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Community Gardens and Crime: Exploring the Roles of Criminal Opportunity and Informal Social Control

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Community Gardens and Crime: Exploring the Roles of Criminal Opportunity and Informal Social Control

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ABSTRACT

Community gardens may bring people together in a way that could help to control crime. The bringing together of community members via an organization, such as a community garden, has been shown to build social capital and informal social control (Bursik & Grasmick, 1993; Morenoff et al., 2001; Sampson, 2012). Alternatively, the building of a community garden where once there was likely a vacant lot may help control crime by lowering criminal opportunity. A garden is an improvement in image and territoriality over a vacant lot, and the presence of gardeners may serve as guardians or a type of place manager. The present exploratory study analyzes several case study community gardens in comparison to similar "open-air" spaces (i.e., vacant lots, parking lots, parks/green spaces, and playgrounds) in terms of crime and measures of criminal opportunity and informal social control. The results help pave the way for a new line of research that explores theories of criminal opportunity and informal social control.

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CHAPTER ONE

INTRODUCTION

The concept of gardening in urban areas began in the late nineteenth century. In 1893, the mayor of Detroit began an allotment gardening program in response to the economic depression and vast unemployment. He called his program "allotment" gardening, because he allotted city-owned vacant lots to community members for gardening. Many cities followed, including Baltimore, Philadelphia, Chicago and New York (Huff, 1990). However, when the economy improved, the urban gardens were no longer needed and were deserted until the need for them arose again during World War I. In fact, both World Wars saw a resurgence of community gardening, dubbed Liberty Gardens and Victory Gardens, respectively (Huff, 1990) – these were times when average citizens pitched in during war time. However, after the end of World War II, urban gardens died out for several decades.

As the 1960s drew to a close, there were an abundance of vacant lots in poverty stricken areas of New York City. In an effort to beautify their neighborhoods, "guerilla gardeners" began lobbing "seed bombs" in fenced-in vacant lots all over New York City. This "guerilla" movement eventually led to a revival of urban community gardens, and New York City founded Operation GreenThumb in 1978 to keep up with requests to use the city's vacant lots (Huff, 1990). Community gardening has since spread across the country with around 18,000 community gardens nationwide (National Community Garden Association, n.d.).

COMMUNITY GARDENS AND CRIME

As indicated above, there is a rich history of community gardens serving as a source of locally grown food, particularly in poor urban areas where residents would otherwise not have access to such nutrition. While this serves as a valuable function, I believe community gardens are much more than a pantry for the less fortunate. Often community gardens are cultivated in the space of a once empty lot. On the surface, this serves as a beautification of the area, particularly when a flower garden is put in place. Thus, "broken windows" are cleaned up by adding beauty and purpose to a once vacant lot. Beyond cleaning up disorderly space, a community garden often fills a vacancy in a community, thus creating a sense of ownership where none previously existed and making the space less suitable for hosting crime. Further, children and adolescents frequently become involved in community gardens. These once "idle hands" no longer have time for "the devil's workshop" at the garden location.

As their name suggests, community gardens foster a sense of community. The coming together of neighbors to work side-by-side is invaluable in today's busy digital age. It allows for interaction among community members who may otherwise not know each other. Additionally, community gardens may promote a sense of community pride and ownership. For example, pride and a sense of purpose associated with community gardens in New York City led residents to fight real estate developers who wanted to take their land (Chitov, 2006). These characteristics (strong social ties and purposive action) have been shown to impact crime via collective efficacy theory.

Drawing upon these ideas, this dissertation provides an investigation of the potential impact of community garden on crime via two different criminological frameworks: criminal opportunity and collective efficacy. Routine activities theory states that crime occurs when three

criteria intersect: a motivated offender, a suitable target, and the lack of capable guardianship (Cohen & Felson, 1979). From this perspective, a community garden can change a once undefined space into a place less likely to facilitate the convergence of offenders, targets, and inadequate guardianship. Specifically, the garden can provide an unambiguous use for the land parcel on which it sits, thus making the space less likely to be co-opted for illegitimate activities. Additionally, the presence of gardeners may provide guardianship, handling, and place management. Relatedly, when adolescents are involved in urban community gardens, it provides a form of structured as opposed to more risky unstructured socializing at the place of the garden, thus lessening "motivated offenders" at that location. And presumably, a potential setting for criminal activity is made unsuitable by increasing the visibility of the location. The site of the garden may also be deemed unsuitable as a target via the "broken windows" perspective (Wilson and Kelling, 1982). The beautification of a once unkempt space can signal to would-be criminals that disorder and crime is not tolerated.

Alternatively, collective efficacy theory is an extension of the systemic model of social disorganization theory (SDT), which stresses that social ties and social control are the key intervening concepts between measures of social disorganization (socioeconomic status, ethnic heterogeneity and residential mobility) and crime rates (e.g., Sampson, 1988; Sampson and Groves, 1989). The systemic model of social disorganization theory in general, and collective efficacy theory in particular, are closely tied to the sociological concept of social capital. The theory suggests that a neighborhood with low collective efficacy (social ties/capital and a willingness to take action) would be less likely to use informal social control, and crime would thrive. Community-based organizations and activities, like those represented in a community

garden, can potentially increase a neighborhood's collective efficacy by bringing community members together (Sampson, 2012).

Previous Research

A limited number of prior studies have indirectly examined the constructs of collective efficacy and/or criminal opportunity in relation to community gardens. Much of the existing research on the sociological benefits of community gardens deals with their ability to foster social capital/cohesion. Prior qualitative research has found evidence that community gardens promote relationships that lead to collective action (Chitov, 2006; Jamison, 1985), as well as fostering social connections, reciprocity and mutual trust (Teig et al., 2009). Two quantitative studies used telephone surveys to find that participation in a community garden leads to increased social capital/cohesion (Alaimo et al., 2010; Armstrong, 2000). In addition, a few studies have examined the effect of "green" space on crime. Branas and colleagues (2011) conducted a sophisticated longitudinal difference-in-difference analysis. Taking advantage of a program to "green" vacant lots in Philadelphia, the study compared lots chosen for greening with vacant lots that were not chosen by the program. The results indicated a significant reductions associated with the green lots in some crimes, most notably gun assaults.

Gorham and colleagues (2009) directly studied the correlation of community garden sites and property crime. While not explicitly naming the theories outlined above, they note that "the act of building and maintaining a community garden can become a tool to empower neighborhood residents against urban blight and crime" (p. 291). They further note that "some people have reported that urban lots that were once trash-strewn eye-sores and magnets for criminal activity have become havens of safety that provide valuable interaction among neighbors" (p. 291). Unfortunately, this study is plagued by methodological issues. While the

authors selected comparison sites randomly from within a one-mile radius of each community garden, property crime rates were examined within 1/8-mile of each of these sites—including the community garden. Needless to say, the resulting data likely contained many overlapping areas rendering any conclusions weak at best.

THE PRESENT STUDY

The present study will add to this body of literature by quantitatively assessing the crime risk levels of the areas surrounding community gardens. Two geographic areas will be focused upon for this investigation: 1) the grounds of the garden and the immediately surrounding vicinity (100-foot perimeter), and 2) the radii surrounding the gardens created by one and two street segments. If collective efficacy is enhanced through the establishment of community gardens, this may create a drop in crime at the further radii. This is because collective efficacy is a process that presumably should control behavior beyond the grounds of the garden. On the other hand, if opportunity for crime is decreased due to the garden filling a vacant space, then crime changes would likely be observed only in the immediate area surrounding the site. Beyond analysis of crime data, qualitative methods will then be used to explore in more detail the possible explanatory mechanisms of "opportunity" and "collective efficacy."

It should be noted that conclusions regarding collective efficacy and opportunity as explanations for any garden-crime link observed will be highly tentative. The case study methodology is intended to *explore*, preliminarily, the *potential* applicability of these alternative theories. While limited, such exploration is an invaluable step towards our greater understanding of the effects of community gardens.

It should also be noted that community gardens are unlikely to be a miracle pill. From a collective efficacy perspective, a sense of community takes time to build—and no one yet knows just how long! And even if community gardens lessen crime in the immediate area (through criminal opportunity mechanisms), it may not impact an entire neighborhood plagued by crime. Further, it is unlikely that a community garden alone will have a pervasive impact on crime in a high crime neighborhood. However, community gardens as organizations and defined spaces may be beneficial in reducing crime in a neighborhood. This possibility seems worthy of exploration.

RESEARCH QUESTIONS

Stemming from the theories outlined above, my dissertation poses several research questions. Four questions pertain specifically to the criminal opportunity perspective. First, what is the crime risk level of the community garden spaces? To answer this question from the perspective of criminal opportunity, crime data will be analyzed at the specific garden address and within close proximity (100 feet) to the sites. Second, how does the crime risk level of the community garden spaces compare with the crime risk level of counterfactual comparison sites? More specifically, these counterfactual comparison sites are vacant lots that could be used for a community garden but remain vacant[1]. Third, how does the crime risk level of community garden spaces compare with the crime risk level of similar "open-air" spaces that have periodic guardianship? These "open-air" sites will include parking lots, playgrounds and parks/green spaces. And fourth, if some community gardens have a higher crime risk level than others, are there differences between these gardens that may relate to other aspects of criminal opportunity

[1] It is an unproven assumption of this study that community garden parcels were previously vacant lots. While this is likely most often the case here and elsewhere, a few gardens in the sample for this study did not fit this assumption. For example, one garden was previously a vacant lot that was illegally being used as a parking space.

(beyond the garden itself)? For example, differences in street access surrounding a community garden may affect the criminal opportunity mechanism.

Three research questions focus on the collective efficacy perspective. As with criminal opportunity, the first question is what is the crime risk level surrounding the community gardens at approximately one and two street block radii? If crime risk does not increase further away from the garden, this may be indicative of informal social control at work. Second, do community gardens build collective efficacy? This question may be difficult to answer given the fact that we do not know just how long collective efficacy takes to build. Nevertheless, this question will be addressed. And third, are there differences between these gardens beyond levels of collective efficacy – differences that may, in fact, affect levels of collective efficacy? For example, some community gardens are surrounded by a locked fence creating a feeling of exclusivity that may impact the building of collective efficacy.

DISSERTATION OUTLINE

What follows will address the topics briefly mentioned above. The next two chapters will deal specifically with the theoretical framework of my dissertation. Chapter Two will present the foundations of criminal opportunity theories, such as routine activities theory. This chapter also includes a review of literature on crime places, with a particular emphasis on crime opportunity at "open spaces." Chapter Two closes with a description of how opportunity theories and previous crime-and-place research are relevant to understanding fluctuations in crime risk levels in the immediate vicinities of community gardens.

In Chapter Three, a detailed overview of collective efficacy will lead into how this theory may be at work in community gardens. More specifically, collective efficacy's roots in the

systemic model of social disorganization theory will first be covered briefly, followed by a review of a sample of research that has proven collective efficacy as a viable theory of crime. Finally, Chapter Three will present the existing literature on community organizations (to which community gardens are kin), collective efficacy, and crime. Together, Chapters Two and Three will form the theoretical backdrop of my dissertation.

My dissertation follows a mixed-methods design. Both quantitative and qualitative approaches will be detailed in Chapter Four. This chapter will include sections on sampling, data collection and measurement, and analytic techniques. Analysis results will then be presented in Chapters Five through Seven. Chapter Five will provide results from analyses of the crime rate data. This will include descriptive analyses and analyses of crime risk levels of the community gardens and their comparison sites. Chapter Six will include all results from analyses the observational data. This will first include a descriptive analysis of the community garden locations and participants. Analyses of crime risk levels at the one- and two-street segment radii are presented next. Finally, analyses of interview and survey data on collective efficacy will be used to offer potential explanations for differences in crime risk levels and ascertain whether community gardens build collective efficacy. Lastly, Chapter Eight will offer a discussion of the findings, limitations of this study and directions for future research.

CHAPTER TWO

THEORY AND LITERATURE REVIEW OF CRIMINAL OPPORTUNITY

Community gardens are places. As such, crime that may or may not happen at a community garden is theoretically governed by a line of inquiry known as "crime and place" research. Crime and place research is rooted in an "opportunity perspective," broadly speaking, which consists of multiple, overlapping theories. In brief, certain places can provide opportunities for crime by serving as crime generators or crime attractors (Brantingham and Brantingham, 1995). Places that serve as crime generators are places where a large number of people tend to gather together, thereby presumably creating a convergence in time and space of motivated offenders, an abundance of suitable targets, in a somewhat chaotic situation that makes capable guardianship difficult. Examples of crime generator places are shopping centers, sporting events, and busy transit centers. Crime attractors, on the other hand, are places with a reputation for criminal activity. Criminals are attracted to these places due to the high likelihood of achieving the illicit act, good or service. For example, seedy bars, red-light districts, and crack houses are all crime attractors.

These types of places provide criminal opportunity in a number of different ways. For example, places that serve as crime generators do so via an ample supply of suitable targets with easy access for offenders. Crime attractors tend to be places with weak territoriality, guardianship and/or place management, as well as a poor or criminogenic image.

Community gardens are thought to reduce the opportunity for crime at places that were likely once vacant lots or open spaces. Community gardens provide definition (i.e., a legitimate purpose) to this once-undefined, and thus vulnerable space. Additionally, community gardeners

may also provide guardianship for the space and those around it. In order to provide the theoretical background at the root of this idea, this chapter briefly reviews the main criminal opportunity theories that serve as the basis for crime and place research. The chapter then reviews research on crime and places, concluding with a summary of research on crime in open spaces, in particular, since they are most relevant to the study of criminal opportunity and community gardens.

CRIME AND PLACE: THE CRIMINAL OPPORTUNITY PERSPECTIVE

The criminal opportunity perspective emerged out of the blending of several lines of research. Jacobs (1961) and Newman (1972) pioneered and inspired the concepts of defensible space and crime prevention through environmental design (CPTED). Routine activities theory (RAT) focused on the necessary components for criminal opportunity, namely the coming together in space and time of a motivated offender and a suitable target, in the absence of capable guardianship (Cohen and Felson, 1979; Cohen, Felson, and Land, 1980). Concentrating more on the offender's decision-making are offender search theory (Brantingham and Brantingham, 1981) and rational choice theory (Clarke and Cornish, 1985). These theories, though slightly different in focus, have come to be known collectively as criminal opportunity perspectives (see Table 2.1).

Defensible Space

Originally conceptualized in the context of housing developments, "*defensible space* is a model for residential environments which inhibits crime by creating the physical expression of a social fabric that defends itself" (Newman, 1972, p. 3). These physical expressions include messages of territoriality, opportunities for natural surveillance, and an overall image that the

Table 2.1 Theories of Criminal Opportunity

Citation	Theory	Key points
Newman (1972)	Defensible Space	Space can be defended via: • Territoriality • Natural surveillance • Image management
Cohen & Felson (1979)	Routine Activities Theory (RAT)	Necessary components for crime: 1. Motivated offender 2. Suitable target 3. Absence of guardianship
Brantingham & Brantingham (1993)	Offender Search Theory	Offenders search for targets along their typical: • Nodes • Paths • Edges
Clarke & Cornish (1985)	Rational Choice Theory	Offenders weigh the cost and benefits of criminal activity

place is looked-after. Together, these physical expressions deter crime by affecting offenders' rational choices (see full discussion of rational choice theory below). Territoriality is conveyed through either real (e.g., walls, fences) or symbolic (e.g., shrubs, stairs) barriers. These barriers are intended to delineate the gradation from public to private space. The effect of territoriality is to send the message that one should not be in a certain place if s/he does not belong there.

Opportunities for natural surveillance are accomplished through site design. Newman's 1972 book, *Defensible Space*, was specifically about architectural design of housing projects. Therefore, he suggested architectural designs for apartment buildings that allowed for residents to keep watch over their own and shared spaces within the complex. However, the principle of natural surveillance can be applied to any place. The main premise is to design the makeup of the place in such a way as to easily allow surveillance of all areas.

Finally, the image of a place is important in creating a defensible space. While Newman (1972) wrote specifically about the stigma of most inner-city housing projects based solely on their image, his ideas align closely with what is often called "broken windows" theory (Wilson

and Kelling, 1982). When an area is blighted by broken and boarded up windows, litter and graffiti, it projects the image that the area is not cared for. If a place appears uncared for, offenders may be more comfortable committing crime at that place. Broken or boarded up windows, litter, graffiti and the like send the message that the place is undefended, as no one has bothered to clean up its image.

Routine Activities Theory

Routine activities theory developed out of a desire to understand why national-level crime rates went up in the United States in the mid-twentieth century (between 1960 and 1970, more specifically). Cohen and Felson (1979) attributed the increase in "direct-contact predatory violations" to the changes in the routine activities of the average American. They contended that the 1960s brought people out of their homes more often. Women began entering the workforce along with men, leaving homes unattended for much of the day. At the same time that homes were unattended, women were in public spaces more frequently, attending college and going to work in large numbers. Cohen and Felson (1979) explained why they believed that routine activity patterns affect rates of direct-contact predatory violations. In order for crime to occur, they asserted, three elements must converge in space and time: a motivated offender, a suitable target, and lack of capable guardianship (see Figure 2.1). Further, they believed that removing any one of these necessary elements would deter crime. Assuming a motivated offender need not be explained, they focused their efforts on understanding the suitable target and lack of capable guardianship. In the example above of women entering the working world, homes were left with a lack of capable guardianship. Further, the women themselves, now venturing into more places, constituted new suitable targets exposed to motivated offenders.

Figure 2.1 Cohen and Felson's Routine Activities Theory

The Crime Triangle

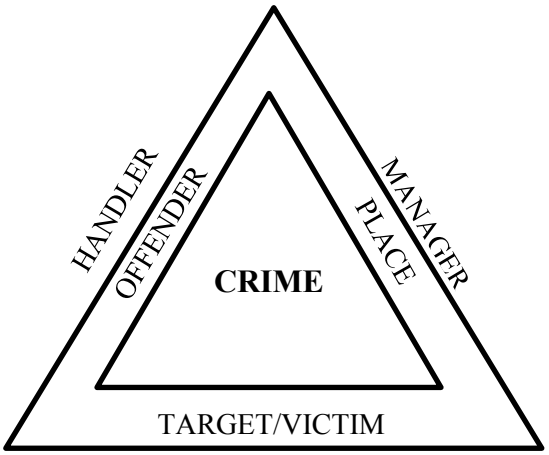
Cohen and Felson's original conception of RAT seemed to lack an explicit focus on the places at which offenders and unguarded targets or victims converged. Also, it lacked a distinction in the various forms that capable guardianship might take. For example, people can guard both targets and places where crime occurs. Eck (1994) led a revised conceptualization of RAT that addressed these issues. First, he conceptualized the theory through his now-famous "crime triangle" (see Figure 2.2).

Figure 2.2 Eck's Crime Triangle (adapted from Popcenter.org)

According to this conceptualization, crime occurred when offenders converged with targets/victims at particularly problematic places. Eck further suggested that opportunity for crime could be broken by not only providing guardianship to target/victims, but by providing management to places. Place managers were thus introduced to call attention to the idea that those who are guarding a place deter crime, somewhat distinctly than guardians of targets/victims do. As a clarification of terminology, place managers guard places where crime may take place, and guardians guard potential targets. More specifically, place managers have some form of ownership stake in the place itself. Sometimes, the same person plays the role of place manager and target guardian.

Felson (1995) noted that offenders have controllers as well. He named them "handlers," and like the other controllers, crime is less likely to be committed in the presence of offender handlers. Along with place managers and target guardians, these three controllers added another layer to the crime triangle (see Figure 2.3).

Figure 2.3 The Crime Triangle with Controllers (adapted from Popcenter.org)



Additionally, Felson (1995) elaborated on Eck's addition of a second layer to the crime triangle by incorporating four levels of responsibility to describe varying degrees of control exerted by these "controllers" (i.e., place managers, target guardians and offender handlers).

Ranked by primacy, these levels are personal responsibility, assigned responsibility, diffuse responsibility, and general responsibility. The highest level of responsibility is personal. In the case of place management, an example of personal responsibility is one's control over their own home. An example of the next highest level of responsibility, assigned responsibility, is an employee's control over the place which they are employed to oversee, such as a parking lot attendant watching for potential car thieves. Diffuse responsibility, the next level, is the control other employees have over a place even though guarding said place is not their primary job. Finally, general responsibility is the control one has over a place, often simply by their presence. Of these, gardeners can be seen as having both personal and general responsibility for control of the garden and surrounding area, respectively.

Offender Search Theory

Similar to routine activities theory, offender search theory describes the process by which offenders encounter their victims. Brantingham and Brantingham (1993) used the terminology of "nodes, paths and edges" to describe the routine activity routes of offenders and their targets. They assereted that offenders, like most people, stay within their comfort zones. Also like most people, offenders tend to stick to certain paths between the places, or nodes, where they spend most of their time, such as their home, homes of friends and family members and recreational areas. Occasionally, Brantingham and Brantingham (1993) noted, offenders will venture around the edges of their typical paths and nodes. These nodes, paths and edges are the areas where offenders search for potential targets. Following Cohen and Felson's (1979) notion of the "suitable target," Brantingham and Brantingham suggested that offenders choose which target is suitable via stored cognitive cues. These crime templates are assembled through a complex combination of past experiences and relationships. "Criminals construct templates of sites and

situations that are suitable for commission of particular sorts of crime and use these crime templates in selecting targets or victims and in deciding to commit the crime at a particular place and time" (Brantingham and Brantingham, 1993, p. 12).

Rational Choice Theory

Each of the above-mentioned theories – defensible space theory, routine activities theory, and offender search theory – are based on an assumption of rational choice on the part of offenders. Drawing on work from sociology of deviance, criminology, economics and cognitive psychology, Clarke and Cornish (1985) outlined a rational choice theory of criminal behavior. Although they outlined models of rational choice for criminal involvement (i.e., initiation, continuation and desistance) as well, their rational choice model of the criminal event is most relevant to this discussion. Keeping in mind an entire decision making process by which an offender chooses to become involved in crime, the decision surrounding the commission of a specific criminal act is based on a sort of cost-benefit analysis, according to Clarke and Cornish (1985). Using the residential burglary example (as opportunity and thus event decision-making is crime-specific), the offender is presumed to take into account various factors about the neighborhood and the home itself that make it an attractive or unattractive target. For example, an empty home in an affluent area with little lighting and few police patrols in the area has a lot of benefits with few risks of being caught. The offender also takes into account effort, risk, and reward when deciding how to enter the target, how to search the target, how to leave the target, how to convert goods to cash, and so on (e.g., see Wright and Decker, 1994). It is not surprising that rational choice theory underlies most criminal opportunity theories; opportunistic situations are problematic because of rational decision making.

CRIME AND PLACE RESEARCH

Theories comprising the opportunity perspective have been used for the last several decades to understand the concentration of crime at places. While community gardens have never before been the focus of crime-place research, other places have been highlighted as crime generators or hot spots. Research on crime at places is discussed in the two sub-sections to follow. First, I review research that examines the concentration of crime at particular places or types of places. Next, I review experimental studies that examine the impact of changing opportunity at problematic places.

For the literature review that follows, it's important to define what is meant by "place." Eck and Guerette (2012) asserted that to be a "place" five characteristics must be present. First, a place has a specific location. Second, boundaries demark what is *this* place and what is *that* place. Third, places serve a particular function. Fourth, a place is managed, or controlled, by someone who is legally responsible for happenings at the place. And fifth, they assert that a place is small, "measured in feet and meters rather than miles and kilometers" (Eck & Guerette, 2012, p. 356). However, different scholars measure different levels of place; some define it as large as a street-block, and some define place as small as an individual parcel. Although the community gardens in this project are all on individual parcels, some community gardens can be the size of a street block. As such, research conducted at each of these levels will be included in this review. Table 2.2 provides a summary of the studies that will be discussed below.

Table 2.2 Studies of Crime and Place

Citation	Data Source	Outcome Variable(s)	Tested Predictors	Relevant Significant Predictors
Roncek and Faggiani (1985)	Cleveland police reports	Murder, rape, assault, robbery, burglary, grand theft, car theft	Proximity to public or private high school	• Directly adjacent to public school ∓ all crime • Directly adjacent to private school ∓ robbery and grand theft
Roncek & Maier (1989)	Cleveland police reports	Index crimes, total property crime, total violent crime, overall crime total	Total number of taverns/lounges	Tavern/lounge on block ∓ all crime types and crime totals
Sherman et al. (1989)	Minneapolis police data 1986	Calls for service	Geographic location	3.3% of addresses received 50% of calls for service
Sherman & Rogan (1995)	Kansas City, MO gun hot spots	Gun crimes	Gun seizures by police	65% increase in gun seizures correlated with 49% decrease in gun crime
Sherman & Weisburd (1995)	Minneapolis hot spots	Calls for service, observed crime	Increased police patrol	Increased patrols reduced calls for soft crime and observed crime
Weisburd & Green (1995)	Jersey City, NJ drug hot spots	Calls for service	Individualized policing strategy vs. treatment as usual	• Increasing policing= calls for disorder • Diffusion of benefits
Eck & Wartell (1998)	San Diego drug crime at residential properties	Crime rates at hot spots	Police intervention with place managers	Treatment group had less crime than control at 30-day follow-up
Weisburd et al. (2004)	Seattle 1989-2002	Police crime data	Street segments	• 18 crime trajectories • Increased crime = 2% street segments • Decreased crime = 14% • Stable crime = 84%

Braga et al. (2010)	Boston 1980-2008	Assault and battery by means of a deadly weapon - firearm	Street segments and intersections	5% of street segments and intersections have 74% of gun assaults
Groff et al. (2010)	Seattle 1989-2004	Police crime data	Street segments	• Chronic high trajectories cluster together • Higher crime trajectories cluster within 1.5-2 streets • Higher crime clusters bordered by lower-crime trajectories
Bernasco & Block (2011)	Chicago 1996-1998	Outdoor, public street robberies	Crime generators, crime attractors and offender anchor points	• Crime generators $\overrightarrow{+}$ robbery • Crime attractors $\overrightarrow{+}$ robbery • Offender anchor points $\overrightarrow{+}$ robbery
Braga et al. (2011)	Boston 1980-2008	Street robbery Commercial robbery	Street segments and intersections	• 8% of street segments and intersections have 66% of street robbery • 1% have 50% of commercial robbery

Place-level Crime Concentration

Crime and place research began with studies that found the concentration of crime at certain micro-places. Roneck and his colleagues were among the first to study potential crime generators, particularly high schools. As a replication and extension of research on crime in proximity to high schools in San Diego (Roncek & LoBosco, 1983), Roncek and Faggiani (1985) studied crime near high schools in Cleveland. They wished to replicate the findings that city blocks adjacent to high schools had more crime than areas more than one block away. Cleveland was chosen as a more "typical" American city than San Diego, thereby extending the findings as

well as replicating them. Roncek and Faggiani (1985) examined both public and private schools in Cleveland. They found that city blocks directly adjacent to public school had greater incidents of all index crimes, and those directly adjacent to private schools had greater rates of robbery and grand theft. Roncek continued to study crime surrounding certain types of places. Roncek and Maier (1991) set out to test the concentration of crime near bars/taverns. Therefore, they examined index crime rates on city blocks based on the number of taverns or lounges on the block. After controlling for social composition and environmental characteristics, Roncek and Maier (1989) found that residential blocks that had at least one tavern or lounge experienced more crime than would be expected. However, 30% of the blocks that they examined were below the city median for index crimes. This means that even in areas where crime is relatively low, the presence of a tavern or lounge increased crime. Roncek and Maier (1989) also point out that these findings are likely due to the routine activities of the areas surrounding these establishments rather than the patrons' use of alcohol, citing other studies of nonresidential land use that have found similar results.

Sherman and his colleagues (1989) articulated the routine activities perspective as it relates to specific places. They argued that crime tends to be concentrated in certain places, possibly due to the routine activities surrounding those places. Coining the term "hot spots," Sherman and his colleagues (1989) found that just 3.3% of places in Minneapolis accounted for more than 50% of the calls for service in one year, which is significantly higher than chance. Hot spots are defined as "small places in which the occurrence of crime is so frequent that it is highly predictable, at least over a one year period" (Sherman, 1995, p. 36). With Sherman et al.'s research, the study of crime at micro-places obtained a name and a focus.

Weisburd and his colleagues have studied the stability of crime and place over time. In 2004, Weisburd, Bushway, Lum and Yang used 14 years of crime data in Seattle, from 1989 to 2002. Their unit of analysis was street segments, which they defined as "two block faces on both sides of a street between two intersections" (Weisburd et al., 2004, p. 290). As an initial measure, "hot spots" were established from the data; each year, 50% of the city's crime incidents took place at just 4-5% of street segments (p. 294). Additionally, Weisburd and his colleagues used group-based trajectory analysis to categorize the trends of different street segments over time. Eighteen different trajectories were found. Three of these generally tended to increase in crime over time; however, this accounted for only 2% of the total street segments. A slightly larger percentage of street segments (14%) fell into one of seven trajectories where crime tended to decrease over time. Finally, the vast majority of street segments (84%) remained stable over time. While Cohen and Felson's (1979) original theory was developed to explain change in crime via changes in people's routine activities, Weisburd and colleagues argued that general stability in crime trends over shorter periods of time (i.e., 14 years) is seemingly consistent with routine activities theory.

To assess the importance of studying crime at micro-places, Groff, Weisburd and Yang (2010) set out to examine the variation of crime across street segments in both time and space. Using the same Seattle data as Weisburd and colleagues (2004), it is not surprising that the same longitudinal trajectories emerged. Groff and colleagues (2010) define them as crime free, low stable, low decreasing, low increasing, moderate stable, high decreasing, high increasing and chronic high. Next, they examined the spatial layout of these trajectories to determine if they were clustered to the extent that micro-level studies become unimportant. In other words, if these trajectories do not vary significantly at close distances (e.g., street segments), then macro-

level analyses (e.g., neighborhood/community) may be sufficient to study crime. They found the most clustering of chronic high street segments, and trajectories with high crime tended to cluster within 1.5 to 2 street blocks. Further, these clustered areas were often bordered by lower-crime trajectories (see also Weisburd, Groff, and Yang, 2012). Although the study's finding support the importance of studying micro-places, they found larger patterns of crime trajectories as well. Groff and colleagues (2010) ultimately determined that there is support for both micro- and macro-level studies of crime.

Braga and his colleagues have studied the trajectories of gun crime (Braga et al., 2010) and robbery (Braga et al., 2011) in Boston. Using data from 1980 through 2008, they examined reported crime at street segments and intersections. They found that 74% of "assault and battery by means of a deadly weapon - firearm" (p. 38) took place at just 5% of street sections and intersections (Braga et al., 2010). In 2011, Braga and his colleagues examined robbery in Boston from 1980 through 2008. They found that just 8% of street segments and intersections accounted for 66% of street robbery. Further, 50% of commercial robberies took place at just 1% of street segments and intersections. These studies added to the importance of studying crime at place.

Finally, Bernasco and Block (2011) looked for common characteristics among places with high crime by examining outdoor, public street robberies in Chicago. They identified crime generators (i.e., main streets and public transit stations) and crime attractors, specifically "cash economies," among Chicago's 24,594 census blocks. Cash economies were defined as "micro places with specific functions, such as bars, fast-food restaurants, check-cashing centers, and pawn shops, that is, places that bring together, often in large numbers, people who carry cash, some of whom are distracted and vulnerable" (Bernasco and Block, 2011, p. 34). Additionally, offender anchor points were identified, namely places where known offenders live or frequent.

Bernasco and Block (2011) found that most robberies between 1996 and 1998 occurred on blocks with crime attractors, crime generators and/or offender anchor points. The next highest occurrences of street robberies were on streets adjacent to these blocks.

Reducing Crime at Places: Evaluation Studies

Crime and place research, particularly the notion of hot spots, has led to studies of targeted policing efforts. Sherman and his colleagues tested their concept of hot spots in this way. Two studies examined the effect of concentrated policing on calls for service, observed crime (Sherman and Weisburd, 1995) and gun seizures (Sherman and Rogan, 1995). To study the effect of increased policing in empirically-based hot spots on calls for service and observed crime, Sherman and Weisburd (1995) randomly assigned Minneapolis hot spots to increased patrol or treatment-as-usual. They used trained observers and "calls about crime" (p. 636) as the outcome measures. The increased patrol consisted of police presence for at least 3 hours per day during the hours of 11am and 3am (empirically determined "hot times"; p. 633). It was found that the hot spots with the increased patrols had a reduction in calls for soft crime ($p<.10$) and observed crime ($p<.05$).

Sherman and Rogan (1995) focused the idea of hot spots on gun crimes in Kansas City, Missouri. A before-and-after comparison design was used, with the comparison beat historically having about the same number of drive-by shootings as the experimental beat. Although the unit of analysis in this study was the beat, the extra patrol was focused on gun detection and seizures in gun hot spots. The hypothesis was that increased gun seizures through targeted patrol would be correlated with a decrease in gun crimes. Police in the experimental beat used three strategies for increased gun seizures: door to door solicitation for tips, training in gun carrying body language, and field interrogations at hot spots. The before-and-after changes for the comparison

beat were not significant. However, there was a significant 65% increase in gun seizures and a significant 49% decrease in gun crimes for the experimental beat. Even though only 29 guns were seized from the hot spot areas, Sherman and Rogan (1995) speculated that the reduction in gun crimes was due to seizing high risk guns from high risk offenders.

Another line of crime and place research has focused on illicit markets. Eck (1995) argued that these markets rely on social networks or routine activities. Because dealers and buyers find each other through acquaintances, they can arrange to meet anywhere. In contrast, dealers who find buyers through their routine activities do best to stay in one place. This high place attachment leads dealers to choose locations with low place management. Eck and Wartell (1998) tested this hypothesis through an experimental design. Residential rental properties where police received calls about drug dealing were each randomly placed into one of three groups. The control group received no further intervention beyond that from the initial police visit. Another group had a letter sent to the owner (i.e., place manager) of the property. This letter simply informed the owner of the drug activity in at their property, the consequences if it continued and offered assistance from the police department. The final group received the same letter, but also received a follow up interview with police at the property. A plan to prevent future drug dealing, including the eviction of problem tenants, was put into place at this interview. A 30-month follow-up of crime at each of these places found that both treatment groups did significantly better than the control group, with the largest and strongest effect at those places that received the interview and prevention plan. Eck's research has established that not only does place matter in illicit markets, but place managers can greatly affect the illegal activity at places.

Weisburd and Green (1995) examined the effect of hot spots policing on drug markets in Jersey City, New Jersey using a pre-post intervention experimental design. Fifty-six drug hot spots were identified and randomly assigned half to individualized police crack-down strategies. The other half received treatment-as-usual to form a comparison group. Police assigned to the experimental hot spots spent 5 months developing a crack-down strategy by interviewing residents and business owners and identifying problem individuals. Using a seven-month pre-post examination period, Weisburd and Green (1995) found a significant decrease in calls for disorder, particularly for suspicious persons and public morals, between the experimental and comparison groups. However, the significance test for calls for service related to narcotics was inconclusive. Nonetheless, evidence was found for a "diffusion of benefits" (Clarke and Weisburd, 1994) of the narcotics hot spots policing. A significant pre-post difference was found in the blocks surrounding the experimental hot spots.

CRIMINAL OPPORTUNITY AND "OPEN SPACES"

As noted above, crime and place research has often focused on particular types of facilities, such as bars/taverns or apartment buildings. More relevant to the present study on community gardens is research on crime and place in "open spaces." The following section will review literature that has been conducted on crime at vacant lots, parks, playgrounds and parking lots. Table 2.3 provides a summary of the studies to be reviewed.

Using the backdrop of the Brantinghams' (1995) crime generators and attractors, Kinney and his colleagues (2008) studied the variation of assaults and car thefts across different types of land use in Burnaby, British Columbia, Canada in 2005. This was presented as a case study, so statistical analyses were not done. They found that parks and playgrounds account for 0.2% of

Table 2.3 Studies of Crime and "Open Spaces"

Citation	Data Source	Outcome Variable(s)	Relevant Tested Predictors	Findings
Kinney et al. (2008)	Burnaby, BC 2005	Assaults Car thefts	Parks Playgrounds Vacant lots	Parks/playgrounds: 0.2% of land use, but 0.683% of assaults and 0.706% of car thefts 1 vacant lot was 3rd highest in assault
Stuckey & Ottensmann (2009)	Indianapolis 2000-2004	UCR	% vacant land % parks	More vacant land, higher robbery. More parks, less homicide and aggravated assault.
Groff & McCord (2012)	Philadelphia	Violent crime, property crime, disorder events	Small parks Activity generators at parks	Activity generators correlated with less crime.
Suresh & Tewksbury (2013)	Louisville, KY 2004-2007	Car theft	Parking lots	Church parking lots associated with most car thefts

land use in Burnaby. However, these open spaces accounted for 0.683% of assaults and 0.706% of car thefts. Perhaps more interestingly, one vacant lot in the city had the third highest occurrence of assault. As Stuckey and Ottensmann (2009) pointed out, vacant lots may be associated with crime due to increase opportunity, decreased guardianship and decreased informal social control.

Stuckey and Ottensmann (2009) studied crime from 2000 through 2004 in Indianapolis. The service area for the Indianapolis Police Department was divided into 1,000 square-foot cells. Each parcel in Indianapolis was assigned a land use type, and the percentage of each type of land use was computed for each 1,000 square-foot cell. After controlling for socioeconomic status, the locations of Uniform Crime Reports reported crimes were compared to the percentage of land use type. They found that the higher percentage of vacant lots in a cell, the higher the incidents of robbery. However, it was found that the higher the percentage of parks in a cell, the lower the

incidents of homicide and aggravated assault. This may be due to the likelihood of more people serving as guardians at parks, whereas few people tend to congregate at vacant lots.

Groff and McCord (2012) set out to test whether parks are crime generators due to the gathering of people or if people serve as guardians and suppress crime. They speculated that the answer may vary by park, particularly depending on the number and type of "activity generators", such as recreation centers, pools, playgrounds, etc. To assess this, they examined small parks (less than 10 acres) in Philadelphia and the streets immediately surrounding them. In general, they found that the parks were twice as likely to experience crime as Philadelphia as a whole. When they took into account the number of activity generators at the parks, the parks with more activity generators experienced significantly fewer incidents of crime. This finding supports the perspective that more people lead to greater levels of guardianship, rather than a greater likelihood of victimization.

It makes sense that car thefts are most likely to occur in parking lots. Suresh and Tewksbury (2013) wanted to test which parking lots were most at risk and if those locations had distinct characteristics. Examining official car theft and recovery reports in Louisville from 2004 through 2007, they found that the number one predictor of car theft and recovery in a census block was the number of church parking lots. While initially surprising, it makes sense that church parking lots would attract car thieves. Church parking lots are characterized by "low or no observation/guardianship and [the] presence of large numbers of vehicles" (Suresh and Tewksbury, 2013, p. 212).

CONCLUSION

Crime and place research has not directly studied community gardens. Nonetheless, the preceding chapter provides justification for a possible link between community gardens and crime rates via a criminal opportunity mechanism. Criminal opportunity scholars have developed constructs which explain how characteristics of a place, from a street-segment to as small as a parcel, can influence crime. The improvement of image and territoriality that a community garden brings may impact the lot's defensible space. Alternatively, the routine activities of these places may be altered by the addition of community gardeners who may serve as guardians of the property and/or place managers who deter would-be offenders. Finally, if a community garden used to be a vacant lot, the image of the place is greatly improved, sending a message that the space is looked after.

For example, although Newman was mostly concerned with the defensibility of environmental design in residential complexes, his ideas have been applied to a variety of other places, including schools (Crowe, 1990), parking facilities (Smith, 1996), and transit stations (Felson et al., 1996). Presumably, his concepts can apply to community gardens as well. For example, the land prior to a community garden was undefined, often vacant. By creating a use for that space, namely gardening, it now has a symbolic barrier in that the space is cared for and looked after. Similarly, a community garden may enhance the image of the space. Newman's discussion of image in *Defensible Space* (1972) was, again, focused on subsidized housing projects. The image of these low-income apartments has historically been industrial and negatively unique. Furthermore, they are often dull and plain with no individualization by its residents that may signal that the property is cared for. Due to this recognizability and drab appearance, these buildings were stigmatized. This stigma was often a signal to criminals that

these places and the people in and around them were easy targets. Vacant land can send the same message with its image. Therefore, turning vacant land into a community garden may project the image that the space and the people in and around it are not easy targets.

Previous research has examined criminal activity at similar "open spaces" via the lens of criminal opportunity. Particularly, scholars have studied crime at vacant lots, parks, and parking lots. Although these studies have had mixed findings as to whether these places may be crime generators or crime attractors, this may be due to variations in the characteristics of the individuals places. As a comparison to community gardens, these other types of open spaces are included in the present study.

CHAPTER THREE

SOCIAL ORGANIZATIONS AND SOCIAL CONTROL OF CRIME

Community gardens can be viewed not only as physical places that can host crime opportunity, but also as social organizations that can potentially facilitate informal social control of crime. This chapter discusses criminological theory and research in support of the idea that local organizations and institutions influence crime via informal social control. Specifically, the evolution of social disorganization theory is briefly reviewed, from the early work of Shaw and McKay to contemporary work on the "systemic model" and "collective efficacy" by scholars such as Robert Bursik and Robert Sampson. Then, the chapter concludes with a thorough review of the few previous studies examining community gardens, in particular, as potentially playing a role in informal control of crime.

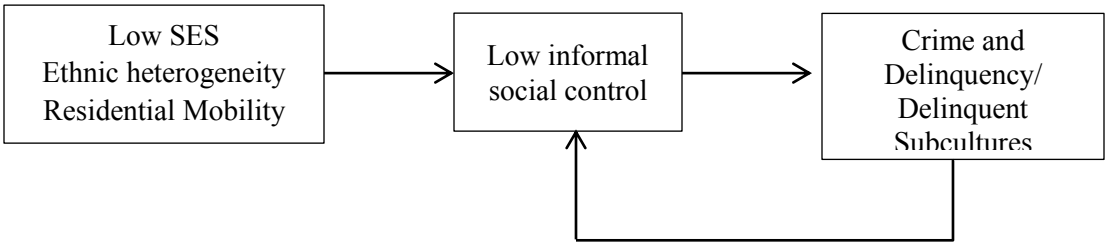
THE SOCIAL DISORGANIZATION THEORETICAL TRADITION

Early Chicago School

Social disorganization theory (SDT) stems from the Chicago School of criminology. This line of thought gets its name from the early works of scholars, affiliated with University of Chicago's Department of Sociology, who studied the Chicago area. Most importantly for the SDT tradition are Shaw and McKay (1942). In the early twentieth century, Shaw and McKay (1942) used official arrest data to map the prevalence of juvenile delinquency throughout the Chicago metropolitan area. They discovered that the areas with the highest rates of delinquency were in what Park and Burgess (1925) called the "zone in transition."

Park and Burgess observed that cities (namely Chicago) follow a concentric zone pattern. Being the early twentieth century, they noted that the city center was predominated by industrial businesses. Zone Two, the next concentric circle out from the city center, is the area they termed the "zone in transition." No longer desirable as a place to live due to its proximity to dirty industry, those who could afford to fled to further out zones. This left the zone in transition a slum, characterized by dilapidated buildings and poor housing conditions. When Shaw and McKay discovered that this same zone had high rates of delinquency, they searched for other socio-demographic correlates. They found that populations within areas with high rates of delinquency were characterized by low SES, high rates of residential mobility and ethnic heterogeneity. Examining other cities and various time periods, they found these correlations to be very stable over time and across places. However, they were not incredibly clear on their speculation as to the potential cause of these correlations. They seemed to present a mixed-model, implicating both lack of social control and cultural deviance as the source of delinquency (Kornhauser, 1978). More fully, they claimed that the social structural conditions is transitional neighborhoods prohibited the articulation of shared values necessary for effective informal social control. In turn, this allowed a subculture of delinquency to arise and flourish. This subculture served to pass delinquent traditions on to successive generations of youth in transitional communities, and the rise of a delinquent subculture led to even less social control. This resulted in a nonrecursive model, where delinquency was both the cause and the effect (see Figure 3.1). The theory was criticized for this problem, among others, and was largely ignored by criminologists throughout the 1950s and 1960s.

Figure 3.1 Shaw and McKay's nonrecursive mixed-model of SDT (adapted from Kornhauser, 1978, p. 58)



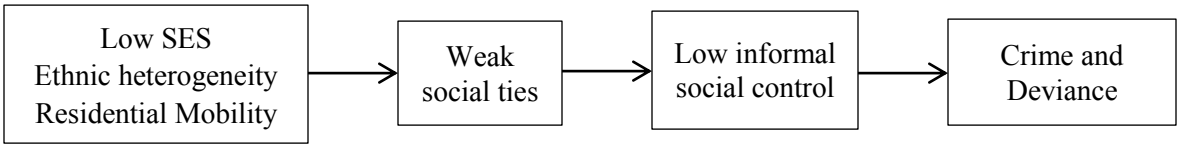
The Systemic Model

Ruth Kornhauser is often credited with interpreting and reviving SDT. In her seminal work, *Social Sources of Delinquency*, Kornhauser (1978) outlined criticisms of Shaw and McKay's work and offered explanations that rendered SDT more testable. Scholars often struggle with operationalizing nonrecursive theoretical models, due to the same variables serving as both independent and dependent. Kornhauser suggested that we can do away with the nonrecursive cultural deviance aspect of SDT for more reasons than a simpler model. She argued that cultural deviance cannot exist without weak informal social control. In Shaw and McKay's cultural deviance model (as interpreted by Kornhauser), the majority of residents ascribe to a prosocial culture. However, social disorganization leads to some residents adopting an antisocial or deviant culture, possibly via a Mertonian-like strain felt from living in a poor neighborhood. Kornhauser discounted this view. She argued that weak social controls must be present in a community with a predominately prosocial culture if cultural deviance is to develop in the first place. As such, Kornhauser suggested we focus instead on the social control aspects of Shaw and McKay's SDT. Most importantly, she brought focus to the intervening variable of weak controls and how the exogenous variables of Shaw and McKay's theory lead to them.

Further, Kornhauser highlighted the importance of *social ties in the form of neighborhood organizations* for effective social control: "Because heterogeneous, poor, and

mobile populations lack community of purpose, money, skills, and will, they fail to form voluntary associations to protect and defend their interests and values" (1978, p. 79). Indeed, her discussion of neighborhood control is similar to work in the tradition of the "systemic model," whereby local communities are viewed as "a complex system of friendship and kinship networks and formal and informal associational ties" (Kasarda & Janowitz, 2004, p. 329). The version of social disorganization theory prompted by Kornhauser has thus been termed the systemic model of SDT – it is a version of the theory that states that social structural features of communities such as low SES, ethnic heterogeneity, and mobility weaken the community networks responsible for informal social control (especially of youth); this breakdown, in turn, leads to higher rates of crime (see Figure 3.2)

Figure 3.2 Control Model of Social Disorganization Theory (adapted from Kornhauser, 1978, p. 69)



Systemic Control of Crime: A Closer Look at the Role of Organizational Participation

The nature of the role of social ties on community rates of crime continued to be investigated and expanded by Bursik and Grasmick (1993). Their efforts were especially important for further specifying the role of community organizations in informal control of crime. Borrowing from the ideas of Albert Hunter, they classified three levels of social ties and how they may affect a neighborhood's social control of crime in different ways. The first and most intimate level of social ties are private ties. These are the types of social ties most commonly studied within the systemic model. Private social ties are close familial and friendship ties within a neighborhood. This level is often operationalized through questions such

as, “How many close friends and/or family members live within a 15 minute walk of your home?” The most distant level of social ties, in both proximity and intimacy, are public social ties. These are the ties local community members have with those considered to be outside the neighborhood, particularly city officials.

Bursik and Grasmick (1993, p. 17) note that the intermediate level of social ties, the parochial level, may ultimately be the most important for crime control. Parochial ties are social linkages between distinct groups within a community. Because these ties connect groups that may otherwise not associate with one another, they may have the ability to create bridging social capital (Putnam, 2000). Putnam (2000) defines bridging social capital as “outward looking and encompass[ing] diverse social cleavages” (p. 22). These “weak” social ties (Putnam, 2000, p. 23) broaden recognizability among neighbors who may not regularly socialize with one another. Indeed, Bursik and Grasmick (1993) outlined the role of parochial ties in social control in terms of “the ability of local neighborhoods to supervise the behavior of their residents” (p. 35). Bridging social capital or parochial ties can be formed through patronage of or participation in local “stores, schools, churches, and voluntary organizations” (Bursik and Grasmick, 1993, p. 17).

While studies of the effects of private ties on crime are plentiful (see Burchfield & Silver, 2013; Sampson & Groves, 1989; Simcha-Fagan & Schwartz; Warner & Wilcox Rountree, 1997), there have been few studies on the effect of parochial ties and/or organizational participation on social control. Nonetheless, given the particular relevance of these studies to this dissertation, they are summarized in Table 3.1 and reviewed in some detail below.

Table 3.1 Studies on the Role of Organizations in Social Control

Citation	Data Source	Outcome Variable(s)	Tested Predictors	Relevant Significant Predictors
Simcha-Fagan & Schwartz (1986)	Structured interviews with 553 NYC adolescent males and their female guardians	• Self-reported delinquency • Officially recorded delinquency • Severe self-reported delinquency • School attachment-commitment • Delinquent peers	• Community-level: o Residential stability o Economic level o Organizational participation o Disorder-criminal subculture • Individual-level: o Age o Residential stability o Income o Organizational participation	Community organizational participation ⇄ School attachment ⇄ Self-reported delinquency Community organizational participation ⇄ Self-reported delinquency
Sampson & Groves (1989)	British Crime Survey (1982)	• Self-reported delinquency • Self-reported victimization	• SDT exogenous variables o SES o Residential stability o Ethnic heterogeneity o Family disruption o Urbanization • Intervening variables o Local friendship networks o Unsupervised peer groups o Organizational participation	Organizational Participation ⇄ self-reported victimization (mugging, stranger violence, burglary, auto theft)
Bellair (1997)	Victimization survey of 12,019 households in 60 urban neighborhoods across the U.S. in 1977	Self-reported victimization rate per 1,000: • Burglary • Motor vehicle theft • Robbery	• SDT exogenous variables o SES o Residential stability o Ethnic heterogeneity o % single-parent household o % 15-24 • Strength of social ties (how often neighbors gather in each other's	Getting together once per year or more ⇄ Burglary victimization Getting together once per year or more ⇄ Motor vehicle theft Getting together once per year or more ⇄ Robbery

			homes): o Every day o Once per week o Several times per month o Once per month o Once per year	victimization
Bursik (1999)	Survey of 368 adults in Oklahoma City	Social control: Loss of respect if known offender	• Private ties o Local friendship network • Parochial ties o Patronage of local businesses	Private ties ⇄ Social control Parochial ties ⇄ Social control
Morenoff et al. (2001)	PHDCN: 1995 survey of 8,787 residents of 343 "Neighborhood Clusters" in Chicago	• Collective Efficacy o Shared expectation for social control o Social cohesion/trust	• Organizations in the neighborhood, for example: o Block group/Tenant assoc. o Crime prevention program o Mental health center • Participation in organizations, such as: o Local religious groups o Neighborhood watch o Community council o Business/Civic groups	Presence of organizations ⇄ Collective efficacy Organizational participation ⇄ Collective efficacy
Sampson (2012)	PHDCN and the National Center for Charitable Statistics	• Collective Efficacy o Shared expectation for social control o Social cohesion/trust	• Organization services (1995) • Nonprofit organizational density (2000) • Residential stability (2000) • Concentrated disadvantage (2000) • Diversity (2000) • Friend/Kinship ties (1995) • Civic/Organizational memberships (1995)	Organizational services ⇄ Collective efficacy Residential stability ⇄ Collective efficacy Concentrated disadvantage ⇄ Collective efficacy

Simcha-Fagan and Schwartz (1986) interviewed a stratified random sample of New York City male teens and their female caregivers to assess contextual neighborhood effects on self-reported and officially recorded delinquency. In addition to SDT, they also tested constructs of subculture/cultural deviance theories and labeling theory. As such, they measured numerous independent variables at both the individual and community level. The community-level measures were factor analyzed into nine factors, including "Community Organizational Participation…defined by: average parental education level and community level of organizational involvement" (p. 677). Individual-level variables were factor analyzed as well, resulting in five factors. Of note is the School Attachment-Commitment factor scale, defined by variables such as how much the adolescent likes school, feels grades are important to him, and cuts class (reverse coded). Simcha-Fagan and Schwartz (1986) found that Community Organizational Participation had a positive effect on School Attachment-Commitment, which in turn had a negative effect on both self-reported delinquency and officially recorded delinquency. Additionally, Community Organizational Participation had a small direct negative effect on self-reported delinquency.

Sampson and Groves (1989) provided a path-breaking study of the systemic model of SDT. Using the 1982 British Crime Survey (BCS), they tested the effect of a full systemic model of SDT on both self-reported victimization and self-reported offending. The full systemic model included exogenous variables implicated by SDT (low SES, ethnic heterogeneity, and residential mobility) and several intervening variables. The intervening variables, which were intended to tap systemic control, included the density/sparseness of local friendship networks (private ties), extent of organizational participation (parochial ties), and supervision of teen groups. Regarding parochial ties, they found that organizational participation was significantly

negatively related to self-reported victimization, specifically muggings, assaults, burglary and auto theft. While organizational participation had no significant impact on self-reported offending, Sampson and Groves note that the data did not indicate *where* the offending took place. Given the negative effect that organizational participation had on self-reported victimization, it is possible that self-reported offending took place outside the community with high organizational participation.

Bellair (1997) directly examined the effect of "weak" social ties versus stronger social ties on rates of burglary, motor vehicle theft and robbery victimization. The strength of local social ties was measured by how often neighbors get together in each other's homes (every day, once a week, several times a month, once a month or once a year). He found that even infrequent levels of social interaction among neighbors mediated the effects of one or more of the exogenous variables of SDT (low SES, ethnic heterogeneity, and residential mobility) on rates of victimization. These findings lend credence to the importance of informal parochial ties on social control, as infrequent social interaction with neighbors indicates more distant social ties perhaps like those formed through organizational participation. However, Bellair (1997) also hints at a need for more than just social ties to enact informal social control, stating "conceptualizing neighbor networks solely in terms of frequent social interaction may provide an incomplete or erroneous picture of the supervisory capacity of local social networks" (p. 682).

In 1999, Bursik himself tested the mediation effects of private and parochial ties on the link between the exogenous variables of SDT and crime. He surveyed a random sample of 368 adults in Oklahoma City. Bursik (1999) used a measure of how often participants patronized local businesses or groups to measure parochial ties. To measure private ties, he assessed levels of friendship and trust of neighbors. Rather than predicting crime rates, Bursik used a measure

of social control, namely whether the participant believed he/she would lose the respect of those important to him/her if it became known that the participant engaged in "assaultive behavior" (p. 89). More specifically, he examined the connection between private (friends in the neighborhood) and parochial (membership in groups/businesses within the neighborhood) social networks and whether the respondent felt that he/she would lose the respect of those important to them if they were arrested for assault. Indeed, higher levels of both private and parochial social networks were associated with greater likelihood of loss of respect after an arrest.

Collective Efficacy

Recent work in the social disorganization tradition has revised the systemic model and developed "collective efficacy theory" as an alternative model for understanding community action against crime (Sampson, Raudenbush & Earls,1997). Sampson and colleagues have made the claim that, at the heart of informal social control, is a willingness and ability to intervene when a law or social norm is violated. Sampson and his colleagues therefore stressed that it is the combination of social ties (that gets at perhaps the ability to intervene) with this willingness to intervene that provides the social capital for effective informal social control of crime. They called the intersection of these concepts *collective efficacy*. Social ties alone cannot impact crime if residents are not willing to enact informal social control. And the efficacy of a few individuals to make a change may not be enough to control a neighborhood. But the *collective efficacy* of an entire community may impact crime rates. Further, they speculate that some of the exogenous variables of social disorganization theory impact the ability of a community to build collective efficacy.

To test this theory, Sampson, Raudenbusch and Earls (1997) used data from the Project on Human Development in Chicago Neighborhoods (PHDCN). Residents of 343 "neighborhood

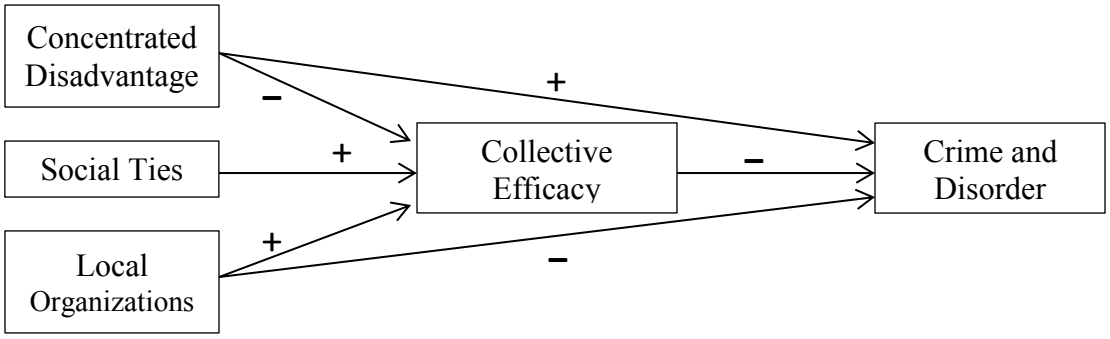
clusters" representing each of the three predominant ethnicities in Chicago (white, black and Latino), stratified by socioeconomic status, were surveyed. Measures of social ties (e.g. "This is a close-knit community") were highly correlated with measures of informal social control (e.g. how likely community members are to intervene if they witness a fight). As this fit with their theory of collective efficacy, these measures were combined into a single variable, "collective efficacy." The authors then examined the mediating effect of collective efficacy on the correlation of measures of social disorganization with crime and victimization. They found that collective efficacy mediated, to some degree, the effect of social disorganization factors on perceived violence, violent victimization and homicide rates. Collective efficacy remained significant in all three models even after controlling for prior homicides, which may have affected the community's willingness to intervene.

Building from the initial specification of collective efficacy theory, subsequent work went on to more fully incorporate private and parochial ties (including local organizations) into the model. Morenoff, Sampson and Raudenbusch (2001) examined the effects of collective efficacy on homicide rates using data from the PHDCN. They included in their models survey measures of the number of organizations (e.g., community newspaper, neighborhood watch, block groups) and voluntary associations (i.e., participation in local organizations). After controlling for other relevant measures, such as collective efficacy, concentrated disadvantage and ICE ("index of concentration at the extremes" p. 528; a measure of the concentration of both poverty and wealth), the impact of the density of and participation in local organizations on crime was insignificant. However, density of organizations and voluntary associations led to higher levels of collective efficacy; in other words, the effects on crime were indirect. Morenoff and colleagues (2001) point out that "the density of organization is important only insofar as it

generates effective action on the part of the organizations that do exist" (p. 553). Indeed, this is the same argument collective efficacy theory makes for the importance of a willingness to take action to enact the potential informal social control of network ties.

Having examined the empirical evidence from nearly a decade of study, Sampson (2006) modified collective efficacy theory. As can be seen in Figure 3.3, he views collective efficacy as a mediator of the impact of exogenous variables similar to SDT on crime and disorder. Pertinent to this discussion, the presence of organizations can have a positive impact of levels of collective efficacy which in turn has a negative impact on crime and disorder. His model also point to a direct effect of organizations on crime and disorder, most like through the mechanism outlined above (Morenoff el al., 2001). In short, organizations play a clear role in Sampson's more recent conceptualization of collective efficacy theory.

Figure 3.3 Model of Collective Efficacy theory (adapted from Sampson, 2006, p. 156)



Finally, to supplement the findings from studies done using the PHDCN, Sampson (2012) used data from the National Center for Charitable Statistics (NCCS) to determine the effect of density of non-profit organizations in a neighborhood on collective efficacy. Included in the analyses were non-profits that received more the $25,000 per year and were not affiliated with the government or tax-exempt religious organizations. Interestingly, the density of non-profit organizations was negatively associated with collective efficacy. However, organizational

services remained positively correlated with collective efficacy. Sampson concluded, "[w]hen it comes to organizational mechanisms…the explanatory driver is now resources and not sheer density" (2012, p.199).

COMMUNITY GARDENS AND SOCIAL CONTROL

In light of the systemic control/collective efficacy tradition reviewed above, community gardens can be seen as parochial community organizations that bring community members together. In addition to bridging social capital, community garden members may have to work together to initially build the garden or sometimes save it from real estate developers. As such, gardens can foster collective efficacy and/or informal social control generally, including control of crime specifically. Several studies have examined community gardens and their ability to facilitate social cohesion, social capital, and/or collective action (see Table 3.2).

Chitov (2006) conducted a qualitative study, interviewing and observing members of a number of community gardens in New York City over the course of a year. In chronicling the rise and potential demise of urban gardens in the Lower East Side of Manhattan, Chitov noted that "the gardens of low-income neighborhoods were transforming once crime-ridden communities into oases of vibrant cultures, establishing informal networks of social control and accumulating social capital" (p. 443). Unfortunately, it was this transformation that led New York City to seek to auction the now valuable land to real estate developers. Chitov argued that "it was the significant accumulation of social capital in the gardens interconnected by social networks that allowed the emergence of massive grassroots mobilization against the auctions, eventually achieving the gardens' preservation" (p. 444).

Table 3.2 Studies on Community Gardens and Social Capital/Control

Citation	Data Source	Findings
Jamison (1985)	Interviews with urban gardeners and their organizers and/or agency funders	Community gardeners viewed community action as the most valuable by-product of community garden participation
Armstrong (2000)	Phone survey of community garden participants in upstate New York	Community garden participation led to "[b]etter community cohesion"
Glover (2004)	Interviews with gardeners and non-gardeners in a community surrounding a community garden	Non-gardeners did not report the building of social capital, perhaps due to not being directly connected to the community garden
Chitov (2006)	Interviews and observations of community gardens in NYC	Social capital built by community gardens led members to act together to oppose and stop the selling of the land to real estate developers
Teig et al. (2009)	67 community garden participants in the Denver area	Participation in a community garden fostered social connections, reciprocity and mutual trust
Alaimo et al. (2010)	Phone survey of random sample of residents of Flint, Michigan	Those closer to involvement with community gardens reported a greater sense of social capital
Firth et al. (2011)	Case study of two community gardens in England	Community gardens both build and benefit from social capital

Through interviews with participants at dozens of urban gardens and their organizers and/or agency funders, Jamison (1985) assessed the differing views on the benefits of community gardens. While the agency representatives tended to focus on the positive gains of the individual urban gardeners, actual participants and grass-roots organizers found the main benefits in the collective nature of community gardening, specifically collective action.

Jamison's "own interviewees often stated that control of gardens can lead to control in other areas" (p. 480). Indeed, "many [of the grass-roots organizers] viewed this as but one component in the process of community development – the garden was a starting point, a symbol for change" (p. 479).

Glover (2004) conducted a qualitative study "to examine a community garden as a social context in which social capital is produced, accessed, and used by a social network of community gardeners" (p. 145). While others have found evidence of this connection, the members of the community surrounding the Queen Anne Memorial Garden seemed to have mixed feelings. There are perhaps a couple of reasons for this finding. One is that Glover interviewed both gardeners and community members not involved in the garden. Conceivably, those who were not directly involved did not form the ties that lead to social capital and collective efficacy. However, the more likely cause of the inconsistent findings is the fact that the "community" garden had an air of exclusivity. It was founded by the Old Town Neighborhood Association (OTNA), who had been involved in community action since the 1980s (p. 148). Moreover, during Glover's interviews, the decision was made to place a lock on the gate to the garden to keep out vandals. While the OTNA viewed this as a "harmless" decision, it nonetheless affected the chances of building collective efficacy among all the neighborhood residents (p. 154).

Although the outcome variable of interest was individual health rather than crime rates, Teig et al. (2009) also conducted a qualitative study that collected data specifically on constructs of collective efficacy within community gardens. The researchers interviewed 67 individuals from 29 sites sponsored by Denver Urban Gardens. These interviews led to a number of conclusions related to collective efficacy; most notably, participation in the garden fostered

social connections, reciprocity and mutual trust (p. 1117). Further, "when one gardener was found stealing produce from others, collaborative mediation resolved the issue. Such decisions were informed by a system of social norms that helped uphold a sense of shared responsibility and mutual accountability" (p. 1121).

While most of the research on the benefits of community gardens has been qualitative in nature, there have been a couple of survey studies on the topic. Armstrong (2000) used a phone survey of community garden programs in upstate New York to assess the reasons for development of or participation in community gardens. Although the specific survey questions did not address collective efficacy constructs, community garden program coordinators reported positive effects from the establishment of the garden, such as "[b]etter community cohesion", and the "garden lead [*sic*] to 'neighborhood watch', residents are very involved in watching out for each other" (Armstrong, 2000, p. 324). Alaimo et al. (2010) conducted a phone survey of a random sample of Flint, Michigan residents. A random sample was chosen to assess different levels of community involvement: those who were directly involved, those who had a household member involved and those whose communities were more or less involved in community gardens. They found that having closer connection to "the community gardening/beautification and/or neighborhood meetings was associated with more positive perceptions of social capital" (p. 510).

Finally, Firth and his colleagues (2011) directly assess the ability of community gardens to build three types of social capital: bonding, bridging and linking. These are similar to Bursik and Grasmick's (1993) private, parochial and public distinctions. Bonding social capital refers to the strengthening of bonds between friends. Bridging social capital brings people together who may be different is terms of socioeconomic status, ethnicity, etc. And linking social capital

establishes connections between community members and people of power, such as political officials. Firth and his associates (2011) conducted a qualitative study of two community gardens in England. In general, they found that "community gardens contribute towards, and benefit from, the generation of social capital" (p. 564). Community gardens did this in four ways. First, community gardens bring people together for a common purpose. Second, they act as a common place for people to interact. Third, social capital is built by growing, harvesting and sometimes cooking and eating amongst each other. Finally, community gardens connect members to outside institutions and authorities, via land acquisition and visibility.

CONCLUSION

While a direct study of the impact of community gardens on rates of crime via collective efficacy in a neighborhood has not been done, evidence presented in this chapter invites the possibility. As an extension of the systemic model of social disorganization theory, collective efficacy has emerged to help explain the relationship between social disorganization and crime. Studies have shown that community gardens have the ability to build social capital in the surrounding neighborhood. Moreover, community gardens seem to have the ability to invoke a willingness to take action (see Chitov, 2006), an important construct of collective efficacy. Both social capital and collective efficacy have been shown to impact crime rates.

Furthermore, almost since its inception, the building of collective efficacy has been linked with local community organizations (see Morenoff et al., 2001). Although they have never been directly studied as such, community gardens are a form of local organization. Therefore, it is not a far leap to hypothesize that community gardens may impact levels of collective efficacy in a neighborhood, which may in turn affect crime rates.

CHAPTER FOUR

RESEARCH QUESTIONS AND METHODOLOGY

Stemming from the theories outlined in Chapter Two and Chapter Three, my dissertation poses several research questions. These questions were stated briefly in the introductory chapter, but they are reiterated here. They are grouped below based on the theory to which they pertain.

Criminal Opportunity Research Questions:

- Research Question 1: What is the crime risk level of the community garden spaces? To answer this question from the perspective of criminal opportunity, crime data will be analyzed at the parcel itself and within a 100-foot perimeter around the parcel.
- Research Question 2: How does the crime risk level of the community garden spaces compare with the crime risk level of counterfactual comparison sites? More specifically, these counterfactual comparison sites are vacant lots that could be used for a community garden but remain vacant.
- Research Question 3: How does the crime risk level of community garden spaces compare with the crime risk level of similar "open-air" spaces that have periodic guardianship? These "open-air" sites will include parking lots, playgrounds and parks/green spaces.
- Research Question 4: Are there differences between these gardens and comparison sites that may relate to other aspects of criminal opportunity (beyond the garden itself)? For example, perhaps differences in street access surrounding community gardens affect criminal opportunity.

Collective Efficacy Research Questions:

- Research Question 1: What is the crime risk level of the broader area surrounding the community gardens? To answer this question from the perspective of collective efficacy, crime data will be analyzed within approximately one and two street segments surrounding the sites.
- Research Question 2: Do community gardens build collective efficacy? This question may be difficult to answer given the fact that we do not know just how long collective efficacy takes to build. Nevertheless, this question will be explored.
- Research Question 3: Are there differences between these gardens beyond levels of collective efficacy – differences that may, in fact, affect levels of collective efficacy? For example, some community gardens are surrounded by a locked fence creating a feeling of exclusivity that may impact the building of collective efficacy.

METHODS

The above research questions are addressed using multi-method case studies of a small subset of purposively-selected gardens. Sampling and analytic procedures are discussed below.

Sampling

Given the study's interest in the role that community gardens might play in crime-reduction, purposive sampling was utilized in order to focus on gardens in areas that could potentially recognize gains (e.g., those in areas with a discernible crime problem). The first stage in purposive sampling was the obtaining of a list of community gardens in the Cincinnati

area from the Civic Garden Center of Cincinnati (CGC). This list consisted of over sixty community gardens that CGC had helped implement since the People's Garden was initiated in Over-the-Rhine in 1980. Therefore, it was not a complete list of every community garden in Cincinnati. CGC community gardens for which the implementation date was known were then mapped in ArcGIS.

Next, Uniform Crime Reports (UCR) data from 1997 through 2011 were obtained from the Cincinnati Police Department (CPD). This data set was sorted and cleaned for the purposes of this study. From the full CPD data set, I only included visible crimes that could reasonably be prevented via informal social control or that could be affected by the opportunity (or lack thereof) provided by the garden space. The final data set used for sampling included such crimes as assault, burglary, robbery, theft and vandalism. These data were plotted on the same ArcGIS map with the gardens. Using ArcGIS, crime data were pulled from a 300-foot radius around the community gardens. A radius of 300-feet was chosen to represent the average city block.

Most gardens were located in areas where crime was minimal. Ultimately, five community gardens that had the highest levels of crime in the surrounding area were selected for case-study purposes. These five gardens were located in two distinct Cincinnati neighborhoods. More specifically, two community gardens were selected in the Northside neighborhood: Agnes Wagner McKie and Garden at Village Green. Agnes Wagner McKie has a locked fence around it, whereas Garden at Village Green is open for anyone to walk through. Additionally, three community gardens were selected in Over-The-Rhine/Pendleton: Eco Garden, Pendleton Children's Garden, and Pleasant Street Community Garden/Race Street Children's Garden. Pleasant Street Community Garden and Race Street Children's Garden are actually two gardens,

but they are treated as one site for crime analyses due to their proximity (within 200 feet). The garden locations are shown on the maps in Figures 4.1 and 4.2.

Figure 4.1 Map of gardens in Over-the-Rhine

Figure 4.2 Map of gardens in Northside

Comparison Sites

To address the two research questions regarding counterfactual vacant lots and other "open-air" sites, comparison sites were needed. These two research questions will help ascertain whether community gardens indeed have an impact on crime over these comparison sites. Comparison sites were chosen by driving through the areas where the community gardens are located. I took note of any "open-air" parcels, including vacant/abandoned lots, parking lots, parks/green spaces, and playgrounds. Therefore the number of comparison sites varies by community garden location.[2] These "open-air" comparison sites will be compared to the community gardens using observations and crime analyses. In addition, some of the community garden locations had additional community gardens in the vicinity. The Eco Garden is in the same area as the People's Garden. The Pendleton Children's Garden also is fenced-in and locked. However, two fully accessible community gardens in the area will also be used. A small

[2] The comparison sites are not an exhaustive sample of all possible comparison sites in the area.

community flower garden is located in the vicinity of Agnes Wagner McKie as well. Finally, Pleasant Street Community Garden/Race Street Children's Garden has a small additional community garden nearby. These community gardens were used as additional garden sites for observations, crime analyses and the interviews described below.

In total, Agnes Wagner McKie garden has 11 comparison sites and one comparison community garden; Eco Garden has 14 comparison sites and one additional community garden; Garden at Village Green has ten comparison sites; Pendleton Children's Garden has eight comparison sites and two additional community garden sites; and Pleasant Street Community Garden/Race Street Children's Garden have 13 comparison sites and one additional community garden. The comparison sites for Agnes Wagner McKie breakdown as follows: one additional community garden, three vacant lots, one playground, and seven parking lots. Eco Garden's comparison sites consist of one additional community garden, nine vacant lots, three playgrounds, and two parking lots. The comparison sites for the Garden at Village Green consist of six vacant lots, one playground, one park/green space, and two parking lots. Pendleton Children's Garden's comparison sites are two additional community gardens, two vacant lots, two parks/green spaces, one playground, and three parking lots. Finally, the breakdown of the comparison sites for Pleasant Street Community Garden/Race Street Children's Garden is one additional community garden, five vacant lots, two parks/green spaces, one playground, and five parking lots.

Data Collection

Crime Data

Uniform Crime Report (UCR) data were obtained from CPD for the years 2012 and 2013. UCR data was chosen over calls-for-service data due to the inherent problems with calls-

for-service, especially when attempting to analyze informal social control. If calls for service increase, this may be due to increased informal social control rather than increased crime. Further, calls for service data often include duplicate calls for the same incident and calls for service that are not crime related. UCR data minimize these issues. Contrary to the garden sampling process, all UCR crimes were included in the crime data analyses described below. All crimes were mapped in ArcGIS, along with all of the community gardens and comparison sites. Using the selection process in ArcGIS, crimes that were committed in 2012 and 2013 near each of the sites were pulled in four ways. At the first level of analysis, all crimes that occurred at the exact parcel of a site were obtained. For the second level of analysis, a 100-foot perimeter was created around each parcel, and all crimes that occurred within this area were collected. To be consistent with crime and place literature, the third and fourth levels of analysis approximated one- and two-street segment radii. As with the initial garden selection, one street segment was approximately 300-feet. Therefore, the third level of analysis equaled a 300-foot radius around each parcel, and the fourth level of analysis equaled a 600-foot radius around each parcel. Finally, crime data within these last two distances were pulled from the data base as well.

Observations

Periodic observations of community garden and comparison sites were conducted throughout the gardening season and extending through the winter months. Data collected during observations will be used both to describe the nature of the community gardens and comparison sites as well as constructs of opportunity theories. Please see attached for the data collection tools for both initial (Appendix A) and ongoing observations (Appendix B).

Observations of the community gardens and comparison sites varied by time of year. During the gardening season (May through November), observations were conducted two times

per week per site, once during the weekdays and once during the weekend. Observation times were chosen randomly via SPSS program starting at 6 o'clock in the morning through midnight. However, there were a few exceptions to the random times. Nighttime observations, defined as after 10 o'clock at night, were limited to once per month per site. Also, no one site would be observed twice on the same day. For logistical reasons, observations were scheduled at least two hours apart to allow for the availability of only one data collector. Initial observations were conducted during the week of April 29, 2013. Only one observation per site was conducted during this initial week. Ongoing observations began the following weekend with one visit per site on either Saturday, May 4th or Sunday, May 5th. Ongoing observations continued as describe above. Once enough random observations were conducted to get a sense of when people were most often at the garden, one observation per week was changed to reflect garden activity. These purposive observations occurred in the evening or on the weekend, which is when gardeners were most often at the gardens.

Interviews

Interviews were conducted with community garden members, other members of the community and police officers familiar with the areas in which the gardens are located. The primary reason for the interviews was to measure constructs of collective efficacy; however, measures of criminal opportunity were included as well. Interviewees were chosen by snowball sampling. Interactions with community gardeners and other community members led to the identification of possible interviewees, and word-of-mouth snowball sampling led to more interviewees. Additional interviewees were solicited by attending community council meetings in the areas of the community gardens. Ideal interviewees lived in the neighborhood and had substantial knowledge of the goings-on in the neighborhood and/or area immediately

surrounding the community garden. Police interviewees were chosen by contacting the Cincinnati Police Department. Officers who currently or recently worked the beat where a community garden is located were selected for potential interviews. Interviews were semi-structured, audio recorded and last one to two hours. In total, 24 people were interviewed, with at least one current garden member per garden site. Unfortunately, the interviews with the four police officers did not yield information relevant to this study. The interviewees who were included in analyses included 11 men and nine women, mostly white (one African Americans and one Hispanic), and averaged 41 years of age. See attached for the semi-structured interview guides (Appendices C and D).

Data Analysis

Crime Risk Level

Each site type was analyzed for crime risk level. All UCR data from CPD for 2012 and 2013 were used. In separate analyses, Part I crimes were analyzed apart from Part II crimes. Crime risk level was ascertained at four levels: the exact parcel, a 100-foot perimeter around the parcel, a 300-foot radius, and a 600-foot radius. Since I am interested in the effect each site may have on crime levels due to the type of usage of the parcel, each site type was combined with all like types for levels of analyses. For example, the number of Part I UCR crimes in 2012 and 2013 that occurred at the exact parcel of one of the vacant lot sites was pooled with the number of Part I UCR crimes in 2012 and 2013 of every other vacant lot, regardless of the community garden it is near. Similarly, all community gardens were pooled together in this way, as were all of the different comparison sites. Once pooled, the crime data was divided by the square-footage of all the sites included, based on the square-footage of each parcel and taking into account the

square-footage of the perimeter, depending on the specific analysis. This crime rate was then multiplied by 10,000 for the ease of the reader.

If there is low criminal opportunity at any of these site-types (community garden, vacant lot, parking lot, playground, or park/green space), it would be expected that the amount of crime would be low at both the exact parcel and 100-foot perimeter levels. There may be evidence of an informal social control effect if the amount of crime remains low at the farther distances (i.e., 300- and 600-foot radii).

Observation Data Analysis

Data collected during site observations was used to describe the community gardens and comparison sites in terms of criminal opportunity. Four types of comparisons were done. First, the community gardens were compared to vacant lots which have the potential to become community gardens. Second, community gardens were compared to other open-air sites that have guardianship capabilities (i.e., parking lots, playgrounds and parks/green spaces). In these cases, the observations data served to distinguish between the various types of comparison sites. Third, trends of image measures (e.g., litter, graffiti) were compared with crime trends. Fourth, measures of territoriality (e.g., fencing, traffic potential, surrounding land use) were compared with crime trends. And finally, amount of guardianship and potential offenders (e.g. legitimate versus illegitimate users) were compared with levels of crime.

Interview Data Analysis

The audio recordings of the interviews were transcribed into separate Microsoft Word documents. Once all interviews had been transcribed, they were input in NVivo qualitative analysis software. NVivo allowed me to identify similar responses to similar questions and determine common themes. Of interest are not only general themes across all interviewees but

specifically themes related to collective efficacy and informal social control. The transcribed interviews were analyzed for themes related to (1) perceptions and experiences of neighborhood crime, (2) community cohesion within the garden, (3) community cohesion throughout the entire neighborhood, (4) informal social control within the garden, and (5) informal social control throughout the entire community.

Answers to survey-style interview questions that utilized a five-point Likert scale were input into SPSS along with the demographic information of the interviewees. These survey style questions are intended to measure levels of collective efficacy. Unfortunately, there was very little variation in the responses to the survey-style, so they were not included in the final analyses.

CHAPTER FIVE

CRIME RISK RESULTS

In the following three chapters, the main results of the methodology summarized in the last chapter will be presented. Additional analyses were conducted to explicate the main findings, and those results will be presented here as well. First, the results from analyses of the Uniform Crime Reports (UCR) data will be presented in this chapter (Chapter Five). Second, the observational analyses will be presented in Chapter Six to explore potential reasons for any differences seen in close-proximity crime rates. Finally, themes and comments from the interviews will be presented in Chapter Seven to attempt to explain differences in crime rates at the "neighborhood" level.

INDEX CRIME RATE ANALYSIS

Two-Year Crime Risk Level

As described in Chapter Four, crime risk was obtained at four different levels of analysis for community gardens and comparison site types (i.e., vacant lots, parking lots, parks/green spaces, and playgrounds). The first level of analysis is the exact parcel, and the second level is a 100-foot radius around the parcel. These two levels of analysis are intended to represent the "place" in a criminal opportunity structure. Consistent with the crime and place literature, the third level of analysis, a 300-foot radius around the parcel, is intended to represent one street segment. Finally, a 600-foot radius around the parcel represents two street segments and is intended to imply a "neighborhood" level of analysis. To account for the differences in number of cases/parcels per site type, as well as the size of each parcel, the number of UCR crimes from

the past two years (2012 and 2013) at each level was divided by the combined square footage of all parcels. This number was then multiplied by 10,000 for the ease of the reader, resulting in a crime rate per 10,000 square feet. The initial results are presented in Table 5.1.

Table 5.1 Past 2 year crime rates by site type (UCR incidents per 10,000 square feet)

Site type	Exact parcel	100ft radius	300ft radius	600ft radius
Gardens (N=10)	1.9625	1.6584	1.8077	1.6870
Vacant lots (N=26)	1.1924	1.1953	1.5419	1.5250
Parking lots (N=18)	2.3413	2.2634	2.4231	2.0570
Playgrounds (N=7)	2.2376	1.9775	2.7407	2.1052
Parks/Green spaces (N=5)	1.8129	1.3805	2.5294	2.2473

Several things become immediately apparent from examining the crime rates across site types. First is the ranking of the site types. At the exact parcel level, crime rates ranked from lowest to highest are vacant lots, parks/green spaces, gardens, parking lots, and playgrounds. Consistent with the idea that exact parcel and 100-foot radius levels of analysis both represent "place" in a criminal opportunity structure, the crime rate rankings for the 100-foot radius level are the same as for the exact parcel level. At the 300-foot radius level of analysis, the rank order changes: vacant lots, gardens, parking lots, parks/green spaces, and playgrounds. And the rankings at the 600-foot "neighborhood" level are quite similar to the rankings at the 300-foot level: vacant lots, gardens, parking lots, playgrounds and parks/ green spaces.

Considering the crime risks across the various site types at all levels of analysis, collectively, it is notable that there is a relatively small rate of crime at vacant lots at all levels. This is counter to what would be expected, given that vacant lots are presumably high in criminal opportunity measures and low in measures that might lead to informal social control. In contrast, playgrounds have the highest rates at each distance, and gardens seem to display relatively moderate crime risk compared to other site types at each of the levels of analysis.

Another interesting pattern in the data is that, for each site type, the rates tend to decrease as the radii increase. This suggests that these site types may be nodes of activity which generate criminal opportunity (i.e., crime generators), and this effect declines with distance from the activity node. As vacant lots are not typically nodes of activity, this line of reasoning may also explain the low crime rates at vacant lots relative to the other site types.

There are a couple outliers to the general pattern of declining rates of crime as the level of analysis broadens. Both parks/green spaces and playgrounds experience an increase in crime rate at the 300-foot radius which declines again at the 600-foot radius. However, this may simply be an anomaly due to specific high-rate sites that will be explored later in this chapter.

In an attempt to make statements about the significance of the crime rate differences across site types at various levels of analysis, a number of statistical analyses were done, including analysis of variance, multiple t-tests and chi-square analysis. Results were similar across all of these tests, with very few of these analyses yielding evidence of statistically significant differences across site types. Therefore, only the cross tabulation and chi-square analyses are presented in the tables below, as the cross tabulation provides the most information even though the chi-square values are non-significant. To complete the chi-square analysis, the crime rates were divided equally into thirds creating an ordinal scale of low, moderate and high crime. Crime rates less than or equal to 0.9748 are in the low group; crime rates between 0.9749 and 1.9628 are in the moderate group; and crime rates greater than or equal to 1.9629 are in the high group. A cross tabulation and chi-square test was then computed using this ordinal crime rate scale by site type for each of the distance levels. Table 5.2 compares site types and crime levels at the exact parcel level; Table 5.3 compares rates of crime at the 100-foot radius; Table 5.4 summarizes the distribution of crime at the 300-foot radius; and Table 5.5 does so for the

600-foot level. It should be noted that due to the small sample size, many of the expected frequency cells in the chi-square analyses were less than five. This creates an unstable chi-square equation, thus hindering the significance test.

Table 5.2 Observed frequencies and chi-square analysis of crime rate by site type at the exact parcel level.

	Crime rate			
Site type	**Low (≤ 0.9748)**	**Moderate (0.9749-1.9628)**	**High (1.9629+)**	**Total**
Gardens	4	2	4	10
Vacant lots	15	4	7	26
Parking lots	6	5	7	18
Playgrounds	3	0	2	5
Parks/Green spaces	3	0	4	7
Total	31	11	24	66
$x^2 = 6.639^1 \;\; p = .576$				

[1]11 cells (73.3%) have expected count less than 5. The minimum expected count is .83.

Table 5.3 Observed frequencies and chi-square analysis of crime rate by site type at the 100-foot radius level.

	Crime rate			
Site type	**Low (≤ 0.9748)**	**Moderate (0.9749-1.9628)**	**High (1.9629+)**	**Total**
Gardens	4	3	3	10
Vacant lots	14	7	5	26
Parking lots	6	5	7	18
Playgrounds	2	2	3	7
Parks/Green spaces	1	3	1	5
Total	27	20	19	66
$x^2 = 5.795^1 \;\; p = .670$				

[1]19 cells (60.0%) have expected count less than 5. The minimum expected count is 1.44.

Table 5.4 Observed frequencies and chi-square analysis of crime rate by site type at the 300-foot radius level.

	Crime rate			
Site type	**Low (≤ 0.9748)**	**Moderate (0.9749-1.9628)**	**High (1.9629+)**	**Total**
Gardens	3	3	4	10
Vacant lots	10	9	7	26
Parking lots	2	6	10	18
Playgrounds	1	2	2	5
Parks/Green spaces	1	2	4	7
Total	17	22	27	66
$x^2 = 6.422^1 \;\; p = .600$				

[1]10 cells (66.7%) have expected count less than 5. The minimum expected count is 1.29.

Table 5.5 Observed frequencies and chi-square analysis of crime rate by site type at the 600-foot radius level.

	Crime rate			
Site type	**Low (≤ 0.9748)**	**Moderate (0.9749-1.9628)**	**High (1.9629+)**	**Total**
Gardens	2	5	3	10
Vacant lots	8	14	4	26
Parking lots	0	12	6	18
Playgrounds	1	1	3	5
Parks/Green spaces	2	2	3	7
Total	13	34	19	66
$x^2 = 11.888^1 \;\; p = .156$				

[1]9 cells (60.0%) have expected count less than 5. The minimum expected count is .98.

In order to further explore crime risk levels across site types, UCR Part I and Part II crimes were separated and analyzed by site type per 10,000 square feet (see Tables 5.6 and 5.7, respectively). In Table 5.6, the site types ranked from lowest to highest Part I crime rate at the exact parcel level are vacant lots, playgrounds, parks/green spaces, parking lots, and gardens. This is similar to the rank order at the 100-foot radius. However, playgrounds and parks/green spaces switch rankings, and parking lots have the highest Part I crime rate at the 100-foot radius level. Gardens still exhibit fairly a moderate level of crime, although they rank as having the highest Part I crime rate at the exact parcel and the second-highest at the 100-foot radius level.

Additionally, playgrounds have among the lowest rates when examining Part I crimes only, except at the further distances. Parking lots have the second highest Part I rates at the exact parcel level of analysis and the highest Part I rates at a 100-foot-radius level of analysis. Vacant lots again have the lowest Part I crime rate at every level. Keeping in mind that the 300-foot radius is meant to represent one street segment, parks/green spaces and playgrounds experience the same jump in Part I crimes at the 300-foot radius as in Table 5.1. Once again, in general, all rates in Part I crimes go down across all site types as the level of analysis broadens.

Table 5.6 Past 2 year crime rates by site type (UCR Part I incidents per 10,000 square feet)

Site type	Exact parcel	100ft radius	300ft radius	600ft radius
Garden (N=10)	1.4867	0.9224	0.8973	0.7577
Vacant lots (N=26)	0.7852	0.6335	0.6476	0.4028
Parking lots (N=18)	1.2971	1.0622	0.9192	0.5995
Playgrounds (N=7)	0.9789	0.9036	1.4581	1.0288
Parks/Green spaces (N=5)	1.0877	0.8924	1.4585	1.0397

Shifting focus to UCR Part II crimes, Table 5.7 shows much more modest numbers. Interestingly, the rankings for Part II crimes are different than both all UCR crimes combined and the Part I crimes, especially with respect to the community gardens. The site type ranking for Part II crimes is as follows: gardens, vacant lots, parks/green spaces, parking lots, and playgrounds (from lowest to highest). Thus, when examining Part II crimes at the parcel level only, gardens have the lowest crime rate among all site types. However, when considering all other levels of analysis, gardens rank in the middle of the pack. For each site type, Part II crime rates generally decline as the level of analysis increases, with a few exceptions. The gardens low rate at the parcel level throws off its downward trend, and both playgrounds and parks/green spaces experience a jump in Part II crime rates at the 300-foot radius level. Like Table 5.1,

vacant lots show the lowest rates at all distances, with the exception of the exact parcel where the gardens experience a drop in its trend.

Table 5.7 Past 2 year crime rates by site type (UCR Part II incidents per 10,000 square feet)

Site type	Exact parcel	100ft radius	300ft radius	600ft radius
Garden (N=10)	0.4757	0.7359	0.8472	0.5807
Vacant lots (N=26)	0.5816	0.5448	0.5054	0.3250
Parking lots (N=18)	0.9808	0.7847	0.6443	0.4561
Playgrounds (N=7)	1.2586	1.0738	1.1341	0.7505
Parks/Green spaces (N=5)	0.7251	0.4880	0.7902	0.6435

The most interesting finding from separating Part I and Part II crime rates is the contrast in the rates associated with community gardens when using the exact parcel as the level of analysis. While the garden parcel crime rates were moderate when all UCR crimes were combined, they had the highest rate of Part I crimes and the lowest rate of Part II crimes. To examine this further, Tables 5.8 and 5.9 show the disaggregated Part I and Part II crime rates, respectively, for community gardens at all levels of analysis.

Table 5.8 Past 2 year crime rates by garden (UCR Part I incidents per 10,000 square feet)

Site	Exact parcel	100ft radius	300ft radius	600ft radius
Garden lots (N=10)	1.4867	0.9224	0.8973	0.7577
Agnes Wagner	1.7161	0.8053	0.4886	0.4448
Agnes B	1.3459	0.2705	0.9360	1.0384
Village Green	0.4281	0.5256	0.4764	0.5531
Eco Garden	0.0000	0.0000	0.3897	0.5125
People's Garden	5.0813	2.7645	2.2447	1.2488
Pleasant/Race	1.0137	1.8478	1.7931	2.2184
Pleasant #16	13.0890	2.6377	1.7201	1.7056
Pendleton	0.0000	0.7684	0.8552	0.8252
C #1	0.0000	0.3375	0.4409	0.5654
C #2	0.0000	0.1189	0.3094	0.5662

Table 5.9 Past 2 year crime rates by garden (UCR Part II incidents per 10,000 square feet)

Site	Exact parcel	100ft radius	300ft radius	600ft radius
Garden lots (N=10)	0.4757	0.7359	0.8472	0.5807
Agnes Wagner	0.8581	0.2478	0.1685	0.2575
Agnes B	1.3459	0.5410	0.6324	0.4821
Village Green	0.6421	0.5256	0.4436	0.2650
Eco Garden	0.0000	0.1788	1.0460	0.8214
People's Garden	3.3895	2.7645	2.3850	1.4592
Pleasant/Race	0.5068	0.4199	1.0958	1.1706
Pleasant #16	4.3630	2.8261	1.4868	1.2972
Pendleton	0.0000	0.9220	1.1225	0.7565
C #1	0.0000	0.5625	0.8354	0.7280
C #2	0.0000	0.0000	0.1428	0.4730

Two things become apparent when comparing the Part I and Part II crime rates of the individual gardens at the parcel level of analysis. First, in Table 5.8, we see that Pleasant Street #16 has an extremely high rate of Part I crimes at the parcel level (13.089 Part I crimes per 10,000 square feet), and the People's Garden has a fairly high rate as well (5.0813). Second, Table 5.9 shows that Pleasant Street #16 has a considerably smaller rate of Part II crimes (4.363) compared to its Part I crimes at the parcel level. In fact, all of the individual gardens have a smaller Part II crime rate than Part I crime rate. However, the huge difference between the Part I and Part II crime rates at Pleasant Street #16 is likely the main contributor to the previous finding of gardens ranking highest among the site types in Part I crime rate at the parcel level of analysis. To further explore this finding, the breakdown of violent and property Part I crimes at People's Garden and Pleasant Street #16 were examined. Across all levels of analysis (i.e., parcel, 100-, 300- and 600-foot radii), Pleasant Street #16 showed a similar distribution of Part I crimes as the national average. While the People's Garden had a higher percentage of violent crimes compared to the national average, the number of crimes across all levels and sites was too small to provide meaningful analyses.

Explicating the Crime Risk Levels: Disaggregation of Sites

To get an idea of whether certain sites are driving these overall findings, Table 5.10 shows the full UCR crime risk level for each individual site at every distance level. The sites are grouped by site type, and the crime risk level of the combined site type for each distance level is provided in this table as well. First examining the garden sites, it was noted above that the overall crime rates (i.e., Part I and Part II combined) for the garden sites were often in the middle of the pack relative to the other site types across all four levels of analysis. In Table 5.10, it can be seen that People's Garden and Pleasant Street #16 seem to have much higher rates of crime at all levels than the other gardens. The observational analyses in Chapter Six will help shed light on *why* these gardens have higher crime rates than the other gardens. With the outliers removed from the original analyses, the garden sites may have been more at the low end compared to the other site types. These data will be presented below. Before doing so, however, I will discuss the presence of outliers among other site types.

Moving on to examine vacant lots, Tables 5.1 and Table 5.6 and 5.7 showed relatively low crime rates for vacant lots at the parcel level. More than half (53.85%) of the vacant lots experienced no crime in the past two years at the parcel level. Even the vacant lots that experienced a high rate of UCR crimes per 10,000 square feet at the parcel level (i.e., Village Green #11, Eco Garden #2 and Eco Garden #7) show a steep drop to more comparatively typical rates at the other levels of analysis. These findings are contrary to the idea that vacant lots, a proxy counterfactual for the community gardens, would experience high rates of crime due to the virtual absence of ownership over such spaces. In fact the opposite is true for these data; vacant lots are consistently lowest in crime rates compared to the other site types. This may be due to the fact that people do not tend to gather at vacant lots, thereby making vacant lots poor crime

generators compared to "busier" site types (i.e., those with more consistent patterns of daily activity).

Now let us examine the "open-air" comparison sites. Although parking lots did not seem to show anything unexpected in the grouped UCR crime rates of Table 5.1, there are several outliners in this category of Table 5.10 that are worth noting. Both Eco Garden #3 and Pleasant Street #12 have particularly high crime rates at the parcel level. Additionally, the crime rate for Eco Garden #4 increases considerably from the parcel level to the 100-foot radius level. However, this may be due to its close proximity with Eco Garden #3.

Table 5.1 showed an unusual increase in the crime rates of parks/green spaces and playgrounds at the 300-foot level. It was speculated that this would be due to outliers at this level. Table 5.10 indicates that this indeed seems to be the case. For the parks/green spaces, although each of the sites experience an increase in crime rate at the 300-foot radius, the crime rates for both Pleasant Street #10 and Pleasant Street #15 increase dramatically at this level. Similarly for playground sites, Eco Garden #24 and Pleasant Street #14 show a more pronounced jump at the 300-foot level than the other playground sites.

Table 5.10 All UCR crime rates per 10,000 square feet by site

Site type	Exact parcel	100ft radius	300ft radius	600ft radius
Garden lots (N=10)	1.9625	1.6584	1.8077	1.6869
Agnes Wagner	2.5742	1.0534	0.6571	0.7023
Agnes B	2.6918	0.8116	1.5684	1.3721
Village Green	1.0702	1.0512	0.9364	0.8239
Eco Garden	0.0000	0.1788	1.3947	1.3339
People's Garden	8.4739	5.5290	4.6095	2.7080
Pleasant/Race	1.5205	2.2677	2.8889	3.3891
Pleasant #16	17.452	5.4638	3.2069	3.0028
Pendleton	0.0000	1.6904	1.9777	1.5817
C #1	0.0000	0.9000	1.2763	1.3004
C #2	0.0000	0.1189	0.4522	1.0392
Vacant lots (N=26)	1.1924	1.1953	1.5419	1.5250
Agnes #2	2.8482	2.6769	1.0964	0.7532
Agnes #5	0.0000	0.5753	0.7983	1.3164
Agnes #10	0.0000	5.9334	2.5994	1.4734
Village Green #1	0.0000	1.4749	2.3506	1.7148
Village Green #3	2.2000	1.1229	0.9248	1.5222
Village Green #5	1.5222	0.8982	0.7944	0.9315
Village Green #6	0.0000	0.6200	0.6232	0.9178
Village Green #9	1.6643	0.8731	0.8010	0.8226
Village Green #11	4.3715	1.1603	0.6196	0.4608
Village Green #12	0.0000	0.6168	0.2530	0.3731
Eco Garden #2	9.4310	3.0555	3.5273	3.4873
Eco Garden #7	7.4697	0.5961	2.8498	2.6258
Eco Garden #16	0.0000	3.3957	1.5751	1.7326
Eco Garden #17	1.6464	1.3477	0.8776	0.9066
Eco Garden #19	2.5671	1.5931	1.0031	0.9005
Eco Garden #20	0.0000	0.7037	1.4079	1.3030
Eco Garden #21	0.0000	0.6556	1.5614	1.4253
Eco Garden #22	0.0000	1.6269	1.1045	1.5747
Eco Garden #23	0.4385	0.1689	1.3045	1.3127
Pleasant #1	0.0000	0.0000	3.1887	1.7847
Pleasant #4	0.0000	0.3468	2.3080	1.9321
Pleasant #5	0.0000	0.9748	1.5889	1.8539
Pleasant #8	1.5250	1.5871	1.7421	3.1208
Pleasant #11	5.1894	2.2666	6.6985	3.9860
Pendleton #10	0.0000	0.0838	0.3219	1.1668
Pendleton #11	0.0000	0.0000	0.3989	1.3668
Parking lots (N=18)	2.3413	2.2634	2.4231	2.0569
Agnes #6	0.0000	0.5009	0.7620	0.9754
Agnes #7	2.2581	1.4930	1.7203	1.2649
Agnes #8	2.6384	0.9762	0.6933	1.3124
Agnes #9	0.0000	0.4541	2.3320	1.5310

Agnes #11	1.5997	5.5098	2.9367	1.7414
Agnes #12	2.5589	4.3373	2.4663	1.6110
Agnes #13	0.0000	0.4175	1.7529	1.7297
Village Green #2	5.0213	0.7511	1.2619	1.7230
Eco Garden #3	10.2815	6.2853	4.1074	3.3111
Eco Garden #4	2.8321	6.9477	5.0547	3.6741
Pleasant #2	0.0000	0.5963	2.1238	1.8524
Pleasant #3	0.0000	1.0815	1.9370	1.7581
Pleasant #9	0.0000	0.0000	2.3442	3.5422
Pleasant #12	19.513	6.2032	2.0592	2.7984
Pleasant #13	1.7760	1.5261	5.8852	2.9285
Pendleton #2	1.8404	2.1266	4.5475	3.3159
Pendleton #4	1.5758	1.0192	1.2655	1.4303
Pendleton #8	1.0530	2.3524	1.9054	1.2778
Playgrounds (N=7)	2.2376	1.9775	2.7407	2.1052
Agnes #4	0.0000	0.0000	0.6633	0.7543
Village Green #4	2.4933	0.7891	1.2371	0.9248
Eco Garden #8	3.9939	3.7796	3.5639	3.0704
Eco Garden #15	2.6961	2.0762	1.9638	1.7660
Eco Garden #24	0.4391	1.2354	1.7145	1.4642
Pleasant #14	0.0000	0.9787	7.0163	3.4629
Pendleton #1	2.7048	3.2144	3.6631	3.2061
Parks/Green spaces (N=5)	1.8129	1.3805	2.5294	2.2473
Village Green #8	0.4092	0.5914	0.6415	0.8819
Pleasant #10	0.0000	1.1209	6.7841	3.1483
Pleasant #15	4.0925	2.6135	4.0976	3.9551
Pendleton #3	1.9628	1.4193	1.4607	2.0351
Pendleton #6	0.0000	1.1077	1.4456	1.4388

To examine the crime rates of the site types more fairly due to the presence of outliers, Table 5.11 presents the crime rates for the past two years by site type with all outliers removed. Outliers were determined as crime rates beyond three standard deviations from the mean at each distance level. The means and standard deviations, respectively, for each distance level are as follows: parcel ($\bar{x}$ = 2.218; SD = 3.718), 100-foot radius ($\bar{x}$ = 1.741; SD = 1.746), 300-foot radius ($\bar{x}$ = 2.132; SD = 1.609), and 600-foot radius ($\bar{x}$ = 1.841; SD = 0.963). Thus, any parcel with a crime rate higher than 13.372 at the parcel level (one garden and one vacant lot), higher than 6.979 at the 100-foot radius level (none), higher than 6.959 at the 300-foot radius level (one

vacant lot and one park/green space) and/or higher than 4.730 at the 600-foot radius level (none) was removed from the analyses presented in Table 5.11.

Table 5.11 Past 2 year crime rates by site type with outliers removed (UCR incidents per 10,000 square feet)

Site type	Exact parcel	100ft radius	300ft radius	600ft radius
Gardens	1.7485	1.6584	1.8077	1.6870
Vacant lots	1.1924	1.1953	1.3631	1.5250
Parking lots	1.8545	2.2634	2.4231	2.0570
Playgrounds	2.2376	1.9775	2.7407	2.1052
Parks/Green spaces	1.8129	1.3805	1.8123	2.2473

Once the outliers were removed from all site types at each distance, the gardens dropped to the second lowest crime rate at all distance levels except the 100-foot radius. The rankings at this distance level, as well as the 600-foot radius, remained the same as there were no outliers at these levels. Despite the improvement in the crime rates of the gardens once the outliers were removed, the vacant lots still had the lowest crime rates at each distance level.

Pre-Post Trends in Garden Crime Rates

A final component of my analysis of crime data was an analysis of crime rates before and after gardens were implemented. Due to limited data, pre-post garden trends were not able to be examined for all gardens selected as case studies. As the potential impact of gardens on crime is the main focus of this dissertation, however, it seems prudent to examine pre-post rates where possible. Therefore, gardens for which UCR crime data was available for two years prior and two years after implementation were pooled together to create an overall pre-post garden trend. Table 5.12 depicts this crime rate trend at each distance level for all gardens combined. Paired-sample t-tests were conducted to assess the significance of change in crime rates for each distance level for both 2-years pre-post and 1-year pre-post. However, none of the findings were significant. Therefore, general trends are examined below.

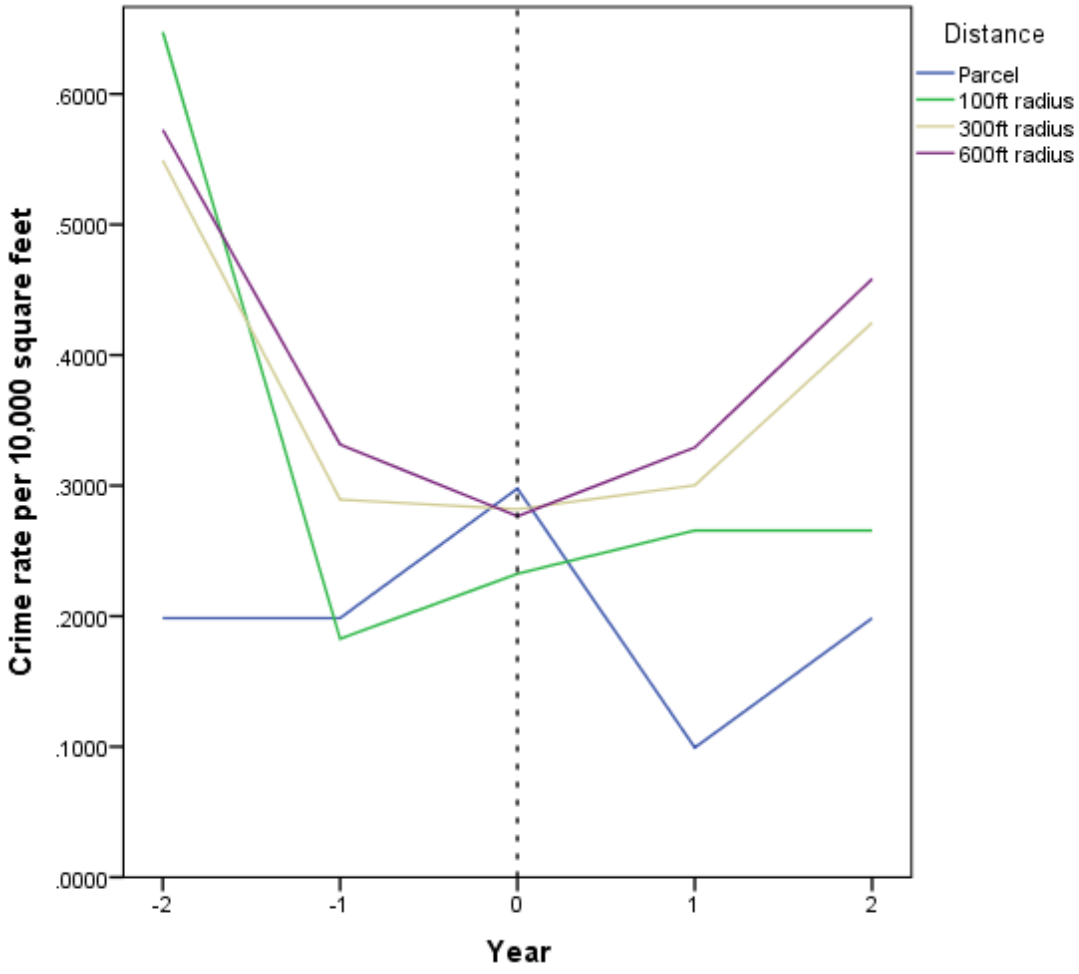
Table 5.12 Garden crime UCR incidents per 10,000 square feet two years pre-implementation and two years post-implementation for all gardens[1] combined

Garden	Exact parcel	100ft radius	300ft radius	600ft radius
All gardens 2 years pre	0.1985	0.6475	0.5492	0.5726
All gardens 1 year pre	0.1985	0.1826	0.2893	0.3315
All gardens Year of garden	0.2978	0.2324	0.2819	0.2766
All gardens 1 year post	0.0993	0.2657	0.3002	0.3292
All gardens 2 years post	0.1985	0.2657	0.4247	0.4583

[1]This table includes only gardens for which UCR data was available two years before and two years after garden implementation.

Overall, regardless of which level of analysis is considered, crime rates tend to be lower at gardens post-implementation in comparison to pre-implementation. The most substantial decrease is observed when the exact parcel level is the level of analysis (shown graphically in Figure 5.1). This may indicate that more substantial reductions in crime are possible through processes associated with criminal opportunity as opposed to processes of informal social control. That being said, gardens experienced a return to pre-implementation crime rates at the 2-year follow-up (using parcel as level of analysis), suggesting that any opportunity-reduction that came about from the implementation of the garden at the exact parcel level was relatively short-lived. In contrast, when considering all other levels of analysis, the crime rates are higher 2 years after garden implementation as opposed to one year after implementation, but few of the gardens returned to their pre-implementation crime rates (i.e., especially those two years prior to garden implementation). As such, it is possible that crime prevention processes occurring at broader levels of analysis (i.e., informal social control) have a more modest yet more sustained impact. Site-specific pre-post findings that will be presented next.

Figure 5.1 Trend lines of UCR incidents per 10,000 square feet two years pre-implementation and two years post-implementation for all gardens combined



There are several findings worth noting when looking at the pre-post implementation crime rates for the gardens individually, as presented in Table 5.13. First, while Pendleton Children's Garden had no crime at the parcel level at any time period, there is a sharp decline in crime one year *prior* to the garden's implementation when using all other levels for analysis (shown graphically in Figure 5.2). At these various levels, rates begin a steady and slight *increase* after implementation. Though crime is higher post-implementation in comparison to one year prior to implementation, the crime rates associated with Pendleton Children's Garden

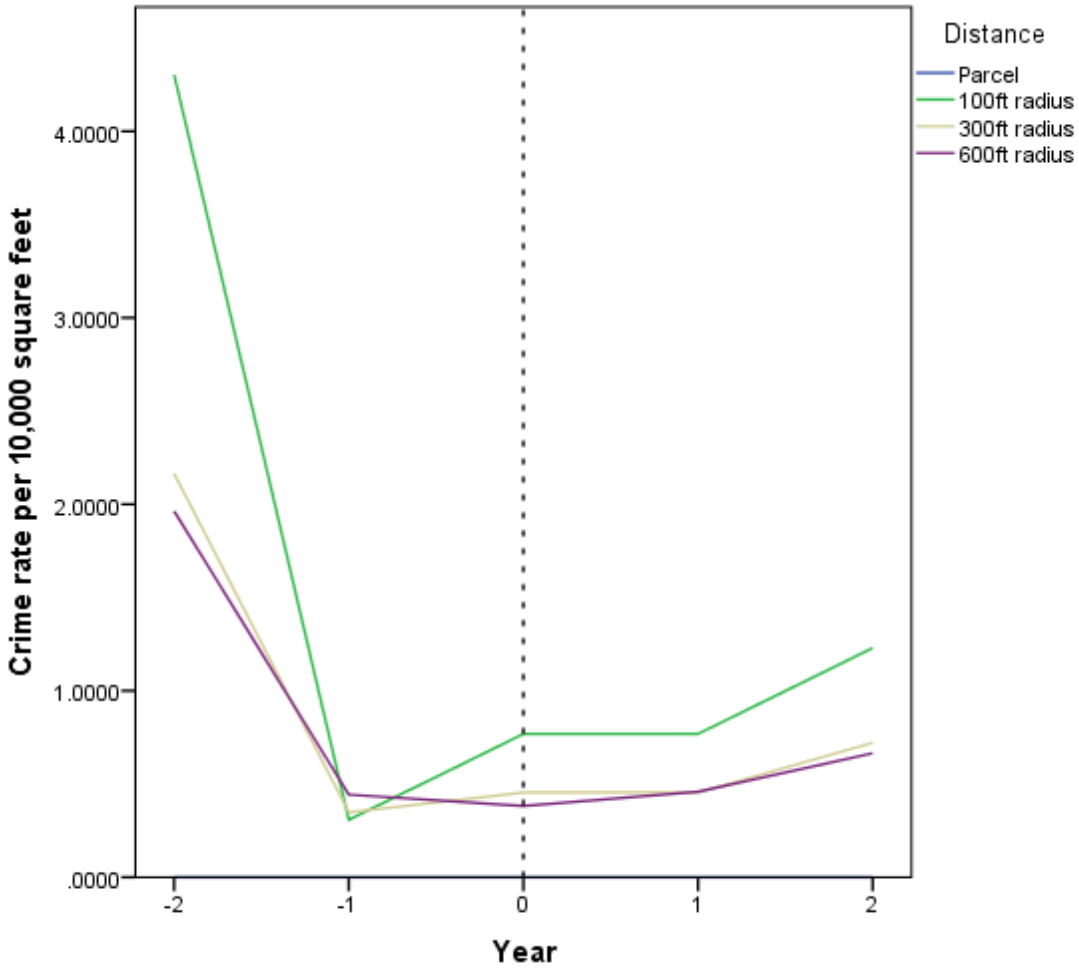
were lower during the two observed post-implementation years than they were *two-years prior* to implementation at each of these levels of analysis (other than the parcel level).

Table 5.13 Garden crime UCR incidents per 10,000 square feet two years pre-implementation and two years post-implementation for individual gardens

Garden	Exact parcel	100ft radius	300ft radius	600ft radius
Pendleton 1997	0.0000	4.3029	2.1648	1.9637
Pendleton 1998	0.0000	0.3073	0.3474	0.4432
Pendleton 1999	0.0000	0.7684	0.4543	0.3820
Pendleton 2000	0.0000	0.7684	0.4543	0.4585
Pendleton 2001	0.0000	1.2294	0.7216	0.6648
Village Green 2002	0.0000	0.1752	0.1479	0.1901
Village Green 2003	0.0000	0.2336	0.2136	0.1671
Village Green 2004	0.4281	0.1168	0.0986	0.0979
Village Green 2005	0.2140	0.0584	0.0657	0.0864
Village Green 2006	0.0000	0.2336	0.2136	0.1498
Pleasant St./Race St. 2007	0.5068	0.1680	0.6376	0.7438
Pleasant St./Race St. 2008	0.0000	0.0000	0.5778	0.7567
Pleasant St./Race St. 2009	0.0000	0.0840	0.4782	0.5498
Pleasant St./Race St. 2010	0.0000	0.1680	0.3387	0.3816
Pleasant St./Race St. 2011	0.0000	0.0000	0.2590	0.3687
C #1 2008	0.0000	0.3375	0.3945	0.2968
C #1 2009	0.8299	0.1125	0.2089	0.2615
C #1 2010	0.8299	0.2250	0.3017	0.2403
C #1 2011	0.0000	0.6750	0.1856	0.2120

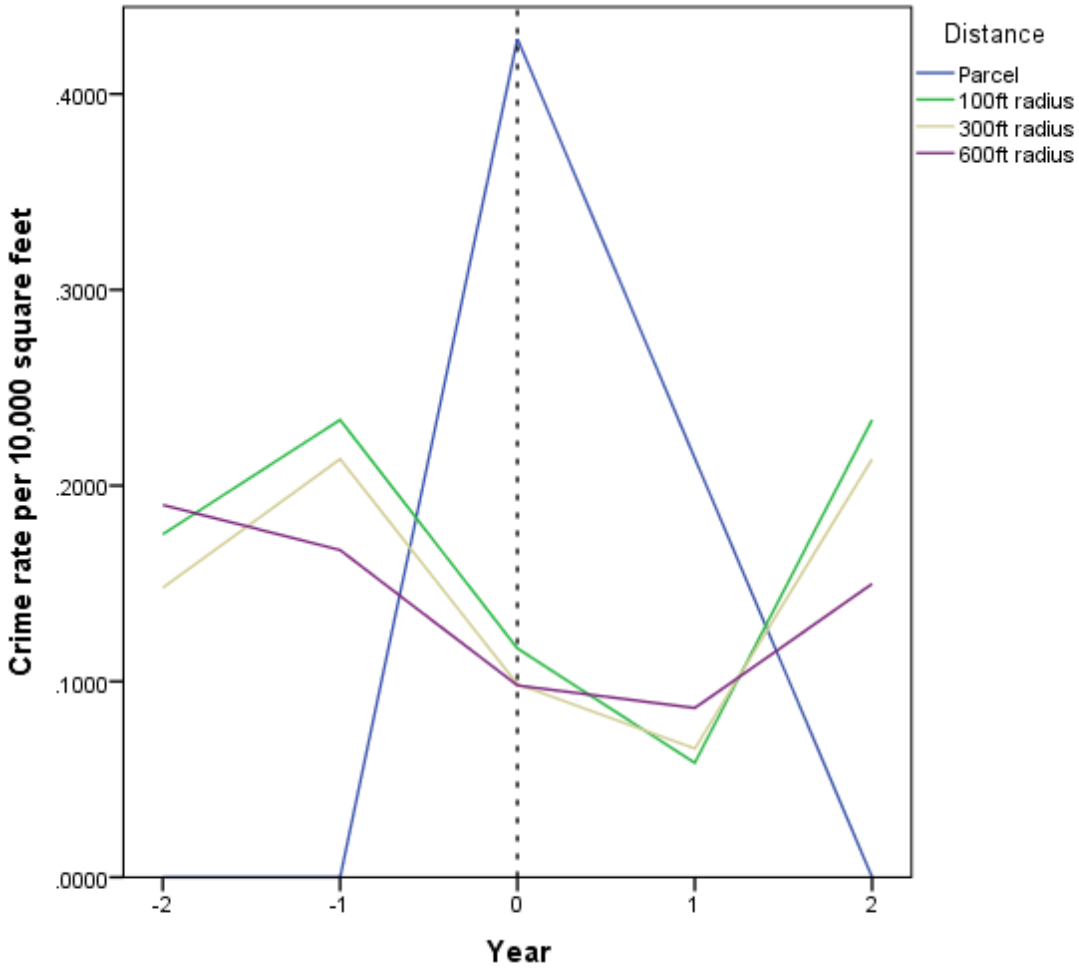
C #1 2012	0.0000	0.0000	0.6962	0.6149
C #2 2008	0.0000	0.0000	0.0238	0.1720
C #2 2009	0.0000	0.0000	0.0714	0.1433
C #2 2010	0.0000	0.0000	0.0952	0.2078
C #2 2011	0.0000	0.0000	0.0714	0.1505
C #2 2012	0.0000	0.0000	0.0952	0.4443
Agnes B 2009	1.3459	0.4058	0.2530	0.2225
Agnes B 2010	1.3459	0.5410	0.3036	0.2151
Agnes B 2011	0.0000	0.5410	0.3289	0.2003
Agnes B 2012	0.0000	0.2705	0.8348	0.7639
Agnes B 2013	2.6918	0.5410	0.7336	0.6082

Figure 5.2 Trend lines of UCR incidents per 10,000 square feet two years pre-implementation and two years post-implementation for Pendleton Children's Garden



The trend lines for pre- and post-implementation of the Garden at Village Green are presented in Figure 5.3. The exact parcel level trend line jumps out as a potential anomaly, as the crime rate spikes sharply during the year of the garden's implementation and returns steadily to the pre-implementation crime rate of zero at 2-year follow-up. At other levels of analysis, the crime rates associated with the Garden at Village Green follow a similar pattern: The crime rate begins a steady drop from 1-year pre-implementation to 1-year post-implementation and rises to near or exceeding pre-implementation crime rates by the 2-year follow-up.

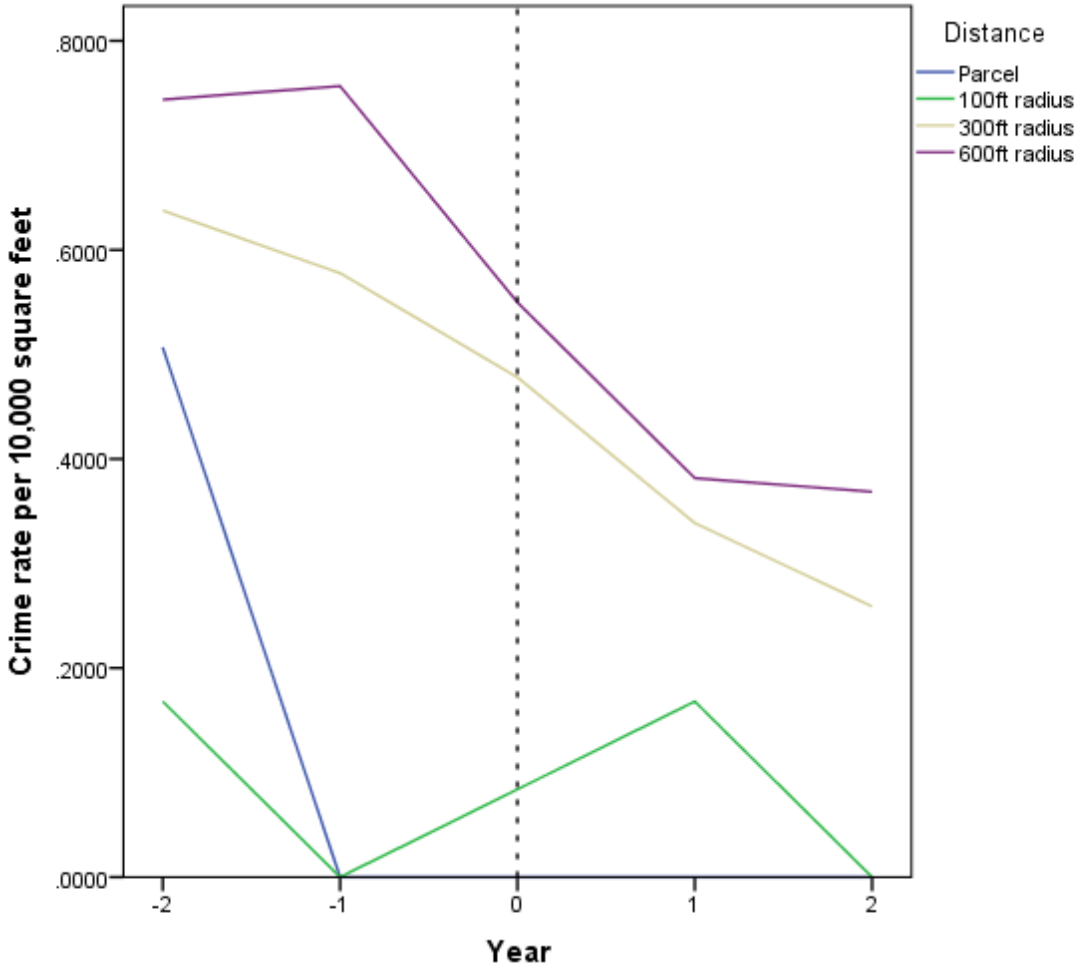
Figure 5.3 Trend lines of UCR incidents per 10,000 square feet two years pre-implementation and two years post-implementation for Garden at Village Green



The pre- and post-implementation crime rates for Pleasant Street/Race Street gardens are shown graphically in Figure 5.4. The crime rates at the exact parcel and 100-foot radius levels (again, meant to represent the "place" in a criminal opportunity structure) are relatively low, with the exception of 2-years prior to implementation. However, at the 100-foot level of analysis, crime increased from 1-year pre- to 1-year post-implementation, and then fell back to zero at the 2-year follow-up. The crime rate within 300- and 600-feet of Pleasant Street/Race Street Gardens (meant to represent one and two street segments, respectively) experienced a fairly

steady decrease across the full timeline, with the crime rate with 600-feet of the gardens leveling off from one-year to two-year follow-up.

Figure 5.4 Trend lines of UCR incidents per 10,000 square feet two years pre-implementation and two years post-implementation for Pleasant St./Race St. Garden



Unfortunately, the pre-post-implementation crime rates for the garden labeled C #1 (shown graphically in Figure 5.5) do not show a clear trend at any of the levels of analysis examined. Using the exact parcel as the level of analysis, the crime rate decreased dramatically post-implementation. However, this may be an abnormality due to the spike in the crime rate at the parcel level one-year prior and during the implementation year, as crime simply returned to the rate it was two-years pre-implementation. While crime exhibited a slight decline one-year

after implementation using the 300- and 600-foot levels of analysis, the crime rates at both levels rose past the rates of pre-implementation at the two-year follow-up.

Figure 5.5 Trend lines of UCR incidents per 10,000 square feet two years pre-implementation and two years post-implementation for C #1

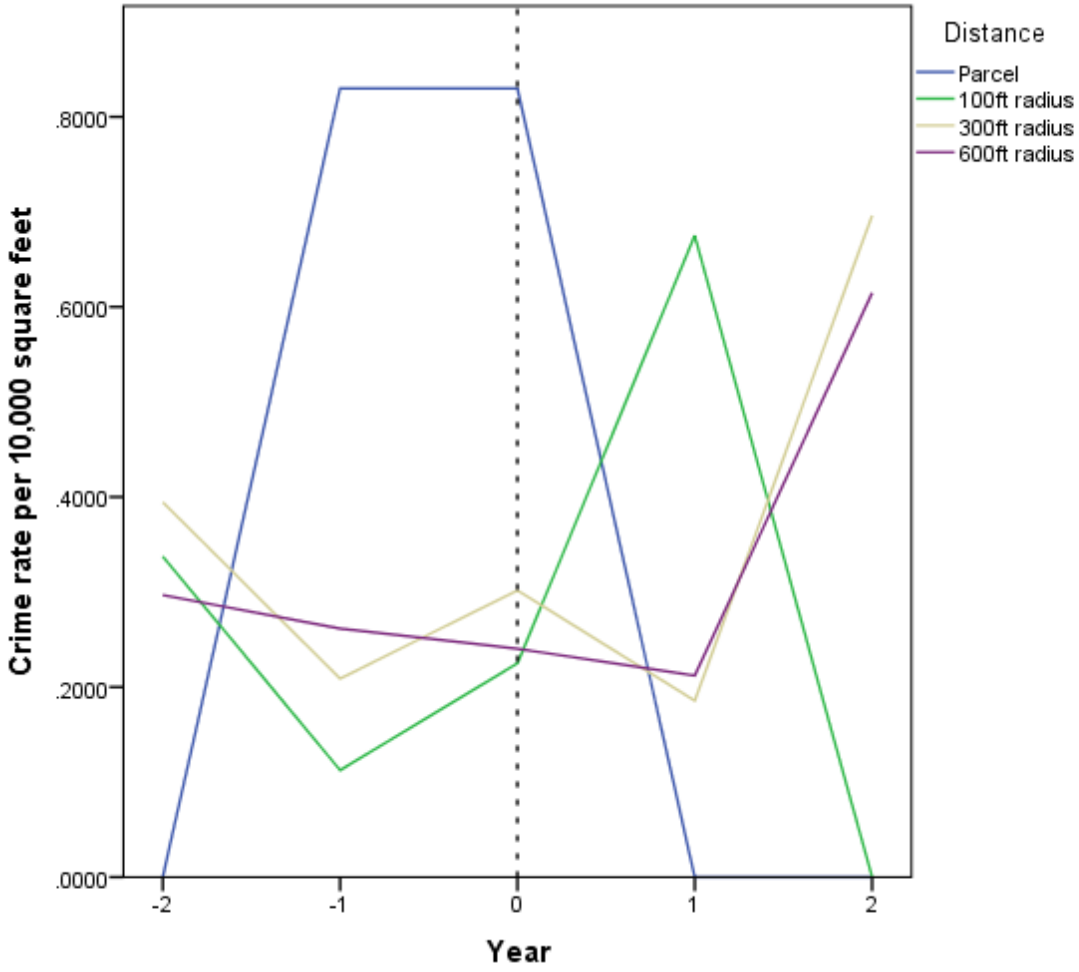
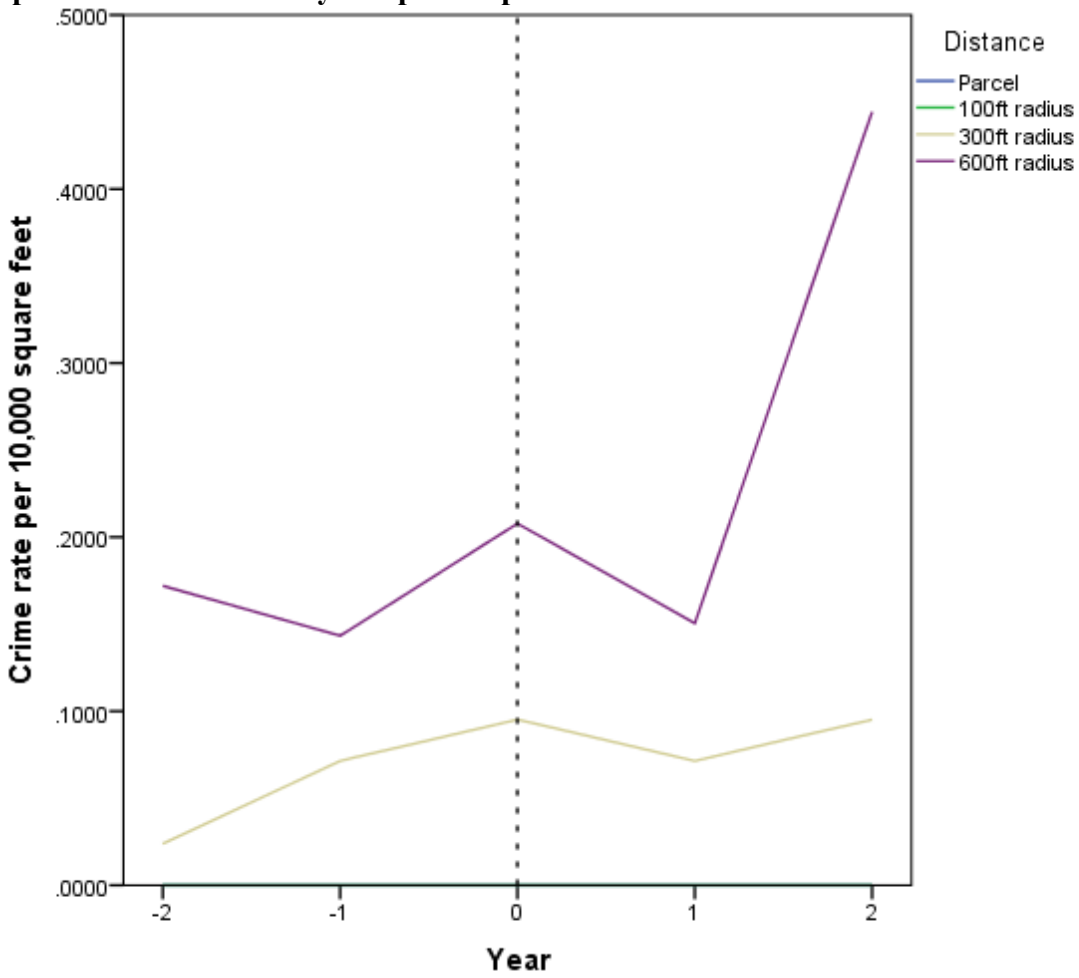


Figure 5.6 presents the trend lines for the garden labeled C #2. Using the exact parcel and 100-foot levels of analysis, the crime rate was zero throughout the time period. Thus, these trend lines cannot be seen in the graph. Considering the 300-foot level of analysis for C#2 garden, the crime rate was fairly low throughout as well. However, a slight decrease in the crime rate was experienced at the one-year follow-up at this level of analysis, only to return to the same rate as the year of implementation by the two-year follow-up. Likewise, using a 600-foot radius around garden C#2 as the level of analysis, there is a similar, though more dramatic, trend in

crime. At the one-year follow-up, the crime rate (using the 600-foot level) was down as compared to the crime rate the year of implementation. However, there was a large increase in the crime rate within 600-feet of garden C #2 two years after implementation.

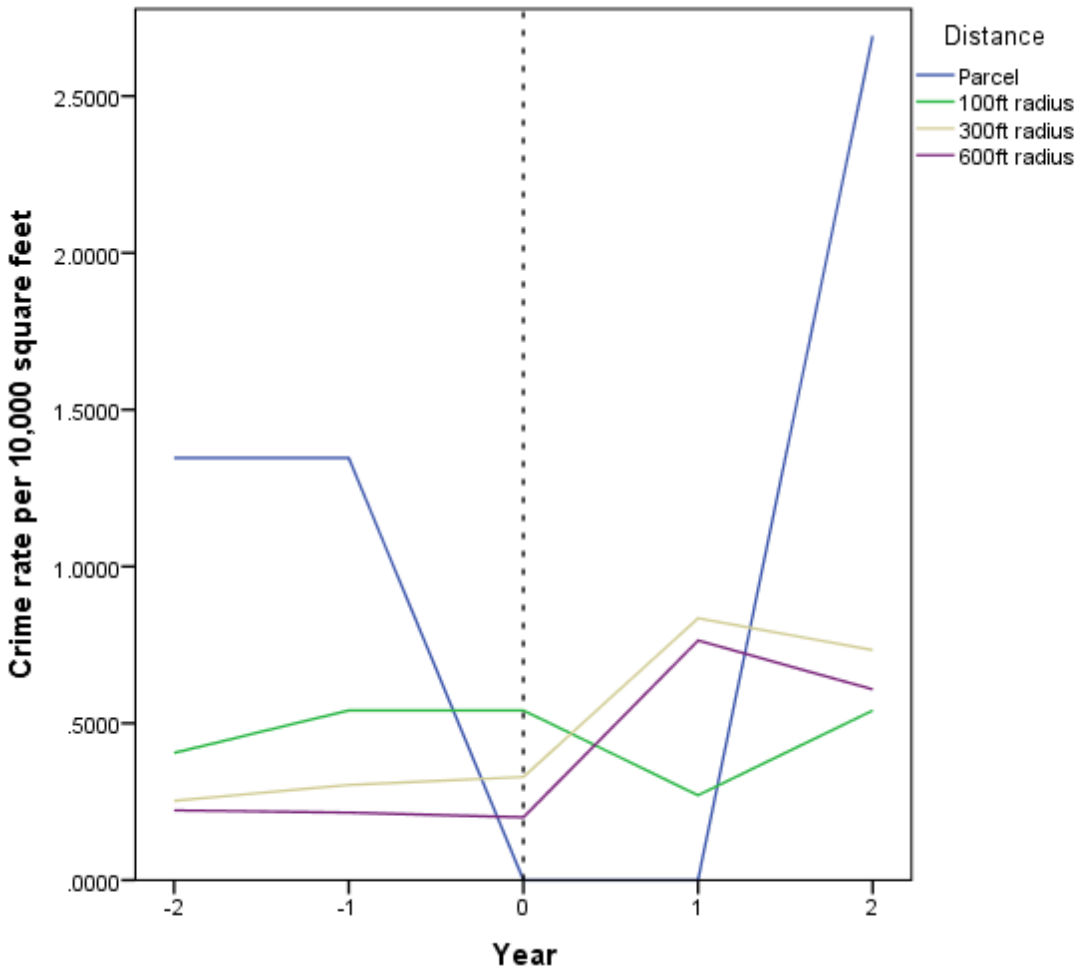
Figure 5.6 Trend lines of UCR incidents per 10,000 square feet two years pre-implementation and two years post-implementation for C #2



Finally, the trend lines for Agnes B are shown in Figure 5.7. Interestingly, Agnes B experienced zero crime at the exact parcel during the year of implementation and one-year follow-up. However, the crime rate at the Agnes B parcel jumped to twice the pre-implementation levels at the two-year follow-up. The crime rate within 100-feet of Agnes B remained fairly steady, with a dip in the crime rate at the one-year follow-up that returned to the

pre-implementation levels by the two-year follow-up. Analyses of crime using broader levels (300- and 600-foot radii around the parcel) follow similar trends to one another. The crime rates at both of these levels increased one-year post-implementation then declined slightly at two-years post-implementation, though not returning to the pre-implementation rate.

Figure 5.7 Trend lines of UCR incidents per 10,000 square feet two years pre-implementation and two years post-implementation for Agnes B



CONCLUSION

Although none of the significance tests showed differences other than what would be expected under the null hypotheses for those tests, the crime rates analyzed in this chapter were unexpected. With the exception of one garden which had an extremely high Part I crime rate at the parcel level, the garden sites showed moderate crime rates at all distances relative to the other site types. Perhaps most interesting was the finding that the vacant lots consistently had the lowest crime rates at all distances. Due to limited crime rate data, only a handful of garden sites were able to be analyzed pre- and post-implementation. None of the paired-sample t-tests showed statistically significant differences between pre- and post-implementation crime rates, and simple trend examinations showed little consistency. However, the grouped trend lines indicated that if the gardens had any impact on crime at all, it was limited to one-year post-implementation at the parcel level. The following two chapters will present findings from the observations and the interviews to examine criminal opportunity and informal social control at these sites, respectively. Perhaps these analyses will shed light on the unexpected crime rate findings.

CHAPTER SIX

OBSERVATIONS OF OPPORTUNITY STRUCTURES

After exploring the rates of crime surrounding community gardens and comparison sites at various levels of analysis, my focus now shifts to the data collected during periodic observations of these places. The intent of these observations was to capture measures of criminal opportunity (see Chapter Four). This chapter is thus organized around constructs from various opportunity theories (see Chapter Two). The first two measures are derived from defensible space theory. First, observations regarding measures of image are presented. Second, all of the sites are described in terms of measures of territoriality, including measures of parcel access and street access. Finally, measures of routine activities theory, specifically guardianship and/or offender handling, are analyzed. Each table that is provided to describe levels of image, territoriality, and guardianship/handling also reiterates a summary of the crime data from the previous chapter for ease of comparison. While most of the data provided in this chapter are descriptive, Pearson's correlation coefficients describing the relationships between certain measures of image, territoriality, and guardianship specific to individual sites and site-specific rates of crime are provided in order to supplement the descriptive data. Clearly, small sample sizes would limit such correlation analysis, so the Pearson's correlation coefficients presented in this chapter include all site types combined (N=65).[3]

[3] It should be noted that Pleasant Street garden and Race Street Children's Garden could not be included as individual units in correlation analyses. Due to their close proximity, these two sites were treated as one for the purposes of crime rate calculations, though they were observed as separate sites.

MEASURES OF IMAGE

Of the data collected during the periodic observations, five measures were chosen to best represent the image of these places: small litter, large litter, graffiti, dilapidated buildings, and evidence of drug or alcohol use. During each observation, the amount of small litter (smaller than 2"x2"), the amount of large litter (items that had been "dumped"), the number of pieces of graffiti and its approximate size, and the number of beer cans, beer or liquor bottles and/or drug paraphernalia were counted. All observations of graffiti, regardless of size, were combined into a single count. Similarly, the various indicators of drug and alcohol use were also combined into a single count. Because small litter, large litter, graffiti and evidence of drug and alcohol use were counted during every observation, an average count across all observation points is used for these items in the analysis presented below. It should be noted that the numbers of adjacent buildings that were boarded up or had broken windows were counted during every observation period as well. However, very little change was observed in the state of the surrounding buildings across the observation periods. Therefore, the data presented below are taken from the number of dilapidated buildings (either boarded up or broken windows) from the initial site visits. As with the crime rate data, all measures (counts) of disorder were standardized by the size of sites per 10,000 square feet.

These measures of image were first analyzed by grouping all sites of like-type together. In these cases, the mean of each variable was calculated by averaging counts across all sites within each site type category, including dilapidated buildings. Table 6.1 summarizes these findings. As with the overall crime rate at the parcel level, gardens appear to be comparatively moderate on all of the measures of image, except dilapidated buildings for which gardens rank

highest among the site types. Again, vacant lots unexpectedly rank lowest on measures of small litter, graffiti and evidence of drug or alcohol use. Despite having the second lowest rate of crime at the parcel level, parks/green spaces have the highest rate of small litter and evidence of drug and alcohol use. Although playgrounds have the second highest collective crime rate at the parcel level, the only measure of image for which they rank highest is graffiti.

Table 6.1 Crime and mean measures of image per 10,000 square feet by site type

Site type	Crime rate at parcels	Small Litter	Large litter	Graffiti	Dilapidated Buildings[1]	Evidence Drugs/ Alcohol
Gardens (N=11)	1.9625	0.3277	0.0226	0.0779	.0307	0.0482
Vacant lots (N=26)	1.1924	0.2769	0.0256	0.0524	.0291	0.0181
Parking lots (N=18)	2.3413	0.5004	0.0357	0.0768	.0218	0.0251
Playgrounds (N=7)	2.2376	0.6256	0.0145	0.3179	.0058	0.0345
Parks/Green spaces (N=5)	1.8129	0.8314	0.0368	0.2056	.0259	0.1155

[1]Mean number of buildings boarded up or with broken windows surrounding the sites of each type

Table 6.2 presents the data regarding measures of image at each individual garden site. First examining the anomaly of gardens ranking highest in dilapidated buildings, Table 6.2 shows that two gardens had two dilapidated buildings each: People's Garden and Pleasant Street #16. These two gardens are also the highest compared to the other gardens in small litter, large litter, evidence of drug and alcohol use, and, indeed, crime rates. In fact, evidence of drug and/or alcohol use was significantly correlated with crime rates ($r = .269$; $p < .05$). Hence, it might be particularly important in understanding the unusually high rates of crime at People's Garden and Pleasant Street #16. While these two sites may be consistent with what would be expected in terms of image and crime, they may be unusual among the community gardens in this sample.

Table 6.2 Crime and measures of image per 10,000 square feet by individual garden site

Site	Crime rate at parcels	Small Litter	Large litter	Graffiti	Dilapidated Buildings[1]	Evidence Drugs/ Alcohol
Garden lots (N=11)	1.9625	0.3277	0.0226	0.0779	.0307	0.0482
Agnes Wagner	2.8602	0.4636	0.1316	0.0458	0.00	0.0286
Agnes B	2.6918	1.6824	0.5249	5.6393	0.00	0.0269
Village Green	1.0702	0.4987	0.1798	0.0171	0.00	0.0000
Eco Garden	0.0000	1.0301	0.0382	0.2017	0.00	0.0491
People's Garden	9.3212	34.878	0.9575	0.7372	2.00	7.8722
Pleasant Street	1.5205	1.1906	0.2560	0.0000	1.00	0.0256
Race Street		0.2669	0.1413	0.0157	1.00	0.0000
Pleasant #16	17.452	33.857	1.2216	3.3595	2.00	4.2757
Pendleton	0.0000	23.571	0.1063	6.4187	0.00	1.4665
C #1	0.0000	0.5561	0.0000	0.0000	0.00	0.0332
C #2	0.0000	1.6214	0.5339	4.1819	0.00	0.0593

[1]Number of buildings boarded up or with broken windows surrounding site

MEASURES OF TERRITORIALITY

Territoriality was measured from the data collected at the initial site observations (measures were not presumed to vary across observation periods). Table 6.3 presents measures of fencing, signage, parcel accessibility and traffic potential. Since information regarding whether the parcel was fenced was collected dichotomously (i.e., yes or no), this measure is represented as a percentage of parcels that were surrounded by fences by site type. The measure of signage is similarly represented as a percentage of those displaying signage by site type. Only signage that indicated ownership (i.e., the name of the location or "No Trespassing"/ "Private Property") was counted in this measure.

A scale was created to represent parcel accessibility based on how easily one could access the parcel on any given boundary of the adjacent parcels. A value of zero indicated that the parcel was completely inaccessible on that side; a value of one represented a partially

accessible boundary, and a value of two specified a boundary that was fully accessible. The accessibility value for each side of a parcel was added together resulting in an ordinal measure of parcel accessibility ranging from zero (completely inaccessible on all sides; usually indicative of fencing) to eight (completely accessible on all sides). The mean of these values was then computed to represent each site type.

The measure of traffic potential was computed comparably to parcel accessibility, although it was a bit more complicated given the variability in street types (for the list and configurations of all street types see the last page of Appendix B). This measure was created by adding together the level of traffic potential of the streets surrounding each parcel with zero representing streets with three possible outlets (i.e., dead ends and cul-de-sacs able to turn left, right or straight), one representing streets with four outlets, two representing streets with five possible outlets and three representing streets with six possible outlets (i.e., through streets) resulting in an ordinal measure ranging from 0 to 12. The mean of these numbers for each site type, along with overall rates of crime at the parcel level, is presented in Table 6.3.

Table 6.3 Crime and measures of territoriality by site type

Site type	Crime rate at parcels	Fencing	Signage[1]	Parcel Accessibility[2]	Traffic Potential[3]
Garden (N=11)	1.9625	54.55%	63.64%	2.45	2.82
Vacant lots (N=26)	1.1924	11.54%	4.00%	4.19	4.19
Parking lots (N=18)	2.3413	27.78%	38.89%	4.17	3.17
Playgrounds (N=7)	2.2376	71.43%	42.86%	3.43	4.71
Parks/Green spaces (N=5)	1.8129	20.00%	50.00%	4.80	4.60

[1]Only signage indicating ownership is included (i.e., name of the location or "No Trespassing"/ "Private Property")
[2]Mean of the accessibility of each side of the parcel (with 0 being completely inaccessible, 1 being partially accessible and 2 being completely accessible) resulting in an ordinal measure ranging from 0 (all sides inaccessible) to 8 (all sides accessible).
[3]Measure was created by adding together the level of traffic potential of the streets surrounding each parcel with 0 representing streets with 3 possible outlets (i.e., dead ends and cul-de-sacs able to turn left, right or straight), 1 representing streets with four outlets, 2 representing streets with five possible outlets and 3 representing streets with 6 possible outlets (i.e., through streets) resulting in an ordinal measure ranging from 0 to 12. The mean of these

numbers for each site type is presented here. For diagrams of the different street types, please see the last page of Appendix B.

Results presented in Table 6.3 indicate that gardens had the highest percentage of signage and second highest percentage of fencing, while vacant lots had the lowest percentage of each. However, these measures of territoriality did not translate into lower and higher crime rates, respectively. In fact, higher percentages of fencing and signage seem to be associated with *higher* crime rates at the parcel level. However, neither the Pearson's correlation coefficient for crime rate and fencing nor crime rate and signage were significant. The counterintuitive trend continues with the measures of parcel accessibility; higher levels of parcel accessibility do not correspond with higher crime rates in the way we would expect. There seems to be little association between these variables at all. While traffic potential seems to show little association with crime rates at first glance, this was the only significant Pearson's correlation coefficient of any of the territoriality variables ($r = .358$; $p < .01$).

Table 6.4 presents these measures of territoriality by individual garden site. These data help to explain some of the outliers in crime rate at the parcel level. First, the garden with by far the highest crime rate, Pleasant Street #16, has no fencing, no signage and high levels of both parcel accessibility and traffic potential. While the garden with the second highest crime rate, People's Garden, does not show the same results, data later in this chapter will help explain its crime rate. On the opposite end of the outlier spectrum, two of the gardens that had zero crime at the parcel level, Eco Garden and Pendleton Children's Garden, have fencing, signage, and low parcel accessibility and traffic potential. And even though the other two gardens with zero crime at the parcel level, the gardens labeled C #1 and C #2, have no fencing, no signage, and high parcel accessibility, their nonexistent traffic potential (both are on dead end streets) may be enough to affect crime at these gardens.

Table 6.4 Crime and measures of territoriality by individual garden site

Site	Crime rate at parcel	Fencing	Signage[1]	Parcel Accessibility[2]	Traffic Potential[3]
Garden lots	1.9625	54.55%	63.63%	2.45	2.82
Agnes Wagner	2.8602	Yes - locked	Yes	0	3
Agnes B	2.6918	Yes - unlocked	Yes	1	3
Village Green	1.0702	No	Yes	3	3
Eco Garden	0.0000	Yes – unlocked	Yes	0	1
People's Garden	9.3212	Yes – locked	Yes	0	6
Pleasant Street	1.5205	No	No	5	3
Race Street		Yes – locked	Yes	0	3
Pleasant #16	17.452	No	No	4	6
Pendleton	0.0000	Yes – locked	Yes	0	3
C #1	0.0000	No	No	6	0
C #2	0.0000	No	No	8	0

[1]Only signage indicating ownership is included (i.e., name of the location or "No Trespassing"/ "Private Property")
[2]Measure was created by adding together the accessibility of each side of the parcel (with 0 being completely inaccessible, 1 being partially accessible and 2 being completely accessible) resulting in an ordinal measure ranging from 0 (all sides inaccessible) to 8 (all sides accessible).
[3]Measure was created by adding together the level of traffic potential of the streets surrounding each parcel with 0 representing streets with 3 possible outlets (i.e., dead ends and cul-de-sacs able to turn left, right or straight), 1 representing streets with four outlets, 2 representing streets with five possible outlets and 3 representing streets with 6 possible outlets (i.e., through streets) resulting in an ordinal measure ranging from 0 to 12. The mean of these numbers for each site type is presented here. For diagrams of the different street types, please see the last page of Appendix B.

To further examine how these crime rates might be explained by opportunity measures, Tables 6.5 and 6.6 present the surrounding land usages by site type. Upon the initial site visits, the land usage of the six lots surrounding each of the sites was noted (see Appendix B for a diagram). While many categories of land usage were originally gathered, the data presented in Table 6.5 reveal the mean levels of various types of land use often studied in the crime and place literature (described in detail in Chapter Two): single-family residences versus apartments, alcohol establishments (i.e., bars and restaurants that serve alcohol), convenience stores, and unsecured vacant structures. Table 6.6 shows the mean number of vacant lots, parks/green

spaces, parking lots, and playgrounds surrounding each site; these types of land use are also often studied in the crime and place literature but are examined separately since they are comparison site types used in this study. To obtain the values in Tables 6.5 and 6.6, the number of each type of land use surrounding each individual site was counted (up to six, if all six surrounding parcels were of the same land use). These numbers were then averaged for each site type.

Table 6.5 Crime and surrounding land usage by site type - Land uses from literature[1]

Site	Crime rate at parcels	Single-Family Residences	Apartment	Alcohol Establishment	Convenience Store	Unsecured Vacant Structure
Garden lots (N=11)	1.9625	1.4545	2.1818	0.0000	0.0000	0.4545
Vacant lots (N=26)	1.1924	1.3077	2.3077	0.0000	0.0385	0.4615
Parking lots (N=18)	2.3413	0.7222	2.6111	0.1667	0.0556	0.3889
Playgrounds (N=7)	2.2376	0.4286	3.1429	0.0000	0.0000	0.0000
Parks/Green spaces (N=5)	1.8129	1.0000	2.4000	0.0000	0.0000	0.0000

[1]Land usage was computed by adding the number of each land use type surrounding the individual parcels on all six sides (0 if there was no land use of that type surrounding the parcel and up to 6 if the land use surrounding the parcel was all of the same type). The mean of these totals by site type are presented.

Table 6.6 Crime and surrounding land usage by site type - Comparison site land uses[1]

Site	Crime rate at parcels	Vacant Lot	Parking Lot	Park/Green space	Playground
Garden lots (N=11)	1.9625	1.2727	0.4545	0.3636	0.2727
Vacant lots (N=26)	1.1924	0.5769	0.4231	0.5769	0.0385
Parking lots (N=18)	2.3413	0.4444	1.0000	0.3889	0.0556
Playgrounds (N=7)	2.2376	0.7143	1.0000	1.0000	0.0000
Parks/Green spaces (N=5)	1.8129	0.6000	1.4000	0.4000	0.2000

[1]Land usage was computed by adding the number of each land use type surrounding the individual parcels on all six sides (0 if there was no land use of that type surrounding the parcel and up to 6 if the land use surrounding the parcel was all of the same type). The mean of these totals by site type are presented.

Examining the surrounding land usage of gardens specifically, the gardens in this study had the highest number of residential properties and the lowest number of apartments

surrounding them. These findings would ordinarily be associated with low crime rates. However, the gardens also had the highest number of unsecured vacant structures and vacant land surrounding them, which would usually be associated with higher crime rates. In conjunction, these surrounding land uses may help explain the moderate crime rate found at the gardens in this study.

To explore these findings further, Tables 6.7 and 6.8 present the surrounding land usage for the individual garden sites. The community gardens that had the highest crime rates at the parcel level, People's Garden and Pleasant Street #16, and the community gardens that had zero crime at the parcel level, Eco Garden, Pendleton, C #1 and C #2, are interesting in terms of their surrounding land usage. Beginning with the People's Garden, we see that it is mostly surrounding by apartments and unsecured vacant structures. These variables are indeed typically associated with higher crime. Likewise, Pleasant Street #16 is entirely surrounded by apartments and parking lots. Neither of these types of land use is typically associated with ownership and place management, so the high rate of crime here also makes sense. However, the land usage surrounding the zero crime gardens is mixed in terms of what we would expect given criminal opportunity theories. The Eco Garden is surrounded mostly by vacant lots, and C #2 is surrounded by vacant lots and single-family residences. While vacant lots may typically be thought to increase crime potential, the data presented in Chapter Five show otherwise – comparison-site vacant lots, in fact, had the lowest overall crime rates across the site types studied. Such data are further supported here by the fact that Eco Garden and C #2 had zero crime at the parcel level and yet are surrounded by an abundance of vacant lots. Pendleton Children's Garden may be the greatest anomaly. It had a zero crime rate at the parcel level, yet it is completely surrounded by apartments which are typically associated with higher crime.

Table 6.7 Crime and surrounding land usage by individual garden - Land uses from literature[1]

Site	Crime rate at parcel	Single-Family Residences	Apartment	Alcohol Establishment	Convenience Store	Unsecured Vacant Structure
Garden lots (N=11)	1.9625	1.4545	2.1818	0.0000	0.0000	0.4545
Agnes Wagner	2.8602	1	2	0	0	0
Agnes B	2.6918	0	2	0	0	0
Village Green	1.0702	6	0	0	0	0
Eco Garden	0.0000	0	1	0	0	0
People's Garden	9.3212	0	2	0	0	4
Pleasant Street	1.5205	2	4	0	0	1
Race Street		3	2	0	0	0
Pleasant #16	17.452	0	3	0	0	0
Pendleton	0.0000	0	6	0	0	0
C #1	0.0000	1	2	0	0	0
C #2	0.0000	3	0	0	0	0

[1]Land usage was computed by adding the number of each land use type surrounding the individual parcels on all six sides (0 if there was no land use of that type surrounding the parcel and up to 6 if the land use surrounding the parcel was all of the same type). The mean of these totals by site type are presented.

Table 6.8 Crime and surrounding land usage by individual garden - Comparison sites[1]

Site	Crime rate at parcel	Vacant Lot	Park/Green space	Parking Lot	Playground
Garden lots (N=11)	1.9625	1.2727	0.3636	0.4545	0.2727
Agnes Wagner	2.8602	0	0	0	3
Agnes B	2.6918	0	1	2	0
Village Green	1.0702	0	1	0	0
Eco Garden	0.0000	6	0	0	0
People's Garden	9.3212	0	1	0	0
Pleasant Street	1.5205	0	1	0	0
Race Street		1	0	0	0
Pleasant #16	17.452	0	0	3	0
Pendleton	0.0000	1	0	0	0
C #1	0.0000	2	0	0	0
C #2	0.0000	4	0	0	0

MEASURES OF TARGET GUARDIANSHIP AND OFFENDER HANDLING

The variables used to measure aspects of guardianship were collected on an ongoing basis during observations. These measures are number of legitimate users, number of loiterers, and number of police. Each of these types of people—legitimate users, loiterers, and police—

potentially fills a role in the crime triangle. Legitimate users and police are potential target guardians, whereas loiterers are potentially unhandled offenders (Felson, 1995).

Those who were considered a "legitimate user" as opposed to a "loiterer" varied depending on the site type. Anyone who was gardening at a community garden was counted as a legitimate user. Someone parking their car or moving to or from their car was considered a legitimate user of a parking lot. Children or adults observing their children playing at a playground were counted as legitimate users as well. Anyone hanging about who is not considered a legitimate user was counted as a loiterer. It was sometimes difficult to distinguish loiterers from legitimate users of parks/green spaces. Generally, those who were sitting on park benches were counted as legitimate users. The only individuals who were considered legitimate users of vacant lots were construction workers using the lot to park while completing work nearby.

Again, these potential guardians and unhandled offenders—legitimate users, loiterers, and police—were counted at each site during every observation. For the grouped measures of potential guardianship and handling, presented in Table 6.9, the mean number of people per site per observation was computed. The ratio of legitimate (i.e., "legitimate users" and police) to illegitimate users (i.e., loiterers) is also presented to explicate the relationship between the number of potential guardians to the number of potential unhandled offenders at each site type; the higher the ratio value, the more potential guardians there were relative to potential offenders. As with the other tables presented earlier in this chapter, the crime rates at the parcel level of each of the site types are also presented for ease of comparison.

Table 6.9 Crime and measures of target guardianship and offender handling by site type

Site type	Crime rate at parcels	Legitimate users (mean[1])	Police (mean[1])	Loiterers (mean[1])	Ratio of Legitimate[2] to Illegitimate users
Garden (N=11)	1.9625	.45	.02	3.72	0.1263
Vacant lots[3] (N=26)	1.1924	.16	.01	2.72	0.0625
Parking lots (N=18)	2.3413	.61	.02	3.43	0.1837
Playgrounds (N=7)	2.2376	6.16	.04	5.26	1.1787
Parks/Green spaces (N=5)	1.8129	1.06	.00	3.70	0.2865

[1]Means computed as the mean number of people per site per observation.
[2]"Legitimate users" and police were combined to create the numerator of the ratio.
[3]Construction workers using vacant lots were considered "legitimate users."

Several interesting things emerge from the data in Table 6.9. First, it is evident that there was very little police presence at any of the site types. However, gardens had the second highest amount of police presence among all of the site types. Gardens also had the second highest mean number of loiterers. Surprisingly, playgrounds were the only site type with more legitimate users than illegitimate users (i.e., a ratio greater than one), but they also had the second highest crime rate. However, this may simply be due to the large number of people in general present at playgrounds; they had by far the highest rate of both legitimate users and loiterers. Finally, the lowest mean number of legitimate users of a site type (besides vacant lots) was at the gardens. To examine these numbers further, Table 6.10 presents the mean number of these potential guardians and unhandled offenders, and the ratio of legitimate to illegitimate users, by individual garden.

The gardens that had the highest mean legitimate users (Village Green and Eco Garden) also had among the lowest crime rates. In fact, Eco Garden was the only garden with more legitimate users than illegitimate users (i.e., a ratio greater than one), and it also had a zero crime rate. Unfortunately, the other gardens with a zero crime rate (Pendleton Children's Garden, C #1 and C #2) did not have a ratio of legitimate to illegitimate users greater than one, but other factors presented earlier in this chapter have helped to explain the zero crime rate at each of these

gardens. The People's Garden had the highest mean number of loiterers (potential unhandled offenders), but also the highest mean number of police (still a low 0.16). This mixture of guardians and motivated offenders may help explain why the People's Garden had the second highest crime rate among gardens. However, since this explanation does not hold true for Pleasant #16 (which had the highest crime rate, but one of the lowest mean number of loiterers), the high mean number of police at the People's Garden may simply be an artifact of the large number of loiterers (i.e., police frequent the area due to a reputation of trouble). Although the average police presence was small at all sites, it was significantly correlated with crime ($r = .374$; $p < .01$).

Table 6.10 Crime and measures of target guardianship and offender handling by individual garden

Site	Crime rate at parcel	Legitimate users (mean[1])	Police (mean[1])	Loiterers (mean[1])	Ratio of Legitimate[2] to Illegitimate users
Garden lots	1.9625	.45	.02	3.72	0.1263
Agnes Wagner	2.8602	.55	.00	3.33	0.1652
Agnes B	2.6918	.02	.00	2.14	0.0093
Village Green	1.0702	1.75	.00	2.40	0.7292
Eco Garden	0.0000	1.42	.00	1.25	1.1360
People's Garden	9.3212	.13	.16	6.98	0.0415
Pleasant Street	1.5205	.02	.00	1.63	0.0123
Race Street		.23	.06	2.80	0.1036
Pleasant #16	17.452	.63	.02	1.90	0.3421
Pendleton	0.0000	.04	.04	3.54	0.0226
C #1	0.0000	.07	.00	3.85	0.0182
C #2	0.0000	.09	.00	1.42	0.0634

[1]Means computed as the mean number of people per site per observation.

[2]"Legitimate users" and police were combined to create the numerator of the ratio.

CONCLUSION

The preceding chapter presented information on variables associated with criminal opportunity theories with the intension of explaining difference in levels of crime at the site types. The results for the variables associated with image mostly corresponded with crime rates in the way theory would predict; sites with high crime rates tended to also be higher on measures that indicate a poor image. In fact, evidence of alcohol and/or drug use was significantly correlated with crime rates. While the gardens once again fell into the middle of the pack, vacant lots were again an exception to what might be expected of a parcel without management. However, some of the vacant lots in this study had periodic management via the Keep Cincinnati Beautiful campaign. These lots were identified by the decorative picket fence typically along just one edge of the parcel. Using this method of identification, vacant lots managed by Keep Cincinnati Beautiful accounted for 11.54% (N=3) of the vacant lots in this study. Despite the small number of vacant lots that were periodically managed, they had the lowest levels of most of the measures of poor image, which may help explain why they also had the lowest rate of crime. Additionally, the measures of image by individual garden site helped explain the crime rate outliers; People's Garden and Pleasant Street #16 had by far the highest rate of small litter and evidences of drugs/alcohol among the garden sites.

Measures of territoriality also revealed interesting findings regarding gardens and vacant lots, given their moderate and low crime rates, respectively. The gardens ranked highest in fencing and signage, indicating high levels of territoriality which should deter crime. On the contrary, the vacant lots ranked lowest in fencing and signage. The only significant Pearson's correlation coefficient among the territoriality measures was crime rate and traffic potential. Crime pattern theory would predict this to be the case, as higher trafficked areas tend to be

frequented by both motivated offenders and potential targets. The measures of territoriality also helped explain at least one of the crime rate outliers among the garden sites. Pleasant Street #16 had no fencing, no signage, and was high in both parcel accessibility and traffic potential.

Finally, the presence of legitimate users, police and loiterers were analyzed to assess levels of guardianship and offender handling and if/how these measures relate to crime rates. The most noteworthy finding from this analysis was further explaining why the People's Garden is an outlier in crime rates among gardens. The People's Garden had the highest rate of police and loiterers of the individual gardens. For site types as a whole, gardens seemed to have the lowest average number of legitimate users, according to Table 6.9. While this may not help explain the moderate crime rate at the garden sites, the low number of gardeners gathering may help explain some of the findings regarding informal social control and the building of collective efficacy. These constructs were analyzed via interviews and will be presented in the next chapter.

CHAPTER SEVEN

INTERVIEWS OF GARDENERS AND RESIDENTS

The final part of data analysis for this study was transcribing and coding interviews with gardeners and residents of the neighborhoods surrounding the gardens. While the structured observations of garden and comparison sites—the results of which were presented in Chapter Six—were intended to collect data on measures of criminal opportunity, the interviews were designed to capture constructs of informal social control and collective efficacy. However, constructs of criminal opportunity also emerged naturally from the semi-structured interviews, lending credence to the idea that informal social control, collective efficacy and criminal opportunity are not necessarily mutually exclusive. This chapter will present the qualitative analysis of these interviews. First, a brief overview of the process of coding the interview transcripts will be provided, and the results of that process serve to outline the rest of the chapter.

Qualitative analyses progressed through several stages. First, the audios from the 24 interviews were transcribed into Word documents. Those word documents were then uploaded into NVivo, a qualitative analysis software program. This program is designed to allow the user to easily code quotes from the interviews into various emergent themes. Unfortunately, the interviews with the police officers did not provide any information meaningful to this analysis. Several distinct themes were noted in the other interviews and will be presented in this chapter in the following order: crime, community cohesion (including garden participation), and informal social control, both direct and indirect. Each of these themes is discussed in more detail in the sections to follow. The chapter then concludes with an overview of the ability of these community gardens to build social capital.

CRIME

A part of each interview focused on crime. As Chapter Five provided the quantitative crime statistics from the Cincinnati Police Department, the aim of the interviews was to understand the perception and experience of crime in the communities surrounding the community gardens and the gardens themselves. Interviewees were asked about the types of crimes that are most prevalent in their areas and about who tend to be the perpetrators and the victims. During these discussions, stories of witnessed and heard-about crimes came up as well. Despite the gardens being located in both Over-the-Rhine and Northside, the experiences and perception of crime were somewhat similar across all interviews.

Crime in the surrounding communities

Drug trafficking was an issue common to gardens in both Over-the-Rhine and Northside. Drug trafficking was particularly a problem in areas near interstate highways. A woman who lived near Agnes Wagner McKie described her block: "[W]e have a lot of drug activity, more so than the rest of Northside, because you can get off the interstate, stop on Florida [Avenue], pick up your drugs, and get right back on. It's really fast." A similar operation was happening near Pendleton Children's Garden:

> 13th and Main has always been an issue. [Highway] 471 is really convenient for buyers to get off 471, go down 13th, cut back over to 12th and get back on back to Kentucky. I mean they're all Kentucky buyers, it's crazy. And the way it works is all car and cell phone. Someone might say, I'm coming to get my drugs, so I'll meet you here in the middle of the block; they do their deal and then they drop them off here on 12th Street.

The same interviewee mentioned other violent and property crimes, but he believed it all stems from the drug trafficking problem in the Pendleton area. When asked about major crime issues in the neighborhood, he said:

> Dealing, for sure. Car break-ins, little property things like that. But it all stems from dealing. Craps games are drug dealers, because they're the ones with cash. Unfortunately, they get out of hand. Someone loses $500 and they decide to go get their gun.

Graffiti was noted as a problem in some of the neighborhoods surrounding the gardens, particularly by the owner of Agnes B, which had the highest rate of graffiti during observations (see Chapter Six). When speaking about crime in Northside in general, he said, "The graffiti is worse. Over the past six to ten months the graffiti is horrible." And the graffiti problem hit close to home for him: "[T]wo weeks before we moved in someone graffitied on that brick [wall next to the garden]. I tried to scrub it off but I couldn't get it off." However, he had a creative solution to control the image of the garden:

> [T]here's a twenty-five foot planter against that wall, and then there are trellises that run up, so we decided the one way to prevent graffiti was to grow it. So we have hops growing, so we'll have hops. They're starting to really take off now, we hope by the fall, that new wall area will be filled with green, and we won't have to worry about someone graffiti-ing on that brick wall.

Robbery was a commonly cited problem at the gardens in Northside. A woman who works at the Cincinnati Recreation Center adjacent to the Agnes Wagner McKie garden noted robberies right outside the establishment, "[T]here was someone robbed of their cell phone and then somebody got robbed of $20." And another woman who is a member at the Garden at Village Green mentioned being concerned about robberies in the area: "I think I'm most nervous about muggings. I think that is like the biggest thing I'm scared of walking around at night in Northside." A man who lived near Agnes Wagner McKie told of a burglary that led to a string of robberies:

> There was a house two blocks from here owned by a gun collector that [was] broken into and all of the guns were stolen, and it was like 25 guns which were suddenly in the hands of teenagers. You can imagine the havoc around that! It doesn't matter if those guns were antiques that didn't work or not, if somebody pulls a gun, the whole neighborhood

goes crazy. And we had like nineteen stick ups in a month or you know a really concentrated amount of time.

Crime at the garden sites

Crime at the gardens themselves was also discussed. Again, the incidents were similar regardless of which community garden was being spoken about. In particular, just about every garden had reports of "free-pickers," people who take produce from gardens other than their own. While this seemed to be a problem at the gardens without fences, the fenced-in gardens also experienced free-picking. The woman who works at Agnes Wagner McKie said she'd heard of people "borrowing" tomatoes. And at Pendleton Children's Garden, they have had pumpkins stolen:

> Woman: [T]he pumpkins usually we plant along the fence so they climb out into the street.
> Lesli: Have you ever had any issues with the pumpkins growing like that?
> Woman: Like have people taken them? Yeah. Yes.

Despite having a fence around most of the garden, Eco Garden in Over-the-Rhine has had problems with vandalism: "For some reason we have been getting vandalized every 3 weeks…A couple years back we had kids who were vandalizing the garden a lot."

With the exception of the Pendleton neighborhood and a few reports of robbery across all sites, most of the accounts of crime both in and out of the gardens were non-violent. Table 7.1 shows the percentage of interviewee who reported the various types of crimes discussed in this section. The next sections are intended to find out what, if anything, people did about the crime in their areas.

Table 7.1 Percentage of interviewees who reported crime types

All interviewees (N=20)		Garden interviewees only (N=15)	
Drug use/trafficking	55.00%	Free-picking	46.67%
Graffiti	25.00%		
Robbery	55.00%		

COMMUNITY COHESION

One of the main components to collective action, according to collective efficacy theory, is social cohesion (Sampson, Raudenbush and Earls, 1997). If community gardens are to spread collective efficacy throughout the surrounding neighborhood, they must first build collective efficacy amongst themselves. Interviewees were also asked about their feelings of community cohesion, both in the broader neighborhood and within the gardens themselves.

Community cohesion in surrounding communities

First, examples of being a close-knit community were given by various neighborhood residents. The woman who works at Agnes Wagner McKie, and also lives in Northside, had this to say about her neighborhood:

> I think Northside has always been a tight-knit community. It's always been collective and different ages and backgrounds and hippie-dippie and green. I think it's been like that for a long time; that's what attracts people. It's growing.

Another resident of Northside said the feeling of community cohesion is what drew his family to live there:

> Well, I mean, we are really drawn to the neighborhood, because of the way neighbors interact. They take the time to get to know each other, walk down the street, look each other in the eye and say, "Hello," maybe strike up a conversation.

The people who live on Pleasant Street, near both Pleasant Street garden and Race Street Children's garden in Over-the-Rhine, have a unique sense of community cohesion that seems to be isolated to their specific block. There is a set of newly developed row homes on this particular block of Pleasant Street, one of which recently sold for $450,000 according to one resident. Immediately surrounding this one block, there was no residential housing at the time of data collection; it was either vacant buildings or new restaurants and businesses. Perhaps for these reasons, the residents of Pleasant Street tend to think of the specific block they live on as their "neighborhood." When asked if she would say she lived in a close-knit community, one Pleasant Streeter responded:

> Extremely. I think everybody who lives in this neighborhood will tell you this is the best neighborhood they've ever lived in. They know more neighbors and interact on a more regular basis than anywhere they've ever lived.

A Pendleton resident, which is in a different part of the city-defined Over-the-Rhine neighborhood, described the closeness of his community:

> It's pretty small; it's about 900 residents as of the last census. It's pretty small geographically as well, the part of the neighborhood that's actually residential…But yeah, definitely it's close knit, because it's so small. And I'm pretty active in the community council and go to community events, so I see it as close-knit.

The last sentence of that quote suggests that this interviewee may have a skewed perspective of his neighborhood due to his strong involvement. Perhaps had random residents been interviewed on the street, rather than seeking out interviewees at community council meetings, different community perspectives would have emerged.

Another typical measure of community cohesion is how involved residents are in local organizations. Evidence of community involvement was given when the interviewees were asked, "How would you describe neighbors' participation in community organizations/events?" One of the more common answers to this question was about participation in community council.

The woman who works at Agnes Wagner McKie, where the Northside community council meetings are held, noted, "We have a large turnout for our community meetings every third Monday at seven." And a gardener at Pleasant Street mentioned the same thing: "Over-the-Rhine community council is very active." While an interviewee from Pendleton described an active community council, he noted that participation is mixed:

> For such a small neighborhood, we have a pretty active community council. I would say on average we have 20-30 people, which is typical for even Northside, and that's a much larger community geographically and population wise. But yeah, pretty active, but again it's just a small portion of the neighborhood. It's kind of like where I live. There are people who get involved from other streets, but it's more reactionary, like, "There was crime this month!"

Community cohesion among the gardeners

One of the underlying premises of this study has been that community gardens are local organizations, and, as Robert Sampson and others have argued, participation in local organizations should build collective efficacy and social cohesion. Although the residents of the neighborhoods surrounding the community gardens identified with the constructs of social cohesion, members of the community gardens themselves showed less solidarity, both among themselves and between the gardeners and the residents of the surrounding community. One likely reason for the lack of community cohesion among the gardeners is that they are often not gardening at the same time. When asked directly if gardeners "get together at the same time and garden," one member of the Garden at Village Green said:

> Not really. We are having a hard time creating a more sense of community, and that is what we are working really hard on this year as a board is trying to get people interested in being here for other things besides just gardening their plot. It's hard and none of us are really sure how to incorporate more of a sense of ownership of the rest of the [whole garden] area.

The Pleasant Street and Race Street Gardens showed signs of cohesion among gardeners, but that may be due to the strong relationships among the residents of Pleasant Street. The following exchange came after discussing mandatory volunteer hours for gardeners of the Race Street Garden:

> Lesli: It sounds like it's really common for the gardeners to interact?
> Race Street gardener: Yeah, and most of us know each other, most of us live around here. We interact outside of the garden, a good number of us.
> Lesli: Did you know each other prior to the garden?
> Race Street gardener: We knew each other as neighbors here prior to the garden; none of us knew each other prior to moving down here though.
> Lesli: Would you say the garden has enabled you to get to know your neighbors better?
> Race Street gardener: It's enabled us to know more of our neighbors and know them in a different way. There's something about working together as opposed to going and having a beer together…It brings out a different side of people who are relatively new to being city dwellers.

However, even though the Pleasant Street neighborhood is a unique case, the owner of one of the open, non-fenced gardens in Pendleton (C #2) noted some gardener interaction during this exchange:

> Lesli: Is it common for the garden members to interact then? Do you ever see multiple gardeners here at the same time?
> C #2: The most I've ever seen is three people, me and two other people.
> Lesli: Would you say everyone knows each other then?
> C #2: Oh yeah. That's the neat thing about it because before this happened not everyone knew one another. And not everyone was exposed to one another. When I said earlier about the equalizer it provides a really neat common denominator.

Community cohesion extending from the garden to the neighborhood

Another necessary step if community gardens are to help build broader community cohesion is the interaction of gardeners with the whole community. Several of the gardeners mentioned attempting to bridge that gap. For instance, the owner of Agnes B gives away free veggie burgers at a garden barbeque once per month. In addition to the barbeque, he tries other things to bring the outside community to the garden:

> Then we'll do different activities, like last year we had about eight to ten different classes and sessions that go on in the garden…we'll do some art classes there, we'll have some meditation classes for mindful youth.

The members of the Garden at Village Green are also putting an effort into creating a broader sense of community:

> Soapbox…it is like a lending library we have in the building in there, and they have hours twice a week. That's created a lot of interest among the community; a lot of people are coming around to see what that is about.

Table 7.2 presents the percentage of interviewees that described the various kinds of community cohesion described above.

Table 7.2 Percentage of interviewees who reported constructs of community cohesion

All interviewees (N=20)		**Garden interviewees only (N=15)**	
Tight-knit neighborhood	40.00%	Tight-knit gardeners	33.33%
Neighborhood organization participation	55.00%	Gardener-Neighbor interaction	33.33%

Barriers to building collective efficacy

It appears as though several of the neighborhoods surrounding the community gardens show high levels of the constructs of collective efficacy, but the gardens themselves do not. Perhaps part of the reason that some of the gardens struggle to build collective efficacy with the surrounding neighborhoods is due to barriers to participation in the garden. Often, there is a cost associated with garden participation. At the Garden at Village Green, for example, "[t]he bigger plots are $25 per year and the half plots are $15 per year." Due to the nature of their selection, the residents of the neighborhoods bordering the gardens included in this study are of lower socioeconomic status. The cost associated with participating in some of the community gardens may be a deterrent to members of the surrounding community becoming involved.

Another barrier to garden participation may be a feeling of exclusivity. As mentioned in Chapter Four, many of the gardens included in this study are surrounded by a locked fence. Many of the interviewees agreed that a fence makes the garden feel less open to the community. The owner of the gardens labeled C #1 and C #2 made a conscious decision to *not* put fences around his gardens for this reason. When asked if he thought a fenced-in garden would provide the sense of community, he responded:

> Absolutely not. Because right away the fenced garden says, "Keep out; this is mine. This is not yours, and I don't want you to be a part of me. I don't belong to you; you don't belong to me."

The owner of these gardens also does not charge a fee to plant in his gardens. Fencing and plot fees may affect the ability of some gardens to build collective efficacy by excluding certain members of the community.

INFORMAL SOCIAL CONTROL

The hypothesized outcome of community cohesion and a willingness to take action is increased informal social control. Traditionally, informal social control is thought to be the control of the behavior of a member of a group or community via extraneous means. Direct informal social control, therefore, involves members of a community taking direct action when deviant behavior occurs. However, Hirschi's social bond theory (1969) posited that informal social control can be achieved through social bonds with the community. Indirect informal social control, therefore, happens when one's bonds to prosocial others, prosocial achievement, prosocial activities, and prosocial norms control the natural impulse towards delinquency. Throughout the interviews, themes of both direct and indirect informal social control emerged.

Direct Informal Social Control

The interviewees were directly asked questions about informal social control: ""How would you describe neighbors' willingness to mobilize to solve community problems?" Speaking about Northside in general, one interviewee said:

> It's an understatement [that] people care about this place, and they're hyper vigilant about, you know, what goes on in the street, what goes on in the business …[T]hey are quick to speak up, and there are a lot of strong minded people and as a result we get things done, whether that means blocking a Walgreens trying to move in because we want locally owned businesses, cracking down on particular graffiti artists, you know, it's just getting sidewalks repaired, all sorts of things.

One interviewee, whom I called "Mama Bear," described how she dealt with the drug trafficking on her block and how it influenced her neighbors to take action as well:

> [A]t first I would take pictures and call the police, and then I kind of went crazy and went knocking on people's windows. [T]hey were like "Hi", and I would be like, "Just letting you know I called the police." There's been a lot of burglaries and drug activity, and most of the time they are very nice because it scares them that someone is doing that. My neighbor saw me doing it, and she was like, "What are you doing?" and I was like, "I'm just reminding people I've called the police and took pictures." I make it very obvious that I'm taking pictures and that I've called the police. My husband will go stand by their car sometimes or stand behind their car and take a picture. So now [my neighbor] kind of comes out and does it a little more discreetly. But she will call the police when she sees someone from Kentucky or Indiana sitting on the street. My neighbor down the street she will do it and then another neighbor will do it and the neighbors on the other street have been present when I've kind of lost my cool and yelled at people because we have so many kids now.

While there were stories of community members being very involved in solving community problems, there were also stories of residents who weren't as involved. A member of the Garden at Village Green who used to live in the surrounding area responded to the question of neighborhood mobilization: "I think it was really, well, I think it was half and half. Like half the neighbors were really dedicated to solving issues and the other half were - just didn't care. Indifferent." A Pendleton resident reported the same kind of mixed indifference:

> Hopefully that will change too as there are more people in the neighborhood, more eyes on the street. That hasn't happened yet. We haven't hit that critical mass, where people really take ownership. There might be one or two on a block that are homeowners and actually care about the block, but the rest, seemingly, just don't care.

Even in a community environment where not everyone is committed to everyday change, mobilization would still happen. The same Pendleton resident recounted these instances:

> We had four murders that happened within a week of each other. One was a triple homicide and the other one was a random stray bullet that caught this girl walking; she basically passed away three houses down from us. It was really horrific, and they were all shooting deaths. It was definitely one of those times we were all on it. There wasn't any crime for a couple months, because we did walks, community walks and people being upset about violence and guns… There was a rash of muggings, I don't know when that was, several years at least. We made sure that was not gonna happen anymore, because they were happening at five in the afternoon. My roommate got mugged. It was definitely one of those times when people were watching out for each other.

The quote above from the Pendleton resident spoke of organized walks to raise awareness about the gun violence in the neighborhood. In addition to generally looking out for one another, most interviewees told of more organized community action, such as Citizens on Patrol (COP). A member of the Race Street Children's Garden spoke about COP in her area and her recent involvement:

> Citizens On Patrol has been in existence for a long time, we were just the largest group that's ever gone through the program. It's been in existence for over a decade. There have been people patrolling- not necessarily residents, but people from the West End and Hyde Park, who have been doing it for over 10 years. The reasons we have such a large group, a couple months ago when the number of shootings spiked in OTR, one of our neighbors orchestrated a community meeting with the police department to explain why the spike, what we could do about it, personal safety… One of the outcroppings was the police department said we have something called Citizens On Patrol, and your neighbors have expressed concerns and this is a great way for you to add to the safety of your community. We ended up getting 20 people together, and they held a class just for us.

The "Mama Bear" from Northside is also involved in COP, and she told this story of her patrols and direct informal social control:

> We would see kids charging their phones, because [a resident] had an outdoor outlet and we would stop and talk to them. [T]hey would say, "Oh, it's not my phone," and we would be like, "Oh, it's not yours? Well then we will take it to the police department and whoever is looking for it…" And then they would be like "Oh… well...." We would say, "Oh it is your phone then do you have permission to use his outlet? And they would say, "Yes… No." This happened like three times this year, and we asked the guy and he said yes he knew they were using but it didn't really bother him, but he did realize it became a problem when they would sit on his steps and graffiti on his wall. He built flower boxes to sit on those steps and those kids instantly stopped sitting there. He is a member of our neighborhood that was proactive about something.

Interviews with the gardeners provided evidence of informal social control within the gardens themselves. As mentioned by the woman who works at Agnes Wagner McKie, the most common dispute within community gardens is harvesting another gardener's plot. She says it is handled at Agnes Wagner McKie in this way: "They'll just put a little sign up that says, you know, 'Whoever borrowed: Don't do that.'"

And again, there was the example of the owner of Agnes B handling the graffiti problem by changing the garden's image:

> [T]here's a twenty-five foot planter against that wall, and then there's trellises that run up so we decided that one way to prevent graffiti was to grow it. So we have hops growing, so we'll have hops. They're starting to really take off now, we hope by the fall, that new wall area will be filled with green and we won't have to worry about someone graffiti-ing on that brick wall.

As shown by the quotes above, there seems to be at least some direct informal social control going on both at the gardens themselves and in the surrounding communities. However, there was only one interviewee who reported direct informal social control between the garden and the surrounding community. She lives in a house on the same property as the Garden at Village Green.

> I've only had one experience where I had to, like, go over and resolve a conflict with a child since I've lived here the past year. Their kid had come in and taken things from us, like a really young kid, and he was like, the father talking to him, was really receptive and grateful that we wanted to work with the kid. They come over sometimes and tried to work off what they took.

Which came first?

Although there seems to be some evidence of direct informal social control both in the gardens themselves and in the surrounding neighborhood, there was little evidence that social cohesion and informal social control was being built by the gardens and permeating to the surrounding community. On the contrary, it may be that communities that have strong collective efficacy are the ones that build community gardens. In fact, there seemed to be more evidence of direct informal social control in the surrounding neighborhood than at the gardens themselves (see Table 7.3, described below).

Indirect Informal Social Control

While findings from the interviews seem to show that community gardens high in collective efficacy are the ones that build community gardens (not vice versa), another interesting way that community gardens may help lessen crime emerged from the interviews. Many of the community gardens chosen for this study are used wholly or in part as children's gardens. The idea of a community children's garden is to teach children in the community how to grow (and eat) their own fruits and vegetables. Since most of the gardens in this study are in impoverished neighborhoods, children who participate in them often do not have access to fresh, healthy foods. A volunteer at the People's Garden describes the youth she works with trying such food for the first time:

> [T]his week I pulled a couple sweet peas when we were here with the high school kids and I'm like, "Here, try it," and they're like, "It's not cooked," and I'm like, "Yeah, it's good that way!" So they tried it and it was cute because one of them was like, "Huh, that's good," and the other one's like, "Needs salt."
>
> I'll say, "Go ahead, you planted these so now you harvest them." So he puts a glove on and finally does it and I take the knife and he samples it. The one kid next to him says, "I don't like that," but he says, "I like that, that's good. I like hot stuff." You could tell that there's an element of interest.

Indeed, even some adults from these areas have never tasted freshly grown food. The owner of Agnes B offered a fresh tomato to one of his adult volunteers at his vegetable garden:

> And he picked it, and ate it, and his eyes lit up, like it tasted great. Then I realized that, I said, "Have you ever picked anything off the vine and ate it?" He was 23 years old. So I stopped what we were doing, you know I realized we were working down there, and he was watering with me, maybe once a week, you know he'd come down, but he really didn't understand or have the experience, I'd say, of [the results]…So we went through each one, and I was like, "Okay, this is basil." We went through all the herbs and everything. You know, it's like wow, this guy has never eaten anything fresh out of the garden. And so his eyes just lit up every time.

By getting children from high-crime neighborhoods interested in gardening, the aim is to teach more than healthy eating habits. The Eco Garden is designed as a summer job for the neighborhood youth:

> The age range is 13 to 18…I think our most difficult problem is attendance. Many times recently they were given a paycheck and then they wouldn't show up for a couple days after the paycheck until the paycheck was gone and they realize they need more money and come back…That's the point; we are trying to teach job readiness skills.

Hopefully, by making a connection between work and money, these inner city youth will learn the value of employment. This idea is similar to the commitment aspect of social bond theory (Hirschi, 1969). Even the adults working in gardens, likely for the first time, can experience a change. The owner of Agnes B described his experience working with adult men in his vegetable garden:

> I've seen direct change in some of the guys that have helped me with the garden. People are in trouble coming here…Most of these guys have some sort of record that would keep them from being able to work…And so, as far as building a relationship with some guys in the neighborhood, it's been a real, really great experience…The garden has been really, has done some great things for some guys in the neighborhood that have been in some not good situations. And so they actually call it, they got a nickname with these guys, it's the "Ring of Heroes," because when they're working in there, people stop to talk to them that would never talk to them.

Even if youth involved in community gardening do not internalize the social bonds intended by Hirschi's (1969) theory, they are experiencing something other than "life on the

streets." The manager of the Eco Garden said that the kids he works with often tell stories of their lives outside of the garden:

> [A]t one of the peace and blessing circles, they said they had a great day and glad to be a part of something positive. "Because the other day after we left work, we saw this guy got arrested for carrying a gun for someone else." They definitely share that with us. Another day there was a teenager that got shot over on Vine last summer and this kid actually knew her and he said he was having a rough day, but he was here and really dedicated and working hard and you could tell he was working hard because he was on fire about her getting shot and killed and he was grateful to be here.

A volunteer at the People's Garden, which is in the same area as Eco Garden, also spoke of the juxtaposition of working with inner city youth in a garden:

> There are two high school boys who have shown up a couple times. They're actually different: the one who is more involved is generally more outgoing. He's I think more outgoing. The bigger one, the high school football player seems very subdued. He's the one who had gotten shot. [It] just surprised me that they would be engaged as they are.

Hirschi's idea that involvement in conventional activities prevents criminal behavior, if only for the time in which one is engaged in the prosocial activity, is likely taking place at these children's gardens. Further, there is overlap in this notion of involvement in conventional activities and routine activities theory. When the hands of a potential offender are not idle, the motivated offender is removed from the crime triangle.

Table 7.3 presents the percentage of interviewees who described incidents of informal social control. It is clear that incidents of direct informal social control were higher in the neighborhood as a whole than at the gardens themselves. And while few incidents of either direct or indirect informal social control were reported at the gardens, it was more often that garden participants reported indirect informal social control.

Table 7.3 Percentage of interviewees who reported informal social control

All interviewees (N=20)		Garden interviewees only (N=15)	
Direct informal social control in the neighborhood	50.00%	Direct informal social control at the garden	20.00%
		Indirect informal social control at the garden	33.33%

CONCLUSION

The goal of the qualitative analyses in the preceding chapter was to determine whether community gardens build collective efficacy within the surrounding neighborhood. To fulfill this goal, themes of perception and response to crime and community cohesion and informal social control both within the gardens themselves and within the broader neighborhood were presented. While most of the interviewees reported high levels of collective efficacy (i.e., social cohesion and a willingness to respond to crime) among their neighbors in the community, few gardeners described feelings of social cohesion among their fellow gardeners. This lends doubt to the idea that community gardens may help build collective efficacy in the broader neighborhood if they do not build collective efficacy amongst themselves. On the contrary, it may be the other way around. Perhaps neighborhoods with high collective efficacy are more likely to start community gardens. However, identification of potential barriers to full community participation in the gardens (namely, fencing and plot fees) may shed light on how gardens can increase their impact on levels of collective efficacy in their surrounding communities. This and other recommendations will be outlined in the final chapter.

CHAPTER EIGHT

DISCUSSION AND CONCLUSIONS

In this final chapter, the results presented in Chapters Five through Seven will be put into the context of the research questions presented in Chapter One. First, the research questions will be reiterated followed by a review of the support for each from the analyses conducted. Second, the implications of these findings for the underlying theories (criminal opportunity and informal social control) will be examined. Third, policy/practice implications will be a discussed, with a specific focus on how the potential crime prevention impact of community gardens might be strengthened. Finally, the limitations of this study and directions for future research will be presented.

SUPPORT FOR RESEARCH QUESTIONS

To begin this chapter, it is important to review the research questions presented in Chapter One and review the support for these questions provided by the analyses presented in Chapters Five through Seven. As in previous chapters, the research questions will be presented in two sections, based on their underlying theory. The research questions regarding criminal opportunity will be examined first.

Criminal Opportunity Research Questions

The first research question dealing with the criminal opportunity perspective was the following: *What is the crime risk level of the community garden spaces?* This question was addressed primarily via the crime rate analyses of Chapter Five. Specifically, crime rate analyses at the parcel level and at a 100-foot radius around the parcel were intended to measure the impact

of criminal opportunity. Looking at the numbers for the garden sites at these levels alone is not incredibly informative; the gardens averaged less than two crimes per 10,000 square feet over the past three years at both levels of analysis. Therefore, in an attempt to measure the impact of the garden itself, an exploratory pre-post analysis was conducted using the gardens for which crime rates were available for the two years prior to their implementation and two years after their implementation. Paired sample t-tests of these pre-post trends were non-significant, but such findings must be considered in light of the statistical limitations presented by analyses of such a small number of cases. Garden-specific analyses of over-time trends did demonstrate declines in crime 1-year post-implementation at the parcel- and 100-foot levels of analysis. Such findings suggest that community gardens may serve to reduce opportunities for crime at some locations.

The second research question related to criminal opportunity was as follows: *How does the crime risk level of the community garden spaces compare with the crime risk level of counterfactual comparison sites?* Vacant lots were used as counterfactual comparison sites, as it is presumed that the community gardens were built on once vacant lots (as opposed to the former site of some structure). The findings of this comparison were unexpected. On average, the vacant lots examined in this study had far lower rates of crime than the community gardens. In fact, the vacant lots consistently had the lowest crime rates compared to the other site types examined (i.e., gardens, parking lots, parks/green spaces, and playgrounds). Criminal opportunity theories, as commonly conceived, would seem to predict that vacant lots would have higher crime than these other types of sites. Such a prediction was based on the assumption that vacant lots would have lower levels of guardianship, territoriality and image compared to sites with more defined usages. According to criminal opportunity theories, low levels of these

constructs should lead to higher criminal opportunity and therefore, higher crime rates. The opposite was found in the present sample of vacant lots.

The third research question related to criminal opportunity was the following: *How does the crime risk level of community garden spaces compare with the crime risk level of similar "open-air" spaces that have periodic guardianship?* The "open-air" comparison sites used in this study were parking lots, parks/green spaces and playgrounds. At the exact parcel and 100-foot radius levels, crime rates at the community gardens were moderate compared to the other "open-air" spaces. On average, the community gardens had lower crime rates than both parking lots and playgrounds, but higher crime rates than parks/green spaces. However, when the sites with extremely high crime rates were removed from the average of each site type, community gardens had the lowest average crime rate at the exact parcel level. This was unexpected from a criminal opportunity perspective. Based on routine activities theory, it would be reasonable to expect sites with similar levels of periodic guardianship to have similar levels of crime. However, Chapter Six revealed that these "open-air" sites did not have the same levels of potential guardianship as was expected. Therefore, the idea that these sites would show similar rates of crime via criminal opportunity theories was likely flawed.

The fourth and final research question related to criminal opportunity was as follows: *Are there differences between these gardens and comparison sites that may relate to other aspects of criminal opportunity (beyond the garden itself)?* Chapter Six presented findings related to criminal opportunity constructs such as image (i.e., litter, graffiti, dilapidated buildings and evidence of drug/alcohol use), territoriality (i.e., fencing, signage, parcel accessibility and traffic potential), and presence of guardians and/or motivated offenders (i.e., legitimate users, police presence, surrounding land use and loiterers). The role of image will be considered first.

As with the crime rates, the community gardens were moderate in mean amount of litter and graffiti compared to the other site types. However, the community gardens were highest in the average number of dilapidated buildings surrounding the parcel and second highest in evidence of drug/alcohol use. Upon examining the community gardens individually, however, it seems that these findings— which, on the surface, seem to run counter to criminal opportunity theory— may be driven by outliers. Two gardens, Pleasant Street #16 and the People's Garden, had extremely high crime rates at the parcel level as well as poorer image, including higher amounts of dilapidated buildings and evidence of drug/alcohol use. So, when the aggregated garden data were unpacked, and gardens and indicators of image were examined individually, relationships emerged that were more clearly consistent with criminal opportunity: High crime gardens had poor images, whereas safer gardens had relatively stronger images. Thus, while such analyses did not support the idea that gardens serve to reduce opportunity, they did support the theoretical links between opportunity and crime.

The relationship between territoriality and crime revealed in this study is considered next. Examining the measures of territoriality across site types did not help explain the moderate crime rates of the gardens compared to the other site types. For example, the gardens overall ranked second highest across all site types in terms of fencing, and they ranked highest in use of signage. Further, gardens overall ranked lowest of all site types in terms of parcel accessibility and traffic potential. According to criminal opportunity theory, gardens should have relatively low rates of crime compared to comparison site types. Yet, gardens ranked third across the five site types in terms of crime. However, once again, analyses of individual gardens and their respective levels of territoriality were informative. Specifically, the territoriality measures of the individual gardens seemed very much related to the relative crime rates of these gardens. For

example, although the gardens overall were the second highest site type in percentage of fencing and highest in signage identifying ownership, Pleasant Street #16, which was an outlier in terms of its high rate of crime, had neither of these indicators of territoriality. In addition, even though the community gardens as a whole were lowest in both parcel accessibility and traffic potential compared to other site types, Pleasant Street #16 had high parcel accessibility and traffic potential. Additionally, Eco Garden and Pendleton Children's garden both had zero crime at the parcel level and had fencing, signage, and low parcel accessibility and traffic potential. Therefore, again, the link between constructs of criminal opportunity and crime was supported.

The relationship between crime and measures of surrounding land uses is considered next. As with the previously-discussed relationships, conclusions differed depending upon whether gardens were considered collectively or individually. For example, regarding the surrounding land use, in the aggregate, the community gardens had the highest number of single-family residences and the lowest number of apartment buildings. As such, criminal opportunity theory would suggest gardens should have comparatively low rates of crime; their actual overall ranking in this study is therefore not that supportive of criminal opportunity theory. However, garden-specific analyses provide much greater support for the theory. For example, two gardens with high rates of crime—Pleasant Street #16 and the People's Garden—were surrounded by apartments, unsecured vacant structures and parking lots.

Finally, the relationship between crime and measures of legitimate versus illegitimate users is considered. When analyzed in the aggregate, the presence of legitimate users and police was moderate at the community gardens, and gardens ranked second highest across all site types in terms of presence of loiterers. As such, there is not a clear relationship between legitimate/illegitimate users and crime at gardens versus other site types based upon such

observations. However, disaggregation of the garden sites again served to better highlight the potential importance of such measures. People's Garden, which had a very high rate of crime in comparison to other gardens, had by far the highest number of loiterers. At the other end of the spectrum, Eco Garden had the second highest number of legitimate users, which corresponded well with its zero crime rate from the perspective of criminal opportunity theory.

Overall, then, the analysis of community gardens, collectively, yielded little support for many relationships posited by criminal opportunity theory. The overall level of opportunity observed at the gardens (versus opportunity at comparison sites) often did not seem to correspond well with the overall levels of crime at gardens (versus crime at comparison sites). But, the "average correlations" emerging from the aggregate analysis masked some very important evidence of garden-specific correlations that were much more aligned with the tenets of criminal opportunity theory. When disaggregated, the individual community gardens seemed to follow patterns expected by criminal opportunity theories; for instance, gardens with the poorest image or territoriality also had the highest rates of crime. Though supportive of the theory, such garden-specific analyses also clearly showed that not all community gardens minimize criminal opportunity as expected. To the contrary, some were observed to offer high opportunity. As a whole, the extent to which gardens reduced crime opportunity seemed to be greatly affected by the outliers.

Collective Efficacy Research Questions

The first research question from an informal social control perspective was as follows: *What is the crime risk level of the broader area surrounding the community gardens?* Again, this question was addressed via the crime rate analyses in Chapter Five. The 300-foot radius and 600-foot radius distances were intended to approximate one- and two-street blocks, which served

as a proxy for the "neighborhood" level. As with the closer proximities, examining the crime rates of the past two years across site types was not incredibly informative. Therefore, the pre-post crime rate analyses of the gardens for which data was available helped to analyze crime rates from the perspective of informal social control. Although the pre-post analyses did not show distinct trends across gardens, there did appear to be some indication that if there was a post-implementation impact on crime, it was limited to one year. Several of the gardens included in the pre-post analyses experienced a drop in crime rate from the garden implementation year to one-year follow up at the 300- and 600-foot radii levels of analysis. The crime rate trends at these gardens increased again at the two-year follow up. However, the two-year follow up window should be viewed with caution from a collective efficacy standpoint. Although scholars have yet to establish how long collective efficacy takes to build, it is likely longer than just two years. Perhaps if the data allowed for a longer follow up period, clearer trends would have emerged to help ascertain any impact these gardens had on crime from a collective efficacy perspective.

The second informal social control research question was the following: *Do community gardens build collective efficacy?* The interviews with garden participants and other community members, the results of which are presented in Chapter Seven, were intended to help answer this research question. There are two important components to collective efficacy, social cohesion and a willingness to take action (Sampson, Raudenbush and Earls, 1997). Interviewees were asked about these constructs both in the context of the garden and also the broader community. While many interviewees reported a feeling of social cohesion in their broader community, most gardeners expressed a lack of a sense of community among the gardeners themselves. Some gardeners reported attempting to build a community-feel to their gardens, but they seemed to

struggle to do so. However, interviewees reported a willingness to intervene via informal social control by both broader community members and members of the gardens. Garden members reported taking action to stop "free-picking," people harvesting out of plots that do not belong to them. In the broader community, interviewees described varied participation in community safety initiatives.

Overall, these findings may indicate a causal order problem with respect to where informal social control is initiated. One hypothesis of this study was that community gardens build collective efficacy in the surrounding neighborhood. However, it seems that collective efficacy and informal social control may already exist in neighborhoods that choose to build a community garden, and that the garden itself does not seem to enhance community action. Additionally, a selection bias may have impacted the results of the interviews. While the interviewees stated that they and their friends were very active in the community, the results of the interviews would likely have been more mixed had they been chosen at random rather than from community council meetings.

The third and final research question regarding informal social control was: *Are there differences between these gardens beyond levels of collective efficacy – differences that may, in fact, affect levels of collective efficacy?* This research question was addressed during the interviews by examining potential barriers to the building of community cohesion within the gardens that might then extend to the greater community. Potentially, these barriers were gardens with locked fences and gardens which charge a fee. Members of gardens with fences noted that they were intended to make the gardeners feel safe. However, members of gardens without fences believed that a fence would hinder the feeling that the garden belongs to the community and the community belongs to the garden. Additionally, charging a fee to participate

in a community garden may prohibit low income community members from being able to participate. This may further a sense of exclusivity, which is likely to block any building of community cohesion. Therefore, community gardens that are fenced and/or charge a fee for participation may be inadvertently blocking the building of collective efficacy among the broader community through participation in the garden. Suggestions to remedy this are presented later in this chapter.

IMPLICATIONS FOR THEORIES

This study was exploratory and largely descriptive in terms of data analysis. As such, any implications for the underlying theories are provisional. Nevertheless, several possibilities are discussed.

Implications for Criminal Opportunity Theories

As discussed above, relationships between crime opportunity measures (i.e., image and territoriality from defensible space theory, and guardianship and offender handling from routine activities theory) and garden-specific rates of crime were often in the direction predicted by criminal opportunity theories. This was evident despite the fact that gardens did not appear to be consistently associated with reduced crime opportunity. So, opportunity appeared to be related to crime in this study, but gardens were less apparently related to opportunity (potentially because of outliers). Therefore, the impact of constructs of criminal opportunity theories on crime were supported more generally, even though the link between community gardens and these constructs was not clearly supported.

Although it did not relate directly to community gardens, the most interesting finding regarding the criminal opportunity perspective was the low rate of crime at vacant lots.

According to routine activities theory (RAT), crime occurs when three things interact in space and time: a motivated offender, a suitable target, and a lack of capable guardianship. Mostly due to the lack of capable guardianship, it would seem that vacant lots would be prime locations for crime. However, the vacant lots in this study were consistently ranked lowest in terms of crime rate. The vacant lots also ranked lowest in evidence of drug or alcohol use; drug/alcohol use was expected to be higher at places lacking guardianship and/or place management, such as vacant lots. In this sense, this study found evidence that may impact assumptions made by RAT. Namely, many scholars place great emphasis on the importance of the lack of capable guardianship aspect of the crime triangle, while often assuming that the motivated offender and suitable targets components are given. This study provides support for the great importance in the variability of suitable targets at places, perhaps most famously emphasized by Brantingham and Brantingham (see, e.g., Brantingham and Brantingham,1995), and motivated offenders. However, this study did not directly test these assumptions; future research would benefit from a renewed focus on these often neglected aspects of the crime triangle.

More specifically, crime pattern theory (Brantingham and Brantingham, 1995) provides a concept that may help to explain the low crime rate at the vacant lots in this study. A crime generator is a location that tends to generate crime due to the gathering of a large number of people who become easy targets for criminals. The low crime rate at the vacant lots in this study may be because people do not gather at vacant lots. In fact, there is rarely a legitimate reason for anyone to be at a vacant lot, so it would be a poor hunting ground for motivated offenders. Although vacant lots lack guardianship and management, they likely also lack suitable targets.

Implications for Collective Efficacy and Informal Social Control Theories

Sampson (2012) has recently focused on the ability of local community organizations to help build collective efficacy. This study examined community gardens as one such local community organization. To be clear, this study only examined part of the path model associated with collective efficacy theory; the impact of collective efficacy on crime was not examined directly, but this study did examine the ability of community gardens to build collective efficacy. It is difficult to determine the source of the constructs of collective efficacy (i.e., social cohesion and informal social control) within a community, and it has yet to be determined how long collective efficacy takes to build. However, the community gardens in this study seemed to struggle to build social cohesion among their members. Additionally, it seemed that social cohesion that was present in the broader communities likely existed despite the gardens. Perhaps community gardens are poor examples of the types of local community organizations that Sampson has suggested researchers focus on. More likely, there is potential for community gardens to build collective efficacy, as some of the gardens in this study were trying to do. In order for local organizations, such as community gardens, to build social cohesion, there must be instances for its members to interact amongst themselves and with the broader community. Members of typical local organizations often interact during meetings and social gatherings, but the community garden members in this study did not interact in this way. Therefore, the community gardens in this study were likely not building collective efficacy even amongst themselves.

More meaningful for collective efficacy theory, however, is the importance of the interaction of the organization members with the broader community. Even if a local organization builds social cohesion amongst its members, it will not impact the collective efficacy of the neighborhood if there is not a representative sample of the community among its

members. Some of the community gardens in this study may not have been inclusive to all members of the surrounding community due to the physical barrier of fencing and/or the financial barrier of a cost to join the garden. For local organizations to impact the collective efficacy of the entire neighborhood, the organizations should be inclusive and representative of the entire neighborhood.

There may be several reasons why this study found little evidence that community gardens build collective efficacy. First, perhaps recent work emphasizing the importance of local organizations for informal social control is misguided. A second, and more likely, possibility is that community gardens do not operate in the same way as typical local organizations, particularly in terms of member interaction. Third, and perhaps most likely of all, a community garden may have the potential to build collective efficacy among its members and the broader community, but strategic implementation and operation practices are necessary. The following section will outline such strategies for both building collective efficacy and lessening criminal opportunity at community gardens.

IMPLICATIONS FOR PRACTICE

While the community gardens in this study, overall, did not seem to reduce crime opportunity or increase informal social control, community gardens may still have the potential to impact crime, and specific gardens among those observed here support this potential. Many interviewees mentioned that the garden spaces seemed to be respected by the surrounding neighborhood.

> [T]he level of respect that the neighborhood gives to the [Pendleton] Children's Garden- especially the Children's Garden, but even community gardens- is pretty darn impressive. It doesn't get vandalized, knock on wood. People don't climb over the fences cuz people watch out.

The woman responsible for the Agnes Wagner McKie garden said, "Even some of our rough kids… 'Well I'll put you in charge of watching the garden. When we're not here, you tell me who touched something.' So they took ownership, and it was cool." There is potential for this level of respect to impact crime rates and spread to the rest of the community. Based on the exploratory findings in this study, I suggest six ways that community gardens can be implemented to have a greater potential to impact crime.

The first suggestion from a criminal opportunity perspective has to do with image. The data presented in Chapter Six revealed that gardens with higher crime rates, particularly the two extreme outliers (i.e., People's Garden and Pleasant Street #16), also had high levels of small litter, large litter, evidence of alcohol/drug use, and adjacent buildings with broken or boarded up windows. This finding illustrates the importance of how the garden looks in potentially impacting crime. People looking to implement a community garden, or even members of an existing garden, should be diligent about cleaning up the garden and its surrounding area. In addition to routinely picking up various forms of litter, it would be beneficial to work with neighboring building owners to fix dilapidated buildings. Providing a space that the community can feel proud of may also deter crime through a "broken windows" mechanism. In fact, the owner of Agnes B mentioned this exchange with a neighbor of the garden:

> The senior that lives on Chase Street, you know, and she came over when everything was in bloom, the roses were in bloom, and she said you know I can smell the roses from my apartment. So it's all the senses, you know. It's not just walking by, it affects everyone. And so she came by to thank me.

Second, community gardens should have a firm, but open sense of territoriality. Clear signage sends the message that the land is cared for by the community gardeners. While fencing is usually a good provider of territoriality, it may be counterproductive in spreading a sense of

community cohesion from the garden to the surrounding neighborhood. Secure fencing sends the message that the garden is not a "community" space. A community garden should have ample signage, but little fencing.

Third, aspects of territoriality related to the parcels surroundings should be kept in mind when selecting a site for a community garden. The data presented in Chapter Six found that low traffic potential was significantly correlated with low crime rates. Therefore, when selecting a community garden site, preference should be given to cul-de-sacs over through streets. Additionally, community garden implementers should take note of the land use of the surrounding parcels. Apartments, unsecured vacant buildings, and parking lots should be avoided. On the other hand, a vacant lot may be a good choice for a community garden neighbor.

Fourth, community gardeners should strive to establish themselves as target guardians and place managers by simply increasing the frequency of their presence. While people obviously took care of the spaces, the presence of guardians and managers was sparse in this study. During observations, it was very rare to see a gardener. Indeed, the community gardens ranked second to last in average number of legitimate users observed (see Chapter Six). When asked how often they ran into other gardeners at the garden, most interviewees said this was a rare occurrence. There is likely more activity at the gardens during planting and harvesting times, but gardeners should be encouraged to spend more time at the garden throughout the year if they are to have an impact on crime from a criminal opportunity perspective.

Fifth, members of a community garden should strive for creating a sense of belonging amongst fellow members of the garden. As mentioned in the previous section, the community gardens in this study had difficulty creating a sense of community and social cohesion among the

garden members themselves. This sense of belonging and ownership is a critical component of collective efficacy, and community gardens should strive to be more than simply a place for people without their own yards to grow vegetables. Indeed, several of the community gardens in this study were attempting to do just that. The Race Street Children's Garden has established mandatory volunteer hours for all of its members, and the Garden at Village Green was actively trying to encourage group gardening hours for fellow gardeners to get together.

Finally and more importantly, community gardens need to be more inclusive of the general community if they are to impact crime via informal social control. Explicit efforts to do this have been made by both the Garden at Village Green and Agnes B (see Chapter Seven). Perhaps a community garden could be a part of a larger comprehensive community partnership with organizations whose explicit mission is to impact crime and increase community cohesion (Rosenbaum & Schuck, 2012). In addition to reaching out to the neighborhood, a community garden should make an effort to be more inclusive with its membership. Gardens without fencing and without a financial cost to participation may be more inviting. Members of the community must feel like the organization belongs to all of them if it is to be a source of social cohesion and collective efficacy for the entire community.

DATA LIMITATIONS AND FUTURE RESEARCH

Though the suggestions for community garden implementers and participants outlined above appear promising based upon this research, more research is clearly needed before such suggestions are widely-implemented. This research represents a first step in understanding the relationship between community gardens and crime via processes of criminal opportunity and informal social control, and it was clearly hampered by limitations. A limitation that plagues

most social science research was also a problem for this study; processes associated with the community gardens were not able to be disentangled from other neighborhood effects. Unfortunately, it will be difficult for future research to isolate the effects community gardens may have on crime. However, future research may be able to overcome some of the other limitations and provide further insight into how community gardens might impact crime.

The limitations of this study stem from its exploratory nature. A small sample of community gardens were used as case studies. The selection of community gardens was originally based on areas that had higher rates of crime, so as to more easily observe any changes in pre-post analyses. However, few gardens were able to be examined in this way due to the age of the community gardens exceeding the available crime data. If it is possible to know all of the community gardens in an area, future research should select a true random sample of these gardens for study. Alternatively, case studies may be done using gardens that are currently being established, so as to follow the progress and ascertain an exact implementation timeline. A longitudinal study such as this would likely need to be large in scale, perhaps across several cities, to overcome issues due to small sample sizes. These techniques would also alleviate the limitation of community gardens predating available crime records.

The crime data used was the Uniform Crime Reports (UCR) from the Cincinnati Police Department. There are limitations to using only reported crimes from UCR data; not all crimes are reported to the police. While this weakness was preferable over using calls for service data, which may have been artificially inflated with increased informal social control, limited UCR data did not allow for the analysis of monthly crime rates. Monthly crime data would have been able to capture potential changes in crime due to the seasonality of community gardens. Future research should attempt to account for seasonal changes in crime by using thoroughly cleaned

calls for service data, eliminating non-crime calls and duplicate calls for the same incident. However, the potential for calls for service data to inflate the presence of crime due to increased informal social control must be considered a limitation of any such study.

Using UCR data as the dependent variable may also have impacted the overall findings of this study due to the fact that not all crimes are reported. The finding that vacant lots consistently had the lowest crime rates may be an artifact of examining only reported crimes. The crimes that occur at vacant lots are likely crimes in which all parties are involved in illicit activity (i.e., drug trafficking or use). These crimes would not be reported to police, unless they were witnessed by someone who was not involved in the illegal activity. This leads to another alternative explanation of the findings, specifically that gardens tended to have a moderate crime rate compared to the other site types. It may be that the implementation of a community garden and the presence of its gardeners created a "new normal" in terms of reporting crime. The spike in crime seen during the implementation year in the pre-post trends may simply be due to the fact that people not involved in the criminal activity are now reporting crime that had always happened but was never reported. Unfortunately, it is extremely difficult to obtain a measure of the number of actual crimes that occur. Therefore, future research may not be able to accurately explicate these ideas.

Observational data were limited by the amount of time required to walk by the sites. Given the total number of sites to be observed, and limited personnel and funding, each individual site could only be observed, at most, three times per week, with each observation limited to the amount of time it took to walk past and complete the observation data collection sheet (see Appendix B). This may have affected the amount of activity seen at the sites. In particular, the number of legitimate users observed at the community gardens was unexpectedly

low. Perhaps, if more time was spent at one location, it would have increased the chances that gardeners would have been observed interacting or at least providing guardianship. The availability of more personnel would allow for longer observations. Additional personnel would allow for more observations as well. In particular, observers collecting data in pairs would allow for safer night-time observations, when levels of disorder, loitering and crime are likely more prevalent. Therefore, to get a better idea of the amount and types of activities occurring at the community gardens, future research should include more personnel to allow for more and longer observation periods. This will increase the chances of observing gardener interaction and other measure that impact criminal opportunity.

The interview process could also be improved in a number of ways. First, participants were selected via snowball sampling from individuals encountered at the gardens and community council meetings. This may have biased the results of the interviews. Ultimately, interviews with 15 gardeners and five community members were used for analyses. The gardeners were able to impart information regarding the level of collective efficacy and informal social control within the gardens themselves. Interviews with community members were intended to provide information on the level of collective efficacy and informal social control throughout the entire neighborhood. However, choosing community members from community council meetings likely biased the level of community cohesion and participation in community organizations that was reported in the interviews. Community council is itself a local community organization of which these interviewees are a part. Additionally, many other community organizations—often ones intended to either increase community cohesion (e.g., welcoming new neighbors) or increase informal social control (e.g., citizens on patrol)—extend from community councils. As such, future research should interview a more random sample of community members to get a

more unbiased view of the level of collective efficacy in the community. Ideally, all residents should be approached to participate via random sampling. Interviews with random community members could also ascertain the impact of community gardens through more of a "broken windows" mechanism. Perhaps community gardens impact crime simply by providing beautification which leads community members to take more pride in their neighborhood.

A second limitation of the interviews in this study is the small sample size. In addition to poor sampling technique, the representativeness of the interviewees in this study was likely affected by the small number of them. Increased personnel and funding for future research would help to increase the number of possible interviews that could be conducted, leading to a more representative sample of the population.

Third, the timing of the interviews in this study limited the potential findings. Interviewees were asked to recall changes in their neighborhood retrospectively, which is a poor method to scientifically ascertain real change. Ideally, future research should conduct interviews both before and after garden implementation. Additionally, as has been mentioned previously, scholars have yet to determine how long collective efficacy takes to build. As such, future research should conduct periodic follow-up interviews and/or surveys over many years to reveal any changes in the constructs of collective efficacy.

CONCLUSION

Community gardens are often implemented to improve access to healthful foods or to provide a space for apartment dwellers to grow their own fruits and vegetables. Lowering crime may not be the impetus for community gardens, but this study explored the possibility that they might have an impact on crime. The theoretical connections community gardens have with criminal opportunity and informal social control were outlined in Chapters Two and Three.

However, this study did not find support for these theoretical connections. In particular, community gardens do not appear to be the type of local organizations that might build collective efficacy. Contrary to the term "community" garden, most of the gardeners in this study seemed to utilize the garden space alone; there was very little interaction among gardeners. Therefore, community gardens, at least the ones in this study, do not build social cohesion, a critical component of collective efficacy. Indeed, community gardens may not have an impact on crime at all.

Although this exploratory study was not able to find clear direct connections between gardens and crime via processes of criminal opportunity and collective efficacy, the recommendations both for community gardens themselves and for future research in the preceding chapter may help establish community gardens as unintended crime fighters or help explain why these theoretical connections are flawed. Therefore, this study has laid the groundwork for future research to explore how community gardens may affect crime via a criminal opportunity model or through the building of collective efficacy and informal social control.

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Appendix A

Community Gardens, Collective Efficacy and Criminal Opportunity
Initial Observation Sheet

Observer name: _____

Observation date: _____ Day of week: _____

Arrival Time: _____ am pm Departure Time: _____ am pm

Garden name: _____

Weather: ☐Sunny/Clear ☐Raining ☐Overcast/Cloudy ☐Other _____

Instructions: Walk the perimeter of the garden or comparison site.

Note the following within eyesight:

Record the number of people in the area:

Gardeners: _____ Non-Gardeners: _____ Police: _____

Do any non-gardeners loiter in the area (not just walking by)? ☐Yes ☐No

If yes, note how many (e.g. # of individuals, are they in groups, size of group):

If you notice police officers, describe their presence:

☐ just drive/bike by ☐ park and sit ☐ get out of vehicle (no interaction)

☐ interact with someone ☐ make an arrest ☐ other: _____

Do you observe any possible criminal activity? ☐Yes ☐No

Describe:

Note any signage on or near the community garden site:

☐Garden Name ☐Decorative signs

☐"No Trespassing/Loitering" ☐Garden plot designations

☐Other _____

Are there street lights on the blocks adjacent to the garden? ☐Yes ☐No

Are there lighting fixtures that seem to be part of the garden? ☐Yes ☐No

Is there a bus stop(s) on any of the streets surrounding the garden? ☐Yes ☐No

If more than one, indicate number: _____

Does the garden have a fence around it? ☐Yes ☐No

If yes, what kind: ☐Wood ☐Chain link ☐Chicken wire ☐Plastic

☐Other _____

If yes, does the fence have a lock? ☐Yes ☐No

If yes, is the lock engaged? ☐Yes ☐No

If **no**, are gardeners present? ☐Yes ☐No

Describe the presence of any of the following:

Graffiti (# of pieces, size):

Trash/Litter (number of pieces larger than 2"x2"):

Communal trash areas (#, are they full/overflowing?):

Empty alcohol containers (number and type):

Public drug use (needles, syringes, roaches, etc.):

Street harassment (cat calls, shouting, etc.):

Broken/Abandoned cars (#, do they appears to have been vandalized, etc.):

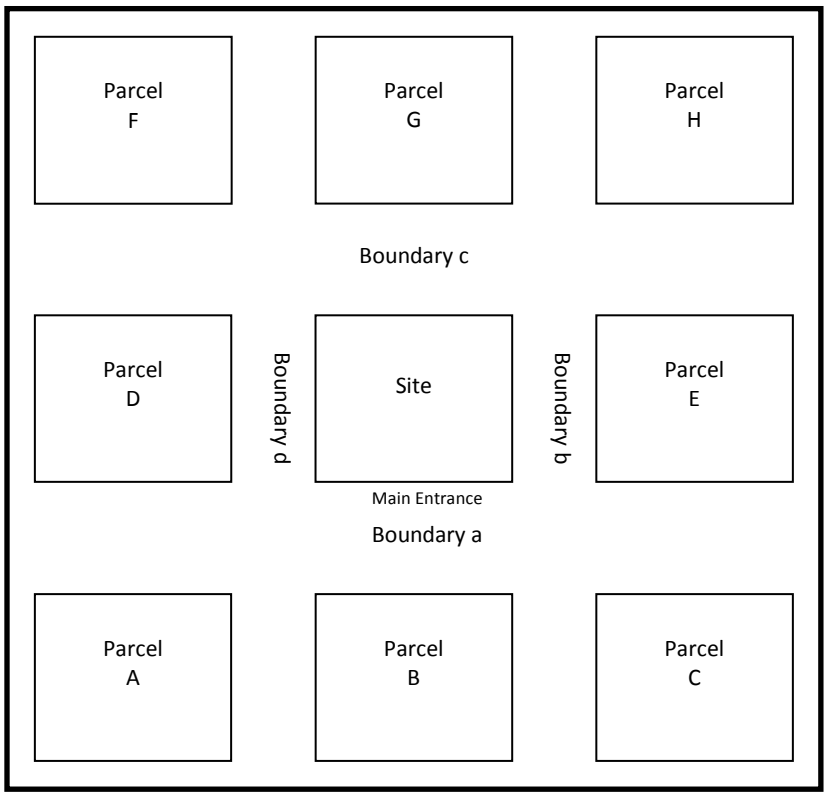
Dilapidated buildings (#, broken windows, boarded up, etc.):

Benches/sitting areas (#, any broken):

Street lights out (night observation only):

Area Surrounding Site:

Diagram 1



Parcel Attributes
1 Apartment
2 Single family
3 Duplex (two family)
4 Retail
5 Convenience store
6 Bar
7 Restaurant with alcohol
8 Restaurant w/o alcohol
9 Church
10 Hospital
11 Grade school
12 High school
13 Gas station
14 Warehouse/Industrial
15 Park/green space
16 Parking lot
17 Empty lot
18 Vacant structure - secure
19 Vacant structure - unsecure
20 Other (describe)

Boundary Attributes
1 Property boundary only
2 Street
3 Alley
4 Other (describe)

Boundary Accessibility
1 Inaccessible (no openings)
2 Gardener cxxxonly
3 Partially enclosed
4 Completely accessible

Boundary Enclosures
Only for those with accessibility coded as 1 through 3
1 Wall
2 Shrubbery
3 Fence
4 Gate
5 Other (describe)

Area Surrounding Site:

Describe the structures surrounding the complex using diagram 1 and the corresponding list of attributes.

	Parcel Attributes	Number of stories (or NA)
Parcel A	_____	_____
Parcel B	_____	_____
Parcel C	_____	_____
Parcel D	_____	_____
Parcel E	_____	_____
Parcel F	_____	_____
Parcel G	_____	_____
Parcel H	_____	_____

	Boundary Attributes	Boundary Accessibility	Boundary Enclosures
Boundary a	_____	_____	_____
Boundary b	_____	_____	_____
Boundary c	_____	_____	_____
Boundary d	_____	_____	_____

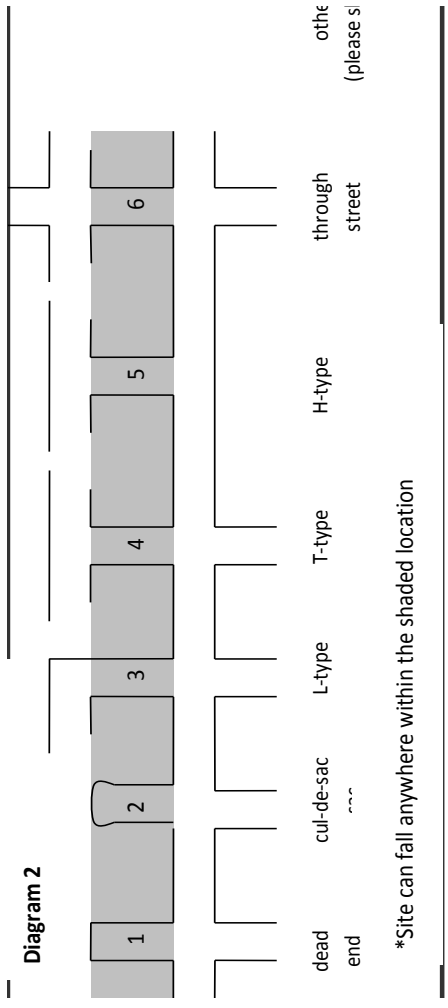


Diagram 2

Complete the following *only* for each boundary coded as a *street*.

Boundary a

Number of lanes _____
Street type (refer to diagram 2) _____
Direction ☐ One-way ☐ Two-way
☐ Median ☐ Traffic light ☐ Stop sign

Boundary b

Number of lanes _____
Street type (refer to diagram 2) _____
Direction ☐ One-way ☐ Two-way
☐ Median ☐ Traffic light ☐ Stop sign

Boundary c

Number of lanes _____
Street type (refer to diagram 2) _____
Direction ☐ One-way ☐ Two-way
☐ Median ☐ Traffic light ☐ Stop sign

Boundary d

Number of lanes _____
Street type (refer to diagram 2) _____
Direction ☐ One-way ☐ Two-way
☐ Median ☐ Traffic light ☐ Stop sign

Appendix B

Community Gardens, Collective Efficacy and Criminal Opportunity
Ongoing Observation Sheet

Observer name: _____

Observation date: _____ Day of week: _____

Arrival Time: _____ am pm Departure Time: _____ am pm

Garden name: _____

Weather: ☐Sunny/Clear ☐Raining ☐Overcast/Cloudy ☐Other _____

If there is a gate, is it LOCKED? ☐Yes ☐No ☐ N/A

Instructions: Walk the perimeter of the garden or comparison site.

Note the following within eyesight:

Record the number of people in the area:

Gardeners: _____ Non-Gardeners: _____ Police: _____

Do any non-gardeners loiter in the area (not just walking by)? ☐Yes ☐No

If yes, note how many(e.g. # of individuals, are they in groups, size of group):

Number of CARS (parking lots only): _____ Planted? ☐Yes ☐No ☐ N/A

If you notice police officers, describe their presence:

☐ just drive/bike by ☐ park and sit ☐ get out of vehicle (no interaction)

☐ interact with someone ☐ make an arrest ☐ other: _____

Do you observe any possible criminal activity? ☐Yes ☐No

Describe:

Describe the presence of any of the following:

Graffiti (# of pieces, size):

Trash/Litter (number of pieces larger than 2”x2”): Recently mowed? ☐Yes ☐No ☐ N/A

Count and describe large trash/litter items (e.g. tires):

Communal trash areas (#, are they full/overflowing?):

Empty alcohol containers (number and type):

Public drug use (needles, syringes, roaches, etc.): Number of cigarellos: _____

Street harassment (cat calls, shouting, etc.):

Broken/Abandoned cars (#, do they appears to have been vandalized, etc.):

Dilapidated buildings (#, broken windows, boarded up, etc.):

Benches/sitting areas (#, any broken):

Street lights out (night observation only): How well lit? ☐Dark ☐Part Dark ☐ Well lit

Appendix C

Community Gardens, Collective Efficacy and Criminal Opportunity

Community Garden Participant Interview Guide

1. Participant ID number
2. Gender
3. Age
4. Race/Ethnicity
5. Home Address
6. When was the community garden established?
7. Who owns the land?
8. How does one become a member of the garden? When did you become a member?
9. How did the garden get started? Who was involved? Was it part of a larger community initiative?
10. How often and when do you come to the garden?
11. Describe the activities that take place at the garden. Is it common for garden members to interact? Are there structured activities for garden members? Or do interactions among members occur by happenstance?
12. Do non-gardeners come to the garden, even just walking past? If so, how do residents interact at the garden? How do residents interact *about* the garden?
13. Are there other garden activities that involve interaction between garden members and non-garden members within the neighborhood? Explain.
14. Do you live in this neighborhood? If so, how long have you lived here?

15. Would you say that most of the gardeners live in this neighborhood?
16. How would you describe interaction among neighbors prior to the garden? Would you say it was a “close-knit” community? How about since?
17. Has the garden allowed you to get to know your neighbors better?
18. How would you describe neighbors’ participation in community organizations/events prior to the garden? How about since?
19. How would you describe neighbors’ willingness to mobilize to solve community problems prior to the garden? For example, would neighbors have worked together to stop an outbreak of vandalism in the neighborhood? What about since the garden has been in place?
20. Have there ever been any community organizations to stop or prevent crime in the neighborhood? If so, when? How did it go?
21. How was this land being used before the garden? By whom? When/how often?
22. Before this land was a garden, did people hang around the area at all? What sort of people?
23. Prior to the garden, would you say there were people “keeping an eye” on this area on a regular basis? How about since the garden has been in place?
24. Were there problems in this immediate area prior to the garden being here? If so, what sort of problems?
25. How has the use of the land changed since the garden was initially planted? Who uses the land now? When/how often? Any problems since the garden has been in place?
26. Has the area around the garden changed since the creation of the garden? Explain.

27. Would you say the garden and surrounding areas are vulnerable to crime? Explain.
28. What sort of crime did your neighborhood experience before the garden? Please explain locations, victims/targets, types of crime- as much about the criminal activity as you know. How about since the garden has been in place? Any changes?

MAP INSTRUCTIONS:

MAP 1: Using two different highlighter colors, please mark on this map where you live and where your five closest friends live.

MAP 2: Mark the places that you consider most dangerous (e.g. where you wouldn't walk alone at night).

Rate your agreement with the following on a scale from 1 to 5, with 1 being "Strongly Agree" and 5 being "Strongly Disagree."

[This scale will be repeated to the interviewee periodically throughout the following set of questions.]

29. Overall, I am very attracted to living in this neighborhood.
30. I feel like I belong to this neighborhood.
31. I visit with my neighbors in their homes.
32. The friendships and associations I have with other people in my neighborhood mean a lot to me.
33. Given the opportunity, I would like to move out of this neighborhood.
34. If the people in my neighborhood were planning something I'd think of it as something "we" were doing rather than "they" were doing.
35. If I needed advice about something I could go to someone in my neighborhood.

36. I think I agree with most people in my neighborhood about what is important in life.
37. I believe my neighbors would help me in an emergency.
38. I feel loyal to the people in my neighborhood.
39. I borrow things and exchange favors with my neighbors.
40. I would be willing to work together with others on something to improve my neighborhood.
41. I plan to remain a resident of this neighborhood for a number of years.
42. I like to think of myself as similar to the people who live in this neighborhood.
43. I rarely have neighbors over to my house to visit.
44. A feeling of fellowship runs deep between me and other people in this neighborhood.
45. I regularly stop and talk with people in my neighborhood.
46. Living in this neighborhood gives me a sense of community.
47. People around here are willing to help their neighbors.
48. This is a close-knit neighborhood.
49. People in this neighborhood can be trusted.
50. People in this neighborhood generally don't get along with each other.
51. People in this neighborhood do not share the same values.

Appendix D

Community Gardens, Collective Efficacy and Criminal Opportunity Police Interview Guide

1. Participant ID number
2. Beat number
3. Gender
4. Age
5. Race/Ethncity
6. How long have you been a police officer?
7. How long have you been with CPD?
8. For how long have you or when did you patrol this beat?
9. How would you describe the level and type of crimes (including victims/targets, perpetrators, etc.) in this neighborhood?
10. How would you describe the level and type of crimes (including victims/targets, perpetrators, etc.) in this immediate area (garden/comparison site)?
11. Have the hotspots changed over the years? How so/please describe?

MAP INSTRUCTIONS: **Please indicate on this map the spots you believe to be high-crime areas in this neighborhood. Indicate any changes over the years.**

12. Have you ever been a part of a crime reduction initiative in this neighborhood?
13. If yes, describe the initiative(s) and when it took place.
14. Do you get a lot of calls for service/residents reporting crime?
15. Do you find the people in this neighborhood to be cooperative with the police?
16. How often to you encounter crime in progress while on patrol in this neighborhood?
17. What time of day, days of the week, times of the year is crime most prevalent in this neighborhood?