THE IMPACT OF NEIGHBORHOODS ON A VARIETY OF POLICE ACTIONS

By

Michael Kevin Gray

A DISSERTATION

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

DOCTOR OF PHILOSOPHY

Criminal Justice

2004

ABSTRACT

THE IMPACT OF NEIGHBORHOODS ON A VARIETY OF POLICE ACTIONS

By

Michael Kevin Gray

Using conflict theory and the benign neglect hypothesis, a variety of police services are examined to determine if police activities differ by neighborhood. While previous research has examined contextual level influences of police behavior, prior examinations have been limited in terms of the activities examined (typically limited to law enforcement activities) and the contextual characteristics included. The current research examines officer initiated order maintenance, law enforcement, and service actions of the police across neighborhoods. Neighborhood characteristics, derived from a conflict theoretical approach, include concentrated disadvantage and percent homeownership. Results indicate that officer level variables are more consistently related to the three types of officer initiated activities than are neighborhood characteristics. Differences were found for how much time officers spend inside assigned beats based on neighborhood characteristics as well as how much order maintenance is conducted. Findings are discussed and placed within the larger context of existing research of police behavior.

Dedicated to my father, John Gray.

ACKNOWLEDGMENTS

I would like to take this opportunity to thank several people without whom I would not have finished this dissertation. First, I would like to thank the members of my committee: Chris Maxwell, Kevin Ford, John McCluskey, and Ed McGarrell. I appreciate your time and input into this paper; your suggestions and insights have made this research much stronger.

I would like to extend particular thanks to the chair of my dissertation, Chris Maxwell. You have helped me throughout my time at Michigan State – from my first years working for you (locked in your basement with no heat), through job searches, conferences, until now when I am finally finished with the dissertation. I sincerely appreciate all the advice, assistance, and support you've provided.

I would also like to thank my family and friends – for their support, encouragement, and their patience. I dedicated this dissertation to my dad because, from an early age, he always told me that I could accomplish anything I put my mind to. Of course, some things take longer than others, but I'm finally done! I appreciate the encouragement and patience of my mother especially – even after hearing "I don't want to talk about it!" time and time again when asking how the dissertation was going. I have been blessed with such a wonderful and supportive family.

I have also been fortunate to have had so many good friends who have encouraged me along the way. My MSU friends are among the best people I have ever met: Meghan Stroshine, Stephen Jefferson, Hao Lu, Amanda Robinson, Roni Mayzer, Barb Koons, Heather Hansel, Gwen Bramlet – to name a few. My friends in Terre Haute have had to

listen to me rant and rave and fret more than anyone should have to, thank you to Jenny Krozier, Kelly and Joe Spitznagel, Jennifer Boothby, and Jon Schaefer.

I would also like to thank my colleagues at Indiana State University.

Table of Contents

LIST OF TABLES

LIST OF FIGURES

Chapter 1

Introduction

The importance of considering context in explaining behavior is evidenced by the number of disciplines that include context as a key construct of interest. Considerable research addressing innumerable topics has been conducted in fields such as psychology, sociology, and criminology examining contextual level influences. Both social and physical conditions of neighborhoods have been shown to be associated with emotional and behavioral outcomes of residents (Austin, Furr, and Spine, 2002). Brodsky, O'Campo, and Aronson (1999) note the important role that community level resources play in the development, treatment, and prevention of various mental and physical public health concerns. Brodsky et al. (1999) identify the improvement in mental health and well-being in relation to environmental design. According to Oxford (1992) person-in-context is the hallmark of the community psychological approach; what are termed "healthy communities" are seen to play a pivotal role in the physical and psychological well-being of its residents and increase the ability to resist physiological and psychological problems (Chavis and Newbrough, 1986).

Place and place characteristics have also been examined in efforts to identify determinants of police actions. Explaining and identifying the influences of police behavior have been goals of police researchers for decades. Approaches have followed several dimensions – individual, situational, organizational, and contextual level influences. Using conflict theory and the benign neglect hypothesis, differential police initiated activities are examined to determine if neighborhood contextual level influences of police behavior can be identified.

Conflict theory suggests that the police, as an agent of the state, behave in a more punitive manner towards members of groups who pose a threat to the established order and in places where other forms of social control are weak or nonexistent. As a result of this, differential patterns of police behavior are expected – based on neighborhood characteristics such as income levels.

A second theoretical approach that explains differential police behavior is the benign neglect hypothesis. This approach suggests that the police operate towards certain areas with a type of "benign neglect" (Liska and Chamlin, 1984) – ignoring behaviors that may warrant attention if seen in other areas and providing fewer and lower quality services to some groups than would be provided to others. Benign neglect suggests that poor or minority areas would receive fewer and lower quality of public services – such as police services.

Both of these theoretical approaches underscore the differential behavior of the police towards different groups in society. Both of these approaches recognize the theoretical importance of place and place characteristics in explaining police behavior.

This research endeavor examines whether context is a relevant factor when considering the delivery of a variety of police services. Specifically, police provision of services and the types of services provided to different neighborhoods are examined. While no clear relationship has been shown in terms of the provision of traditional reactive policing activities for different neighborhoods (based on racial and economic characteristics) (Mladlenka and Hill, 1978; Ostrom, 1983), other forms of policing, namely, order maintenance and service activities have yet to be examined for potential differential distribution by neighborhood. The frequency with which police engage in

such non-crime services involving order maintenance and service activities has long been recognized (Mastrofski, 1983) and is substantial (Bayley and Mendelsohn, 1969; Walker and Katz, 2002; Wilson, 1968). This line of research is important for several reasons, including the significant amount of time that police are engaged in non-law enforcement activities. This line of research is also important considering the potential for inequities in the delivery of police services. Finally, this line of research is important due to the prevalence of community policing reforms being adopted across the country and principles inherent in these reforms, such as increased discretion and neighborhood specific approaches.

During the past 15 years, more and more police departments across the country have adopted principles of community policing, especially since the 1994 passage of the President's Crime Bill which included provisions for hiring 100,000 more community police officers. The adoption of community policing constitutes a major reorientation of departmental patrol efforts and operational strategies. Community policing as a reform movement has several principles that differentiate it from previous police practices, four of which are particularly relevant for the current study. These differences include (1) calls for a different relationship between the police and the public, (2) expansion and/or recognition of non-law enforcement functions, (3) place-specific approaches, and (4) increases in officer discretion (Cordner, 1995– cited in Novak, Frank, Smith and Engel, 2002).

The relationship and partnership between the police and the public is one significant difference between traditional police strategies and community policing. The professionally remote relationship with citizens that departments pursued during the

professional era of policing, is seen under a community policing philosophy as a hindrance to effective policing. Community policing attempts to address and change the relationship between the police and public – calling for working relationships/partnerships between the two. The professional remoteness which was sought by previous police reforms ultimately led to relationships characterized by isolation, alienation, and mistrust. Isolation led to resentment and misunderstanding and a lack of support by the community of the police (Trojanowicz and Carter, 1988). For community policing, this support and cooperation is seen as a necessity. Community policing reforms recognize the role of the public in maintaining order in their neighborhoods and specifies changes in the role of the police with respect to duties, activities, and general operating policies. As Sparrow, Moore, and Kennedy (1990) note, "police are rediscovering that ordinary people and communities are the first line of defense in controlling crime and fear" (p. 46).

In addition to a change in the relationship between the police and the public, community policing efforts recognize and embrace a broader police mandate. Throughout the majority of the 20th century, police agencies emphasized the law enforcement/crime control aspects of policing. With community policing, the goals and focus of police action is expanded to include such considerations as fear of crime, disorder, and quality of life issues; service behaviors and order maintenance functions are recognized as essential police functions. While traditional police models have emphasized the crime fighting/law enforcement role of police, community policing efforts accommodate the breadth of functions that the police routinely handle.

Another substantive change from traditional policing, is that community policing calls for a place-specific approach, recognizing that different areas have different problems and needs. More tailored or neighborhood-specific approaches in terms of police service delivery replace the traditional "one size fits all" approach. With this tailored approach, one potential problem is that differential and unequal service delivery by neighborhoods could manifest; the quality of services which police provide to different areas could be different. The impact of community policing reorientation regarding the potential for differential service delivery is not known and is examined by this research.

A final and significant change involves officer discretion. While most police reform during the 20th century aimed (explicitly or implicitly) to reign in officer discretion, as a reform, community policing is unique in its call for increased officer discretion (Novak, et al., 2002). Specifically, officers under a community policing philosophy are given more autonomy to determine how their time is spent, with whom they interact, and the targets of their actions. The outcome of this increased discretion is only partially coming to light and indicates that officers freed from traditional 911-response driven contacts with citizens, come into contact with significantly different groups (Parks, Mastrofski, DeJong, and Gray, 1999).

Police discretion has been a focus of research for some time, involving the examination of police behaviors in terms of organizational, situational, individual officer, and neighborhood or contextual level influences. The findings from previous research regarding these influences on police discretionary behaviors have yielded some consistent findings, such as the influence of suspect demeanor, and some inconsistent findings, such

as the race of the offender (see for example, Riksheim and Chermak, 1993, and Sherman, 1980). One possibility is that inconsistencies of prior research can be explained by considering the different contexts in which decisions, such as arrest, occur (Smith, 1984). This notion is highlighted by Chambliss and Seidman (1971) who note that the total social milieu in which people operate must be examined to determine the way in which rules actually operate.

While some research has been conducted on the influences of neighborhood characteristics and police discretionary actions, the primary focus of these studies has been limited to police decisions to arrest and police use of force (See for example, Brown and Warner, 1992; Crank, 1990; Liska, Chamlin, and Reed, 1985). While important, these two areas of police action leave much left to be examined. A further consideration is that different activities involve varying levels of discretion and that arrest decisions and use of force practices arguably involve the least amount of discretion. Bayley and Mendelsohn (1969) note that some events entail clear cut enforcement decisions while others are more ambiguous and more discretionary. Wilson (1968) identifies the type of activity (law enforcement or order maintenance) as a key factor affecting the amount of discretion that an officer has and notes that order maintenance functions involve exercising substantial discretion.

As Brooks (1997) notes, the fewer the rules about handling situations, the more discretion officers have. There are numerous rules concerning situations when arrests should be made, as well as when the use of force is appropriate.

Walker and Katz (2002) also acknowledge the considerable discretion that officers possess when handling non-crime incidents and Kelling (1997) refers to order

maintenance activities as highly discretionary. The question remains, how might neighborhood context influence situations in which discretion is higher?

Traditional police practices have served to provide a seemingly egalitarian distribution of police services (Parks et al., 1999). Specifically, equity in services has been examined in relation to the allocation of resources and response time (Ostrom, 1983) and the research conducted in these areas suggest no relationship between these outcome measures and racial or economic indicators (Maxfield, Lewis, and Szoc, 1980; Mladlenka and Hill, 1978; Ostrom, 1983). Mastrofski (1983) notes the general lack of support for the underclass hypothesis (the idea that members of the lower class receive fewer public services) in regard to the delivery of these police services.

Community policing may change the egalitarian nature of police service delivery. Principles inherent in community policing drive this potential, namely an appreciation of non-law enforcement type activities, place-specific approaches, and increased discretion in terms of how officers spend their time. This paper examines the degree to which discretionary police behaviors are influenced by neighborhood context. As noted by Smith (1987): "Police patrol both people and places, hence characteristics of both people and places may influence police behavior" (p. 780).

Explaining and identifying the factors which influence police behavior has been a target of police researchers for some time; various approaches have been used in such efforts. The current study attempts to add to the current knowledge of influences of police behavior by examining a variety of police activities and by examining contextual level variables. While not negating the potential influences of officer-level, situational, or organizational factors, environmental or contextual factors have often gone

unexamined in explaining differential police practices. This is especially true when one considers the examination (or lack thereof) of activities outside the realm of traditional reactive policing – considering the broad provision of services in which police are engaged, namely order maintenance and service activities.

For the remainder of Chapter One, a theoretical framework is provided for the current study. Specifically, a conflict theoretical approach is provided as a foundation for explaining and understanding the potential differences in the provision of police services (law enforcement, order maintenance, and service activities) to different neighborhoods.

In Chapter Two, previous research examining neighborhood and contextual level influences of police behavior is examined. The state of what we know about neighborhood level influences is presented as well as how this information was gained. The body of prior research is examined along a several dimensions, including the specific contextual variables included and the level of aggregation (e.g., neighborhood, police beat, city). The current study is placed within a broader context of existing scholarship concerning the influences of police behavior. The current study broadens the knowledge base by examining neighborhood level influences on police practices especially non-law enforcement activities.

Chapter Three describes the methodology for the current study. Data collected as part of the Project on Policing Neighborhoods (POPN) are used for the current analyses. Chapter Three begins with a discussion of the original study and how the data were gathered. Next, the neighborhood level variables used for the current study are outlined. In addition, specific hypotheses about the relationship between these neighborhood level

variables and police behavior are provided. Finally, the data analytic techniques to be employed are outlined in Chapter Three.

In Chapter Four, the results from the analyses outlined in Chapter Three are presented. Significant findings are highlighted.

In Chapter Five, a summary of the results is provided and then discussed. Implications are also discussed, as are the limitations of the current study and avenues for future research.

The Importance of Place [1]

Numerous disciplines within the social and behavioral sciences have addressed the importance of place in affecting human behavior. Sociological examinations have included studies identifying neighborhood level effects on such topics as sense of community (Brodsky et al., 1999; Kingston, Mitchell, Florin, and Stevenson, 1999; Prezza, Amici, Roberti, Tedeschi, 1999) and feelings of attachment (Buttel, Martinson, and Wilkening, 1979; Kasarda and Janowitz 1974; Oropesa, 1989; Sampson, 1998). One interesting example of this line of research was conducted by Kuo, Sullivan, Coley, and Brunson (1998) who discovered that the level of vegetation in common spaces predicted the use of these common spaces and the social ties that subsequently developed.

Neighborhood satisfaction has also been shown to be influenced by the physical and social characteristics of neighborhoods (Fried, 1982; Herting and Guest, 1985; St. John et al., 1986; White, 1985). Several researches have determined that the physical

---

[1] Place is used to denote environmental or social characteristics of a geographical location. References in the extant literature utilize inconsistent terminology in this regard. Context could be used to indicate several dimensions but is used for the current study to denote characteristics of geographic locations.

characteristics of a community have significant impacts on residents' satisfaction (Fried, 1982; Herting and Guest, 1985; St. John et al., 1986; White, 1985). Although community attractiveness is necessarily subjective (White, 1985), residents' perception of physical characteristics have been shown to explain satisfaction. These include such things as general physical appearance, beauty, housing quality, access to nature, neatness, and home ownership. In these studies, the physical characteristics of the communities were found to be among the most powerful predictors of community satisfaction. Mobility is identified by Baldassare (1986) as one important ramification of neighborhood satisfaction; dissatisfaction among residents results in more geographic mobility.

In other studies, the role of these positive community attributes (e.g., satisfaction) are examined to determine their effect on various outcomes. For example, examinations have been conducted to determine the effects of positive community attributes on citizen participation in organizations, such as community groups (Arcury, Austin, Quandt, Saavedra, 1999; Chavis and Wandersman, 1990; Howell et al., 1999; Julian, Reischl, Carrick, and Katrenich 1997) and other collective action efforts (Haeberle, 1989; Hyman and Wright, 1971; McPherson, 1981; Perkins et al., 1990; Skogan and Lurigio,1992). Community characteristics have been shown to function as a catalyst for civic participation in change – improving an area's ability to combat and resist problems (Chavis and Pretty, 1999; Prezza et al., 1999).

Research in the field of Criminal Justice has also long recognized the importance of settings and the influence of contextual level characteristics. Criminological research on crime (Sampson and Groves, 1989; Sampson and Raudenbush, 2001; Shaw and McKay 1942/1969), victimization (Cohen and Felson, 1979; Sampson, 1986), fear of

crime (Austin et al., 2002; Greenburg, 1986; Ross and Jang, 2000), attitudes towards the police (Cao, Frank, and Cullen, 1996; Reisig and Parks, 2000; Sampson and Jeglum-Bartusch, 1998; Weitzer, 1999) and recidivism (Gottfredson and Taylor, 1986) have all illustrated the influence of place and place characteristics.

The interest of criminologists in place can be traced to the works of Social Ecologists such as Park, Burgess, and McKenzie. These early social ecologists stressed an ecological focus on the process of spatial development. McKenzie (1926) describes a community as "an ecological distribution of people and services in which the spatial location of each unit is determined by its relation to all other units" (p. 312). This approach adapts a model from the physical sciences, specifically plant ecology, and applies it to the evolution of the city. It is the spatial distribution of the city which determines the interactions and relations among people and units comprising the city (McKenzie, 1926). According to McKenzie (1926), social organization accommodates itself to spatial dimensions; as areas expand, social disorganization (e.g., crime, disorder, disease) increases and relationships are increasingly strained.

In one of the most influential examinations of ecology and crime, Shaw and McKay (1942/1969) explained higher delinquency rates in certain parts of Chicago – specifically, identifying what were termed transition zones. Areas characterized as socially disorganized were found to have higher rates of delinquency. These areas maintained high delinquency rates despite significant shifts in residential populations (Shaw and McKay 1942/1969).

In a cursory review of neighborhood-level research, Byrne and Sampson (1986) identify several community characteristics that have been shown to have a positive

relationship with crime and/or delinquency. These characteristics include percent nonwhite, proportion of younger males, housing density, and mobility. At the city-level, research has also linked crime and delinquency to physical characteristics such as density, crowding, population, and population change, as well as aggregate residential characteristics such as ethnicity, age composition, economic factors, and family composition (Byrne and Sampson, 1986).

Wilson and Kelling (1982) argue that neighborhood disorder and crime are inextricably linked. In their seminal piece, "Broken Windows" Wilson and Kelling (1982) suggest that neighborhood disorder leads to fear of crime which in turn leads to isolation among citizens and eventual withdrawal from the community. This isolation and withdrawal reduces the informal social controls that exist, and begets more disorder, more crime, and more serious crime (Wilson and Kelling, 1982). The popularity of this line of reasoning is evidenced by the intense focus which community policing programs have received and the adoption of community policing principles by police departments across the country.

Examinations have also been conducted examining contextual characteristics and victimization. In describing a routine activities approach to explaining crime and victimization, Cohen and Felson (1979) note that physical characteristics of dwellings, as well as architectural and environmental designs impact victimization – specifically, through target suitability.

Non-physical contextual characteristics have also been examined. Sampson (1986) illustrated how the nature of family structures (i.e., divorced/separated and female headed households) affected victimization rates. Areas with more dissolved families had

higher victimization rates, according to Sampson (1986) because of lower levels of social controls exhibited in these areas. The influence of structural characteristics of neighborhoods as well as levels of informal social control exerted was later examined and found to significantly affect both levels of crime and levels of disorder in a neighborhood (Sampson, Raudenbush, and Earls, 1997; Sampson and Raudenbush, 2001).

McGahey (1986) discusses economic factors and their influence on the stability of an area which impacts the informal social controls that develop and resulting susceptibility of a neighborhood to crime. With regard to recidivism, Gottfredson and Taylor (1986) conclude that the interaction effects between environmental factors and offender characteristics are important areas to be considered.

As described, the influence of place and contextual characteristics has been found across multiple disciplines and used to explain a variety of outcomes and behaviors. Characteristics and influences of place have received special attention by researchers and practitioners in the area of crime and justice as a broader understanding of crime and delinquency has been sought. Program development and implementation to address problems associated with crime, at least implicitly, recognize the importance of context. The influence of place and contextual characteristics on the day-to-day operations of police is the topic of the current research.

Place and the Police

In addition to numerous other examinations, the influence of context on behavior has also been a focus of examinations conducted involving police discretionary behaviors. The idea that police behave differently and provide different services in

different neighborhoods is neither a novel nor unexamined notion. Sherman (1986) states that there is significant variation in policing across cities and within cities across neighborhoods. Previous research (discussed in detail in Chapter 2) illustrates the variation of police behaviors for activities such as arrest and use of force by considering neighborhood characteristics.

There are two general approaches found when discussing the operating styles of police and variations of behavior by type of neighborhood, both of which can be supported with reference to the extant policing literature. One approach is founded upon the idea that police act more formally in areas characterized as poorer or higher percentage minority. More formal actions including more frequently handling situations with arrest as opposed to warnings and engaging in more crime control and law enforcement activities and fewer order-maintenance and service activities. This approach can be traced to conflict theory generally and from the threat hypothesis contained within conflict theory specifically. Works such as those done by Turk (1972), Blalock (1967), and Quinney (1970) exemplify this approach.

The second approach suggests that police tolerate higher levels of criminal behavior in areas characterized as poor, minority, and unstable than is tolerated in other areas. This latter approach would explain why there appears to be a higher threshold for action in some areas, why police overlook some violations and disturbances, are less likely to take formal actions such as an arrest, and tolerate certain public behaviors in specific areas which would warrant formal action in others. With this second approach, the police operate towards certain areas with a type of "benign neglect" (Liska and Chamlin, 1984); Warner (1997) describes this as the underclass hypothesis. This

approach applied to explaining police behaviors is described by Klinger (1997) and Stark (1987).

A Conflict Theoretical Approach to Police Behavior

The first approach considered in explaining police behaviors and linking these to community characteristics stems from conflict theory. Conflict theory posits that law enforcement agencies, as agents of the state, process individuals with less (economic and political) power (Vold and Bernard, 1986). Conflict theory attempts to explain crime control as a means by which a dominant group in society controls other groups whose actions may threaten the interests of that dominant group (Liska and Chamlin, 1984). Instead of viewing the law as impartially imposed in the general interests of the majority (i.e., the consensus view), conflict theorists view crime control and the imposition of law as in the interests of those with power to maintain the status quo (Jacobs, 1979). Accordingly, even minor incidents when committed by members of these threat groups are handled formally (Warner, 1997). Proponents of conflict theory cite manifestations such as police force size (Jacobs, 1979; Liska, Lawrence, and Benson, 1981), higher arrest rates (Jacobs and Britt, 1979), and brutality of the poor by the police (Chambliss and Seidman, 1971) as evidence supporting the legitimacy of a conflict theoretical approach.

Turk (1972) details the conflict perspective with regard to who is initially defined as criminal and as a result, who are the targets of police actions and also the official responses which these groups receive. With this perspective, the criminal justice system in general and the police specifically are enforcers of legal and social norms; they are

authorized coercive agents (Turk, 1972). Considerable variation in both law formulation and law enforcement is understood as efforts to control culturally dissimilar subordinate groups (Liska et al., 1981; Turk, 1972). Turk (1972) recognizes that police can routinely enforce or ignore violations, and when responding, take formal or informal actions. As an example, Turk cites police routinely ignoring weekly suburban poker games but being on the lookout for cards and craps games in the "slum". Chambliss and Seidman (1971) echo these sentiments noting that law enforcement officials will process a disproportionately high number of the politically weak, at the same time ignoring the violations of those with power. According to Chambliss and Seidman (1971) police operate more in a crime control manner with poor populations and engage in more non-enforcement practices with politically and economically powerful groups.

In terms of police behavior, the power and threat hypotheses contained in the conflict perspective indicate that police act more formally and more vigorously in areas characterized as less powerful (i.e., poorer, minority, heterogenous, unstable areas) to compensate for the lack of other social controls. Sampson et al. (1997) define social control a the capacity of a group to regulate its members. According to this view, poorer and more minority neighborhoods present a threat to the established order and elicit higher levels of formal social controls by the police (Warner, 1997).

Characteristics of communities play an integral role in the development of informal social controls. Bursik (1986) discusses communities' ability to engage in self regulation and notes the importance of the development of formal and informal networks. These networks are difficult to maintain during periods of compositional change (Bursik, 1986). Sampson et al. (1997) identify specific examples of the types of informal social

controls in consideration, including the monitoring of play groups and teenagers and conclude that,

> the capacity of residents to control group level processes and visible signs of disorder is thus a key mechanism influencing opportunities for interpersonal crime in a neighborhood (p. 918).

When these controls are absent, the threat hypothesis contends, formal mechanisms for control, such as the police, are necessary.

As Jacobs (1979) notes, the police are the major institution responsible for the maintenance of order and stability and a strong police force is the most direct way of maintaining the current order. Consistent with a conflict approach, higher levels of social control are expected by the police in certain locations and towards certain groups. As Black (1976) details, law and the imposition of law are variable and quantifiable – being more heavily or formally applied in some places, to some people, and at certain times.

Following a conflict perspective, Jacobs and Britt (1979) use the power hypothesis to explain police behavior, specifically, identifying differential police behavior based on the social class of the target citizen. Jacobs and Britt (1979) state that the police have fewer restraints when interacting with members of the lower class because these groups have less power. As Sherman (1986) notes, differential police behavior by neighborhood is a product of what police feel that they can get away with based on the political power of the neighborhood. The threat hypothesis of conflict theory is one

explanation of discretionary police behavior and why law is more heavily or formally applied in some areas more than in others.

Quinney (1970) addresses police discretion and community context and discusses differential police behavior associated with community heterogeneity. Quinney (1970) states that "the most significant characteristic that accounts for community differences in law enforcement is the extent to which the community is homogenous . . ." (p. 115). The degree to which police act more or less formally is claimed to be a function of the degree of heterogeneity/homogeneity that a community exhibits. Basically, if the police believe that order can be maintained in an area without the invocation of formal law enforcement efforts, then informal efforts will be applied. Areas which are characterized as more heterogenous receive more formal police actions while more homogenous areas receive more informal measures. Law enforcement is used as a means of maintaining order and used more formally in heterogenous areas to compensate for the lack of other mechanisms of control. Even for the same behaviors, law violations in homogenous areas are handled informally while handled formally in heterogenous areas (Quinney, 1970).

Black (1976) also provides an explanation of how and when law is imposed and how the implementation of law varies from one time to another and from one setting to another. The foundation upon which Black's (1976) propositions rest is that law is a quantifiable variable. A central tenet of Black (1976) is that law varies according to social context and that law varies inversely with other social controls (i.e., where there are more social controls there is less law). According to Black, where social controls are weak or nonexistent, law is imposed in a more vigorous manner. The police are but one

type of social control and they can impose law more or less. Black (1970) notes that when no other type of social control is present, people are more likely to rely on the police.

The relationship between the police and other forms of social control has also been addressed by Banton (1964). Banton (1964) states that when other controls are present, there is less reliance by the public on the police. Additionally, when other social controls are weaker, police act more formally, hence, imposing more law. Goldman (1963) describes how police officers' impressions of a family's ability to control their children impacts the officer's decision to refer a juvenile to court. Specifically, if an officer believes that a family is able to control the juvenile, then the police act less formally than if they believe such familial, informal social controls are weaker or nonexistent.

Black (1976) explains the behavior of law and how law is imposed in certain settings, not how individual police officers act. In addition to the amount of law, the style of law also varies from setting to setting: law can be applied in a punitive, compensatory, therapeutic, or conciliatory manner (Black, 1976). Black claims that the conciliatory style of policing is common in areas where people are considered equal, intimate, and homogenous (Black, 1980).

Among several influences of the quantity of law, Black (1976) identifies stratification (vertical relationship), morphology (horizontal relationship), organization, culture, and social control. Goldman's (1963) findings concerning juvenile court referrals by the police illustrates the horizontal relationship as described by Black: where officers and citizens had impersonal or rigid relationships, formal actions are more likely taken,

whereas officer behavior was more informal in communities where more personal relationships existed.

Place and changes in place play a key role in the implementation of law. The development of cities and population growth and density are related to the differing levels of law. Black (1976) notes that in the development of law, it is adopted first and most fully in the cities and "last and least to the bush where tradition is still strong" (p. 15). As populations increase and as people crowd together, relational distance grows. Black identifies two important developments which result from growths in population and increased density: the development of laws and the adoption of full time police officials. As groups grow, communal relationships are weakened or broken and the need for laws and for law enforcement increases. Black (1976) states that, "in any setting where people closely watch each other's conduct and readily criticize and punish deviants in their own way, law is less important" (p. 109). Chambliss and Seidman (1971) similarly state that as societies move from primitive to more complex, less consensus and more conflict is present; as societies became more complex, police forces were developed.

Black's (1976) Behavior of Law is particularly useful in explaining the behavior of the police, in particular, why police behavior is different in different settings. Characteristics of neighborhoods, such as the degree of organization present (such as neighborhood groups), indications of levels of social controls, and socioeconomic status (as an indicant of stratification), determine the quantity of law that is imposed. Black (1980) notes that while in theory the law is available to all, the imposition of law tends to be reserved for those at the bottom and this serves to perpetuate systems of social stratification.

Consistent with conflict theory, as stratification increases, the frequency or intensity of legal-coercive control increases (Williams and Drake, 1980). More formal police actions (e.g., arrest versus warning) are manifestations of the varying quantities of law and this control. Differential police officer actions, as exhibiting more or less vigor in different settings can be understood in light of the behavior of law.

Benign Neglect and the Underclass Hypothesis

The alternate and contrasting approach to the conflict theory in explaining differential police behavior by neighborhoods centers around what Liska and Chamlin (1984) term "benign neglect" and Klinger (1997) and others refer to as the underclass hypothesis. This approach posits that the police have a general disregard for areas characterized as poorer and more unstable and act less formally, less vigorously, and provide fewer services in general than in other areas (Warner, 1997). In terms of specific officer behavior, the benign neglect hypothesis contrasts with the threat and power hypotheses of conflict theory, suggesting that police will behave less formally in poor and minority neighborhoods (e.g., fewer arrests, fewer reports taken) (Liska and Chamlin, 1984; Warner, 1997).

Two important tenets of the benign neglect hypothesis are identified by Liska and Chamlin (1984) that have particular relevance for the study of differential police behavior. One is that as the percentage of nonwhites and segregation increases arrests of nonwhites decreases because the ratio of intra-racial crimes increases; and secondly, that nonwhites are arrested less often for intra-racial crimes (p. 392).

Klinger (1997) provides a theoretical foundation consistent with principles found in the benign neglect hypothesis. Klinger (1997) notes the relatively common belief that officer discretionary behavior is influenced by contextual characteristics of a neighborhood or community and sets out to provide a theory to explain this influence. Klinger's (1997) approach to explaining differential police behavior by place, while centered around the same principal as found in the benign neglect hypothesis, goes further to explain why such neglect exists. Specifically, Klinger provides a theoretical framework explaining why officers behave more vigorously in some area than in others, accounting for differences in police behaviors that have been previously noted (e.g., tolerating citizen actions in one area that would receive a formal response from police in another area).

Several principles are presented by Klinger (1997) in explaining differential police activity by location. Klinger notes the importance of boundaries in policing and the recognition, identification, and association of locations by officers with certain characteristics. Klinger also notes the influence that officers have on one another, so that perceptions among officers are shared regardless of personal experiences in a specific area. This is similar to the near unanimity of beliefs held by officers that was found by Bayley and Mendelsohn (1969) regarding areas of town and problems associated with these areas. It is claimed that officers stereotype the population of individual districts, one stereotype involving officers' evaluation of victim worthiness. Other police researchers have addressed the issue of victim worthiness as well.

Bittner (1970) states that the differential treatment of citizens by the police stems from the distribution of esteem, credit, and desserts in society at large. Victim worthiness

influences how officers interact with citizens and the services they provide to all people in certain areas. What Klinger (1997) terms "territorial stereotyping" is comparable to the concept Werthman and Piliavin (1967) call "ecological contamination" and similar to what Wilson (1980) refers to as "collective liability".

Stark (1987) also discusses principles consistent with a benign neglect approach. In defining a theory of place and the ecology of crime, Stark (1987) discusses the impact of neighborhood characteristics on law enforcement. From a set of propositions, Stark delineates how such factors as neighborhood density, poverty, mobility, level of dilapidation, and residential/commercial use influence the rates of deviancy. Of particular relevance and value in understanding diverse police behaviors is how poorer, more densely populated neighborhoods are more mixed-use (i.e., containing both residential and commercial establishments) and how these areas tend to be more transient or mobile. Neighborhoods characterized as more mobile have weakened extra-familial bonds and fewer voluntary organizations – both of which directly reduce formal and informal sources of social control. These areas are also characterized as more dilapidated, with higher rates of deviance; these in turn lead to stigma being attached to the area. Stark (1987) presents that residents in these stigmatized neighborhoods will receive more lenient law enforcement, for example, allowing things to pass in these neighborhoods that officers would respond to in non-stigmatized neighborhoods.

Klinger (1997) also states that in addition to victim worthiness, differential officer behavior is influenced by workload levels. Officers who work in high workload areas devote less attention to and even ignore minor crimes than officers patrolling in low workload areas. Stark (1987) states that police frequently share the general community's

view of stigmatized places as filled with morally disreputable individuals who deserve what they get. Kress (1980) illustrates this line of reasoning noting that while there may be a public perception of an "overarrest" of minorities, that within the "ghetto" the opposite is often true. Kress (1980) uses a stabbing as an example: while in a middle-class suburban area a stabbing is viewed as a serious matter, in poorer, predominantly minority areas, criminal justice officials including the police, view the same offense as somewhat trivial.

Examination of Turk (1972) reveals an ideological foundation for the benign neglect hypothesis within conflict theory. Turk notes that enforcers (i.e., police) are indifferent towards opportunities to arrest what he terms the helpless. According to Turk, as long as these helpless people only bother each other, they are not worth the trouble. A curvilinear relationship is suggested in that those on one end (i.e., the powerful) and those at the opposite end (i.e., the very weak) are essentially ignored.

Summary

Both the conflict perspective and the benign neglect hypothesis are useful in explaining differential behavior by the police (with opposing outcomes) and account for potential variations in the delivery of police services across neighborhoods. The conflict perspective indicates more stringent, strict enforcement of the laws when focused on poorer or minority populations, so that even minor infractions warrant formal responses. On the other hand, following a benign neglect approach, minor infractions within these same populations would be ignored. Additionally, a benign neglect approach suggests a

generally lower level and quality of service provision results when the focus involves poorer or minority areas.

In sum, both of the approaches discussed can be used to explain differential police behavior by neighborhoods. Following these perspectives and recognizing the importance and the influence of place and contextual level characteristics on police behavior, the variation of police behavior across neighborhoods will be examined. The current study will use these theoretical approaches as a foundation to test whether police provide different services to different neighborhoods. Following a conflict perspective, it is believed that police will engage in more criminal and law enforcement activities in areas characterized as poorer, unstable, and racially or economically heterogeneous and also engage in less order maintenance and service activities. From a benign neglect position, it is believed that poorer, more unstable areas will receive fewer services from the police. While police practices have previously been seen as somewhat equitable (based on limited measures, such as response time and allocation of resources), examination of a broader array of police activities could illuminate inequities that may exist and which may be exaggerated with current police practices.

Chapter 2

Introduction

A significant amount of research has been conducted in an attempt to identify the determinants of police actions. Specific activities of officers such as arrest and use of force have been the primary focus of such research efforts, examinations being conducted to identify factors at various levels which may influence officer behavior. During the 1970s and early 1980s research was conducted to assess the equity of police services across racially and economically disparate areas. These examinations, however, were limited to measures capturing traditional and limited police practices. Specifically, research involving the equity of the provision of police services has examined the allocation of police services in terms of personnel levels and also response times (Ostrom, 1983). The research conducted in these areas suggests no evident relationship between these specific outcome measures and racial or economic indicators (Maxfield et al., 1980; Mladlenka and Hill, 1978; Ostrom, 1983). These measures however, leave unexamined significant activities in which the police are engaged and for which the potential for differential distribution exists. These studies also fail to capture the wide range of environmental factors which may potentially influence officer discretion.

While environmental factors are important, they are by no means the only influence of officer discretion. Areas that have traditionally been examined include individual officer level characteristics, situational and organizational characteristics, as well as community level characteristics. At the individual level, demographic, background, and attitudinal variables have commonly been examined. Probably the most researched area of influences of police behavior involve situational factors, such as

suspect demeanor, victim/suspect relationship, victim preference, and the seriousness of the crime (Riksheim and Chermak, 1993; Sherman, 1980) . Organizational factors which have been examined include managerial styles and mandates, bureaucratization, and levels of professionalism. Research surrounding these different spheres of influence have provided voluminous results. Some consistent and inconsistent findings have been produced and some areas of examination have yet to be fully developed (Riksheim and Chermak, 1993, and Sherman, 1980).

Individual Level Influences of Police Behavior

Research has indicated that differences exist between male and female police officers. There is evidence that female officers perform their duties and interact with citizens differently from male officers. Research conducted in the 1970s (e.g., Bloch and Anderson, 1974; Sherman, 1975) found that female police officers initiated fewer citizen encounters and also made fewer arrests. Later research such as Worden (1989) found no difference between male and female officers in terms of initiating encounters nor arrest patterns.

Other research indicates that female officers are less likely to have misconduct complaints filed against them (Brandl, Stroshine, and Frank, 2001; Hickman, Piquero, and Greene, 2000; Lersch, 1998; Lersch and Mieczkowski, 1996; Wagner, 1980). Lersch (1998) explains such findings, indicating that female officers were less authoritarian, better communicators and possessed greater pacifying qualities. Others have noted that female officers are more adept at avoiding violence, de-escalating potentially violent

situations, and providing sympathy and support to citizens (Brandl et al., 2001, Toch, 1996).

Mixed result have been provided for officer race and potential behavioral differences. Reiss (1972) found differences in the use of unjustified force – with black officers exhibiting higher levels; Fyfe (1978) found similar results though these were attributable to neighborhood differences. Sherman (1980) described research that found that black officers patrolled more aggressively, initiated more citizen contacts, and filed more crime reports than white officers. Worden (1989) however, found no racial differences between officers in arrest decisions and Friedrich (1980) found no racial differences between white and black officers with concern towards force – excessive or justified.

As with race, officer education has been found to affect police behaviors by some researchers and not by others. Breci and Simmons (1987) found that more educated officers engaged in more criminal detection activities. Bozza (1973) found that college educated officers made more arrests (though the sample was small). Other researchers have found no difference between college educated officers and those officers without a college education – Smith and Klein (1983) and Worden (1989) examining arrest, and Sherman and Blumberg (1981) examining force.

These are just a few of the numerous findings indicating that differences may exist between officers when considering individual level variables. While not negating the importance of individual level influences, other levels such as contextual levels have also been shown to impact the actions of the police.

Contextual Level Influences of Police Behavior

While examination of individual level influences on police behavior is substantial, one area of research which is less developed is the examination of community level influences on police behavior. From a summary and review of quantitative analyses of the causes police behavior, Riksheim and Chermak (1993) conclude that neighborhood characteristics (such as stability and racial homogeneity/heterogeneity) affect police behavior. This same summary of research indicates that the influence of community level variables on police behaviors has received little quantitative attention, especially with regard to police service behaviors. Smith (1984) states that consideration of the contexts in which discretion is exercised is essential for understanding decision-making by the police. While considerable research on police discretionary actions has been conducted, the primary focus of such research has been on situational and case characteristics leaving unexamined the possibility that discretionary decisions are influenced by the contexts in which these decisions occur (Smith, 1984).

Previous research examining contextual influences of police discretion differs along several dimensions – the data used, the methods employed, theoretical frameworks (or lack thereof), outcome measures (i.e., police behaviors), the level of "place," key contextual variables, and findings. Research into police discretionary behavior and the inclusion of context is noticeable beginning in the 1960s; earlier examinations were more qualitative and ethnographic in nature (e.g., Banton, 1964, Bittner, 1967). In the 1970s, the Police Services Study provided a rich source of data that has been examined along many lines, including examinations of contextual influences (e.g., Smith, 1984, 1986, 1987).

The outcome measures of previous research into contextual level influences of police behavior have been limited primarily to arrest practices and the use of force (See Appendix A, column 6 "outcome variables"). Various levels of aggregation have also been used in previous research, such as neighborhood, census tract, police beat, police precinct, city, and state (Smith, 1984; Weiner and Willie, 1971; Maxfield et al., 1980; Hepburn, 1978; Swanson, 1978; Jacobs and Britt, 1979 respectively). A significant amount of research has been conducted examining aggregate arrest rates by examining state and city characteristics such as income levels and population demographics (e.g., Brown and Warner, 1992; Crank 1990; Jacobs and Britt, 1979; Liska et al., 1985). Lower levels of aggregation such as neighborhoods have also been used (e.g., Smith 1984, 1986, 1987, Warner, 1997).

A variety of community characteristics have been examined in an attempt to identify environmental influences of police behavior. Most commonly examined characteristics include racial and socioeconomic indicators (e.g., Crank, 1990; Hepburn, 1978; Liska and Chamlin, 1984). While most research examining the influence of place on police behavior has found some influence, a few studies find little impact of contextual level variables (e.g., Novak et al., 2002, Slovak, 1986, 1987).

What follows is a review of the existing research into environmental and contextual level influences of police behavior along the dimensions mentioned above. The limitations of previous research are addressed and the current study is placed in the broader context of extant research.

Qualitative Accounts of Differential Police Behavior by Neighborhood

The idea that police officers engage in different behaviors and treat citizens in different areas differently has been present in the police literature for some time. As Warner (1997) notes, there is a growing body of literature which suggests that police respond differently to similar behavior in different communities. Several early ethnographic works conducted in the 1960s identified differential police practices in various neighborhoods. In an early work illustrating police behavior and community level influences, Banton (1964) describes how officers in different neighborhoods provide different services; Banton attributes this difference to the social distance that officers have with the residents whom they police. Black (1980) states that the greater relational distance between *disputants*, the more likely law is used to settle disputes; this reasoning could easily be extended to consider the social distance between the police and citizens and the resulting differential imposition of the law.

Banton (1964) discusses the varying levels of social control that are present in different communities and the notion that residents in areas characterized by more social control come to rely on the police less. Communities are more or less stable, more or less homogenous, and more or less able to exert social control. Police officers function to enforce the standards accepted by the community (Banton, 1964). These community standards differ and therefore police officer behavior differs by community. As Banton describes, at different times and in different districts, the police enforce the law more strictly. It is pointed out that in:

> "rougher neighbourhoods [the police] will disperse groups from the street corners to prevent the conditions arising in which fights and disturbances most usually start. A larger group on the pavements at the end of a church service or in a middle-class neighborhood will be left undisturbed' (p. 131).

The police turn a "blind eye" upon "drunks and revellers" in some neighborhoods and arrest them in other neighborhoods; police are seen to provide services in some areas that are not requested nor required in others (Banton, 1964).

Bittner (1967) also identifies differential police behavior by neighborhood. Bittner describes police behavior as adaptable to different settings, noting that officers adopt a style of policing that fits both the inhabitants and the conditions of an area. Bittner recounts officer behavior on 'Skid Row,' noting that "police have a particular conception of the social order of skid-row life that determines the procedures of control they employ" (p. 699). Skid row is seen as completely different from other areas and other districts.[2] According to Bittner (1967) officer behavior towards residents of skid row are markedly different from behavior towards residents in other areas. The invocation of law, as a formal response to deviance, is not the same in skid row and towards skid row inhabitants as in other parts of the city.

Bittner (1967) also points out that officers had a fundamental agreement about the structure of skid-row life and residents. Residents are presumed to be incompetent and disinclined to be "normal." In terms of perceptions of skid row inhabitants, residents are

---

[2] According to Bittner (1967), skid row is identified as an area with a heavy concentration of persons classified as not living "normal" lives.

painted with broad brush strokes – identifying all who dwell in the area as alike and coloring how they are treated by the police. This process is similar to what Werthman and Piliavin (1967) call ecological contamination, wherein all people in an area are treated differently (from people in other areas) because of a few. Werthman and Piliavin (1967) identify differential behavior of police as motivated by a set of expectations regarding appropriate conduct in a given neighborhood – for example, gang boys were allowed privileged use of certain parts of the streets, while similar behavior in other areas would be grounds for arrest.

Among the determinants of officer behavior identified by Werthman and Piliavin (1967), such attributes as the attitude of juvenile and their "moral character," location is said to play a pivotal role. Who is (and who is not) deemed suspicious is a function of both personal characteristics and place characteristics. In the natural course of police business, people and places are divided into categories and initial assumptions are associated with these categories. Accordingly, police treat persons and places in unique ways. By their residency in certain "bad" neighborhoods, most of the people in these neighborhoods are regarded with suspicion (Werthman and Piliavin, 1967).

In another early work, Bayley and Mendelsohn (1969) examined police in Denver, Colorado and discuss police relationships with minorities and also officer attitudes and expectations towards different racial and socioeconomic groups. The expectations that officers have concerning the parts of a city where these groups are concentrated are also discussed. Bayley and Mendelsohn note that officers consistently and uniformly profess that different socioeconomic groups request different services as well as present different challenges for police. When Denver police officers were presented with a map of the

city, officers identified specific duties that they expected would be required in different areas of the city. Specifically, in areas characterized as having higher socioeconomic status, officers expected more assistance calls – those not involving criminal violations. In lower income areas, officers consistently stated that more ambiguous situations (for example, family disputes and general disturbances such as noise complaints or crowds) were common and assistance calls were less common. In other words, situations in which officers exercised the greatest amount of discretion were associated with lower income and minority areas. Denver police associated their work in disadvantaged areas with a high amount of "discretionary intervention". Bayley and Mendelsohn (1969) concluded that:

> Police officers not only carry very detailed maps of the city in their minds but they evidently color these maps almost identically with respect to the kinds of behavior to expect in different locations (p. 74).

The perceptions of different neighborhoods and expectations identified by Bayley and Mendelsohn (1969) were consistent among officers, despite their personal experiences in specific neighborhoods. This indicates sharing of information among officers and the development of a "climate of opinion" about a neighborhood (Bayley and Mendelsohn, 1969). Officers carry these predispositions (i.e., cognitive maps) into their contacts with individuals in these neighborhoods and different levels of enforcement result. As noted by Banton (1964) and Bittner (1967), from this, differential police responses are

presented (e.g., a brawl that is tolerated in one area producing an arrest in another) (Bayley and Mendelsohn, 1969).

These works conducted in the 1960s provide some of the earliest attempts to explain police behavior and include geographic location and characteristics of place as central influences. The assertions, depictions, and accounts provided in these earlier accounts of police behavior have since been used as a foundation for empirical attempts to quantify and specify the influences of police officer behavior. In addition to other levels of influence, place and characteristics of place have been included in examinations of police discretionary behaviors and have generally been shown to influence the actions of officers.

Quantitative Examinations of Neighborhood Influences on Officer Behavior

While examination of neighborhood level influences is less common than other examined levels of influence of police behavior, several researchers have looked at the role of neighborhood and other environmental influences. The majority of findings (twenty-five out of twenty-eight studies examined) support the significance of context as an influence on police officer behavior.

Wilson (1968) and Liska and Chamlin (1984) have identified the effects of community characteristics on styles of policing. In his seminal work, Varieties of Police Behavior, Wilson (1968) recognizes that police behavior differs from city to city and identifies three distinct types of police organizational styles (watchman, legalistic, and service) which vary according to city (or community) characteristics. Wilson notes that police officers' conception of the police role varies with the character of the community.

For example, the service style of policing identified by Wilson (1968) is characterized by frequent but informal police interventions and is said to be most often found in homogenous, middle class communities comprised of citizens who have a generally high level of agreement concerning the definition of public order. Crank (1992) credits Wilson's Varieties of Police Behavior with sparking an interest in jurisdictional variations in police practices based on organizational and environmental factors; Kania and Mackey (1977) describe Wilson as the foremost advocate of explanations of the variability of police behaviors based on community characteristics.

One relatively common type of police decision-making which has been examined in light of community characteristics is arrest. Arrest patterns and decisions have been examined in regard to a variety of community contextual characteristics including racial composition, city government types, urban-rural differences, and socioeconomic factors.

Of the research examining community characteristics and police behavior, examinations of the racial compositions of areas in which certain police activities, such as arrest, are among the most common. The research that has been conducted indicates that police are more likely to make arrests in areas containing larger minority populations. Swanson (1978) found that environmental variables (as well as organizational variables) affected arrest rates – the percentage of the population as non-white being the most important predictor. Others such as Hepburn (1978), Liska and Chamlin (1984), Liska et al. (1985), and Williams and Drake (1980) also found the racial composition of an area to be a predictor of arrest – specifically, as the percent non-white population increases, the likelihood of arrest increases. Liska and Chamlin (1984) found that arrest rates varied according to the racial composition of cities, independent of police size and reported

crime rates. Hepburn (1978) found that the racial composition of the area in which an arrest was made had a significant impact on whether or not the prosecutor eventually refused a warrant, indicating to Hepburn that in these areas, people are more likely to be arrested on insufficient evidence.

Crank (1990, 1992) also examined and found significant relationships between arrest rates and the racial composition of areas. Crank (1990) measured racial heterogeneity in 3 ways (percent Black, percent Hispanic, and percent foreign-language speaking) and found that increases in percent Black and percent Hispanic were related to increases in arrest rates.[3] Crank (1992) continued with this line of research and found that police were more likely to make arrests of minority suspects when the percentage of minorities in the community was small. In other words, black and Hispanic suspects were arrested at higher rates when they were in areas where their percentage of the population was small (Crank 1992). Although Crank (1990) did not find the percentage of foreign speaking residents to be a predictor of arrest, Brown and Warner (1992) found percent foreign-born to be a significant predictor of arrests for drunkenness (B = 3.04) in an examination of arrest rates in the early 20th century, though this effect was mediated by cities' political culture and structural characteristics.

Characteristics pertaining to the economic conditions of certain locales have also been shown to influence arrest practices. Smith (1984) found that as the percentage of households below the poverty level increased, the probability of arrest increased. Others such as Crank (1990) and Smith (1986, 1987) have similarly shown that arrest rates are

---

[3] In urban communities, percent Hispanic was associated with higher arrest rates for trespassing (B=.29); percent Black was a consistent predictor of arrest in both urban and rural settings for trespassing (B=.34 and .15), disorderly conduct (B=.36 and .19) and in rural settings, percent Black was predictive of arrest for motor vehicle offenses (B=.35) and cannabis control (B=.18) (Crank, 1990).

influenced by the economic conditions of an area. Williams and Drake (1980) found that income inequality was positively related to arrest rates; as income inequality increased, arrest rates increased.

The type of city government has also been examined as an environmental or community characteristic affecting arrest decisions. Specifically, Wilson's (1968) typology of police departments (i.e., legalistic, watchman, and service) has been tested empirically and found some support. Departments have been measured according to their degree of professionalization and bureaucratization, classified according to Wilson's typology, and examined in relation to the type of city government present in the area (city council, city managers, mayors, and combinations thereof). Results indicate that the type of city government influences the levels of arrests for different types of crimes (Crank, 1990; Crank 1992; Langworthy, 1985). Slovak (1986) found that policing styles were more legalistic (i.e., more arrests and more formal actions) in cities that were governed by city managers and where political decision-making was more decentralized. Brown and Warner (1992) found that the type of political culture (including the strength of local political machines) mediated the effect found in regard to the percent of immigrant residents.

A second type of police behavior that has been examined in light of community level influences is police use of force. Several community characteristics have been shown to influence police use of force. In particular, police use of force (including police use of deadly force) has been shown to be affected by the crime rate, socioeconomic status, and racial composition of an area. Kania and Mackey (1977) examined influences of police use of deadly force across states (including what they termed quality of life,

safety, mobility, and recreation) and found the strongest associations to be crime rates. Waegel (1984) also found the level of crime in the environment to be related to police use of lethal force. Findings by Geller and Karales (1981) point to differential residential patterns in police shootings in Chicago – larger percent minority and higher crime rates were associated with more shootings by and of the police.

While the validity of the findings drawn by Kania and Mackey (1977) have been questioned (see for example, Fyfe, 1988), several of the measures used captured indicators of socioeconomic status (e.g., owning an automobile, owning a television, hot water in the home) and these indicators were found to be related to the rates of police use of deadly force at the state level.[4] Jacobs and Britt (1979) also examined instances of police use of deadly force and found that economic inequality (measured as the differences in economic resources) explained police use of deadly force better than absolute poverty.

In another examination of police use of force and community characteristics, Fyfe (1980) examined police shootings in New York City from 1971-1975, specifically examining arrest and homicide rates of police zones and found that as these rates increased, so too did the prevalence of police shootings.[5] Both Kania and Mackey (1977) and Fyfe (1980) concluded that police respond to the characteristics of a community in developing operating styles; specifically, in more violent areas, police act more violently.

---

[4] These measures were initially used by Kania and Mackey (1977) to indicate such things as "mobility," "quality of life" and "recreation."

[5] This finding was the highest correlation found (r = .72) in the analysis – and was between arrest rates and on-duty uniformed officers' shooting rates (Fyfe, 1980).

The impact of community characteristics on other discretionary police activities, such as police contact with juveniles and decisions to formally file a crime report have also been examined, though to a lesser extent. Weiner and Willie (1971) found that in Washington, D.C., racial and socioeconomic characteristics of census tracts were related to police contacts with juveniles. No relationship was found between these characteristics and subsequent court referrals, similar to Hepburn's (1978) finding regarding the effects of race on arrest and the subsequent decision not to issue warrants (cited above).

In an examination of police decisions to take a report or not, Maxfield et al. (1980) and Warner (1997) both found community level influences. Examining police decisions to file an offense report, Maxfield et al. (1980) found that as demands for service increased in different areas, the likelihood that officers would file an official report increased. Warner (1997) also examined police decisions to record a crime and found neighborhood influences. Police were less likely to record burglary complaints in poor neighborhoods, more likely to record in more mobile neighborhoods, and more likely to record in neighborhoods with higher percentages of foreign-born residents.[6] For calls that involved assaults, only percentage foreign-born residents was a significant predictor of non-recording (B = -.222); police were more likely to make an official record of assault calls in areas with higher percentage of foreign-born residents. In neighborhoods with a lower percentage of black residents, reported burglaries were more likely to be recorded as less serious and in neighborhoods with higher percentages of black residents, it was more likely that no crime was recorded (Warner, 1997).

---

[6] Percent Black was not a significant predictor of non-recording of burglaries (Warner, 1997)

One of the most thorough examinations of the effects of neighborhood context was conducted by Smith (1986) using the Police Services Study from the late 1970s. Smith (1986) examined 'neighborhood context of police behavior' looking at various police activities and numerous neighborhood characteristics. Types of police officer behavior that were examined included proactive assistance and investigation, the use of coercive authority (e.g., taking a person into custody or arrest), and report filing. Characteristics of neighborhoods were obtained using a random survey of approximately 200 residents of each of the study neighborhoods. Variables created that were examined included: a crime scale, socioeconomic scale, residential stability (i.e., percentage of residents residing in the neighborhood less than five years), interaction of residents (i.e., how often neighbors socialized), household composition, and racial heterogeneity of the neighborhood (Smith, 1986).

Several findings signified the importance of the influence of neighborhoods on police officer behavior. Smith (1986) found that officers were more active in racially mixed neighborhoods, arrested suspects more in lower status neighborhoods, were more likely to exert coercive authority in minority or racially mixed neighborhoods, and were less likely to file reports in higher crime neighborhoods. Smith (1986) discovered that the likelihood of arrest declines with increasing community status in terms of SES (B = -1.13). Coercive authority was more likely to be used or threatened to be used in black or racially mixed neighborhoods (B = .19) and less coercive authority exhibited in more transient areas (B = -.24). Socioeconomic status, as hypothesized, had an influence on several police activities. Police actions were considered more legalistic (i.e., more arrests / more formal actions taken) as the socioeconomic status of a neighborhood decreased

(Smith, 1986). Additionally, police used more coercive authority in non-white and racially mixed areas, even taking into consideration suspect race, sex, demeanor and the type of problem involved (Smith, 1986).

In an examination of police responses to interpersonal violence, Smith (1987) again included individual, situational, and contextual variables in an attempt to explain officers' responses (i.e., separate, mediate, arrest) towards interpersonal conflicts. Two measures of the context in which the police work were developed by aggregating survey responses from study neighborhood residents (i.e., violent crime rate and economic status). Smith (1987) found that the poverty level of the neighborhood where the encounter occurred had a significant influence on how police officers responded to calls involving interpersonal violence. Specifically, encounters involving interpersonal violence in neighborhoods with lower economic status were significantly less likely to be mediated, independent of encounter-level characteristics such as severity of the incident or victim/offender characteristics.[7] In sum, the economic status of the neighborhood "independently affects how police handle violence between citizens" (Smith, 1987, p. 779).[8]

Smith (1986) described these findings as "disturbing" because, he said, they "undermine our ability to develop general theories of police discretion or decision making" (p. 339). Smith states that any complete understanding of police decision making must include the contexts in which such decisions are made. Theories attempting

---

[7] Results are presented as probabilities of mediation, separation, and arrest. As the poverty level of a neighborhood increases, the probability of mediation decreases (-.219) and the probability of an arrest increases (.335) (Smith, 1987).

[8] Smith (1987) found no significant effect of the neighborhood crime rate on police decision-making.

to explain police behavior and police discretionary decisions "must explicitly recognize the contextual variability of police decision making" (Smith, 1986, p. 339).

While the above research highlights evidence indicating the influence of contextual factors in police activity, other research has failed to find such effects. In an examination of types of police activity across neighborhoods, Slovak (1987) found little variation between the types of activities, which were divided into 3 categories (service, legalistic, and watchman-type behaviors – per Wilson, 1968) and examined across 8 neighborhoods. Neighborhood characteristics that were examined included the age and income of residents and also how safe residents' felt. Slovak (1987) concluded that variations in police activity were but nuances on a general city-wide pattern of policing with little variation from one neighborhood to the next. In an examination of police use of deadly force, Lester (1982) found patterns of civilians killed by the police in areas characterized with higher violent crime rates and those with a higher percentage of black residents, but the associations rarely reached a statistically significant level.

Novak et al. (2002) included situational and community level variables to examine the impact of community policing and found that arrest decisions did not vary due to community level characteristics. Novak et al. (2002) examined characteristics such as crime rate, mobility and a community factor capturing economic and racial characteristics. Slovak (1986) found that organizational characteristics impacted styles of policing and concluded that the style of police work was generally consistent across neighborhoods within a given city – the one exception being differences found in police styles between downtown business districts and residential neighborhoods.

Despite these lastly mentioned studies, there is reason to believe that contextual variables influence a variety of police behaviors. While most of the existing research has been limited to traditional measures of police activity, the current study examines a wider range of police practices as well as contextual indicators which may play a role in influencing the types of services police provide to neighborhoods.

Levels of Analysis

One consideration in attempting to better understand persons and systems such as the police, is the recognition that context is multi-leveled (Kingry-Westergaard and Kelly, 1990). The studies cited above have examined influences at various levels of aggregation including states, cities, police districts and beats, census tracts, and neighborhoods (Jacobs and Britt, 1979; Liska and Chamlin, 1984; Maxfield et al., 1980, Smith, 1984). With the embedded nature of systems within systems, the consideration of different levels of aggregation are important in providing a complete context.

As Klinger (1997) notes, "because ecological research examines 'communities'. . . the first order of business is any ecological work is to specify precisely the areal units that constitute the 'community of interest'" (p. 280). For Klinger (1997), identifying the ecological unit of interest is a somewhat less complicated task when discussing the police since departments operate within police districts with clearly defined boundaries. These police-defined units have been utilized in previous research: police beats (Maxfield et al., 1980), police zones (Fyfe, 1980), police districts (Geller and Karales, 1981) and police precincts (Hepburn, 1978). Others, such as Smith (1986), described the locus of influence in terms of smaller units – the neighborhood, but also recognized potential

influences of larger units. Smith (1986) and Klinger (1997) come to similar conclusions, that any attempt to understand police behavior in neighborhoods, must also take into account the nature of the patrol district in which they are situated. Neighborhoods have commonly been the unit of analysis in examinations of contextual influences of police behavior (e.g., Novak et al., 2002, Smith, 1984; Smith 1986; Warner, 1997).

Kelly (1988) notes that the inclusion of multiple levels of community necessitates the consideration of a number of different variables such as economic, social structural, and physical. As seen, examinations of police behavior have been conducted at these multiple levels but have been limited in the range of contextual variables which have been included in analyses.

Contextual Variables

For the studies described above, several community contextual variables have been examined to determine if an effect on police behavior is discernable. One of the most commonly included contextual variables examined involves the racial composition and/or racial heterogeneity of an area (e.g., Crank, 1990, Crank 1992; Geller and Karales, 1981; Hepburn, 1978). Income characteristics are also commonly included (e.g., Crank 1990; Hepburn, 1978; Jacobs and Britt, 1979; Kania and Mackey, 1977, Lester, 1982; Liska and Chamlin, 1984). A third important and frequently included contextual variable of interest in terms of potential effects on police practices are crime rates (e.g., Jacobs and Britt, 1979; Kania and Mackey, 1977; Lester, 1982; Slovak 1986).

Other variables capturing community context have been included but less frequently. The inclusion of these characteristics are particularly relevant in terms of the

potential influences of police behavior based on levels of other forms of social control. Specifically, variables indicating levels of social control, such as residential stability and mobility, have been included (Novak et al., 2002, Smith, 1986, Warner, 1997).

Summary

These previous studies involving the influence of place on police behaviors provide the foundation for the current research. The previous research conducted can be placed along several dimensions, such as the type of data examined, key contextual variables included in the analysis, and the level of aggregation. The current research attempts to add to the current state of knowledge regarding contextual level influences of police behavior by examining the patterns of policing by neighborhood context. Specifically, while previous research has been limited primarily to examinations of arrest decisions and decisions to use force, the current study takes a broader approach in examining a variety of police behaviors, including order maintenance and service-type activities. Previous examinations have also been limited in the scope of variables available – largely relying on racial and economic indicators. The current study includes neighborhood level social and economic characteristics, as well as stability indicators, which may prove useful in determining the influences of police behavior.

While researchers have examined the role of contextual level influences of police behavior, the current study attempts to broaden our understanding of determinants of police behavior. Previous studies have been limited in numerous respects, primarily with regard to the types of behavior examined. With the exception of Slovak (1986 / 1987) and Smith (1986), examinations of contextual level influences have been limited to

traditional law enforcement practices, specifically, crime control aspects such as arrest (e.g., Brown and Warner, 1992; Crank, 1990, 1992; Langworthy, 1985; Liska and Chamlin, 1984; Smith 1984), police use of force (e.g., Fyfe, 1980; Geller and Karales, 1981; Lester, 1982; Waegel, 1984), and decisions to file a police report (Warner, 1997; Maxfield et al., 1980).[9] These studies, as previously mentioned have generally supported the notion that contextual level factors influence police behaviors. While providing important insight into discretionary police practices, the focus of previous studies has been narrow and ignores a considerable, some would argue, the majority of police activities in which the police engage and activities involving the most discretion.

Cognizant of the amount of time that officers spend engaged in non law enforcement type activities, the current study examines a variety of police behaviors. Specifically, the current study examines three broad areas of police activities: order maintenance, law enforcement, and service activities. While previous research has illustrated differential law enforcement/crime control behavior by neighborhood, other activities in which the police engage have been all but ignored.

To be fair, a couple of previous studies have examined a broader sphere of police behaviors, most notably, Smith (1986) and Slovak (1987). The study conducted by Slovak (1987) is of particular utility for methodological considerations for the current undertaking. Slovak (1987) categorized all police activities into one of three style categories, following Wilson's organizational styles: legalist, watchman, and service. These styles correspond to the three generally accepted categories of police behavior

---

[9] Categories of crimes for Warner (1997) included only burglaries and assaults; Maxfield et al. (1980)examined UCR Part I and II offenses.

mentioned above (crime control/law enforcement, order maintenance, and service).[10] Taken together, Smith (1986) and Slovak (1987) are unique for their breadth and also their conflicting findings: Smith (1986) finding support for the contention that neighborhood level influences affect police behavior while Slovak (1987) found that differences across neighborhoods were insignificant.

Previous studies have also been limited in terms of a coherent theoretical underpinning. Most commonly examined is a conflict perspective (e.g., Brown and Warner, 1992; Jacobs and Britt, 1979; Liska and Chamlin, 1985; Williams and Drake, 1980) and while these studies supported conflict theory, Crank (1990) warns that a conflict theoretical approach may not be appropriate to all areas, namely rural areas. Alternative approaches have centered around the underclass hypothesis (e.g., Maxfield et al., 1980) and organizational approaches such as Wilson's styles of policing (e.g., Langworthy, 1985; Smith, 1984).

While previous studies have broadened the understanding of the determinants of police behavior, significant shortcomings prohibit a complete picture. The current study draws from and builds on existing knowledge and also attempts to fill in existing gaps. Specifically, extant research indicates differential police behavior by neighborhood characteristics when examining certain (and limited) police practices. How do these characteristics affect the delivery of other services? How do these characteristics affect the amount of order maintenance activities in which officers engage? The present study considers a range of police activities that captures the diversity of the job and potentially illuminate differentials and even discrepancies in police practices.

---

[10] Chapter Three details the specific police activities and categories into which each was included.

Chapter 3

Data

The current study involves secondary data analyses of data from the Project on Policing Neighborhoods (POPN). The original study was funded by the National Institute of Justice and involved multiple data collection methods including systematic social observation (SSO), structured and unstructured interviews with police officers, and citizen surveys. The study sites were Indianapolis, Indiana in 1996 and St. Petersburg, Florida in 1997.

Systematic Social Observation was the primary method of data collection and will be the main data source analyzed. The methods involved in SSO date back to the 1930s and were initially applied to the study of policing by Reiss in the 1960s (Mastrofski et al., 1998). In a research report prepared for the National Institute of Justice, Mastrofski et al. (1998) describe the methods involved in the systematic social observation of police, "In SSO of patrol work, trained observers accompany police officers in their cars, on foot, or on bicycle to observe everything [police officers] do during a typical tour of duty" (p. vii). Data collected for POPN involved project observers taking brief notes during police observation sessions and later recounting what they observed in semi-structured narrative accounts of events from the patrol observation period. Next, highly structured computerized questionnaires were completed about events that occurred during the observation session. Information was coded concerning the ride, the officer, citizens encountered, and other details of events that were observed.

The observation instruments used for the initial project included multiple forms (i.e., ride, activity, encounter, and citizen), providing for different levels of analysis. The

ride form provided general information about an observation period (e.g., date, shift, time of day, assigned beat, officer's assigned unit); one ride form was completed per observation session.

When officers were engaged in some activity in the absence of citizens, this was defined as an "activity" and an activity form was completed detailing such an event. Activity form questions included how the activity began and ended, the type and length of the activity, as well as the focus of the activity. Information was also obtained as to how much of the activity (0 - 100 percent) occurred inside the study beat. Each activity was assigned an activity code.[11] In addition, an activity could be directed towards a specific problem and therefore also given a problem code. Problem codes were from an exhaustive list of potential problems and situations in which the police could become involved. These were broadly categorized as: problems with persons, problems with property, traffic problems, service problems, information problems, legal procedures, administrative problems, and miscellaneous problems. To illustrate, an officer engaged in an activity involving administrative report writing (activity code 701) could also involve the specific problem of drug violations (problem code 040).[12]

When citizens were present and officers were interacting or otherwise engaged with these citizens, these events were considered "encounters" and a different form (an encounter form) was used to code information about these events. Encounter forms

---

[11] For example, the activity code for general patrol was 110; for directing traffic, 404.

[12] Activities did not always involve a problem code. For example, general patrol which was focused on no specific problem would not be assigned a problem code, whereas general patrol focused on a specific problem (e.g., drugs) or area (e.g., a park) could have a problem code attached.

captured a variety of information including the initiation source and location for the encounter (using geocodes of cross-streets), the length of the encounter, and the problem(s) addressed during the encounter, to name only a few. All encounters were assigned problem codes.

The final form was the citizen form. Information about citizens with whom officers interacted was coded using the citizen form. The citizen form captured information about general citizen characteristics such as age and race, specific officer and citizen interactions, requests made by citizens, and responses of the officer to such requests, as well as situational characteristics such as demeanor.

Observers collected and coded data for a total of 729 observation sessions (commonly referred to as ride-alongs), totaling more than 5,700 hours of field observation (Parks et al., 1999). A total of 35,433 events were observed; a breakdown of these can be found in Table 1.

Table 1. Event Type by Study Site (n = 35,433)

	Activities	Encounters
Indianapolis, IN	13,418	3,967
St. Petersburg, FL	14,572	3,476
Total	27,990	7,443

The POPN project had twenty-four study beats that were selected for observation (twelve in each site). The observation sampling plan was created to capture all days, work shifts, units working the study beats (both community police officers and general

patrol unit officers), and both busy and slow times (Parks et al., 1999).[13] Observers conducted approximately 240 hours of observation in each study beat (DeJong et al., 2001).

A number of trained observers were involved in these 5,700 hours of systematic social observations over several months, during two summers. As such, two considerations generally considered important when using methods such as SSO – reliability and reactivity – need to be addressed. These issues however do not necessarily become problems methodologically, as POPN recognized and attempted to address such concerns. According to Mastrofski et al. (1998) reliability issues were addressed in several ways: first, reliability was enhanced by the structured nature of the observations and the reconstruction of these observations. Second, reliability was enhanced by extensive training and supervision of observers. Third, the data entry system contained quality control programs which tested logical arrangements of coded data.

Officer reactivity to observers was a second important methodological consideration with field observations, especially in observations of the police. The potential exists that observed officers may change their behavior when being observed, resulting in researchers collecting data about behaviors that are different from the true nature of police work. The most important measure to address potential subject reactivity was strict confidentiality agreements and restrictions regarding information sharing. Observers were not allowed to discuss or disclose any aspect of an observation session

[13] Busier times (Thursday through Saturday) were over sampled to ensure sufficient numbers of observations of encounters with the public (Parks et al., 1999)

with anyone except the observed officer. Observers were also trained to look for and note potential signs of reactivity (Mastrofski et al., 1998)

In addition to information collected through the systematic observation of officers, further information about officers was gathered through structured interviews. These interviews were conducted outside of any observation sessions and by separate research personnel (DeJong et al., 2001). General demographic characteristics, education, training, and attitudinal variables were obtained through these interviews. Attitudinal questions pertained to officers' beliefs about their role, attitudes towards supervisors, and attitudes about citizens (DeJong et al., 2001). The data gathered from these interviews supplemented the observational data.

One significant strength of SSO is that it allows for the observation of social phenomenon in its natural setting following explicit, duplicatable procedures (Mastrofski et al., 1998). Since the focus of the current study is the context of police behavior, SSO provides an excellent opportunity to consider important contextual characteristics – in this case, neighborhood characteristics – and examine differential police practices.

For the original project, neighborhoods were defined by the police departments using the boundaries of primary police assignment areas. Assignment areas (known as patrol beats in Indianapolis and Community Policing Areas in St. Petersburg) "were drawn to match existing neighborhood boundaries as far as possible, given available patrol resources" (Reisig and Parks, 2000, p. 613).

Information about neighborhoods was obtained from 1990 Census data. For the current project, census data was aggregated to the study beat boundaries. While the level of aggregation for the current study is the neighborhood, since there are multiple levels to

be considered, a description of the study sites is provided to place the police behavior in a larger context.

Study Sites [14]

Indianapolis, Indiana

At the time of the study, the Indianapolis Police Department (IPD) had an estimated service population of 377,723. Of this population, 39 percent was minority, eight percent was unemployed and nine percent was 50 percent below the poverty level. The Uniform Crime Report Index Crime rate was 100 per 1,000 residents. IPD employed 1,013 full-time sworn officers (approximately 2.7 officers per 1,000 residents), of which 48.6 percent, or 492 officers were assigned to the patrol division. Patrol officers were the focus of the original study; observation sessions and interviews were conducted with these officers. At the time of the study, 83 percent of IPD patrol officers was male and 21 percent was minority. Thirty-six percent of IPD officers had a four-year college degree.

The Indianapolis Police Department service area is divided into 4 districts (North, South, East, and West) and within these districts, there are 50 police beats. Twelve of these beats were included in the original project as study beats. The average residential population of a beat in Indianapolis was approximately 7,500 (Mastrofski et al., 2002).

[14] Information concerning the study sites was obtained from published articles using POPN data, primarily, Parks et al. (1999). 1990 census data (and projections) were originally used as was the most recent (1996) UCR data.

St. Petersburg, Florida

At the time of the original study, the St. Petersburg Police Department (SPPD) had a service area of approximately 240,318 residents and employed 505 full-time sworn officers (approximately 2.1 per 1,000 residents). Of the residential population, 24 percent was minority, five percent was unemployed, and six percent was 50 percent below the poverty level. The UCR Index Crime Rate per 1,000 residents was 99. Of the 505 full-time sworn officers, 283 of these were in the patrol division (56 percent). Eighty-seven percent of SPPD patrol officers was male, 22 percent was minority, and 26 percent had four-year college degree.

The St. Petersburg Police Department jurisdiction was divided into three districts (North, South, and West) containing a total of 48 beats. Twelve of these beats were included in the original project as study beats and were selected to approximate the socioeconomic conditions of the study beats selected in Indianapolis. The average residential population of a beat in St. Petersburg was approximately 5,000 (Mastrofski et al., 2002).

Unit of analysis

Observers were assigned to observe and record events of officers in one of twenty-four study beats in each study site. Approximately 240 hours of observation were conducted in each site's 24 study beats (40 rides per beat). A total of 361 observation sessions were conducted in Indianapolis and 368 observation sessions were conducted in St. Peterburg. Observation sessions were designed to average approximately eight hours

but this time varied as some shifts ended early (for various reasons) and some were extended (DeJong et al., 2001).

Observation of an assigned study beat was not always possible primarily due to departments not always assigning an officer primary patrol duties to a specific study beat. In such events, observers were assigned to ride with the officer who would most likely be responsible for covering calls from the study beat (typically an officer from an adjacent beat). These rides were excluded from the current analyses.[15]

The unit of analysis for the current research is the officer, with 224 officers being observed – 173 officers observed in Indianapolis and 70 officers observed in St. Petersburg. It should be noted that several officers were observed more than once and though rare, some officers were observed in more than one study beat. For officers observed multiple times in the same study beat, these times are summed. If an officer was observed in multiple study beats, times were calculated and summed separately for each study beat. The 224 observed officers therefore resulted in 243 unique officer-in-beat observations. A total of 529 rides were included in the analyses (281 observation sessions in Indianapolis and 248 observation sessions in St. Petersburg); the mean number of observation sessions per officer was 2.18 (S.D. = 1.8) and ranged from 1 to 10.[16]

---

[15] A total of 166 observation sessions were excluded for this reason. No pattern was observed based on beats and department assigned officers or lack of assigned officers.

[16] Significantly more repeat observations of the same officer occurred in St. Petersburg. The mean number of observation sessions in Indianapolis was 1.6 (S.D. = 0.85, range 1 to 4) while in St. Petersburg, the mean number of observations sessions was 3.5 (S.D. = 2.6, range 1 to 10).

Measurement of the Dependent Variables:

Several variables were available and used to calculate the dependent measures: time variables, initiation source indicators, event location, and event type descriptions. For each event, observers coded the time the event began and the time the event ended – in minutes. For the current analyses, the time spent on each event during each observation session was summed to give a total observed time for each officer in minutes.

The initiation source for each event was also available – whether officer initiated, dispatch, on-scene citizen initiated, or other officer initiated. This variable was used to provide a total amount of "free" time that an officer had per ride. Free time was defined as time that did not involve being dispatched, engaged with a citizen by citizen request, or directed by a supervisor or other officer to perform some duty or function. In other words, the calculated free time was the summed time of all officer initiated events per observation session. For each officer, a value was calculated indicating the amount of free time that an officer had divided by the total observed time. While this variable was used to create subsequent dependent measures, it is useful in and of itself in examining the possibility that officers in some areas had more free time than officers in other areas. This will be examined at the outset to determine if some areas placed higher demands on officers and in which areas officers had more self-directed (or free) time.

Indicators were also available that identified where events occurred. Only events that occurred within the geographical boundaries of the assigned study beat were included in the current analyses. For activities, information was available indicating the percent of the activity that occurred within the study beat (0 - 100 percent); for encounters, geocodes indicated the location of the encounter (by using cross-streets) and beat designations were

later tied to these geocodes. Again, while this variable is used in the subsequent creation of the dependent measures, it should be useful to examine this variable independently and before the primary analyses. Examination of the location and time variables can determine if officers on some rides were more involved in (and/or restricted to) an assigned beat while more time on others was spent outside of the assigned area.

The amount of free time that officers had and the amount of time that officers spent inside their beat will be examined first to determine what influences are able to be identified for these. These preliminary analyses have implications in terms of selection effects – that the dependent measures and primary analyses described below may be affected by the amount of free time that officers had and the amount of time officers spent inside the assigned beat. Officers may not be equal in the amount of free time or time inside the beat that they had available to engage in the behaviors of interest, described below.

Finally, for the creation of the dependent measures, indications were available identifying the type of event observed. Events were placed into three categories: order maintenance, legalistic, and service – inspired by the typology introduced by Wilson (1968). Activity codes (and problem codes if available) were used to classify activities and problem codes were used to classify encounters into one of the three categories.[17]

Order maintenance activities involve situations where the police are functioning in a peacekeeping capacity. Order maintenance type activities and encounters involve situations in which a crime may not have been committed, but the potential for such a

[17] Complete lists are provided in Appendix B (Tables B.1, B.2, B.3) for the various police activities and encounters, how they were categorized, as well as their distributions.

commission is present and possible. Order maintenance events also include events that by their mere presence, police function to instill some order – such as general patrol. Examples of other order maintenance behaviors include the relatively common practice of settling disputes.

Legalist events revolve around law enforcement and crime control behaviors. These events involve incidents of law violations (or suspected violations). As discussed previously, the majority of previous research has focused on legalist activities or orientations of the police (e.g., arrests). The events included in this third category of behaviors are the most varied – due to the specificity of problem codes indicating the precise violation or issue addressed.

Service behaviors involve and indicate behaviors that anyone could perform; the full weight of the state and authority given to the police are not necessary to attend to these functions. As Wilson (1968) notes, "it is only a matter of historical accident and community convenience

that [these services] are provided by the police" (p. 5). Examples of service behaviors include helping someone locked out of a car or house, transporting a citizen, or giving directions.

It is important to note when considering specified activities, that certain activity categories were not mutually exclusive. Some activities are not considered in and of themselves to be one of the three types of behavior. Activities such as meetings with non-police service providers and checking or fixing property *were* exclusively categorized as service, while other activities were placed into a specific category based upon the focus of the problem (i.e., problem codes). For example, backing up other

officers, information gathering, or "checking out the situation" activities were classified as 'service' only if the activity was tied to a service problem code considered of a service nature.[18] Problem codes provided more detail and specifics than did activity codes, therefore, they were more amenable to classification; the categorizations of problem codes were mutually exclusive.

Values were calculated that indicated the percentage of observed, officer initiated time spent on each variety of behavior in a study beat, out of the total observed free time. Free time was used as the denominator in an effort to determine how officers were *choosing* to spend the time they had that was not otherwise obliged.

Officer initiated service, order maintenance, and legalist events are the focus of the current analyses. The use of *officer* initiated events is useful in uncovering the discretionary activities engaged in by officers in different areas – as opposed to examining all activities which would include what citizens or supervisors request.

Table 2 provides descriptive information about the variables used to create the three dependent measures. Descriptive statistics are provided for the total amount of observed time for each officer, time inside and outside the assigned beat, officer and other-initiated time, total time on each of the three behaviors comprising the dependent measures, and finally, the dependent measures: percent of free time on each type of behavior inside the beat.

As mentioned previously, in addition to the three types of behaviors that are the focus of the current paper, the total amounts of time spent within and outside of an

---

[18] The same is true for order maintenance and legalist events. For ambiguous activities such as those listed, placement of the event into one of the three categories was dependent upon a problem code consistent with the respective category.

assigned beat were available for examination. Also, summed times engaged in citizen or other officer requested action – as well as officer initiated time for each beat were available. These measures will also be examined in an effort to provide a fuller picture of how officers' time is spent and the policing patterns for different types of neighborhoods.

Table 2. Outcome Variables - and Variables Used in Calculations (n = 243 Officers)

	Mean	S.D.	Range
Total observed time (in minutes)	1,010.6	846.3	15 to 4,698
Percent of observed time in assigned beat	46.1	26.7	0 to 90.8
(Percent spent outside of beat	53.9	23.7	9.2 to 100)
Percent of observed time on Officer initiated events	70.5	13.0	3.6 to 99.4
(Percent on other than Officer initiated events)	29.5	13.0	0.64 to 96.4
Percent of observed time on officer initiated events in beat	47.3	26.2	0 to 100
(Percent on officer initiated out of beat	52.7	26.2	0 to 100)
Total time on Order Maintenance events (in minutes)	293.7	229.2	0 to 1,569
Total time on Legal events (in minutes)	185.1	178.9	0 to 1,202
Total time on Service events (in minutes)	28.2	87.2	0 to 1,009
Percent of free time on OM events in beat	24.3	17.3	0 to 80
Percent of free time on legal events in beat	5.5	6.3	0 to 34.7
Percent of free time on service events in beat	0.5	1.5	0 to 10.1

Measurement of the Independent Variables

Officer Level Variables

A number of officer level variables believed to impact the delivery of police services were available, specifically, officer sex, race, age, unit, education, and an attitudinal variable capturing "crime fighting" orientation. These variables were available from officer surveys. As mentioned in Chapter Two, research has shown that police practices vary by individual officer characteristics as well as contextual factors. As such, officer characteristics were included as one level of analysis for the current research.

Several demographic variables were available from the officer survey and included in the current analyses. Table 3 contains descriptions, coding, and distributions of these variables. In addition to the officer demographic variables included, Table 3 describes the distribution of officer unit. For the current study, police officers were identified as either 911 officers or Community Police Officers (CPOs). Differences are expected between the two types of officers.

Speaking generally, CPOs were freed (for the most part) from answering dispatch calls for service. As Parks et al. (1999) found using these same data, CPOs may spend less time with citizens than 911-responders. In addition, the persons with whom CPOs have contact have been described as a "better class of people" (e.g.,"non-criminals," community leaders, neighborhood organizers, and business people) (Parks et al., 1999).

One attitudinal variable considered important for inclusion was also available – officer's crime fighting orientation. Officers were asked to identify on a likert scale how strongly they agreed with the following statement: "Enforcing the law is by far a patrol officer's most important responsibility." This variable was included in an attempt to

capture differences in officers' attitudes and identify priorities that may predispose an officer towards engaging in one type of behavior over another – i.e., law enforcement over order maintenance activities or service activities.

Officers working different days of the week or different times of the day are confronted with different situations and problems. Some days of the week and some shifts are busier than others, late week and weekend days and night shifts particularly. Officers working busier days of the week or working busier shifts would have less free time and therefore may be less likely to engage in activities due to the workload (expected or real). In other words, officers working less busy days or shifts may not be concerned that they will be swamped with calls and therefore may engage in different activities than officers scheduled on busier days and shifts. To control for these possibilities, shift times and the percent of free time that an observed officer had were included as control variables at the officer level.

Shift times were calculated using the start time for officers' shifts. Since start times varied across departments, values for shift were categorized into day shift, evening shift, and night shift. Day shifts included start times ranging from 5:30 am to 11:10 am; evening shifts included start times ranging from 1:30 pm to 4:09 pm; night shifts included start times from 7:00 pm to 12:55.[19] For the multivariate analyses, dummy variables were created for evening and night shifts.

[19] Thirteen officers had start times that varied across shifts (5.3% of all observed officers). For these officers, the modal start time category was used.

Percent of free time was calculated as all officer initiated events of an observed officer divided by the total amount of observed time. Table 3 contains descriptive statistics for this and the other officer level variables described above.

As can be seen in Table 3, most officers were male (84 percent) and white (77 percent). The mean age for officers was approximately 35 years. The majority of the observed officers were general response, or 911 officers (70 percent). Around one-third of the observed officers had a college degree; over 80 percent had some college or higher. Regarding the attitudinal variable, 81 percent agreed (somewhat or strongly) with the statement that crime fighting was the most important responsibility of an officer.

Table 3. Officer Characteristics (n = 224)

Variable	Coding	n	%
Female	0 - male	187	83.5
	1 - female	37	16.5
Minority	0 - white	173	77.2
	1 - minority	51	22.8
Age	Mean: 34.6 S.D.: 7.0 Range: 24 to 65		
CPO	0 - 911 officer	155	69.2
	1 - Community Police Officer	69	30.8

Table 3 (cont'd).

Variable	Coding	n	%
Education	1 - Less than High School	2	0.9
	2 - High School or GED	34	15.2
	3 - Some college (no degree)	50	22.3
	4 - Associates degree	15	6.7
	5 - More than 2 years of college	40	17.9
	6 - Bachelors degree	73	32.6
	7 - Some graduate school	10	4.5
Crime fighting orientation			
	1 - disagree strongly	12	5.4
	2 - disagree somewhat	30	13.4
	3 - agree somewhat	115	51.3
	4 - agree strongly	67	29.9
Shift*			
	0 - Day	88	36.2
	1 - Evening	66	27.2
	2 - Night	89	36.6
% free time*	Mean: 70.5 S.D.: 13.0	Range: 3.6 to 99.4	

* includes all unique officer-in-beat combinations (n = 243)

Neighborhood Variables [20]

Due to the limited number of neighborhood units available for observation (n = 24) the number of variables at the neighborhood level is restricted. Several contextual variables believed to impact how police deliver services were available for the current study. Some of these neighborhood level variables have been included in previous research efforts examining differences in police behavior, others have rarely been included. The neighborhood variables described below were drawn from 1990 census data.[21] These data were aggregated to the beat level.[22]

Buckner (1988) discusses the aggregation of individual level data and states that if individual level scores on variables are aggregated and averaged, the resulting mean score is a measure of the collective of community residents. The aggregated variable is said to describe a setting-level attribute (Buckner, 1988). As Moos and Lemke (1983) note, the "character" of an environment depends in part on the typical characteristics of its members. Brodsky et al. (1999) echo this statement stating that the combined responses of individuals in a setting contribute to that community's overall character. According to

---

[20] An important issue faced when examining community level variables is delineating appropriate and meaningful boundaries. The notion of neighborhood possesses the same vague qualities as the notion of community (e.g., what exactly constitutes a neighborhood ?). The definitions of both are necessarily subjective. For the current project, the delineation of neighborhoods was established by the police departments and as Klinger (1997) notes, this makes identifying the ecological unit of interest less problematic than in other inquiries as police districts and beats contain clearly defined boundaries. Mastrofski et al. (2002) address this issue, recognizing the complexities involved in defining a neighborhood and stating that "in both departments efforts had been made to draw beat boundaries consistent with the community's sense of where neighborhoods began and ended" (p. 4).

[21] Initially, variables drawn from residential surveys, gathered as part of the POPN project were to be used. Specifically, levels of mobility/stability, satisfaction, involvement, and heterogeneity were obtained for each study beat. These data presented problems and the inclusion of these initial variables was reconsidered. In place of these, census data was examined and chosen for inclusion; census data proved to be more reliable. Appendix C outlines the initial variables under consideration and the problems that arose from them.

[22] Beat is used to refer to the smallest geographical police service area. The SPPD used the term Community Policing Area (CPA) to denote this.

Shinn (1990), the aggregating of individual units assumes that individual biases cancel each other out and that a more reliable, valid picture of the community as a whole emerges.

Individual level census information from neighborhood residents was aggregated to the neighborhood level in order to provide information and differentiate areas on key contextual variables. The measures selected for the current study are believed to be indicative of different types of neighborhoods in terms of economic and social factors.

The neighborhood variables included are theoretically rooted in conflict theory. Specifically, the variables tap into economic and racial indicators that are relevant when examining how police respond to different neighborhoods from a conflict theoretical perspective. These variables are similar to contextual level variables used by previous researchers testing macrosociological influences of police activity. Williams and Drake (1980) describe the importance of dominant/subordinate relationships inherent in conflict theory and historically relevant measures such as percent black and percent unemployed. With the premise of conflict theory being power differentials between groups, racial and economic indicators are particularly salient. Differences in poverty rates, minority status, and economic equality have commonly been included when testing conflict theory (see for example, Hepburn, 1978; Jacobs and Britt, 1979; Liska and Chamlin, 1984; Warner, 1997). The variables described below were designed to capture these differences. Table 4 describes the neighborhood level variables included in the current analyses.

Table 4. Neighborhood Characteristics (n = 24)

Variable	n	%
Site		
1 = Indianapolis	12	50
2 = St. Petersburg	12	50

	Mean	S.D.	Range
Concentrated disadvantage*	1.9	0.87	0.63 to 3.5
Percent homeownership	39.66	15.30	2.0 to 66.1

* Factor score: % poor, % unemployed, % female headed family, % African-American

Site. Site was included primarily as a control variable due to differences that might manifest between study sites. While it could be argued that site is an organizational level, it is included at the neighborhood level for two reasons: 1) it places neighborhoods within a larger context – neighborhoods have the quality of being in one of the two specific jurisdictions, and 2) increasing the number of levels in the models increases the complexity of the models and potentially confuses the primary focus of identifying contextual level influences of police behavior.

Concentrated Disadvantage. Concentrated disadvantage is a factor score from four census items: percentage poverty, percentage unemployed, percentage female headed families, and percentage African-American. Concentrated disadvantage has been used by previous researchers to distinguish between neighborhoods. Sampson et al. (1997) examined neighborhood level influences and included a concentrated disadvantage factor similar to that outlined above. Sampson et al. discussed the importance of resource

distribution and economic stratification that included income, racial, and familial indicators (e.g., female headed households). Sampson et al. (1997) noted the cumulative effect of these forms of disadvantage.[23] These items loaded onto the factor included with an eigenvalue of 3.13 (See Table 5). The factor had a skewed distribution and, as had been done with previous use of this factor, a constant (1.5) was added to the term to eliminate negative values and adjust the distribution (Morenoff, Sampson, and Raudenbush 2001; Terrill and Reisig, 2003). The communalities and factor loadings for this variable are presented in Table 5.

Table 5. Disadvantage Factor

Item	Communality	Factor Loading
Percent poor	0.84	0.92
Percent unemployed	0.76	0.87
Percent female headed families	0.83	0.91
Percent African-American	0.71	0.84
Eigenvalue	3.13	
Percent of Variance explained	78.33	

[23] The inclusion of percent African-American in the factor variable described as concentrated disadvantage is not intended to describe any inherent meaning in terms of "disadvantage". Percent African-American was included for three reasons: 1) the factor loading and communality indicated a good fit with this factor; 2) racial indicators have been included with this factor by previous researchers; and 3) as described above, for conflict theory, racial indicators are theoretically relevant and in conjunction with the other items for this variable, indicate a cumulative form of disadvantage.

The inclusion of concentrated disadvantage as a neighborhood level variable is designed to identify areas that are socially and economically challenged. Previous research outlined in Chapter Two indicates that these areas are subjected to different types of policing. Additionally, previous research using this specific measurement has indicated an effect on homicide rates (Morenoff et al., 2001) and also on police use of force (Terrill and Reisig, 2003).

Percent Homeownership. In addition to tapping negative social indicators, indications of positive social control were also sought. As noted by Morenoff et al. (2001), a reliance on indications of concentrated disadvantage may obscure protective effects of more stable affluent neighborhoods. One indication of higher levels of stability captured and used for the current study was the percentage of homeowners out of all housing units. Previous research has identified home-ownership as a key influence of attachment and stability (Fried, 1982; Riger and Lavrakas, 1981; Taylor et al., 1985). Neighborhoods that have a higher percentage of homeowners are judged as exhibiting higher levels of attachment and resulting higher levels of social control.

Analytic Techniques

To consider the possible contextual effects of neighborhood level characteristics on police officer discretionary behavior, several analytic procedures will be used. Chapter Four begins by examining the distributions of the independent variables and determining if potential problems of multicollinearity exist. Multicollinearity would cause logical and statistical problems; logically, redundant variables would be useless to include. Statistically, multicollinearity creates problems with unstable estimations of

error terms (Tabachnick and Fidell, 2001). Zero-order correlation matrices will be provided and tolerance statistics calculated for the independent variables and the three dependent variables.

Next, an examination of the dependent variables will be conducted. In addition to analyzing the three outcome measures described above, preliminary analyses will be conducted to determine if influences of free time and time inside the beat can be identified. Using the same independent variables, these two measures will be designated as outcome measures to determine if officer demographics, assignment, attitude, or neighborhood characteristics influence the amount of free time that officers had or the amount of time that officers spent within the boundaries of their assigned beat.

After examining amount of free time and time spent inside the beat, attention is turned to the three dependent measures. It is important to examine the distribution of the dependent variables and determine if these distributions approximate normality or if problems of overdispersion exist. The dependent variables will be examined both statistically and graphically – the former by examining the skewness and kurtosis; the latter by examining histograms of the variables with a normal distribution overlay (Tabachnick and Fidell, 2001). If there are indications of non-normality, data manipulations to normalize the distribution will be conducted (e.g., using natural logs).

After these analyses, bivariate correlations between the independent variables and the outcome measures will be examined. Mean group comparisons and differences between the categorical independent variables and the three dependent variables will be examined using One-way ANOVAs; significant differences identified using F-ratios (Agresti and Finlay, 1986).

Next, the data will be analyzed using traditional linear techniques, specifically, Ordinary Least Squares regression models.[24] Predictor variables from both levels will be entered into these models.

Since the data under examination involve variables at multiple levels – officer level information (e.g., officer race, sex, unit, etc.) which are nested within the community level (in this case, police beat – e.g., neighborhood level variables), hierarchical linear modeling (HLM) will be used. HLM allows analyses of multilevel models. In the present case, there are two levels of data under consideration: (1) officer level variables – Level 1, and (2) neighborhood level data – Level 2. Before this more advanced analytic technique can be performed, the data first need to be examined to determine the suitability for these procedures and diagnostics need to be performed.

The unit of analysis is the officer, and these officers were observed in twenty-four study beats repeatedly. This being the case, neighborhood level variables and values would have to be duplicated in each case. These repeated observations at the community level make the use of traditional linear analytic models questionable. With multilevel investigations, individuals nested within groups are exposed to the same stimuli and are therefore expected to be more similar to one another than individuals in other groups (Hofmann and Gavin, 1998). Traditional linear regression techniques, such as OLS, assume that the random errors are independent, normally distributed, and have constant variance (Hofmann and Gavin, 1998). Traditional linear models therefore underestimate the size of the standard error (Bryk and Raudenbush, 1992). With HLM, each level in the structure is formally represented by its own submodel which expresses relationships

[24] The choice of analytic techniques will be dependent upon the normality of the distribution of the dependent variables and the appropriateness or inappropriateness of traditional linear techniques.

among variables at that level and also specifies how variables at one level influence relationships at another level (Bryk and Raudenbush, 1992).

With HLM, parameter estimates from the first level are subsequently used as outcome variables in the second level. For the second level, the outcome measures are modeled as a function of group level variables (Hofmann and Gavin, 1998).

Outlined below are the equations used for HLM. Both Level 1 and Level 2 models are presented, followed by a combined model.

Level 1 model (officer level):

$$Y_i = b_0 + b_1 X_i + r_i$$

where:

b_0 = the intercept (expected value of Y if X = 0)

b_1 = the slope (expected change in Y with 1 unit increase in X

r = the error term

HLM allows consideration of multiple neighborhoods (Level 2). Below is a Level 2 equation, for *j* neighborhoods; the equation describes the relationship within any neighborhood *j* as follows:

$$Y_{ij} = b_{0j} + b_{1j} (X_{ij} - \__j) + r_{ij}$$

where:

subscript j: = each neighborhood unique intercept and slope.

The strength of HLM is that it allows the consideration of both Level 1 and Level 2 variables in a combined model for hierarchical data.

Combined model:

$$Y_{ij} = \gamma_{0\,0} + \gamma_{0\,1} W_j + \gamma_{1\,0}(X_{ij} - \_\,j) + \gamma_{1\,1} W_j\,(X_{ij} - \_\,.j) + u_{0j} +$$

$$u_{1j}(X_{ij} - \_\,j) + r_{ij}$$

where:

γ = Level 2 coefficients

$\gamma_{0\,0} / \gamma_{1\,0}$ = level 2 intercept terms

$\gamma_{0\,1} / \gamma_{1\,1}$ = level 2 slopes

W = Level 2 predictor

u_{0j} and u_{1j} = the Level 2 random effects

r_{ij} = the Level 1 random effects

Following the description of Bryk and Raudenbush (1992) the steps of the HLM analyses will first involve a determination of the appropriateness of HLM for the current data. A One-way ANOVA will be performed involving Level 1 data; this will provide descriptive information as to the sample means and also indicate the reliability of the sample mean as a representation of the true mean. This step will determine the

applicability of the data to hierarchical linear modeling. If it is determined that HLM is not the most appropriate technique for the available data, other regression techniques or adjustments will be used to evaluate the data and judge the hypotheses outlined below.

Hypotheses

Officer Level Variables

It is expected, based on previous research findings, that different officers will behave differently based on individual officer characteristics. Considerable research has been conducted examining this premise (for a review, see Riksheim and Chermak 1993; Sherman, 1980). The present research adds to this long line of research by including individual officer level variables and examining the relationship of these variables to the levels of officer initiated order maintenance, legalistic, and service behaviors. The following hypotheses are presented regarding officer level variables and the three dependent measures.[25]

Hypothesis 1 – Officer sex: Female officers engage in less order maintenance behaviors, less legalistic behaviors, and more service behaviors.

While previous research has been mixed regarding officer sex and behaviors, there is some evidence to support the idea that male and female officers behave differently. Bloch and Anderson (1974) found that female officers made fewer felony and

[25] While specific hypotheses are not posited for all officer level variables, these variables are included in the analyses. Variables such as officer education levels and officer race are traditionally included in such research, were available, and therefore included in the current analyses.

misdemeanor arrests and this finding was supported by the findings of Sherman (1975). Sherman (1980) cites research indicating that female officers are less likely to initiate encounters. On the other hand, Homant and Kennedy (1985) found that females were more likely to get involved in disturbances.

Hypothesis 2 – Officer age: Older officers engage in less legalistic behavior; stated conversely, younger officers will engage in more legalistic behavior.

Age and length of service are difficult to differentiate from each other as they are typically (and with the current data) highly correlated – older officers have more experience. Several researchers have found differences between younger less experienced officers and older officers with more experience. Sherman (1980) described findings indicating that officers with less experience engage in more law breaking detection activities (legalistic) and also engaged in more preventive patrolling (order maintenance). Forst, Lucianovic, and Cox (1977) found that less experienced officers made more arrests. Worden (1989) found that more experienced officers made fewer traffic stops and also fewer stops of suspicious persons.

Hypothesis 3 – Officer unit: Community Police Officers will engage in more order maintenance and service oriented policing and less legalistic policing.

Community policing, in general, recognizes a broader mandate for police – more than a simple focus on law enforcement activities. As such, it is expected that

community police officers will spend less time engaged in legalistic behaviors and more time on order maintenance and service policing.

CPOs, generally freed from dispatched calls, have more discretion in how they spend their time. These officers should have more free time (which can be tested) and therefore may be more likely to devote that time to service or order maintenance policing – instead of limiting what they become engaged in due to expectations of being interrupted by being dispatched. This premise can be further examined by controlling for the amount of free time that the officers in different units have.

Hypothesis 4 – Attitudes: A positive relationship is expected between law enforcement attitudes (enforcing the law as the top priority of officers) and legalistic behaviors.

While previous research has provided weak support for the link between attitudes and behaviors, an officer level attitudinal variable was included in the current research in an attempt to control for preferences of officers that might be present. In other words, officers who viewed their primary role as enforcing laws will choose to spend more of their free time engaged in more legalistic activities. Alternately, officers who expressed that enforcing the law was not the highest priority of police will engage in more diverse behaviors, including order maintenance and service activities.

Hypothesis 5 – Free time: Officers who have more free time will engage in more order maintenance, legalistic and service policing.

It is expected that officers with more free time will use this free time to engage in a variety of activities – including the three used for the present research as outcome measures. Logically, officers with less free time will have less time to devote to *any* activity. Also, officers with less free time could be less inclined to become involved in self-initiated events as these may be interrupted by dispatched calls.

Neighborhood Level Variables

The main premise of the current research is that police function differently in different areas. While previous studies have examined a set of specific police behaviors and a limited number of key contextual characteristics, much has been left unexamined. The current study attempts to include key contextual variables believed to impact the delivery of a variety of police behaviors.

In short, it is believed that police behave differently in different neighborhoods, acting more legalistic in some than others and providing more services in some than others. As described above, it is expected that in areas characterized as having more concentrated disadvantage, police will provide fewer services and engage in more order maintenance and legalistic behavior. In areas with higher percentage of homeowners (versus renters) – indicating more attachment and commensurate higher levels of informal social control – it is expected that the police will provide more service functions and engage in less order maintenance and legalistic behavior. The expected relationships revolve around the idea that the police compensate for the lack of other controls. As such, the following hypotheses are presented:

Hypothesis 6 – Concentrated disadvantage: A positive relationship is hypothesized between concentrated disadvantage and both legalistic and order maintenance policing. A negative relationship is hypothesized between concentrated disadvantage and service policing.

Hypothesis 7 – Percent homeowner: A negative relationship is hypothesized between percent homeowner and both legalistic and order maintenance policing. A positive relationship is hypothesized between percent homeowner and service oriented policing.

In the next chapter, these hypotheses will be tested and results of the analyses (i.e., bivariate correlations, ANOVAs, traditional linear regression analyses, and HLM) presented. In Chapter Five, these results will be interpreted, implications drawn, and directions for further research discussed.

Chapter 4

Analyses

As described in Chapter Three, the first steps of the data analyses involved determining the suitability of the data for the proposed analytic techniques. To this end, several diagnostic procedures were performed. Specifically, collinearity checks were performed on the Level 1 data to ensure that correlation problems did not exist among the independent variables chosen for the current analyses. Collinearity diagnostics were also performed for the Level 2 data to determine if the items selected for inclusion were inter-correlated. For the current analyses, the number of Level 2 variables is limited since there were only 24 units of observation at Level 2 (i.e., 24 neighborhoods).

Bivariate Correlations Among Predictor Variables

First, correlational analyses for Level 1 data (i.e., officer level) were examined. A correlation matrix was produced that included all of the officer level variables (i.e., sex, race, age, unit, education, crime fighting orientation, shift, and percent free time). These results can be seen in Table 6. While there were correlations that were statistically significant, none reached or exceeded the generally accepted cut-off point of .80. Table 6 does indicate that officer sex and race were significantly correlated, as were officer age and education. The shift indicators were significantly correlated to several other officer level variables. Day shift was positively correlated with female officers, minority officers, age, CPOs, and amount of free time. Day shift was negatively correlated with officer education. Evening shift was negatively correlated with officer age and free time. Night shift was negatively correlated with female officers, minority officers, age, and

CPOs. Percent free time was positively correlated with day shift and negatively correlated with evening shift. None of these bivariate correlations was large enough to indicate concerns of collinearity.

Additional test for indications of multicollinearity involved tolerance statistics (See column 12, Table 6). Tolerance statistics indicate the percentage of variance of specific predictor variables that is not explained by the other predictor variables. Tolerance statistics were calculated for all of the independent variables for each of the three dependent variables. Tolerance statistics range from 0 to 1 and lower values indicate problems (< .20) (Mernard, 1995). Tolerance levels for these Level 1 variables also indicated no problems with multicollinearity.

Table 6. Zero-Order Correlation Coefficients and Tolerance Statistics: Officer Level Variables

Variable	1	2	3	4	5	6	7	8	9	10	Tolerance Statistic
1 Female	1.00										0.92
2 Minority	0.15 *	1.00									0.94
3 Age	-0.01	-0.01	1.00								0.80
4 CPO	0.03	-0.04	0.03	1.00							0.95
5 Education	-0.09	0.01	-0.26 **	0.03	1.00						0.89
6 Crime fighting orientation	-0.08	0.03	-0.10	-0.04	-0.12	1.00					0.94
7 Day shift	0.16 *	0.18 **	0.37 **	0.16 *	-0.14 *	-0.08	1.00				excluded
8 Evening shift	0.05	-0.04	-0.17 **	0.03	0.08	0.11	-0.46 **	1.00			0.64
9 Night shift	-0.21 **	-0.14 *	-0.21 **	-0.18 **	0.07	-0.02	-0.57 **	-0.46 **	1.00		0.60
10 % free time	0.02	0.09	0.04	0.03	0.02	-0.09	0.26 **	-0.17 **	-0.10	1.00	0.91

* $p < .05$ ** $p < .01$

Next, Level 2 (i.e., neighborhood) variables were examined. Bivariate correlation coefficients are provided in Table 7. As with the officer level variables, these Level 2 variables did not present problems due to high inter-correlations. In fact, none of the correlations was significant at the p = .05 level. Tolerance statistics were also calculated using aggregated / summed time variables at the neighborhood level; these also indicated no problems of multicollinearity.

Table 7. Zero-Order Correlation Coefficients of Neighborhood Variables (n = 24)

Variable	1	2	3	Tolerance Statistics
1 St. Petersburg	1.00			0.82
2 Disadvantage factor	0.00	1.00		0.85
3 Percent homeowner	-0.40 *	-0.35	1.00	0.72

* p = .052

Preliminary Analyses – Free Time and Time in Beat

To determine if potential selection effects were influencing the sample of officers observed, preliminary analyses of the amount of free time that officers had and the amount of time spent inside the study beat were examined. It was necessary to determine the influences of these in order to have an accurate and complete picture of how officers were spending their time.

Free time

As mentioned in Chapter Three, while the primary focus of the current research involves the three types of behavior engaged in by the police, also of interest is the amount of free time that officers had as well as the time that officers spent within their assigned study beat. Bivariate and multivariate analyses were performed using these calculations as dependent measures.

First, the amount of free time was examined to determine if any of the included variables predicted this. As mentioned, the mean percent of observed free time was 70.5 (S.D. 13.0) and ranged from 3.6 percent to 99.4 percent. For amount of free time, only officer unit, shift, and the neighborhood level variables were included – as there was no reason to believe that an officer's demographic information would determine how often dispatch operators or supervisors directed the officer to engage in some activity.[26] The results of the bivariate correlations are presented in Table 8. As Table 8 indicates, bivariate correlations indicate that officers on day shifts had more undirected (i.e., free time) and officers on the evening shifts had less free time.

[26] Just to be certain, a separate model was run that included all of these variables and none reached significance.

Table 8. Bivariate Correlations - Free time

Variable	% Free Time r	(Sig.)
Officer variables		
CPO	0.03	0.640
Day shift	**0.26**	**0.000**
Evening shift	**-0.17**	**0.007**
Night shift	-0.10	0.107
Neighborhood variables		
St. Petersburg	0.06	0.362
Concentrated disadvantage	0.01	0.851
Percent homeowner	-0.11	0.086

A series of One-way ANOVAs were also calculated to examine the categorical variables (i.e., officer unit, shift, and site) and potential significant differences for officer amounts of free time. As Table 9 indicates, the ANOVAs indicated that shift was significant – officers with day shift assignments had significantly higher mean free times than other shifts; officers on evening shift had the least amount of free time.

Table 9. One-way ANOVA - Free time

Variable		Mean		S.D.
Unit				
	911	70.21		12.21
	CPO	71.05		14.64
	F-ratio		0.22	
Shift				
	Day	75.02		14.22
	Evening	66.79		12.50
	Night	68.70		10.71
	F-ratio		9.48***	
Site				
	Indianapolis	69.99		13.01
	St. Petersburg	71.67		12.95
	F-ratio		0.83	

*** $p < .001$

Table 10 provides the results of an OLS regression model with the percentage of free time as the outcome measure. As with the bivariate correlations and the ANOVAs, shift was the only variable that was significantly related to the amount of free time that officers had. Officers who were observed on evening shifts and night shifts had significantly less free time. This finding should be kept in mind when examining the specified outcome measures – time on order maintenance, legalist, and service events. Officers on different shifts did not have the same amount of free time to potentially

devote to any or all of these three types of behaviors. Officers assigned to different units and in different types of neighborhoods did have similar amounts of free time.

Table 10. OLS Regression Results - Free time

Variable	B	S.E.
Constant	80.52***	4.79
Officer variables		
CPO	-1.98	2.29
Evening shift	-8.61***	2.07
Night shift	-6.44***	1.93
Neighborhood variables		
St. Petersburg	1.79	2.48
Concentrated Disadv.	-0.29	1.09
Percent own	-0.11	0.07
R squared	0.09	

* p < .05; ** p < .01; *** p , < .001

Time in Beat

Next, the amount of time that officers spent within and outside their assigned study beats was examined. All of the variables used were included in these analyses. First, bivariate correlations were calculated, followed by a series of one-way ANOVAs, and lastly an OLS regression model using percent of time in beat as the dependent variable. Recall, that the mean percent of time spent inside an assigned study beat was 46.1 (S.D. = 26.7) and ranged from 0 to 90.8 percent.

Table 11 provides the bivariate correlations of both officer level and neighborhood level variables and the amount of time that officers spent within the assigned study beat. Officer age, unit, shift, and site had significant bivariate correlations. The bivariate correlations revealed that older officers, CPOs, officers on day shifts, and officers in St. Petersburg spent less time within the assigned study beat.

Next, a series of one-way ANOVAs were produced examining group differences for the amount of time officers spent within their beat. As with the bivariate correlations, officer unit was significant – 911 officers spent a significantly larger portion of the observed time inside the study beat than CPOs. Officer shift was also significant – officers on day shift spent less time in the assigned beat than officers on evening or night shift. Also, officers in Indianapolis spent more time inside the assigned beat. Age, which was significant at the bivariate level failed to reach significance though it was close (p. = .078) – with younger officers spending more time in the assigned beat than older officers.

Table 11. Bivariate Correlations - Time in beat

Variable	r	(Sig.)
Officer variables		
Female	-0.08	0.224
Minority	0.01	0.882
Age	**-0.16**	**0.015**
CPO	**-0.36**	**0.000**
Education	0.06	0.333
Attitude	-0.01	0.897
Day shift	**-0.18**	**0.005**
Evening shift	0.10	0.107
Night shift	0.08	0.188
Percent free time	0.00	0.959
Neighborhood variables		
St. Petersburg	**-0.31**	**0.000**
Concentrated disadvantage	0.06	0.314
Percent homeowner	-0.01	0.833

Table 12. One-way ANOVA - Time in beat

Variable	Mean		S.D.
Officer level variables			
Sex			
Male	46.88		23.56
Female	41.94		24.24
F-ratio		1.48	
Race			
White	45.93		23.87
Minority	46.49		23.26
F-ratio		0.02	
Age			
30 and younger	50.63		21.07
31-40	44.53		24.08
41 and older	41.74		26.20
F-ratio		2.57	
Unit			
911 Officer	51.79		22.56
CPO	33.45		21.24
F-ratio		35.76 ***	
Education			
Less than HS	59.64		1.19
HS / GED	43.17		24.53
Some college	44.02		22.94
Associates degree	50.35		22.10
2 + years college	46.96		25.92
Bachelors degree	45.51		23.40
Some graduate school	57.73		22.01
F-ratio		0.82	

Table 12 (cont'd).

Variable	Mean		S.D.
Law Enforcement Orientation			
Strongly disagree	42.53		29.63
Disagree somewhat	44.69		25.70
Agree somewhat	48.32		22.94
Agree strongly	43.58		22.92
F-ratio		0.78	
Shift			
Day shift	40.38		25.82
Evening shift	50.06		21.17
Night shift	48.69		22.42
F-ratio		4.12 *	
Neighborhood level variables			
Site			
Indianapolis	50.76		24.36
St. Petersburg	34.41		17.25
F-ratio		26.18 ***	

* p < .05; ** p < .01; *** p , < .001

Lastly for time in beat, an OLS model was produced using both officer level and neighborhood level characteristics as predictor variables and percent of time inside the study beat as the outcome variable. Results are presented in Table 13.

Table 13. OLS Regression Results - % Time in Beat

Variable	B	S.E.
Constant	69.11***	18.41
Officer variables		
Female	-3.93	3.89
Minority	-0.23	3.56
Age	-0.34	0.23
CPO	-12.59**	4.03
Education	0.12	0.91
L.E. orientation	-0.79	1.78
Evening shift	7.79*	3.95
Night shift	3.09	3.76
Percent free time	0.08	0.11
Neighborhood variables		
St. Petersburg	-11.83**	4.37
Concentrated	0.67	1.94
Percent homeownership	-0.27*	0.13
R squared	0.21	

* p < .05; ** p < .01; *** p , < .001

Several significant predictor variables were found for time inside the beat. Officer unit was significant; Community Police Officers spent significantly less of their free time in the assigned beat. Officers on evening shifts spent more time in the study beat and officers in St. Petersburg spent less time in the study beats. Officers in neighborhoods that had a higher percentage of homeowners also spent less time in the assigned beat.

These findings should be kept in mind when examining the subsequent analyses. Only officer shift was significant in predicting how much free time that officers had. With the exception of officers observed on day shifts, observed officers had similar amounts of free time to which they *could* devote to engaging in the three sets of outcome behavior measures. Observed officers generally had equal amounts of free time to engage in the activities targeted for examination.

Officers were <u>not</u> equal in terms of the amount of time that they spent inside their study beat. Officer age, assignment, shift, city, and neighborhood influenced the amount of time spent inside the assigned beat and therefore result in different amounts of time and opportunity to engage in the identified behaviors that are the primary focus of the current research.

Dependent Variables – Distributions

Attention was next turned to the examination of the dependent variables. Considering the possibility of non-normal distributions of the dependent variables, a cursory look at the distribution of the dependent variables (see Table 2) indicates that overdispersion could be a problem with the current data (for two of the three dependent variables). This can be determined by examining the means and standard deviations. The

standard deviation for time spent on legalistic behaviors is greater than the mean (mean = 5.5, S.D. = 6.3) and the same is true for time spent on service behaviors (mean = 0.6, S.D. = 2.5) indicating overdispersion. To examine this possibility further, calculations of skewness and Kurtosis were conducted.

Skewness indicates the symmetry of a distribution while Kurtosis indicates the peakedness of a distribution. When a distribution is normal, the values of each are zero (Tabachnick and Fidell, 2001). Additionally, histograms with a normal curve overlay are provided (See Figures 1-3).

When the distribution of the three dependent variables were examined and statistics for normality calculated, indications of non-normal distributions were evident. Skewness and Kurtosis values indicated problems with legalist and service behaviors – two of the three dependent variables: order maintenance (skewness = 0.84; Kurtosis = 0.58), legalist (skewness = 1.62; Kurtosis = 3.35), and service (skewness = 7.73; Kurtosis = 68.91). The high Kurtosis value for service was due to the considerable number of zero values and the peak that this caused in the distribution.

Figure 1. Histogram – Time on Order Maintenance Events

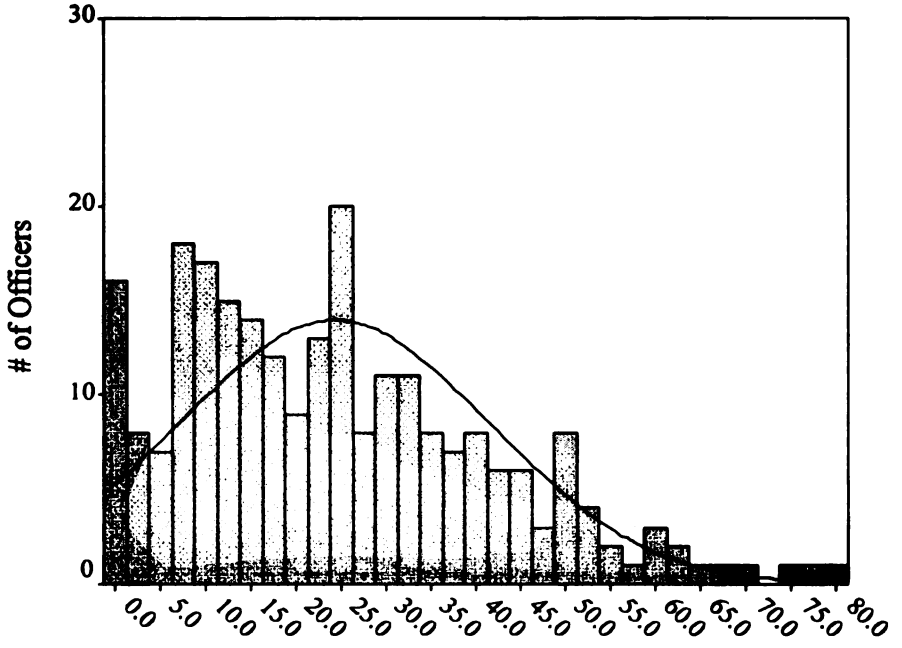


Figure 2. Histogram – Time on Legalist events

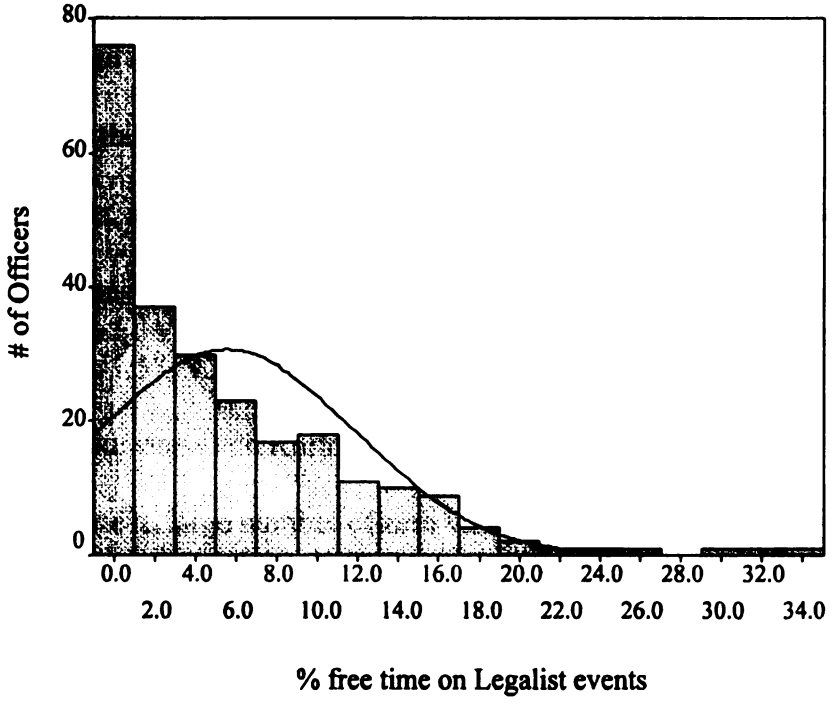
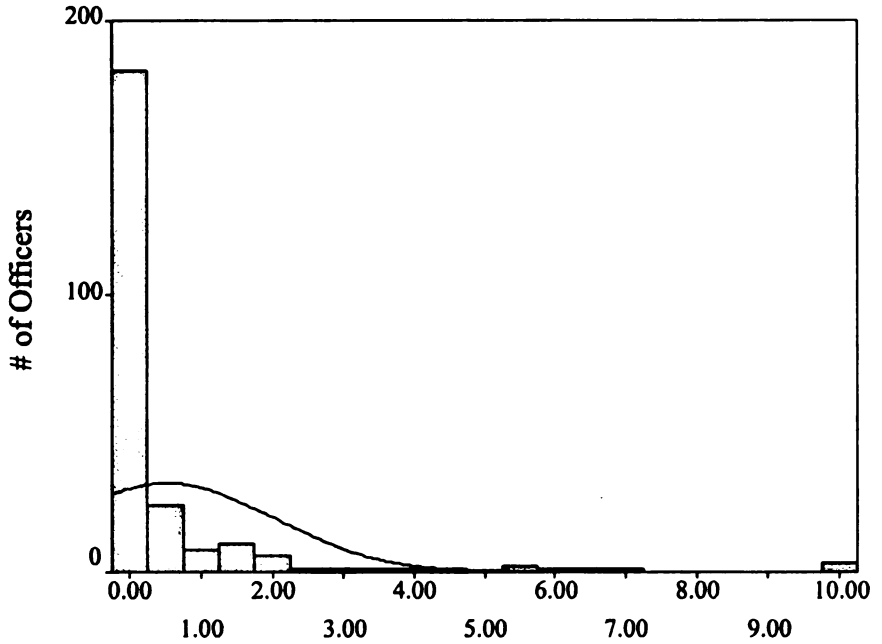
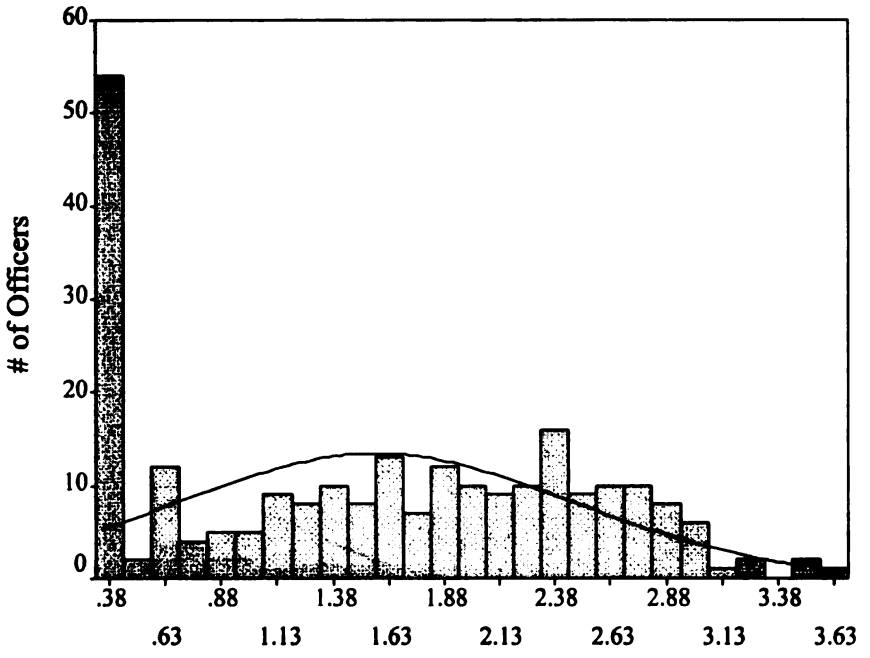


Figure 3. Histogram – Time on Service events



The histograms produced (with a normal curve overlay) also indicated distribution problems with the same two dependent variables (legalist and service). A number of responses to address this problem were available. First, an attempt was made to normalize the distribution of legalist behavior. To better approximate a normal distribution, a natural log transformation was performed, after adding a constant (1.0) in order to transform zero values. After the transformation, the mean value for legalist events was 1.57, S.D. = 0.90. As Figure 4 indicates, the distribution appeared much more normal. Skewness and Kurtosis were also improved (0.1 and - 1.2 respectively; higher Kurtosis due to large number of zero values – officers not engaging in legalist behaviors).

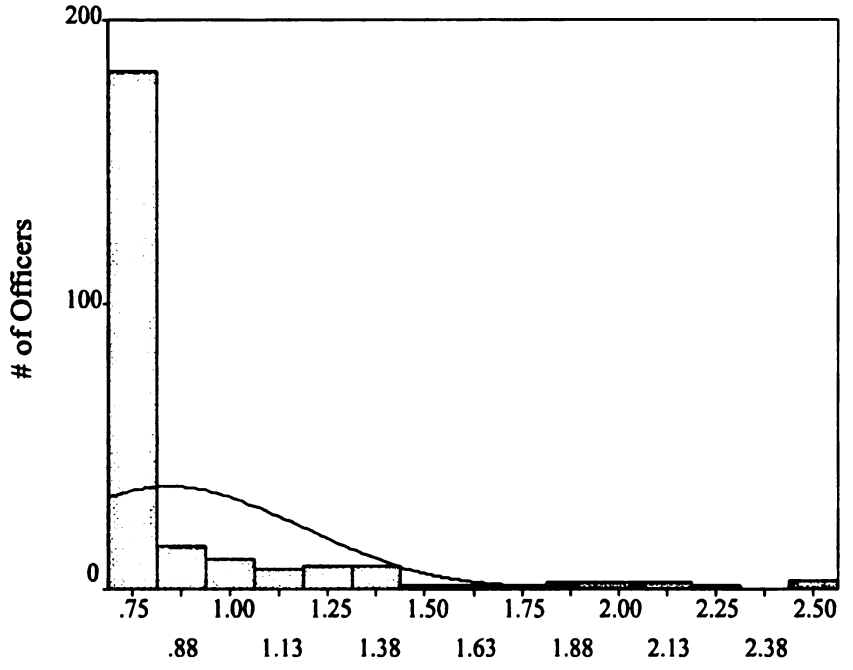
Figure 4. Log Transformed Time on Legalist Events



Log transformed % free time on Legalist events

Time on service events also has a skewed distribution. As with the legalist dependent variable, a constant was added and a log transformation was conducted as to better approximate a normal distribution. Even after these had been conducted, time on service events, though improved, still presented a skewed distribution (See Figure 5). After transforming this variable, free time on service had a mean value of 0.85 (S.D. = 0.34). The skewness was 2.99 and Kurtosis was 9.4 – again, due to the high number of zero values (i.e., officers not performing service activities). Considering the persisting distribution problem, the hierarchical models run will be adjusted to take this into consideration. Transformed values of legalistic and non-transformed values of service will be used and adjustments will be made to the multivariate statistical procedures used.

Figure 5. Log Transformed Time on Service Events



The three dependent variables were next examined to determine if significant inter-correlations were present between these three types of behaviors. Table 14 provides the correlations among the three dependent measures. As Table 14 illustrates, there were no significant correlations between the outcome measures.

Table 14. Inter-correlations Among Dependent Variables

Variable	1	2	3
1 O-M	1.00		
2 Legalistic	0.06	1.00	
3 Service	-0.04	0.07	1.00

Bivariate Correlations – Predictor and Outcome Variables

Table 15 provides the correlations between officer level (Level 1) variables and the three dependent variables. The significant bivariate correlations are in bold. For free time on order maintenance events, officer sex, officer unit, shift, and percent of free time had significant bivariate correlations. Female officers, community police officers, officers on day shift, and officers with lower percentages of free time spent less of their free time engaged in order maintenance activities. Night shift and time on order maintenance were positively correlated, indicating that officers on night shifts spent more time engaged in order maintenance policing.

For time on legalist events, age and shift were the only variables that were significantly correlated with the percent of free time that officers spent on legalist events. Younger officers spent more time engaged in legalist events. Day shift was negatively correlated with amount of free time on legalist events and night shift was positively correlated.

For service, officer sex, shift, and percentage of free time were significantly correlated with time on service events. According to the bivariate correlations, female

officers engaged in more service behavior than male officers, officers on day shifts engaged in more, officers on night shift engaged in less, and officers with more free time engaged in more service events (See Table 15).

Table 15. Bivariate Correlations: Officer Level and Dependent Variables

	OM		Legal		Service	
Variable	r	(Sig.)	r	(Sig.)	r	(Sig.)
Female	**-0.13**	**.040**	-0.03	.688	**0.15**	**.017**
Minority	-0.06	.370	-0.06	.359	-0.08	.247
Age	-0.12	.070	**-0.25**	**.000**	0.04	.522
CPO	**-0.32**	**.000**	-0.05	.469	0.06	.372
Education	0.05	.413	0.12	.069	0.02	.764
Attitude	-0.05	.436	0.07	.250	-0.11	.084
Day shift	**-0.24**	**.000**	**-0.23**	**.000**	**0.18**	**.006**
Evening shift	0.10	.112	0.01	.830	0.01	.910
Night shift	**0.15**	**.022**	**0.22**	**.001**	**-0.18**	**.004**
Percent free time	**-0.13**	**.044**	0.03	.671	**0.21**	**.001**

Next, neighborhood level variables were examined for bivariate correlations with the dependent variables. Table 16 presents the bivariate correlations between the neighborhood level variables and the three dependent variables. The significant correlations are in bold type. As can be seen in Table 16, St. Petersburg police engaged

in less officer initiated order maintenance events and more service events. Neighborhoods exhibiting higher levels of concentrated disadvantage were significantly correlated with more legalistic police behavior.

Table 16. Bivariate Correlations: Neighborhood and Dependent Variables

	OM		Legal		Service	
Variable	r	(Sig.)	r	(Sig.)	r	(Sig.)
St. Petersburg	**-0.73**	**.000**	-0.15	.489	**0.49**	**.016**
Conc. Disadv.	0.06	.796	**0.50**	**.012**	-0.11	.612
% homeowner	0.19	.379	-0.19	.366	-0.11	.599

Analysis of Variances

Next, a series of One-way ANOVAs were calculated for the independent variables at the officer level and the three dependent variables. Tables 17 - 19 provide group mean values and f-ratios for these variables.

Table 17. One-way ANOVA by Officer Characteristics - Order Maintenance

Variable	Mean		S.D.	n
Sex				
Male	25.31		17.38	202
Female	19.22		16.35	41
F-ratio		4.26*		
Race				
White	24.80		18.06	192
Minority	22.34		14.26	51
F-ratio		0.81		
Age				
30 and younger	27.30		16.60	82
31-40	22.41		17.04	114
41 and older	23.56		18.86	47
F-ratio		1.97		
Unit				
911 Officer	27.98		17.02	167
CPO	16.15		15.17	76
F-ratio		26.98***		
Education				
Less than HS	29.54		1.91	2
HS / GED	24.57		19.46	38
Some college	21.92		15.61	54
Associates degree	29.30		14.95	16
2 + years college	21.65		14.86	42
Bachelors degree	24.41		18.01	80
Some graduate school	35.71		22.84	11
F-ratio		1.40		

Table 17 (cont'd).

Variable	Mean		S.D.	n
Law enforcement orientation				
Strongly disagree	20.26		15.93	14
Disagree somewhat	27.19		20.86	33
Agree somewhat	25.51		16.94	122
Agree strongly	21.72		16.37	74
F-ratio		1.31		
Shift				
Day shift	18.73		15.10	88
Evening shift	27.17		17.44	66
Night shift	27.63		18.09	89
F-ratio		7.47***		

* p < .05; ** p < .01; *** p , < .001

Table 18. One-way ANOVA by Officer Characteristics - Legalist

Variable	Mean		S.D.	n
Sex				
Male	5.61		6.33	202
Female	5.18		6.13	41
F-ratio		0.16		
Race				
White	5.73		6.48	192
Minority	4.82		5.52	51
F-ratio		0.84		
Age				
30 and younger	6.93		6.98	82
31-40	5.67		6.18	114
41 and older	2.79		4.15	47
F-ratio		6.82**		
Unit				
911 Officer	5.73		6.28	167
CPO	5.10		6.33	76
F-ratio		0.53		
Education				
Less than HS	14.61		0.75	2
HS / GED	4.24		5.84	38
Some college	4.14		5.19	54
Associates degree	4.39		6.04	16
2 + years college	7.12		6.75	42
Bachelors degree	6.43		6.88	80
Some graduate school	5.54		4.31	11
F-ratio		2.36*		

Table 18 (cont'd).

Variable	Mean		S.D.	n
Law enforcement orientation				
Strongly disagree	5.02		6.06	14
Disagree somewhat	3.28		6.01	33
Agree somewhat	6.18		6.60	122
Agree strongly	5.58		5.79	74
F-ratio		1.90		
Shift				
Day shift	3.59		4.96	88
Evening shift	5.68		5.57	66
Night shift	7.36		7.37	89
F-ratio		8.47***		

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 19. One-way ANOVA by Officer Characteristics - Service

Variable	Mean		S.D.	n
Sex				
Male	0.42		1.15	202
Female	1.03		2.59	41
F-ratio		5.73 *		
Race				
White	0.58		1.60	192
Minority	0.31		1.00	51
F-ratio		1.35		
Unit				
911 Officer	0.47		1.38	167
CPO	0.65		1.73	76
F-ratio		0.80		
Age				
30 and younger	0.47		1.11	82
31-40	0.47		1.50	114
41 and older	0.76		2.03	47
F-ratio		0.69		
Education				
Less than HS	0.87		1.23	2
HS / GED	0.21		0.46	38
Some college	0.71		1.93	54
Associates degree	0.13		0.39	16
2 + years college	0.74		1.90	42
Bachelors degree	0.57		1.49	80
Some graduate school	0.04		0.12	11
F-ratio		0.97		

Table 19 (cont'd).

Variable	Mean		S.D.	n
Law enforcement orientation				
Strongly disagree	1.09		2.93	14
Disagree somewhat	0.76		2.11	33
Agree somewhat	0.47		1.21	122
Agree strongly	0.40		1.20	74
F-ratio		1.18		
Shift				
Day shift	0.88		2.10	88
Evening shift	0.54		1.38	66
Night shift	0.16		0.39	89
F-ratio		5.17**		

* p < .05; ** p < .01; *** p , < .001

The One-way ANOVAs for the officer characteristics revealed several significant relationships. For order maintenance behaviors, the ANOVAs revealed mean differences for officer sex, unit, and shift. The mean order maintenance time for male officers was significantly higher than for females (25 percent versus 19 percent respectively); the mean for 911 officers was significantly higher than for CPOs (approximately 28 percent versus 16 percent). The mean order maintenance time for day shift officers was significantly lower than evening and night shift officers (18.7 percent versus 27.2 and 27.6 percent respectively).

For legalist behaviors, officers in the younger age categories engaged in more legalist behavior. The One-way ANOVA for officer education indicated significantly different mean values between groups, though no clear pattern was evident. The

ANOVA for shift indicated that officers on day shift spent less time engaged in legalistic events (3.5 percent), compared to evening (5.7 percent) and night shift officers (7.4 percent).

The ANOVAs revealed that officer sex and shift had significant mean differences for time on service events. Female officers had significantly higher mean scores than did male officers (1.03 percent for females versus 0.42 percent for males). Officers on day shift had a mean percentage of time on service of 0.88 percent, whereas evening shift officers had 0.54 percent and night shift officers spent 0.16 percent of their observed free time on officer initiated service events.

A series of One-way ANOVAs including study site and the three dependent variables was also conducted (See Table 20).[27] As indicated in Table 20, officers in Indianapolis engaged in significantly higher percentages of officer initiated order maintenance policing. Officers in Indianapolis had a mean score of 27.8 for percent of free time on officer initiated order maintenance compared to 15.6 percent for St. Petersburg officers. Officers in St. Petersburg engaged in more service policing than officers in Indianapolis (1.05 percent versus 0.31 percent, respectively).

[27] Study site was the only categorical variable at Level 2.

Table 20. One-way ANOVA - Site and Outcome Measures

	O-M		Legalist		Service	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Site						
Indianapolis	27.80	18.20	1.59	0.92	0.31	1.08
St. Petersburg	15.60	10.80	1.51	0.84	1.05	2.14
F-ratio	27.52***		0.38		12.65***	

*** $p < .001$

While several significant relationships were uncovered with these bivariate calculations, these relationships may not hold up once other variables are entered into the analyses. The next sections begins with traditional linear analyses to examine the multivariate relationships between officer and neighborhood characteristics and police behavior, followed by multi-level analyses containing the full models which differentiate between Level 1 and Level 2 variables.

Multivariate Analyses

Ordinary Least Squares

First, traditional linear models were produced that included both officer level and neighborhood level variables. Ordinary Least Squares (OLS) regression coefficients were produced and are presented in Table 21.

Table 21. OLS Regression Results

	Order Maintenance		Legalist		Service	
Variable	B	S.E.	B	S.E.	B	S.E.
Constant	44.95**	13.42	1.21	0.72	0.56	1.18
Officer variables						
Female	-4.88	2.835	0.05	0.15	0.56*	0.25
Minority	-1.89	2.593	-0.11	0.14	-0.46*	0.23
Age	-0.1	0.165	-0.02**	0.01	-0.01	0.01
CPO	-6.19*	2.937	0.02	0.16	-0.71**	0.26
Education	-0.07	0.662	0.03	0.04	0.06	0.06
L.E. Orientation	-1.55	1.30	0.11	0.07	-0.21	0.11
Evening shift	6.85*	2.88	0.25	0.15	-0.37	0.25
Night shift	4.78*	2.74	0.46**	0.15	-0.69**	0.24
Percent free time	-0.10	0.08	0.01	0.00	0.02*	0.01
Neighborhood variables						
St. Petersburg	-9.87**	3.18	-0.15	0.17	1.05***	0.28
Conc. Disadv.	1.46	1.42	0.11	0.08	0.01	0.12
Percent own	-0.13	0.09	0.00	0.01	-0.01	0.01
R squared	0.21		0.16		0.18	

* $p < .05$; ** $p < .01$; *** $p , < .001$ [a] $p < .06$

As Table 21 indicates, for percentage of free time spent on officer initiated order maintenance events, the OLS results indicate that officer's unit, shift variables, and site were significantly related to time on order maintenance. CPOs and officers in St. Petersburg engaged in less order maintenance behavior. The OLS regression coefficients indicate that officers on evening and night shifts spent more time on order maintenance policing.

For time on legalist events, the OLS results indicate that older officers spent less of their free time engaged in activities defined as legalistic. The results also indicated that officers on night shifts spent more of their free time on legalist events.

For service behavior, significant officer level variables included officer sex, race, unit, shift, the percent of free time, and site. Female officers, officers with more free time, and officers in St. Petersburg engaged in more service behavior. Minority officers, CPOs, and officers on night shifts engaged in less service behavior.

Hierarchical Linear Modeling

For the multilevel models using HLM, steps suggested by Bryk and Raudenbush (1992) were followed. Specifically, intraclass correlation coefficients (ICC) and reliability coefficients were calculated, followed by multilevel models.

First for the HLM analyses, one-way ANOVAs were calculated for each of the three dependent variables. By computing these, several important descriptive indicators are provided. First, the reliability of the three dependent variables at the neighborhood level can be assessed. HLM calculations for the ANOVAs provide reliability estimates (λ) for each of the three dependent variables. For order maintenance, $\lambda = 0.64$, indicating

that this measure was a reliable indicator of the true value at the neighborhood level. For legalist and service behaviors, the reliability coefficient was lower, indicating questionable suitability of HLM in analyzing these behaviors. For legalist behaviors, the ANOVA produced a $\lambda = 0.36$; for service behaviors $\lambda = 0.17$.

Next, intraclass correlation coefficients were calculated (ρ). ICCs indicate the amount of variance in the outcome variable that was between neighborhood units (Reisig and Cancino, 2004). For order maintenance events, $\rho = 16.37$, meaning that about 17 percent of the variance in officer initiated order maintenance policing was between neighborhoods. Alternately, approximately 83 percent of variance was within neighborhoods. The ICCs for legalist and service behaviors were lower: for legalist, $\rho = 6.3$ and for service $\rho = 10.4$.

For order maintenance activities, the reliability and intraclass correlation coefficients indicate that HLM is appropriate; the analysis follows below. The low reliability coefficients and ICCs for legalist and service behaviors indicate that HLM may not be the most appropriate technique for these two dependent variables. Taken together, these calculations indicate that legalist and service behaviors as measured may not vary across neighborhoods in a consistent manner. Despite these indications, HLM analyses will be run and results provided in order to compare findings across the three dependent measures. Significant findings however should be interpreted with these considerations in mind.

Tables 22 - 24 present the results of the HLM using percent of free time on officer initiated order maintenance (Table 22), legalist (Table 23), and service events (Table 24) as the dependent variables. Both officer level and neighborhood level characteristics are

entered into the model. The results are from a "fixed effect" hierarchical model. Using a fixed effect model constrains the slopes of the officer level measures, not allowing them to vary as a function of neighborhood level characteristics. Using fixed effects ensures a test of the primary objective of the current research – testing the potential effects of cross-level interactions (Reisig and Cancino, 2004; Terrill and Reisig, 2003). The constant, β_{0j}, was allowed to vary across neighborhoods and was modeled as a function of the neighborhood variables: site, concentrated disadvantage, and percent homeowner. Both the officer and neighborhood level variables were centered around the grand mean.

As mentioned, there were some concerns about the distribution of the dependent variables, specifically legalist and service behaviors. The problem identified with legalist behaviors was the large number of zero values – indicating that numerous officers were not observed engaging in such behaviors. As such, for the HLM for legalist behaviors, a Poisson distribution was used. The Poisson distribution, which is also called the distribution for rare events compensates for a non-normal distribution. The distribution was more normal after log transforming the variable so this problem was not an issue for this dependent variable.

For service behaviors, the distribution described above indicated the rarity of these events and also the non-normal distribution. As such, a Poisson distribution was used, as well as modifications for an over-dispersed distribution. This was done because even after transforming the service dependent variable, the distribution was still heavily skewed. Since order maintenance did not have these problems, a "normal" HLM model was run for order maintenance. The results are presented below.

Table 22. HLM - Order Maintenance

Variable	b	S.E.
Intercept	23.07***	1.06
Officer variables		
Female	-5.72[a]	2.79
Minority	-2.28	2.68
Age	0.21	0.15
CPO	-7.55*	3.08
Education	-0.13	0.77
L.E. Orientation	-0.75	0.88
Evening shift	8.06***	1.82
Night shift	4.87	2.60
Percent free time	-0.06	0.08
Neighborhood variables		
St. Petersburg	-9.58**	2.80
Conc. Disadv.	0.49	1.12
Percent own	-0.19**	0.04

* $p < .05$; ** $p < .01$; *** $p < .001$

[a] $p = .052$

Table 23. HLM - Legalist

Variable	b	S.E.
Intercept	0.41***	0.04
Officer variables		
Female	0.05	0.11
Minority	-0.06	0.10
Age	-0.02***	0.00
CPO	0.02	0.10
Education	0.02	0.02
L.E. Orientation	0.07	0.04
Evening shift	0.18*	0.08
Night shift	0.30**	0.10
Percent free time	0.01*	0.00
Neighborhood variables		
St. Petersburg	-0.10	0.10
Conc. Disadv.	0.07	0.04
Percent own	0.00	0.00

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 24. HLM - Service

Variable	b	S.E.
Intercept	-0.22	0.23
Officer variables		
Female	0.74[a]	0.36
Minority	0.26	0.50
Age	-0.01	0.02
CPO	-0.70	0.71
Education	0.08	0.07
L.E. orientation	-0.44**	0.11
Evening shift	0.44	0.35
Night shift	-0.62	0.37
Percent free time	-0.02	0.02
Neighborhood variables		
St. Petersburg	2.77***	0.45
Conc. Disadv.	0.71*	0.27
Percent own	0.00	0.02

* $p < .05$; ** $p < .01$; *** $p < .001$

[a] $p = .052$

As seen in Table 22, for time on order maintenance events, the HLM results indicate several significant findings. Community police officers spent less of their free time engaged in order maintenance and officers on the evening shifts spent more. For the Level 2 variables, the HLM coefficients indicated that officers in St. Petersburg spent less time on order maintenance policing as did officers in areas characterized by more homeowners. For homeownership, as the percent of home owning increased, the amount of officer initiated order maintenance decreased. Female officers were also seen engaged in less order maintenance policing than male officers and this finding was close to significant ($p = 0.052$).

For Legalist events, Table 23 provides the findings for the HLM for this dependent variable (using a Poisson distribution in the HLM model). As can be seen, age, shift, and free time were significantly related to officer initiated time on legalist events. Age was negatively related to officer initiated legalist activity while evening shift, night shift, and percent of free time were positively related to time on legalist events. Older officers engaged in less officer initiated legalistic policing; officers observed on evening shifts, night shifts, and officers with more free time engaged in more legalistic policing.

Table 24 provides the findings for the HLM for service behaviors. For officer level variables, officer attitude was significant and officer sex was close to significant ($p = 0.052$). The attitudinal variable – law enforcement orientation – indicated that officers who identified law enforcement as the top priority engaged in less service policing. Officer sex was close to signficant, indicating (as did the ANOVAs and OLS) that female officers engaged in more service policing. For the service HLM, site and concentrated

disadvantage were significant Level 2 predictors. Officers St. Petersburg engaged in more service policing. Officers in more disadvantaged areas are also seen to engage in more service policing.

In the next chapter, these findings are discussed in detail. Consistent and inconsistent findings across methods are addressed and conclusions are drawn.

Chapter 5

Discussion and Conclusions

The present research attempted to answer key questions concerning the contextual determinants that influence police practices and impact the delivery of police services. As with much research, some questions were answered, some were not, and new questions arose.

The current research was designed to examine potential differential police behavior across neighborhoods and how neighborhood contextual characteristics influence the behaviors in which police engage. The importance of this line of research was addressed and included the potential for variations for the provision of police services – especially in a time of community policing. As found in the previous chapter, CPOs and general response officers did differ in terms of the types of activities engaged in by type of officer. For example, community police officers engaged in less order maintenance. CPOs and general response officers did not vary in the amount of discretionary time that they had available but did differ from regular patrol officers in the amount of time that they spent inside their assigned beat, surprising findings which are discussed in more detail below.

While previous research has, in a limited way, examined the impact of contextual level influences on specific police behaviors, the current research examined a variety of police behaviors across neighborhoods. Previous inquiries were limited in terms of both the behaviors examined (limited primarily to legalistic practices such as arrest) and the contextual characteristics included. The question was posed as to whether, in addition to the previously studied legalistic activities, other police behaviors, ones that by their nature

are more discretionary, would be influenced by neighborhood characteristics. Limited significant findings were uncovered for the contextual variables included in these analyses. In short, most of the behaviors included in the present analyses and examined using the contextual variables did not vary across neighborhoods. The one exception is that as homeownership increased, officers' order maintenance behaviors decreased. This and other findings, as well as the lack of findings for other behaviors, are discussed below.

These analyses were approached from two theoretical perspectives. Conflict theory suggests that police act in a more legalistic manner in areas characterized by higher socioeconomic distress. The benign neglect hypothesis suggests that police provide fewer services in these same areas. The unsupported hypotheses concerning the contextual variables lend support to neither of these theoretical approaches. The findings from the preliminary analyses concerning how much time officers spent inside study beats provide support for a workload hypothesis. In areas characterized as more stable, officers spent less of their free time inside the beat. One interpretation is that officers in these beats leave the area in search of activities and work that need their attention.

In this final chapter, the findings presented in Chapter Four are interpreted and discussed, the current research is placed in the larger context of current policing literature, limitations of the data are addressed, and areas for future research are presented. First, findings from the data are presented, interpreted and discussed. Several interesting findings resulted from examination of the current data. These will be discussed in the order that they were uncovered.

Interpretation and Discussion of the Findings

When considering the totality of the project from which the data used was drawn, a tremendous amount of information was available. For the original study, over thirty-five thousand individual events from 729 observation sessions were observed, coded, and included in the data sets. The current study used this as a beginning point. As indicated previously, though the original research design assigned project observers for specific beats and shifts, occasionally there was no department assigned officer for that beat and shift. In such events, observers rode with officers who would most likely respond to calls coming from inside that study beat. These observation sessions were excluded from the analyses. As a result, a total of 529 rides (i.e., observation sessions) were used; 281 in Indianapolis and 248 in St. Petersburg. A total of 224 different officers were included in the current analyses.

The data was reduced further (and significantly so) by examining only the identified three types of behavior – order maintenance, legalistic, and service. These three measures do not capture the entire range of what police do during the normal course of business. Excluded was unobserved time, personal time, time spent with other officers discussing non-police business, time to check in and out of service (e.g., at the beginning and end of a shift), certain administrative activities, and others. This is an important aspect of the examination conducted. The behaviors measured did not total 100 percent of officer activity, where an increase in one type would have necessarily resulted in a decrease in another type. The lack of inter-correlations among these three outcome measures (See Table 14) indicates that the measures were distinct from one another and not capturing an underlying construct such as officer productivity.

In addition, only officer initiated events were included as the target behaviors for examination. Finally, only those events occurring inside the study beat were used to calculate the outcome measures. After considering all of this, the original data was reduced significantly, resulting in 4,532 classifiable events for the targeted measures of police behavior out of the initial 35,433 events.

The total observed time and also the time for all of these target events were summed for each unique officer-in-beat combination. In other words, if Officer 1 was observed three times in beat 321, the total time observed on these events was calculated. If Officer 1 was observed three times in beat 321 and once in beat 344, two summed times were calculated – one for beat 321 and one for beat 344. This occurrence was relatively rare however – happening for only 19 observed officers (8.5 percent).

Times for observation sessions varied, as did the number of times officers were observed. There were more repeated observation sessions of officers in St. Petersburg than in Indianapolis (mean = 1.6 versus 3.5 respectively). The average time for observed officers was 1,011 minutes – close to 17 hours. The shortest observation session was 15 minutes and the longest observed officer totaled over 78 hours of observation.

Several computations were involved in calculating the three dependent variables. These are interesting in their own right and are worthy of discussion. The mean observed time that officers spent in their assigned beat was 46.1 (S.D. 26.7). In other words, officers spent over half of the time they were observed outside their assigned beat (close to 54 percent). While it is not unexpected for a certain portion of a shift to be spent outside of an assigned beat, the finding that more than half is spent outside the beat is somewhat surprising. In the normal course of work, officers leave their beat for multiple

reasons – to back up another officer in a nearby beat, to take a suspect to the station for processing, meetings (including roll call / read-off at the beginning of a shift), etc. Fifty-four percent of time outside the beat does seem high however, and a closer examination was conducted.

Further examination of this finding involved a review of the events in which officers engaged outside of their beats. The most frequently engaged in activities outside of the assigned beat were moving en route to a location other than a dispatched call. The possibilities of this are numerous: driving to or from the station, driving to or from a restaurant, driving back to the assigned beat after being dispatched to a call outside the beat, just to name a few.

The second most common activity outside an assigned beat was general motorized patrol. One cautionary point is in need of mentioning regarding this: activities that were not 100 percent inside a study beat were not included in the analyses, therefore, an officer could spend ten minutes conducting general motorized patrol, nine minutes within the beat and one minute outside, and this would not be included. This was due to the impossibility of classifying the geographic location of the remainder of the patrol and to distinguish patrol that was purposely targeted to the study beat. Most activities (even patrol) were either totally inside or totally outside the assigned beat (approximately 80 percent). Despite this, what is interesting is that it appears routine for officers to leave their assigned beats while conducting motorized patrol.

Other common activities outside an officer's beat included meeting with other police (official business), personal time (lunch breaks, personal errands, etc.), administrative activities (such as report writing), backing up other police officers, and

meeting with other police (non-police business). These identified activities make logical sense when considering the types of activities that would draw an officer outside of his or her assigned beat.

Also included in the calculation of the three dependent variables was the amount of observed time that was officer initiated (as opposed to dispatched events, citizen initiated events, or other officer, including supervisor, initiated events). The mean amount of observed time that was officer initiated was 70.5 percent (S.D. = 13) and ranged from around 4 percent to almost 100 percent. In other words, the majority of an officer's shift involved undirected time.

Time spent in the beat (as mentioned above, 46 percent of observed time) was dissected further into officer initiated versus other person initiated events. Of the time spent within the boundaries of the beat, officer initiated time was reduced from 70.5 percent to 47 percent. While within the boundaries of their beat, the majority of officer time was directed either by dispatch, other officers or supervisors, and citizens. Most of the time spent within the geographic boundaries of an assigned beat was other than the observed officer initiated.

An examination of time outside the beat (54 percent of observed time) indicated that 70.9 percent of this time was officer initiated. This is an interesting finding. When officers are free, they tend to leave their beat. It appears that if not directed by others (police or citizens) officers would spend even more time outside their beat.[28]

---

[28] This finding is supported further by indications that day shift officers have the most free time and also spend the least time inside their assigned beat.

The "preliminary analyses" section of the previous chapter which examined free time and time in beat calculations (variables that were subsequently used to create the dependent variables) provided some interesting findings. Analyses were performed to determine if any of the other variables included in the analyses were predictive of the amount of free time that officers had or the amount of time that officers spent in their primary beat.

The examination of free time and potential influences of this revealed that only officers' shift was significant. Officers working day shifts had the most free time and officers working the night shift had the least. Day shift officers had a mean percent of free time of approximately 75 percent, evening shift officers was 67 percent, and night shift officers was 69 percent. This finding is expected as different shifts have previously been shown to involve varying workloads and demands on officers' time. None of the other variables was significant in predicting the amount of free time that officers had.[29] Observed officers, across study sites, across beats, and across units had similar amounts of free time. Other than officers on different shifts, officers are being engaged in different beats and cities at similar rates. The results discussed below should be viewed with this in mind.

Significant findings by shift in terms of the rates of engagement in the targeted behaviors further highlight the differing workloads and activities that officers choose to engage and the significant differences in officer behavior across shifts. The other officer

[29] Note that only officer unit, shift, study site, concentrated disadvantage, and percent homeowner were included in these analyses.

characteristics included to predict free time indicate that officers are left with similar amounts of free time to do with what they will.

One surprising finding from the examination of free time was that community police officers and general response officers did not differ in the amount of free time that they had. This is surprising since one would expect general response officers to have more directed time due to responding to dispatch calls. Perhaps community police officers are engaged by citizens in a different way from general response officers – specifically, in person as opposed to telephonically. It could also be that community police officers are being directed by superiors as to the activities in which to become engaged. The lack of differences found between the two types of officers could counter arguments that community police officers who are freed (in most situations) from responding to dispatched calls for service, left to their own devices, could have misconduct problems. Even though CPOs are not primarily responsible for handling calls for service, they are still being engaged by citizens or directed by superiors at the same rate as general response officers.

Unlike the analyses for officer's free time, there were several significant findings revealed from the examination of the amount of time that officers spent in their primary beat. Age was consistently and significantly negatively related to the amount of time that officers spent within their beat. As officer's age increased, they spent less time within the beat. One explanation is that younger officers are also newer officers and these officers may be less likely to deviate from proscribed beat boundaries. Younger officers may be hesitant to leave their beats in the event of an important call for service being ordered. Older officers having been there a while may feel freer to wander and have more

confidence in their ability to respond to calls, or recognize that the frequency of these high priority calls is relatively low.

Another significant finding for amount of time spent inside the beat was that community police officers spent *less* time in their beat than did general 911 officers. This finding is surprising and counterintuitive. One would expect that community police officers, being relatively permanently assigned to their respective beats and urged to take ownership of these beats would outspend general patrol officers in the amount of time spent inside these beats. It would also be expected that in the normal course of business, officers are routinely dispatched outside of their beat; this occurrence would seem more rare for community police officers.

Explaining the finding that observed CPOs spent less time in their beats than did 911 officers is difficult. One possibility is that CPOs, who have projects, programs, and reports that traditional officers do not, spend more time in the department (headquarters or beat office) working on these. It could also be that observed CPOs are helping other CPOs from different beats with programs or events and this takes them out of their own beat. It could be that CPOs are meeting outside of their beat with other agencies or officials for projects. It could also be that community police officers have more discretion and choose to spend their time outside of the assigned beat for personal matters. Any of these are possibilities and further research would need to be conducted to determine the answer.

Officers on different shifts were also significantly different from one another in terms of time spent in the assigned beat. Officers observed on day shifts spent the least amount of time in the assigned beat (approximately 40 percent), followed by night shift

officers (48 percent), and evening shift officers (approximately 50 percent). The findings for free time and time in beat exhibit an interesting pattern: officers with more free time spend less time inside the assigned beat. Day shift officers had the most free time and spent the least time in the assigned beat; officers on evening shift had the least amount of free time and spent the most time inside the assigned beat. This supports the earlier statement that when officers have free time they tend to leave their beat.

Also significant for the amount of time spent inside the assigned beat was the neighborhood variable, percent homeownership. The results from the OLS analyses indicated that as the percentage of homeowners in an area increased, officers spent less of their time in the beat. As described for the current research, percent homeowner indicates more stable areas. This result makes intuitive sense. If these areas are indeed more stable, then the reliance on the police should be less and officer activity in these areas would be lower. As such, officers would be more likely to leave their beat to back up other officers or simply to look for things to do. This finding lends support to the premise of differential policing; that more stable areas do not receive the same services, even general patrol, that more troubled places receive. This is common sense and empirically backed up. This finding is consistent with the workload hypothesis that Klinger (1997) offered. Klinger (1997) states that differential neighborhood policing is due to the variations in workloads that are present in different neighborhoods.

From the present findings, if neighborhoods are more stable and the workload is lower, officers may leave their primary beat to assist others or locate activities in need of their attention. As indicated by these results, officers in these areas spent less of their free time in these areas – these areas which have been characterized in the present case as

more stable areas. So even the most commonly observed activity of general patrol, which was classified as order maintenance, was less in these areas and helps explain the significant finding of percent homeowner and less time spent inside the beat.

This finding supports partially the proposition that officers treat different areas differently. It makes intuitive sense, and now shown empirically, that in areas that can be characterized as more stable, officers spend less of their unobligated time. If these areas are not in need of assistance from the police in maintaining order, then why should the police linger about. It is likely the case that general patrol of these areas is rare and that police presence is more common on an as-needed basis. After the examination of free time and time inside the assigned beat, attention was turned to the three outcome variables, the primary focus of the current research. Times values were summed for each officer: total observed time, time inside the assigned study beat, officer initiated time, and officer initiated time inside the beat. The values outlined and discussed above were used to calculate, as the denominator, the percentage of time spent on the three specific types of police behaviors – order maintenance, legalistic, and service events. These behaviors are described next – the frequency of their occurrence, time spent on each, and the distribution of these dependent variables across officers.

Order Maintenance. Of the three types of police behavior examined, order maintenance was by far the most common. The total number of order maintenance events was 2,928. The large number of order maintenance events was due to the inclusion of general patrol in this category. General patrol was the most common type of order maintenance activity engaged in by observed officers. It should be noted however, that for inclusion as one of the three types of behaviors used for this dependent measure, 100

percent of the activity had to occur within the boundaries of the study beat. These restricted general patrol activities were observed 2,431 times.

Other order maintenance events that were more commonly observed included checking out suspicious circumstances (n = 93), encounters with suspicious persons (n = 52), residential and business security checks (n = 35), loiterers (n = 33), persons identified or suspected of being drunk (n = 26), public nuisances (n = 19), and domestic arguments (n = 15). The full list of events identified as order maintenance and the distribution of these events can be found in Appendix B. As mentioned previously, some activities were classified as one of the three types of measured activities based on the focus of that activity – not the activity itself. For example, backing up another officer did not receive a classification as one of the three outcome measures unless the problem on which that activity was focused was able to be identified and categorized as either order maintenance, legalist, or service oriented policing.

Legalistic. Legalistic behaviors initiated and engaged in by officers was the next most commonly seen. A total of 1,332 legalist events were observed. The most common legalist activities involved attempts by the observed officer to locate suspects or witnesses (n = 133).[30] Traffic focused activities were also common – mobile and stationary traffic activities occurred 108 times. Law enforcement focused surveillance of particular persons or particular locations was also commonly observed (n = 75).

The most common officer initiated legalist encounters involved automobile violations, specifically, moving violations (n = 154) and improper equipment or plates (n

[30] Here, activity is specifically used to denote activities as originally coded – differentiated from events by the presence of a citizen interaction. Encounters are discussed subsequently.

= 111). The most commonly observed specific criminal violations (or suspected) that officers engaged in involved drugs. Eighty-two events (57 encounters and 25 activities) involved officer initiated events involving suspicion of illegal drug activity. Table B.2 located in Appendix B provides all observed legalist events. The list of legalist events is the most lengthy due to the specificity of problems or crimes on which police were observed to engage and the comprehensive nature of the list.

Service. Of the three types of police behaviors under examination, service behaviors was by far the rarest. Only 272 observed events were classified as officer initiated within beat service events. Service was defined as behavior for which the authority and enforcement powers of the police were not necessary in order to complete. In other words, these activities were not necessarily considered police responsibilities – anyone could conduct these. The findings indicated that these observed service behaviors included activities commonly associated with community policing programs.

The most common types of service activities involved meetings that the observed police officer attended. These were not necessarily formal meetings but could also include brief face-to-face interactions with certain people. Classified as service were meetings with other government officials (n = 26), meetings with the public – such as neighborhood group meetings (n = 18), and meetings with non-police service providers. Common service encounters involved what was termed "officer friendly" or community relations encounters (n = 45). Another commonly observed service event involved officers giving citizens information (n = 40). Assisting motorists and providing directions occurred 31 times. A complete list of these service events can be found in Appendix B, Table B.3.

The specific activities and encounters described above and detailed in tables in Appendix B detail the types of behaviors that were included in the classification of the three dependent variables for the current study. While common perceptions exist as to how officers spend their time and what types of activities they engage in, the detail provided above is to move beyond vague notions of what is considered order maintenance, legalist, or service behaviors. Most of what has been described is not surprising – police spend a large part of their time engaged in general patrol and a large part conducting traffic enforcement. What is surprising is the relative infrequency of service events. While other police researchers have identified larger percentages of time on service (e.g., Walker and Katz, 2002); the current research found that this type of behavior is quite rare.

Simple counts of events however do not necessarily capture the degree to which police engage in these behaviors of interest. For this reason, time spent on such behaviors, as a percentage of all observed time was used. Again, the mean observed time was 1,010.6 minutes (S.D. = 846.6) and ranged from 15 minutes to 4,698 minutes. Approximately 70 percent of this time was free time – not dispatched or otherwise engaged; 46 percent of this time was spent in the assigned beat. Using these calculations, the percent of free time spent on each of the three dependent variables inside the assigned beat was produced for the 243 unique officer-in-beat combinations.

The mean percent of free time spent on order maintenance inside a beat was 24.3 (S.D. = 17.3) and ranged from zero to 80 percent. The mean percent of free time spent on legalist events inside the beat was 5.5 percent (S.D. = 6.3) and ranged from zero to 34.7 percent. The mean percent of free time spent on service events was considerably less, 0.5

percent (S.D. = 1.5) and ranged from zero to 10.1 percent. In addition to the simple counts described above, the percentages of time officers spend reiterate the relative common practice of spending time on officer initiated order maintenance events and the small amount of time spent on service behaviors. Not only are the number of service events offered small, the time spent on them is also limited.

Further examination of the distribution of the three outcome measures also reveals some interesting findings. While the distribution of order maintenance policing is somewhat normal (See Chapter 4, Figure 1), the distribution for the other two outcome measures are negatively skewed, and in the case of service behaviors, seriously so. An examination of the histograms provided in Chapter 4 (Figures 2 and 3), indicate that a large number of officers engaged in no officer initiated, inside the beat legalist oriented policing and an even larger number did not engage in any service. For officer initiated legalist behaviors inside the study beat, 54 officers had values of zero; for officer initiated service behaviors inside the study beat, 166 officers had values of zero (several more officers for each outcome measures had very little, less than two percent of their free time spent on these activities). These findings indicate that a significant number of officers choose to spend no time trying to invoke the law or offer services inside their beat of primary responsibility.

For the three dependent measures, an examination was done to determine if these were correlated with each other (See Table 14). It would be useful to know if officers who had high levels of one type of officer initiated activity also had high levels of other behaviors. In other words, there is the potential for the designed measures to be tapping into an underlying indicator of productivity. This however did not appear to be the case.

Correlations among the three dependent variables were low (none above 0.07) and none was significant. This finding indicates that the outcome measures were not simply identifying officers that were more productive, or engaged in more officer initiated activities – that there is some pattern of activities in which police engage and that officers choose to spend their time differently from one another. The next set of analyses discussed attempted to identify officer and neighborhood characteristics that helped predict these patterns.

Bivariate and Multivariate Analyses

Several significant findings were uncovered by examining both the bivariate and multivariate relationships between the officer, neighborhood, and behavior variables. Table 25 contains the significant relationships that were found.

Table 25. Significant Bivariate and Multivariate Findings

Variable	Bivariate Correlations	ANOVA	OLS	HLM
Officer variables				
Female	- (OM) + (Service)	- (OM) + (Service)	+ (Service)	- (OM)* + (Service)*
Minority			- (Service)	
Age	- (Legal)	- (Legal)	- (Legal)	- (Legal)
CPO	- (OM)	- (OM)	- (OM) - (Service)	- (OM)
Education		+/- (Legal)		
Attitude				- (Service)
Day shift	- (OM) - (Legal) + (Service)	- (OM) - (Legal) + (Service)	(excluded)	(excluded)
Evening shift		**	+ (OM)	+ (OM) + (Legal)
Night shift	+ (OM) + (Legal) - (Service)	+ (OM) + (Legal) - (Service)	+ (OM) + (Legal) - (Service)	+ (Legal)
% free time	- (OM) + (Service)	N/A		+ (Legal)
Neighborhood variables				
St. Petersburg	- (OM) + (Service)	- (OM) + (Service)	- (OM) + (Service)	- (OM) + (Service)
Concent. Disadv.	+ (Legal)	N/A		+ (Service)
% own		N/A		- (OM)

* p = .06

** Evening shift had median value for all 3 measures

Both bivariate and multivariate analyses indicate that female officers spent less time engaged in order maintenance policing and more time engaged in service policing. These findings partially support Hypothesis 1 offered in Chapter Three (that female officers engage in less order maintenance, less legalistic, and more service).

Previous research has indicated that male and female officers perform their functions differently. Previous studies have indicated that female officers made fewer arrests (Bloch and Anderson, 1974; Sherman, 1975). The findings here lend support to these previous findings regarding the types of activities in which female officers choose to engage. While the ANOVA for legalistic behaviors indicated that female officers had lower mean values for legalistic behaviors, the differences failed to reach a level of significance.

Analyses also indicated that as the age of officers increased, the percentage of free time spent on officer initiated legalistic behaviors decreased; this was true for both bivariate and multivariate analyses. Stated conversely, younger officers engaged in more legalistic behavior. This finding is consistent with previous research that has indicated that younger officers (generally speaking, officers with less experience) engage in more law enforcement oriented behaviors such as arrests and field interrogations. Forst et al. (1977) and Worden (1989) found similar results concerning legalistic, or law enforcement, types of behaviors and age – that younger/newer officers engage in more activities identified as law enforcement oriented. This finding supports Hypothesis 2 – that older officers engage in less legalistic behavior.

As illustrated in Table 25, there were also significant findings concerning differences between general response officers and community police officers. It was

found that community police officers spent less time on order maintenance policing. This finding is opposite of what was expected and expressed in Hypothesis 3 which proposed that community police officers would engage in *more* order maintenance policing, less legalistic, and more service. The regression analyses do not support this hypothesis – confirming that community police officers actually engaged in not only less order maintenance but also less service.

These findings are somewhat surprising when considering the role of community police officers and the broadened mandate, that by definition, these officers have. It is also surprising since it would be expected that community police officers would have more "ownership" of their beat and exert more effort in providing services. When one considers the importance of building community relationships and partnerships, the fact that community police officers spent less of their free time on service activities is interesting to discover. It should be kept in mind however that as defined, service events were rare and only accounted for a minuscule amount of observed officer time. It could be that the way that service was defined here was limiting and therefore did not capture the full range of potential services that police, especially community police officers provided.

As outlined in Chapter One, community policing as a reform differs from "traditional" policing in many respects. The expanded role of police – in terms of recognizing and embracing the varied nature of the role, not just enforcing the law – is not supported by the findings. It was thought that the broader mandate for community police officers that includes quality of life issues would be evidenced in higher levels of order maintenance activities, but this was not the case.

The finding of differences between general patrol and community police officers and the types of behaviors in which they engage could be capturing underlying neighborhood needs not identified by the current research. The neighborhood specific approaches called for by many community police advocates might be operating here and evidenced by the different patterns of officer initiated behaviors.

Differences were also uncovered for officer behavior by shift. In addition to the amounts of free time and the time spent inside the assigned beat (discussed above) officers on various shifts (i.e., day, evening, and night) engaged in different levels of order maintenance, legalistic, and service policing. Day shift officers were seen to engage in less order maintenance policing. The larger amounts of free time discovered for day shift officers helps to explain this finding and the indication that officers with more free time leave their beats. General patrol outside of the assigned beat would not be included in the current measure of order maintenance, and may be responsible for the lack of significant findings for day shift officers' provision of order maintenance to their assigned beat. There were indications at the bivariate and from the ANOVAs that day shift officers engaged in more service policing. Further research is needed to detect how specifically day shift officers are spending their time.

Day shift officers were also seen to engage in less legalistic behavior. This may be due to the opportunity for such enforcement. Day shifts are known to be slower for officers in terms of workloads and the fact that most people work or are in school during the day shift may limit the opportunity to engage in legalistic activities.

The bivariate analyses and ANOVAs for shift indicated that day shift officers engaged in more service policing however this finding failed to reach significance for the more advanced regression models.

Evening and night shift officers were identified as engaging in more order maintenance and more legalistic policing. These findings may be due to differential opportunities for activities and enforcement that present themselves during different times of the day. Night shift officers were also seen to engage in less service policing. Considering the time of the evening and after midnight hours that these officers work, this is not surprising – people may not be around and situations may not arise during these hours for service opportunities.

There were also differences between study sites. Officers in St. Petersburg engaged in less order maintenance and more service policing. Differences in departmental styles and organizational mandates may help explain these findings. Describing the departments used for the original study, Parks et al. (1999) indicate that the Indianapolis Police Department at the time, was directed by a chief who urged officers to engage in aggressive order maintenance policing and traditional law enforcement activities such as suspicious stops. The results here consistently showed that officers in Indianapolis spent more of their free time engaged in order maintenance policing. With such support from management for aggressive order maintenance and traditional law enforcement practices, it is not surprising that time on service behaviors in Indianapolis was consistently and significantly lower than in St. Petersburg.

These findings lend some support to Wilson (1968) and the differences between departments and organizational influences of police behavior. While the focus of the

current research did not attempt to capture organizational influences, the differences between departmental priorities and mandates point to areas that warrant further examination. Clear differences were present in terms of the priorities and styles of the departments included in the original study and these differences manifested in the findings of significant differences across sites. Further analyses, measuring specific organizational characteristics could more solidly identify potential organizational effects and lend support to the influence of departmental styles such as those described by Wilson (1968) – i.e., watchman, legalistic, and service styles.

HLM

For the Hierarchical Linear Models, similar results to those found in the preceding discussion were found though some slight differences also appeared. For order maintenance, the multilevel model indicated that female officers engaged in less order maintenance policing, community police officers engaged in less, and officers in St. Petersburg engaged in less. The HLM indicated that officers observed during evening shifts engaged in more order maintenance. Two differences between the HLM and previous analyses were found: (1) percent of free time which was significant in the earlier analyses was not significant for the HLM, and (2) percent homeownership was significant for the HLM and had not been for the previous analyses.

The Level 2 variable, percent homeownership being significant indicated that in areas that had more homeowners, officers engaged in less order maintenance policing. This supports in part, Hypothesis 7 and was one of only two significant findings concerning contextual characteristics and variations in police behavior.

There are two possible interpretations for this finding. One interpretation is that these areas did not have problems that were categorized as order maintenance and therefore the observed officers did not need to engage in these activities. In other words, perhaps these areas were relatively stable and not in need of the control mechanisms offered by the police.

The alternate explanation becomes apparent by looking at the "preliminary analyses" section of the previous chapter. One area that was examined was the amount of time that officers spent in their assigned beat. Table 13 provides the OLS regression results examining the independent variables and the outcome of percent of time spent within a beat. As indicated by these results, officers in areas with more homeowners spent less of their free time in these areas – these areas which have been characterized in the present case as more stable areas. So even the most common observed activity of general patrol which was classified as order maintenance was less in these areas and this helps explain the significant finding of percent homeowner and less order maintenance policing.

The HLM for legalist behavior also provided results that were similar to the bivariate and multivariate findings. Specifically, only age and officer shift variables were significant. The HLM analyses supported the findings previously discussed that younger officers spent more of their free time on officer initiated events categorized as legalistic in nature. For officers' shifts, the HLM confirmed earlier findings that officers observed during evening and night shifts both engaged in more legalistic policing. None of the Level 2 variables was significant – indicating that the variables used at the second level did not capture variations across neighborhoods that would account for different legalistic

behaviors. It is worth noting that only a small percentage of the variance was able to be attributed across neighborhoods, specifically, 6.3 percent. The measures used in the current analyses failed to capture or identify these differences.

One explanation for the findings of no differences between neighborhoods for legalistic behaviors and the relatively small amount of variation attributable to between neighborhoods involves the nature of police work in general. Previous research has indicated that officers behave somewhat similarly in terms of triggers for initiating events involving actual or suspected criminal activities. More specifically, when engaging in crime fighting activities, police might need stronger evidence to motivate their involvement. While order maintenance policing is relatively easily engaged in (e.g., general patrol or asking a crowd to move on), a higher threshold exists for police to implant themselves in a situation which could result in someone being ticketed or arrested. It is possible that the areas observed for the current project provided similar opportunities for such engagement in these crime fighting opportunities.

The final HLM to be discussed involves service policing. The findings from the HLM for service policing provided some interesting and unique findings – findings different from the less sophisticated bivariate and OLS analyses. It is worth repeating that there were problems with this dependent variable: a non-normal distribution, a high number of officers who engaged in no service policing, and the low reliability coefficient (0.174). Accommodations for the model were made before it was run, namely, the use of a Poisson distribution and indicating that the distribution was over dispersed. These considerations make this HLM not directly comparable to the other multilevel models.

Four variables in the HLM were found to be significant predictors of the amount of free time that officers spent on officer initiated service policing: officer sex, law enforcement orientation (the attitudinal variable), study site, and concentrated disadvantage. Female officers were seen to engage in more service policing. The variable capturing the law enforcement orientation of officers was also significant and in the expected direction. Officers who identified law enforcement as "by far" the most important duty of a police officer engaged in less service policing. This finding is consistent with Hypothesis 4, however the problems with the reliability of the model prevent full support for this hypothesis. Officers in St. Petersburg engaged in more service policing. The significance of concentrated disadvantage would suggest that officers in more disadvantage areas engaged in more service policing, opposite of what was expected and proposed following both conflict theory and the benign neglect hypothesis.

What is to be made of these conflicting findings? Due to the problems with the distribution of this variable and the low reliability, HLM is probably not an appropriate method for analysis for this variable. The inconsistencies provided by the HLM further indicate the questionable applicability of this method for this variable. The rarity of service policing also created a problem for meaningful analyses. As such, the bivariate and OLS results seem more appropriate: that female officers engaged in more, officers on day shift engaged in more, and that officers in St. Petersburg engaged in more. The "more" described above however is minuscule.

In addition to the significant findings discussed above, several variables that were not significant are worth mentioning – namely, officer race, education, and attitudes.

There were no significant differences uncovered between minority and white officers in terms of observed time spent maintaining order or time engaged in legalistic activities. Additionally, no differences were found between officers who had different levels of education and the three outcome variables. While the ANOVA revealed significant mean differences, these differences were not in any discernable pattern.

No consistent findings were uncovered between officers who held different attitudes concerning law enforcement as the top priority of officers. The lack of finding for the attitudinal variable is not altogether surprising since previous research has struggled to link attitudes and behavior. Hypothesis 4 which posited a relationship between law enforcement attitudes and priorities and behaviors was therefore not supported.

Concerning the neighborhood variables, the hypotheses concerning the expected effects of the contextual level influences on police behavior are generally unsupported. Concentrated disadvantage was significant for the bivariate correlations with legal activity – positively correlated – and for the HLM, positively related to service. The correlation with legal activity is in the proposed direction, but the more sophisticated analyses fail to find an effect making this bivariate relationship questionable. The problems with the service model HLM also make the impact of concentrated disadvantage questionable.

These findings fail to support the contention proposed concerning police officer compensation for the lack of other social controls. In addition, Hypothesis 6, which expressed that areas characterized by higher levels of concentrated disadvantage would be

related to higher levels of legal and order maintenance policing (and less service) was not supported by the analyses.

The positive indicator – percent homeownership – was found to be significant in the multilevel model and in the direction proposed by Hypothesis 7. This lends support to the idea that areas are indeed policed differently. In addition, differences were uncovered in terms of how much time officers spend in communities that are characterized as more stable.

The analyses described above help shed light on how police officers are choosing to spend their time and advance our understanding of police behavior. While ultimately, conflict theory and benign neglect fail to explain most of the differences in police behavior, the significant findings uncovered do help create a fuller understanding of police practices. While consistent significant patterns of variations of neighborhood policing are absent, there are indications of neighborhood effect that are significant and help explain police conduct.

Our understanding of police behavior has focused primarily on officer and situational level explanations leaving contextual level characteristics under-examined. Evidence supporting multiple levels of influence are present from the current research – officer level, organizational level, and contextual level. Effects of officer level characteristics were identified from the current research indicating that male and female officers behaved differently and that officers of different ages behaved differently. There is also evidence that organizational influences are acting to shape officer behavior – site differences presumably the result of different organizational mandates from departments – though further analysis is needed to confirm this.

The findings from the current study also support the idea that police behave differently in different neighborhoods – the original premise of the current study. Although officers in different neighborhoods had similar amounts of free time, the amount of time that they devoted to these areas and what they did in these areas was different. In areas characterized as more stable, officers spent less time inside the beat and spent less time focusing on order maintenance problems.

As shown, where and how officers are spending their time is affected by characteristics of place. As described here and by previous police research, to understand fully the influences of police behavior, contextual level characteristics need to be included. The current research is an attempt to fill the void in terms of macro level examinations of police behavior, especially approaching these from a theoretical perspective. It may be that different outcome measures and alternate community characteristics can be shown to have a more powerful effect and can ultimately confirm and advance police theory. These and other areas for future research endeavors are discussed in more detail below.

Though several significant findings and interpretations have been discussed and though all of the expected findings were not revealed (especially at the neighborhood level), certain methodological and measurement considerations might help explain these. There are certain examinations that could and were done and some that were not possible. Attention is next turned to discussing the limitations of the data used for the current project.

Limitations of the Current Research

There are important limitations faced by the current research, namely, the choice of neighborhoods, the limited number of neighborhoods available for study, the exclusion of activities due to the limited ability to capture the locations of these activities, and the limitations posed by the use of secondary data. While these limitations are present and ones that face many researchers, they do not prohibit meaningful analyses and interpretations.

The first and most important limitation of the current research involves the neighborhoods that were chosen for study by the original research project. The neighborhoods chosen for the Project on Policing Neighborhoods were deliberately chosen to represent areas where more police-citizen encounters would occur. In other words, these areas were not necessarily representative of all the neighborhoods for which the Indianapolis and St. Petersburg Police Departments were responsible. The neighborhoods that were chosen represented the higher end of the continuum of socioeconomic distress. This being the case, an accurate picture of how police act in the most stable neighborhoods is difficult to glean. What is left to analyze are areas of high economic distress and areas of medium economic distress. The limited number and type of neighborhoods raises questions of the generalizability of the results uncovered.

A related problem is the number of neighborhoods selected. The use of only twenty-four neighborhoods was limiting. First, it was limiting in terms of the variation between all types of neighborhoods, from the best to the worst. Second, it was limiting in terms of the number of variables that could be used at the second level. Certainly other indicators of "good" or "bad" neighborhoods could have been chosen, however with such

a small number of level two units, the number of independent variables at level two was restricted. The goal was to choose indicators that had been used before, were theoretically relevant, and also indicators not only pointing to negative traits (i.e., disadvantage) but also positive assets (i.e., percent homeowner).

A problem that is directly related, or better, underlying the issue of chosen neighborhoods is the use of secondary data. Obviously secondary data is limiting – in terms of how data was collected and what specific data was collected. The current project is no exception. While enough and a variety of information was gathered in the original project, the data was not originally designed for the purposes of the current project. There are specific issues for the current research that result from using this particular secondary data.

The use of secondary data precluded the current analyses from using all observed events. The geographic location of activities was not known other than whether or not it was within or outside the study beat. As such, only events that were 100 percent inside the study beat were able to be used. The reason for this was to be able to identify activities geographically. Events that occurred outside of the designated study beat could have been inside another study beat, thus muddling the picture. This being the case, the decision was made to eliminate events that did not occur inside the study beat for its entirety.[31] The problem here is one of precision and not necessarily validity.

Another problem for the present research presented by the use of secondary data involves the categories compiled. The three dependent variables that were used for most

[31] While this may seem an extreme limitation, it should be noted that the vast majority of events (upwards of 80 percent) either occurred 100 percent (all) or zero percent (none) inside the study beat.

of the analyses were created by collapsing problem and activity codes into one of the three categories. While great effort was expended to appropriately categorize these variables, the fact remains that these were a reclassification of originally coded data. The three variables created and used for the current analyses attempted to capture differences in types of police activity using admittedly broad categories. The problem with the categorization of these behaviors in ways not initially designed for is that there could be some overlap in exactly what type of behavior is being exhibited by the police. For instance, while "checking out suspicious circumstances" was categorized as order maintenance, it could be argued that it is also legalistic.

As discussed previously, clear logical lines were drawn to differentiate the three types of behavior. The order maintenance label was applied if no violation of the law was evident or if the event involved nuisance or quality of life issues; legalistic events involved crime fighting or law violations, and service events were ones that could be done by anyone. There are certainly specific event type classifications that could be debated, however, justifying each of these as one type of behavior or another would be cumbersome and distracting. While not initially coded as one or other type of behavior, careful attention was given to appropriately identifying and classifying each type of behavior.

While these broad categories of behavior have been used in previous research and are in wide use when classifying types of policing or police work, they may gloss over types of order maintenance or services provided. For instance, if an officer is involved with a group of people suspected of drug activity (maybe after dark in a park), the officer could also be functioning to maintain order, or providing services such as suggesting

alternate recreational activities for young people. The broad categories of behavior may not adequately capture what is precisely going on at the encounter level.

While the problems and limitations are serious issues that merit attention and ones that should be kept in mind when reading and interpreting these results, they are not fatal flaws. There is still variation between the neighborhoods that was able to be identified and used; the secondary data while limiting, is still a widely accepted way to analyze data. The data set while flawed, is still the best police research data that we currently have. This data set is substantial and enough information was available, useful, and captured to give this research and a variety of other researchers fruitful avenues to carry out their work.

It is also worth noting that other researchers have analyzed data collected from the same project, including examining contextual influences. Terrill and Reisig (2003) used data from the same project and hierarchical linear modeling to examine police use of force by neighborhood. They found that officers used more force in neighborhoods characterized as disadvantaged. This examination involved encounter-level measures and was able to geographically locate all of these encounter events, resulting in 98 Level 2 cases or neighborhoods. Reisig and Parks (2000) examined and found that residents from more disadvantaged neighborhoods expressed less satisfaction with the police. The focus of this research involved citizen surveys and was able to geographically place the citizens in 58 neighborhoods between the two study sites. The availability of more (and a wider range of) neighborhoods may explain why these other multi-level examinations utilizing the same data have been able to identify significant neighborhood effects.

Future Research

There are several avenues for further research that arise from the current research and alternate avenues for future research. The amount of contextual level research is still dwarfed by other police research such as individual and situational level examinations. In this section, these areas will be offered.

The importance of considering context in explaining behavior is highlighted in the psychological maxim that behavior is a function of the person, his or her environment, and the interaction between the two (Lewin, 1935). The relationship between person and setting is reciprocal – people influence their settings and settings influence people (Allen, 1990; Oxford, 1992). Future research of contextual level influences of policing should examine the potential interaction of place and personal characteristics.[32] For example, community police officers may not only provide different services from general response officers, but may also behave differently in different areas. Likewise, demographic characteristics of officers (e.g., race and sex) should be examined to determine if interactions exist between these characteristics and place characteristics such as the racial composition of neighborhoods. For instance, does the race of the officer interact with the race of the place resulting in differential policing? Future research could help answer these questions and identify potential interaction effects of persons and places.

As described above, the current research has several limitations that future research could address. One of these areas involves the number and type of police beats sampled. Future research should strive to ensure that all types of neighborhoods are

[32] Variables capturing potential interaction effects were not included in the models examined due to the limited Level 2 cases and resulting number of Level 2 variables that could be included.

represented. It is important to know how police act in all types of neighborhoods, how they spend their time and the services that they provide. More neighborhoods available for examination would be ideal, and if possible, an entire jurisdiction. Not only would different types of neighborhoods be represented, this would allow more level two variables to be included in the analyses.

It would also be useful to be able to pinpoint the geographical location of activities. While this presents serious methodological concerns, especially considering the movement of officers while conducting general patrol, effort should be made to capture this information. At a minimum, the specification of which neighborhood or beat an activity may have been carried into would be beneficial.

Future research should also consider different measures, both independent and dependent that could impact the delivery of police services. At the neighborhood level there is an abundance of possibilities. One of the most obvious neighborhood variables that was not available for the current study, which could impact how police behave in certain areas are crime and victimization rates. This would be an objective measure and one that police would be familiar with and potentially respond to in their choice of actions.

Other contextual level influences that should be considered include measures that previous neighborhood research have included. One measure in particular, collective efficacy has frequently been shown to have important implications for community level research. Sampson and Raudenbush (2001), Sampson et al. (1997), and Sampson and Bartusch (1998) define collective efficacy as cohesion among neighbors and the willingness and/or ability of residents to intervene on behalf of the common good.

Collective efficacy has been shown to impact neighborhoods, for instance, in terms of levels of violence. The neighborhood variables included for the current analyses have been shown to be related to collective efficacy efforts: concentrated disadvantage decreasing collective efficacy efforts and stability increasing collective efficacy efforts (Sampson and Raudenbush, 2001). This same research indicated that the effects of concentrated disadvantage and residential stability was mediated by levels of collective efficacy. It may be that collective efficacy is a better, more direct measure of informal social control than those included in the current study. Indicators for this variable were not available for the current study. The neighborhood variables that were available and included (i.e., concentrated disadvantage and percent homeownership) may be too distal from influential neighborhood forces that would influence police behavior – such as collective efficacy or other measures of informal social control.

In addition to the measures described above, more subjective contextual measures should also be examined. One important subjective measure would be officers' perception of an area – as stable or unstable, as helpful or unhelpful, as having crime problems or being relatively crime free. Previous research has indicated that officers carry images and perceptions of areas, not only of areas where they work, but by communicating with other officers, of all areas in a city (Bayley and Mendelsohn, 1969). These cognitive maps, as they have been termed, could impact they types of activities in which officers engage in these different areas and should be studied.

Another variant of the current research might consider, instead of the broad categories of outcome measures used, more specific encounter level variables. It could be that the failure to find significant variation between neighborhoods is a product of the

choice of outcome measures. Encounter level variables may reveal differences in the types of services offered, the helpfulness or unhelpfulness of officers, or a variety of other behaviors dealing with how police interact with citizens in different areas. It may be that the categories used here were too broad to capture the nuances of police behavior.

The current research contains some interesting findings that also point to potential areas for further inquiry. For instance, results revealed that community police officers and general patrol officers had the same amount of free time; this despite the fact that CPOs do not routinely take calls for service. This finding should be examined and efforts exerted to duplicate or refute this finding and determine how and why this is the case.

Efforts should also be made to determine why CPOs are spending significantly more time outside of their assigned beat than general response officers. While potential explanations have been offered, the true nature of what CPOs are doing is not known.

These are only a few of possible areas for future research. Some of these suggestions arise from unique and surprising results uncovered from the current research, while others extend the important research that has and should be conducted in the area of contextual level influences of police behavior.

Though the current study is limited in its ability to identify strong influences of police behavior at the contextual level, findings point to the differential delivery of police services across neighborhoods. The two key findings endorsing this point are that officers in more stable neighborhoods left those neighborhoods more and that officers in these same neighborhoods engaged in less officer initiated order maintenance policing. Future research should continue along these lines of research in an effort to identify neighborhood level influences on these and a variety of other police behaviors.

APPENDIX A

Appendix A. Contextual Variables - Previous Research

	Author(s)	Nature of study	Data	theoretical framework
1.	*Banton (1964)*	Focus groups, interviews, observations in Scotland observation of 2 departments in the U.S.	qualitative	social control
2.	*Bayley & Mendelsohn ('69)*	Denver Police Department survey (officers and citizens)	survey - police survey - citizens	none
3.	*Bittner (1967)*	ethnographic account of police practices on skid row	qualitative	none
4.	*Brown & Warner (1992)*	arrests in 50 largest U.S. cities in 1900	official data- arrest	conflict theory
5.	*Crank (1990)*	arrest rates in municipal PD's in IL serving pop.over 2,500 organizational and environmental influences of arrest	official data UCR, Census	mentions system approach, styles, and conflict
6.	*Crank (1992)*	arrest rates in municipal PD's in IL serving pop.over 2,500	official data,UCR, Census	Wilson, police styles
7.	*Fyfe (1980)*	Reported shootings by NY officers (1971-75) (n=2,746)	NYPD records	env. and organiz. influence
8.	*Geller & Karales (1981)*	All shootings of & by Chicago P.D. (1974-1978) (n=650)	Dept. records	none
9.	*Hepburn (1978)*	Midwestern city, all adults arrested in 1974 (n=28,235)	Dept. records census data	conflict and labeling
10.	*Jacobs and Britt (1979)*	U.S. police caused homicide rates for each state (1961-70)	official data Census, IRS	conflict theory
11.	*Kania & Mackey (1977)*	Police killings in the U.S. (1961-1970) (n=2,941)	official data	mention psych. & sociological occupational norm, class conflict, and others
12.	*Langworthy (1985)*	152 Police Departments serving pop.over 100,000 in 1970	official. 1975-UCR, Municipal Yearbook	Wilson political culture
13.	*Lester (1982)*	police killed & cits killed by police in 31 major U.S. cities	mixed sources, official & other researchers	none
14.	*Liska & Chamlin (1984)*	arrest rates in 76 cities with population over 100,000	official arrest data	Conflict theory

Author(s)	Key contextual variables	context level	outcome variable
Banton (1964)	"rougher" neighborhoods, income levels	neighborhoods	imposition of control
Bayley & Mendelsohn ('69)	racial makeup and income levels of neighborhoods	neighborhoods	primarily descriptive
Bittner (1967)	n/a	skid row	n/a
Brown & Warner (1992)	% foreign born, political context variables	city	arrest
Crank (1990)	cultural-racial heterogeneity, economic conditions, city mgr style, urban / rural	city	arrest
Crank (1992)	minority presence, geography (urban/rural)	city	arrest
Fyfe (1980)	arrest rates and homicide rate	police zones (3-5 bordering precincts)	police shootings
Geller & Karales (1981)	population figures, arrest statistics, racial comp.	city-wide & police district	police shootings
Hepburn (1978)	racial & SES composition of n'hood	city-wide & pol. precinct	arrest & warrants issued
Jacobs and Britt (1979)	Income inequality, % Black, violent crime rate	state	police killings
Kania & Mackey (1977)	socioeconomic stratification, violent crime rate	state	police caused homicides
Langworthy (1985)	City government type	Cities	arrest rate
Lester (1982)	res. segregation, % of families below poverty level, violent crime rate	Cities	police killed by citizens / citizens killed by police
Liska & Chamlin (1984)	% poor, crime rate, income inequality, segregation, % nonwhite	Cities	arrest rates

Author(s)	**findings**
Banton (1964)	officers enforcing consensus; as problems of maintaining order becomes more severe, societies increasingly adopt formal controls, police allow behaviors in one n'hood that they would not allow in others
Bayley & Mendelsohn ('69)	mental maps; O expect re: duties and resistence and respect in different areas based on race and income of residents
Bittner (1967)	police develop conception of social order of skid-row life that determines procedures of control employed; officers acquire a rich body of knowledge by cultivating relationships, proceed agst persons based on risk rather than culpability, and attempt to manage situations rather than people
Brown & Warner ('92)	support for conflict theory - % foreign-born sig. predictor of arrests for drunkenness type of political culture (including the strength of local political machines) mediated the effect
Crank (1990)	both environmental & org. factors influenced arrest support for conflict theory and the styles theory may not be applicable to rural areas
Crank (1992)	police more likely to arrest Black and Hisp minorities when % of these groups in the comm. are relatively small race influences and organizational influences in arrest patterns - (support for Liska and Chamlin)
Fyfe (1980)	officer reacts to the comm.as he sees it - rates of violent fel.arrests & homicide rates closely related to shootings
Geller & Karales (1981)	high crime areas, housing patterns explain disproportionate explain higher shooting rates for black officers
Hepburn (1978)	interaction between race of offender and racial composition of the n'hood (warrants refused for nonwhite in lg % nonwhite area)
Jacobs and Britt ('79)	Violence index sig. predictor of police killings, when controlled for distribution of economic resources & power predict use of lethal force by police
Kania & Mackey ('77)	Police caused homicides related to comm.characteristics of the 50 states; strongest relationship with levels of public violence and police homicides explain police use of violence as a response to community characteristics; officers use "personalities" which are keyed to the environment
Langworthy (1985)	city manager governments increased arrest rates for larceny and DUI. traditional city gov't higher arrest rates for disorderly conduct
Lester (1982)	higher incidence of civilians killed by police officers in cities where there are higher rates of violent crime; police officers killed found no assoc. b/t city and dept. characterstics
Liska & Chamlin (1984)	racial and economic composition of cities substantially affects arrest rates, independent of police size and reported crime rate

	Author(s)	Nature of study	Data	theoretical framework
15.	*Liska et al. (1985)*	arrests in 77 cities with population over 100,000	official arrest data	conflict theory
16.	*Maxfield et al. (1980)*	Chicago Police Department - calls for service Jan.-July 1976	offical P.D. data	Underclass hypothesis
17.	*Novak et al. (2002)*	334 police/cit. probable cause encounters (Cincinnati 4/97-4/98)	observation and census	none (mentions conflict /neglect)
18.	*Slovak (1986)*	42 U.S. cities (1976-79)	census, UCR	some reference to conflict
19.	*Slovak (1987)*	Patterns of service delivery in one city in northeastern Ohio	observations, surveys	none
20.	*Smith (1984)*	PSS (1977) 1,139 potential arrest encounters	primarily obervational	Wilson styles
21.	*Smith (1986)*	PSS (1977) neighborhood context on a variety of police activities	observation and cit. surveys	none
22.	*Smith (1987)*	PSS (1977) 186 encounters involving phys.violence b/t citizens	observation and cit. surveys	Black's theory of law
23.	*Swanson (1978)*	arrest data for 40 U.S. cities with pop. 300,000 to 1,000,000	UCR	systems theory (open/closed)
24.	*Waegel (1984)*	Police shootings in Philadelphia 1970-78 (n=459)	Dept. records	mentions conflict (not a test though)
25.	*Warner (1997)*	Calls for service, Boston P.D. (1990) (n=19,279)	Dept.records & Census	conflict and benign neglect
26.	*Weiner & Willie (1971)*	6,099 police juvenile contacts in Washington, D.C. (1963) 1,351 police juvenile contacts in Syracuse, NY (1968)	Dept. and Youth services records	none
27.	*Werthman & Piliavin (1967)*	Oakland and S.F. Police and gang members	observations and interviews	ecological contamination
28.	*Williams and Drake (1980)*	69 SMSA with 500,000+ populations (1970)	census (and other nat'l data); UCR; victim data	conflict

Author(s)	Key contextual variables	context level	outcome variable
Liska et al. (1985)	res.segregation, income inequality, % poor	cities	certainty of arrest
Maxfield et al. (1980)	% Black, median family income, demand for services	beats aggregated to 74 community areas	crimes recorded
Novak et al. (2002)	residential stability and a comm.factor (distress, racial composition single family households, renter occupied, and poverty level)	32 neighborhoods	arrest
Slovak (1986)	% teenagers, household density, % children, % owner occupied, median schooling, home value, % high income, % black, % foreign violent crime rate, prop.crime rate, % women working, % married, southern location	42 cities	police aggressiveness & watchman like style
Slovak (1987)	population age, income level, dilapidated housing	8 neighborhoods	service, order-maintenance, L.E.
Smith (1984)	percent poverty, victimization rate	60 neighborhoods	arrest decisions
Smith (1986)	SES scale, residential mobility, interaction with neighbors single parents w/children, racial heterogeneity, income het., n'hood stability, % living alone, % over 65	60 neighborhoods	proactive investigation proactive assistance, report coercive authority, report
Smith (1987)	economic status of n'hood, n'hood victimization rates	60 neighborhoods	response to interpersonal violenc (mediate, separate, arrest)
Swanson (1978)	crime environment (income inequality, % nonwhite, age) political culture (% white collar, foreign born or mixed parentage.....)	40 cities	arrest rates
Waegel (1984)	crime rates	1 city	police shootings
Warner (1997)	% in poverty, % foreign born, % black, mobility rate, demand for services	61 neighborhoods	recording incident as crime (burglary and assault)
Weiner & Willie ('71)	SES of area (employment type, education levels, value of homes, rental amounts, % sound dwellings), n'hood racial composition	125 Census tracts aggregated to 5 levels	court referrals
Werthman & Pilivian ('67)	"bad" and poor (lower class) neighborhoods	neighborhoods	n/a
Williams and Drake ('80)	Economic inequality, % black, % unemployed, population size, official crime rate, victimization rate	cities	arrest rates

Author(s)	findings
Liska et al. (1985)	considerable support for the conflict perspective variables - clearly affect the certainty of arrest
Maxfield et al. (1980)	only demand for services was related to recording crimes: n'hoods with higher demands for police services have lower portion of crimes recorded racial and income characteristics do not account for sig.pattern of variation in recording practices
Novak et al. (2002)	arrest decisions do not vary significantly due to the community level characteristics
Slovak (1986)	the lower the SES of an area, the more aggressive the police work it experiences differences between cities mostly attributable to organizational differences in dept. - environment = a stage, organization = the actor (determinor)
Slovak (1987)	organizational effects far outweigh environmental ones in structuring the pattern of local police-service delivery differences between neighborhoods are but nuances
Smith (1984)	as the percentage of households below the poverty line increases, the probability of arrest in any given encounter also increases no sig.effect of n'hood victimization rate on arrest
Smith (1986)	more assistance to residents & initiate more contact w/susp.persons & susp violators in racially het.n'hoods; less likely stop susp.person in high crime suspects arrested more in lower status n'hood, use of coercive authority linked to racial composition of n'hood not race of individual less likely to file incident report in higher crime n'hoods
Smith (1987)	the economic status of the n'hood in which the encounter occurred independently affects how police handle violence between citizens (more likely to arrest in lower-status n'hoods)
Swanson (1978)	indicators of city's crime environment is positively related to arrest rates with % nonwhite being the most important predictor variable
Waegel (1984)	relationship between police shootings and the level of crime in the environment -- as crime rates rose, police shootings increased
Warner (1997)	all of the n'hood variables except % black, were sig.related to police non-recording of burglaries - supports benign neglect and underclass hypoth.few of the n'hood variables were sig in predicting recording of assaults
Weiner & Willie (1971)	in D.C. - race and SES of tract are related to the incidence of contact b/t police and juveniles (higher portion in poor and black have contact); court referral process, no relationship. In Syracuse - no effects found
Werthman & Pilivian (1967)	examined how police and gang members interact: factors determining police action include the moral character of the juvenile which is closely tied to place -- the n'hood in which he lives; ecological contamination
Williams and Drake (1980)	relationship between economic inequality and the arrest rate for aggravated assault, as well as those b/t the % black and the rate of arrest for rape &

APPENDIX B

Appendix B. Categorization and Distribution of the Three Outcome Measures.

Table B.1. Order maintenance events (n = 2,928)

Activities	n	Problem codes	n	*
General motorized patrol	2,443	Suspicious person	52	(4)
Check out susp.	93	Loitering	33	(4)
Back up other police	35 *	Drunk	26	(5)
Res. security check	19	Public nuisance	19	(2)
Comm. security check	16	Domestic argument	15	(13)
Parade/crowd control	13	Susp. circumstances	14	(3)
Foot patrol	12	Juvenile problem	13	
Direct traffic/parade	8	Noise disturbance	12	
Information gathering	7 *	Traffic accident	12	(3)
Problem focused activity	6 *	Argument	10	(3)
Check out situation	4 *	Vagrancy	8	
Conduct research	1 *	Adult subject of police concern	8	
		Juvenile subject of police concern	6	(1)
		Peddling/begging	5	
		Neighbor trouble	5	(2)
		Mental disorder	4	(1)
		Landlord/tenant dispute	4	(2)
		Abandoned vehicle	4	(2)
		Traffic flow	4	
		Litter/trash	4	
		Suspicious motor vehicle	3	(1)
		Disorderly conduct	2	(2)
		Family trouble	2	
		Suicide or attempt	2	
		Alarm	2	(2)
		Inter-group conflict	1	
		Crowd control	1	
		Police protection		(3)
Total	2,657		271	(53)

*53 activities involved an "order maintenance" problem

Table B.2. Legalist events (n = 1,332)

Activity	n
Attempt to locate suspect/witness	133
Back up other police	81 *
Surveillance - address	75
Traffic mobile	65
Traffic - stationary	43
Surveillance - person	33
Information gathering	27 *
Search property	23
Problem focused activity	20 *
Pursue fleeing suspect	18
Traffic enforcement	13
Parking	13
Search crime scene	12
Building code	11
Guard crime scene	7
Process evidence/property	7 *
Conduct research	7 *
Warrant/subpoena service	3
Health/sanitation/trash violation	3
Check out situation	3 *
Ordinance enforcement	1
Total	598

*142 activities involved a "legalist" problem code

Table B.2 (cont'd).

Problem codes	n				
Moving violation	154	(12)	Child abuse/neglect	6	
Equipment/tags violation	111	(5)	Robbery - citizen	5	(4)
Drugs	57	(25)	Missing/stolen property	5	(5)
O wants crime information	30	(9)	Juvenile runaway	4	
Warrant to be served	27		Flight from police	4	(6)
Trespass	25		Robbery - commercial	4	(2)
Non domestic assault	23	(8)	Rape	4	(2)
Vehicle violation	21	(3)	Theft (attempted) - comm.	4	
Parking violation	19	(1)	Arson	4	(1)
Domestic fight	16	(4)	Hit and run	4	(3)
Motor vehicle theft	16	(8)	Leaving the scene	4	(1)
Suspected violator	15		Gunshot	3	(1)
Burglary	13	(3)	Weapons violation	3	
Prostitution	12	(5)	Arrest/booking	3	
Curfew/truancy	12	(1)	Domestic assault	4	
Vandalism	11	(1)	Homicide (or attempted)	2	(2)
Obscene activity	10	(1)	Buy/possess stolen property	2	
Alcohol	10		Damaged property	2	(2)
Problem with money	11	(1)	Nonpayment of child support	1	(2)
Fight	9	(3)	Physical injury (or threat) by person	1	(2)
Theft from residence	9	(4)	Child molestation	1	(1)
Routine check	8	(1)	Break in - residential	1	(1)
Harassment/stalking	7	(3)	Intentional damage of property	1	
Missing person	7	(1)	Citizen case related information	1	(2)
Burglary - commercial	7		Citizen crime tip	1	
Civil code problem	7	(1)	Transport person in custody	1	
Theft - unspecified	6		Officer needs aid - weapons involved		(2)
Theft from motor vehicle	6	(2)	Interference with police		(1)
			Total	734	

Table B.3. Service events (n = 272)

Activity	n		Encounters (problem codes)	n	*
Meet gov't agency officials	26		Officer friendly/ comm. relations	45	(2)
Meet with public	18		Give information	40	(7)
Meet non police service provider	18		Assist motorist	24	
Back up other police	9	*	Directions	7	
Meet neighborhood group	8		General request for service	6	(2)
Meet business individuals	7		Animal problem	6	
Service	5		Compliment/complaint	5	
Check /fix road conditions	5		Crime prevention info	4	
Check/fix property	5		Medical assist/person down	3	(1)
Problem focused activity	4	*	Help disable person	3	
Check out situation	3	*	Fire/fire prevention	6	(1)
Escort	2		Funeral/parade/escort	3	
Information gathering	4	*	Lost property	2	(1)
Medical/health service	1		Emergency transportation	1	
Transport prisoner/witness/evidence	1		Road block	1	
			Dead body		(2)
			Environmental hazard		(1)
			Escort		(1)
			Transport		(2)
Total	116		Total	156	(20)

* 20 activities involved a "service" problem/problem code

APPENDIX C

APPENDIX C. Contextual Information From Citizen Surveys - Original Analyses

Described below are the initial contextual level variables identified for inclusion for in the current research. Due to data limitations however, the use of these variables was not feasible. Specifically, the reliability of the citizen survey data was low making the use of the variables questionable. Census data was used instead.

Initial community-level variables were obtained from aggregating citizen survey data. This information about neighborhoods and citizens was obtained through telephone interviews with citizens conducted in conjunction with (although by different research personnel) the observational study. The target sample was 100 interviews with residents 18 and older in each study beat (neighborhood). The sample was stratified by neighborhoods; households within the study beats were randomly selected from telephone directories and telephone surveys were conducted. Interviews were conducted by Indiana University's Center for Survey Research (Reisig and Parks, 2000). The citizen survey used for the project collected a variety of citizen information including (but not limited to) length of residence, neighborhood satisfaction, identification and levels of neighborhood problems, perceptions of crime and fear, satisfaction with the police, and demographic characteristics. A total of 2,343 citizen surveys in the 24 study beats were available (average number for each study beat = 96.6).

Neighborhood variables

A number of contextual variables believed to impact how police deliver services are available for the current study. Some of these neighborhood level variables have been included in previous research efforts examining differences in police behavior, others have rarely been included. Table C.1 details these variables, provides a description and coding, and the distribution of these variables.

As mentioned in the previous chapter, race and income are commonly included; other less commonly examined variables involve social aspects of the neighborhood – indicators which tap other forms of control. These are especially relevant to the current study due to the proposition that police compensate for the lack of other controls by engaging in more control oriented types of behavior.

Table C.1. Original Neighborhood characteristics (n = 24)

Neighborhood characteristic	Description (coding)	Mean	S.D.	Range
Mobility /stability				
residential mobility	% living in neighborhood fewer than 5 years	25.55	9.01	8.1 to 42.1
rent versus own	% owning (or buying) residence	28.79	17.02	11.9 to 81.5
Satisfaction				
neighborhood satisfaction	rating of neighborhood (0 'poor' - 3 'excellent')	1.45	0.33	0.97 to 2.35
fear	fear of walking alone at night scale (0 'very unsafe' - 3 'very safe')	1.44	0.25	1.04 to 2.02
Involvement				
network	number of friends/relatives in area scale (0 'none' - 8 'almost all')	2.02	0.28	1.46 to 2.42
interactions	how often get together with neighbors scale (0 'never' - 5 'daily')	2.27	0.26	1.88 to 2.95
participation	% who are members of neighborhood organization	22.83	9.87	4.95 to 50.9
Heterogeneity				
% minority	% minority	44.72	34.98	3.1 to 98.0

The neighborhood variables described below are drawn from the citizen survey of residents of study neighborhoods, aggregated to the beat level. A total of 2,343 respondents from the study beats were used to create aggregate neighborhood level indicators. The mean number of respondents per beat used to create the aggregated neighborhood characteristics was 97.6 (S.D. = 14.4).

The key variables aggregated and presented for each neighborhood involve indicators of mobility and stability, satisfaction, involvement, and heterogeneity. It is believed that these variables can be used to distinguish neighborhoods from one another and that these characteristics potentially influence the types of activities in which the police engage.

The measures selected for the current study point to indicators of informal social control present or absent in the study neighborhoods. As previously mentioned and as previous studies and scholars have indicated, varying levels of informal social control have implications for social control mechanisms (i.e., the police). The indicators chosen point to geographical areas that exhibit higher levels of cohesion and social control and as such, the treatment by formal social control agents may differ.

Mobility. The item on the citizen survey used to gauge mobility asked for the length of residence in the neighborhood; this item is used as an indicator of residential mobility or transience. Original responses ranged from 0 (less than 1 year) to 51 years. The length or residency variable was recoded providing a dichotomous variable indicating those who had lived in the neighborhood less than five years and those living there 5 years or more. These categories indicated longer term and shorter term residents and have commonly been used in other studies. Responses were aggregated to indicate

areas that had more or fewer long-term residents. Areas that scored higher on this measure indicated more mobile areas and alternately, considered less stable.

Length of residence and residential mobility have been examined previously and have been shown to have an impact in the development of social networks, sentiments of attachment, and sense of community (Kasarda and Janowitz, 1974; Sampson, 1988; St. John et al., 1986). High community mobility is said to reduce local friendship ties by limiting and constraining friendship ties and hence reducing attachment to the community (Sampson, 1988). These are all important considerations for the levels of social controls exhibited by areas.

One indication of higher levels of stability used for the current study is the percentage of homeowners (or buyers). Previous research has identified home-ownership as a key influence of attachment and stability (Fried, 1982; Riger and Lavrakas, 1981; Taylor et al. 1985). Neighborhoods that have a higher percentage of homeowners will be judged as exhibiting higher levels of attachment and resulting higher levels of social control.

Satisfaction. Community satisfaction refers to an individual resident's subjective evaluation of his or her residential environment – how people evaluate the place in which they live (Baldassare, 1986; Hummon, 1992). Residents were queried as to their level of overall satisfaction with where they lived; specifically, residents were asked to rate the neighborhood on a scale (excellent, good, fair, poor). Shumaker and Hankin (1984) enumerate three consistent assumptions in the areas of community attachment and satisfaction: that individuals can become attached to their physical and social

environments, that these attachments vary across individuals, groups, and locations, and that attachment has important implications for both the individual and the community.

An additional item considered important in terms of community satisfaction is the level of fear that residents have. The specific item included in the citizen survey asked residents "how safe would you feel walking alone in your neighborhood after dark ?" with possible responses ranging from very safe to very unsafe. Feelings of safety in their own neighborhood provides an alternate indication of citizen satisfaction as well as indications of levels of controls that citizens feel are present or absent in their neighborhood.

Involvement. Involvement in the community refers to an individual's networks and interactions with other residents. For the current study, three indicators of involvement were gathered and aggregated to the beat level: a measure of the number of friends and relatives living in the area, a measure of how often residents interact with neighbors socially, and the percentage of residents who are members of a neighborhood organization.

One key consideration concerning involvement is the interpersonal or social relations and interactions. A number of studies have demonstrated the importance of these social ties, sentiments and feelings of attachment (Goudy, 1982; Herting and Guest, 1985; Kasarda and Janowitz, 1974; Sampson, 1988; St. John et al., 1986; White, 1985). Social ties refer to factors such as the number of friends living in the area, involvement in social networks, and participation in local activities or organizations. Kasarda and Janowitz (1974) note that the number of friends in an area is the most important type of social bond influencing community sentiments. Sampson (1988) states that sparse

friendship ties impede an individual's integration into the community. St. John et al. (1986) note that the number of friends one has is an important determinant of attachment to the community. Collective attachment refers to a macro level measurement of the percentage of people who exhibit indicators of attachment (Sampson, 1988).

Two indicators of these type of social ties were available and used for the current study. Residents were asked how many of their friends lived in their immediate neighborhood and also how many of their relatives lived in their neighborhood. Responses ranged from 0 (none) to 4 (almost all). These 2 questions were combined to give a measure of the number of friends and relatives in an area – indicating social networks, an important determinant indicating the involvement of residents in the community.

Residents were also asked how often they interacted with their neighbors. Possible responses ranged from 0 (never) to 5 (daily). Higher mean scores on this variable indicated stronger social networks and were taken as an indicating areas with more interactions and therefore higher levels of control.

Participation in local organizations is the final indicator of involvement. Responses from the citizen survey were aggregated to indicate areas that had a larger number of respondents who were members of local neighborhood organizations. The specific item on the survey asked residents if they were member of an organization or group in their neighborhood that addresses neighborhood problems.[33] Membership in neighborhood organizations is especially relevant to the current research effort as an

[33] The specific item referred to was a contingency question – respondents first being asked whether or not there was an organization or group in their neighborhood that dealt with problems. Respondents who were unaware of such groups could logically not be members and were scored on the contingency membership question as "no".

indicator of informal mechanisms of social control. It is believed the areas exhibiting higher levels of membership display more collective action efficacy (or at least efforts) and resulting less reliance on police. It is worth mentioning that citizen participation in such organizations is a cornerstone of many community policing efforts. While membership in organizations does not necessarily indicate active participation, it does indicate a certain level of personal investment.

Heterogeneity. The potential effects of residential heterogeneity have been studied in terms of racial or cultural heterogeneity and also income heterogeneity; for the current project, heterogeneity is measured in terms of the racial composition of neighborhoods. Previous community studies have provided mixed results in terms of residential heterogeneity. Wirth (1938) posits that increased heterogeneity breaks down rigid social structures and lead to increased mobility, instability, and insecurity. Other community researchers have found that despite significant changes in population, social ties, networks and community sentiments still existed in what were considered heterogeneous areas (Christenson, 1979; Goudy, 1982; Kasarda and Janowitz, 1974; Rodgers, 1980). The heterogeneous indicator for the current study tapped the percent minority population of the study beat.

The neighborhood characteristics outlined above capture differences between areas and indicate levels of stability, satisfaction, involvement, and heterogeneity. The individual level responses of residents are aggregated to provide a picture of neighborhood level characteristics. Generally, these measures provide indications of the levels of informal social control exhibited in different areas. It is hypothesized that the

differences in these characteristics will be related to differences in the types of activities in which police operating in these areas engage.

Level 2 variables were examined carefully. Since many of the variables proposed for inclusion in the Level 2 model bore some theoretical relevance to each other, these individual items were included in an exploratory factor analysis. First, however, bivariate correlations were calculated for the Level 2 data. Table C.2 presents the zero-order correlation matrix for the neighborhood-level variables drawn from the aggregated citizen data.

Table C.2. Zero-order Correlation Coefficients of Neighborhood Variables (n = 24)

Variable	1	2	3	4	5	6	7	8	9
1 - Site	1.00								
2 - % Residents < 5 years	0.28	1.00							
3 - % Renting	-0.21	-0.54**	1.00						
4 - Mean satisfaction	0.32	0.42*	0.00	1.00					
5 - Mean fear	0.16	0.13	0.40	0.72**	1.00				
6 - % Org. member	0.42*	-0.11	0.26	0.44**	0.36	1.00			
7 - Friends/relatives in area	-0.24	-0.69**	0.32	-0.14	-0.02	0.18	1.00		
8 - Interact with neighbors	0.36	0.52**	-0.53**	0.39	0.23	0.02	-0.08	1.00	
9 - % Minority	0.06	-0.46*	0.07	-0.41*	-0.56**	0.05	0.08	-0.65**	1.00

* $p < .05$
** $p < .01$

Several significant correlations were revealed from the bivariate correlation matrix which is a good indication that the items may reveal some underlying factor. In an effort to reduce the number of variables and considering that the neighborhood levels could be tapping into some underlying concept, the neighborhood levels were factor analyzed. Since the data had been aggregated to the neighborhood level from individual respondents residing in each neighborhood, the non-aggregated, citizen-level data was examined for potential factors. Twenty-four neighborhood cases would not provide the number of cases necessary to perform factor analysis – as it is generally accepted that 300 cases are necessary for such functions (Tabachnick and Fidell, 2001).

The original neighborhood respondent data set, from which the aggregated neighborhood level variables had been created, was examined to identify potential factors. An initial correlation matrix was calculated from the neighborhood residents database (See Table C.3). The zero-order correlation matrix revealed that there were several significant correlations (ranging from r = .-.20 to r = .46). As Tabachnick and Fidell (2001) note, if an initial correlation matrix does not reveal numerous variables correlated at high levels, the use of factor analysis should be reconsidered; this would indicate that it is unlikely that they share common factors (Norušis, 1990). As seen in Table C.2, only 2 correlations are greater than the recommended level of .30 (renting/length of residence, r = .31 and fear/satisfaction r = .46). Since the bivariate correlations among the items examined are small, the use and appropriateness of factor analysis is called into question. Although low, there were significant correlations and therefore the items were factor analyzed.

Factor analysis attempted with these variables and the items within the dimensions as described above. Scores for these factors were weak and reliability coefficients were extremely low (< .10). I therefore elected to seek more conclusive contextual level variables for inclusion – choosing census data.

Table C.3. Correlation Coefficients, Neighborhood Level Variables (n = 2,343)

	1	2	3	4	5	6	7	8
1 Length of residency	1.00							
2 Own versus rent	0.30**	1.00						
3 N'hood satisfaction	-0.09**	0.05*	1.00					
4 Fear in N'hood	-0.10**	0.04	0.45**	1.00				
5 Organization participant	0.05*	0.14**	0.11**	0.08**	1.00			
6 Friends/relatives scale	0.18**	0.03	0.07**	0.09**	0.06**	1.00		
7 Interaction with neighbors	0.02	-0.01	0.12**	0.08**	0.11**	0.26**	1.00	
8 Minority status	0.09**	-0.02	-0.12**	-0.06**	-0.01	0.03	-0.12**	1.00

* $p < .05$
** $p < .01$

REFERENCES

REFERENCES

Agresti, A. and Finlay, B. (1986). Statistical methods for the social sciences, 2nd Edition. San Francisco: Dellen Publishing Company.

Allen, L. (1990). A Developmental perspective on multiple levels of analysis in community research. In P. Tolan, C. Keys, F. Chertok, and L. Jason (Eds.) Researching community psychology (pp. 131-134). Washington, D.C.: American Psychological Association.

Arcury. T.A., Austin, C.K., Quandt, S.A., and Saavedra, R. (1999). Enhancing community participation in intervention research: Farmworkers and agricultural chemicals in North Carolina. Health Education and Behavior, 26 (pp. 563-578).

Austin, D.M., Furr, L.A., and Spine, M. (2002). The Effects of neighborhood conditions on perceptions of safety. Journal of Criminal Justice, 30 (pp. 417-427).

Baldassare, M. (1986). Residential satisfaction and the community question. Sociology and Social Research, 70 (pp. 139-142).

Banton, M. (1964). The Policeman in the community. London: Tavistock Publications.

Bayley, D.H. and Mendelsohn, H. (1969). Minorities and the police: Confrontation in America. New York: The Free Press.

Bittner, E. (1967). The Police on skid-row: A Study of peace keeping. American Sociological Review, 32 (pp. 699-715).

Bittner, E. (1972). The Functions of the police in modern society. Washington, D.C.: National Institute of Mental Health.

Black, D. (1976). The Behavior of law. New York: Academic Press.

Black, D. (1980). The Manners and customs of the police. New York: Academic Press.

Blalock, H.M. (1967). Toward a theory of minority-group relations. New York: John Wiley and Sons, Inc.

Bloch, P. and Anderson, D. (1974). Policewomen on patrol: Final report. Washington, D.C.: Police Foundation.

Bozza, C.M. (1973). Motivations guiding policemen in the arrest process. Journal of Police Science and Administration, 1 (pp. 468-476).

Brandl, S.G., Stroshine, M.S., and Frank, J. (2001). Who are the complaint-prone officers? An Examination of the relationship between police officer attributes, arrest activity, assignment, and citizens' complaints about excessive force. Journal of Criminal Justice, 29 (pp. 521-529).

Brecci, M.G. and Simmons, R.L. (1987). An Examination of organizational and individual factors that influence police response to domestic disturbances. Journal of Police Science Administration, 15 (pp. 93-104).

Brodsky, A.E., O'Campo, P.J., and Aronson, R.E. (1999). PSOC in community context: multi-level correlates of a measure of psychological sense of community in low-income, urban neighborhoods. Journal of Community Psychology, 27 (pp. 659-679).

Brooks, L.W. (1997). Police discretionary behavior: A Study of style. In R.G. Dunham and G.P. Alpert (Eds.) Critical Issues in Policing: Contemporary Readings (3rd Edition) (pp. 149-166). Prospect Heights, IL: Waveland Press, Inc.

Brown, M.C. and Warner, B.D. (1992). Immigrants, urban politics, and policing in 1900. American Sociological Review, 57 (pp. 293-305).

Bryk, A.S. and Raudenbush, S.W. (1992). Hierarchical linear models: Applications and data analysis methods. Newbury Park, CA: Sage Publications.

Buckner, J.C. (1988). The Development of an instrument to measure neighborhood cohesion. American Journal of Community Psychology, 16 (pp. 771-791).

Bursik, R.J., Jr. (1986). Ecological stability and the dynamics of delinquency. In A.J. Reiss and M. Tonry (Eds.) Communities and crime (pp. 35-66). Chicago: The University of Chicago Press.

Buttel, F.H., Martinson, O.B., and Wilkening, E.A. (1979). Size of place and community attachment: A Reconsideration. Social Indicators Research, 6 (pp. 475-485).

Byrne, J.M. and Sampson, R.J. (1986). Key issues in the social ecology of crime. In J.M. Byrne and R.J. Sampson (Eds.) The Social ecology of crime (pp. 1-22). New York: Springer-Verlag New York, Inc.

Cao, L., Frank, J.T., and Cullen, F.T. (1996). Race, community context and confidence in police. American Journal of Police, 15 (pp. 3-22).

Chambliss, W.J. and Seidman, R.B. (1971). Law, order, and power. Reading, MA: Addison-Wesley Publishing Company.

Chavis, D.M. and Newbrough, J.R. (1986). The Meaning of "community" in community psychology. Journal of Community Psychology, 14 (pp. 335-340).

Chavis, D.M. and Pretty, G.M.H. (1999). Sense of community: Advances in measurement and application. Journal of Community Psychology, 27 (pp. 635-642).

Chavis, D.M. and Wandersman, A. (1990). Sense of community in the urban environment: A Catalyst for participation and community development. American Journal of Community Psychology, 18 (pp. 55-81).

Cohen, L.E. and Felson, M. (1979). Social change and crime rate trends: A Routine activity approach. American Sociological Review, 44 (pp. 588-605).

Cordner, G.W. (1995). Community policing: Elements and effects. Police Forum, 5 (pp. 1-8).

Crank, J.P. (1992). Police style and legally serious crime: A Contextual analysis of municipal police departments. Journal of Criminal Justice, 20 (pp. 401-412).

Crank, J.P. (1990). The Influence of environmental and organizational factors on police style in urban and rural environments. Journal of Research in Crime and Delinquency, 27 (pp. 166-189).

DeJong, C., Mastrofski, S.D., and Parks, R.B. (2001). Patrol officers and problem solving: An Application of expectancy theory. Justice Quarterly, 18 (pp. 31-61).

Forst, B., Lucianovic, J., and Cox, S.J. (1977). What happens after arrest? A Court perspective of police operations in the District of Columbia. Washington, D.C.: Institute for Law and Social Research.

Fried, M. (1982). Residential attachment: Sources of residential and community satisfaction. Journal of Social Issues, 3 (pp. 107-119).

Friedrich, R.J. (1980). Police use of force: Individuals, situations, and organizations. Annual American Academy Political Social Sciences, 452 (pp. 82-97).

Fyfe, J.J. (1980). Geographic correlates of police shooting: A Microanalysis. Journal of Research in Crime and Delinquency, 17 (pp. 101-113).

Fyfe, J.J. (1988). Police shooting: Environment and license. In J.E. Scott and T. Hirschi (Eds.). Controversial issues in crime and justice. Newbury Park, CA: Sage Publications.

Geller, W.A. and Karales, K.J. (1981). Shootings of and by Chicago police: Uncommon crises Part I: Shootings by Chicago police. The Journal of Criminal Law and Criminology, 72 (pp. 1813-1866).

Geller, W.A. and Karales, K.J. (1981). Shootings of and by Chicago police: Uncommon crises Part II: Shootings of police, shooting correlates and control strategies. The Journal of Criminal Law and Criminology, 73 (pp. 331-378).

Goldman, N. (1963). The Differential selection of juvenile offenders for court appearance. New York: National Council on Crime and Delinquency.

Gottfredson, S.D. and Taylor, R.B. (1986). Person-environment interactions in the prediction of recidivism. In J.M. Byrne and R.J. Sampson (Eds.) The Social Ecology of Crime (pp. 133-155). New York: Springer-Verlag New York, Inc.

Goudy, W.J. (1982). Further consideration of indicators of community attachment. Social Indicators Research, 11 (pp. 181-191).

Greenburg, S.W. (1986). Fear and its relationship to crime, neighborhood deterioration, and informal social control. In J.M. Byrne and R.J. Sampson (Eds.) The Social Ecology of Crime (pp. 47-62). New York: Springer-Verlag New York, Inc.

Haeberle, S.H. (1989). Planting the grassroots: Structuring citizen participation. New York: Praeger.

Hepburn, J.R. (1978). Race and the decision to arrest: An Analysis of warrants issued. Journal of Research in Crime and Delinquency, 15 (pp. 54-73).

Herting, J.R. and Guest, A.M. (1985). Components of satisfaction with local areas in the metropolis. The Sociological Quarterly, 26 (pp. 99-115).

Hickman, M.J., Piquero, A.R., and Greene, J.R. (2000). Does community policing generate greater numbers and different types of citizen complaints than traditional policing. Police Quarterly, 3 (pp. 70-84).

Hofmann, D.A. and Gavin, M.B. (1998). Centering decisions in hierarchical linear models: Implications for research organizations. Journal of Management, 24 (pp. 623-641).

Homant, R.J. and Kennedy, D.B. (1985). Police perceptions of spouse abuse: A Comparison of male and female officers. Journal of Criminal Justice, 13 (9-47).

Hummon, D.M. (1992). Community attachment: Local sentiment and sense of place. In I. Altman and S.M. Low (Eds.) Place attachment (pp. 253-278). New York: Plenum Press.

Hyman, H.H. and Wright, C.R. (1971). Trends in voluntary association memberships of American adults: Replication based on secondary analysis of national sample surveys. American Sociological Review, 36 (pp. 191-206).

Jacobs, D. (1979). Inequality and police strength: Conflict theory and coercive control in metropolitan areas. American Sociological Review, 44 (pp. 913-925).

Jacobs, D. and Britt, D. (1979). Inequality and police use of deadly force: An Empirical assessment of a conflict hypothesis. Social Problems, 26 (pp. 403-412).

Julian, D.A., Reischl, T.M., Carrick, R.V., and Katrenich, C. (1997). Citizen participation - lessons from a local United Way planning process. Journal of the American Planning Association, 63 (pp. 345-355).

Kania, R.E. and Mackey, W.C. (1977). Police violence as a function of community characteristics. Criminology, 15 (pp. 27-48).

Kasarda, J.D. and Janowitz, M. (1974). Community attachment in mass society. American Sociological Review, 39 (pp. 328-339).

Kelling, G.L. (1997). Crime control, the police, and culture wars: Broken windows and cultural pluralism. In National Institute of Justice, Perspectives on Crime and Justice: 1997-1998 Lecture Series (pp. 1-28). Washington, D.C.: U.S. Department of Justice.

Kelly, J.G. (1988). A Guide to conducting prevention research in the community. New York: The Haworth Press.

Kingry-Westergaard, C. and Kelly, J.G. (1990). A Contextualist epistemology for ecological research. In P. Tolan, C. Keys, F. Chertok, and L. Jason (Eds.) Researching community psychology (pp. 23-31). Washington, D.C.: American Psychological Association.

Kingston, S., Mitchell, R., Florin, P., and Stevenson, J. (1999). Sense of community in neighborhood as a multilevel construct. Journal of Community Psychology, 27 (pp. 681-694).

Klinger, D.A. (1997). Negotiating order in patrol work: An Ecological theory of police response to deviance. Criminology, 35 (pp. 277-306).

Kress, J.M. (1980). The Spatial ecology of criminal law. In D.E. Georges-Abeyie and K.D. Harris (Eds.) Crime: A Spatial perspective (pp. 58-71). New York: Columbia University Press.

Kuo, F.E., Sullivan, W.C., Coley, R.L., and Brunson, L. (1998). Fertile ground for community: inner-city neighborhood common spaces. American Journal of Community Psychology, 26 (pp.823-851).

Langworthy, R.H. (1985). Wilson's theory of police behavior: A Replication of the constraint theory. Justice Quarterly, 2 (pp. 89-98).

Lersch, K.M. (1998). Predicting citizen race in allegations of misconduct against the police. Journal of Criminal Justice, 26 (pp. 87-97).

Lersch, K.M. and Mieczkowski, T. (1996). Who are the problem prone officers? An Analysis of citizen complaints. American Journal of Police, 15 (pp. 23-44).

Lester, D. (1982). Civilians who kill police officers and officers who kill civilians: A Comparison of American Cities. Journal of Police Science and Administration, 10 (pp. 384-387).

Lewin, K. (1935). Principles of topological psychology. New York: McGraw-Hill.

Liska, A.E., and Chamlin, M.B. (1984). Social structure and crime control among macrosocial units. American Journal of Sociology, 90 (pp. 383-395).

Liska, A.E., Chamlin, M.B., and Reed, M.D. (1985). Testing the economic production and conflict model of crime control. Social Forces, 64 (pp. 119-139).

Liska, A.E., Lawrence, J.J., and Benson, M. (1981). Perspectives on the legal order: The Capacity for social control. American Journal of Sociology, 87 (pp. 413-426).

Mastrofski, S.D. (1983). The Police and noncrime services. In G.P. Whitaker and C.D. Phillips (Eds.) Evaluating performance of criminal justice agencies (pp. 33-61). Beverly Hills, CA: Sage Publications.

Mastfrofski, S.D., Parks, R.B., Reiss, A.J. Jr., Worden, R.E., DeJong, C., Snipes, J.B., and Terrill, W. (1998). Systematic observation of public police: Applying field research methods to policy issues. National Institute of Justice, U.S. Department of Justice, Washington, D.C.

Mastrofski, S.D., Parks, R.B., Worden, R.E., and Reiss, A.J., Jr. (2002). Project on policing neighborhoods in Indianapolis, Indiana, and St. Petersburg, Florida, 1996-1997, Part 18 (Citizen survey data). U.S. Department of Justice, National Institute of Justice, Data Resources Program.

Maxfield, M.G., Lewis, D.A., and Szoc, R. (1980). Producing official crimes: Verified crime reports as measures of police output. Social Science Quarterly, 61 (pp. 221-236).

McGahey, R.M. (1986). Economic conditions, neighborhood organization, and urban crime. In A.J. Reiss and M. Tonry (Eds.) Communities and crime (pp. 231-270). Chicago: The University of Chicago Press.

McKenzie, R.D. (1926). The Scope of human ecology. In E.W. Burgess (Ed.) The Urban community: Selected papers from the proceedings of the American Sociology Society. Chicago: University of Chicago Press.

McPherson, J.M. (1981). A Dynamic model of voluntary affiliation. Social Forces, 59 (pp. 705-728).

Menard, S.W. (1995). Applied logistic regression analysis. Sage series: Quantitative applications in the social sciences, vol. 106. Thousand Oaks, CA: Sage.

Mladenka, K.R. and Hill, K.Q. (1978). The Distribution of urban police services. Journal of Politics, 40 (pp. 112-133).

Moos, R.H. and Lemke, S. (1983). Assessing and improving social-ecological settings. In E. Seidman (Ed.) Handbook of Social Intervention (pp. 143-162). Beverly Hills, CA: Sage Publications.

Morenoff, J.D., Sampson, R.J., and Raudenbush, S.W. (2001). Neighborhood inequality, collective efficacy, and the spatial dynamics of urban violence. Criminology, 39 (pp. 517-553).

Norušis, M.J. (1990). SPSS / PC + Statistics 4.0 for the IBM PC/XT/AT and PS/2. Chicago, IL: SPSS Inc.

Novak, K.J., Frank, J., Smith, B.W., and Engel, R.S. (2002). Revisiting the decision to arrest: Comparing beat and community officers. Crime and Delinquency, 48 (pp. 70-98).

Oropesa, R.S. (1989). The Social and political foundations of effective neighborhood improvement associations. Social Science Quarterly, 70 (pp. 723-743).

Ostrom, E. (1983). Equity in police services. In G.P. Whitaker and C.D. Phillips (Eds.) Evaluating performance of criminal justice agencies (pp. 99-125). Beverly Hills, CA: Sage Publications.

Oxford, J. (1992). Community psychology: Theory and practice. New York: Wiley.

Parks, R.B., Mastrofski, S.D., DeJong, C., Gray, M.K. (1999). How officers spend their time with the community. Justice Quarterly, 16 (pp. 483-518).

Perkins, D.D., Florin, P., Rich, R.C., Wandersman, A., and Chavis, D.M. (1990). Participation and the social and physical environment of residential blocks: Crime and community context. American Journal of Community Psychology, 18 (pp. 83-115).

Prezza, M., Amici, M., Roberti, T., and Tedeschi, G. (1999). Sense of community referred to the whole town: Its relations with neighboring, loneliness, life satisfaction, and area of residence. Journal of Community Psychology, 29 (pp. 29-52).

Quinney, R. (1970). The Social reality of crime. Boston: Little, Brown and Company.

Reisig, M.D. and Cancino, J.M. (2004). Incivilities in nonmetropolitan communities: The Effects of structural constraints, social conditions, and crime. Journal of Criminal Justice, 32 (pp. 15-29).

Reisig, M.D. and Parks, R.B. (2000). Experience, quality of life, and neighborhood context: A Hierarchical analysis of satisfaction with police. Justice Quarterly, 17 (pp. 607-630).

Reiss, A.J., Jr. (1972). Police brutality. In L. Radzinowicz and M.E. Wolfgang (Eds.) The Criminal in the arms of the law, Volume 2. New York: Basic Books.

Riger, S. and Lavrakas, P.J. (1981). Community ties: Patterns of attachment and social interaction in urban neighborhoods. American Journal of Community Psychology, 9 (pp. 55-66).

Riksheim, E.C. and Chermak, S.M. (1993). Causes of police behavior revisited. Journal of Criminal Justice, 21 (pp. 353-382).

Rodgers, W. (1980). Residential satisfaction in relationship to size of place. Social Psychological Quarterly, 43 (pp. 436-441).

Ross, C.E. and Jang, S.J. (2000). Neighborhood disorder, fear, and mistrust: The Buffering role of social ties with neighbors. American Journal of Community Psychology, 28 (pp. 401-420).

Sampson, R.J. (1986). Neighborhood family structure and the risk of personal victimization. In J.M. Byrne and R.J. Sampson (Eds.) The Social Ecology of Crime (pp. 25-46). New York: Springer-Verlag New York, Inc.

Sampson, R.J. (1988). Local friendship ties and community attachment in mass society: A Multilevel systemic model. American Sociological Review, 53 (pp. 766-779).

Sampson, R.J. and Groves, W.B. (1989). Community structure and crime: Testing social disorganization theory. American Journal of Sociology, 94 (pp. 774-802).

Sampson, R.J. and Jeglum-Bartusch, D. (1998). Legal cynicism and (subcultural?) tolerance of deviance: the neighborhood context of racial differences. Law and Society Review, 32 (pp. 777-804).

Sampson, R.J., Raudenbush, S.W., and Earls, F. (1997). Neighborhoods and violent crime: A Multilevel study of collective efficacy. Science, 277 (pp. 918-924).

Sampson, R.J. and Raudenbush, S.W. (2001). Disorder in urban neighborhoods – does it lead to crime? National Institute of Justice, Research in Brief. Washington, D.C.: U.S. Department of Justice.

Shaw, C.R. and McKay, H.D. (1942/1969). Juvenile delinquency and urban areas: A Study of rates of delinquency in relation to differential characteristics of local communities in American cities. Chicago: The University of Chicago Press.

Sherman, L.J. (1975). An Evaluation of policewomen on patrol in a suburban police department. Journal of Police Science and Administration, 3 (pp. 434-438).

Sherman, L.W. (1980). Causes of police behavior: The Current state of quantitative research. Journal of Research in Crime and Delinquency, 17 (pp. 69-100).

Sherman, L.W. (1986). Policing communities: What works? In A.J. Reiss and M. Tonry (Eds.) Communities and Crime (pp. 343-387). Chicago: The University of Chicago Press.

Sherman, L.W. and Blumberg, M. (1981). Higher education and police use of deadly force. Journal of Criminal Justice, 9 (pp. 317-331).

Shinn, M. (1990). Mixing and matching: levels of conceptualization, measurement, and statistical analysis in community research. In P. Tolan, C. Keys, F. Chertok, and L. Jason (Eds.) Researching Community Psychology (pp. 111-126). Washington, D.C.: American Psychological Association.

Shumaker, S.A. and Hankin, J. (1984). The Bonds between people and their residential environments: Theory and research. Population and Environment, 7 (pp. 59-60).

Skogan, W.G. and Lurigio, A.J. (1992). The Correlates of community antidrug activism. Crime and Delinquency, 38 (pp. 510-521).

Slovak, J.S. (1987). Police organization and policing environment: Case study of a disjuncture. Sociological Focus, 20 (pp. 77-94).

Slovak, J.S. (1986). Styles of urban policing: Organization, environment, and police styles in selected American cities. New York: New York University Press.

Smith, D.A. (1987). Police response to interpersonal violence: Defining parameters of legal control. Social Forces, 65 (pp. 767-782).

Smith, D.A. (1986). The Neighborhood context of police behavior. In A.J. Reiss and M. Tonry (Eds.) Communities and crime (pp. 313-341). Chicago: The University of Chicago Press.

Smith, D.A. (1984). The Organizational context of legal control. Criminology, 22 (pp.19-38).

Smith, D.A. and Klein, J.R. (1983). Police agency characteristics and arrest decisions. In G.P. Whitaker and C.D. Phillips (Eds.) Evaluating performance of criminal justice agencies (pp. 63-97). Beverly Hills, CA: Sage Publications.

Sparrow, M.K., Moore, M.H., and Kennedy, D.M. (1990). Beyond 911: A New era for policing. New York: Basic Books.

St. John, C. Austin, D.M, and Baba, Y. (1986). The Question of community attachment revisited. Sociological Spectrum, 6 (pp. 411-431).

Stark, R. (1987). Deviant places: A Theory of the ecology of crime. Criminology, 25 (pp. 893-909).

Swanson, C. (1978). The Influence of organization and environment on arrest policies in major U.S. cities. Policy Studies Journal, 7 (pp. 390-398).

Tabachnick, B.G. and Fidell, L.S. (2001). Using multivariate statistics (4th Edition). Boston: Allyn and Bacon.

Taylor, R.B, Gottfredson, S.D., and Brower, S. (1985). Attachment to place: Discriminant validity, and impacts of disorder and diversity. American Journal of Community Psychology, 13 (pp. 525-524).

Terrill, W. and Reisig, M.D. (2003). Neighborhood context and police use of force. Journal of Research in Crime and Delinquency, 40 (pp. 291-321).

Toch, H. (1996). The "Violence prone" officer. In W. Geller and H. Toch (Eds.) And Justice for all: Understanding and controlling police abuse of force. Washington, D.C.: Police Executive Research Forum.

Trojanowicz, R. and Carter, D. (1988). The Philosophy and role of community policing. Community Policing Series, No. 13. National Foot Patrol Center, School of Criminal Justice, Michigan State University.

Turk, A.T. (1972). Criminality and legal order. Chicago: Rand McNally & Company.

Vold, G.B. and Bernard, T.J. (1986). Theoretical criminology (3rd Edition). New York: Oxford University Press.

Waegel, W.B. (1984). The Use of lethal force by police: The Effect of statutory change. Crime and Delinquency, 30 (pp. 121-140).

Wagner, A.E. (1980). Citizen complaints against the police: The Accused officer. Journal of Police Science and Administration, 8 (pp. 373-377).

Walker, S. and Katz, C.M. The Police in America (4th edition). New York: McGraw-Hill.

Warner, B.D. (1997). Community characteristics and the recording of crime: Police recording of citizens' complaints of burglary and assault. Justice Quarterly, 14 (pp. 631-649).

Weiner, N.L. and Willie C.V. (1971). Decisions by juvenile officers. American Journal of Sociology, 77 (pp. 199-210).

Weitzer, R. (1999). Citizens' perception of police misconduct: Race and neighborhood context. Justice Quarterly, 16 (pp. 819-846).

Werthman, C. and Piliavin, I. (1967). Gang members and the police. In D.J. Bordua (Ed.) The Police: Six Sociological Essays (pp. 56-98). New York: John Wiley and Sons, Inc.

White, M.J. (1985). Determinants of community satisfaction in Middletown. American Journal of Community Psychology, 13 (pp. 583-597).

Williams, K.R. and Drake, S. (1980). Social structure, crime and criminalization: An Empirical examination of the conflict perspective. The Sociological Quarterly, 21 (pp. 563-575).

Wilson, J.Q. (1968). Varieties of police behavior: The Management of law and order in eight communities. Cambridge, MA: Harvard University Press.

Wilson, J.Q. and Kelling, G.L. (1982). Broken windows: The Police and neighborhood safety. Atlantic Monthly (March 1982) (pp.29-38).

Wirth, L. (1938). Urbanism as a way of life. The American Journal of Sociology, 44 (pp. 1-24).

Worden, R.E. (1989). Situational and attitudinal explanations of police behavior: A Theoretical reappraisal and empirical assessment. Law and Society Review, 23 (pp. 667-707).