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FOOD DESERTS? PURCHASING PATTERNS AND
PERCEPTIONS OF FOOD INSECURE AND SECURE
HOUSEHOLDS IN A MIDWEST URBAN NEIGHBORHOOD

presented by

BRIAN JASEN THOMAS

has been accepted towards fulfillment
of the requirements for the

Ph.D.	degree in	Sociology

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FOOD DESERTS? PURCHASING PATTERNS AND PERCEPTIONS OF FOOD
INSECURE AND SECURE HOUSEHOLDS IN A MIDWEST URBAN
NEIGHBORHOOD

By

Brian Jasen Thomas

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Sociology

2007

ABSTRACT

FOOD DESERTS? PURCHASING PATTERNS AND PERCEPTIONS OF FOOD INSECURE AND SECURE HOUSEHOLDS IN A MIDWEST URBAN NEIGHBORHOOD

By

Brian Jasen Thomas

Over the last decade new attention has been paid to the issue of food security in the United States. Food security represents a useful lens through which to examine the issue of agency since food is difficult for a large sector of the population to access, even though it is considered a basic human right. By examining two classes of households, food secure and food insecure, I shed light on some factors that lead to the relative ability of households to successfully and reliably obtain food. I focus on the perception and behavior of consumers related to decisions to shop, or not to shop, at food retailers. Some theories of consumer behavior tend to focus either on class-related cultural elements which determine taste while others focus on structural elements of the food system which force a limited selection onto different social groups. While it is assumed that culture affects taste to some extent, results from this study suggest that structural elements of the food system and economic differences among households have a larger influence on store choice than cultural preferences. In fact, both food secure and insecure individuals indicated similar sets of criteria that they used in determining store choices. However, food insecure households were more likely to shop at deep discounters and more likely to travel farther to obtain food. These results suggest that structural elements such as food retailer locations may lead to increased transaction costs for food insecure households when compared to food secure households. While food insecure households

do have limited agency in terms of procuring food, their options are more limited and, in many cases, more costly than those of food secure households. Therefore, the structure of the conventional food system, in particular as it relates to physical distribution of food retailers, most closely fits the interests of those who already have few, if any, problems reliably purchasing healthy food.

ACKNOWLEDGEMENTS

DEDICATIONS

This dissertation is dedicated to my son, Elliott James Thomas, who has given

new purpose to everything I do.

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CHAPTER ONE

INTRODUCTION

Food and the Consumer

For the past few decades, social scientists have been interested in issues of food availability. The ability of a society to produce food is critical to its development (Diamond 1997) and intricately related to basic survival and environmental quality (Ehrlich, Ehrlich, and Daily 1993). Access to food has been examined as a factor related to both fertility and mortality (Basu 1992). Authors such as Smil (1994) have argued that food sufficiency needs to be understood as more than an issue of simple calories, but also of nutritional quality and social and environmental differences among populations. Some efforts to identify the impacts of different nutritional food regimes have focused on developing countries. For instance, Jenkins and Scanlan (2001) found increases in food security in many developing countries from 1970 to 1990. However, the increases were not equally distributed globally and negative change was identified in areas such as sub-Saharan Africa. The United States, despite its global political power and economic productivity, is not immune from problems of food availability. In 2005, 11% of the U.S. was still food insecure (Nord, Andrews, and Carlson 2006). Moreover, research indicates that food insecurity has very real social, psychological, and physiological impacts (Hamelin, Habicht, and Beaudry 1999; Morland, Wing, and Roux 2002; Olson 1999; Rose 1999; Travers 1996; Vozoris and Tarasuk 2003). These impacts are not just caused by a lack of food, but also by the quality of food that is consumed.

The question that needs to be addressed in the United States, as elsewhere, is what factors are leading to differential food consumption patterns by some populations? Why do some people suffer from a lack of food or only have low quality foods to eat? Needless to say, the inability to pay for food is a primary obstacle to food access and lack of income is an important factor in assessing food security. People do not, however, simply buy less food when they have less money. Rather, there are a complex series of decisions that influence the quality, quantity, source, and timing of food procurement (Travers 1996). The transaction in the checkout line is only one of a set of negotiations which takes place when people are making purchasing decisions.

Several authors have argued that the problem is not only whether people have sufficient money for food, but also the relative difficulty for some groups in getting to the store to buy food (Blanchard and Lyson 2002; Caraher, Dixon, and Car-Hill 1998; Cummins and Macintyre 1999; Furey, Strugnell, and McIlveen 2001; Lang and Caraher 1998). After all, price is only part of the cost of food. Transaction costs refer to all of the other costs associated with getting food, including traveling to the store, negotiating the parking lot, spending time cutting coupons and looking for sales, and carrying food. Household characteristics such as physical disabilities, lack of an automobile, or small children may increase the transaction costs for accessing food from different locations. Furthermore, neighborhood characteristics can influence the distance that people must travel to purchase food and influence the price they pay for various commodities (Alwitt and Donley 1997; Hall 1983; Kaufman, MacDonald, Lutz, and Smallwood 1997).

In the past few decades the field of sociology has begun to theorize about the role of consumers within the food system (Fine 2002; Lockie 2000; Lockie and Kitto 2000;

Marsden, Flyn, and Harrison 2000). New questions have arisen regarding the ability of consumers to influence the content and structure of the food system. For example research on alternative agriculture has provided evidence to suggest that the structure of the food system is very much influenced by consumers (Allen and Kovach 2000; Raynolds 2000); however, scholars working largely within the sociology of agriculture are still struggling to understand the nature and extent of that influence (Goodman and DuPuis 2002). This new attention to consumers in the food system has developed, in part, because of the recent development of a sociology of consumption, which has begun to examine the cultural, economic, political, and social forces that influence consumption. Building on classical work by scholars such as Veblen (1959) and more recent work by scholars such as Bourdieu (1984), work in this area has examined important questions regarding how consumption has, and has not, changed in the past few decades. Given the complex nature of the process of consumption, it will be important that theories of consumers in the food system also incorporate research from other disciplines. For instance, the field of geography has recently sought to understand the behavior of consumers within the context of a retail environment through the concept of food deserts (Furey et al. 1999; Lang and Caraher 1998).

The scholarly understanding of the role of the consumer in the food system has very real implications for those populations in the United States who are suffering either from a lack of food or reliable access to high-quality food. While consumer movements around food safety and quality appear to be influencing the activities of food companies, such as by limiting the sale of genetically modified organisms in some countries, it is not clear whether these movements are benefiting all segments of the population. The high

levels of food insecurity in the United States certainly suggest that simplistic notions of consumer agency must be cast aside for a more nuanced understanding of the variety of ways in which different consumers influence and are influenced by the larger food system.

Hays (1994) explains that traditional sociological understandings of structure and agency are problematic because they fail to acknowledge that there are various social structures which dictate individual interests. Agency is reduced to the extent to which individuals can get what they want and structure represents static structures that either facilitate or prevent those wants from being met. But, as Hays suggests, if agency represents the extent to which people can get what, we must keep in mind that there were social structures related to class, gender, ethnicity, economics, politics, education, and family that also influence individual interests. There is no such thing as agency that is separate from *some* social structure.

This does not mean that agency and structure lose all sociological meaning. Rather, it suggests the importance of specificity. Agency does not stand in opposition to all social structures; however, it can be a measure of the extent to which various social structures, which are manifest in individual tastes, coincide with a specific social structure. This is how agency is approached in this study. In this case, the social structure we are interested in is the conventional food retail system in our study site. Agency, therefore, can be measured by examining the extent to which households are able to obtain what they want from this food system without turning to other social structures to procure food. In other words, agency is a measure of the extent to which consumers can easily get what they want from the area food stores.

Even narrowed in this fashion, the relationship between consumers and food retailers is important as this is the primary vector through which consumers engage the food system. Research into food security and food deserts has helped to highlight the relationship between consumption and the retail environment, but the nature of this relationship is not always clear. This study examines the situation of consumers in an inner city neighborhood in Lansing, Michigan. Within a distance of five miles from the neighborhood, there are nearly 100 food retailers. These food retailers represent a cross section of the industry: 45 are convenience or party stores, 17 are small grocers, 11 are specialty stores, and 22 are large supermarkets. This variety and density of retailers in a medium sized urban area appears to stand in opposition to much of the current food desert research which would suggest that given the high density of food retailers, access should not be a significant problem for neighborhood residents. In spite of this apparent abundance of retailers, however, this study found food insecurity twice that of the state. These high levels of food insecurity indicate that, despite this high density of food retailers, significant sectors of the population are having difficulty getting what they want from the food system.

In 2003, a local neighborhood center went door to door and conducted a survey in the study site that included several food related questions (Thomas 2004). In addition to finding food insecurity levels much higher than the state of Michigan, 7% of the respondents indicated that transportation to food retailers was a problem and over 9% indicated that getting to the store was either difficult of very difficult. Also, nearly 30% of those who were food insecure indicated that they also had a disability. While this survey was conducted as part of a community outreach effort and therefore not randomly

sampled, it nonetheless indicates that food security is an issue for many residents and barriers related to disabilities and transportation may be part of the problem.

Each of these barriers indicates that the ability of some individuals to purchase food is not simply an issue of income sufficiency, but also influenced by a combination of proximity to stores and ability to negotiate that distance. For instance, someone with a relatively high income, but a physical disability, may have difficulty traveling to some stores or even traversing the parking lot or large area of a large supermarket. At the same time, someone with a low income might be able to negotiate their resource limitations by driving across town to discount grocery stores. Income matters, but it is not the only factor that influences food insecurity. Similarly, barriers such as distance cannot be measured through binary assessments of "too far" or "close enough." It is important to consider the characteristics of individual households in order to understand what "too far" and "close enough" means for different groups of people. As I will discuss later in this study, qualitative research in this neighborhood indicates that distance to food sources is often perceived and negotiated by food insecure individuals through very complex food purchasing strategies, such as shopping at multiple stores to seek sale items and driving out of the neighborhood to discount grocers. Food-insecure individuals engage in a diverse set of activities to balance limited incomes and transportation opportunities against the structure of the retail environment.

The trends evident in Lansing indicate that a significant proportion of the population in the area is struggling to obtain food. The results of the 2003 survey also indicated that a number of people without automobiles live outside a convenient walking distance (defined as ½ a mile) from a major food retailer. Much of the food desert

literature suggests that for disadvantaged consumers simply making it to the store represents a significant obstacle (Furey et al. 2001; Whelan 2002) and data from this study indicates that many people in Lansing are encountering these same obstacles.

While identifying obstacles to reliable access to food is itself an important contribution of food desert literature to broader sociological thought, it is only recently that researchers in this area have begun to look closely at how people behave within a food desert, as well as how disadvantaged consumers perceive and make decisions within their retail environment (Whelan, Wrigley, Warm, and Cannings 2002). Moving from understanding the distribution of food retailers in relation to different populations and towards understanding how different people perceive and negotiate that environment represents an important direction for food desert literature. Consumer decision-making regarding store selection involves a complex set of economic and non-economic factors (Bell, Ho, and Tang 1998; Moore 1989). Without explicit incorporation of consumer perception of food retail options and how that determines behavior, food desert literature risks digressing to simplistic spatial models of food availability and access. Furthermore, this provides food insecure populations with a voice in regards to the structure of the food system.

Food desert research has made the important point that the physical structure of the conventional food system makes it easier for some sectors of the population to buy food. However, current applications of food desert methodologies have been insufficient to explain the high levels of food insecurity in the study site. This stems, in part, from the privileging of the physical structure of the food system in determining whether or not a household will be food insecure and, in part, from the failure to acknowledge either the

existence of other social structures or the agency of people in the context of the food system or other social structures. Distance, after all, has different meaning for different people. Surely, it may represent a barrier, but it may represent one that can be overcome through other resources such as a kind neighbor. At the same time, living one hundred feet from a grocery store does not matter if you do not have sufficient money to buy food there. However, a trip to a relatively distant dollar store might allow one to stretch a limited set of financial resources. The point is not that distance, as a characteristic of food system structure, is of little relevance. Rather, it points to the importance of a more nuanced understanding of *how* it matters to different people.

The next step for food desert research is to reconcile the agency of disadvantaged consumers without dismissing the initial, and still pertinent, point that the structure of the food system does influence household retailer choice and, consequently, consumption habits. Food insecure households and disadvantaged consumers do not completely lack agency, even in the context of a physical environment where food retailers are located relatively far from people's homes. People are creative and innovative; they are able to devise solutions to transportation limitations and to call upon friends, neighbors, and relatives for assistance. Economic limitations can be negotiated through trips to discount grocers, dollar stores, or other activities.

Yet, the agency that is evident in these strategies and activities is, in many ways, constrained. Certainly, these activities and strategies can put food on the table, but they require additional time identifying sales and coupons, traveling to discount grocers, or shopping at multiple stores. There may even be additional costs that are incurred as the up front cost of repairing an automobile is traded against the cost of purchasing an

overpriced box of macaroni and cheese from the convenience store that is within walking distance. Furthermore, relying on friends and family members for food or rides to the grocery store requires turning to social structures that are not part of the conventional food system.

Building from the sociology of agriculture and food desert research, this leads us to a fundamental question: To what extent is food retailer choice an issue of personal preference or one of structural necessity? This question is at the heart of this study because it provides insight into the reasons that people are differentially served by the conventional food system. Furthermore, it provides insight into the reasons that different people appear to have differing levels of agency in the context of the structure of the food system. Based on a combination of qualitative and quantitative data I will make the point in this study that food secure and food insecure individuals often share similar perceptions of the food retail environment. However, due to a limited ability to negotiate the retail environment, food insecure individuals are forced to develop complex purchasing strategies that prioritize cost. In short, I will address the question: to what extent do differing levels of agency relate to different perceptions of and behaviors related to food purchasing?

Research Questions

Six major research questions are addressed in this research. For clarity, these questions will be examined separately in different chapters.

1. *What types of households are more likely to be food insecure or food insecure with hunger?* This question is central to research on food security and important

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to identifying populations that are particularly vulnerable to problems related to food access. While, without surprise, evidence indicates that household income is one factor related to food security, it appears that other factors may also have an influence on food security status (Rose 1998).

2. *Do food secure and food insecure households perceive food retailers differently?* Major consumption theories, such as those posed by Bourdieu (1984), suggest that social class may influence how people perceive their environment. Class influences the ability of people to interpret different elements of their social worlds. This question examines whether food security status is related to perception of food retailers.

3. *Do food secure and food insecure households use different criteria for selecting food retailers?* Regardless of whether or not retailers are perceived to be the same or different, it is possible that different criteria are used to actually select food retailers. For instance, shoppers in both food secure and food insecure households may perceive Wal-Mart as the place to get low-cost bulk items, but only the food insecure households may see this as a factor important to their decision whether or not to shop there. This question addresses the decision making criteria used by people in the neighborhood. What factors go into peoples' decisions to shop at individual stores?

4. *Do food secure and food insecure households shop at different types of food retailers?* It is important to understand the consequences of perception on actual behavior. In particular, since shopping behavior may be influenced by factors that

respondents may or may not be aware of, it is important that actual shopping behavior of respondents be examined in addition to perception of retailers.

5. *Are food secure and food insecure households located at different distances from food retailers?* Food desert research suggests that distance from food retailers influences food security status. This research question tests the accuracy of this proposition in the study neighborhood. If distance really influences food security status, food insecure households should be located farther from food retailers than food secure households.

6. *Does distance influence shopping behaviors of food secure and food insecure households?* Of course, food security status is only one measure of food purchasing patterns and this question examines the possible influence of distance on other shopping behaviors. In other words, is proximity a factor that influences the likelihood of households to purchase food from different sources?

Significance of Study

This study has a number of implications for scholarship as well as those engaged in work to alleviate food insecurity. First, this research will shed light on the role of the consumer in the food system. Current research, in particular that stemming from agrifood studies, is still working to "theorize the consumer" as an agent in the modern food system. Such efforts have been limited by a tendency to treat consumers as a homogenous group. This research begins to alleviate some of the problems related to this homogenous treatment by examining a wider spectrum of consumers and drawing explicit divisions between groups of consumers.

Another debate that has emerged among scholars examining consumer behavior relates to the extent to which choice is dictated by culturally derived preferences and to what extent choice it is dictated by the availability of goods and services. By looking at consumer preferences and behaviors among different groups of people, this research will shed light on the relative influence of individual preferences and availability on choice. In much of the literature these discussions have related to item selection; however, recognizing that there are a number of decisions involved in procuring commodities, it is important that other decisions, such as the decision regarding retailer choice, also be examined.

This research will extend scholarship that has recently begun to view hunger as part of the structure of the food system, rather than only a problem for individuals or households. Specifically, food desert research suggests that the physical structure of the food system creates barriers for certain populations who find distance a barrier, or limit, to procuring food. This research will look explicitly at the relationship among distance, food security status, and shopping behavior. Given conflicting evidence on the impact of distance, this research will take an important step by looking directly at individual household behavior as it relates to distance from different types of food retailers.

Finally, this research will point to some reasons why households may be food insecure. This information can be of vital use to organizations that are engaged in activities to alleviate food security problems. A number of non-profit and governmental agencies are currently engaged in activities to make healthy food more accessible in the neighborhood that was studied, and it is hoped that the information derived from this

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dissertation can be used to develop new programs and guide existing programs that will help alleviate food insecurity.

Organization of Dissertation

The next chapter in this dissertation examines the theoretical framework that has defined this research with particular emphasis on the issue of consumer agency in the food system. Fundamentally, this study questions the extent to which food insecure households have control over what they eat. It is important, therefore, that I start by examining the meaning of agency in the food system. In Chapter Three I outline the basic methods used to examine the food purchasing patterns of households in the study site. I collected both qualitative and quantitative data through a combination of a survey and interviews. Additional data on food retailers was also collected and assessed using a Geographic Information System. In this chapter, I also provide an overview and rationale for the study site. Given the range of analytic techniques used in this research, the specific ways in which data were analyzed is outlined in each chapter before reporting the results of the analysis. In Chapter Four, I examine basic questions regarding the causes of food insecurity. In this section, the factors related to food insecurity in the neighborhood are examined and compared to other studies looking at the causes of food security. In Chapter Five I take a closer look at the differences and similarities between food secure and food insecure households by comparing the perception and behavior of households in relation to food shopping. Utilizing a spatial analysis of survey respondents and food retailers in Chapter Six, I shed light on the role that the physical structure of the food retail environment plays on the issue of food security. Finally, in

Chapter Seven, I will revisit the issue of agency as examined in Chapter Two and demonstrate how the physical structure of the food system plays a role in food security levels.

CHAPTER TWO

CONSUMER BEHAVIOR AND FOOD

Theories of Consumer Behavior

In many ways, the act of consuming food is exemplary of the relationship

between individual decisions and social structures. At one level, eating is an act that is

influenced by individual tastes and nutritional requirements. On the other hand, eating

represents the expression of a set of socially constructed symbols, the manifestation of

culturally determined tastes, and decisions constrained by a variety of social structures.

We eat what we want, but our wants have themselves social roots and are constrained by

the foods that we can obtain. Fundamentally, therefore, decisions around food offer

potential insight into some very basic sociological questions regarding structure and

agency. To what extent is an individual decision about what to eat (or in the case of this

study, where to shop for food) dictated by their individual wants and desires and to what

extent is the decision dictated by social structures which dictate food price, availability,

and desirability.

Interestingly, despite the potential of food to shed light on issues central to

sociology, Beardsworth and Keil (1997) note that, historically, sociology has not paid

attention to it. They suggest that "it may well be that the very taken-for-granted nature of

eating has rendered this activity, and the complex of other activities and relationships

which cluster around it, relatively 'invisible' to sociologists (2)." While this may have

been the case in the past, rapid growth in the sociological literature around the area of

food points to a newfound awareness of the topic. Not only does the food sector represent a significant part of the economy with food and beverage store sales reaching nearly $520 billion dollars in 2005 (US Census), but it also represents the theoretically important confluence of two important, albeit relatively novel, sets of sociological literature: the sociology of agriculture and the sociology of consumption. In the case of the former, Goodman and Dupuis (2002: 8) state "Consumption as a theoretical category has 'arrived' in agro-food studies." In the case of the latter, Warde (1997: 22) argues that "for a sociology of consumption, food is a most instructive critical case study." While it would seem that the interest of these two literatures on a single topic demonstrates the emergence of a sociology of food, a cohesive understanding of the role of the consumer in the food system has yet to be fully developed. Regardless, it is worth reviewing existing sociological theories of consumer behavior to understand the current state of sociological theories of food consumption. To what extent can consumer behavior around food be understood within the context of existing theories of general consumer behavior?

Certainly there have been some very influential theoretical works that have sought to understand consumer behavior from a sociological perspective. Campbell (2000) provides a summary of the predominant theories that claim to explain why and how we consume. He breaks these theories down to Veblenesque, instinctivism, marginal utility theory, and manipulation. Veblenesque theories are based, to varying extents, on Veblen's classic work *Theory of the Leisure Class* (1959) which introduced the concept of "conspicuous consumption" to everyday language. For Veblen, consumption was a cultural act that reinforced social class differences. In particular, unproductive

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consumption (i.e. luxuries) gained cultural value among the upper class which was used to distinguish them from other social classes. More recently, Bourdieu (1984) built upon the cultural role of consumption as an act of differentiation. He stated "consumption is . . . a stage in a process of communication, that is, an act of deciphering, decoding, which presupposes practical or explicit mastery of a cipher or code (2)." The influence of these theories can be seen in studies such as that by Peterson and Kern (1996) which suggests that omnivorous consumptive tastes have begun to define upper social classes.

Despite the popularity of this approach, Campbell (2000) remains critical of Veblen's theories noting a failure to distinguish between societies of close-knit communities of peers and socially mobile, fairly open societies. Most importantly, according to Campbell (2000:66), "Veblen does not provide a basis for distinguishing traditional from modern consumer behavior, and hence does not account for the insatiability and desire for novelty which is such a crucial hallmark of the latter."

Campbell (2000) states that Instinctivism is largely based on humanistic psychology's concept of a hierarchy of needs and the idea that wants stem from latent desire. In the context of the hierarchy, individuals first need the basics of life, such as food, water, and shelter. After those needs have been met, humans will pursue wants at higher levels in the hierarchy. According to Campbell (2006:56), "The postulation of such a hierarchy, is obviously an attempt to cope with the problem of the non-universality of 'instinctivism' desires, that is, that the fact that the whole of humanity does not display one common set of consumer wants." Explanations of consumer behavior along this thread argue that traditional people were too preoccupied with obtaining the wants at the base of the hierarchy and it has only been with the broader satisfaction of these needs that

new desires have become manifest. Campbell concludes that these explanations are dubious at best. He points out that human beings will often "override the imperatives of biological urges for the sake of a 'higher-order' need such as love or self-respect (56)." In understanding consumer food choices, Campbell's critique is apt. McIntyre et al. (2003) for instance found that low-income mothers would give up food for their children. This provides one example of how the biological imperative of food may take second place to the social need to provide for one's children.

Marginal utility theories are based upon the idea that consumers pursue items and activities that maximize their utility. While Campbell concedes that this perspective has provided some theoretical utility, it does not constitute a theory of consumer behavior. In particular, he notes the failure of theories in this category to successfully explain the nature or origins of wants and tastes. Furthermore, the failure of this perspective to explain "irrational" consumer behavior, such as excessive consumption, limits its utility. Given the recent growth of health problems related to excessive food consumption, it would seem that this line of theorizing has only limited utility when applied to food. Rappoport (2003) provides several accounts of "irrational" consumer decisions that derive from cultural background rather than nutritional utility. Both the refusal of some foods, such as preserved fish, to embracing other foods such as cat, highlights the limited applicability of marginal utility theory to food consumption.

Manipulation theories of consumer behavior are based on the idea that wants are created by the actions of outside agencies. In short, people want things because other groups, generally advertising agencies, have created the desire. Campbell (2000:57) explains "this perspective derives from what has been called the 'hypodermic' model of

the workings of the mass media, one which implies that the various media of modern society—such as film, television, and newspapers—each function like a hypodermic needle to inject a given message into their audience." From this perspective, consumers play only a passive role. Wants and desires are generated by others. This set of theories may carry some weight in explaining consumer behavior. The growth of food related advertising certainly indicates that food companies see this as a possibility and there is evidence that at least children are being influenced by food advertisements (Harford et al. 2004). Still, the colossal failure of heavily marketed products, such as New Coke in the 1980's indicate that simplistic notions of passive consumers may be overstated.

This typology of consumer behavior provides us with a background for understanding current theories related to food consumption. As I will discuss in the next section, despite the breadth of theories stemming from the consumption literature, explanations for food consumption have been largely oriented towards marginal utility theories and manipulation theories.

The Sociology of Agriculture and the Consumer

In the literature on food I see the greatest theoretical overlap between the sociology of consumption and the sociology of agriculture in the latter two of Campbell's (2000) categories, marginal utility theories and manipulation theories. In the sociology of agriculture, there has been a historic emphasis on consumption either as a simplistic set of desires from a rational group of people or as an activity that is determined by outside agents. As Lockie (2000: 279) explains, "until recently, most accounts of consumption within the agri-food studies dichotomized production and consumption and dealt with

consumption either as a set of practices manipulated by capital and the state in the interest of capital accumulation or as the simple agglomeration of individually free and rational choices." This dichotomy continues as an influential part of sociology of agriculture accounts of consumer behavior and mirrors, albeit not perfectly, the dichotomy represented by Campbell's typologies of marginal utility theories at one end and manipulation theories at the other. In terms of agency and the food system, consumers are either very influential or lack any ability to influence the structure or content of the system. Interestingly, while past studies have been more oriented towards production and a lack of consumer agency, recent studies have moved closer to the other end of the spectrum and attributed consumers with a greater amount of agency (Lockie 2000.)

This has likely been influenced, in part, by the idea of reflexive modernity discussed by Beck (1992). Sociology of agriculture scholars have begun to recognize that consumers are active and reflexive – both interested in and able to influence the structure of the food system. This reflexivity is apparent in the recent, but rapidly growing concern of consumers with issues of food safety. Busch (1997) suggests that the recent growth in concern with food safety has only developed in the past 50 years. Beardsworth and Keil (1997) also note the growth in concern with food safety that characterizes modern society. They attribute some of this concern to the erosion of traditional ways of managing the food paradox (it must be eaten, but eating can also cause harm). They state "many of the structural and ideological features of the modern food system have the effect of raising the visibility of the paradoxical nature of food and eating (160)." Similarly, Senauer et al. (1991) note the growth in consumer concern with

food safety and the health consequences of eating. At times concern with food safety is punctuated by food scares such as outbreaks of salmonella, E. coli, or bovine spongiform encephalopathy (mad cow). The growth in these concerns has been elaborated in other studies (Green, Draper, and Dowler 2003; Nygard and Storstad 1998; Sapp and Bird 2003).

This reflexivity is not simply a matter of concern with risk. Zukin and Maguire (2004) found trends towards reflexivity in their review of recent consumer research. They contend that much of this literature shows people actively engaged in consumption in ways that contribute to their sense of identity. In addition, they suggest that many people think of consumption as a creative activity for self expression. While this is not to say that elements of this satisfaction are not in part the result of marketing, it does suggest that people are to some level consciously engaged in consumptive practices.

Associated with this growing consumer reflexivity is a willingness and ability of consumers to use their consumptive practices to promote change in other areas. Drawing from geography, Crewe (2001) notes that consumers increasingly are not only engaged in reflexive consumption, but that this reflexive consumption has increasingly political implications. She states that "there is evidence of a shift in focus during the early 2000's towards consumption as a site of political action through explorations into the connections between commodity culture, self-identity, citizenship and political participation (632)." This builds upon Zukin's conclusions that consumption has become an element of identity to suggest that it is also one of social change. Miller (1995) also takes the position that consumers have a very active and powerful role in shaping society. He states, "Consumerism as an activist movement remains one of the most powerful

critical points in assessing the consequences of capitalism (40)." For Miller the power of consumers is one of the major driving forces of society.

This growing consumer reflexivity is intricately related to recent changes in the agrifood system. Industrial agriculture has created environmental and health problems that have become difficult to entirely ignore. Highly publicized environmental problems associated with agrichemicals, such as DDT, highlighted the risks associated with the modern food system. Such chemicals were an integral part of Fordist production strategies. At the same time, medical developments around the relationship between diet and diseases such as cancer, heart disease, diabetes, and obesity heightened concern about the types of food consumed. Interestingly, several of these health problems have ties to meat, processed grain, corn syrup, and other food products that tended to easily fit into the rationalized mass production of Fordism. These health concerns were further influenced by the growing role of the government in promoting health (Nestle 2002).

According to Beardsworth and Keil (1997: 148), the growth in consumer concern with the relationship between health and food can also be traced to the social movements of the 1960s where health food was promoted as a sort of "alternative cuisine." By the 1980s and '90s these movements had grown and found legitimacy in the mainstream in the form of heightened concern with the health consequences of food, though I also recognize the efforts of other social movements, such as the environmental or labor movement, in making important contributions to publicizing issues related to food (Beardsworth and Keil 1997.) In the case of both environmental and health concerns, growing consumer reflexivity can be seen as closely related to problems that resulted from conventional agricultural production patterns.

Perhaps the most obvious recent example of peoples' efforts to alter the structure of the food system through their role as consumers can be seen in the Fair Trade Movement, within which Fair Trade coffee represents the largest product. This movement seeks to create new linkages between producers in developing countries and consumers in developed countries. While these linkages are in part economic in that commodities are being exchanged, they also carry with them certain values related to social justice. Third parties, such as Transfair USA, certify and label products as Fair Trade based on a set of social standards. Consumers in developed countries spend their money on Fair Trade products because they believe these products are produced in a more socially just fashion. Some advocates of the movement would even suggest that the more money that is spent on Fair Trade the more socially just the world will be. While Fair Trade is still a very small market, its recent growth and inclusion into large transnational corporations such as Starbucks suggests it is one way in which consumers are having an influence on the food system (Renard 2003).

While there appears to be evidence that scholars are giving greater credence to the role of consumers in the food system, theorization of consumption remains a highly contested area (Fine, Heasman, and Wright 1996; Goodman and DuPuis 2002; Lockie 2000). Part of the difficulty stems from the traditionally production oriented nature of agricultural studies in the past thirty years. The historic orientation of the sociology of agriculture on production has led to an orientation towards a manipulation explanation of consumer behavior. Such an emphasis has made acknowledgement of the active role of the consumer in agrifood systems difficult. A production/consumption dichotomy still exists that gives agency to producers and ignores the agency of consumers. Fine's

Systems of Provision (Fine et al. 1996) represents one attempt to move beyond a simple production/consumption dichotomy. However, as Guthman (2002) and Lockie and Kitto (2000) point out, production is still typically treated as the driving force behind consumer demand. Goodman and Dupuis (2002) and Lockie (2000) have sought to apply actor network theory to the puzzle of consumer behavior and while such attempts are promising, they generally treat consumer demand as either given or the result of production. Other scholars, such as Appadurai (1986) and Miller (2000) have looked at consumption as an issue of material culture; however, as Goodman and Dupuis (2002) caution, such perspectives should not preclude the influence of production. Bringing together these divergent perspectives of consumption represents a significant obstacle to a meaningful understanding of the influence of consumers on and within the agrifood system.

Warde (1997) frames current debates around food consumption as involving four different trajectories: individual diversity, market segmentation, massification, and structural division. These trajectories represent different explanatory directions in the literature on food consumption. The individual diversity trajectory, according to Warde, stems directly from Beck's risk society (1992) and encompasses some of the recent agrifood studies interested in food safety and focused on growing consumer reflexivity and anxiety. The market segmentation trajectory suggests that there is an increasing differentiation of distinctive lifestyles that are evolving out of the era of mass consumption. Warde points to analyses of post-Fordist trends in economic production such as Harvey (1989) as representative of this thread. Literature in this area suggests that the food system is defined by greater nichification and greater diversification.

Directly opposite this thread, massification studies have a cultural orientation and focus increasingly on ubiquitous cultural elements, perhaps best represented by Ritzer's (1996) McDonaldization thesis. Finally, literature focused on structural elements argues that social divisions are becoming more intense. Warde notes that these divisions are not simply based on socio-economic class, but also nationality, ethnicity, race, and gender. Perhaps the most widely read recent work along this trajectory would be Bourdieu (1984).

While Warde (1997) drew largely from the sociology of consumption in constructing this framework, I would offer that these four trajectories can also be used to situate literature examining consumer agency and the agrifood system. Understood in this manner I am able to apply axes representative of two major tensions that exist within current literature on consumer behavior and fundamental to sociology: that of structure versus agency and that of production versus consumption (Figure 1). Framed in this way, I see individual diversity and massification as representing literature related to consumption with the former allowing for greater individual agency than the latter. At the same time, studies along the market segmentation and structural division trajectories tend to situate the locus of power at the end of production with varying degrees of influence allocated to the predominant social structure.

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                 AGENCY
                    ┊
   market            ┊        individual
   segmentation      ┊        diversity
                    ┊
 PRODUCTION          ┊      CONSUMPTION
 --------------------┊-----------------
                    ┊
   structural        ┊        massification
   division          ┊
               STRUCTURE
```
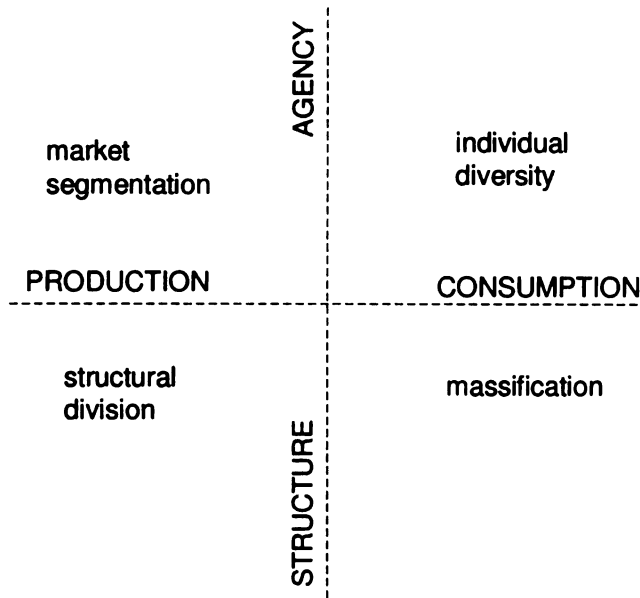
Figure 1. Determinants of consumptive practices

While this slightly altered perspective of the literature is not a substantial change

from that offered by Warde, it does provide a cohesive way of bringing literature from

the sociology of consumption together with recent work from the sociology of

agriculture. In Goodman and Dupuis's recent review of consumption and agrifood

studies they note that many studies based in rural sociology remain "critically impaired

by the continued reliance on production-centered theoretical frameworks (2005:5)." For

Goodman and Dupuis the trend for work in this area has been to place explanations on

the left side of Figure 2. These authors highlight Marx-inspired work along the lines of

Friedland's (1984) commodity systems analysis as being a major theoretical thread

attempting to bring consumption into agrifood studies. More recently, Fine's (2002)

systems of provision represents another attempt to reconcile power of production and that

of consumption. While both represent meaningful theoretical developments in their

expansion of agrifood studies "beyond the farm gate," both have been clearly situated at

the production end of the spectrum by placing power predominantly in the hands of producers (or at least in the hands of actors at that end of the commodity chain such as processors). Dixon (1999) builds upon Friedland's commodity system analysis and attempts to incorporate consideration of consumption to a greater degree with her cultural economy model for agrifood studies. I would suggest that this perspective comes closest to escaping the production orientation of past models by explicitly incorporating the conditions of consumption that are so influential on consumption decisions.

Interestingly, the growth in scholarly interest in consumers and food has led to a growth at the other end of the production/consumption spectrum. That is, there has developed a turn towards looking only at culturally derived changes to explain the structure of the food system. Goodman and Dupuis (2000) attribute this to the cultural "turn" that has taken place more broadly in the social sciences. One of the most influential studies noted by Goodman and Dupuis is Ritzer's (1996) *McDonaldization of Society*. Studies in this category focus on commodities as elements of material culture. Consumption is seen as a way of creating and recreating cultural values and identities. Importantly, for our discussion here, studies in this area have little, if any, consideration for the influence of production. This, for Goodman and Dupuis (2000: 14), represents a sticking point as they caution against "overshooting the cultural 'turn.'"

But is there no way of reconciling the taste and preferences at the site of the consumer while giving appropriate consideration to the influence of producers? In order to reconcile culturally derived tastes of consumers with the power of producers, we must look beyond simplistic conceptualizations of culture. Bourdieu (1984) provides us with one means of reconciling production and consumption in his efforts to bring together

economic and cultural elements of society. As Bourdieu (1984: 6) famously states "[t]aste classifies, and it classifies the classifier." For Bourdieu, tastes are socialized, largely by social class, and expression of tastes further serves to identify social class in society. Taste then, can be understood as something that stems from the class divisions caused by a capitalist economic system, but also as the cultural reification of this system. Culture then becomes a system for understanding the symbols imbedded in commodity tastes related to class.

Of course, we are not necessarily aware of how tastes have been dictated by our class. Bourdieu offers the concept of *habitus* as a way of relating taste as dictated by class as well as manifestations of class. Swartz (1997: 117) explains Bourdieu's habitus stating "If on one level habitus can be read as a way of conceptualizing culture as practice, on another level it associates practice with habit." Our tastes are both what we are used to as well as the means through which we decode or apply meaning to the objects in our world.

Bringing together culture and economic systems as they relate to tastes is important as it allows us to incorporate culture into understanding tastes without losing the influence of producers in the food system. Bourdieu is specifically concerned with meanings that are attached to material goods, such as food. Consequently, we must concede that cultural tastes and preferences as class manifestations are also limited by the availability of material goods. For those in disadvantaged classes this can mean "a taste for what they are anyway condemned to (Bourdieu 1984: 507)." Wright, Nancarrow, and Kwok (2001) go even further to note the relative abundance and scarcity of foods can influence the meaning that classes apply to food. They note, for example, the shift in

perception of ideal body weight. At one point, being heavy was considered a mark of high class, but is now considered more symbolic of the poor.

Food producers and retailers have a great deal of control over the relative abundance and price of food in different locations and therefore they have some control over the taste and preferences for different types of food. As Wright et al. (2001: 335) explain "Supermarkets stock food which reflect the tastes of their consumers whilst simultaneously stimulating their taste buds in new directions." Much in the same way that DeBeers' near monopolistic control over diamond production has had an influence on the class related cultural meanings associated with diamonds, it seems reasonable to note that producers are able to influence preferences by changing prices and relative availability. Organic produce, for instance, carriers a price premium. This both limits its availability among lower classes as well as creating cultural meaning associated with desirable elements of higher classes.

Certainly, as Bourdieu and others suggest, there is a relationship between taste and class. However, the relationship between the two is more complicated than simple high-brow and low-brow tastes. As Peterson and Kern (1996) note, there has been an increase in consumption activities that appear to transcend class boundaries. They argue that music traditionally associated with "low brow" tastes, such as bluegrass, is now being consumed by upper class groups. What is the nature of the relationship between class and tastes as it pertains to food? In terms of understanding the causes of food insecurity it seems a stretch to suggest that people "prefer" not to have sufficient healthy food to eat. In order to also understand the causes and consequences of food insecurity,

we must consider not only tastes and preferences, but also agency and the extent to which households are able to negotiate the structure of the food system.

Agency and the Consumer

I applaud the efforts of scholars to reconcile the consumption/production debate in such a manner as to understand how different actors are linked along the spectrum. However, I think that the project of "theorizing the consumer" in agrifood systems is hindered by a failure to fully acknowledge the second axis—that of structure versus agency. My modification of Warde's (1997) explanations of changing consumption overlaps along the horizontal axis with existing analyses of agrifood studies (Figure 2). However, the addition of the vertical axis highlights an issue rarely considered in agrifood studies: the fact that actors, even in the same part of the production/consumption spectrum, have different amounts of agency in terms of operating in, and enacting change within, the conventional agrifood system. A small farmer and Monsanto might both exist at the producer end of the production/consumption spectrum, but both do not have equal influence on the structure of the food system. The same can be said of consumers.

What does it mean to say that consumers have different amounts of agency? In order to answer this question, it is worth giving some consideration to what is often meant by structure. Despite its prominence in sociological literature, it is a somewhat elusive and problematic concept. Sewell (1992), for example, notes that structures in social science literature often appear as things that are impervious to human agency and which exist outside of humans. As he explains, this approach to structure is problematic as it is too rigid in its determinism and makes social change difficult to understand. This

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is not to say that social structures do not exist, as individual behavior is inevitably shaped by the resources and ideas that are set before us. Sewell suggests that structure is better understood as two-dimensional. One dimension involves a depth dimension (schema) and the other involves a power (resource) dimension. The depth dimension refers to the extent to which the ideology related to a structure pervades a society. The power dimension refers to the extent to which resources are allocated based on structure.

These two dimensions can be easily applied toward an understanding of the structure of the food system. On one side the modern food system carries a significant amount of depth and, through advertising and other vectors, has promoted a set of tastes that influence not only what people eat, but more generally what people consider to be worthwhile qualities of food. Interviews with both food secure and insecure individuals that were conducted as part of this study revealed widespread understanding that organic food was "better" than other food, even if respondents' understanding of organic varied widely. Similarly, many respondents noted the strong desire, especially among children, for food from McDonalds, regardless of an awareness of the nutritional problems associated with fast food. In both examples the food system strongly influences symbolic associations with food. In the case of organic, the association of "organic" with "higher quality" took place even without an understanding of the organic certification process. Similarly, McDonalds was seen as desirable and good, even when respondents were aware that many McDonalds products were not healthy.

In terms of the second dimension of structure -- power -- the food system has a significant influence on the material allocation of food. One's ability to obtain a particular type of food is certainly limited by its availability where food is typically

purchased. While additional options might be available such as getting food through the mail or driving farther to obtain it, those activities require greater resources. Even when desired food is available in an area, some individuals might not have sufficient resources to gain access. While in a sense the food system, as with other largely economic structures, constrains or enables people's ability to act based on how much money they have, it is important that we understand resources as including, but not limited to, financial ones. Gardening, food sharing, and food assistance all represent ways that food can be procured that require resources, but not necessarily money.

Hays (1994) provides us with a way of relating this multidimensional understanding of structure to the issue of agency. Importantly, Hays makes the point that agency is not the same thing as freewill or randomness. He states:

> Social structures are simultaneously constraining and enabling: although structural constrains absolutely preclude the possibility of making certain choices, they also provide the basis of human thought and action, and therefore offer the very possibility of human choice. A sociological understanding of agency, then, does not confuse it with individualism, subjectivity, randomness, absolute freedom, or action in general, but recognizes it as embracing social choices that occur within structurally defined limits among structurally provided alternatives (65).

Such a conceptualization of agency is useful in understanding the role of consumers in influencing the food system because it avoids simplistic explanations whereby some individuals are completely constrained by a structure and others are completely empowered by it. Rather, agency becomes an indicator of the extent to which consumers are able to alter one social structure to coincide with another structure. In the case of this study, it allows us to examine the extent to which the structure of the conventional food

system coincides with the social structures which dictate food purchasing preferences of consumers.

Food security status represents a useful indicator of agency since it allows us to examine this concept in a broad fashion to the structure of the conventional food system. After all, it seems reasonable to assume that nearly everyone in a population would like reliable access to quality food. Most people prefer to be food secure. Admittedly, food security status is partially a subjective measure leaving it up to the respondent to determine what constitutes a "balanced meal." Even questions related to whether a respondent had "enough money" for food require a subjective assessment on the part of the respondent. The subjectivity of the food security questions is useful because it allows the respondent to bring to bear all of the social structures (class, gender, ethnicity, education, etc.) which influence taste and preferences into a measure of the adequacy of food access. Food insecurity, therefore, becomes an indicator of constrained agency within the conventional food system because the ability of food insecure households to obtain food in preferred quantities over time, without sacrificing resources that they would rather allocate elsewhere, is constrained by the existing structure of the food system.

This does not mean that those who are food insecure completely lack agency or, in many cases, the ability to access food through other means. Rather it indicates that the food system, as represented by food retailers, is a social structure that food insecure households are unable to influence to fit the other social structures that influence their food purchasing and consumption preferences. This represents a deviation from many agrifood studies which look at how consumers, as a general category, are able to

influence the structure of the food system. Consumer agency is often perceived through conventional lines as consumers engage with increasingly concentrated food retailers (Marsden, Flynn, and Harrison 1997). In some cases agency is seen in terms of new consumer demands for products such as organic produce. In other cases, consumer demand for food that was produced in a fashion to meet certain social standards has led to the development of alternative networks such as the case of Fair Trade. Finally, the growth of locally based alternative marketing arrangements, such as farmers' markets and Community Supported Agriculture, is commonly associated with consumer interest in supporting local growers. With few exceptions, e.g. Guthman (2002), accounts of consumer agency in the agrifood literature treats consumers as homogenous. There is little, or no, consideration for the fact that some consumers are (often because of resource constraints) unable to reorient the food system to coincide with their interests. After all, if all people were able to alter the structure of the food system in a similar fashion, the approximately 10% without reliable access would disappear.

It is important to note that the focus of this study on agency in the context of the conventional food system, as represented by food retailers, does not suggest the denial of the existence of agency in other social contexts. In other words, to have or not to have agency in the conventional food system does not preclude other forms of agency in other contexts. Even food insecure households have at least some opportunities for political activity that could, for instance, influence zoning laws that determine where food retailers are located. Place based relationships with neighbors that lead to the exchange of garden produce could help alleviate food insecurity problems while taking place external to the conventional food system. As a more tangible example, the non-profit community center

located in the neighborhood has recently built a greenhouse in an underutilized

neighborhood park to help neighborhood residents learn to grow food on their own.

These all represent ways in which the agency of neighborhood residents has been

manifest in the context of social structures other then that of the conventional food

system. Still, everyone in the neighborhood engages with the conventional food system

and on a regular basis must negotiate their agency within the structure of this system.

Space, Agency, and Structure of the Food System Structure

What does it mean to talk about the structure and agency within the food system?

While there are a variety of characteristics of the conventional food system, recently,

sociologists and geographers have begun to examine the physical structure of the food

system as manifest in retailer locations. The spatial distribution of food retailers provides

an excellent vector through which to understand the intersection between structure of the

food system and the agency of consumers. On one level, people have no influence on the

distribution and array of food retailers in their area (a few communities have been able to

keep Wal-Mart out of their neighborhoods, but these are exceptions to the rule). It

represents an element of their environment that they must inevitably negotiate despite

their relative inability to influence its structure. At the same time, the distribution of food

retailers in an area is strongly influenced by the aggregate characteristics of the

population. Food retailers make location decisions based on physical characteristics,

such as the availability of a building and sufficient land for a parking lot, as well as

population characteristics, such as the purchasing power of a neighborhood.[1] After all, stores that are unable to sell sufficient products will eventually go out of business. Therefore, space is an element of social structure, but nonetheless one that is partially influenced by aggregations of individuals. The difficult task is in understanding how these two elements intersect. In order to do this, we must first examine the sociological implications of space.

Consideration of space in sociological literature has both a long and short history. It is long in the sense that sociologists have been working in space regardless of subject matter, as sociology studies almost invariably take place *somewhere*. Furthermore, space has often played an extremely significant role in both bounding the field and guiding research directions in subfields such as rural and urban sociology. At the same time, space has only recently been recognized as having a significant and definable role in the larger sociological enterprise (Gieryn 2000; Tickamyer 2000). This new recognition of the importance of space and place has come about both by a new awareness of the role of places in processes such as globalization (Swyngedouw 1997) as well as critical developments in subfields that have led to questions regarding the content of those fields. This has been particularly notable in the case of urban (Fischer 1975) and rural (Lobao and Rogelio 2002) sociology.

Gieryn's (2000) seminal paper on place in sociology represents a useful point for understanding the role of space and place in sociology. In this paper, Gieryn states that place has three features: geographic location, material form, and investment with meaning and value. A place must have a unique location, some compilation of objects on

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[1] Purchasing power refers to a combination of neighborhood income and populations. High population density areas with low average incomes may have less purchasing power than low population density areas with very high incomes.

or associated with it, and meaning attached to the place. For Gieryn, space is simply abstract geometries—place, on the other hand, is imbued with meaning. This distinction between space as meaningless and place as a location of meaning is echoed by Gans (2002). Rather than "space" as the socially-void arena, however, Gans suggests a distinction between "natural space" and "social space." The former is simply "air over dirt" (Gans 2002: 379) and immediately becomes social space as soon as people use it.

The meaning that is attached to space (i.e. place) has real and meaningful impact on the subjective experience of distance. Consider that while a store may be very close in terms of distance (e.g. five blocks), a variety of factors such as poor road conditions, a lack of sidewalks, a "dangerous" neighborhood, might make the trip to that store much more difficult. At the same time, even though a particular store is many miles away it may be located on the way to one's workplace, in a particularly pleasant area, located conveniently close to other stores, or on a reliable bus route. All of these factors might lead to a perception that a store is in close proximity regardless of physical distance to one's place of residence. In terms of understanding the role of distance on consumer behavior, therefore, it stands to reason that understanding people's perception of distance will provide important insight into how they negotiate the spaces around them.

Is an understanding of place as a subjective measure compatible with objective measures of space? Tickamyer (2000) argues that space can be conceptualized in three ways: as place, relational units, and scale. Place refers to the particular locale or setting. Relational units is a term which refers to the organization of ideas about places. Scale addresses the size of the units to be compared. She states that these can be viewed as "context, cause, or outcome for other social processes (806)." While her

conceptualization does move beyond a simple dualism, it really offers more of a descriptive framework than theoretical understanding of the role that space does and does not play vis-à-vis society.

Agnew (1989) suggests that some of the tensions that exist around place stem from disciplinary differences around how it is perceived. He suggests that economists and economic geographers have emphasized location (physical distribution), microsociologists and humanistic geographers have been concerned with locale as the site of daily action, and anthropologists and cultural geographers have focuses on the sense of place or identification with place (Agnew 1989:2). In many cases, these different perspectives are seen as mutually incompatible rather than complementary. Agnew further demonstrates how conceptualizations of space have been closely tied to conceptualizations of community. Specifically, he traces how critiques of modernization and capitalist development have often focused on a shift towards a "placeless" society and the erosion of a sense of community (Agnew 1989).

Gieryn (2002:342) draws a parallel between sociological studies of space and studies of science. He notes the tension that exists in science and technology studies around the role of "reality" in determining social processes and cautions that a failure to recognize the influence of space risks "unbridled social constructivism." Similarly, Zukin (2002) is very critical of the relatively simplistic perception of space conceptualized, in particular by Gans. Zukin states that by emphasizing space as the site upon which action takes place and use as the primary means of socializing space, Gans "fails to raise the larger issue of how and why spaces are constituted for critical social purposes (Zukin 2002: 345)." Zukin goes a step farther than Gieryn by questioning the

existence of any socially-void space, whether it is "air over dirt" (Gans) or space without meaning (Gieryn). Zukin (2002: 346) warns "There is no neutral vantage point and only partial objectivity. Whether built or only portrayed, moreover, a landscape obscures as much as it reveals. To study only the use of space prevents us from dealing with what is suppressed by a landscape, forcefully reshaped, or willfully forgotten."

While I think that Zukin is correct to emphasize the importance of understanding all spaces as socially constructed, the nature and structure of that social construction is not without limits. Materiality still matters and some of the limits to how place is perceived are physical. Measures of physical distance (space) still matter. This can be understood on a practical level—there is, after all, only a limited distance that people can practically travel in order to purchase food from a desired store or to obtain the desired selection of food. One cannot simply perceive a store to be close enough without the time and resources to negotiate the necessary distance. Therefore, while it may be impossible to fully understand space without consideration of the meaning that people associate with it, that does not obscure the complimentary task of objective measurements of space.

Reconciling subjective distance (place) and objective distance (space) is fundamentally related to our central question of food retailer perception and choice. First of all, in both interviews and the survey, respondents indicated that distance was an important factor influencing store choice. The question is the extent to which distance matters. Answering this question requires both a subjective component (i.e. assessing the extent to which perceived distance is seen as an important characteristic of store choice) as well as an objective component (i.e. assessing the extent to which physical distance

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influences store choice). By understanding both these components a fuller understanding of the relationship between space and consumption can be gained. Fortunately, recent scholarship provides us with new ways of understanding the relationship between space and consumption. First, however, we need a basic understanding of how food retail spaces have evolved in the recent past.

Space and the Structure of the Food System

The evolution of food retailers has followed much the same expansion and concentration as other retail segments. In the first half of the 20[th] century, small grocers were the standard food retailer. Selection was limited and the shopping experience was very service oriented with the grocer selecting items for shoppers. By the middle of the century, supermarkets rose to prominence, replacing the smaller grocers with a retail format that allowed consumer to browse and select items themselves. Writing during this period, Zimmerman (1941: 402) estimates that from the 1930s to 1940s 50% of consumers had switched from a "the long established habit of service, credit and delivery to that of self-service, cash and carry." Not only did supermarkets provide a wide selection of items, Zimmerman explains, but they also had a significant impact on the space of the cities and towns in which they located. In contrast to small grocers, which were typically located in downtown or city center areas, he states, "The character of the supermarket makes central location not important. In fact, many of the flourishing supermarkets are on the fringe of towns, where rentals are low, but where they can attract the motor trade (404)." Zimmerman concluded that these stores would expand in size to approximately 10,000 square feet in the Midwest and begin to incorporate more and more

product lines such as lunchrooms, soda fountains, drug departments, notions, novelties, and magazines (409).

Zimmerman was correct that food retailers would get bigger and diversify, only to a much greater extent than he anticipated. In the 1980s, food retailing went through another significant shift from large supermarkets to superstores and hypermarkets. No longer focusing only on food, these stores offer an even wider variety of food and nonfood items in stores even larger than seen before. Kaufman (1995) describes the shift through the 1980s and early 1990s. He notes that floor space in supermarkets grew during this period from 23,000 square feet to 35,000 square feet. At the same time, the variety of items available also expanded from an estimated 14,000 items in 1980 to 25,000 items in 1993 (Kaufman 1995:26). While conventional grocery stores continued to be influential in the 1990s capturing 50% of grocery sales this had fallen from 80% in 1980. This growth in superstores was influenced in no small part by the growth of Wal-Mart's supercenters during this period and by 2003 one out of every five dollars spent on food in the United States was spent at Wal-Mart, with sales greater than the other top four supermarket chains (Tillotson 2005).

Wrigley (2002) traces many of these changes to a consolidation and acquisition wave that swept across the United States food retailing industry in the 1990s. A decline in power of anti-trust legislation in the 1980s was a contributing factor while the development of information technologies that facilitated centralized control also helped the process. Wrigley also notes that the rapid expansion of Wal-Mart's supercenters in the late 1980s and into the 1990s also put pressure on other food retailers to "get big" in order to compete. Wal-Mart's supercenters led to more frequent shopper visits and,

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consequently, greater profits. The success of this model, which was actually pioneered by Meijer and Fred Meyer, put pressure on other food retailer to do something similar.

The expansion in floor space has had some clear implications for the location of stores. Much as Zimmerman noted the movement of food retailing to urban fringes in order to obtain land necessary for larger stores, so too have superstores been developed increasingly farther from city and town centers in order to find sufficient space to locate these stores. The issue is not only one of sufficient land, but also convenience. Even when sufficient land is available within a city's limits, obtaining that land often requires negotiating with 25 to 30 landowners, each with a different set of interests and willingness to sell. This can translate into taking two to three times longer to develop a store within city limits than in the suburbs (Ehrenhalt 2006).

From Supercenters to Food Deserts

Of course, the growth of large food retailers does not represent a critical element of the structure of the food system because of where they are located. They are also a critical element because of where they are *not*. And lack of food retailers, or particular types of food retailers, has become part of a new wave of interest in food security that looks, not only at individuals and households, but also at the entire community. Moving away from calorie focused notions of food security that were the norm in the 1960s, there is new consideration that includes how the physical structure of the food system may be limiting access to some populations and leading towards greater food insecurity. As Anderson and Cook (1999) note, in the past ten years the concept of food security has shifted almost entirely towards concern with reliable access, affordability, and quality.

This shift took place through cross fertilization with areas such as agriculture and the environment, nutrition, and community development. This changing conceptualization of food security was important because it opened up discourse around food and poverty to include a wider range of considerations for political, economic, and environmental factors that may be contributing to food insecurity.

This change in orientation is highlighted by the evolution of the community food security movement, which is working to develop communities where "all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice."[2] Notably, this movement includes concern for the nutritional quality and cultural appropriateness of diets as well as the environmental and social impacts of food production practices. Rather than simply focusing on the ability of individuals to access sufficient calories or macronutrients, there is broader consideration both for the needs of individuals as well as indirect social and environmental impacts of production. Some scholars have noted that the concept of community food security is problematically vague (Anderson and Cook 1999; Pelletier, Kraak, McCullum, Uusitalo, and Rich 1999). However, this is as much a consequence of its novelty as it is of its wider goals.

The expansion of food security concerns can be seen as part of the growing alternative agriculture movement. This movement has evolved out of increasing concern with the impacts of the conventional food system on the environment, health, and communities. This includes, among other things, elements such as organic agriculture, local food, Fair Trade, and other efforts to reembed food production and consumption in something more than market relations (Hendrickson and Heffernan 2002). Community

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[2] www.foodsecurity.org

food security is one element of this movement that has focused on issues of hunger and equity as these pertain to the food system (Koc and Dahlberg 1999). One element of this, of course, is access to food and, in particular, the role of space in defining access.

Drawing from widespread concern with suburban sprawl, urban flight, and food retailer concentration, the concept of food deserts was developed in the 1990s by a working group for the Low Income Project Team of the Department of Health in the United Kingdom (Lang and Caraher 1998). The concept was meant to address issues related to the closing of food retailers in inner cities and the associated growth of large supermarkets in suburban areas—often beyond convenient access of low-income, inner city residents. In the decade since its inception, the concept of a food desert has sparked off a series of related research (Cummins and Macintyre 1999; Donkin, Dowler, Stevenson, and Turner 2000; Morland, Wing, Roux, and Poole 2002; Whelan, Wrigley, Warm, and Cannings 2002). Much of this research has involved the use of GIS to examine the relationship between food retailer distribution and low-income populations. In some cases, consumer surveys and price indexes have been incorporated into the research. Additionally the concept has been applied to rural areas (Blanchard and Lyson 2002; Furey et al. 2001). Although the coining of the phrase marked a new recognition of the role of physical access in food security, the inequalities inherent in food retailers had been examined to a limited extent in previous decades (Guy 1985; Hall 1983).

Furey et al. (2001: 447) define a food desert as "an area where people do not have easy access to healthy, fresh foods, particularly if they are poor and have limited mobility." In contrast to traditional conceptualizations of food security, the emphasis is not on the characteristics of households, but rather the physical distribution of food

retailers. An important critique underlying much of the literature is that the food system is structured in such a fashion as to negatively impact vulnerable populations. While this structuring is deliberate as big-box retailers position themselves in suburbs where large tracts of land are available and populations have sufficient purchasing power to support these retailers, the consequence is that inner-city populations are at a greater distance from certain food retailers, making food purchasing difficult for some. The point is that the food deserts literature stresses deficiencies in the modern food system rather than deficiencies of food insecure individuals.

Studies have been conducted that support the hypothesis that physical access to food is unequal. Moreland et al. (2002) examined the location of food retailers in Mississippi, North Carolina, Maryland, and Minnesota as compared to US Census data. They found large numbers of supermarkets located in wealthy, predominantly white areas and relatively few in poor, black neighborhoods. Interestingly, they also found higher concentrations of places that sold alcohol in the poor, black neighborhoods. A similar study was conducted in New York (Hall 1983) which found that consumers in neighborhoods with high concentrations of black and elderly people face higher prices, lower levels of quality and cleanliness, and less variety of prices, brands, and sizes. More recently, Blanchard and Lyson (2002) found that poor rural residents, when compared with higher income residents, were often located disproportionately far from large supermarkets.

Alwitt and Donely (1997) found that poor zip code areas in Chicago have fewer and smaller retail outlets overall than nonpoor areas, including fewer supermarkets, banks, and large drug stores. However, they note that "it may be misleading to claim that

poor areas are underserved, relative to nonpoor areas, unless one controls for differential levels of purchasing power. Even though there may be fewer stores of various types in poor neighborhoods, there may be or may not be a reasonable number given the sales expected from those neighborhoods (143)." After controlling for purchasing power, they found no difference in number of supermarkets. This highlights the point that the actions of the retailers make economic sense while at the same time generating social problems related to food access. Furey et al. (2001) also found mixed results in their study. Although prices for some products were higher in small grocers than in large supermarkets, the differences were often only minor. Furthermore, most of the people in their survey were satisfied with the availability of food. However, much in line with other studies, segments of the population that had special needs, such as elderly populations, were still very concerned with physical access.

The point that different populations have different needs is further elaborated on by Whelan et al. (2002). They used a qualitative approach based on focus groups to assess a potential food desert in the UK. They found that physical access was a concern for many of their subjects; however, the level of concern often depended on the type of household. They conclude that access is not uniform across household groups. For instance, mothers with younger children were more motivated by cost while elderly subjects were more concerned about physical access due to personal mobility issues. Donkin et al. (1999) sought to develop a culturally sensitive price index by drawing on lists of foods commonly purchased by four major ethnic groups in London. Prices and availability of these foods was then collected from 210 food outlets in the area. They found that culturally appropriate and reasonably priced food did appear to be physically

accessible to the groups examined. They note, however, that even when food is reasonable priced (that is, no more expensive than other places) and physically accessible, this does not mean that all people can afford it.

Fundamentally, the issues addressed by food desert research relate to the relationship between the physical retail environment and consumer behavior. One of the most interesting studies in this area was conducted by Wrigley et al. (2002), which involved a "natural experiment" when a large food retailer opened after a study of consumption patterns in a food desert. After the opening, the researchers found a significant upward shift in fruit and vegetable consumption amongst those with the poorest diets. Furthermore, many local residents shifted away from using limited range/budget stores as a source of fruits and vegetables.

Despite this evidence, it is important to note that food deserts do not exist in all low income areas. For instance, Cummins and Macintyre (2002b) actually found a higher concentration of food retailers in the low-income areas of Glasgow. In many cases, food prices were also lower in low-income areas. It may appear, therefore, that while low-income populations are particularly vulnerable to food deserts and some inner cities may represent areas of higher cost for food retailers, impoverished neighborhoods and food deserts do not inevitably go hand in hand. Cummins and Macintyre, for example, found that the types of food that drove down the average cost of food in the low-income areas was often high-fat and high-sugar foods. Thus, while the food desert concept might be a problematic metaphor, it still retains some utility as a lens to understand the spatial distribution of different types and prices of food.

Despite the popularity and rhetorical power of the concept of the food desert, its analytical utility has often been limited or reduced to factoids (Cummins 2002a). This, in part, has stemmed from the 500 meter radius that was set by the UK Department of Health as a "convenient" walking distance and which has been used in several studies (Clarke, Eyre, and Guy 2002). This simplistic proximity indicator fails to take into account the situation of elderly or disabled individuals who may be unable to carry groceries 500 meters or people with cars who may think little of traveling ten or more miles to shop for food. Furthermore, other elements of the landscape such as a dangerous neighborhood or a highway or road without sidewalks may create barriers not apparent in typical food desert research methods. Regularly traveled routes, such as between work and home, may be perceived as close, regardless of actual distance.

Other problems also exist. Blanchard and Lyson's (2002) study suffers from a high level of spatial aggregation. While operating at the zip code level may be necessary given data availability (something the authors admit), this can lead to problematic assessments of the relationship between a population and retailers. Such analyses can lead to the promotion of solutions, such as recruiting a large supermarket, which may actually undermine existing food retailers and reduce total access (Clarke et al. 2002).

There have been other problems with studies that fail to actually obtain a statistically significant measure of the consumption patterns of people at various proximities to food retailers. Rather, assessments are done either qualitatively (Whelan et al. 2002) or conclusions are drawn from census data (Alwitt and Donley 1997; Donkin et al. 2000; Morland et al. 2002). Simply because there are few grocery stores in low-income neighborhoods does not lead to the conclusion that these populations must be

either having difficulty accessing food or compromising the quality of the food that they eat. It is important that assessments of food retailers be compared against actual surveys of consumer behavior. Otherwise, unreasonable generalizations regarding relationships between retailer distribution and consumer behavior may be drawn based on class-based generalizations and vacant data on actual consumer behavior. It also overlooks the strategies that people have developed to purchase food, even when it is not readily available in their neighborhood.

Despite these problems, the food desert concept represents an interesting turn in assessing consumer behavior. Rather than attributing behavior to either independent action or the dictates of capital, food desert literature recognizes that different consumers have various levels of ability to engage in independent action and different levels of accountability to the interests of capital. Unfortunately, these levels of agency vis-à-vis the food system have not been closely examined. Rather, consumers are lumped into two different categories: disadvantaged consumers and everyone else. The former category lacks agency, even to travel 500 meters, while the latter feels few structural constraints on purchasing decisions.

While the existence of food deserts in inner cities is not inevitable, a growing body of research demonstrates that the structure of the environment can have a real impact on the food that people select. French, Story, and Jeffery (2001) review a wide variety of social changes that they argue have contributed to nutrition problems in the US. Among other changes, they note the increased convenience of food with poor nutritional quality which has led to additional health problems. Sobal and Wansink (2007) argue that the spatial relationships influence food consumption in unconscious

ways. They note how the distribution of food items on a plate, on a table, or in a kitchen, can influence the types and amounts of food that people consume. In part, the new interest in the relationship between the environment and nutrition stems from concern with obesity rates and related health problems in the US. In addition, the relationship has implications for food security. After all, environments increasing the intake of some foods are likely to reduce the consuming of others. Similarly, Moreland, Wing, and Roux (2002) used food surveys to assess risk of atherosclerosis on people in different communities. They compared this risk against the number of food retailers in each neighborhood. They found that there was a relationship between the two with density of grocery stores being related to fruit and vegetable consumption. Interestingly, the authors found the influence of retailer density on African-American consumption to be greater than White American consumption.

Space therefore represents one area in which the structure of the food system overlaps with the social structures that dictate household food demands. At the same time, recent developments in food desert literature suggest that the extent of overlap varies, quite literally, by how far people live from a food retailer. It appears therefore that the agency of different groups in relation to the structure of the food system may be influenced by the physical location of food retailers.

Conclusion

Within a capitalist system, it is assumed that consumers with greater financial resources will have greater ability to access certain products than other consumers. People with access to reliable transportation will have a wider range of stores from which

they can shop. People with children may find it difficult to dedicate the time to find the range of products at the price they desire, even if available in the immediate vicinity. People with physical disabilities may struggle to obtain certain types of food, even when they may be nutritionally beneficial. Of course, we should not acknowledge such constraints without also considering the rational, creative ways in which people negotiate and overcome the obstacles they face. Financial limitations may be minimized by strategies such as coupon use, sale seeking, or purchasing of bulk items. Time constraints may be minimized by shopping only at a single store with a wide selection of food and nonfood items. Concerns with managing small children may be mitigated by shopping at a single store known to be friendly to children. Structures, including the structure of the food system, can at times constrain and at times can be overcome. Unfortunately, recognizing the differential agencies of consumers vis-à-vis the food system is something that has received very little attention in either the sociology of consumption or agrifood studies.

Addressing this issue of agency is important because the new focus on consumer reflexivity and agency has paid insufficient attention to the differential agencies among segments of the population. If growing consumer concern with food safety and health is driving segmentation of the food industry into areas such as organic, we must also account for the fact that it is only a relatively affluent sector of the population that is affecting such a change. For the sociology of consumption, important questions remain as to whether the cultural value of commodities is still associated with class position. As Warde et al. (1999: 107) state, "[t]he question of whether there is a cultural hierarchy reflecting class position and how it might have been affected by the variegation of

cultural items in circulation has exercised many scholars recently." While consumption is still influenced by availability and a variety of other factors related to class, evidence exists supporting the idea that class is declining as a factor influencing tastes (Peterson and Kern 1996). At the same time, however, it is clear that social class has significant influence on the types of food that people consume (Rose, Gunderson, and Oliveira 1998). The question is not, of course, a binary one and a clear understanding of how much social class influences consumption warrants greater empirical research.

The impetus for research such as this stems from the fact that the intricacies of food consumption patterns need to be understood in order to understand how economic stratification is created and recreated through consumption patterns. Unreliable access to nutritious food can have a detrimental impact on populations. While in the US there is more concern with chronic health problems such as diabetes, cancer, and heart disease than relatively acute problems related to starvation. The growing rate of food insecurity in Michigan -- and nationally -- points to a significant social problem (Nord et al. 2006). It is well understood that food insecurity can have lasting physical and psychological problems (Vozoris and Tarasuk 2003). However, it is not well understood why people of different economic strata are engaging differently with the agrifood system.

This study will challenge and extend the literature on the sociology of food by building upon the question of the role of consumer agency in purchasing decisions, focusing on differential abilities in navigating and influencing the conventional agrifood system. Specifically, this study examines differential consumer agencies in relation to food retailers. Since, in the US, people's primary engagement with the food system is through the purchasing of food at grocery stores and supermarkets, this represents a

poignant locus for examination. Furthermore, the ways in which characteristics of the agrifood system, such as food retailer distribution, relate to individual behavior are not well understood.

Looking specifically at how consumers make decisions about where to shop and when and how frequently to shop is important because current research is struggling to negotiate the relationship between food system structure and differing agencies of consumers. This study will demonstrate how and why different groups' engagements with the food system may be related to a relative amount of constrained agency. It will show how the conventional food system limits the choices and power of food insecure households. At the same time, this study will also show that having constrained agency is not the same as lacking agency. Many households manage to successfully obtain food through conventional means. However, the costs associated with simply getting food may not be the same for all groups. For instance, time spent with children may be sacrificed in order to pour over ads and coupons to maximize shopping returns. Discount grocers may sell cheap food, but require large amounts of gas to get there. Convenience stores may be available to those without an automobile, but prices may be higher. The point is that a complete understanding of consumer agency vis-à-vis the food system requires an understanding of the act of consumption that recognizes the heterogeneity of consumers.

CHAPTER THREE

STUDY SITE AND GENERAL METHODOLOGY

For four years, I have been involved in projects taking place in a neighborhood within the city of Lansing, mainly through involvement with the Allen Neighborhood Center. These projects have involved analysis of food security survey data, mapping and spatial assessment of neighborhood food retailers, examination of area census data, and qualitative interviews of neighborhood residents. In 2003, the neighborhood center added a series of food related questions to a door-to-door health survey (Thomas 2004). While this survey was conducted as part of a community organizing effort, and therefore not randomly sampled, the results indicated that access to food was a problem for a significant portion of the neighborhood. The results of this initial survey helped stimulate greater interest among neighborhood activists in examining issues of food. Unfortunately, due to its lack of scientific rigor as well as the small number of food related questions that were asked, it provided only brief insight into the factors that were contributing to food insecurity and the food purchasing patterns of households in the neighborhood. This dissertation was constructed to help answer the many questions that were left unanswered in this initial survey.

Study Site

The study site examined in this dissertation is an urban neighborhood located in Lansing, Michigan. Lansing is the capital of Michigan and has a total population in 2000

of around 120,000 (US Census). Downtown Lansing is dominated by state government buildings and other offices. This area is surrounding by several residential areas mixed with commercial activity. Lansing is home to a community college and a law school. Located adjacent to Lansing is East Lansing the home of Michigan State University, a large land-grant university with over 45,000 students. As with many Michigan cities, Lansing has struggled with the declining American automotive industry; the city had an unemployment rate of 7.6% in 2005 (US Census). Median household income for the city was around $34,000 in 2005, below the national median of $46,000 (US Census).

The neighborhood examined in this study is an urban area located on the east side of the city. The land area of this neighborhood is approximately 4.8 square miles. While the neighborhood is primarily residential, there are some small businesses scattered throughout the area and significant commercial activity to the north and between two major roads on its eastern edge. The boundaries used in this study are the 48912 zip code. This area corresponds with the service area of the Allen Neighborhood Center (ANC), a non-profit community group established in 1996 and evolving out of the Eastside Neighborhood Organization (ENO), a 30 year-old volunteer neighborhood advocacy organization. Many people in the area identify as being part of the same neighborhood, in part due to the activities of the ENO and ANC so it was felt these were reasonable boundaries to use. The 48912 zip code corresponds approximately to 17 census blocks on the east side of Lansing.
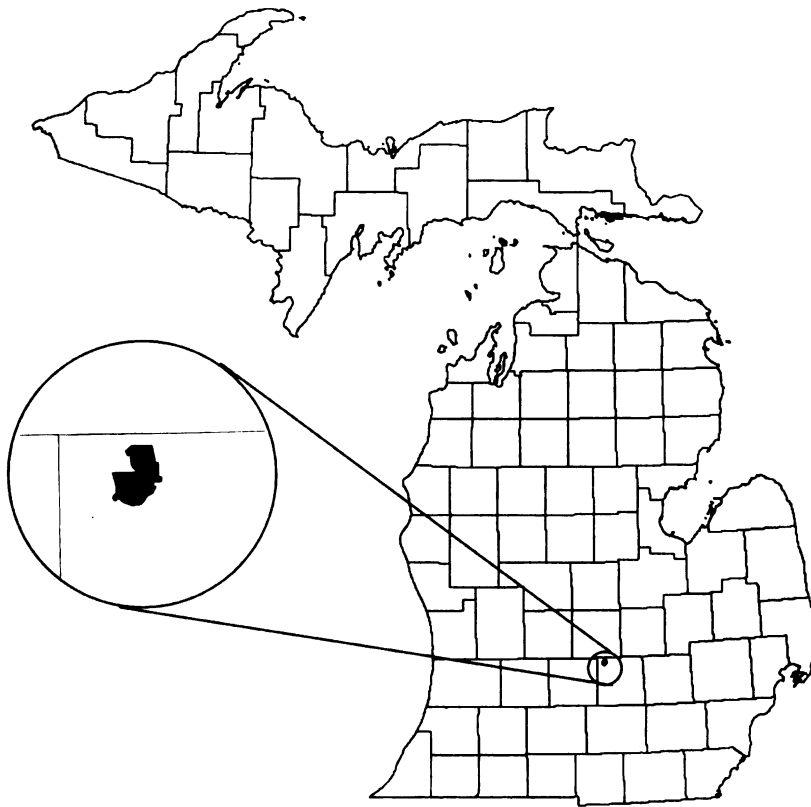
Figure 2: Location of the study site in relation to the state of Michigan

The 2000 U.S. Census provided a sociodemographic profile of the neighborhood. The total population of the study area is 18,583 with 8,740 housing units. The average household has 2.27 people and the average family has 3.09 people. There is some racial and ethnic diversity in the neighborhood. Seventy-three percent of the population identifies as white while 13.3% identify as African American. Just over ten percent (10.7%) of the neighborhood is Hispanic or Latino/Latina. There is also a significant foreign born population (8.8%).

Even in this relatively small geographic area, a significant amount of economic differentiation is evident. In particular, populations in the northern part of the neighborhood tend to have significantly higher incomes than populations in the southern

area. This is evident in the median income of individual census blocks which range from $14,069 to $57,768 in the richest (Figure 3). Largely in the southern part of the neighborhood, significant poverty exists and, in aggregate, 18.5% of the people in the neighborhood live below the poverty line.

Figure 3: Median income for study site and surrounding census blocks

As noted previously, there are nearly 100 food retailers located either within or in close proximity to the neighborhood and InfoUSA data provide a picture as to the relative influence of each of these retailers on the food system. The largest number of which consisted of convenience or party stores (37%), with sales volumes most often below 3

million dollars per year. The only grocery store located centrally within the neighborhood is Apple Market, a relatively small grocery store with just over 8 million dollars in annual sales volume. In contrast, the two nearby Kroger stores, where a large portion of the neighborhood shops, have sales ranging from 12 to 16 million dollars per year. While sales data for the closest Meijer was not available, other Meijer stores in the area typically have in excess of 100 million dollars per year in sales volume.[3]

Not only did a 2003 survey indicate neighborhood food insecurity levels well above state and national levels, the structure of the neighborhood also showed some promise as a case study for theoretical insights regarding the influence of the structure of the food system on different groups. The current situation of the neighborhood represents a location that intersects among contemporary trends in retailing, consumption, and the agrifood system. From a research perspective, the built environment of the neighborhood provides some interesting opportunities to examine spatial inequality—in particular the concept of the food desert as measured by proximity to food retailers.

Focusing on a single urban area allows for greater depth of analysis than a study examining a larger geographic region. Understanding consumer perception and behavior of the retail food system requires both an assessment of consumers as well as an assessment of the structure of the food system. By focusing on a population in a single area, the amount of variation in the retail environment will be limited compared to examining a population across a wide geographic distribution. It will therefore be possible to use geographic information system (GIS) software to relate survey responses to the physical distribution of the retail environment. Such integration is greatly

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[3] Meijer is a Michigan based retailer that has adopted the supercenter retailing format that provides a full grocery store and department store in the same location. Meijer has 170 locations throughout the Midwest United States.

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facilitated by limiting the geographic focus of the region and is a typical method used in food desert research. The retail environment is, essentially, held constant so that other household variables (income, education, car ownership, disability status, etc.) can be examined. While some researchers have examined larger geographic regions (e.g. Blanchard and Lyson 2002), this is only possible by using aggregated data, such as from counties or census blocks. Use of aggregated data can only indicate the types of areas where food retailers are located—it does not assess the actual behavior or perceptions of consumers which may or may not involve traveling to the closest store. This study goes a step farther by collecting data at the household level and relating that to the structure of the food system in the neighborhood. In this way, we gain insight into the actual relationship between retailer choice and the retail environment.

General Methodology

Both qualitative and quantitative methods were used in this study. I felt that the use of multiple methods was the most appropriate means to answer my research questions. First, the complexity of perceptions and decisions surrounding food retailers is better understood by examining the issue from a variety of angles. As Wansink and Sobal (2007) point out there are literally hundreds of decisions that are related to the food we obtain and eat on a daily basis. These decisions relate to decisions such as when, how much, where, and with whom we will consume food. Similarly, it is reasonable to suggest that the range of decisions regarding when, how frequently, where, and with whom one goes shopping is equally as complicated. Qualitative methods provide a depth of understanding of the varied strategies and perceptions that people have of the food

system. At the same time, quantitative methods are useful for assessing how widespread various activities and perceptions are within the neighborhood. Newman et al. (2003) recommend the use of mixed methods for the assessment of complex phenomena.

The use of mixed methods also allows for the triangulation of data and an indicator of the internal validity of my results. By examining the issue of food purchasing from multiple perspectives, overlapping conclusions are more likely to be valid. For instance, if both survey and interview data indicate that food quality is a factor influencing store selection, this indicates a greater probability that each respective method is a valid measure for what is taking place in the neighborhood.

The qualitative data had limited generalizability due to the relatively small sample size (N=16) and the fact that sampling frame from which respondents were drawn did not consist of the entire neighborhood (details of data collection are addressed later). However, the interviews did provide depth of information about food purchasing patterns, especially of disadvantaged residents, that would not have been possible in a self-administered survey. This data provided an important basis for the development of the survey instrument, which allowed for the testing of extent of certain behaviors and perceptions in the neighborhood. Since the survey involved randomly sampling from the entire neighborhood, I was able to generalize the results to the entire neighborhood, something which was not possible had I drawn only from qualitative data.

The changing structure of food retailers has led to the growth of large food retailers in suburban areas and the decline in small grocers. At the same time, there has been a decline in small grocers and the growth in convenience stores in inner city areas. This has placed different segments of urban populations in different proximities from

different types of retailers. This has the potential of making food purchasing particularly problematic for disadvantaged inner city populations for whom traversing distance may be difficult due to limited mobility. One of my goals in this research is to understand the role that distance from food retailers has, as an independent variable, on both the perception and behavior of households. In order to obtain an objective measure of distance, I incorporated spatial data for analysis using GIS. As the influence of space on behaviors is, in some cases, unconscious (Sobal and Wansink 2007), it was necessary to measure space objectively in addition to assessing how respondents felt space influenced their decisions.

Details of how the data were collected are discussed in this section. Analyses are discussed in subsequent chapters. This breakdown was necessary to avoid confusion related to the wide variety of analytic techniques that were used in this study. Table 1 provides a breakdown of how different types of data were incorporated into the study. Included in this table is also a breakdown of how different research questions are addressed in subsequent chapters.

Table 1: *Data Collection Techniques and Relationship to Research Questions and Organization of Dissertation*

Data Source	Research Questions					
	What types of households are more likely to be food insecure or food insecure with hunger?	Do food secure and food insecure households perceive food retailers differently?	Do food secure and food insecure households use different criteria for selecting food retailers?	Do food secure and food insecure households shop at different types of food retailers?	Are food secure and food insecure households different distances from food retailers?	Does distance influence shopping behaviors?
Semi-structured interviews		CHAPTER FIVE	CHAPTER FIVE			
Survey	CHAPTER FOUR	CHAPTER FIVE	CHAPTER FIVE	CHAPTER FIVE	CHAPTER SIX	CHAPTER SIX
GIS Mapping					CHAPTER SIX	CHAPTER SIX

Qualitative Methods

To understand the shopping experience of neighborhood residents, a series of 16 semi-structured, qualitative interviews were conducted in 2004 and 2005. Additional interviews were also conducted with members of a local neighborhood organization that is interested in food and hunger problems. Interviewees were identified through the neighborhood organization through their participating in two existing programs being offered by the neighborhood organization, a Community Supported Agriculture (CSA) drop-off point and a free bread program.[4] CSA members were contacted directly by phone. Additional neighborhood residents were recruited for interviews at the neighborhood center on Fridays, the day in which a free bread program is held. On this day, a clipboard announcing the study was put at the front desk along with other materials

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[4] Interviews were conducted as part of a larger study on the potential of the Community Supported Agriculture farm to increase fresh produce availability to low-income neighborhood residents.

giving information about events in the community. Interested parties signed up and were later contacted by phone to schedule interviews to be held in the neighborhood center.

A total of 16 interviews were conducted with neighborhood residents and an additional two interviews were conducted with key informants who were involved with the neighborhood center. Each interview lasted between 45 and 90 minutes and examined where, how, and why different food retailers were selected. The demographic characteristics of the respondents included a variety of age groups, from mid 20s to late 60s, different racial categories; Hispanic, African American and Caucasian. The majority of interviewees were female. They included single people, single parents, married couples with children and married couples without children, as well as families living with extended family members. Almost a third of the interviewees were either disabled or suffered from a chronic illness. Six were unemployed.

Minimal demographic information was collected as part of the interviews. However, the overrepresentation of women (81%), families with dependent children (81%), and unemployed individuals (38%) suggests that this was not a sample representative of the neighborhood. At least two respondents noted that they had physical disabilities and four either had no working car or were unable to drive themselves to a store for other reasons. Furthermore, since interviewees were all selected from programs associated with the neighborhood center, this led to a bias towards respondents who had an interest in food programs. The type of program from which interviewees were selected helped ensure that a diverse group was interviewed. I selected one set of respondents from people accessing a free bread program while I selected another set of respondents from those participating in a Community Supported

Agriculture Farm. The former group consisted of resource limited individuals while the latter group consisted of individuals with greater resources. Since the interviews were, in part, conducted as background data for survey construction and to understand the diverse behaviors and perceptions related to food purchasing, with a particular focus on disadvantaged consumers, I felt the breadth of backgrounds met the needs of the study.

Quantitative Methods

Survey mode

In order to understand the relationship between food security and shopping behaviors, a survey of the Lansing eastside neighborhood was conducted using a self-administered mail survey. Previous research in one area of the neighborhood had indicated potentially high levels of food insecurity which has been related, in part, to limited access to grocery stores (Thomas 2004). While the earlier study also indicated that food insecure individuals were more likely to shop at discount or "big box" food retailers, the role of income in determining the purchasing patterns of households was not identified. Furthermore, the limited geographic area, lack of random sampling, and lack of income data collected in the 2003 study limited generalizability and analysis. By expanding the geographic scope, as well as specifically addressing issues related to income and purchasing patterns, the data collected by this study will be generalized to the entire area served by the local neighborhood center and may be useful to studies examining similar neighborhoods.

Use of a survey to examine food security and purchasing patterns is consistent with other research into food security and food deserts. The USDA uses telephone

surveys in its national assessment of food security (Nord et al. 2006), but has also

provided methodologies for conducting food security assessments through other survey

modes (Cohen 2002). The Community Food Security Coalition also discusses the

potential of using various survey modes to determine food security levels (Pothukuchi,

Hugh, Burton, and Fisher 2002). Wrigley et al. (2002) successfully used a combination

of a self-administered survey and face-to-face interviews in order to assess food

consumption patterns in an urban area in Britain.

To increase generalizability, it is important that this study be comparable with the

national USDA telephone data and there exists the potential of a mode effect due to using

a self-administered survey instead of a telephone survey (Dillman 2000). However, it is

likely that these effects will be minimal and may, in fact, reduce the error in the self-

administered survey in comparison to the USDA survey. First, there is ample evidence

that self-administered surveys reduce responses that are based simply on social

desirability (Aquilino 1994). While food security questions do not involve information

of a very personal manner, some respondents may feel social pressure to hide or

exaggerate the extent of their food deprivation. Therefore, their answers to a self-

administered survey may be more accurate. Dillman (2000) also notes that acquiescence

to a telephone interviewer and primacy/recency effects may also influence responses,

which is less likely in a self-administered survey. Finally, there is evidence that

adaptations of the USDA metrics are often just as accurate as the conventional USDA

measurements (Keenan, Olson, Hersey, and Parmer 2001).

The survey itself consisted of five mailings in a manner similar to that

recommended by Dillman's (2000) Tailored Design Method. Pre-survey letters have

been shown to increase response rates of mailed surveys (Dillman 2000; Linsky 1975; Yammarino, Skinner, and Childers 1991). First a pre-survey letter was sent informing respondents that they had been selected to participate in the survey. Next, approximately a week after the pre-survey letter, the survey itself was mailed. This mailing led to approximately 150 responses. The third mailing consisted of a thank-you/reminder postcard, which was sent out approximately one week after the survey was first mailed. This postcard thanked people who had already responded to the survey, as well as reminded those who had yet to return surveys. Another 50 responses were received after the postcards were sent. After two more weeks, a replacement survey was sent to non-respondents. The replacement survey was very effective in increasing response rates and led to approximately 100 additional responses. A final mailing of thank-you/reminder postcards was also provided two weeks after the replacement survey was sent; however only a few surveys were received after this postcard was sent. One respondent who had difficulty reading the instrument was surveyed by phone.

The survey took an estimated 15 minutes to complete. It was anticipated that keeping the survey brief would increase response rates. A self-addressed, stamped envelope was included with both the survey and replacement survey. In both cases, first-class stamps were used on the return envelopes as a means of increasing response rates (Armstrong and Luske 1987). If the name of the respondent was known the envelope was personalized; however, when the name of the respondent was unknown, the survey was addressed to "Current Resident." The level of analysis of the survey was the household, so instructions on the survey asked that the individual primarily in charge of purchasing food was to complete the survey.

Sampling

The sampling frame for households was constructed based on a list of properties purchased from Accudata Inc. for the zip code of 48912. Accudata Inc. is a marketing company that provides residential mailing lists, based on data obtained from the United States Postal Service. While on site enumeration is commonly regarded as one of the most comprehensive ways to obtain a complete sampling frame, the use of purchased, residential mailing lists was chosen to save time and resources. Assessments of the accuracy of residential mailing lists compared to on-site enumeration has found sampling frames from the two sources to largely coincide (Iannoaccacchione, Jennifer, and Redden 2003). The list from Accudata Inc. contained 7,939 addresses. According to the 2000 US Census there were 8,740 households in the neighborhood. While the Accudata Inc. list left approximately 800 addresses unaccounted for, this was still felt to be a sufficiently large sampling frame for the purposes of this study. From the sampling frame a random sample was drawn of 1,100 addresses. Each questionnaire had an identification code placed on it that correlated with the sample in order to track which surveys were returned, and to ensure that replacement questionnaires were sent to appropriate addresses.

Description of Sample

A total of 302 surveys were returned for a response rate of 27%. Approximately 8% of the sample was returned due to vacancies, insufficient or incorrect addresses, or refusal to participate. Of these, the vast majority were returned because the residence

was vacant with only a few returned because of an explicit refusal to participate. It is possible that the high percent of vacancies was an effect of conducting the survey in the summer. As noted below, many of those in the sample appeared to be college students, and it is likely that many of these residents were not living in rental housing during the summer.

In order to assess the spatial representativeness of the sampling frame, it was broken into census blocks. The randomly drawn sample included an average of 12% of the households from each census block with a standard deviation of 3%. I felt this meant that the sampling frame offered a reasonably even amount of spatial representation once normalized for areas of higher population density. The spatiality of response rates was also examined using census blocks as the unit of comparison. The average response rate of all the census blocks was 25% with a standard deviation of 9.5%. Response rates ranged from 14% to 52%. Pearson's r was used to check examine whether or not the nature of the surrounding area could have influenced response rates by testing a correlation between median income and response rate for census blocks. No statistically significant correlation was found. Furthermore, since only one of the 16 census blocks exhibited a response rate of >40%, I believe this was a statistical outlier and the spatial distribution of response rates was relatively consistent with population distributions. Figure 4 demonstrates that the spatial distribution of response rates.
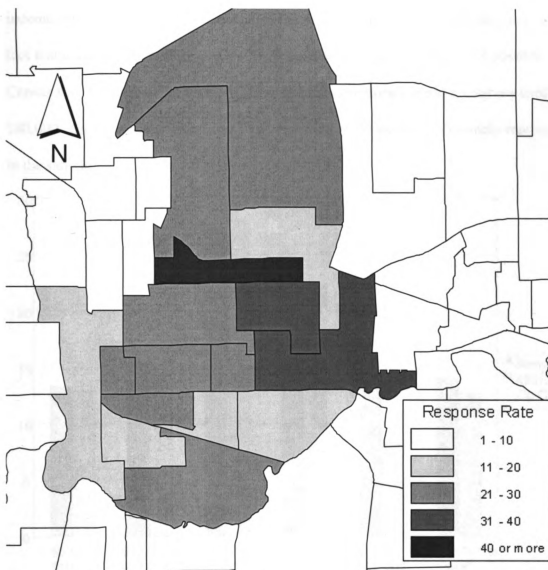
Figure 4: Response rates as a percent of the sampling frame in each census block in study site

The socioeconomic diversity of the region was reflected in the sample (Figure 5). Nearly 29% of the households surveyed had total incomes less than $20,000 per year while 28% indicated household incomes of greater than $80,000 per year. The income distribution of the sample matched the income levels reported by the US Census reasonably closely. Only in the case of incomes ranging from $40,001 to $80,000 was there some discrepancy. The sample included an under-representation of households with incomes ranging from $40,001 to $60,000. On the other hand, households with

incomes of $60,001 to $80,000 were over-represented. This may be partially due to the fact that a true comparison between US Census data and sample data is not possible since Census uses $75,000 as the breaking point between categories while my survey used $80,000. Still, it appears likely that these income groups were not accurately represented in the sample.
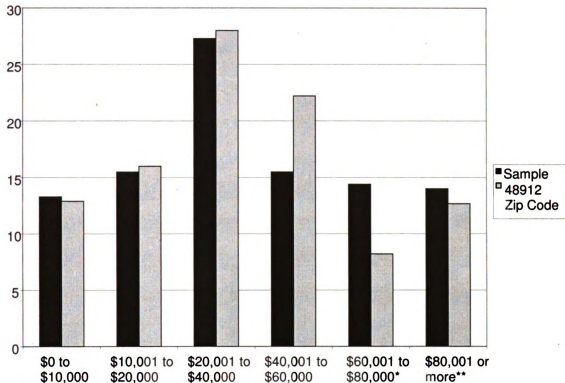
*48912 Zip code data actually represents a range of $60,000 to $75,000.
**48912 Zip code data actually represents a range of $75,000 or more.
Figure 5: Household income distribution of the study sample and 48912 zip code

Despite the fact that the income distribution of the sample closely reflected the population, this was not the case with education. The sample had a clear over representation of households with higher education with higher response rates for people with bachelors, graduate or professional degrees (Figure 6). In fact, over 28% of the sample indicated that they had a graduate or professional degree, which was much higher than the 12.6% that US Census reported for the zip code. The sample appeared to be

more representative of those with some college or bachelors degrees, although there was still a higher response from those with bachelor's degrees (25.4%) when compared to the Census data (19.5%). At the same time, there was an under-representation of households with high school degrees or less. Only 3.1% of the sample had less than a high school degree and 12.2% had only a high school degree compared to 16.1% and 21.8% respectively for the zip code. Notably, US census collects education data at the individual level while this survey asked for the highest education level of anyone in the household. This may account for some of the discrepancy since many households consist of a primary income provider with a higher level of education than other people in the household. Still, research indicates that surveys may be vulnerable to bias those with higher education (Figure 6) and I believe that this was also a factor in this survey.
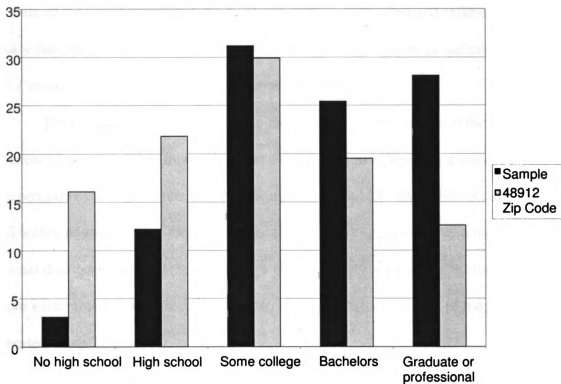
Figure 6: Highest level of education of someone in the household for the study sample and population education for 48912 zip code

Over 30% of the households in the sample were renters. This was surprising since, according to the 2000 US Census, 47% of the households in the area were rented. However, once the percent of surveys returned due to vacancies are taken into account these numbers come closer to matching. This likely supports the idea that the neighborhood is very much influenced by college students who might not be present during the summer when the survey was distributed.

Household size appeared to be relatively small with the average household containing only 2.2 people. Just over 20% of the households in the survey contained children with the average household with children containing an average of 2 adults and 2 children. The US Census reports 24% of the households in the neighborhood contain children so the sample appeared to accurately represent families with children. Four percent of the sample consisted of households with a single adult and children. It is likely that the sample under represents the number of single-parent households, which the US Census reports as 12.9% of the households in the zip code.

The median age of the person who most frequently obtained food for the household was 51. While this suggests an older population, there was a notable spike in the percentage of respondents between the ages of 21 and 30. Over 18% of the sample fell within this age range. Other than this, the age distribution followed a roughly normal distribution around the average age of 49. Elderly populations, which are often more vulnerable to food insecurity, are also represented (just over 9% of the sample reported being 71 or older).

Both automobile ownership and whether anyone in the household had a physical disability were assessed as these characteristics tend to be associated with food

insecurity. Just over 19% of the sample households had one or more individuals with a physical disability while 8.5% of the sample indicated that they did not own a working automobile. According to the US Census, 19.9% of the households in the neighborhood had a person with a disability while 11.9% of the neighborhood did not own an automobile. Consequently, the sample was felt to be largely representative on these factors.

While the response rate of the survey was slightly lower than the anticipated value of 35%, the response of 302 suggests that the sample is representative of the population at a confidence interval of +/-5.5% at the 95% confidence level. Furthermore, comparison of the sample against US Census data in terms of income, household size, children, age, disability status, and automobile ownership suggest that the characteristics of the sample are very close to that of the population. In terms of education level and home ownership, the sample appeared to be better educated and less likely to rent than the general population. In the case of the former, this may be due to the effect of education on the likelihood of respondents to appreciate, and consequently respond to, the survey. The survey came from Michigan State University so it may be that students of this university were more likely to respond. The relatively low instance of renters who were part of the sample is more difficult to explain; however, it may be an artifact caused by conducting the survey in the summer. While these concerns must be considered when generalizing the results of this study, the sample was felt to be reasonably representative of the population.

Definition of Terms

The following definitions are used throughout the dissertation:

* Food secure—The United States Department of Agriculture (USDA) is the most

  influential agency involved in assessing food security in the United States.

  According to the USDA, food secure households are those that "have consistent,

  dependable access to enough food for active, healthy living (Nord, Andrews,

  Carlson 2006: iv). Use of the term food secure in this study is based explicitly on

  USDA definitions. In order to assess national food security levels, the USDA

  conducts an annual survey using a twelve question assessment tool (Appendix A).

  In this study, a six question modified version of the USDA measure was used

  (Appendix B: Questions 30 through 35). Blumberg, Bialostoksky, Hamilton, and

  Briefel (1999) have demonstrated that this shortened version is a valid measure,

  although it fails to detect some elements of food insecurity, specifically hunger

  levels in children. Food security status is defined by the number of food insecure

  conditions and behaviors exhibited by the household. If a household has no or

  only one or two food insecure conditions (e.g. only infrequently could not afford

  balanced meals), the household is defined as food secure.

* Food insecure—Based on the USDA criteria, if a household reports three or more

  food insecure conditions they are considered to be food insecure. Examples of

  food insecure conditions include running out of food, being unable to afford

  balanced meals, cutting portion sizes, or feeling hungry at least once in the past 12

  months. There are two levels of food insecurity. The first is low food security

  and the second is very low food security. The threshold of criteria varies with

whether there are children in the household. Households with *low food security* have multiple indicators of food access problems, but few or no indicators of reduced food intake. Households with *very low food security* have multiple indicators of food access problems and disrupted eating patterns due to inadequate resources to obtain food (Nord et al. 2006). Prior to 2005, the USDA used the phrase "food insecure" to refer to households that have "low food security" and the phrase "food insecure with hunger" to refer to households that have "very low food security" (criteria remained unchanged). Given the prevalence of this nomenclature in the literature, the pre-2005 language is used in this dissertation. Also, in this dissertation, as well as most USDA reporting, references to food insecure households refer to both categories combined.

- Disadvantaged consumer—Income is a significant factor influencing the ability of a household to access food; however, scholars have recently begun to consider other factors that may limit food access, such as a lack of automobile ownership or a physical disability. The term disadvantaged consumer is meant to capture a wider variety of factors that may limit access to food. This study will draw from definitions commonly used in food desert literature. Whelan et al. (2002) state that 'disadvantaged consumers' experience constrained food choice as a function of low income and restricted mobility." "Disadvantage" is a matter of both income and restricted mobility. Restricted mobility may stem from a lack of access to transportation, personal disabilities, or other factors.

- Food Desert—The concept of a food desert evolved out of research into poverty and food retailers that was conducted, largely in Britain, starting in the 1990s.

This research was driven in part from concern about the nutritional causes of health problems suffered by low-income populations and in part by the concern with the decline of inner cities and the growth of large food retailers in the outskirts of urban areas. These two concerns were brought together within the concept of a food desert, which is an area where few, if any, food retailers are located. In practice, the concept of a food desert has been operationalized in different manners, including, most frequently, the use of 500 meter "walking distance" buffers around food retailers. A deeper examination of the meaning of the concept will be explored in Chapter Six. For purposes of discussion, a food desert simply refers to an area that is either devoid of food retailers or where selection of food retailers might be limited, for instance an area that consists only of convenience stores.

- Food Retailer Classification—In order to avoid a simplistic assessment of the structure of the food system in relation to food retailers, a typology of different food retailers was used in this study. This typology is similar to the classifications used in other studies (Kaufman et al. 2003). The initial basis for the classification was Standard Industrial Codes (SICs), commonly used by the federal government and obtained from a list from InfoUSA, a business information company. *Convenience or party stores* are stores, such as Quality Dairy, that only sell a limited number of food items, focus on convenience, and are relatively small. Liquor stores that also sell food were included in this category. *Specialty stores* include stores like health food stores or ethnic grocers that carry food with a particular orientation. Since there were relatively few

specialty stores in the area, this category actually consisted of several SICs. While standard SICs only note grocers as a single category, it was felt that the variety of types of grocers should also be taken into account. Most importantly, it was felt necessary to distinguish between food retailers that specialize only in food and those that also sell a wide variety of non-food items. *Supermarkets* refer to the former type of stores with a focus only on food. Kroger and Apple Market are two major supermarkets in the area in the neighborhood. *Supercenters* refer to the latter type of store, which carries the same selection as supermarkets and has a wide selection of nonfood items. Meijer and Super Wal-Mart are supercenters.

CHAPTER FOUR

CAUSES OF FOOD INSECURITY

The Problem of Hunger and Food Insecurity

In Chapter Two I drew from Hayes (1994) to explain that, sociologically, agency can be understood as the extent to which people are able to alter one social structure (in this case, the commercial food system) to coincide with another structure (perceived food requirements). This perspective is useful since it allows us to consider agency in context without ignoring the varied social structures (e.g. ethnic background, gender, class, etc.) which influence individual tastes. Agency, in the context of the commercial food system, becomes an issue of the extent to which this social structure coincides with the demands and interests of different people. In most of the US the food retail system is the primary means through which people obtain food. Poignantly, in the US, a country with nearly 4,000 calories available per person (Putnam, Allshouse, and Kantor 2002), the fact that one in ten people do not have reliable access to sufficient food indicates a clear problem (Nord et al. 2006). It also suggests that the conventional food retailing system does not meet the needs of at least 10% of the population. This failure suggests that this is a social structure within which a large subgroup has only limited agency.

In a very real sense those who have unreliable access to nutritious food can be seen as representing segments of the population with relatively limited agency vis-à-vis the structure of the food system. The theoretical framework presented in Chapter Two becomes very useful in situating problems with food acquisition in a society where

consumers are increasingly reflexive and influential (Figure 7). At the top of Figure 7 are food secure individuals who, by virtue of their ability to reliably obtain food, have agency within the structure of the food system and at the bottom are food insecure individuals who are largely constrained by this same system.

market
segmentation

individual
diversity

| Food secure populations |

PRODUCTION

CONSUMPTION

AGENCY

STRUCTURE

structural
division

massification

| Food insecure populations |
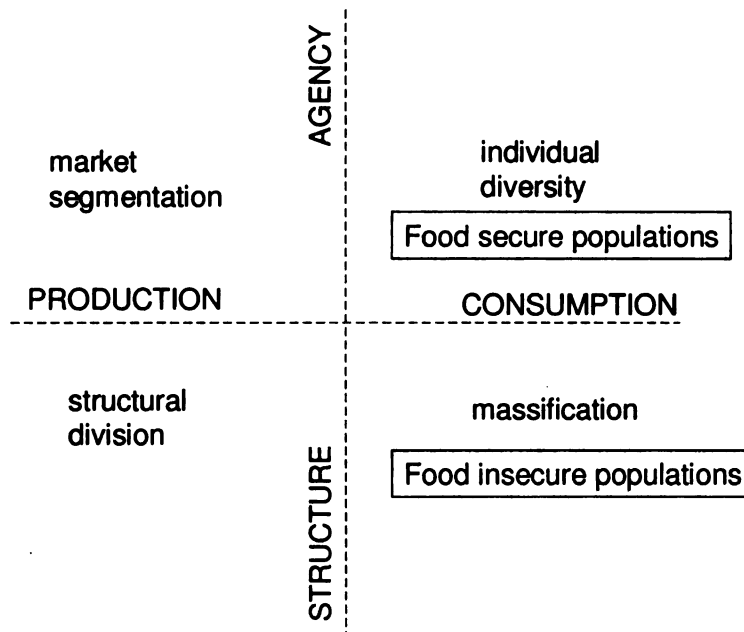
Figure 7: Food security/insecurity as related to agency and structure as determinants of consumptive practices

In this section I will discuss the traditional conceptualizations of hunger and food insecurity. The two terms are often used interchangeably, although hunger is generally understood as a more extreme form of food insecurity. My purpose is to trace some of the roots of food insecurity and hunger as concepts in order to understand some of their commonly accepted meanings. Furthermore, by describing some of the current research in the area I will demonstrate limits to common conceptualizations. After this I will examine the results of survey data examining the causes of food insecurity within my study site. Finally, I will discuss how my findings relate to conventional

conceptualizations of food security and highlight the limitations of assessments of food security that do not also take into account the structural context of the food system.

Anderson and Cook (1999) provide a history of the term food security, noting that concerns with "food security" originated during the 1960s and 1970s in reference to international development. The focus of this research was on food supplies and availability and the unit of analysis was often national in scale. By the 1980s, there was a shift towards household and individual food access and a long-term perspective on food availability. Concern with food security had broadened from simple access within a country to encompassing individual and household characteristics which impact people's long term access to food. By the 1990s the concept of food security had shifted almost entirely towards concern with reliable access to food, affordability of food, and quality of food. The concept of food security was further solidified in 1995 when the USDA began funding programs to alleviate food insecurity and began conducting national surveys of food spending, food access and adequacy, and sources of food assistance.

Frongillo (1999) assessed the validity of the USDA 12 question food security assessment measure. Previous food security measures that were questionnaire based have been criticized for not being accurate representations of people's real experiences. Further concern existed with whether the USDA measure was consistent with other theoretical understandings of food security. Frongillo assessed validity based on six criteria and a review of research that had been conducted using USDA measures in combination with qualitative and other research methods. Frongillo concluded that the USDA measure was consistent with the experience of households, consistent with other food security measures, precise, dependable, and accurate measures of food security and

hunger. This validation is important since the USDA, as well as this study, utilize respondent perceptions of having adequate food to assess levels of food security. As Frongillo found, this type of food security measure is associated with health, nutrition, and children's development that supports the USDA conceptualized link with sufficiency for active, healthy lives.

The specific USDA definition of food security is "access by all people at all times to enough food for an active, healthy life (Nord et al. 2006)." This conceptualization of food security involves two dimensions. The first dimension involves the consistency over time with which households are able to obtain the food that they feel is necessary for the nutrition of everyone in the household. The second dimension involves hunger, or a measure of whether households have had to significantly alter their eating practices due to a lack of resources. Only in severe cases of food insecurity is hunger experienced.

As Nord et al. (2006: 4) notes two-thirds of all food insecure households in 2005 were able to avoid substantial reductions or disruptions in food intake by "relying on a few basic foods and reducing variety in their diets." Even when sufficient calories are consumed, food insecurity can be a significant problem for some households. For instance, Blisard, Stewart, and Jolliffe (2004) found a significant difference in the expenditures of high and low income households on fruits and vegetables. They found that, on average, low-income households spent $3.59 per capita per week on fruits and vegetables while higher income households spent $5.02 (2004). This suggests that while hunger might be avoided by many food insecure households, it is done by compromising the nutritional quality of their diets. In short, hunger is only one part of the problem of food insecurity.

Olson (1999) looked specifically at food security in women of childbearing age and school children and found that for the women there was a correlation between household level food insecurity and a higher body mass index, showing that obesity, not famine, appeared to be correlated with food insecurity, even when income and education were held constant. This echoes other research demonstrating the relationship between poverty and obesity, which is particularly a problem in industrialized countries. Olson (1999) also found that children in food insecure households suffered from compromised psychosocial functioning related to behaviors such as stealing, fighting, and not getting along well with others.

Hamelin et al. (1999) have also examined the consequences of food insecurity. First, they note physical impairments such as hunger, depletion, and illness. Next they describe psychological suffering such as stress and constraints arising from the need to go against held norms and values. Finally, the authors describe sociofamilial perturbations that include modification of eating patterns and ritual, disruption of household dynamics, and distorted means of food acquisition and management. The authors demonstrate that the impacts of food insecurity are not simply related to physiological health, but also psychological and social, leading to problems such as theft or poaching.

More focused research on single mothers with children in Canada highlights how management of food insecurity can have detrimental health impacts. McIntyre et al. (2003) found that single women often compromised their nutrition in order to ensure the health of their children. Parents were found to reduce calorie intake as well as the nutritional quality of the foods they consumed. This was a particular problem during

82

times when food availability was limited. In these cases, children's food intake was maintained at the expense of the parent.

The implications of this research are that food insecurity, even when it is not associated with hunger, can have a significant detrimental impact on people and households. In some cases the consequences are very direct and related to nutritional deficiencies in food insecure households, but in other cases the consequences are less direct, such as the anxiety felt by people in households with irregular access to food. In some cases, the consequences of food insecurity even spill over to communities and schools through behavioral problems such as children struggling with the social norms of a community (e.g., breaking laws and misbehaving in school).

Based on the 1995 Current Population Survey, Rose (1999) found that 17% of households with incomes less than 50% of the poverty level were affected by some form of hunger. They also found that food insufficiency tended to be lower for high school graduates, homeowners, small households, white households, and high income households. Importantly, the authors found that, while there was a relationship between income and food security, it was not a one to one relationship. In short, while many of the socioeconomic characteristics of food insecurity are related to income, this is not sufficient to explain food insecurity. In fact, half of the people in the 1995 USDA survey who experienced hunger had incomes above the poverty line (Rose 1999).

Rose's conclusions are meaningful in that they indicate that food security, while strongly influenced by income, is also influenced by a variety of additional factors. Disability status, family status, children, transportation ownership, and race have all been implicated as factors that contribute to food security status. Specifically, households with

one or more people with physical disabilities, single-parents, large numbers of children, no automobile, or some racial minorities tend to have higher instances of food insecurity. The relationship is not necessarily direct and households may have the resources to negotiate the difficulties in food purchasing related, for instance, to a lack of automobile ownership. However, since these households need to dedicate either financial or temporal resources to riding the bus or waiting for a neighbor to go to the store, this leads to a de facto increase in food purchasing costs by households who might least be able to bear those transaction costs.

Unfortunately, this increased cost is generally seen as a household or individual problem and not a social problem. Much as poverty itself is seen as an individual problem, a lack of adequate access to food is also seen as an individual problem, sharing the same kind of attribution errors. Consequently, solutions to inadequate food have focused on the individual or household through programs oriented towards making food available for free or at a reduced cost or providing nutrition education about how to make do with less. While such programs have utility in reducing some of the impacts of food insecurity, they tend to place the burden of alleviating the problems associated with food insecurity either on social services or on the impacted individuals and households. Class stratification, gender inequality, and other larger social structures are either not implicated or given only passing consideration, despite evidence that disadvantaged groups of all sorts suffer disproportionately from food insecurity.

This uncritical conceptualization of food security and hunger is equally evident in strategies to alleviate hunger. Interestingly, this can be traced to efforts in the late 1800s to reform working class eating habits. Levenstein (1988) describes how in the 1870s

reformers such as Boston businessman Edward Atkinson saw within the working class diet a means to increase the living standards of the poor without increasing wages and violating the laissez-faire canon of the time. Drawing from the "New Nutrition" perspective, which began to see food as constituted of basic elemental nutrients, these reformers attempted to educate poor populations to cook and eat more efficiently. Rather than examining the social, economic and political factors that may have been limiting access to healthy foods, they sought to teach the poor how to live healthy on minimum wages. Much as it is commonly understood today, hunger and food security were seen as an individual's problems to be solved through education.

DeVault and Pitts (1984) describe how hunger has been conceived in relation to the evolution of the Food Stamp Program. They note two potential ways in which hunger can be defined—an issue of income or an issue of food. The Food Stamp Program, perhaps the most influential federal food provisioning program, defines the issue of hunger as a problem of food rather than income. The implications of this are that social inequity as a social problem is left unaddressed and the number of solutions to hunger are limited simply to household or individual level food provisioning.

Poppendiek (2000) provides a more contemporary look at how hunger and food security are conceptualized. In particular, she outlines how modern efforts to alleviate hunger often serve more as "moral relief" for progressive and socially minded middle class advocates. Because hunger is seen as a problem for individuals and households it becomes one that can be alleviated through charity. This can have dire consequences, as she argues that "[f]ood programs not only make the well fed feel better, they reassure us that no one will starve, even if the nation ends welfare and cuts gaping holes in the food

stamp safety net (196)." The central point is that hunger needs to be understood as a state of inequality—not as simply an issue of people who do not have enough to eat.

It is clear from this discussion of conceptualizations of food security and hunger that these problems are still largely seen as a matter of household or individual circumstances, and there is relatively little questioning of the causal factors involved. For instance, while it is analytically useful to understand who is vulnerable to food insecurity (Rose 1999), the unique impacts on particular populations such as women and school children (Olson 1999), or the nutritional and social consequences of food insecurity more broadly (Hamelin et al. 1999) are rarely addressed. This means that there is little light shed on why particular people are food insecure in the first place. In short, traditional views of food security and hunger in the literature have conceptualized these issues as conditions limited to individuals and households by limiting the focus to this level of society. I do not mean to dismiss the importance of this research, for indeed I think it is critical to an expanded understanding of food security; however, we must also look for factors that may be influencing populations differentially to truly understand, and not just describe, problems related to food insecurity.

Traditional conceptualizations of hunger and food security can be seen as akin to the "individualist" poverty explanations described by Cotter (2002:536-537), who notes that accounts of poverty are often explained by either "individualist" accounts that focus on deficiencies of populations or "structuralist" accounts that view poverty as a macro social problem related to the degree of economic and social opportunity. While in many cases these are seen as mutually exclusive, I would agree with Cotter that more integrated approaches are much more insightful. Regardless, in the case of traditional theories of

food security, there is a clear emphasis on "individualist" accounts. This is evident in a research emphasis that is often limited to examining food insecure households as well as the strategies formulated to address problems with food security.

The problem, as authors such as Travers (1996) argue, is that the decisions that people make in regards to their food purchasing and consumption patterns are deeply embedded within a variety of social constructs outside of their control. These include constructs of class and gender; the bureaucratic and political organization of food, health, and welfare; and the commercial organization of food, health, and welfare. Travers (1996:552) is very critical of research that fails to incorporate the perspective of the disadvantaged and finds that eating is highly contingent on "the oppressive nature of corporate control over food, of welfare policies grounded in assumptions that social problems are caused by individual inadequacies, and of professional discourse that 'blames the victim' for their failures to follow nutrition recommendations." Understanding the extent to which consumers have agency in light of existing social structures is a difficult matter and one which warrants greater empirical investigation.

It is important that food insecurity be understood as a social problem related to the structure of the food system since it then supports the idea that food insecurity stems from constraints to agency of particular groups within the food system. Certainly social services, such as food banks, help people get another meal and that itself is a worthy cause; however, these social services tend to exist alongside the conventional food system and do not enhance the agency of food insecure individuals within the context of that structure. In the next section, I will examine the characteristics of food insecure households within the study site. My results were largely consistent with other research

on the characteristics of food insecure households which, as I will explain at the end of this chapter, indicates that agency, as measured by food security, is indicative of a broader lack of agency in relation to other social structures.

Analysis and Results

The USDA classifies food security into three levels—food secure, low food security, and very low food security. As noted previously, these categories are synonymous with the categories of food secure, food insecure, and food insecure with hunger. The latter nomenclature is used in this study. Nord et al. (2006) explain that

> households classified as having low food security have reported multiple indications of food access problems, but typically have reported few, if any, indications of reduced food intake. Households classified as having very low food security have reported multiple indications of reduced food intake and disrupted eating patterns due to inadequate resources for food.

The same USDA criteria were applied to the sample developed for this study. Low and very low food security levels were found among 21.5% of households in this study (Figure 8), nearly double the national average of 11% and well above state averages of 11.5% (Nord et al. 2006). While such levels are not necessarily surprising given the high levels of poverty evident in some areas of the neighborhood, as well as results from previous surveys, it nonetheless represents a disturbing trend. Perhaps even more worrisome was that 9.6% of the sample indicated very low food security levels. This was nearly three times national levels of 3.3% and more than twice state levels of 4.1% (Nord et al. 2006).
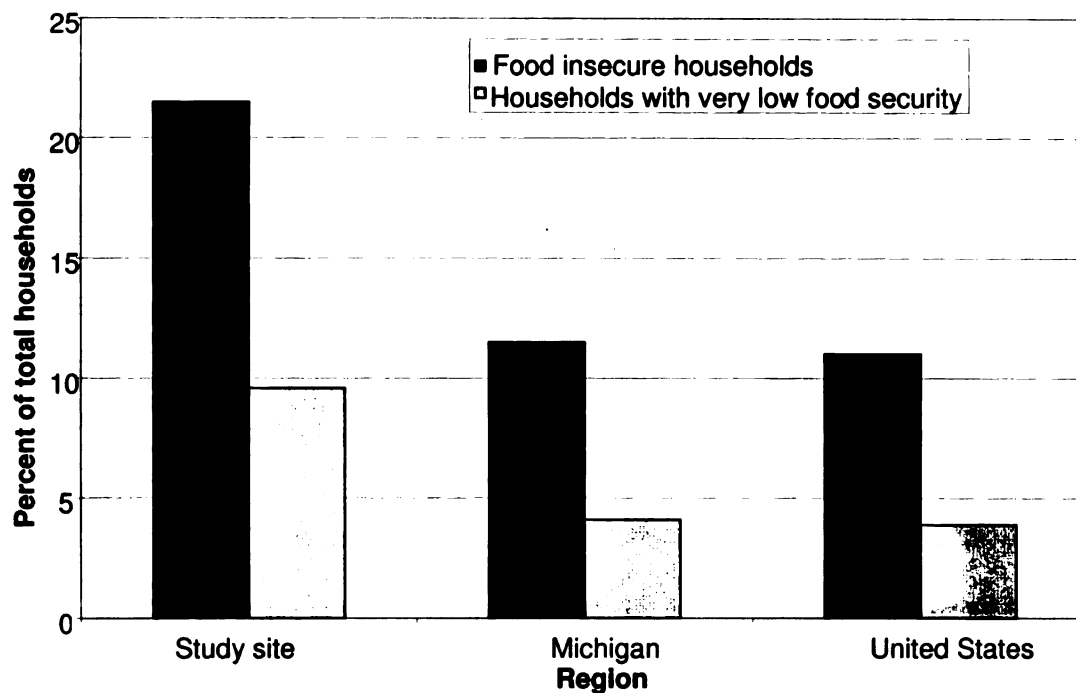
Figure 8: Food security levels in the study site, Michigan, and United States

In order to examine the factors that contribute to food security, two sets of

analysis were conducted. First I used chi-square and t-tests to examine the individual

relationships between each variable and food security status. Second, I used logistic

regression to examining the influence of all the variables together on food insecurity.

Much of the literature on food security focuses on factors that contribute to food security

status and, while the USDA measure used in this study also looked at levels of hunger,

this measure is functionally a subcategory of the food insecure category. Consequently,

binary logistic regression focusing on the distinction between food security and insecurity

was chosen as the most appropriate statistical test. Similar to ordinary-least-squares

multiple regression, logistic regression evaluates particular effects while controlling for

possible confounding variables. Use of logistic regression therefore allows us to

determine which variables have a statistically significant influence on food security status as well as the strength of the influence of each variable.

Variables

The dependent variable consisted of a simple binary measure of food secure or food insecure. Independent variables for the initial model were identified from a review of the literature on factors contributing to food security. These included the interval level variables of distance to the closest grocery store, distance to the closest food retailer, age of primary food shopper, number of children in the household, and number of people in the household. Distances were calculated as straight line distances based on GIS analysis. The details of how this was done are discussed in Chapter Six.

Ordinal and nominal variables in the initial model included education level, physical disability status, home ownership, working automobile ownership, and total household income. Since data were collected at the household level and the primary shopper may not be the one with the highest education, education was assessed by asking respondents the highest level of education of anyone in the household. The education variable consisted of five categories, including less than high school degree, high school degree, some college, bachelor's degree, or graduate or professional degree. As will be noted later, for the third logistic regression model the variable for education was recoded into a binomial variable with bachelor's degree or more and some college or less. Home ownership was assessed by asking whether the household rented or owned the home. Automobile ownership was determined by asking about the number of functioning automobiles. This was then recoded into a binominal variable measuring whether any

functioning automobile was owned by the household. Income was collected as an ordinal set of data at $10,000 increments below $20,000 and at $20,000 increments above $20,000 (this distinction was done to allow for the identification of poverty status for small households). Income consisted of six total categories. All variables were recoded into dummy variables for use in the model.

A new variable for poverty status was created based on 2007 Federal Poverty Guidelines (Federal Register 2007.) This variable is based on income levels and household size. Since income data were collected as an ordinal rather than interval variable, poverty status could only be identified for all households that had incomes less than $10,000 (the poverty level for households of one person is $10,210) and households of four or more people that had incomes less than $20,000 (the poverty level for household of four people is $20,650). While it is likely that households in poverty were excluded from this, it was decided that a conservative estimate was more appropriate for the regression model. Fifteen percent (N=42) of the sample was identified as being in poverty.

Table 2: Summary of variables used to predict food security status

Interval Variables	Average
Distance to closest food retailer	0.29 miles
Distance to closest grocery store	0.76 miles
People in household	2.17
Number of children	0.4
Age	48.92
Ordinal Variables	**Median**
Income	$20,001 to $40,000 per year
Education	Bachelor's Degree
Nominal Variables	**Percentage**
Rent their home	30.20%
Do not own a car	8.50%
Single parents	4.10%
In poverty	15.10%
Have a disability	19.20%

Results

The first set of tests examined the hypothesis that there was a difference between food secure and food insecure households for each of the twelve variables using chi-square or t-tests, as applicable to the appropriate level of measurement. T-test results indicate a statistically significant difference between the distance of food insecure and food secure households to the closest grocery store. Similar results were found in terms of distance to the closest food retailer. This is consistent with current literature on food deserts and will be examined more closely in Chapter Six. For the remaining interval variables, total people in household, number of children, and age, no statistically significant differences were found. This suggests no difference between food secure and food insecure households in terms of household size or age of primary shopper.

Chi-square revealed statistically significant relationships between income and food security and education and food security (Table 3). I also conducted post-hoc testing using Cramer's V to determine the strength of association and found that both income and education had a moderate association with food security status, with education appearing to have a slightly stronger, but still moderate, association. All other variables, which the literature suggested would influence food security status, were also found to have a statistically significant influence and are summarized in Table 3. I measured the level of association of binomial variables with phi. Based on phi, poverty status appeared to have the strongest association with food security status among the nominal variables examined, although it was only of moderate strength. Home renting

also had a moderate influence, while car ownership, single parent status, and disability

status demonstrated a relatively weak influence on food security status.

Table 3: T-test and chi-square results for each dependent variable in relation to food security status

Interval Variables	t	
Distance to closest food retailer	-3.02**	
Distance to closest grocery store	2.191*	
People in household	-.445	
Number of children	-1.807	
Age	2.996	
Ordinal Variables	**Chi-square**	**Cramer's V**
Income	35.017**	0.345
Education	58.539**	0.459
Nominal Variables	**Chi-square**	**phi**
Rent their home	28.324**	0.31
Do not own a car	14.278**	0.22
Single parents	14.560**	0.224
In poverty	31.479**	0.337
Have a disability	12.087**	0.204

*$p<0.05$ **$p<0.01$

The nature of the relationship between each variable and food security status was

largely consistent with other research in this area. Households that are rented, do not

have working automobiles, are headed by single parents, include people with physical

disabilities, or are in poverty are more likely to be food insecure. Similarly, the higher

the household income and the more education that someone in the household has, the less

likely the household is to be food insecure. Cross-tabulation of income and food security

status reveals that income was particularly influential for households with incomes less

than $60,000 (Table 4). For households with incomes above $60,000, food insecurity

was only an issue for less than 3% of the households. In the case of education,

households with more education appeared less likely to be food insecure (Table 5).

There appeared to be a large percentage (35.9%) of households with "some college"

education being food insecure. Of households with bachelor's degrees, only 16% were

food insecure while food insecurity dropped to only 3% for households with graduate or professional degrees.

Table 4: Cross-tabulation of household income and food security status

	What was your total household income for the last year?						
	$10,000 or less	$10,001 to $20,000	$20,001 to $40,000	$40,001 to $60,000	$60,001 to $80,000	$80,001 or more	Total
Food secure	14	27	57	38	40	37	213
	37.8%	62.8%	75.0%	88.4%	100.0%	94.9%	76.6%
Food insecure	23	16	19	5	0	2	65
	62.2%	37.2%	25.0%	11.6%	0.0%	5.1%	23.4%

Table 5: Cross tabulation of household education and food security status

	What is the highest education of anyone in your household?					
	Less than high school	High school	Some college	Bachelors degree	Graduate or Professional degree	Total
Food secure	5	23	59	63	80	230
	55.6%	63.9%	64.1%	84.0%	96.4%	78.0%
Food insecure	4	13	33	12	3	65
	44.4%	36.1%	35.9%	16.0%	3.6%	22.0%

After testing each of the variables individually, I developed three logistic regression models to examine the influence of each of the variables while holding the others constant. This was important since it allowed me to hold other variables constant and determine the influence of each variable. In each model I tested the null hypothesis that the variables together did not have an influence on the likelihood of predicting that a household would be food insecure.

The initial model incorporated all twelve of the variables discussed above. This model correctly predicted 84% of the cases and was statistically significant (p<.001). Coefficients, standard error, p values, and odds ratios are presented in Table 6. Results

indicate that age, some college, and renting a home had a statistically significant relationship with food insecurity (p<0.05). A one year increase in age is linked with a 3.6% decrease in the odds of a household being food insecure. Therefore, the older the primary shopper in a household, the less likely the household is to be food insecure. In terms of education, those households with some college education were over nine times more likely to be food insecure than a household with an education level of the reference group of a graduate or professional degree. For education, households with incomes of $10,000 or less were over fifty two times more likely to be food insecure than a household with an income of over $80,000 per year. In this model which holds all other variables constant, renting a home increased the probability of a household being food insecure by 2.4 times that of home owners. None of the other variables significantly contributed to the model.

Table 6: Logistic regression model of food insecurity status based on all variables

Variables	Coefficient	S.E.	P Value	Odds Ratio
Distance to closest food retailer	0.500	0.465	0.283	1.648
Distance to closest grocery store	-0.091	1.482	0.951	0.913
People in household	0.008	0.233	0.973	1.008
Number of children	0.174	0.316	0.583	1.189
Age	-0.036	0.014	0.012	0.964*
Income-less than $10,000	3.964	1.738	0.023	52.685*
Income-$10,001 to $20,000	0.763	1.015	0.452	2.144
Income-$20,001 to $40,000	0.920	0.937	0.326	2.510
Income-$40,001 to $60,000	-0.170	1.052	0.871	0.843
Income-$60,001 to $80,000	-18.699	6170.198	0.998	0.000
Education-less than high school	0.420	1.156	0.716	1.522
Education-high school	1.108	0.884	0.210	3.029
Education-some college	2.205	0.718	0.002	9.067*
Education-bachelor's degree	0.614	0.783	0.433	1.848
Rent their home	0.876	0.446	0.050	2.401*
Do not own a car	0.368	0.621	0.553	1.445
Single parents	1.608	0.937	0.086	4.992
In poverty	-2.029	1.401	0.148	0.131
Have a disability	0.954	0.540	0.077	2.596
Constant	-2.698	1.372	0.049	0.067

*p<0.05 **p<0.01

Based on these results, I refined the model by removing variables that clearly had

no statistically significant influence. Since disability status and single-parent status were

nearly significant, these variables were retained. Distance to retailers, number of people

in the household, number of children, car ownership, and poverty status were dropped.

This second model is presented in Table 7. This model successfully predicted 82.5% of

the cases and was also significant ($p<0.001$). The results of the second model were very

similar to the first model, with the exception that disability status appeared as a

statistically significant contributing factor. In this model, having someone in the

household with a physical disability actually increased the probability of food insecurity

status 3.6 times compared to those households without someone with a disability.

Table 7: Logistic regression model of food insecurity status based on a reduced set of variables

Variable	Coefficient	S.E.	P Value	Odds Ratio
Age	-0.036	0.013	0.006	0.965**
Income-less than $10,000	1.963	0.952	0.039	7.123*
Income-$10,001 to $20,000	0.819	0.931	0.379	2.268
Income-$20,001 to $40,000	0.937	0.877	0.285	2.552
Income-$40,001 to $60,000	-0.145	0.996	0.885	0.865
Income-$60,001 to $80,000	-18.765	6195.105	0.998	0.000
Education-less than high school	0.727	1.074	0.498	2.069
Education-high school	1.537	0.820	0.061	4.653
Education-some college	2.196	0.688	0.001	8.985**
Education-bachelor's degree	0.698	0.742	0.347	2.010
Rent their home	0.644	0.407	0.113	1.905
Single parents	1.398	0.761	0.066	4.046
Have a disability	1.286	0.480	0.007	3.618**
Constant	-2.248	1.054	0.033	0.106

*$p<0.05$ **$p<0.01$*

I was concerned that the multiple categories involved in the income and education

variables may have been creating a problem for the first two models. Therefore, I created

a third model, similar to the second model, except using poverty status in place of income

and turning education into a single dummy variable of households with no college degree

completed and households with a college degree completed. This model predicted a similar percentage of the cases as the other two models at 82.9%. In this model, all but home renting appeared as a statistically significant predictor of food insecurity status (Table 8). Again age had a minor, but significant, negative influence with a one year increase in age linked to a 3% decrease in the probability of being food insecure. Being in poverty meant that one was nearly three times more likely to be food insecure than a household that is not in poverty. Having a four year college degree or more meant a decrease in the probability of being food insecure by nearly 80% while single parents were nearly five times more likely to be food insecure than other households. As with the second model, having at least one person in the household with a physical disability meant that household was nearly four times more likely to be food insecure.

Table 8: Logistic regression model of food insecurity status based on poverty status and simplified education variables

Variable	Coefficient	S.E.	P Value	Odds Ratio
Age	-0.030	0.012	0.014	0.970*
In poverty	1.069	0.430	0.013	2.912*
Four year college degree	-1.570	0.383	0.000	0.208**
Rent their home	0.686	0.368	0.062	1.986
Single parents	1.584	0.751	0.035	4.877*
Have a disability	1.336	0.444	0.003	3.803**
Constant	-0.058	0.655	0.929	0.944

*p<0.05 **p<0.01

The results of these three models were largely, although not entirely, consistent with existing literature on food insecurity. Nord et al. (2006), in the yearly USDA report on food security in the US, reported disproportionately high levels of food insecurity among households with incomes below the poverty line, households with single parents and children, and Black and Hispanic households. Race data were not collected as part of this survey; however the results support the influence of poverty status on food security status. Single parent status also appeared to predict food insecurity. The findings of this

study also support other research involving USDA food security data such as that by Rose (1999), who found that while income served as one of several significant factors predicting food insecurity.

Previous research has suggested that single parent status increased the probability of food insecurity (Olson, Rauschenbach, Frongillo, and Kendall 1997). Similarly, my research indicated that single-parents were more likely to be food insecure than other households. Day to day activities require a different set of negotiations when small children are involved. Yet, food must be available to eat. The relationship between single-parent status and hunger indicates that the structure of the food system is not one that readily coincides with single parents. This trend was further supported by comments by interviewees regarding the difficulty of shopping with young children. As one respondent explained in response to planning meals before going shopping, "Since he was born it's kind of got off that. I still every now and then try to plan them ahead... if I can get him to cooperate, I'll do it."

Qualitative research by Wolfe et al. (2003) indicates that age can play a significant role in food security. Their research indicates that, while money plays a significant role in the ability of households to reliably obtain food, other factors related to age, such as the ability to obtain transportation or prepare food, are also very influential. Data from this survey found a relationship between age and food security status ($p<0.05$). However, age appeared to have a slight negative relationship with food insecurity. This suggests that young households are slightly more likely to be food insecure, though this might also be related to a lack of connections with the surrounding neighborhood. Younger residents, and especially college students who are likely to be transitory, may be

less likely to make connections with neighbors that could be exchanged for food. Notably, however, the influence of age was not as strong compared to that of other variables, such as income and education.

The lack of influence of transportation on either general food insecurity or food insecurity with hunger came as a surprise. Studies such as that by Caraher et al. (1998) and Bromely and Thomas (1993) suggest that a lack of transportation is a critical factor related to food insecurity. Interviews also indicated that transportation was a limiting factor for many food insecure households. While a lack of transportation may limit the frequency or location of shopping trips, it may not limit these practices to the extent that food accessibility is severely limited.

Despite the lack of evidence in support of transportation as a contributing factor, there was evidence that physical access to food may be a problem. The issue may be one of people with physical disabilities negotiating the shopping process and not simply getting transportation to the store. In the second and third models, households with someone with a physical disability were nearly four times more likely to be food insecure. This strongly supports the idea of a "disadvantaged" consumer who finds food access problematic for reasons other than income . Furthermore, it suggests that differential access to the food system is not simply an issue of whether one has sufficient financial resources.

Conclusions

Travers (1996) makes the argument that nutritional inequities in society are best understood by taking into consideration the social contexts within which purchasing and

consumption decisions are made. Consumption decisions are made within a variety of contexts, each influenced by different, but overlapping, sets of social structures. For example, at the household level gendered divisions of labor influence food selection and preparation. The household level is itself embedded within the commercial organization of the food system and the bureaucratic and political organization of food and health. These systems are themselves embedded within structures of class and gender.

Traver's conceptualization of consumption deviates from traditional conceptualizations which focus on hunger as a problem only of a household or individual. In traditional, definitively non-sociological understandings of hunger, the problem is reduced to a lack of food availability at the household or individual level. Solutions, consequently, are focused on simple food provision. In contrast, Travers sees hunger as the result of inequality derived from social structures. This conceptualization fits well with a sociological understanding of food security which seeks to understand hunger and food insecurity as caused by larger social structures.

The results of my assessment of causes for food security and insecurity indicate income and education were very strong predictors of food security status. Perhaps it comes as no surprise that the less money one has the more likely one is to be food insecure. More broadly, however, these two factors, which are commonly associated with socioeconomic class, indicate that social stratification in the US is having a real, and detrimental, impact, on the ability of large groups of people to meet their basic needs (Nord et al. 2006). The problem is not simply that many households do not have enough money to have reliable access to food. Other issues related to social stratification appear to be influencing food security also.

It comes as no surprise that education had a significant influence on food security status. Even controlling for all other variables including income, households with at least one person who had a bachelor's degree or more were 80% less likely to be food insecure. This suggests that households with people of higher education may be finding it easier to reliably obtain food, even if household incomes are low. I would note, however, that this does not necessarily mean that people in well educated households simply "know more" in terms of how to manage finances or purchase food on a small budget. In fact, interviews conducted as part of the qualitative portion of this study, and discussed in the next chapter, suggest that food insecure households are very strategic about food purchasing. This suggests that people in well educated households may be drawing from other resources related to their position in a higher socioeconomic class. Thirty respondents indicated on an open-ended question that they received additional food from family or friends with several listing "mom" or "my parents." Twenty-seven of those 30 had some college, a bachelor's degree, or a graduate or professional degree. While the small numbers and the fact this is drawn from an open-ended question limit generalizations, this does suggest that socioeconomic class may have an influence beyond its relationship to income.

Consistent with research into disadvantaged consumers, disability status proved to be a strong predictor of food security status (19% of the sample households included at least one person with a physical disability). This, combined with the lack of influence of automobile ownership, indicates that physical access may be misrepresented in current literature on food security. Specifically, physical access may be less an issue of mode of transportation to the store and more a question of individual physical ability to negotiate

the shopping process. Again, this was consistent with some of the interviews, which will be discussed in the next chapter. Notably, respondents with physical disabilities stated that loading and unloading groceries either into their automobile or into their houses were often more of a problem than was driving to the store.

This neighborhood is not entirely representative of either the rest of the state or the nation in terms of food security levels. However, much can still be learned from the neighborhood as an example of an economically diverse area where food insecurity is a significant problem for many residents. It comes as no surprise that elements generally associated with socioeconomic class, such as income and education levels, were strong predictors of food security levels. In addition, other factors proved to be even more important in some models, specifically disability status and single-parent status.

Economic class stood out as the most influential factor influencing food security although there was some indication that gender has a role, at least in relation to single-parent households. Food security, however, is not only about class. Disability status, in particular, points to the fact that our conceptualizations of the problems associated with food insecurity should not be reduced to individual poverty. These results, while useful in understanding neighborhood food insecurity patterns, leave us with many unanswered questions as to why these different groups may be more vulnerable to food insecurity. The original question regarding why different groups have different agency vis-à-vis the conventional food system remains unanswered.

As Travers (1996) points out, the grocery store represents the most common intersection between consumption at the household level and the commercial food system, which influences food availability for the majority of the population. At this

point, let us look closer at the factors that may be contributing to the differences in ability to purchase food exhibited by food secure and food insecure households. In the next chapter I will examine the differences in perception and behavior of food retailers by food secure and food insecure households. After all, a full and productive understanding of the causes of food insecurity requires more than a demographic profile of the characteristics of food insecure households. An understanding of why decisions are made that lead these households to food insecurity is equally important. Or, as it relates to our larger question of agency and structure within the food system, to what extent does food security stem from the decisions households make and to what extent does it stem from an inability of households to make decisions? While seemingly tautological, this question lets us look more closely at the ways in which the food system helps and hinders certain behaviors.

CHAPTER FIVE

PERCEPTION AND BEHAVIOR OF FOOD SECURE AND INSECURE

HOUSEHOLDS

Agency, Taste, and Class

Measures of food security may provide us with some insight into the differing levels of agency that exist between food secure and insecure households. It is important that we avoid simplistic perspectives which assume that food insecure households lack agency. In this section, I will examine the different ways in which food insecure households mobilize various components of agency to cope with differing, and sometimes changing, abilities to purchase food. Food insecure and secure households clearly differ in the ability to obtain food from the conventional food system—the question is how and why do they differ? My comparison will involve two dimensions 1) perceptional differences in food sources and 2) behavioral differences in terms of food purchasing strategies. Based on a combination of qualitative and quantitative data I will make the point that food secure and food insecure individuals often share similar perceptions of the food retail environment. However, due to a limited ability to negotiate the retail environment, food insecure individuals are forced to develop complex purchasing strategies that prioritize cost. In short, I will address the question: to what extent do differing levels of agency relate to different perceptions of and behaviors related to food purchasing?

First, it should be understood that the process of procuring food is complicated. In fact, Wansink and Sobal (2007) estimate that people make well over 200 decisions regarding the how much, when, what and who of food consumption on a daily basis. Wansink and Sobal (2007: 108) note that these decisions are based in part on personal norms or patterns, but that "the norms can also be altered on any given occasion by the environmental cues around that person." While, the vast majority of food decisions are not consciously made, this does not detract from the importance of understanding the nature and reasons for the decisions that people make.

Some scholars such as Greder and Brotherson (2002) and Kaufman et al. (1997) have focused specifically on the food decisions of food insecure families and the ways in which households negotiate resource scarcity. These authors identified five major coping strategies of low income households: (1) relying on others; (2) adjusting resources; (3) reducing food consumption; (4) making trade-offs; and (5) acquiring nutrition and shopping knowledge and skills. Not only does this demonstrate the complexity of decisions regarding food purchasing, but it also demonstrates the influence of strategic and conscious decisions among food insecure households. Specifically, food insecure households are often able to devise strategies to reduce or eliminate some of the problems related to the difficulty of procuring food.

In a similar vein, Kaufman et al. (1997) found that despite the fact that low-income populations often faced higher prices, they were able to adapt by buying more economical and lower quality foods such as hamburger instead of steak. Item selection, consequently, becomes an important way in which cost can be negotiated. Based on household survey data they find their highest income group spent $48 on fish and seafood

per person while the lowest income group only spent $26 (Kaufman et al. 1997: 9). Similar trends were found for fresh fruits and vegetables, with high income groups spending much more than lower income groups. Of course, the implications of this are that while item selection may be a useful way of negotiating cost, there are likely some nutritional consequences of eating less fresh fruits, vegetables, and seafood and more hamburger.

In many cases food insecure individuals will go to great lengths to ensure that they and others in their household have sufficient food. Based on focus groups, Kempson et al. (2003) found that many of these strategies were unknown, even to practitioners working to educate resource limited populations. They cited often unacknowledged strategies such as participating in research projects, selling blood, avoiding having guests over for meals or snacks, going to church dinners, cooking with other people, getting food from work, and even committing a crime to go to jail. While on one level these strategies are indicative of the high level of desperation that many of these people feel, it also shows that food insecure households have devised some creative and strategic ways to negotiate food insecurity.

Many of the strategies noted by researchers relate to obtaining food outside of the conventional food system. Obtaining food stamps, starting a garden, going to a food bank, or even borrowing food from friends or family represent strategies that are external to the conventional food system. This suggests that while resource limited households are often able to obtain sufficient calories, they are often doing so through sources external to the mainstream vector through which people access the food system -- the food retailer. While this research points to the importance of alternative food sources for

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disadvantaged consumers, it does not address questions related to why these consumers do not access all of their food from retailers. Under what circumstances and why do disadvantaged consumers turn to alternative sources to obtain food? To what extent is their behavior an issue of culture (i.e. disadvantaged consumers learn there are numerous ways to obtain food)? To what extent is their behavior due to the costs associated with accessing food from conventional sources (i.e. disadvantaged consumers would like to purchase food from retailers, but lack the financial resources)?

Disadvantaged consumers are resource limited in some fashion, but at the same time they demonstrate a highly rational, and often complicated, set of strategies to obtain sufficient calories within the bounds of these limitations. Unfortunately, people working to alleviate problems related to food insecurity do not always recognize that food insecure households might be doing their best to obtain food and that the real problem is related to the food system. Stokols (1992) makes the point that most activities to promote healthy nutrition have been focused on strategies that relate to educating people to modify their behaviors. Modification of behaviors and the education of disadvantaged consumers on strategies to more efficiently, and nutritiously, obtain and prepare food are seen as solutions to the problems associated with food insecurity. Such efforts suggest a prevalence of the perception that the problem among food insecure households is cultural or attitudinal and that modification of that culture will help them make "better" choices that will alleviate the problems of food insecurity. Despite this, it is not clear whether cultural preferences are really driving the choices of either food secure or food insecure households.

While research specifically examining the cultural factors that contribute to food retailer choice is hard to find, cultural explanations of consumption decisions might be adapted from individual food preferences. For instance, drawing on Bourdieu's work, lower class households might lack the symbols to interpret the haute cuisine available at some food retailers while higher class households might be drawn to them for reasons not understood by lower class households. Bourdieu (1984) argues that this stems from the fact that food tastes are socialized from birth leading to different tastes among the class hierarchy. This is meaningful because it suggests that the item selection by food insecure households might be a matter of socially constructed taste, in addition to economic necessity. Caraher et al. (1998) note a tendency among low income households to select items based on cost instead of quality. Potentially, this is indicative of differences in the socially constructed tastes of households of different classes.

Of course, the issue of taste preferences is complicated by the issue of availability. As Wright, Nancarrow, and Kwok (2001) describe, globalization has led to the proliferation of a variety of products within most supermarkets in developed countries. In many ways, preferences that have been limited by availability are now being challenged by the widespread distribution of various products such as hummus, sushi, and kiwi around the world. Even for food insecure households, supermarkets offer a wide variety of items with relatively low prices. Wright et al. (2001) still argue that the culture in which one is raised, of which social class is a part, strongly influences food tastes. The issue of availability offers a further complication to devising ways to think about food preferences.

This research indicates that cultural preferences have a role in determining food choice, which suggests that cultural preferences have a role in determining food retailer choice. In order to test this proposition it is important that I examine food retailer perception as well as choice. The reason for this is that perception provides an indicator as to whether the symbols that food insecure and food secure households associate with individual food retailers are similar. Additionally, examining perception allows us to compare food retailer "tastes" between the two groups.

Importantly, perception is not the same as behavior and one's tastes say nothing of what one eats (or in this case, where one shops). Therefore, the actual behavior of households is also examined in order to see whether actual store selection is similar between the two groups. The extent to which perception and behavior coincide, therefore provides us with some indication of the extent of, and reasons for, differential agency among these two groups.

As Hays (1994) notes, culture itself is part of a social structure. Agency is a measure of the extent to which one social structure, such as those related to cultural preferences, is able to alter another social structure, such as that of the food system, to match specific needs. In short, the extent to which the structure of the food system coincides with the preferences of a group indicates the amount of agency that group has vis-à-vis the second system. It is possible, of course, that the food system is catering to the preferences of both groups. However, the literature on this topic indicates that it is much more likely that food insecure households are finding themselves limited in their ability to select the food retailer which would provide them with food they would prefer.

Qualitative Results: Tastes and Purchasing Strategies

Analysis

In order to understand the food purchasing strategies of these consumers, a series of semi-structured, qualitative interviews were conducted with food secure and food insecure residents of the neighborhood.[5] A total of seven food secure neighborhood residents were interviewed and nine interviews were conducted with food insecure individuals. Data were analyzed for emergent themes and codes were developed. Coding was conducted using NVivo Software. Displays were developed to reveal patterns among food secure and food insecure respondents with respect to food preferences, particularly among vegetables, meal patterns, shopping behavior, and coping strategies. While the small sample size clearly precludes generalizations of strategies to the entire neighborhood, the in-depth analysis of their food purchasing strategies provides important insight into the perceptions of the food retail environment and the different strategies that both types of households have developed to negotiate the food system.

Results

First, patterns of purchasing vegetables varied greatly between groups. While just over half of the food secure respondents indicated that they did eat fresh vegetables on a regular basis, consumption of fresh vegetables appeared to be somewhat limited in food insecure households. In particular, respondents indicated that even if they were interested in eating vegetables their male spouses and/or children tended to prefer meat and/or

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[5] As noted above, these interviews were conducted as part of a larger study on a Community Supported Agriculture farm that was distributing produce in the neighborhood. While no formal assessment was made of food security status, individuals who were interviewed who were seeking free bread through the neighborhood center were determined to be food insecure. Individuals who were members of the CSA farm were determined to be food secure.

dislike vegetables. One respondent described how s/he was able to overcome the resistance of his/her children to vegetables, "Put some hard boiled egg on top of it. Give them spinach with a hard boiled egg on top and they will eat their spinach. As long as I can figure out a way to make it, you know, I've cooked it up. So when I've had a problem with them eating carrots then I started candying them." Unfortunately, the respondent's efforts to change the taste preference of her children was often thwarted by the spouse, "They learned how to not like liver because their dad won't eat it. If he had eaten it like it was McDonald's hamburgers..."

Problems with the taste preference of family members were echoed by other respondents. One stated, "[I]t's convenient for me to make it, and he likes it. So I just make what he likes right now. He really rarely will eat fruit or vegetables right now." In many cases preferences toward vegetables varied greatly within the family. One respondent noted "[m]y daughter's kind of choosy, but other than that everyone else is fine" and another said that, "[t]he boys, they are so picky. But not the girls. They eat everything."

Respondents were required to negotiate these taste preferences within a set of financial constraints that further complicated food purchasing patterns. Specifically, most respondents described relatively complex food acquisition strategies that involved activities such as sale seeking, bulk buying and storage, food assistance, coupon use, multiple store visits, buying seasonally, taking condiments and crackers from restaurants and reviewing of ads, and buying food after paying bills.

Selection of items based on sales was extremely important in determining which items were purchased—"buy…canned vegetables when they are on sale or frozen

vegetables, whatever is on sale." Another respondent noted that "I just go in and whatever's on sale, that's what I'm going to have. Like I find chickens for 99 cents a pound, that's a real good deal, and these chickens are two-fifty a pound, I went and got big chickens. So then we eat chicken." while one simply stated "it's whatever they have on sale."

Sales served not only as a means to save money, but also as an opportunity to stock up on items that could be used throughout the year. In two cases, respondents purchased or acquired fresh vegetables that they would then preserve through canning or freezing. One respondent described how rain checks could be used to further extend the benefits of sale items:

> They were on special for like 75 cents a piece. So I went out there every day and I picked up four for three dollars. Well that was all of the first week. And then the next week I went in and picked up four more; the next day four more. Anything they was out of I got a rain check on. So I have twelve different cans, you know, items up there and I've got like 10 rain checks yet and they're good forever.

It appeared that the purchasing of meat was one item commonly bulk purchased. "I'll go spend $100 and then just buy meat. Lots of meat," stated one respondent. Another respondent explained that

> I order a side of beef and get me a quarter of a hog, and that eliminates my meat cost. And then if they got sausage or something minor, and I can afford it, I add to that. Like if hamburger or something's on sale for a reasonable price, or them country style ribs, I add to what I got.

Even with all of these strategies, however, respondents still described problems in meeting all of their household needs. One respondent explained "I only have X amount of dollars to spend. I can't go over. So you have to choose from this to that, from deodorant to a gallon of milk. What are you going to buy?" Another respondent was

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very conscious of the seasonality of costs and planned his/her consumption accordingly, saying that

> Because I try to stretch that meat to get to where the snow is gone...cause you gotta deal with them high utility bills, you cannot buy food and think you gonna stay warm, at the same time. So the best plan is by the end of August, September, October, get the freezer packed, as packed as you can.

One respondent described a complex process of budgeting monthly disability checks. Each month upon receiving the check, this person would first leave early in the morning to stand in line at the Salvation Army to get a number to receive food assistance. After receiving a number s/he would go to the bank for assistance writing checks to pay bills due to an eye sight problem. In some cases, if the disability check came after a bill was due, an additional trip had to be made to pay overdue bills. After this, the individual would have to return to the Salvation Army to wait several hours in line, hope that there would be food s/he could eat due to dietary limitations related to allergies and diabetes. After finding out what food was available from the Salvation Army, the final step would be to drive to a discount grocery store and sometimes dollar stores to get food for the rest of the month. Not only does each of these steps require a great deal of waiting in line, but it can be physically demanding, in particular for someone with physical disabilities.

Difficulties related to physical disabilities were echoed by other respondents. One described problems with managing a menu that would help her chronically ill daughter while another described how the physical pain caused by unloading groceries required that s/he often leave part or all the groceries in the automobile until assistance was available. Disabilities of individuals and household members consequently served as a limitation to the types of food items that could be reasonably selected.

Obstacles related to the physical acquisition of food were further exacerbated by transportation, including an unreliable automobile, or no automobile at all. One respondent did not have a driver's license and relied on rides from family members. Two respondents stated that they did not currently own functioning vehicles and therefore had to either carry groceries on public transportation or rely on the schedules and assistance of friends or family members. A lack of automobile ownership serves to limit both the quantity and variety of foods that can be selected at any one time. After all, it is only possible to carry so many gallons of milk and pounds of fresh vegetables onto a bus. Furthermore, as one respondent mentioned, relying on rides to the store from friends often required going wherever that friend wanted and reduced sale seeking activities. While this respondent was aware of sales that would save the household money and had a set of preferred retailers, without a working car the trips to the grocer was dependent on where and when the neighbor shopped.

It would be a mistake to conclude, however, that quality was not something that was of interest to food insecure households. Consider responses to questions of organic food—a term that is commonly perceived as higher quality food. Nearly all of the food secure respondents indicated an interest in organic food and most had purchased it at least occasionally in the recent past. Notably, food secure respondents were recruited from a group who had already indicated interest in organic, fresh produce through participation in a Community Supported Agriculture Farm. On the other hand, only two food insecure respondents indicated any interest in purchasing organic vegetables and one had bought organic. However, 90% of the food insecure respondents indicated concern with the nutritional quality of the food that they purchased and two respondents, who were not

interested in organic food, explained that they had found other ways of obtaining food with the same qualities. One food insecure respondent reported blanching vegetables to remove the pesticides. This person suggested that it provided a more economical way of obtaining fresh vegetables of similar quality as organic. This indicates that, at least in the case of organic food as a measure of food quality, behaviors might have differed between groups, but at the same time both groups had a similar set of interests in the qualities associated with organic.

These results point to some similarities and differences and food procurement patterns of food secure and insecure households. One notable difference is related to how issues of food quality were balanced against cost. Food secure individuals indicated a high level of interest in high quality food, with fresh—sometimes organic—vegetables a clear priority. In many cases, these individuals stated that they dedicated significant resources to obtain these foods, both in terms of paying extra money or driving to specialty stores to obtain the desired products. Interestingly, many of these individuals maintained a high level of interest in saving money or saving time while shopping. One individual even mentioned a tendency to always buy sale items, even though it was clear that he had no financial reason to do so.

Perhaps it comes as no surprise that food insecure individuals placed a much greater priority on food cost than on quality. It was interesting, however, to hear about the relatively complicated, well-devised strategies that individuals had created to minimize costs using available resources. These strategies were often time consuming, reliant on non-perishable products, and closely tied to schedules of store sales, looking after small children, work, food assistance distributions, and release of public assistance

monies which limited the ability to deviate from existing patterns. A closer examination of the interviews will show how these patterns have emerged and are maintained.

These results also show that there is some similarity in perception of food selection criteria between food secure and insecure individuals. It also indicates that, in the context of limited resources, these perceptions are leading to a vastly different set of behaviors, though cost and food quality were of interest to both groups. However, how the two elements were balanced differed noticeably between the two groups. Given the limitations of the sample size, generalizations from this data are limited. Therefore, in order to gain a better perspective of the relationship between perception of food retailers and shopping behaviors, and the prevalence of these behaviors, it is necessary to turn to the neighborhood survey.

Quantitative Results: Preferences and Behaviors

Analysis

Qualitative analyses indicate that even food insecure individuals have agency to negotiate within the food system and, to some extent, minimize the nutritional impact of food insecurity. However, the transaction costs of this negotiation were often high in terms of time, driving distances, making multiple trips, compromising food quality and selection, and other ways. To expand these findings, I turn to the survey data to examine whether the strategies and perceptions of the food system exhibited by interviewees were, in fact, representative of the neighborhood. In particular, I sought to identify the existence of differences between behaviors and perceptions of food secure and food insecure households. Two sets of data were collected through the survey that pertained to

this research question. The first set of data related to the reasons that various stores were selected and the second set of data related to the frequency of shopping trips made to area grocery stores. The former set of data was used to assess how different food retailers were perceived by food secure and insecure individuals while the latter data set was used to assess behavior patterns. A series of hypotheses were developed based on the results of the qualitative analysis in addition to literature in the area of food security and hunger.

Results: Food Retailer Perception

The first set of hypotheses all stated that the perception of eleven different food retailers based on twelve different criteria would be different for food secure and food insecure households. Chi-square analysis enabled comparison of these individuals based on reasons stores were selected among those who have shopped at each store in the past 30 days. Eleven specific stores were examined, as well as convenience stores and health stores. This represented all major food retailers within six miles of the center of the neighborhood. The list of stores was compared against interviews to ensure that the majority of potential food retailers were included in the list. While an additional open-ended question was included to ensure comprehensive data collection, the list of thirteen sources encompassed the vast majority of places where respondents shopped with the only exceptions being farmers markets and dollar stores (only 5% shopped at dollar stores and 6% shopped at area farmers markets). Twelve criteria were used to examine perceptions of food retailers, including sale item availability, everyday low prices, availability of bulk items, availability of specialty items, food selection, selection of nonfood items, food quality, proximity to home, proximity to work, proximity to other

stores, familiarity with store, information from media sources, and other reasons. Criteria were generated from thematic coding of interviews.

Did food insecure and food secure households perceive food retailers as having the same characteristics? Results indicated very few differences in how these individuals perceived each retailer. Differences were only noted in five of the thirteen food retailers examined and only for a small number of selection criteria. Stores with significant differences were Meijer, Sam's Club, Shoprite, Wal-Mart, and convenience stores. Interestingly, in one case the results contradicted the qualitative findings regarding the priorities that food insecure individuals placed on cost. In the case of Meijer, food secure individuals were more likely to shop there due to low prices. Notably, however, the difference was slight though statistically significant. There was some indication that food secure individuals were more influenced by non-cost related factors and, with Meijer, food secure individuals stated that they were more likely to shop there due to quality and selection. Similarly, food secure individuals were more likely to shop at ShopRite due to the availability of specialty items. Only in the case of convenience stores were food insecure individuals more likely to shop due to the availability of sale items. At the same time, familiarity was a significant factor for food insecure individuals in the case of convenience stores and Wal-Mart. Contrary to what was expected there was not a statistically significant difference in the emphasis that the two groups placed on distance as a selection criteria.

Overwhelmingly, however, it appeared that food secure and food insecure populations perceived food retailers as sharing similar characteristics, whether the stores examined were supermarkets, grocery stores, discount grocers, membership based stores,

health stores, or convenience stores. Out of a total of 156 different store characteristics examined, only eight statistically significant differences were noted and none of these were particularly large. This suggests that there were very few differences in how food secure and food insecure households perceived food retailers. Admittedly, due to relatively small numbers of people who shopped at some of the stores, it was difficult to draw definite conclusions. Nonetheless, the similarity in perceptions demonstrated by both groups supports the conclusions drawn from the qualitative analysis—that both food secure and food insecure groups share similar perceptions. In this case, it is clear that this similarity of perception is not simply in terms of similar concerns with food cost and quality, but also a shared perception of the characteristics of food retailers.

Given the similarities in perception between the two groups it is worth assessing how respondents perceived retailers. To do this, store selection criteria were broken down into four categories: cost related attributes, quality and selection related attributes, distance attributes, and other attributes. Cost related factors included sales and everyday low prices. Food quality and selection items included the availability of bulk items, specialty items, food selection, and food quality. Distance characteristics related to proximity to home, work, other stores, or bus stops. Other factors included familiarity with store, information from media, and other factors. Each retailer was then ranked based on the proportion of the sample that had shopped at each store in the past 30 days and stated that cost, quality or selection, distance, or other factors influenced their decision.
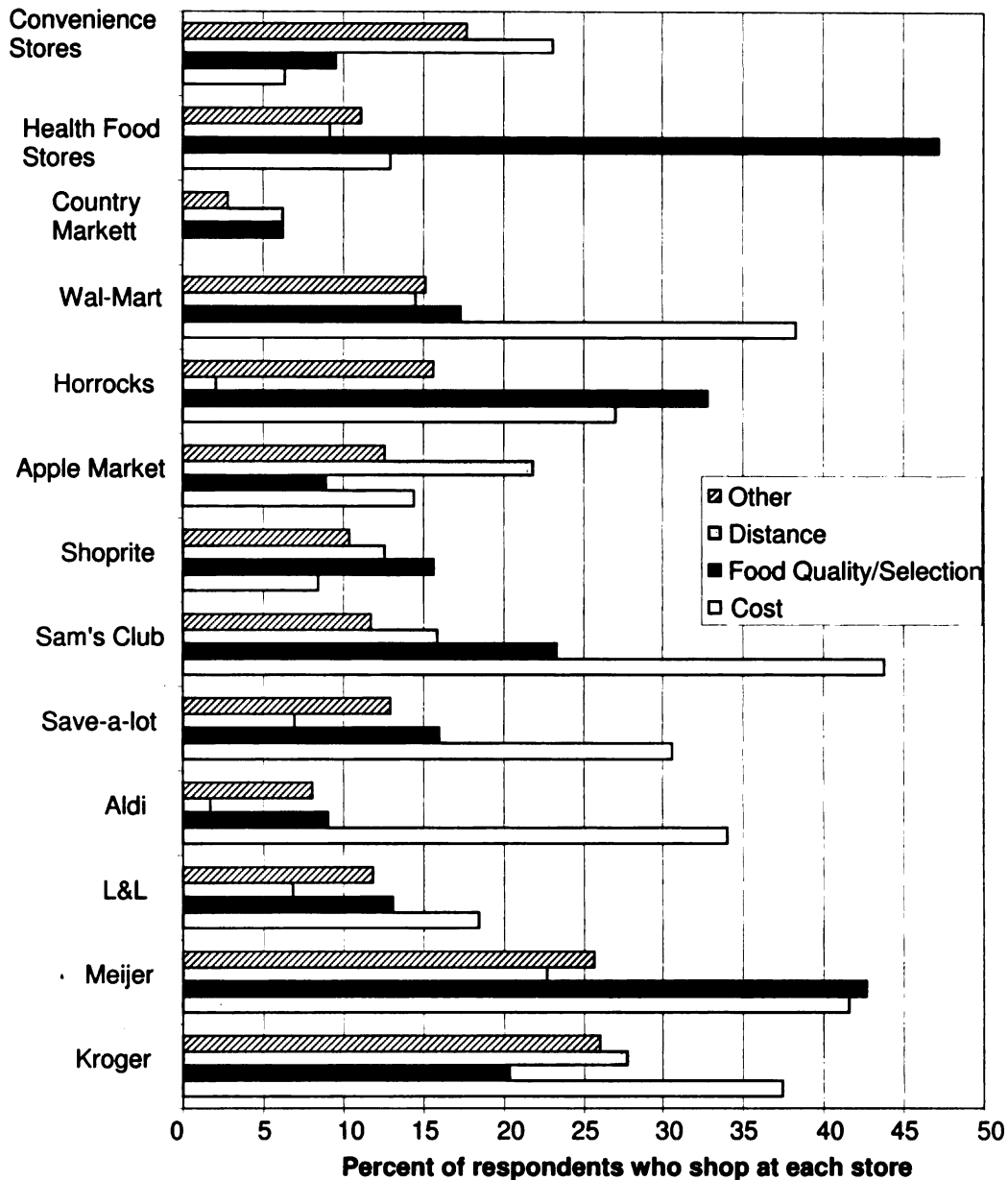
Figure 9. Store characteristics that influenced respondents' decisions to shop there

It is clear from the chart that cost and food quality and selection were two of the

most influential factors related to store selection (Figure 9). Interestingly, the major

supermarkets, Kroger and Meijer, attracted consumers primarily on cost, but also based

on perceived food quality, selection, distance, and other factors. On the other hand, for

deep discounters such as Aldi and Save-a-Lot, and Sam's Club (a membership based bulk

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store), cost was much more important. For the health food stores and Horrock's (a farmers market/grocer), food quality and selection were the top attributes. Finally, for convenience stores and Apple Market (a small grocer closest to most residents), proximity was the predominantly deciding factor.

In order to better understand these differences in retailer perception, I also examined the selection criteria that were applied to the store most frequently visited (Figure 10). Chi-square analysis of these factors identified two selection criteria with statistically significant differences between the two groups. Surprisingly, food secure households were actually more likely than food insecure households to select a primary food retailer based on everyday low prices. Less surprisingly, food secure households were also more likely to select a primary food retailer based on quality. While not statistically significant, there did appear to be a possible relationship between food security status and food selection ($p<.10$) and familiarity with the store ($p<.10$) with these being more important to food secure households. No significant differences were found for cost, proximity, or other criteria. These results indicate that even in the case of primary store choice, the criteria that food secure and food insecure households use in store selection is relatively similar. Cost related factors such as sales and low prices were very important. Other factors such as proximity to home, familiarity with store, food selection, and food quality also carried some significance.
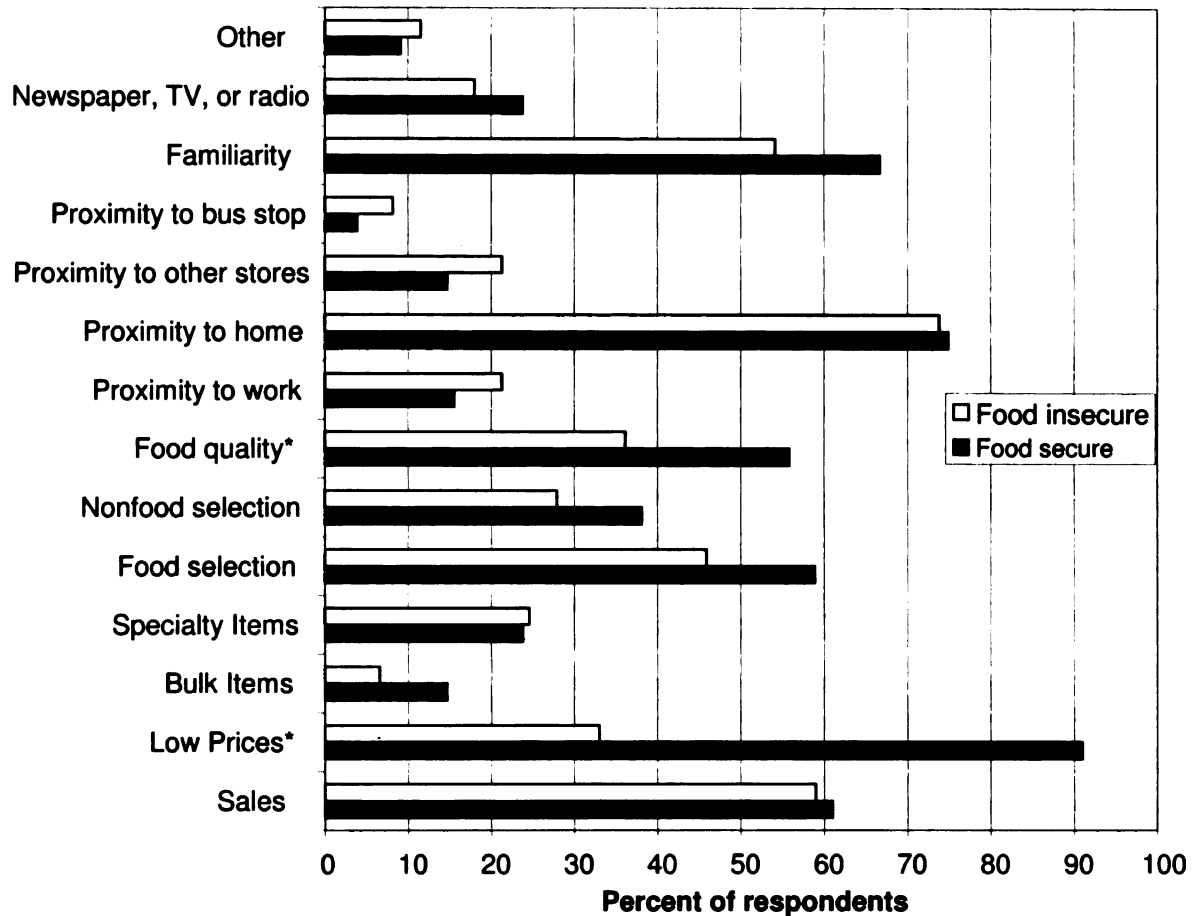
* Indicates a statistically significant difference between groups (p<0.05)

Figure 10. Reasons for shopping at most frequently shopped at store by food secure and food insecure households

A ranking of the reasons that food secure and insecure households shop at their primary location reveals some difference in the relative influence of different store characteristics (Table 9). For instance, sales appeared to be more important than every day low prices for food insecure populations with these characteristics being ranked number two and number six respectively. On the other hand, for food secure households, every day low prices was the most influential factor while sales appeared as the fourth most influential factor. The differences, however, were not great. Notably, food quality was the sixth and fifth most influential characteristic for food insecure and food secure households respectively. Food selection, nonfood item selection, and specialty items also

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appeared with similar rankings for both groups. In contrast to comments made during interviews regarding the importance of store fliers, food secure households appeared more likely to use media as a reason to shop at their primary retailer. Less surprisingly, proximity to a bus stop was more likely to be a factor for food insecure households; however, as previously noted, it was not particularly important for either group.

Table 9: Ranking of the relative influence of store characteristics on the decision to shop at the primary food retailer

	Ranking	
	Food secure	Food insecure
1	Low prices	Proximity to home
2	Proximity to home	Sales
3	Familiarity	Familiarity
4	Sales	Food selection
5	Food selection	Food quality
6	Food quality	Low prices
7	Nonfood selection	Nonfood selection
8	Specialty Items	Specialty Items
9	Newspaper, TV, or radio	Proximity to work
10	Proximity to work	Proximity to other stores
11	Bulk Items	Newspaper, TV, or radio
12	Proximity to other stores	Other
13	Other	Proximity to bus stop
14	Proximity to bus stop	Bulk Items

Where does that leave us? We now have evidence that food secure and food insecure individuals have similar concerns with food cost and quality. We also know that they have a similar set of perceptions of the food retail environment. Already, the differing set of food purchasing strategies identified by the interviews indicates that food insecure individuals are only marginally, and through complex strategies, able to meet their perceived consumptive needs, relying on more than just finances to navigate the food system. Both groups use complex patterns of shopping, but for one group this seems to be a necessity. Does this stand out in the quantitative data?

Results: Food Purchasing Patterns

While the qualitative results indicated limited but important differences between the food purchasing patterns of food secure and food insecure households, the differences were less pronounced in the survey results. Part of this might be due to the relative insensitivity of this research method to complex food purchasing as indicated in the interviews. Also, since interviews were conducted with food insecure individuals who were already obtaining food from a free bread program, it is likely that this group had very low food security.
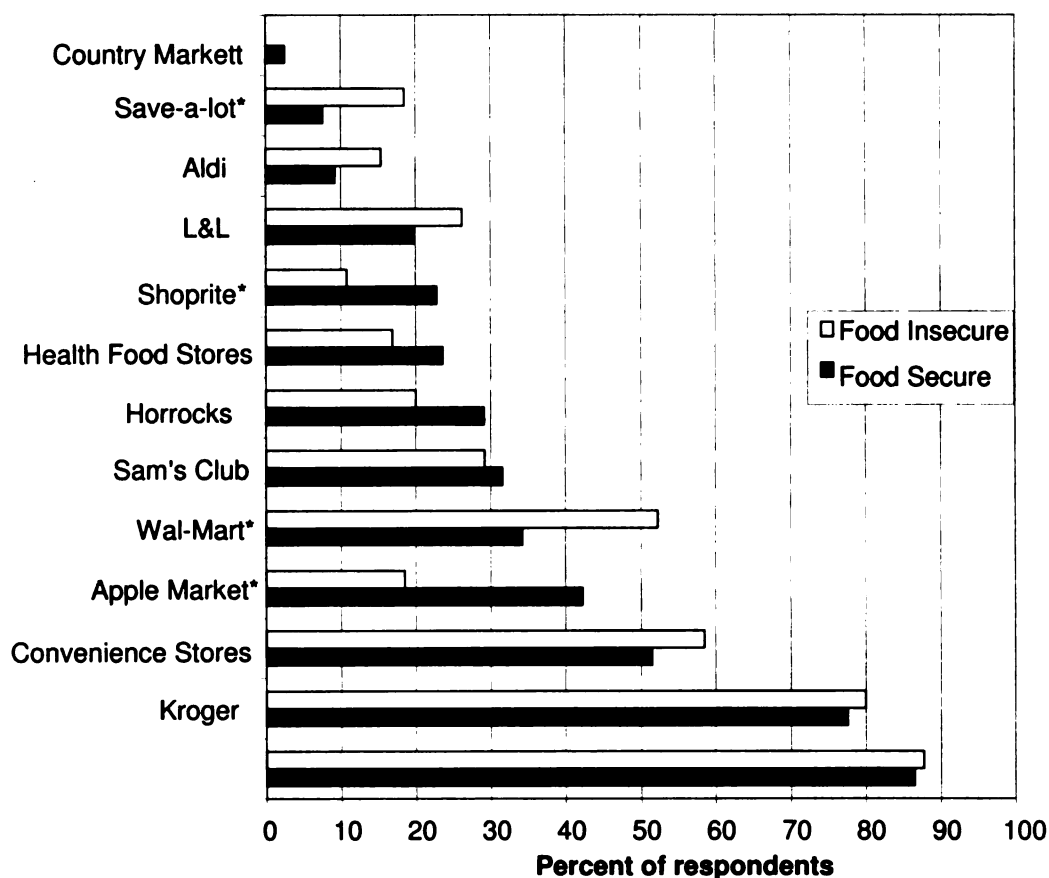
* Indicates a statistically significant difference between groups (p<0.05)

Figure 11: Stores where food was purchased in the last 30 days by food secure and food insecure households

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In terms of store selection, the vast majority of people from both groups obtained food from Meijer and Kroger (Figure 11), large supermarkets with closest proximity to the neighborhood, and were reported as the stores most frequently visited in the past 30 days. Notably, convenience stores, of which there are many in the area appeared to be a significant source of food for both groups with over 50% of each purchasing food from one of these sources in the past 30 days. Apple Market, a small grocer that is located in the middle of the neighborhood, was the third most visited food retailer by food secure respondents.

Percent of respondents
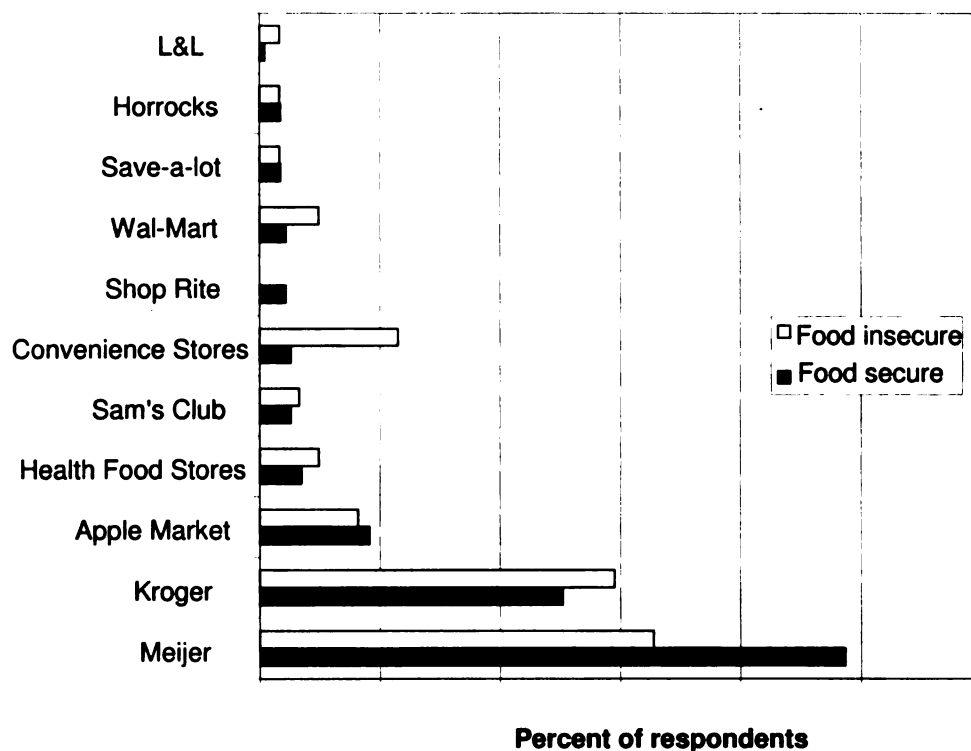
Figure 12: Store shopped at most frequently in the past 30 days by food secure and insecure households

An examination of the stores that respondents identified as their most frequently used food source paints a similar picture of purchasing patterns (Figure 12). Again, Meijer and Kroger appear as the staple food source with other food retailers declining

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rapidly in importance. Notably, food secure individuals appear to rely more heavily on Meijer than food insecure individuals with 49% of them reporting shopping at Meijer most frequently and only 33% of food insecure individuals reporting the same behavior. The remaining food insecure individuals appeared to be relying more heavily on Kroger and Wal-Mart to a minor extent, and convenience stores to a much greater extent. Only 3% of food secure individuals reported that convenience stores were the most frequently used opposed to over 11% of food insecure individuals.

Respondents were also asked to identify one other store most frequented in the past 30 days (Figure 13). Differences in store choice become even more apparent in these results. In addition to continued reliance on convenience stores, food insecure individuals are also relying on "deep discounters" such as Wal-Mart, Aldi, and Save-a-lot. While the difference is not as significant as expected, these trends seem to indicate that similarities in group behavior in terms of general shopping behavior (i.e. stores where food was purchased at any point in the past 30 days), may mask the extent to which each group relies on the stores in question. Examination of primary and secondary retailer choices indicates that food insecure individuals are relying more on convenience stores and deep discounters to obtain food, even though these sources do not replace reliance on large supermarkets.
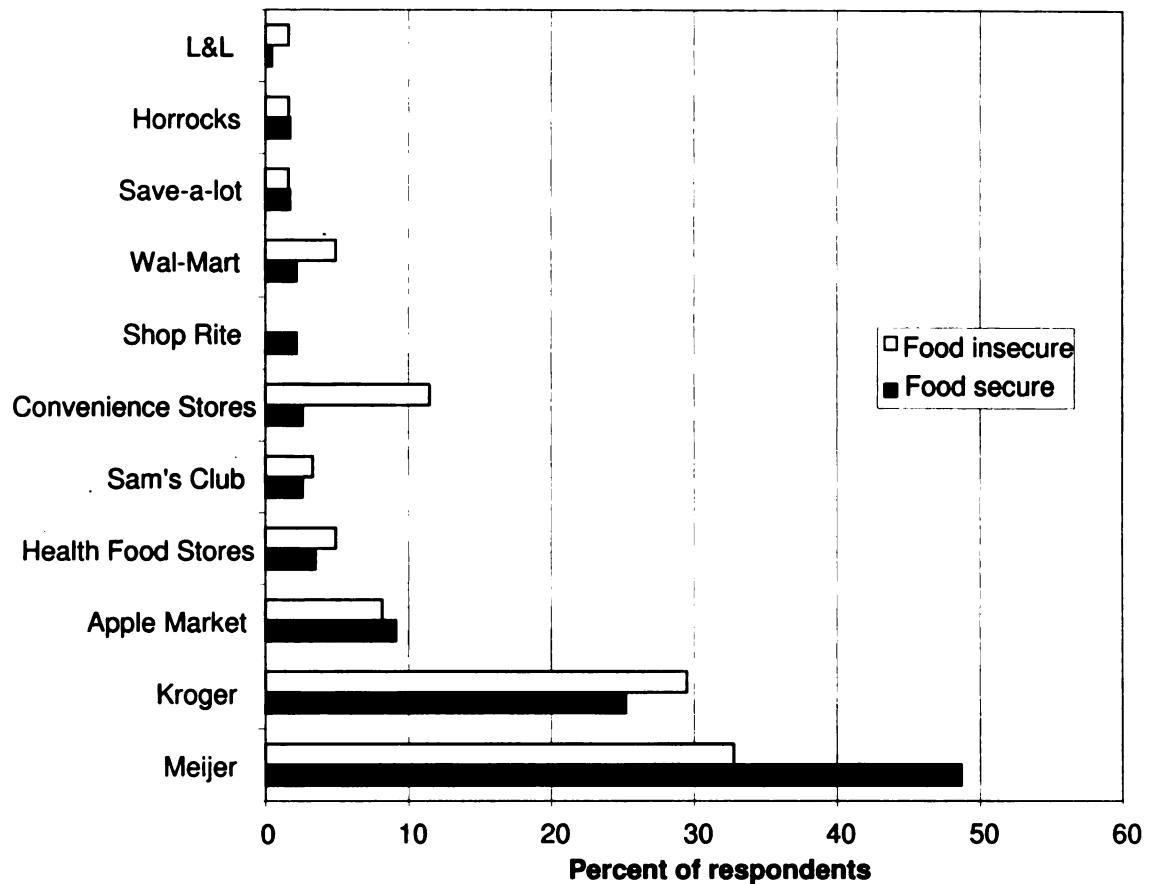
Figure 13: Store shopped at second most frequently in the past 30 days by food secure and insecure households

The tendency of food insecure individuals to rely on deep discounters is further supported by a chi-square analysis of the stores shopped at during the last 30 days. Statistically significant relationships were evident between food security levels and shopping at Save-a-lot, Shoprite, Apple Market, and Wal-Mart. Food secure individuals were more likely to shop at Shoprite and Apple Market while food insecure individuals were more likely to shop at Save-a-lot and Wal-Mart. Shoprite is a local grocer that tends to carry high cost specialty items, such as wine and cheese, so it is possible that this contributes to food secure shopping. However, the causes for the difference in Apple Market shopping is less clear. Both Save-a-lot and Wal-Mart represent retailers that emphasize low prices.

The high percentage of the sample that shopped at Kroger and Meijer can be explained, in part, by the number of these retailers that are within a ten mile radius of the study site. Respondents reported shopping at five different Kroger stores and four different Meijer stores. Therefore, the most frequently shopped at store was disaggregated into available locations throughout the city (other stores with multiple locations reported included Wal-Mart, Sam's Club, health stores, and convenience stores). Distinguishing between stores of the same chain was important since interviewees discussed times preferences between stores of the same chain noting things like differences in item selection and food quality. At the same time, one might imagine that consumers would simply shop at the store that was closest to their home or work. Re-analysis of the relationship between food security status and store selection with stores at different locations revealed no statistically significant relationship, showing that there did not appear to be a relationship between food security status and the specific location chosen to shop. However, in the case of Meijer the relationship was nearly significant (p<.10). Food insecure individuals appeared to have a greater propensity to shop at Meijer locations that were not the closest to their homes.

Given that many interview respondents noted the importance of going to multiple stores specifically for sale items or because particular items (such as canned goods or meat) were perceived as cheaper and/or of higher quality, the number of stores visited in a given month, as well as frequency of visits, was also assessed. No difference was found between the average number of trips that each group made to go buy food (average for both groups was around 15 food shopping trips per month). Surprisingly, there was no apparent difference in the number of stores that each group visited during a given

month with both groups averaging 4.3 different stores in the past 30 days. Given the emphasis in the interview on pursuit of sales and low prices at different stores, this issue was further addressed by comparing the number of stores each group selected based on the thirteen store selection criteria. No significant differences were found between groups.

Differences in shopping frequency did become apparent in comparing how frequently each group shopped at the thirteen stores examined. Differences, however, were only statistically significant in the case of Meijer, Apple Market, and Wal-Mart. While the difference was not very large with any of the stores, the orientation of food insecure individuals towards stores that were seen as low-cost retailers continued to be evident. Food secure individuals shopped more frequently at Meijer and Apple Market while food insecure individuals shopped more frequently at Wal-Mart.

There was not a statistically significant difference between the number of different stores that food secure and food insecure shopped at or the amount of time spent cooking, preparing, and preserving food. There was a difference in the number of hours spent shopping for food ($p<.05$); however, in contrast to statements made during interviews, it was the food secure individuals who spent slightly more time shopping than food insecure individuals.

While the food that was purchased and consumed was not explicitly part of this study, one question did involve the amount of fresh produce consumed on a weekly basis. In other studies, fresh produce consumption has been used as a proxy for measuring 'healthy' food consumption (Wrigley et al. 2002), representing at least a crude indicator of how food purchasing practices might be influencing the health of consumers. Notably,

there was a statistically significant relationship between food security status and the amount of fresh produce consumed in the past week with food secure individuals more likely to have eaten five or more serving of fresh produce in the past seven days.

Conclusions

Both quantitative and qualitative data indicate a significant similarity in food shopping perceptions between food secure and insecure populations. In the interviews, it came as no surprise that food insecure individuals voiced significant concern with costs; however, the differences in perception of the food retail system between food secure and insecure individuals were not as pronounced as expected and cost and food quality were an issue for both groups. Differences were more apparent in how the two groups balanced cost and quality. Food insecure individuals did not select stores and items based only on cost, but rather negotiated cost against quality. Sometimes this negotiation was only possible when dealing with items or stores of perceived equal cost; however, quality remained an important part in decision making. Similarly, despite growing theoretical claims that quality was becoming more important than price, most food secure individuals also noted the necessity of balancing cost against quality. Convenience and distance also appeared to be issues of concern for both groups.

Despite similarities in perception, the shopping behaviors of the two groups were notably different. Specifically, there were differences in the ways in which cost and quality were negotiated. For instance, both groups noted being influenced by sale items, though food insecure individuals were much more likely to go to a store specifically because of a sale item. Notable was the fact that food secure individuals only stated three

strategies for food cost reduction—reviewing ads, sale seeking and bulk buying. In sharp contrast, food insecure individuals described a range of cost reduction strategies including reviewing ads, sale seeking, bulk buying, shopping at multiple stores, shopping at non-traditional outlets such as dollar stores, preserving food, buying seasonal items, using coupons, taking free samples and condiments, and drawing on food assistance.

The similarity in perception demonstrated by both groups would seem to indicate that the cultural influence of social class on food purchasing perceptions may not be as pronounced as one might expect from the work of Veblen or Bourdieu. For both of these theorists, the process of consumption involved the association of cultural values based on social class. While there is ample evidence that food secure and food insecure individuals come from different social classes, data collected in this study indicate that, at least in terms of perception of food retailers, values associated with retailers tends to be similar.

Does this represent a broader social breakdown in class difference in consumption? This is hardly the case since, as discussed in the previous chapter, class, at least as evident through income and education, appeared as one of the most significant factors influencing food security status. Rather it points to the fact that, at least in terms of food shopping, class has relatively little influence on store perception. That being said, class does have an influence on food security and food purchasing behaviors.

Analysis of the different shopping behaviors of food secure and insecure individuals indicates that food system structure clearly places constraints on the shopping decisions made by both food secure and insecure individuals, with the latter demonstrating a limited ability to negotiate financial constraints, but often doing so at the

expense of meeting desires for food quality. Despite these apparent similarities between the two groups, examination of shopping behavior patterns showed more significant differences. While both groups did more of their food purchasing from supermarkets, food insecure individuals had a greater propensity to also purchase food from low cost retailers such as Wal-Mart or Save-a-lot or from sources such as convenience stores that do not necessarily have lower prices, but are used due to perceived convenience (location and proximity).

The implications of this difference in behavior are significant when related to the difference in perception of food retailers. For instance, Save-a-lot and Wal-Mart were perceived as desirable primarily because of their low prices, not because of food quality or variety. Yet a disproportionate number of food insecure individuals tend to frequent these stores. This suggests that the decision that food insecure individuals are making to shop at these sources involves the all too necessary choice of forgoing desired food quality or selection in order to meet a budget. While this likely comes as no great surprise, it represents that any breakdown in class differences in consumption is still very much limited to basic financial differences.

So, while our two groups demonstrate some convergence on an ideological level, there is also divergence at the behavioral level. In a sense, this points to a materialist explanation for food insecurity and hunger rather than an ideological one. Food insecurity does not appear to stem from cultural preferences that are part of class culture, but instead food insecure people share similar values as those who are food secure. The difference comes when we look at the abilities to act on those values. The implications of this are significant for practitioners who seek solutions to nutritional problems

associated with poverty through education. Based on this study, the benefits of educational programs that seek to alter how those who are food insecure perceive and negotiate their food retail environment are likely to have only limited success. Food insecure individuals already demonstrate rational actions to both minimize food costs while trying to maximize food quality and reliability of access. The problem is that they have only limited resources to work with, which limits their range of options.

How do we know that the behavior of food insecure households represents structural constraints by the food system? In Chapter Four, I demonstrated that food insecurity is the result of larger structures of inequality, primarily class. In the first part of this chapter, I demonstrated that cultural differences, at least in relation to perception of food retailers, did not differ significantly between food secure and food insecure households. Finally, I showed that, despite the similarity of perception, the two groups differed in their shopping behaviors. The divergence in behaviors given a confluence in perception indicates that there is a non-cultural factor that is limiting the behavior of the food insecure group. What is limiting the behavior of the food insecure group? Is that limiting factor an element of the structure of the conventional food system?

In the next chapter I will answer this question by examining one characteristic of the food system related to problems with food access which has begun to receive attention by some scholars—space. As I have explained, the evolution of the modern food system is characterized by increasingly large food retailers. In order to find space for these large stores, food retailers have situated stores at the periphery of cities. The growth of these large retailers has met the needs of an increasingly automobile oriented society as well as the expansion of suburbs. The continued movement of these stores to

the outer fringes of residential areas, and in some cases the decline of stores still located in inner cities, has led to greater spatial inequality in terms of resources required to access food retailers. Now, as greater economies of scale are found in superstores, certain segments of the population must either make due with limited selection (and at times, higher prices), from small grocers in close proximity or must allocate scare financial and time resources to leaving the neighborhood to find food.

CHAPTER SIX

SPACE AND FOOD DESERTS

In the last chapter I demonstrated that food insecure and food secure households

perceive food retailers very similarly. Based on twelve different retailer criteria which

were applied to eleven different retailers, I found very little difference in the perceptions

of the two groups. Furthermore, qualitative data suggested that food insecure and secure

households have many of the same desires for healthy, affordable, high quality food.

Despite these shared perceptions, households often deviated in terms of the food retailers

that were selected (Sam's, Walmart, Apple, Sav a Lot). In this chapter, I will examine

the role of space, specifically distance, in determining the differing behaviors of food

secure and insecure households. As discussed in Chapter Two, space has started to

receive more attention in sociology and, particularly with the evolution of the food desert

concept in the 1990's, many scholars have suggested that distance has a significant role

in determining food insecurity. The distribution of food retailers has certainly changed

over time as the commercial food retail system has evolved. I would now like to examine

the extent to which spatial distribution, as a characteristic of the commercial food system,

influences the behaviors of food secure and insecure households.

Earlier I highlighted the fact that modern food retailing is increasingly dominated

by large retailers, often with a supercenter format. These supercenters, and even large

supermarkets, are typically located in suburban areas or urban edges where large tracks of

land are readily available and affluent consumers are in close proximity. This has led to

the decline in small grocers which once served inner cities. A similar spatial pattern of

food retailers is evident in the neighborhood examined in this study (Figure 14).
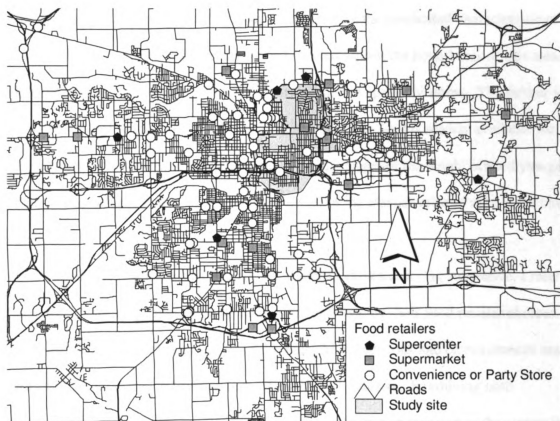
Figure 14: Distribution of convenience and party stores, supermarkets, and supercenters within and around the study site

The food retailers located within the neighborhood consist primarily of small convenience stores and one, relatively small, conventional supermarket in the middle. An additional supermarket lies at its eastern edge. A Kroger lies to its north east. The closest supercenters to the neighborhood is a Sam's Club, which is a membership based bulk buy store and a Meijer, both located at the north side of the neighborhood. Notably, according to the US Census, the northern part of the neighborhood has significantly higher median incomes than the southern parts. It is also worth pointing out that the western edge of the neighborhood is closest to the center of the city and also the area farthest from supermarkets and supercenters.

These patterns indicate a food retail system with a spatial distribution similar to the national trends discussed in Chapter Two. Despite the residential characteristic of the neighborhood, there are many food retailers located within the boundaries of this area. However, these tend to consist of small convenience or specialty stores. The farther you get from the residential areas, and consequently the more land is readily available for development, the larger the food retailers. So at the edges of the neighborhood you get larger supermarkets, and finally, to the northwest in the least developed area is the closest supercenter.

Space has both a subjective and an objective dimension. By subjective, I refer to the extent to which people perceive distance as influencing their food retailer choices. By objective, I refer to the extent to which household decisions and circumstances are related to actual distance from various types of food retailers. Examining both dimensions is important in reconciling objective distance as a measure of the structure of the food system and subjective distance as a measure of household agency in the context of that structure.

Analysis and Results

Perceptions of Space

In order to assess the subjective element of space in relation to store choice, I focused on a series of survey questions that related to the influence of distance on store choice. Specifically, I looked at the extent to which respondents indicated that distance from their home, work, bus stops, and other stores dictated where they purchased food. This would indicate the extent to which distance was seen as relevant to choice of store.

While one could argue that any store where food is purchased is "close enough," it is important to understand whether and how distance is consciously considered in an area with many different food retailers. The question is not whether distance matters, but why and to what extent it matters.

Qualitative Results

Eight of the nine food insecure respondents I interviewed indicated that distance was a factor that influenced at least some of their store choices. Distance was an even bigger problem for two of the respondents who either did not have an automobile at the time of the interview or were having significant mechanical problems with their cars. As one respondent explained, "Mostly it's because it's on the bus line. I can get there. Or walk, even." One interviewee did not have a driver's license, which required that s/he rely on rides from family members to get to the store. While s/he had several older children that made this relatively easy, being the primary food preparer made distance to stores a meaningful factor. Even for those with access to reliable transportation, distance was often a concern that determined where they went shopping and limiting access to some of their preferred food retailers. One person explained, "Kroger's would usually be the third place, and Wal-Mart would be the last place. Like I said, but that's because of convenience. Wal-Mart's way out in Charlotte."

Food secure individuals also voiced concern with the influence of distance on their store choices. This was not as big an issue, as only three of the seven indicated that distance was a primary factor. While none of these individuals faced being without an automobile, the time required to travel to different stores had to be carefully negotiated

against other interests, such as selection. One respondent indicated that s/he was at times unable to get vegetables from the preferred source due to its distance: "I mean that would be our preferred place to get the vegetables and stuff, it's just the convenience sometimes of Shop-rite, or if you need other things too; that are more paper products and ice cream and things like that."

While interviews indicated that distance was an issue, if not a problem, for both food secure and insecure households, it appeared to be more of an issue for food insecure households. First is the simple issue of having transportation to get to the store. Second is the concern of getting to the store that is preferred. Finally, several food insecure individuals indicated that seeking out discount stores or going to several different stores for select sale items were important cost management strategies. Both of these strategies were limited by factors related to distance. Food secure households, on the other hand, simply referred to distance as an issue of convenience that influenced how they spent their time or the selection of foods that they were able to get on short notice.

Quantitative Results

As part of the survey, respondents were asked whether distance to home, work, other stores, and bus stops influenced their decisions to shop at a particular location. Distance to home was clearly the most important thing respondents considered (89% of the sample indicated that distance to home influenced their decision to shop at least one store in the past month). Distance to work was the second most important (30%), followed by distance to other stores (24%). Distance of stores to bus stops influenced store choice for less than 6% of the sample in the last 30 days.

The importance of distance to home was also evident in primary store choice (75% of respondents indicated that this was one of the factors behind their decision to obtain food from their primary retailer), while distance to work and other stores was only relevant for 17% and 16% of the sample respectively, and distance to bus stops was important to 5% of the sample. Interestingly, despite this apparent emphasis on selecting a primary retailer based on distance to home, less than 9% of the sample actually shopped at the food retailer that was closest to their home. This indicates that proximity is clearly being balanced against other factors and is not the only concern influencing primary store choice.

A t-test comparison between food insecure and food secure households revealed no statistically significant difference related to distance to home, work, other stores, or bus stops on their decision to shop at their primary food retailer. These results came as a surprise as it was anticipated that food insecure households, which suffer from some level of resource scarcity such as the time and gas that are required to travel greater distances. Given the number of respondents who indicated that they did not have an automobile, it came as even more of a surprise to find no difference between the two groups.

Behaviors in space

Given the discrepancy between apparent differences in the perceived importance of distance in interviews and the perceived importance of distance in the survey, it is worth considering space from an objective perspective. One of the underlying assumptions of the food desert literature is that physical distance, regardless of subjective perception, is a factor that contributes to food security and makes it difficult for

disadvantaged consumers to purchase food. In order to assess distance as an objective measure, I used GIS (ESRI ArcView 3.1a) to map the location of survey respondents in relation to neighborhood food retailers. Since addresses were listed on the survey form, it was possible to geocode[6] nearly all of the respondents. In three cases, respondents removed the address label on the returned survey so coding was not possible. Geocoding was conducted using an automated service provided by Tele Atlas North America, Inc. This service was unable to match coordinates for 11 of the addresses, leaving a total of 289 responses which were spatially analyzed.

Since I was interested in the distance between consumers and food retailers, a list was compiled of all food retailers within a five mile radius of the neighborhood. Names and addresses of retailers were collected from two internet business databases: www.yellowpages.com and www.mapsonus.com. Additional retailers outside the five-mile radius were added to the list if they were mentioned either in the qualitative interviews or listed in surveys. The websites for large retailers such as Kroger, Meijer, L&L, and other supermarkets were also checked to insure all locations were included in the list. Businesses were categorized into supermarkets, grocery stores, convenience/party stores, specialty stores, and other. Supermarkets included all large chain food retailers such as Kroger and Meijer. Grocery stores included smaller, generally independent food retailers. Convenience and party stores consisted of stores such as Quality Dairy, liquor stores, and gas station based food retailers where food is available but selection is extremely limited. Specialty stores included both health food stores and stores specializing in particular ethnic foods. Only one store was not included

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[6] Geocoding refers to the process through which a street address is converted into a specific geographic location. Most commonly this involves associating the address with a set of latitude and longitude coordinates.

in the above categories—Sam's Club, a membership based warehouse store. Later examination of retailer patterns led to a distinction being drawn between supermarkets, which primarily sold food, and supercenters, which sold a combination of food and other items. The location of all stores were geocoded using the same process as the surveys.

Two sets of spatial analyses were conducted. First, the distance between respondents and the closest food retailer were examined. This distance was assessed using an ArcView extension that automatically calculated the distance from each survey respondent to the nearest food retailer (Jenness 2004b). Subsequent comparisons were also made for the distance between survey respondents and the closest of each type of food retailer. Next, the distance between respondents and the food retailer most frequently used was assessed. In this case, a different ArcView extension was used which matched the most frequently shopped at store to the location of the survey respondent (Jenness 2004a).

In both cases, straight line distances were measured, not actual driving distances. Therefore, distances do not represent actual distance one would have to travel to a food retailer. This straight line measurement is similar to the methods used to assess food deserts which involve the creation of buffers surrounding retailers to look for residential areas that are not close to any food retailers. In this case, however, I was able to quantify actual distances, rather than only identifying gaps.

In general I found that survey respondents all live in very close proximity to food retailers. The average distance from a food retailer to respondents was less than a third of a mile. Some residents lived much closer and no respondents lived more than ¾ of a mile from a food retailer. Many of the stores in close proximity to respondents were not large

supermarkets. For 49% of the sample, the closest place was a convenience or party store, while for 32% the closest food retailer was a grocer (this can be accounted for by the presence of a single small grocer located in the center of the neighborhood), and 7.2% were closest to two small ethnic grocers. Notably, the distance that respondents did travel to shop for food was over twice the necessary distance with the average commute to the primary food retailer being about two miles.

One of the central arguments of the food desert literature is that distance from a food retailer increases the likelihood that a household will be food insecure, at least for disadvantaged consumers. A t-test revealed a statistically significant difference ($p<.05$) between the distance from food insecure and food secure households and the closest food retailer (Table 10). The difference was very small with food insecure households located only 0.05 miles farther from the closest retailer than food secure households.

Since the vast majority of food retailers in the neighborhood and surrounding area were convenience or party stores and the majority of respondents indicated that supermarkets were their primary food retailer, additional comparisons were made between the average distances to supermarkets and convenience stores (Table 10). Again, a t-test revealed a statistically significant difference in the distance to both supermarkets ($p<.01$) and convenience stores ($p<.01$). Food insecure households were located an average of 0.08 miles closer to convenience stores and 0.22 miles farther from the nearest supermarket. While these straight line distances appear rather small, they translate into much larger distances that people must travel following roads and sidewalks to reach the nearest food retailer.

Table 10. Average distance in miles from food secure and food insecure households to different food retailers

	Food secure	Food insecure
Distance to the most frequently used food retailer*	2.04	2.25
Distance to the closest supermarket*	0.71	0.93
Distance to the closest convenience or party store*	0.38	0.30
Distance to the closest food retailer*	0.30	0.25

* Indicates a statistically significant difference between groups (p<0.05)

Additional analysis was conducted using one-way ANOVA in order to assess whether distance was related to food security with hunger in addition to just food insecurity. In this case, relationships were found with proximity to convenience stores and supermarkets (p<.01), but not to the closest food retailer. Post-hoc testing was conducted using the Least Significant Difference (LSD) test. Post-hoc testing of the distances to supermarkets revealed significant differences between those who were food secure and those who were food secure with hunger, but not in other cases. This indicates that distance makes a particular difference for those suffering from very low food security. Post-hoc testing of distances to convenience and party stores revealed no difference between food insecure and food insecure with hunger respondents, but difference between both levels of food insecure and those that were food secure.

The influence of convenience stores was further apparent in the distances from households to convenience stores. A t-test revealed a statistically significant difference between the distance from food secure and food insecure households. In this case, food insecure households tend to be located, on average, closer to convenience stores than food secure households. This suggests that convenience stores are more likely to be located in areas of high food insecurity. Despite the high density of convenience stores in the area, relatively few respondents identified this type of store as being a primary retailer. It is reasonable to suggest that few consumers are able to rely solely on the

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selection available from these retailers. Therefore, additional spatial analysis was conducted looking specifically at supermarkets.

Notably, only four different retailers were represented in a spatial analysis of nearby supermarkets. For 72% of the sample, Apple Market was the closest supermarket, followed by two different Kroger stores (16% -- eastern border; 7% northeast of the study site), and a Meijer (5%) Less than 1% of the sample was located in close proximity to a Shop Rite located in the southeast of the study site. There was no statistically significant difference between food security status and proximity to any of these retailers. This was somewhat unexpected due to census data that indicate higher income and education levels at the northern edge of the study site. However, due to the central location of the Apple Market, food security levels as related to proximity to different supermarkets might not be readily apparent since this single store may have obscured the influence of distance that might be apparent across a larger space.

The next set of analyses involved comparing the distances from respondents' homes to the food retailer where food was most frequently purchased. This revealed two trends. First of all, there was a statistically significant difference between the two groups in terms of distance to their primary food retailers with food insecure households being located, on average, farther than food secure households (the difference was 0.93 miles for food insecure respondents and 0.7 miles for secure respondents). More notably, food insecure individuals appeared to travel farther than those who were food secure to their primary retailer. In this case, food insecure households were located an average of 2.3 miles from their most frequently used food retailer while food secure households were located only 1.8 miles away.

This difference in behavior is particularly notable since analysis of survey data indicated no difference between the two groups' spatial perception as measured by how the groups thought about distance from home into their shopping decisions. This difference in behavior, while no doubt influenced in part by the fact that they lived on average slightly farther from available food retailers, is nonetheless interesting given that there was no apparent difference between the groups in terms of how distance from home influenced primary store choice. Again, this seems to reiterate the fact that perception of distance as a factor influencing store choice was the same for each group; however, how each group negotiated the distance to stores differed with food insecure households traveling farther.

This suggests that cultural preferences or perceptions related to class are not influencing the importance of distance on store choice. At the same time, food insecure households are driving farther in order to access their preferred stores and therefore suffering an additional cost due to the location of food retailers. If agency represents a measure of the extent to which a structure serves the preferences of a group, it appears that, at least in terms of physical distribution, food secure households are being better served. This is despite survey results that indicate a similar set of interests between the two groups.

While a t-test revealed no statistically significant difference between the average distances from primary food retailer to home for both groups, there was a moderate negative correlation (-.212) between the proximity to the closest food retailer and the distance traveled to the primary food retailer. This suggests that the closer a consumer lived to a food retailer, the farther that they were likely to travel to a retailer. While these

results contradict the trends suggested by the food desert literature, this can be explained in part by the confounding factor of the convenience and party stores. In fact, the closest food retailer to over half of the sample consisted of a convenience or party store. With 62 different convenience or party stores in the surrounding area and ten stores located within the neighborhood this comes as no surprise.

To control for the influence of convenience stores, correlations between distance to supermarkets and distance to primary retailer were also assessed. There is a moderate positive correlation (.186) between distance from a supermarket and the distance traveled to the primary food retailer. Interestingly, when the sample was divided into food secure and food insecure groups, the correlation continued to be statistically significant. However, the distance traveled by food secure households to the primary food retailer was influenced more by proximity to a supermarket (.146) than food insecure households (.298). This suggests a few things. First, there is a relationship between space and food security when looking only at supermarkets. Second, for food secure and food insecure households, distance influences store choice; however, for food insecure households, proximity has a much stronger influence.

Despite this apparent relationship between distance and supermarket selection, it is important to keep in mind that most residents do not shop at the supermarket that is closest to them. In fact, only 15% of the sample did most of their shopping at the closest supermarket. Furthermore, food insecure households were no more likely than food secure households to shop at the closest supermarket. This suggests that while distance does play a significant role in food retailer selection, it is not necessarily the force that is driving households, food insecure or otherwise, to the closest supermarket. In other

words, distance to food retailers influences where people shop, but being the closest retailer may be insufficient to cause people to shop there.

Conclusions

By utilizing GIS to examine the spatial distribution of consumer responses, I was able to look at the role that space plays on consumer behavior and perception. In the previous chapter it was demonstrated that food secure and food insecure households tend to have similar perceptions of food retailers, though behavior in relation to food retailers differed, and it is not clear at this point what factors may be influencing store choice. Changes in the structure of food retailers has led to growth in areas increasingly far from residential areas and food desert research suggests that this has led to problems among disadvantaged populations in accessing food. The spatial distribution of food retailers in this study site has similar patterns.

Does this mean that distance limits the behavior of food insecure households? The results of this study demonstrate trends very similar to those found in the previous chapter. Both food secure and insecure households indicated similar perceptions of space. Specifically, neither group was more likely to indicate that distance from home, work, nor bus stops influenced their store choice. This was a bit of a contrast with comments made during interviews that suggested that distance may be a factor limiting shopping habits, particularly within food insecure households. Furthermore, research has suggested that not owning a car can be a significantly limiting factor to food purchasing, which suggests that distance may be more of an issue for some segments of the population. It is not clear from this research why this might be the case. Possible

explanations might include public transportation, the availability of convenience stores, or the ability to share transportation with other households. Even though it was not a factor predictive of food insecurity, it was expected that it would at least have an influence on store choice.

Further analysis indicated that of those without cars only 26% actually shop at the store closest to them. While this is higher than the sample percentage of 15%, it is still not as high as food desert research might suggest. Even the distance that households without cars were located from their most frequently used food source did not appear to differ significantly from that of food secure households. Those without cars were on average 2.2 miles from their primary food retailer, which is very close to the aggregate value for food insecure populations of 2.3 miles. This suggests that the influence of having a car, even in a society so oriented around the automobile as the US, might not be as great as previously thought. Even those without cars who were interviewed noted several strategies to get to the store, primarily relying on rides from other people or using the bus, so it is possible that households without cars are simply finding other ways to get to the store. Proximity to a bus stop might matter more than whether you need to ride on the bus for another few minutes and/or a few more miles to your preferred store.

It is possible that while distance was equally important for both groups, the way in which distance was important may differ in a fashion not detected by the survey. For instance, during one interview a food secure individual explained that "100%" of his/her shopping was based on distance. However, it was not because s/he lacked transportation, but rather because of the time required to travel farther. Jabs and Devine (2006) cite time as a significant factor that influences food consumption practices. These authors also

note that time can be an even more significant constraint for low-income households who are unable to "buy time" by paying others to prepare food, clean, or engage in other activities in exchange. Several food insecure individuals mentioned during interviews that distance did influence their store choice, especially in the context of transportation problems or cost saving strategies that required trips to several different stores. Therefore, while survey results indicated that the importance of distance on store choice was the same for each group, it seems likely that the reasons for, and consequences of, distance differed between groups, even if it was not apparent from the survey.

This is further supported by results that suggest a relationship between food security status and proximity to food retailers. Food insecure households were located slightly farther from supermarkets while slightly closer to convenience stores. The farther one was located from a supermarket and the closer to a convenience store, the farther a respondent was likely to go to shop.

Perhaps it comes as no surprise that distance to a supermarket correlates with distance traveled to the most frequently used store. However, when we also consider that food insecure households tend to be located farther from supermarkets we see clear overlaps between the structure of the food system and the differing agency of consumers. Is distance the only factor that contributes to food security? Certainly not, and when distance to supermarkets and distance to nearest food retailer were added to the logistic regression models, they were not found to be statistically significant predictors of food security. However, the point of the food desert literature has never been to suggest that distance from food retailers is the only factor leading to food insecurity. Rather, as our

results also suggest, the point is that distance can create an additional burden on segments of the population that are already struggling to obtain food.

Distance to a supermarket itself might not be enough to dictate whether a household is food secure or insecure. However, this does not mean that distance fails to influence food purchasing. Our results indicate that it might influence whether a household is able to manage that insecurity without going hungry. Research into the elements of the food system that weigh disproportionately on disadvantaged segments of the population provides an important insight into the structural constraints that many people face. Food desert research has certainly pointed to the negative impacts of a food system that is migrating farther and farther from city centers. It will be important that this research not limit itself solely to issues of distance, however, and begin also to look for other factors that may be constraining choice or creating a burden on those struggling to obtain food for themselves and their families.

CHAPTER SEVEN

CONCLUSION

Agency Revisited

Hunger and food are both problematic in the US, despite the fact that there are nearly 4,000 calories of food available per person (Putnam et al. 2002). The problem is not an issue of quantity, but one of distribution. Increasingly chronic health problems from heart disease and cancer to diabetes and obesity are being related to nutrition. While in the past, food consumption decisions have been seen as individual matters, recent developments in fields such as community food security and food deserts have begun to examine the relationship between hunger and nutritional inequity and the structure of the modern food system. While income plays a critical role, food desert scholars have suggested that other characteristics of the food system, in particular the spatial distribution of food retailers, have placed a disproportionate burden on those who are already struggling to reliably obtain nutritious food.

This research project does more than simply identifying the factors that contribute to food insecurity and hunger. At its foundation, it examines the extent to which the modern food system is structured in a fashion that precludes certain segments of the population. Some scholars hail the era of postmodernism and the reflexive consumer. But many have forgotten that the same market forces that have, at least to some extent, empowered consumers has certainly not empowered all. The structure of the food system is influenced by the changing tastes and interests of buyers—hence the rise of organic

food and 100 calorie snack-packs to meet new environmental and health concerns. However, is this really based on the interests of *all* consumers?

This is a question with which sociologists are still struggling to answer. To what extent do consumers influence the structure of the system, and to what extent are consumers simply selecting from what has been made available to them? I suggested in Chapter Two that to understand the position of the consumer vis-à-vis the structure of the food system requires an appreciation for the varied levels of agency among consumers. Since we exist at the intersection of a variety of social structures that influence our tastes and desires, the issue of differential agency really addresses the extent to which consumers are able to align the structure of the food system with their interests as related to other social structures.

Food security is not only a meaningful measure of a household's ability to purchase food—it also represents a measure of agency vis-à-vis the food system. When a household begins skipping meals, cutting portion sizes, or simply going hungry on a regular basis, it seems realistic to conclude that household's interests are not aligned with the structure of the food system. Certainly money plays a large part in this, and a food system oriented primarily along market lines is going to exclude those with insufficient funds. But is this the only way that the food system excludes people?

The expansion of food retailers from small, downtown grocery stores to today's suburban superstores has also involved a gradual "migration" of food retailers to the edges of communities where large tracks of land are cheap and easy to obtain. At worst this has involved the closing of small grocers in inner cities and at best it has simply meant the wide selection and low prices of supermarkets and superstores has never

developed in urban areas. Urban flight and the common availability of automobiles have meant this movement has had little impact on the ability of retailers to attract sufficient consumers to remain economically viable. On the other hand, it has certainly changed the physical structure of the retail landscape. In the case of the neighborhood examined in this study, it has led to one area with a heavy concentration of convenience and party stores, but relatively far from supermarkets and superstores in an urban setting.

The influence of distance on food security status was not apparent from this research. This suggests the concept of food deserts requires careful consideration and should not be assessed based only on retailer location, without consideration for actual consumer behavior and different types of food retailers. Nonetheless, distance did appear to be related to food purchasing patterns. Perhaps most notable was the fact that distance from a supermarket appeared to correlate with whether a household was food insecure or food insecure with hunger. Does this mean that the increased distance created the hunger? It would be premature to draw such simplistic conclusions. However, qualitative interviews as well as survey results indicated that distance was something that respondents considered when deciding where to shop and, even if it was not the primary factor contributing to a household's food security status, it certainly represents an additional burden on a household with limited resources.

Korczynski and Ott (2006:912) offer a meaningful, and appropriate, metaphor for the question of agency and structure vis-à-vis the food system. They offer the menu as a heuristic device stating that "the menu operates as a key form of mediation between enchanting myths of individual sovereignty and structures of power. It acts as a buffer between the two in such a way as to allow their simultaneous co-existence." Certainly

the idea of a menu offers equal insight into how the structure of the food retail system constrains households while at the same time not completely disempowering them. The structure of the food system presents itself as a menu with a different set of items and a different set of costs for various people depending on their resources and position in relation to food retailers.

Even food insecure households have some choice in their selection from the menu offered by food retailers. Qualitative interviews highlighted the complex strategies that many food insecure households utilized in order to obtain food. Even individuals without cars were able to negotiate rides with friends and family members or use public transportation. A dollar can certainly be stretched through the use of coupons, seeking out sales, or other cost-saving strategies. While such strategies are useful in that they prevent, or at least reduce, problems due to insufficient food, I would note that they still require households to balance one resource in such a fashion that limits their selection. If it is not on sale, on clearance, being sold at a store where a friend is already going, or just plain inexpensive, the item is not on the menu. One interviewee stated, "So you have to choose from this to that, from deodorant to a gallon of milk. What are you going to buy?" Even when hunger is successfully avoided, this does not mean that there are not costs involved.

Similarly, distance represents different cost to different people. The movement of large food retailers to the suburbs or farther has not necessarily put them out of reach of disadvantaged consumers. However, it might act as another factor that limits what is available on the menu. For a disadvantaged household the financial cost of going farther for food must be balanced against the price of the items on sale. Several interview

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respondents stated that they were willing to drive to relatively distant discount stores or visit multiple stores for lower priced items. Time spent driving is time that could have been spent clipping coupons, preserving food, or engaged in other activities. Money spent on gas or a bus ticket is also money not being spent on food. The consequence of living farther from supermarkets might not be felt directly through food insecurity, but it acts as another factor that must be negotiated against other scarce resources. Survey results indicated that distance was the primary reason people go to convenience stores and nearly four times as many food insecure than food secure households indicated that they shopped at convenience stores more frequently than any other store.

Keep in mind that food insecure households tend to be located farther from supermarkets than food secure households. This does not suggest that increased distance leads to food insecurity. Only a longitudinal study would be able to determine that causation, and even the data point to a variety of other factors, such as income, education, and disability status, which are more likely to influence food insecurity. Nonetheless, the difference in distance from supermarkets points to the fact that food insecure households may have an increased resource strain placed on them due to the spatial distribution of food retailers.

It is worth reiterating that the apparent difference in behavior of food secure and food insecure households did not appear to stem from cultural differences. This point is important as, building on Bourdieu, a great deal of scholars point to class culture as influencing taste. While this may be at work in some circumstances, class culture did not appear to dictate the store choices of respondents in this neighborhood—even though incomes ranged from over $80,000 per year to below $10,000. In fact, respondents

appeared to perceive stores similarly in terms of cost, selection, quality, or other criteria. Both food secure and food insecure individuals who were interviewed indicated the need to balance food quality against cost. For those who were food insecure, quality was often sacrificed for cost. This trend has been found in other areas (Caraher et al. 1998).

Food insecure households are not powerless in the context of the food system. Nor, however, are they able to influence its structure to meet their needs to the same extent as others. This does not stem from a lack of interest in being able to afford high quality food as quite the opposite was apparent in this study. Lack of knowledge was not a significant problem. The problem is simply that the price of the food is too high and, as our assessment of spatial relations indicates, the distance required to get that food only drives the price higher. The total cost that food insecure households must pay to purchase food appears to be higher than food secure households, if not in real terms than definitely in relative ones. Consider the greater distance from primary food retailers to food insecure households and the effective, but time and resource costly, strategies of sale seeking and driving out of the way to discount grocers.

The lack of apparent influence of class culture on food retailer selection points to a rather singular explanation as to why, in Figure 5, food insecure households are situated at the bottom of the chart, with less apparent agency, and food secure households are situated at the top, with greater apparent agency. The conventional food system caters to these, relatively affluent, consumers. While it makes rational economic sense for the corporations, the consequences of this on disadvantaged consumers is often unconsidered. In many cases, the food system simply diversifies to provide consumers with a wide variety of products that meet the demands of a variety of individuals. So we

do see the growth of organic, specialty, and health foods in response to an increasingly reflexive population. Of course, these consumers may also benefit indirectly as large superstores make economically rational decisions that also happen to lead to locating stores in convenient proximity to food secure households.

At the same time, however, we see food insecure households having relatively more access to the massified elements of the food system. Consider the lack of food selection in a convenience store or discount grocer and this points to the different ways in which the food system treats different segments of the population. Highly processed, mass produced products with lengthy shelf-lives tend to be the norm. I have yet to see hand-crafted goat cheese or greenhouse tomatoes at a typical party store.

This kind of market behavior is economically rational for food retailers and I would not suggest that selling goat cheese at a 7-11 would somehow alleviate food insecurity. However, it was apparent that food insecure households did have a genuine interest in conveniently obtaining nutritious food at a cost they could afford. This is not something that they are finding at convenience stores and it is something that requires the use of scarce resources to obtain elsewhere. And, of course, given the purchasing power of most food insecure households compared to food secure households, providing convenient sources for affordable, nutritious food will always take second place to overpriced packages of dehydrated macaroni and cheese—a product readily available in most convenience stores.

In short, it has been indicated that there is a failure of the conventional food system to readily provide sufficient, affordable food to large segments of the neighborhood. This failure does not stem from a lack of demand due to a difference in

cultural preferences related to class. This failure stems from the unequal distribution of resources that not only leaves a segment of the population struggling to make ends meet, but also has them paying a higher price for their food (either literally or by requiring them to travel farther to obtain the food that they need and want). Ironically, the very segment of the population least able to cope with the burden of the health consequences of nutritional inequity is the same one for whom avoiding nutritional inequity requires overcoming the most obstacles.

There is, however, hope. There have been new efforts to change food availability in the neighborhood which, in many cases, involve drawing upon resources and social structures that are not part of the conventional food system. This highlights that limited agency in one area does not preclude agency in other arenas. Generated from the same part of the neighborhood where food problems are most pronounced is a small neighborhood center that has for the last few years begun to address the problem of food access. As I will discuss in the next section, this neighborhood center has managed to tap into national social movements, as well as state level resources, in order to initiate programs to alleviate food security issues. Much as the structure of the food system has created a problem associated with space, this neighborhood center has turned to space, and place, as part of the solution to the problem.

Resistance Movements and Alternative Food Sources

Limited or constrained agency in the context of the conventional food system does not inevitably lead to food insecurity. In this neighborhood, a local center made up of area residents, some of whom are food insecure, has been working to make this the

case by increasing the availability of healthy food in the neighborhood. Increased concern that the neighborhood food system was not adequately meeting the needs of all residents stimulated the Allen Neighborhood Center to begin organizing around the topic of food and in the past several years they have expanded their activities to make food a part of many of their activities.

This group currently has a spectrum of food related programs, some of which are market oriented and some which rely on donations. On a weekly basis, free bread is available to neighborhood residents and, when available, other food, such as fresh vegetables, is also provided. This program is critical for many residents, as it not only provides food, but it puts disadvantaged residents in contact with other resources available at the neighborhood center, such as health education programs. Center staff estimates that between 80 to over 100 families take advantage of this program on a weekly basis. For the past few years, the center has worked with a group of children to grow food in a community garden, which creates a new source of fresh vegetable within the neighborhood and teaches children important skills. Recently, some children have also sold the produce they have grown in the neighborhood's farmers' market.

The farmers' market, which operates in a parking lot adjacent to the neighborhood center, was started three years ago with only a handful of farmers. The market was initiated by center staff who were aware that fresh produce was not readily available in the neighborhood. Bringing fresh produce directly into the neighborhood was done to reduce the distance people had to travel to obtain food. At the same time, by holding a farmers' market where food was purchased directly from farmers, the cost of the produce was held down. Further innovations, such as creating a system to accept food stamps,

have made the farmers' market even more accessible to a variety of households. After only a couple years of operation, they estimate 500 people were served each week during the 2006 season. More recently, the center has obtained funds and the use of a local park to develop an urban greenhouse project. They anticipate using the greenhouse as an education site as well as a location to help neighborhood residents grow food all year. Construction of this greenhouse was completed in the summer of 2007.

The efforts of the neighborhood center point to potential solutions to the problem of food insecurity. If food insecure residents are not being fully served by the conventional food system, it seems logical that they should seek and create other social structures to meet their needs. Just because a group lacks agency in the context of one structure (the conventional food system) does not preclude their agency in the context of other structures (the alternative agriculture movement). In some cases these solutions involve creating new connections with other people who feel underserved by the food system—which is the case with the farmers' market that is helping small farmers maintain their economic viability in an era of large agribusiness dominance. In other cases, solutions involve simply shifting community resources to help those who are at greatest risk—such as the free bread program. Finally, the solutions might simply empower residents to circumvent the conventional food system entirely—such as with the children's garden program and the urban greenhouse.

In fact, the success of the neighborhood center in creating alternative sources for food has hinged significantly on its ability to align its activities away from the conventional food system, which is relatively resistant to change, including changes meant to support food insecure households, though many of the large supermarkets have

bought into various aspects of alternative food systems (Belasco 1993). The center, however, was able to use the alternative food movement in strategic ways. Despite its history of providing free food to low-income residents and engagement in health outreach programs, the neighborhood center had relatively little experience working in the area of food activism when it began expanding its food related activities. The rapid growth of programs at the center took place in large part because it was able to access political, expert, and economic resources that were related to an associated social movement. Entering into such relationships was based on the ability of the center to successfully negotiate its own interests with those of the larger social movement. By drawing on the rhetoric of the larger social movement, the center has been able to mobilize resources and gain legitimacy in new ways.

The alternative agriculture movement is only loosely defined as a social movement and represents a set of values related to sustainable agriculture, supporting small and family farmers, localizing production, organic production, fair trade labeling, and community food security. In general, activities by organizations in this movement have involved farmers' markets, Community Supported Agriculture groups (CSA), food policy councils, food system advocacy groups, and community gardening activities and efforts (Koc and Dahlberg 1999: 113). The movement is largely defined by its resistance to problems associated with the conventional food system related to issues of food quality and safety, environmental degradation, and community decline. Community food security represents one element of this alternative agriculture movement.

Rochon (1998) has argued that a true social movement pursues both political and social change as part of its agenda, and the success of the movement can be recognized

through changing cultural values. Certainly the success of the alternative agriculture movement in enacting political change is apparent in policies such as the USDA organic program (imperfect as it may be) as well as the development of USDA supported community food security program. The growth of organic and local food in both conventional food retail outlets as well as outlets such as community supported farms and farmers markets suggests that the movement is making inroads along social lines also. Rochon stated that cultural values were more difficult to change; however, by building on the successes of other social movements such as the environmental movement and in the context of other social changes, we can see new levels of concern with the structure of the agrifood system.

While it seems clear that the alternative agricultural movement is influencing a certain level of social change, to what extent is the center part of this movement? Certainly, the activities that the center has been engaged in are reflective of those promoted by the movement. The center has held a farmers' market, hosted a CSA, facilitated a youth group community garden, sponsored a harvest festival, and is working to create an urban greenhouse in a nearby city park. The center has worked with local, organic farmers to develop ways to bring fresh vegetables into the city in a way that benefits both farmers and neighborhood residents. The center has also been developing programs to increase the self-sufficiency of neighborhood residents by looking for ways that they can grow food in their own neighborhood. All of these activities speak to a high degree of collaboration between the center and the alternative agriculture movement.

Understanding the activities of the center in the context of the larger alternative agriculture movement is important. This is because the activities of the center are to a

significant extent shaped by the trajectory of the larger movement. Farmers' markets and CSAs, for example, have already gained legitimacy in the alternative food movement, as well as in the broader public arena. Engaging in these activities is more likely to bring social legitimacy to the center. This legitimacy provides the center with access to the entire repertoire of research and rationales that the movement has already generated. Such research and rhetoric has proved useful in grant writing and meeting with city officials, where center staff members have drawn from the pre-existing set of arguments generated by the alternative agriculture movement in order to make their own case. In addition to facilitating resource acquisition in other areas, the alternative agriculture movement has itself served as a resource. Other programs and organizations have provided the center with program ideas as well as information about how to implement particular programs.

Despite this beneficial association with the alternative agricultural movement, the center is not simply another element of the movement, as the agendas are not the same. Drawing from Rochon (1998), I would suggest that despite the ideological alliance between the center and the alternative agriculture movement, they each stem from a different set of critical communities and, consequently, operate with a different set of concerns and identified problems. The alternative agriculture movement is driven to remedy concerns with the conventional agrifood systems. The center, on the other hand, is driven to remedy place specific concerns with the neighborhood. This is evident from their website, which states that the center "serves as a hub for neighborhood education and capacity building. We offer activities that promote the health, safety, and stability of families and neighborhoods on the Eastside of Lansing." In short, the mission of the

organization is focused on meeting neighborhood needs—not on promoting widespread

social change. While the alternative agriculture movement represents a fairly typical

example of a New Social Movement in its concern with lifestyle based issues and goals

of social change (Pichardo 1997), the center represents an example of a place-based

movement[7] that is very much grounded in the people and place where it operates.

What does this mean? Well, certainly the alternative agriculture movement

contains within it a set of priorities related to re-embeding people in place, and while the

movement seeks to prioritize place in an *abstract sense*, the center prioritizes *a specific*

place. In the case of food related issues, the interests of the center in representing the

community overlap heavily with that of the alternative agriculture movement and that is

one of the reasons such an alliance has been formed. By looking at some of the

dissimilarities, we can shed some light on where the place-based movement of the center

ends and the alternative agriculture social movement begins.

Perhaps the best example of incongruence between the needs of the center and the

alternative agriculture movement is apparent in the CSA the center has hosted for the past

two years. Despite initial hopes that the CSA would help provide residents with

convenient access to fresh vegetables, the high cost of shares has meant that each year

only a small handful of residents have participated in the program. For the most part the

center has served to benefit affluent CSA members who live outside of the neighborhood,

but find the center a convenient pickup location. At the same time, center resources are

supplementing the running of the CSA by providing space and staff time towards

coordinating share drop off. While association with the CSA has helped further the

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[7] In this case, I am using the term place-based movement to reference collective action by a group working
in the interests of a (virtual or proximal) community.

legitimacy of the organization as well as promoted center activities to those outside of the neighborhood, some concern remains as to the actual benefits of the CSA to the residents whom the center serves.

The place-based orientation of the center is further apparent in the extent to which community organizing and community involvement take place as part of the organization. In particular in the past year, the center has been actively working to involve community residents in the planning and implementation of food programs through the formation of guidance committees related to the farmers' market, CSA, and other food related activities. Even prior to the formation of these committees, the center held several public meetings with the community and conducted a neighborhood wide survey so residents could provide feedback for the center's programs. Again, while the alternative agriculture movement involves a certain amount of grassroots activism, it is largely oriented towards working to mainstream its values. The center, on the other hand, looks to the people in the neighborhood for the values that guide its programs. The alternative agriculture movement contains within it consideration for place as a value. However, my point here is that place, and the specificities of place, play a central role to the center and this distinguishes it as a place based movement which is closely associated with, but not entirely encompassed by, the larger social movement.

The distinction between the alternative agriculture movement and the center as a place based movement helps in furthering our understanding of the ability of place based movements to influence social change at a broader level. Escobar (2001) has suggested that the role of place based movements on influencing larger structures -- globalization in particular -- has remained largely unacknowledged in the literature. He suggests that

these place based movements represent a powerful way through which people are able to defend and construct their own sense of place and remain embedded in place. Understanding how these place-based movements operate, in terms of their collaborations and conflicts with other movements, will help us to understand their role in social change.

Even from the results of this research it appears that the activities of the center may be starting to have an impact on the residents of the neighborhood. Nearly six percent of the sample indicated that they obtained food from the neighborhood farmers' market. Furthermore, both food secure and insecure interviewees spoke very favorably of the farmers' market and felt that it was something that was easily accessible, even to households on limited incomes. As one respondent stated "Oh I loved it the couple of times I've been here, to mingle with the people in the neighborhood and the people that bring their stuff in and see the fresh different things and just talk about stuff."

In many ways, the success of the neighborhood center's programs lies in more than simply making healthy food more accessible to residents. The center has managed to take the space (literally and metaphorically) that has been left by the growth of large supermarkets at its fringes and turn it into something that is filled with people and activities that are genuinely oriented towards community needs and not simply retailer profit. An empty parking lot becomes a farmers' market and an unused park has been turned into a greenhouse. Perhaps even more important, neighborhood residents are finding a locus to collectively reconsider and alter the structure of the food system in their neighborhood.

Limitations of this Research and Future Research

Food retailer selection is only one decision amidst a series that households make regarding food consumption. Since it is the primary vector through which people interact with the food system, stores represent an important site for understanding the relationship between consumer interests and the structure of the food system. That being said, a complete understanding of the differential agency among consumers requires additional research into the other food related decisions that consumers make. For instance, selection of sale items was not only a factor that influenced decisions about what store to go to, it also served to impact what items were selected. Item selection, and the reasons why particular items are selected, remains an important topic that warrants further explanation. Obesity is a problem, particularly among low-income populations, and item selection due to economic constraints appears to be one potential cause (Darmon, Ferguson, and Briend 2003).

Also unexamined in this study was the relative cost of items from various retailers. Donkin et al. (2000), for instance, examined price disparities among different food retailers as a means to determine spatial inequality of food access. Data from this research indicate that convenience stores represent an important food source, especially for food insecure households. Since data on the prices of food was not collected, obtaining food from convenience stores as opposed to traditional food retailers was not assessed from an economic standpoint. It seems likely that there is an additional cost associated with shopping at convenience stores, and the amount of this additional cost would be another useful measure of how different consumers are impacted within the food system.

Similarly, food selection among retailers was not assessed. Not all food is created equal and foods that are traditionally considered healthy, such as fresh fruits and vegetables, are not available in the same quantities, varieties, or qualities among the various retailers in this study. Important questions remain regarding the influence of food selection on the perception and behaviors of consumers. This would provide an additional way of assessing the structure of the food system.

Finally, this research fails to take into account the influence of sources of food other than retailers. For food insecure households, non-traditional food sources were often a critical part of their food purchasing strategies. A truly complete assessment of the community food system should incorporate food from food banks, churches, friends and families, and other retailers such as dollar stores. In addition, food secure households are obtaining food from restaurants or growing food in gardens so the role of these sources in people's food purchasing patterns should be assessed. Researchers are beginning to examine other food sources, such as fast food restaurants, in order to assess their distribution in relation to different populations (Block, Scribner, and DeSalvo 2004).

Recommendations

The results of this research point to some very real potential solutions to the problems associated with food security in the neighborhood. While household income was a significant factor related to food insecurity, other factors such as education, single-parent status, and physical disabilities were also contributing factors. Furthermore, the ways in which neighborhood residents interact with the food system suggests that some solutions, such as direct marketing arrangements with local producers, may have more

potential than recruiting more conventional food retailers into the region. The following are six recommendations stemming from my experiences and the results of this study.

1. <u>Create more and better employment opportunities for neighborhood residents.</u> Fundamentally, food insecurity remains a problem in the neighborhood because many residents have very low incomes. In all logistic regression models households with low incomes were much more likely to be food insecure than households with higher incomes. In fact, one model indicated that households with incomes of less than $10,000 were over 50 times more likely to be food insecure than households with $80,000 or more. This suggests that efforts, such as the recent increase in the minimum wage, may have a positive impact on food insecure households. While providing even better employment opportunities in the area would likely decrease food insecurity levels, this can be a time-consuming and resource intensive endeavor. Furthermore, I was able to identify several non-economic variables that were very strong predictors of food insecurity status.

2. <u>Develop linkages with area colleges and universities to increase educational opportunities and complete college degrees.</u> Results from the survey indicate that people with only some college were nearly nine times more likely to be food insecure than someone with a professional or graduate degree. At the same time, having a four year degree led to a significant decrease in the likelihood that a household would be food insecure. Therefore, in order to decrease food insecurity levels in the area it would be useful to assist people who have started

but not finished college. It would also help to provide greater access to post-secondary education to those who have no college education.

3. <u>Target single-parents and households with physical disabilities.</u> Interview respondents described the difficulties of obtaining food when they or someone in their household has a physical disability. Single-parents expressed the difficulties of negotiating work, family, and school against shopping. Models showed that single-parents are nearly five times more likely to be food insecure than households with two-parents and households without children. At the same time, households with at least one person with a physical disability are nearly four times more likely to be food insecure. In fact, single-parent status and physical disabilities were even stronger predictors of food insecurity than poverty status. This highlights the particular problems of two subpopulations, which would also benefit from programs that target them specifically.

4. <u>Increase healthy food availability to reduce transaction costs</u>—Even when a food retailer is within a few miles, this does not mean that there are no transaction costs involved. Especially for households which are already relying on time intensive food purchasing strategies such as shopping at several stores or limited by child or adult care responsibilities, the cost of traveling even a small distance will be greater than for others, and the most conveniently available food may not be the healthiest. While actual food selection was not assessed in this study, spatial assessment of convenience store locations and comments by interviewees makes it clear that the selection of nutritious food varies significantly among stores. Bringing healthy food into the neighborhood makes it cheaper for the segments of

the population that need it most. Given the importance of cost to food insecure populations, these new food sources should ideally be cheaper and more convenient than existing food sources.

5. Coordinate activities with the food patterns of food insecure households—It is important that new food resources fit into existing purchasing patterns, especially for food insecure households. While many households are successfully avoiding hunger through complicated food purchasing strategies, this may leave them with little flexibility in terms of adapting to new sources. This appeared to be the case with the Community Supported Agriculture Farm, which operated out of the neighborhood center for a few years. Food insecure households did not have the flexibility to adapt to the high upfront cost, tight pickup schedule, and inflexible selection that was required for CSA membership. On the other hand, the farmers market, in particular by going out of its way to accept food stamps, fits more closely with existing purchasing patterns.

6. Enhance alternative food networks—This research suggests that several of the food access problems confronted by households stem from the structure of the conventional food system. It is possible that recruiting a deep discount grocer, such as Sav-a-lot, would help decrease food insecurity. At the same time, many larger supermarkets are resistant to moving into inner cities and may have difficulty obtaining land even if willing to make the move. It may, therefore, be useful to look to more novel forms of food retailing. While efforts such as encouraging convenience stores to carry more fresh produce show some promise and should be continued, alternative food systems also show potential in helping

provide nutritious food more equitably. Direct marketing arrangements with local food producers or the enhancement of community food production both represent potential ways in which the logic that drives larger food retailers might be avoided. Direct marketing arrangements, if done correctly, also help with keeping the money spent on food within the local community, which may enhance employment opportunities in the future.

Final Words

A scholarly understanding of the role of consumers in the agrifood system would be greatly enhanced through a differentiated understanding of consumers and this research indicates real differences in the amount of agency that consumers have. In the context of the conventional food system, some groups have greater levels of agency then others. The food insecure/food secure distinction offers a poignant example of the way in which these different levels of agency are manifest when two groups are differentially served by a social system as influential as the conventional food system. This has very real consequences in terms of health and nutrition and the only way these problems can truly be addressed is by acknowledging the structures that generate the inequality. In an even broader sense, this points to the ways in which capitalist systems, of which the food system is definitely an example, create and maintain inequality.

On a pragmatic level, this research also points to the potential effectiveness of systems, or environmentally based, solutions to food. While the degree to which neighborhood residents were influenced by the distribution of food retailers varied, it appeared that food insecure households were partially constrained by the distances to

various types of food retailers. At the very least, the varied distances represented higher transaction costs for accessing certain types of foods. The negotiation of these costs can be a financially, physically, or psychologically difficult for many disadvantaged consumers to bear.

The efforts by the neighborhood center are encouraging and demonstrate that space can be a solution as much as it is a problem. Hendrickson and Heffernan (2002) argue that alternative food systems have the potential to fill the interstitial spaces that larger elements of the food system are unable to adapt to. After all, the reason there is no super Wal-Mart in the neighborhood is because it would be too expensive to obtain sufficient land and the low purchasing power of the neighborhood would make such efforts unprofitable. What keeps Wal-Mart out, though, creates a space for local farmers to sell kale, cucumbers, and kohlrabi. The success of local initiatives such as the farmers' market suggests that unconventional retail arrangements have potential.

The theoretical framework of this research has focused on agency vis-à-vis the conventional food system. This framework has maintained explicit recognition of the fact that a plethora of other social structures exist that influence the tastes and interest of neighborhood residents. We must also recognize that food retailers are only one social structure through which residents obtain food. Even food insecure households have agency in a variety of other social contexts such as political and place-based. The success of place-based food programs promoted by the Allen Neighborhood Center indicate that these structures have the potential to alleviate some of the inequities perpetuated by the conventional food system. In fact, the success of these programs indicates that theses structure may even be more accessible than the conventional food

system to certain segments of the population. For instance, the farmers market is spatially the closest location to obtain fresh produce for the parts of the neighborhood with the lowest median incomes. For many people, it is within easy walking distance.

As new, and alternative, food networks are brought into the neighborhood it seems very likely that some of the problems associated with food access can be alleviated. However, most people in the neighborhood buy their food from food retailers and, as this research indicates, the structure of food retailers places an undue burden on those who are often the least able to bear the cost. Furthermore, the failure of many households to bear this cost without compromising their health and/or turning to alternative sources for food indicates that it is only by reconsidering the structure of this system that greater widespread equity in food distribution will be accomplished.

Appendix A: USDA Questions Used To Assess the Food Security of Households

1. "We worried whether our food would run out before we got money to buy more." Was that often, sometimes, or never true for you in the last 12 months?

2. "The food that we bought just didn't last and we didn't have money to get more." Was that often, sometimes, or never true for you in the last 12 months?

3. "We couldn't afford to eat balanced meals." Was that often, sometimes, or never true for you in the last 12 months?

4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn't enough money for food? (Yes/No)

5. (If yes to Question 4) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

6. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food? (Yes/No)

7. In the last 12 months, were you ever hungry, but didn't eat, because you couldn't afford enough food? (Yes/No)

8. In the last 12 months, did you lose weight because you didn't have enough money for food? (Yes/No)

9. In the last 12 months, did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food? (Yes/No)

10. (If yes to Question 9) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

(Questions 11-18 are asked only if the household included children age 0-18)

11. "We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food." Was that often, sometimes, or never true for you in the last 12 months?

12. "We couldn't feed our children a balanced meal, because we couldn't afford that." Was that often, sometimes, or never true for you in the last 12 months?

13. "The children were not eating enough because we just couldn't afford enough food." Was that often, sometimes, or never true for you in the last 12 months?

14. In the last 12 months, did you ever cut the size of any of the children's meals because there wasn't enough money for food? (Yes/No)

15. In the last 12 months, were the children ever hungry but you just couldn't afford more food? (Yes/No)

16. In the last 12 months, did any of the children ever skip a meal because there wasn't enough money for food? (Yes/No)

17. (If yes to Question 16) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

18. In the last 12 months, did any of the children ever not eat for a whole day because there wasn't enough money for food? (Yes/No)

Appendix B: Themes and sub-themes applied to interviews

Theme	Sub-theme
Food sources	Food sources
	Factors influencing store selection
	Influence of cost on source selection
	Satisfaction with food from current sources
Food procurement	Factors influencing shopping trip timing
	Strategies and planning involved in shopping
Food consumption values	Cost concerns
	Taste concerns
	Health concerns
	Environmental concerns
	Agricultural concerns
	Social group concerns
	Other concerns
	Meal patterns
	Vegetable consumption
	Attitude toward organic
Misc.	How food fits into the household budget
	Coping strategies for food insecurity
Food acquisition strategy	What drives their food patterns?

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