

University of Cincinnati

Date: 5/31/2011

I, **Cody J Stoddard**, hereby submit this original work as part of the requirements for the degree of Doctor of Philosophy in Criminal Justice.

It is entitled:

Understanding Organizational and Ecological Impacts on Police Use of Formal Authority: Testing an Ecological Theory of Police Response to Deviance

Student's name: **Cody J Stoddard**

This work and its defense approved by:

Committee chair: James Frank, PhD

Committee member: Andrew L. Giacomazzi, PhD

Committee member: Lawrence Travis, PhD

Committee member: John Wooldredge, PhD



1734

Understanding Organizational and Ecological Impacts on Police Use of Formal Authority: Testing an Ecological Theory of Police Response to Deviance

A dissertation submitted to the

Graduate School
of the University of Cincinnati

In partial fulfillment of the requirements for the degree of

DOCTORATE OF PHILOSOPHY (Ph.D)

In the Division of Criminal Justice of the College of Education,
Criminal Justice and Human Services

by

Cody J Stoddard

M.S. Boise State University, 2005

B.S. Boise State University, 2004

B.A. Boise State University, 2004

May 2011

Committee Chair: James Frank, Ph.D.

ABSTRACT

The use of police authority is a major area of focus for criminal justice researchers. While a variety of factors have been found to impact police use of formal authority, most of these factors relate to legal, situational, and individual characteristics of the police-citizen encounter. While the research on legal, situational, and individual factors has been plentiful, comparatively little attention has been dedicated to examining the influence of organizational and ecological factors on the use of formal authority in police-citizen contacts.

In 1997, David Klinger proposed a theory that explains how ecological and organizational variables impact the level of formal authority an officer will use during police-citizen contacts. However, this theory has been subjected to limited empirical verification. This dissertation conducted the most complete test of Klinger's theory of ecological and organizational impacts on police use of formal authority to date. This dissertation adds to the increasing body of knowledge about factors that influence officer decisions to use their authority in police-citizen contacts.

ACKNOWLEDGMENTS

I owe a significant debt of gratitude to a lot of people who have supported and encouraged me in my studies.

First, I would like to acknowledge all of the professors from Boise State University and the University of Cincinnati that have been giving me the support and tools to finish this project. In particular, I would like to thank James Frank for being an excellent advisor, mentor, and chair. I would like to thank Andrew Giacomazzi for his help in this dissertation, during my Thesis at Boise State, and for his continual support and mentoring. I would like to thank David Mueller who encouraged me and supported me during my early undergraduate years and allowed me to work with him and Andy on a variety of projects. I would like to thank Lisa Bostaph and Jeremy Ball for their sound advice about selecting, preparing for, and getting through graduate school. I would like to thank Robin Engel for taking me on several of her projects that gave me a variety of valuable research experiences. I would like to thank Charles Reasons for supporting me during the dissertation writing process. Lastly, I would like to thank Craig Hemmens and Mary Stohr for their mentoring and guidance as I make the transition from a graduate student to becoming a faculty member.

Second, I would like to thank my friends who have supported me over all these years. I would like to thank Scott Butte, Nick Miller, Peter Collins, Jon Doherty, and list of others who have been there supporting me no matter what happens or what is going on—I always knew I could count on you all. I would like to thank Troy Payne and Daniel Lytle for being friends, colleagues, and sympathetic ears during the rough times.

Lastly, I would like to thank my supportive family—without them, none of this would have been possible. I would like to thank my grandparents Bob and Vi Stoddard, and Richard and Donna Wanzer who have always been unconditionally supporting of my endeavors for as long as I can remember. I would like to thank my parents, Shaun and Sheila Stoddard for always supporting me and loving me in everything I have done. With out their support and sacrifice, none of this would be possible. Lastly, I would like to thank my loving wife, Jacqueline Rohrbach, who has seen me through the highs and the lows of graduate school and given me more support than I could ever ask for.

To all of these people, I am eternally grateful.

TABLE OF CONTENTS

<u>ABSTRACT</u>	2
<u>ACKNOWLEDGMENTS</u>	4
<u>CHAPTER 1: INTRODUCTION</u>	10
THE IMPORTANCE OF MEASURING ECOLOGICAL VARIABLES	12
KLINGER'S THEORY	12
Workload	13
Normal or deviant deviance	14
The deservedness of victims	14
Police cynicism	15
THE CURRENT STUDY	16
IMPORTANCE OF CURRENT RESEARCH	17
Discretion	17
Equality of Enforcement	18
Community Oriented Policing	19
CHAPTER SUMMARY	20
<u>CHAPTER 2: LITERATURE REVIEW: KLINGER'S ECOLOGICAL THEORY OF POLICE RESPONSE TO DEVIANCE</u>	22
KLINGER'S THEORY	23
The ecological context	23
Work rules and work group	24
Officers' understanding of crime and the framing of negotiations	28
Workload	29
Normal and deviant deviance	30
Victim deservedness	30
Cynicism	31
PREVIOUS TESTS OF KLINGER'S THEORY	32
CHAPTER SUMMARY	33
<u>CHAPTER 3: EXPLAINING POLICE DECISION MAKING: REVIEW OF EXTANT LITERATURE</u>	34
LEGAL VARIABLES	34
Seriousness of the offense	35
Evidence	36
EXTRA-LEGAL VARIABLES	38
Demeanor	39
Intoxication	40

Race	41
Class	44
Gender	45
Other control variables	45
CHAPTER SUMMARY	46
<u>CHAPTER 4: METHODS</u>	47
RESEARCH QUESTIONS	47
STUDY METHODOLOGY	48
Organization of the Study Site	49
Organization of the Districts	49
DATA SOURCES	50
Observation Data	51
How officers were selected	51
When officers were observed	52
Length of the observation period	54
Observational data and data instruments	54
Coding Information	57
Project Personnel	57
Observational data	57
Officer Survey Data	60
Census Data	61
Cincinnati Police Crime Data	61
STUDY VARIABLES	62
Dependent Variable: Vigor	62
Independent Variables	64
Individual Officer Variables	64
Officer Gender	64
Officer Race	65
Length of Service	65
Officer Assignment	66
Officer Cynicism Index	66
Officer Normal Deviance Index	67
Officer Workload	68
Individual Citizen Variables	68
Citizen Gender	68
Citizen Age	69
Citizen Race	69
Situational Variables	69
Undeserving Victim	70
Citizen under the influence of drugs or alcohol	71
In presence crime	72
Citizen Demeanor	73
Proactive vs. Reactive Encounter	73

Evidence	74
Offense Severity	74
Preference towards arrest	75
Number of spectators: citizens and police	75
Crime Data and Census Variables	76
District Level Deviance	76
DESCRIPTIVE STATISTICS	76
Descriptive Statistics for the Dependent Variable: Vigor	77
Descriptive Statistics for Officer Survey Variables	78
Descriptive Statistics for Citizen and Situational Variables	79
Descriptive Statistics for Crime and Census Data	82
STUDY ANALYTICAL METHOD	82
CHAPTER SUMMARY	83
<u>CHAPTER 5: ANALYSIS</u>	84
STATISTICAL TECHNIQUE	84
RESEARCH HYPOTHESES	87
STATISTICAL MODELS	89
District Level Analysis	89
District Level of Analysis: Analysis of Variance (ANOVA)	90
Community/Beat Level of Analysis	92
Community Level of Analysis: Analysis of Variance (ANOVA)	93
Community Level of Analysis: Means-As-Outcomes	94
Community Level of Analysis: Analysis of Covariance (ANCOVA)	95
District and Community Summary	99
Citizen and Officer Analysis	101
Officer Level of Analysis: Analysis of Variance (ANOVA)	101
Officer Level of Analysis: Means-As-Outcomes	101
Officer Level of Analysis: Analysis of Covariance (ANCOVA)	103
Officer Model Summary	106
ASSESSMENT OF RESEARCH HYPOTHESES	107
CHAPTER SUMMARY	108
<u>CHAPTER 6: CONCLUSION</u>	110
OVERVIEW OF THE STUDY	110
Overview of Theory and Methodology	110
Overview of Findings from Analysis	111
DISCUSSION OF FINDINGS	114
DISCUSSION OF THEORETICAL CONCEPTS	115
Vigor	115
Deserving and Undeserving Victims	116
Officer Cynicism	118
Officer Perception of Normal Crime	119
Workload	121

District/Beat Level Deviance	121
Reconceptualizing the Deviance-Vigor Relationship	122
LIMITATIONS	124
POLICY IMPLICATIONS	125
<u>REFERENCES</u>	128

TABLE OF TABLES

Table 3.1	Operationalization of Vigor	64
Table 3.2	Dependent Variable: Vigor	77
Table 3.3	Descriptive Statistics for Officer Survey Variables	79
Table 3.4	Descriptive Statistics for Citizen and Situational Variables	81
Table 3.5	Descriptive Statistics for Crime and Census Data	82
Table 5.1	Estimation of Effects: Community Means-As-Outcomes Model	94
Table 5.2	Estimation of Effects: Community ANCOVA Model	96
Table 5.3	Estimation of Effects: Officer Means-As-Outcomes Model	102
Table 5.4	Estimation of Effects: Officer ANCOVA Model	104

CHAPTER 1: INTRODUCTION

Often called the “gateway” to the criminal justice system, the police regulate who receives further contact with the system based on how they use formal authority. The lack of literature regarding ecological and organizational explanations for variations in officer decision-making is substantial and possibly detrimental to our understanding of officer discretion. This study would seek to add to this research and therefore enhance our understanding of the factors that influence an officer’s decision to use formal authority by conducting the most complete test of Klinger’s theory, which explains how ecological and organizational variables influence officer decision making. Specifically, this dissertation evaluates whether ecological and organizational variables affect police use of formal authority. Discretion, in and of itself, is often seen as a necessary element of police work and as a byproduct of the authority officers are given to enforce laws; however, when officers’ decisions are influenced by extra-legal factors, discretion can be seen as problematic and ultimately illegitimate. It is for this reason that many agencies try to structure discretion and therefore limit or curtail officer use of authority. If, however, agencies do not fully understand how officers make decisions—what contexts they make them in or the environmental influences on their decisions—then this structuring will be incomplete or ineffective.

Much of the research that focuses on police decision-making measures individual characteristics of the officer, characteristics of the involved citizen, or characteristics of the police-citizen encounter. Measuring these constructs has aided police research on officer decision-making; however, the body of police decision-making research has generally neglected to incorporate ecological and organizational variables. Focusing on incorporating these variables

in the research on police decision-making can make a significant contribution to the literature in two ways. First, by incorporating ecological and organizational variables, we can get a more complete understanding of influences on police behavior. Second, by incorporating ecological and organizational variables, it is possible that we may discover that previous models used to explain police behavior may be misperceived. By introducing other variables that are theoretically important, the variables in prior models may have different effects than previous studies have found. In this way, the incorporation of ecological and organizational variables may improve our understanding of how the traditional predictors impact police behavior.

David Klinger's (1997) theory of police vigor helps to fill in this gap and to explain how levels of deviance in the community can influence how vigorously or how leniently police enforce laws. Within this theory, Klinger speculates that officers form "working rules," which dictate how vigorously officers enforce laws in police-citizen contacts. In this way, Klinger's theory is an ecological and organizational theory; it describes how the use of formal authority by police is conditioned by the ecology of the neighborhood an officer works in and by the structure of the police organization. One of the significant limitation with Klinger's theory is that it has never before been subject to empirical verification. This dissertation focuses on testing Klinger's theory of how the work groups created at the district level affect officers' decisions to enforce the law by influencing the officer's workload, the officer's conceptualization of normal deviance, the officers conceptualization of the deservedness of the victim, and the officer's cynicism.

This chapter gives a brief overview of Klinger's theory, and how the variables within these five major premises interact; additionally, it addresses what this dissertation seeks to test and how this dissertation adds to the growing literature on officer decision making and why it matters.

THE IMPORTANCE OF MEASURING ECOLOGICAL VARIABLES

Over the years, many different police decisions have been investigated by police researchers. Some researchers have focused in on official decisions to use authority—to make an arrest or to issue a citation for example—while other researchers have focused in on officer decision-making regarding the use of force, including informal warnings, voice commands, impact techniques and even lethal force. Situational variables and legal variables have been analyzed extensively in the literature; however, ecological variables have been largely ignored, leaving a dearth in the literature explaining how an officer’s environment affects how he or she responds to crime. This is problematic for several reasons: 1) ecological variables can have a direct effect on officer decision making; 2) ecological variables can also influence situational variables. Both of these things can have direct impacts on policy (such as community policing).

KLINGER’S THEORY

The central concept within Klinger’s theory is the idea of “vigor”: the officer’s use of formal authority. By making an arrest, by issuing a citation, by writing a report, or by doing nothing, the officer uses different levels of vigor. Within the continuum, making an arrest is more vigor than issuing a citation, issuing a citation is more vigor than taking a report, and taking a report is more vigor than simply doing nothing (Klinger 1997: 279-280). Klinger’s main interest within his theory is why levels of vigor vary—to explain why some officers choose to write reports while others do nothing, for example. To explain the variation in vigor, Klinger

offers up several rationalizations, which make up the major premises of his argument: the district in which the officer patrols will influence how much vigor an officer uses during citizen encounters by (1) influencing the officer's workload, (2) influencing the officer's perception of deviance or normal deviance, (3) influencing the officer's perception of the deservedness of the victim, (4) and influencing the officer's cynicism.

Workload

The district's workload will influence the officer's vigor simply by virtue of how much crime occurs in the officer's district. Crime-prone districts are often patrolled with less vigor and all but the major crimes—rape, murder, assault—are responded to with leniency. High-crime districts create a higher workload, and officers in these high-crime districts feel pressure from administrators to be “efficient” and are often evaluated on whether or not there is a backlog of requests for service from citizens. Subsequently, officers patrolling these high-crime districts have less time to use vigor: making an arrest, issuing a citation, or writing a report takes more time than simply responding to a call and then using informal, or unofficial means of social control (both take more time than simply doing nothing, which is also an option and a possibility). Because these actions require more time on the officer's part, they are reserved for more serious behaviors.

Districts that are not as crime prone, however, are often patrolled more vigorously and minor law infractions are more likely to be handled with some type of official, legal authority from the officer. Klinger argues that this differential response is a product of how much time an officer has to address problems within the district. Districts with low crime rates might actually

have officers actively looking for situations in which they can use vigor to meet citation or ticket quotas, another way officers are evaluated by administrators.

Normal or Deviant Deviance

The district workload will also influence how officers within each district will view crime. Officers who work in high-crime districts will see a wider range of deviant behaviors and will be subjected to deviant behaviors with more frequency than their colleagues in low-crime districts. Officers within these districts begin to see some types of deviance (simply because they encounter them so frequently) as a normal part of the landscape of their day-to-day lives. Officers within these districts, then, will not respond with as much vigor as an officer in a low-crime district would since the deviant behavior is not as typical to officers in a low-crime neighborhood; it is still abnormal.

The Deservedness of Victims

District crime rates also affect the proportion of the population police view as “deserving victims.” Within high crime rate districts, officers will encounter a wider variety of citizens who are victims as well as criminals: “prostitutes who are beaten, drug dealers who are robbed, alcoholics who are mugged” (Klinger 1997: 291). The higher dichotomy of role within these populations makes the police less sympathetic and less likely to use their authority on behalf of people within the district: they see the victims as people who brought their misfortunes on themselves and are therefore less likely to use vigor on their behalves.

Klinger argues there are two types of victims whom police may find undeserving of police action and therefore may receive less formal authority on their behalf, by police, against

their aggressor. The first are individuals who engage in conduct that is not illegal; however, they do increase their probability of being victimized. These individuals act in risky ways or do things that make them more attractive targets for crime. The second category includes individuals who have been victimized but were engaging in criminal activity themselves. In other words, these individuals were not acting with 'clean hands' when victimized. High-crime neighborhoods increase the likelihood that officers will encounter citizens who fall into one of these two categories; therefore, the officer begins to stereotype the rest of the community; they will begin to attribute the deserving victim label to more and more people (because the officer perceives them as criminal, whether it's true or not) within the district and will be less likely to use vigor within that district.

Police Cynicism

Police cynicism is another variable that Klinger argues will influence how police exercise the use of formal authority. Police cynicism can occur when officers in the field start to experience or witness failures of the criminal justice system. They see individuals repeatedly being arrested and processed by the criminal justice system, but these individuals are not extensively punished and continue to engage in criminal activity. As officers are exposed to more failures of the criminal justice system, they become disillusioned about the effectiveness of the criminal justice system and begin to see vigorous enforcement of the law as a waste of time and resources. Officers who embrace more cynical views will become less likely to use vigor in police-citizen encounters when compared to non-cynical or optimistic officers.

THE CURRENT STUDY

Klinger's theory of how ecological and organizational variables affect the use of officer vigor has never been subject to a complete test where all propositions of the theory have been evaluated. This current study seeks to add to the existing literature by addressing this gap within the current ecological studies. In order to assess the validity of Klinger's theory, this research uses systematic social observation data that were collected in Cincinnati, Ohio between April 1st, 1997 and April 30th 1998; this data was used to examine how officers decided to use their formal authority during police-citizen contacts during the study. Officers have a variety of actions that they can take including doing nothing, taking a report, issuing a citation, or making an arrest. These police decisions were used as outcomes and measures of police vigor in terms of Klinger's theory.

To explain how officers use formal authority, this dissertation assesses the importance of the central concepts from Klinger's theory: police cynicism, deserving victims, police workload, and neighborhood deviance. In addition to these variables, this dissertation controls for additional known correlates of police decision making: seriousness of the offense, amount of evidence, victim preference for an arrest, citizen intoxication, number of bystanders, demeanor of the citizen, age of citizen, gender of citizen, race of citizen. With these variables used as controls, this dissertation assesses the effectiveness of Klinger's central concepts in explaining how vigorously police officers enforce the law.

The focus of this dissertation is to evaluate the empirical relationship that each of Klinger's major theoretical concepts have on police use of vigor or their formal authority. Klinger has five central concepts: district level deviance, deserving victims, police cynicism,

normal crime, and officer workload. More specifically, this study investigates five major research questions involving these concepts:

- (1) Does district level deviance decrease officer vigor in police-citizen contacts?
- (2) Do undeserving victims (victims who were participating in crime or contributed to their victimization) see less vigor used against their aggressor?
- (3) Do police officers with a cynical outlook use less vigor in police-citizen encounters?
- (4) Does the perception of normal crime in the beat where an officer patrols impact his or her use of vigor in police-citizen encounters?
- (5) Does the workload of an officer impact the vigor an officer uses in police-citizen encounters?

IMPORTANCE OF CURRENT RESEARCH

Discretion

In theory, the decision by the police to use their authority should be governed by laws, rules, and regulations. Laws, rules, and regulations cannot govern or cover all possible situations that police officers will encounter. Administrators cannot feasibly monitor all officer behavior. Because of this, officers make judgment calls or discretionary decisions across a variety of situations. Discretion is pervasive in the criminal justice system and particularly in police work. In the late 1950s and early 1960s, a major research project funded by the American Bar Foundation played a critical role in cultivating the study of how officers make discretionary decisions (Walker 1992). One of the major findings from this research project was the actual “discovery” of discretion in the criminal justice system. Until the American Bar Foundation

research, academics did not understand how widespread discretion was, nor was there a systematic understanding or investigation on how police officers make decisions. Discretion, and how actors within the criminal justice system use it, is a highly researched area within the fields of Political Science and Criminal Justice.

The police decision to use vigor or to be lenient is a critical decision within the system since it influences who will enter the system and who will not. In addition, with police authority comes the power to use coercion and force to bring about compliance with the law; the authority society gives police allows them to deprive citizens of their freedoms and potentially their lives. This power is often vested within the discretion of law enforcement agents, which holds with it the potential for abuse or misuse of formal authority or vigor. Since police are vested with such an important power, it is vital to understand police decision-making; it is easier to curtail or limit problematic discretion when one knows and understands its origins.

Equality of Enforcement

Inequitable enforcement—especially how it relates to issues of poverty and race—creates feelings of mistrust and hostility within communities where police have to operate and function as representatives of the state and of the law. Some communities have raised arguments that police officers are not concerned with their welfare, their property, or with the management of their communities when compared to other communities or neighborhoods. This perceived inequality—true or false—undermines the legitimacy of law enforcement officials (Tyler 1990). It can be particularly detrimental when these allegations are raised from neighborhoods with a high proportion of minority citizens.

Understanding the ecological factors that influence officer decision making may help us understand the problem in racially neutral terms if factors that are non-racially motivated explain the variations in officer vigor by community. In other words, it may be the case that factors such as disorder and deviance in the neighborhood/beat explain why officers use more vigor. This would run counter to the notion that officers make the decision to use vigor based on extra legal factors, such as race. After adding possible influences that this study examines, if race is still a significant factor, it highlights the importance of understanding race in police decisions. However, if the data indicate that the new variables incorporated in this research do not help to explain any disparities that may exist in the enforcement of the law, this research can still help to contribute to the debate by pointing out disparities and informing the public discussion of discretion and equality of law enforcement.

Community Oriented Policing

Discretionary enforcement of the law and its perceived inequality can also undermine effective policing strategies, such as community oriented policing. The effectiveness of community oriented policing is largely contingent on the cooperation of and the assistance from people within communities. This partnership is undermined when citizens in disadvantaged neighborhoods perceive officers as biased or cynical toward them.

Klinger's theory discusses at least two independent variables that would have an impact on community support of officer intervention. The first is officer cynicism. Cynical officers who believe that the system is ineffective and that nothing they can do will curtail crime are not likely to actively engage in problem solving with the community, nor is the community likely to engage in any problem solving with them (Grinc 1994). The second variable that could have an

impact on the effectiveness of community oriented policing is the concept of “deserving victims.” If officers within a particular beat believe that the people within the communities they patrol deserve to be victimized, then they are less likely to seriously problem solve with these community members. And, again, if officer attitudes towards these people are outwardly negative, it is likely that the community members will reciprocate these negative feelings and will refrain from co-productive behaviors, such as exercising informal social control or mobilizing formal control in the form of calling police (Grinc 1994).

CHAPTER SUMMARY

The focus of this current study is to add to the existing literature regarding ecological and organizational variables and their effects on officer decision making: more specifically, how organizational and ecological variables influence officer vigor during police-citizen contacts. This study reviews Klinger’s (1997) theory, which has never been subject to a complete empirical test, in the hopes that doing so will create a complete model of police action. It is possible that previous empirical models developed to explain police decision making were misspecified. By incorporating the ecological and organizational variables found in Klinger’s theory with other variables we know to be predictive of police decision making, we may find that the relationships between established variables do not act as previously thought. Some variables may see an attenuation of significance, some may see an increase in significance, and others might lose their significance all together.

The first chapter of this dissertation explained some of these variables and how they relate to Klinger’s theory. Chapter two gives a more detailed explanation of the theory, the

variables within the theory, and it also gives a brief literature review of the other variables thought to influence officer decision making. Chapter three discusses the operationalization of these variables, the methodology of the present study, the statistical methods that the present study uses, and provides a description of the data. Chapter four discusses the findings of this study, and chapter five discusses the policy ramifications of these findings.

CHAPTER 2: LITERATURE REVIEW: KLINGER'S ECOLOGICAL THEORY OF POLICE

RESPONSE TO DEVIANCE

Klinger's theory attempts to address why patterns of policing vary across communities by analyzing the ecological context in which police-citizen encounters occur; more specifically, Klinger seeks to explain why officers in some districts use more vigor (formal legal authority) than officers in other districts. This, according to Klinger, is an important deviation from other theories, which explain variation in officer behavior by examining the characteristics of the citizen, the characteristics of the officer, the characteristics of the encounter between officers and citizens, or the type of incident the officer is responding to. While the literature on officer behavior has given the criminal justice community a greater understanding of officer decision making, it is an incomplete picture since it ignores the environment or the context in which police decisions occur; a gross oversight since it has long been known that crime levels impact "operation of social control in local communities" (278) and that the decision to use a formal response (or use of vigor) often fluctuates with the area in which the encounter takes place (Klinger 1997).

Klinger's theory about the impacts of ecological and organizational variables on police use of formal authority could create a better understanding of police behavior. However, Klinger's theory has never been subjected to empirical scrutiny. The purpose of this dissertation is to remedy this issue and assess the empirical validity of Klinger's theory. Before doing so, it is important to review Klinger's theory and the relevant literature on police decision making. This chapter provides a detailed account of Klinger's

theory of organizational and ecological effects on police authority. As a whole, this chapter gives a theoretical basis for the rest of the study

KLINGER'S THEORY

This section of the chapter focuses on discussing Klinger's theory and will highlight the concepts critical to this dissertation. It will begin by reviewing how Klinger defines the ecological context and how this ecological context affects the creation of the workgroup rules. This section also discusses how officers' understanding of crime frames workgroup negotiations; how their workload, their perceptions of normal and deviant crime, their perceptions of victim deservedness, and their level of cynicism affect the rules regarding the use of vigor or formal authority.

The Ecological Context

Police organizations are largely decentralized; there is very little state or federal regulation over policing agencies, which are primarily the responsibility of county and municipal governments. However, police work is highly organized territorially: jurisdictions, since they are frequently so large, must be broken down into beats that are easily patrolled by one or two officers, and—in larger areas— multiple beats will be combined into a larger territorial units called districts. These divisions or subsections of the larger territory take on the characteristics of a community: they are “systems of human settlement circumscribed by territorial and temporal boundaries” (Klinger 1997: 280; Hawley 1950, 1986).

Bonds within these territorial communities are strengthened by the sharing of resources across district and beat boundaries and the “exclusivity across jurisdictional and district boundaries” (Klinger 1997: 282). Policing typically isn’t solitary work: officers will frequently assist colleagues patrolling other beats within the same jurisdiction (jurisdictional boundaries, however, are typically not crossed) on calls that require several officers to respond. Officers within the same district—even if they don’t work together—will often share meal times, locker rooms, or chat on a regular basis; this creates distinct cultures, styles of policing, norms and values. These values, norms, and styles of policing, in turn, affect how officers use vigor within their ecological context through the creation of work groups and work group rules.

Work Rules and Work Group

The concept of a police subculture that creates its own rules and regulates its own behavior is not new within the literature; many studies point toward a police counter culture that has its own values, attitudes, and beliefs that are shared among officers. These shared values, attitudes, and beliefs arise from shared experiences, danger presented by the outside, conflicts between police (for example, conflicts with management verses beat officers), isolation from citizens at large, and stresses from the job (Kappler et al. 1998; Herbert 1998). All of these shared attributes and circumstances serve to create a cohesive network of police, a community defined by a dangerous and stressful vocation. Klinger’s theory builds on this past research and defines how these communities are created and how these communities create workgroup rules that influence the use of officer vigor.

The “community” Klinger is interested in studying is both territorially and organizationally created “by the manner in which patrol work is carried out” within these districts—by the informal and formal creation of the work rules, in other words. These work rules, according to Klinger, are formed mostly at the district level and between groups of officers who patrol the beats that make up the districts. Some of the rules are “corporate” or based on loose administrative guidelines for conduct, but police work is difficult for administrators to fully oversee because the citizen encounters officers respond to vary to such a high degree and because the district territory is typically large. Because of this, officers enjoy a great deal of freedom from administrative oversight and regulation; however, the work groups created within policing districts follow basic mandates and organizational goals from upper administration—they use these rules or goals as a framework for their own work rules, which are created as a sort of hybrid of administrative mandates and the work group’s interpretation of these mandates within the context of their districts.

Districts are marked by some degree of continuity, and—vicariously—the work rules created retain some continuity. According to Klinger, officers patrol their beats daily with the same colleagues on a semi-permanent basis; additionally, a lot of the activities officers engage in are shared—patrolling, responding to calls, eating. These shared activities, both during encounters with citizens and during down time (breaks, locker room time, chatting, etc.), create an intergraded community within the officers who patrol these districts; they discuss how they handle interactions with citizens, how they patrol their area, and what crimes they see within their beat. In essence, what Klinger is talking about here is the construction of a police culture (Kappler et al. 1998; Herbert 1998; Crank 2004;

Paoline 2001). Whenever officers receive a call related to criminal activity or possible criminal activity, they typically respond in pairs. The responding officers will then take whatever action is necessary during the encounter, and—afterwards—will typically discuss the encounter and its resolution (it is also possible that they may have to have the assistance of other officers within their district to aid in the resolution) with their peers.

The resolution to many encounters, then, “is arrived at through group processes” (Klinger 1997: 283) where managers are largely shut out and line officers become the primary negotiators. This transference of negotiating power onto organizational members is known as the negotiated-order perspective, which states that members of the organization—based on their perceptions of the organization—“negotiate the construction of conduct norms” (Klinger 1997: 286). Members of the organization negotiate objective social circumstances surrounding their work environment (whatever rules and regulations exist) and define them subjectively through their own bounded rationality; in other words, these “objective features” serve to limit and outline the parameters for the negotiations. Police officers, because the spatial limitations for oversight and the irregularity of their work make them so isolated from administrative regulation, are highly autonomous and are mostly free to negotiate work rules (Klinger 1997: 286).

Again, this observation is also noted within the police culture literature. Reuss-Ianni (1983) found that there are actually two police sub-cultures: the culture of beat or district level officers and the culture of administrators. In this case, the culture created by line-level officers is taking precedent over the administrative culture, mostly due to the logistical problems that would arise from tighter regulation but also because administrators exist outside of, and therefore have limited influence over, the workgroup

rules created at the district level. Klinger's theory seems to play on this power struggle and this cultural clash, highlighting the inability of upper-level of administration to create hard-line rules or administration's inability to effectively enforce hard-line rules that govern police conduct

Behavior, however, is still regulated—if not by administrative hard-line rules, then by informal work rules. Klinger, in his theory, speculates that these informal work rules govern the use of force. This concept is also discussed within the police culture literature. District level officers become part of a highly integrated community, and some of the culture research has demonstrated a link between officer integration in to the police subculture and the use of authority and force. For example, Terrill, Paoline and Manning (2003) found that officers who embodied the police subculture were more likely to use coercion in police-citizen contacts when compared to officers who did not align themselves with the attitudes embodied in the police subculture. While Klinger does not come to this specific conclusion, he does evaluate environmental factors that influence the creation of work rules that regulate the use of vigor at the district level.

Within the context of each district, Klinger lists three features that are germane to negotiations within organizations: environments, mandates, and the work that must be done. The environment is especially relevant here since, according to Klinger, police are “boundary personal who are utterly immersed in the environment of the districts they patrol” (Klinger 1997: 287); additionally, the environment—or district—an officer occupies influences the work that must be done or the level of crime or deviance the officer must deal with. The level of deviance, in turn, creates a general mandate from the public: control crime and regulate deviance. Different levels of deviance across these districts will

influence how officers take up this mandate to preserve public order. For our purpose, these negotiations would include the construction of rules and norms that regulate officer vigor within citizen encounters.

Officers' Understanding of Crime and the Framing of Negotiations

Districts are the ecological context in which officers patrol and influence officer vigor by exposing officers to environments that are either less taxing in terms of the work that needs to be done or more taxing. The perceived level of deviance, according to Klinger, is influenced by a variety of different factors—exposure to constant criminal elements, exposure to dilapidated environments, and more exposure to calls regarding severe or highly criminal acts. The more exposure the officer has to these environmental factors, the more crime prone or deviant he or she will think the district is; moreover, this perception will influence how he or she uses vigor in citizen encounters. Klinger asserts that, while the relationship between district-level crime rates and the use of vigor is an inverse one, the fact that officers respond to more severe crimes in these districts could partially account for this. Officers, by virtue of the fact that they respond to severe crimes more frequently, are given greater opportunity to respond with vigor.

Klinger also acknowledges that there are some circumstances where officers must or will respond with vigor, regardless of informal work rules. In situations where officers feel that they are in physical danger, they will typically respond with high levels of vigor to escape injury. When responding to a call, the officer will assess the threat level to determine whether or not he is in any danger, and if he is not, he will then apply the work rules normally. If, however, the officer feels that he is in danger, he will make an arrest or

use some other type of formal authority and he will do this regardless of the nature of the call, the victim, the district, or his workload.

Officers will also use formal authority—either arrest, write a report, investigate—in instances where homicides occur. Work rules are created, in part, due to the obfuscated nature of police work; however, when a homicide occurs, it is difficult for officers to do anything other than respond with vigor without having their leniency detected by administration. Bodies are somewhat difficult to hide. It is much more low key to not respond to lesser calls for service, such as drunk and disorderly or stranded motorist. When murders occur within an officer's district, she will respond with vigor regardless of her workload, her cynicism, her feelings regarding the victims

Despite these exceptions, Klinger still speculates that the district and the level of deviance within will shape the use of vigor. The crime level of the district (which will remain fairly stable over time) or the perceived level of deviance within the district influences how the officer sees the environment, how he sees the people within the environment, and how he begins to see crime overall. In other words, the perceived level of deviance within these districts controls the officer's workload, how the officer views normal and deviant crimes, the deservedness of the victims, and police cynicism.

Workload

The environments officers patrol (or their district) influence how much deviance or crime officers are exposed to on a daily basis, with officers in high-crime areas typically being busier than officers in low-crime areas. Within the high-crime areas, officers begin to use a system of triage, screening out lower priority calls (such as illegally parked cars or

stranded motorists) and begin responding to situations that involve more deviance or more risk to the community.

High-crime districts' work rules, then, tend to favor using less vigor simply because there are more calls for service than there are police patrol units available to respond. A backlog of calls is created, and officers—fearing that they will be evaluated poorly if they do not process citizen requests efficiently—use their formal authority less within citizen encounters unless it is a situation that dictates a formal response—murder, rape, arson. In other words, officers with limited amounts of time are less likely to respond with vigor simply because a formal response takes more time than leniency. Resources are not as limited within low-crime districts and, therefore, officers patrolling these beats are more likely to use vigor or respond with vigor to more citizen calls for service.

Normal and deviant deviance

Officer work rules created around normal deviance, according to Klinger, are similar to the work rules created around the work rules criminal court lawyers came to: normal crimes require a less stringent sanction, or—in officer work rules—normal crimes require a less vigorous response. As district levels of deviance increase, the types of crimes that officers view as “normal” also increases (by simple exposure); therefore, they are less likely to use vigor as a response to a broader array of criminal activity.

Victim deservedness

As the levels of crime within a district increase, the officers will be exposed to more and more unsavory characters—people whom they view as “deserving” of victimization by

virtue of their association with crime. High levels of deviance pushes the work rules to less vigor in this case because there are fewer people within these districts whom officers feel are worth helping; they lack “moral worth” (Klinger 1997: 290). Officers within lower crime districts, on the other hand, do not have the same level of exposure to criminals or criminal activity and are therefore less likely to question a victim’s moral worth before using vigor on his or her behalf.

Cynicism

Exposed to higher levels of deviance than their counterparts in low-crime districts, officers within high-crime districts respond to a higher proportion of serious calls, and they begin to view their districts as crime ridden. Officers within high-crime districts are frequently exposed to people they know to be criminal, perhaps these people have even been arrested before. As levels of deviance increase within districts, officers are exposed to more deviants out in public and observe more deviant acts occurring in public space and consequently see their districts as more deviant. Seeing criminals out on the street on a regular basis and seeing crimes being committed openly causes officers to take on a more jaded view of the criminal justice system, a system they see as inadequate to control crime or does not sanction criminals severally enough to force them to disengage from criminal activity. This belief instills a cynicism into the officer, who then is less likely to use vigor simply because it is perceived that use of formal authority does no good: crime will continue regardless of what they do. The work group rules within these districts leans to the use of less vigor.

PREVIOUS TEST OF KLINGER'S THEORY

To date, there has only been one other test of Klinger's theory. Sobol (2010) conducted a limited test using three of Klinger's five constructs: district level deviance, workload, and cynicism. Sobol (2010) found only limited support for Klinger's theory. In particular, the data indicated that district crime level (district deviance measure) had a significant impact on police vigor. However, when police cynicism and workload were introduced into the model, they failed to explain a significant amount of the variation in vigor and did they mediate the impact of district level deviance on police use of vigor.

While Sobol's test of Klinger's theory was the first empirical test, it failed to test all of Klinger's theoretical constructs. Specifically, Sobol failed to measure officers' perceptions of normal crime in their patrol district; Sobel did not measure deserving victims. In addition, there are significant methodological issues associated with his study that require further examination. For example, Sobol only measures the community that police work in at the district level. This study intends to look beyond the district level and focus on the beat, where officers typically patrol and where Klinger speculates their work-group rules form.

Additionally, some of Sobol's measurements may be less than desirable. For example, as measures of police cynicism, Sobol (2010) used three items about citizen willingness to call the police, provide information to the police, and willingness to work with the police to solve problems. While there is evidence that these factors do influence police attitudes, they are—at best—indirect measures of police cynicism. This study will use officer survey questions about police work that will more closely measure police

cynicism. While Sobol does provide the first empirical test of Klinger's theory, this dissertation will provide a more complete test of the theory by measuring and incorporating all of Klinger's theoretical concepts into the statistical models and by using more direct measures of the theory's concepts.

CHAPTER SUMMARY

The focus of this dissertation is on testing Klinger's theory about vigor and police decision making. In order to do this, it is important to give a summary of Klinger's theory and the different concepts that are influential in predicting the vigor of police actions in police-citizen encounters. This chapter provided a detailed explanation of Klinger's theory and its variables. His theory, while it stands alone as an ecological explanation for variation in the use of vigor across district boundaries, is based within police culture research. Specifically, Klinger analyzed how police culture creates and fosters an environment where workgroup rules are established to govern the use of formal authority. These cultural values, goals, and attitudes form due to the close-knit nature of police work and the organizational networks developed within policing districts.

CHAPTER 3: EXPLAINING POLICE DECISION MAKING: REVIEW OF EXTANT

LITERATURE

Klinger's theory studies the ecological variables that influence officer decision making; however, there is a large body of literature that discusses how police make decisions and use their discretion (some of these variables are not considered within Klinger's theory or are considered controls). Again, it is important to include these variables in models since it is possible that the strength of the relationships found in previous research literature might increase, decrease, or disappear once Klinger's variables are accounted for and tested. This section will provide a brief overview of this literature and will discuss two different categories of decision-making variables: legal and extra-legal variables.

LEGAL VARIABLES

Legal variables are typically seen as factors that are legitimate to consider under the law. These are normally factors associated with the offense or elements of the criminal offense as defined by law (Worden 1989). These variables are typically codified policy decisions and are factors that the law has designated that the officer should react to. These variables include the seriousness of the offense and the amount of evidence the officer has.

Seriousness of the Offense

One correlate of officer decision making is the seriousness of the offense, a legal factor that should guide officer decision making as a matter of policy. Typically this variable is listed as either felony or misdemeanor (felonies being more severe), and the more serious or deviant the offense, the more likely an officer is to arrest or take formal action. This correlate and its significance as a predictor for the use of formal action is a consistent finding across most studies (Riksheim and Chermak 1993; National Research Council 2004) even outside of policing (see Gottfredson and Gottfredson 1988). Some of the early research on police decision making was qualitative in nature or used very basic analytical techniques; however, even these studies found that felony offenses increased the likelihood of arrest (Piliavin and Briar 1964; Black and Reiss 1970; Black 1971).

Research techniques became more advanced and researchers were able to be more precise when looking at the relationship between arrest and offense seriousness. When studied with more complex statistical techniques, the findings of previous studies were validated. Mastrofski, Worden, and Snipes (1995), for example, found officers confronted with a serious offense were almost ten times more likely to make an arrest than officers confronted with a non-serious offense. This study, however, was limited to officers who did not hold a positive attitude toward community policing. Novak et al. (2002) evaluated both beat officers and community policing officers and found that both were about three times more likely to arrest when confronted with a serious offense; however, this relationship is somewhat weakened by a large standard error within the variable itself. Brown and Frank (2006) assayed the differences between black and white officers when making arrest decisions. While differences were found between the officers, offense

seriousness was significant for both sets of officers: white officers were 3.7 times more likely to arrest for a serious offense, and black officers were 4.8 times more likely to arrest for a serious offense (the difference between the two was not significant) (Brown and Frank 2006).

The consistent significance of this finding could be due, in part, to the general public mandate for officers to intervene or use formal authority in situations that are more dangerous or threaten public harm. It would be considered inappropriate or negligent for officers to not use some type of legal authority when the offense is serious and possibly dangerous. The same trend can be found in other areas of the criminal justice system. For example, both judges and legislators tend to react to more severe crimes by enhancing the penalty or formal response (Black 1971, Gottfredson and Gottfredson 1988). Klinger (1997) cites two other possible reasons. Discretion is not as abundant when the crime is serious. Essentially, officer decisions are easier for administrators or supervisors to monitor when the crime becomes more severe for a variety of reasons including the existence of more evidence, serious injuries, and witnesses or victims. Also, when officers respond to serious offenses, they might feel as though they are in more danger of physical harm and therefore exercise their formal authority as a means to stave off an attack.

Evidence

Evidence is another legal variable that is found to significantly influence the decision to arrest: as officers obtain more evidence that an individual is guilty of a crime, the likelihood of an arrest increases (Riksheim and Chermak 1993; Novak 1999; National Research Council 2004; Mastrofski et al. 1995; Black 1971; Mastrofski et al. 2000). Officers

must meet evidentiary standards before taking action in many encounters. For example, before an officer can search someone, he must have probable cause or reasonable suspicion in order to conduct a stop and frisk. When an officer enters into this type of fact-finding process and finds evidence of illegal activity, it becomes more likely that he will arrest or take some type of formal action. The significance of evidence as it relates to arrest could be due to the fact that once an officer has a certain level of evidence, he obtains the legal authority to take legal action. Without proper evidence an officer cannot legally arrest—such an arrest would exceed the officer’s authority.

Early research found that as levels of evidence increased, the probability of arrest increased as well. Black (1971) notes that while more evidence increases the probability of arrest, it does not necessarily mandate it: evidence is legally necessary but not sufficient. Officers can still use their discretion to not make an arrest, regardless of the evidence. However, research by Terrill and Paoline (2007), which only surveyed situations in which an officer could make an arrest, found that increased levels of evidence still increased the probability that officers would make an arrest. This tells us that even though arrest is not mandatory as the level of evidence increases, it is still a highly correlated predictor.

More contemporary research has also found a relationship between evidence and arrest. In recent studies, there have been two approaches to evidence: one focuses on the quality of evidence (Mastrofski, et al 1995; Mastrofski et al 2000) and the other focuses on the quantity or number of different types of evidence (Novak et al 2002). Mastrofski et al. (1995) found that officers in Richmond were influenced by the quality of evidence when making arrests. When all officers were pooled together, officers were twice as likely to make an arrest for each quality level of evidence. However, when the sample was

separated into officers with positive and negative preferences towards community policing, the relationship only held for officers who did not have a positive preference towards community policing (Mastrofski et al. 1995). Similar findings were found in later replications where requests upon the police to control another citizen were considered (Mastrofski et al. 2000). Novak et al. (2000) studied beat officers and community oriented police officers and found that the arrest probability increased by one and a half times for each level of evidence (there were four levels of evidence within this study). However, the level of evidence standard was not as significant for community oriented police officers.

EXTRA-LEGAL VARIABLES

Situational variables involve, “structural characteristics of the immediate situation: the nature of the problem, the attributes and actions of the citizens, and contextual variables” (Worden 1989: 668). While legal variables account for a significant amount of officers’ decisions, extra-legal variables also influence police decision making. Because these reactions are unscripted by law, they are often viewed with more scrutiny and the discretion involved with the officer’s decision to act on these variables is often viewed with suspicion. This suspicion is not totally unfounded: as discussed before, officers have a wide amount of discretion and administrators can do little to regulate their workgroup rules of conduct regarding the use of formal authority. Since this is the case and because the law does not entirely stipulate how an officer should react, basic questions of fairness arise when officers make decisions based on extra-legal variables. These extra-legal variables

include demeanor of the suspect, intoxication of the suspect, race, class, gender, and community context.

Demeanor

Demeanor is defined as legally permissible behavior that implicates the level of respect the citizen has for the officer (Klinger 1994; Worden and Shepard 1996). The theorized relationship between arrest and demeanor is that a hostile demeanor should increase the probability or likelihood of arrest; citizens who do not show respect for an officer's authority, in other words, are more likely to be arrested than citizens who do. For a long time, it was taken as empirical fact that hostile or disrespectful citizen demeanor would increase the likelihood of arrest, and there is a large body of literature that validates the claim (Friedrich 1977; Lundman 1974; Smith 1984; Visher 1983; Worden 1989; Black and Reiss 1970; Black 1971). One major criticism of these studies is that they used measures of illegal conduct as indicators of demeanor. So, for example, spitting on an officer would be coded as hostile demeanor instead of as a criminal offense (assault) (Klinger 1994). This is problematic because in these studies, demeanor is not limited to legally permissible behavior since it is confounded with criminal activity.

Current empirical findings on demeanor have been mixed. After limiting hostile demeanor to legal activities and after controlling for the presence of (or lack of) criminal activity, Klinger (1994) found that citizen demeanor actually had no independent impact on the officer decision to arrest. Several studies did a follow up after Klinger's report and reexamined previous data, including the Black and Reiss data, PSS, and the Midwest data. Findings indicated that the effect of demeanor was diminished but still present in models

(Worden and Shepard 1996; Lundman 2004, 2006). Current studies have continued to validate this trend toward re-validating demeanor as a correlate of officer decision to arrest. Project on Policing Neighborhoods data were analyzed by Worden and Myers (2000), who found that suspect disrespect raises the probability of arrest; additionally, Brown and Frank (2006) analyzed officer decisions to arrest in Cincinnati and found that suspects who were hostile were more likely to be arrested.

Intoxication

Some researchers argue that citizens who are under the influence of drugs or alcohol are more likely to be arrested than individuals who are not. Citizens who are intoxicated could put up more resistance, or assault officers during the encounter. Even if the citizen does not assault the officer, people who are on drugs or alcohol are perceived as more violent or more prone to violence due to impaired judgment. Officers, suspecting they might be in danger of physical harm, might arrest to prevent harm to themselves or to other citizens (Bittner 1967). Arrest is also a form of control: people who are under the influence of drugs or alcohol may be disorderly and disruptive, and—for this reason alone—officers might be prone to using arrest to remove the intoxicated person from public view as a means to control someone who is disrespectful to their authority.

Mastrofski et al. (1995) use the Richmond data to investigate suspect drunkenness in their statistical model. When all officers are pooled together, intoxicated citizens were two times more likely to be arrested compared to sober citizens. However, when officers were disaggregated into pro and anti community policing, officers who were hostile towards community policing officers were not more likely to arrest drunk citizens while

officers with positive attitudes towards community police were more than five times more likely to arrest drunk citizens compared to sober citizens. Using Cincinnati data Novak et al. (2002) found that beat officers were eighteen times more likely to arrest citizens who were intoxicated compared to non-intoxicated citizens. There was no difference in arrest between intoxicated and non-intoxicated citizens for community policing officers. Terrill and Paoline (2007) scrutinized the reasons why officers decide not to arrest individuals and found individuals who did not show signs of intoxication were more likely to avoid arrest.

These findings need to be interpreted with a bit of caution. There are some studies that have found intoxication may have no or limited effects on the decision to arrest. For instance, Smith (1987) surveyed police action in two-party violent disputes and found that officers were not more or less likely to arrest individuals who had been drinking at the time of the confrontation. Bittner (1967) may provide an explanation for this. In some circumstances (usually in the case of public intoxication or drunk and disorderly), the officer may simply look to control the situation through informal control or alternate means, such as separating the quarreling individuals while others rely on arrest (Smith 1987; Novak et al 2002).

Race

The race of the offender, the race of the victim, and the race of the officer are said to have an effect on the decision to arrest. The race of the citizen is the most commonly examined correlate of officer decision making; it is theorized that officers may be more likely to see individuals of a particular race as more threatening or more likely to engage in

criminal conduct, and, therefore, officers are more likely to arrest based on these perceptions (Skolnick 1966). Several studies have investigated the effect of the citizen's race on the arrest decision, and the literature is mixed. Lundman (1994, 1996) finds that black individuals are more likely to be arrested in DUI encounters than white individuals. Brown and Frank (2006) also found that officers, in general, were more likely to arrest non-white suspects; however, when officers were disaggregated into white and black officers, it was found that white officers were statistically no more likely to arrest non-white suspects while black officers were much more likely (81 times more likely) to arrest non-white suspects. Race can work as a separating variable in the opposite direction, where whites are more likely to be arrested than non-whites in some situations, such as two-party violent disputes (Smith 1987).

There is also literature that examines the correlates of officer decision making that finds race to either be an insignificant variable or a variable that is only significant under specific conditions. Black (1971) found that blacks were more likely to be arrested than whites; however, when conduct or demeanor of suspect toward the police officer was controlled for, race of the suspect ceased to be statistically significant. In their analysis of the Richmond Data, Mastrofski et al. (1995) find that officers, regardless of pro or anti community policing preferences, did not allow race to figure in on their arrest decisions. When we analyze how the race of the offender influences the decision to arrest, then, the best conclusion might be that results are inconclusive or at least mixed (Riksheim and Chermak 1993; National Research Counsel 2004).

Race of the victim has also been examined to assess its impact on officer decisions to arrest (Black 1971). Smith, Visher, and Davidson (1984) found that race of the victim

rendered the relationship between race of the suspect and arrest insignificant. Their findings indicated that suspects were more likely to be arrested if their victim was white and less likely to be arrested if their victim was black. Since a high proportion of crime is interracial, this could be a factor that confounds the relationship between suspect race and the decision to arrest (Black 1971; Smith Visher and Davidson 1984; Smith and Cole 2009).

There is also debate as to whether or not the race of the officer impacts the decision to arrest. Smith and Klein (1983) did not find the race of the officer to be a significant predictor of arrest. Worden (1989) scrutinized a variety of officer characteristics, race being one of them, and failed to find a statistically significant relationship between officer race and the probability of arrest. Officers of different races may very well perceive situations differently based on their cultural norms, values, and experiences. Sun and Payne (2004) studied the influence of officer race on coercive behavior by police officers in the POPN data. They found that black officers were more coercive than white officers. Brown and Frank (2006) examined the differences between black and white officers in Cincinnati and found that there were significant differences in how officers of different races (black and white) enforce the law, a finding that goes against previous research findings. Specifically, they found that black officers were more likely to arrest black suspects, and black officers who had been serving for longer durations were less likely to make an arrest. White officers were more likely to make an arrest when they had been called to a situation (reactive call) where there was no difference for black officers. In addition, black officers were more likely to arrest juvenile suspects and male suspects when compared to white officers.

Class

Historically, police studies have found that officers are more likely to use authority or use force against citizens of lower social classes or lower socioeconomic status (Black and Reiss 1970; Friedrich 1980). Recent studies, however, have found mixed results on the effect of social class on police decision making. Mastrofski et al. (1995) found that the likelihood of arrest is not associated with social class of the suspect; however, Terrill and Mastrofski (2002) found that suspect social class was statistically significant in predicting officer use of force. In other words, wealthy suspects or more affluent suspects who looked wealthy were less likely to have force used against them. Lundman (1994) found that class of the suspect was a significant predictor of police probabilities to arrest in some statistical models but not others, which indicates a mixed finding. These findings were peculiar since suspects of a higher social class were more likely to be arrested than suspects of a lower social class; this finding is contrary to most of the other research.

Some speculate that the mixed results on social class can be attributed to differences in measurement (National Research Council 2004); there is no specific standard in our field, which makes it difficult to compare across studies. Additionally, this is a difficult concept to measure. Trained observers often have to make judgments about an individual's socioeconomic status based on things such as clothing. However, these may not be the best indicators. Because of this, the measurement of social class in systematic social observation research may be suspect at best.

Gender

Studies that examine the influence of gender on police decision making have found mixed results. One of the most common theories on this is the “chivalry hypothesis,” which predicts that officers will treat women who fulfill the societal role that women should (or act like ladies) more leniently than men or other women who behave in a more masculine or unladylike manner (Messerschmidt 1993; Visher 1983). A lot of the research, however, has found that gender does not influence an officer’s decision to arrest (Bayley 1986; Feder 1996; Lundman 1998; Mastrofski et al. 1995; Worden 1990; Smith and Klein 1984). Additionally, a study by Mastrofski et al. (1995) showed that when officers were asked to fulfill a citizen request, gender was not significant predictor.

At the same time, Smith, Visher, and Davidson (1984) found that white females (when no complainant was present) were less likely to be arrested than males. Brown and Frank (2006) found that female suspects were less likely to be arrested by both black and white officers, and Visher (1983) found that females were more likely to be arrested for property crimes, and Smith (1986) found that when other situational and community factors were controlled for, females were somewhat less likely to be arrested.

Other Control Variables

This chapter has reviewed several major variables that have been found to be important when explaining police decision making. These variables represent those that are traditionally included in decision-making models. At the same time, there are a variety of other variables that recent research has suggested may also impact the decisions of officers that have not been discussed in this review. The focus of this dissertation is testing

the impacts of Klinger's (1997) concepts on police vigor. In order to do this, it is important to incorporate all theoretically relevant variables; however, they are not the focus of this study and are primarily used as controls in order to examine the independent effects of the variables specified in Klinger's theory. Because of this, this chapter only contains a brief review of several major factors in police decision making. The rest of the variables that will be used as controls will be discussed in the methods section (Chapter 4).

CHAPTER SUMMARY

This chapter has provided a very brief review of some of the major variables that have been used in existing police decision-making research. However, this review is limited because these variables are not the major variables to be investigated. The focus of this dissertation is on the impact of Klinger's concepts on police vigor during police-citizen contact. While these variables are not of primary concern and interest, they are important as control variables. If this study does not include legal and extra legal variables that are already known to influence police decision making, it is likely that the statistical models will be misspecified.

CHAPTER 4: METHODS

RESEARCH QUESTIONS

This dissertation seeks to provide the most complete test to date of Klinger's 1997 theory about the use of vigor—or formal authority—in police-citizen contacts. Chapter 2 provided a detailed review of five major concepts use in Klinger's theory: (1) district deviance; (2) deserving victims; (3) officer cynicism; (4) normal crime; and (5) officer workload. Based on these concepts, there are six major research questions that this study will addresses:

(1) The first major question to be addressed in Klinger's (1997) theory is how does the district level of deviance impact an officer's use of vigor in contacts with citizens? According to Klinger's theory, as district level of deviance increases, vigor in police-citizen encounters will decrease when controlling for all other factors.

(2) The second major question to be addressed is how does the status of being a deserving victim or an undeserving victim influence officer decision making? More specifically, Klinger (1997) predicts that in encounters with undeserving victims, police will use less vigor when controlling for all other factors.

(3) The third major question to be addressed is how does officer cynicism impact an officer's decision to use formal authority? The theory predicts that police officers who are more cynical will use less vigor during police-citizen encounters controlling for all other factors.

(4) The fourth major question to be addressed focuses on how police perceive normal crime in their neighborhoods and how that impacts their use of formal authority. Klinger (1997) argues that police officers who perceive more serious forms of crime as “normal” in their beats use less vigor, on average, when compared to officers who perceive the same crimes as being “atypical or abnormal” in their beats.

(5) The fifth major question to be addressed focuses on how police workload impacts officer use of formal authority. More specifically, Klinger argues that as officer workload increases, officers, on average, will use less vigor in police-citizen contacts.

(6) A sixth question to be addressed, if data allow, will focus on the differences between vigor at the district level and at the beat level. Klinger advocates in his theory that there will be more variation in police decision making between districts than between beats in the same district. This research question would ask if there is a difference in the vigor of police decision making at the beat level when compared to decision making at the district level.

STUDY METHODOLOGY

This study uses previously collected data; however, the data set and the way the information is organized within this data set lend itself to this study’s analysis. Within the following sections, I will explain how the original study was organized, the data sources and the advantages and disadvantages of these sources, and the role of the observer within the project.

Organization of the Study Site

The initial study, in which this data were collected, examined differences between community oriented police officers and beat officers to determine if differences in officer assignment had an influence on the correlates (individual correlates, situational correlates, community correlates) of the officer's decision to arrest (Frank, Novak, and Smith 2001). The study is based on research done on the Cincinnati Police Division (CPD), which had 996 sworn officers at the time (1997), making it the largest police agency within Hamilton County (Frank, Novak, and Smith 2001). The CPD was divided into four different bureaus; however, the officers observed in the Cincinnati Study were assigned to the Patrol Bureau. The Cincinnati Study observed two types of officers: beat officers and community policing officers. Within the current study, this is a variable taken into consideration; it is not, however, a point of focus.

Organization of the districts

At the time of the Cincinnati study, officers were assigned to beats in one of five districts. In 1994 these beats and districts were reorganized to follow the boundaries of neighborhoods within Cincinnati. If, for example, a patrol beat boundary before 1994 ran through a neighborhood (so the neighborhood was split between two beats) the beat lines were redrawn to conform to the neighborhood line, so an entire neighborhood would be within a single beat. Additionally, beats for Cincinnati can only be contained within a single district. Because of the 1994 redrawing of beat and district lines to conform to existing neighborhoods, neighborhood and beats can be aggregated up to the district level (Frank, Novak, and Smith 2001).

Klinger argues that the district level is the organizational unit of aggregation because the district is a lot more static and a lot less permeable than beats: very few officers transfer or move between districts, but there can be a lot of variation within beats. Additionally, Klinger argues that levels of deviance within the neighborhoods (that are within the districts the officer patrols) influence the level of vigor or the use of formal authority. The 1994 reformation of district and patrol beat lines to conform to neighborhood boundaries makes the testing of Klingers' propositions easier. Since neighborhoods and patrol beats are aligned, they can be aggregated up to the district level; data can be used to test ecological (neighborhood) and organizational (beat and district) research questions within the same model (Frank, Novak, and Smith 2001).

Data Sources

This study's data were collected as part of a larger study (the Cincinnati Study) funded by the National Institute of Justice (Frank 1996). This dissertation uses observational data collected as part of the Cincinnati Study on police-citizen encounters, officer interviews, officer survey data, crime data (duration of the study), and census data. Some of this information is archival data (the crime data for the time period the study was conducted and the census data), but many of the variables within this dissertation (especially the variables associated with officers' decision making) were based on the officer interviews and the observational data collected on police-citizen encounters. Therefore, this section of the dissertation will focus on how this observational data were collected: how officers were selected for observation, when officers were observed, the

length of the observation period, and what behaviors were observed. This section will also give a general overview of how the data collectors were trained.

Observation data

How officers were selected

The intent of the original study was to compare beat officers and community policing officers; therefore, both types officers are included in the sample. Additionally, some studies have found that the environment influences an officer's routines and behavior. As such, both types of officers, COP and beat officers, were observed in similar environments (Frank, Novak, and Smith 2001). The methods for selecting community policing officers and beat officers were slightly different

The sampling frame for community policing officers originally consisted of 47 community officers within Cincinnati. Four of these officers were eliminated from the sample due to the fact that they spent part of their shifts on bicycles, which would make it difficult if not impossible for the data collectors to observe these officers. From the 43 remaining officers, 33 were randomly selected: "four of these officers were assigned to only one neighborhood, eight officers shared a neighborhood with another officer and 18 were assigned to more than one neighborhood (Frank, Novak, and Smith 2001). Twenty-nine of Cincinnati's 52 communities (55.8%) were patrolled by these officers (Frank, Novak, and Smith 2001).

For the selection of the beat officers, researchers randomly selected eight-hour shifts in the beats assigned to the sample of community officers. This selection method allows for direct comparisons between community officers and beat officers in the same

neighborhood/beat. This method had several other advantages associated with it: this method provided researchers with an adequate comparison group, this method increased confidence that the behaviors observed could be generalized, and this method insured the inclusion of eighteen of the 22 beats within Cincinnati.

Finally, the selection methods used within the Cincinnati study benefit this dissertation's study. The environment in which the interactions occur are of particular interest within Klinger's theory. His theory revolves around how the use of vigor changes based on the environmental context; therefore, it is beneficial to this study that the Cincinnati study also considered environment a relevant factor and included the neighborhoods or beats in which the observations took place.

When officers were observed

Finding a similar time of day to observe beat and community policing officers presented somewhat of a challenge because the beat officers' schedules typically varied (some shifts started at 7:00 am and other shifts started at 1:00pm) where the community policing officers typically had static shifts from 10:00am until 6:00pm. Typically speaking, however, community policing officers worked during beat officers' first and second shifts; therefore, researchers decided to observe beat officers during these two shifts but not during the third shift since community policing officers were not working at these times (Frank, Novak, and Smith 2001).

Determining which days in the week to conduct these observations presented a similar problem: beat officers and community policing officers worked on different schedules during the week. According to Novak (1999), most community police officers

worked five consecutive days but never on Sunday. Because no community policing officers worked on Sundays, the researchers only observed beat officers Monday-Saturday, never on Sunday and never during the third shift.

Once it was established what days and during which shifts the observations would take place, researchers had to determine when and for how long they would observe the community policing officers and their beat officer counterparts. Eight hours over a twelve month period was delegated for each community policing officer and his or her beat officer counterpart: these observations occurred over the course of one year. Observations of individual officers occurred no more than once a month whenever possible. A computer was used to randomly generate the days in the month when these observations of community policing officers and their beat officer counterpart would take place: a researcher was then assigned to these observation dates. The community policing officer coordinator was given a list one month before the actual observations took place; this list had the observation dates, officer names or beat numbers, and the starting times of the observations. As an additional precaution (to ensure that the officer would be available), the researchers assigned to observe would contact the officers they were observing two or three days in advance to remind them of the observation. Most of the observations occurred on the randomly selected dates (93.4%); however, on a limited number of scheduled observations officers were not available due to vacations, call in sick, or other unforeseen circumstances that would arise (Frank, Novak, and Smith 2001).

Length of the observation period

The Cincinnati study followed officers for a full year in order to observe officer behavior in all seasons. This is a significant question since many of the systematic social observational studies are conducted during spring and summer. The Cincinnati data can be used to answer questions about how seasonal changes can impact officer decisions and actions. However, analysis of the data by Frank, Novak and Smith indicates that officer behavior did not significantly change between seasons of the year (Frank, Novak and Smith, 2001).

Observational data and data instruments

The focus of the larger study was on the behavioral differences, work routine differences, and workload differences between community policing officers and beat officers. The researchers used four different coding instruments during the observations: ride, encounter, citizen, and activity instruments. This section will briefly describe the different instruments used during the data collection.

Ride instruments were completed for every observation period. These instruments collected information on officer assignment (community policing officer or beat officer), the officer characteristics (gender, age, race, educational background, rank, length of service, and marital status), and the officer's feelings or attitudes about the ride along. This was done to check for officer reactivity, which is when the officer changes his or her behavior based on the presence of the researcher. Questions regarding the weather and precipitation during the ride also were included (Frank, Novak, and Smith 2001).

Encounter instruments collected information regarding all citizen-officer encounters. For the purpose of this study, encounters were defined as interactions between two or more persons (Goffman 1961; Novak 1999) and involved face-to-face verbal or physical communication (three or more verbal exchanges) between officers and citizens (Mastrofski et al. 1998; Novak 1999). Encounter instruments allowed for the systematic collection of information that would describe the police-citizen interaction. For instance, the coding instruments collected information about the duration of the encounter, the encounter location, how officers were mobilized to engage in the encounter (citizen request, proactive, call for service), the number of officer and citizen participants, and the reason for the encounter and the resolution of the encounter.

Additionally, encounters were labeled as “brief,” “casual,” “ or full.” Classification was based on the duration of the encounter and whether it involved police business. Brief encounters were shorter in duration and did not always satisfy the requirements of an encounter. For instance, sometimes an officer simply asked a citizen to comply with a request, such as a request for a citizen to go inside or to stop loitering. Since these types of encounters did not typically involve three verbal exchanges, they were categorized as “brief” (Novak 1999). There were also encounters where the officer did not discuss official police business (discussions with friends, for example); however, there were three verbal exchanges, making these exchanges qualify as encounters. These encounters were labeled as “casual.” A full encounter was an encounter that satisfied the three verbal exchanges criteria and involved official police business: officers were acting in an official police capacity (Frank, Novak, and Smith 2001). This study uses only the data related to the full encounters.

A citizen form was completed for each citizen an officer had contact with during an encounter. As such, there are more citizen forms (since multiple citizens could have been present during one encounter) than encounter forms. Citizen instruments collected information on the demographic characteristics of the involved citizens and the conduct of both the observed officer and involved citizens. Specifically, data were gathered on citizens' characteristics: race, gender, mental state, and whether or not the citizen was under the influence of drugs or alcohol. The citizen's estimated age and social class were also documented. Citizen requests for assistance or requests for the officers to speak to a government agency on the citizen's behalf were recorded, as were the officers' response to these requests. Similarly, requests made by officers were also documented (i.e., consent to search, requests that the citizen stop engaging in illegal or disorderly behavior, requests that the citizen call or not call the police, etc.) along with the citizen responses to the officer requests—did they comply, did they attack the officer, and the demeanor of the citizen (Frank, Novak, and Smith 2001).

The activity instrument collected data that were concerned with what the observed officer did when he or she was not involved in an officer-citizen encounter: routine parole, enroute to a location, roll call, report writing, meetings, and other activities that did not involve encounters with citizens.

These four instruments are used in varying degrees for the current study. The ride, citizen encounter, and the encounter instrument are the most relevant since they measure where the encounter occurred (context), whether or not the officer used his or her formal authority, and the characteristics of the citizen and the encounter. The activity form was not a focus of this current study and more adequately addressed the Cincinnati Study's

initial purpose, which was to determine what differences in activities and job duties there were between community policing officers and beat officers.

Coding Information

Information for this project was recorded in three ways. First, field notes were completed during the ride-a-long with officers in order to record what was happening during the ride-a-long. Second, researchers wrote a narrative of what occurred during the observation period to clarify ambiguous events. Lastly, researchers coded relevant information in computer databases; this process was usually completed within days of the observation period at the University of Cincinnati (Frank, Novak, and Smith 2001).

Project Personnel

Prior to conducting observations, observers were required to complete a training course where they reviewed and discussed the four instruments to clarify how to interpret each of the questions. This was done to standardize the interpretations of each question so that the observers did not extrapolate any additional meaning and to ensure that each observer was interpreting the question in a similar manner. Observers were briefed on project confidentiality and required to complete a form stating that they would not discuss activities observed while on ride-a-longs (Frank, Novak, and Smith 2001).

Observational data

Field observation data allow the researcher access to information that would otherwise be obfuscated; they get the “insider’s view” of the phenomenon they wish to

study. Archival data such as arrest records, for example, only give data on those individuals who were arrested; however, for an encounter to end in arrest is somewhat rare (Reiss 1971). Observational field study is not filtered in this way: researchers are able to witness all police activities, including citizen and police encounters that occur during the observation period. This is especially important to the current study, which attempts to measure whether or not the vigor of enforcement fluctuates based on environmental factors. In order to do this, observational data—which records all use of formal authority, not just arrest—must be used.

There are, however, limitations or problems associated with field observation research. Reactivity is one of the major problems. It is possible that officers (or whatever social group is subject to study) might alter their behavior based on the presence of the researcher. According to Skolnick (1966), this is especially problematic with officers, who have a subculture that is inherently mistrustful of outsiders. This mistrust might cause the officer to guard his or her actual reactions or to behave in other unnatural ways around the observer. For instance, officers, instead of engaging in normal routine behavior, might demonstrate to the observer how police run background checks or record checks or the officer might make more arrests than he normally would. Conversely, the officer might reduce the amount of vigor he or she uses during encounters in order to prevent harm to the observer or reduce the use of questionable tactics. Both of these scenarios would cause the researcher to either over represent officer vigor or under represent it.

Some research has found empirical support that reactivity can impact officer decision making in the field. Spano (2003) used the Project on Policing Neighborhoods data (POPAN) to investigate reactivity during systematic social observation. Some evidence

of reactivity was found in the data. More specifically, when the officer had concerns about safety, there were less likely to make an arrest. Additionally, this avoidance of arrest was magnified when the observer with the officer was a female. These findings demonstrate the importance of taking precautions to minimize any reactivity.

The research team that worked on the Cincinnati Study took several precautions against reactivity to ensure that officer levels of vigor were not over represented or under represented. First, the officers were guaranteed confidentiality. The hope was that this confidentiality guarantee would help put officers at ease with the researchers. The confidentiality agreement and the purpose of the study was communicated to the officers and the department during department staff meetings. The purpose behind this was to limit reactivity. Officers who felt that they were being evaluated by the observers might change their behaviors in order to obtain a favorable evaluation. By telling the officers that they were not being evaluated, the hope was that they would be more comfortable with the observers and be more natural.

The yearlong observation period also served as a way to acclimate officers to the observers' presence, which would ideally make officers more comfortable with the research staff. When possible, observers were assigned to the same districts and locations more than once in the hopes that officers would be less likely to react if they had time to build up a relationship and rapport with the same observer. There was evidence that this strategy was successful: officers would frequently ask about observers with whom they were most familiar, and there were several instances where officers would vouch for observers with other officers. These instances suggest that research staff became

somewhat commonplace within the officer's environment, and that some of the observers gained legitimacy with the officers (Frank, Novak, and Smith 2001).

Despite these four precautions, some level of reactivity was expected. To account for this, observers were asked to record any instance where they felt the officer changed his or her behavior based on the presence of the researcher: observers reported that in only 0.7 percent of all activities did they perceive the officer to react to their presence (Frank, Novak, and Smith 2001).

Officer Survey Data

The research team surveyed officers who participated in the systematic social observation aspect of the study. The original intent of the survey was to measure officers' attitudes, job satisfaction, and perceptions of their assigned neighborhood (Frank, Novak and Smith 2001). The survey instrument was pre-tested with police officers who were not included in the observational research (and therefore would not be taking the survey).

Letters from the Police Chief were sent to all officers and managers in all five of the Cincinnati police districts making them aware that they would be surveyed by the research team and asking them to cooperate in the research project. Research staff contacted Sergeants and arranged visits during roll call to survey beat officers involved in the observation part of the research project. Community officers were contacted on an individual basis by research staff.

The survey packet that was given to officers included a letter from the principal investigator who thanked officers for cooperating in the study and assured them of confidentiality. A total of 171 officers were surveyed (139 were beat officers and 32 were

community officers). Of these 171 surveys, only three individuals refused and eight were not completed; however, 13 other surveys were not completed or could not be used for analysis purposes (retirement, dismissed, deceased, missing information). Overall, 147 of the 171 surveys (about 86%) were completed and usable for data analysis (Frank, Novak, and Smith 2001).

Census Data

Archival data were also collected in order to supplement field observation reports. Data were collected from the 1990 U.S. Census that matched community boundaries. The researchers obtained maps from the Cincinnati Police Division and these maps were compared against census maps in order to determine which block groups corresponded with communities in Cincinnati (Frank, Novak, and Smith 2001). These block groups were then aggregated to the community level.

Cincinnati Police Crime Data

Crime data were also gathered for the time period of the study, and this data contained the recorded incident that the officers responded to and the location of the incident. As stated before, archival data have some problems associated with it. Here, only the crimes reported to the police are recorded, and the officer's perception or definition of a crime might further underestimate the amount of crime that actually occurred during this time period. Crime data were collected for each neighborhood. However, since police beats follow neighborhood lines, crime data can be aggregated up to the district level. (Frank, Novak, and Smith 2001).

STUDY VARIABLES

This section will briefly discuss the variables that will be used to test the five propositions from Klinger's theory of police vigor. The first part of this section will describe how each variable was created and is coded in the data set. The second part will give a very brief overview of the descriptive statistics for the variables in this study.

Dependent Variable: Vigor

The purpose of this study is to conduct a more complete test of Klinger's theory of police vigor. This makes vigor the major focus and dependent variable for this study. The first step in this process is to define and operationalize the concept of vigor. As previously covered in Chapter 2, Klinger (1997) defines vigor as the use of formal authority by a police officer. This includes (but is not limited to) activities such as taking a report, conducting an investigation, issuing a citation, and making an arrest. Each of these activities represents a level of formal authority; however, they represent different levels of an officer's formal authority. In this way, the amount of vigor an officer uses is an ordinal variable; some activities have "more" formal authority than other activities. It is worth noting that not all activity that officers engage in constitute vigor according to Klinger. Klinger argues that actions such as the use of force can be used separately from formal authority. For example, officers can use physical force in a police-citizen encounter where they have no intention of making an arrest or citation.

In order to measure vigor in police work, this study reviews several different formal actions that police can take during police-citizen encounters: (1) doing nothing; (2) asking or telling a citizen to stop a behavior; (3) threaten a citizen with a citation or arrest; (4) issue a citation; (5) make an arrest. These actions are ordered from the least vigorous action (doing nothing) to the most vigorous action a police officer can take during a police-citizen encounter (making an arrest). For each police-citizen encounter, the highest level of vigor used during the encounter was coded. This scale represents an ordinal variable.

Vigor was coded as a “1” when the officer asked or told the citizen to stop engaging in some kind of behavior. This included asking a citizen to leave someone alone, stop bothering people, leave the premises, cease disorderly behavior, and/or discontinue illegal behavior. Vigor was coded as a “2” if the police officer threatened the citizen with a citation or with arrest; “3” if the police officer issued the citizen a citation; “4” when the police officer in the encounter arrested or took the citizen into police custody by depriving them of his or her liberty. If during the police-citizen contact, the officer did not use any formal authority (did not engage in any of the previously listed activities) Vigor was coded as a “0” for no vigor used. As previously mentioned, the highest level of vigor was always coded. For example, if an officer threatened to arrest a citizen and then later in the encounter actually arrested the citizen, the vigor for that citizen-police interaction would be a “5” for making an arrest. Because Klinger’s theory is concerned with the amount of vigor that officers use in the police-citizen interaction, the highest level of vigor is the most appropriate way to measure this variable.

Table 3.1 Operationalization of Vigor

Name	Description	Measurement
Vigor	Level of formal authority used by the officer during the police-citizen encounter	0 = no vigor used 1 = ask/tell citizen to stop 2 = threaten citation or arrest 3 = issue a citation 4 =make an arrest

Independent Variables

The next section discusses the independent variables used to explain vigor during police-citizen encounters. There are several types of variables: individual officer variables, individuals citizen variables, and situational variables.

Individual Officer Variables

Individual demographic information on the officers involved with police-citizen encounters was measured by both systematic social observation data (police-citizen encounters) and officer surveys.

Officer gender

Officer gender was coded as a dichotomous variable. Officer gender was coded as a “0” for male officers and “1” for female officers.

Officer race

Brown and Frank (2006) found that officer race exerted a significant influence on the use of arrest. More importantly, this impact changed further when the analysis incorporated the race of the citizen. Sun and Payne (2004) found that black officers were more likely to use coercive action than white officers regardless of citizen race. Because of this, race of the officer is a significant variable that needs to be controlled. Officer race was coded as a dichotomous variable: "0" for white officers and "1" for black officers. In the original data, officer race included white, black/African American, Hispanic, and Asian categories. However, because of the extremely limited number of Asian and Hispanic officers, they were dropped from the analysis and a dichotomous variable between white and black officers is used.

Length of service

Studies have found that officers do change in their decision making over the course of their career (Mastrofski et al 1997; Brown and Frank 2006). Officer length of service with Cincinnati Police Department was measured. Length of service was measured in number of years with a range from one to twenty seven years in the officer survey data. However, in order to avoid outliers biasing estimates, length of service will be truncated past 13 years. Because of this, years of service will be measured from 0 to 13+ years of service. This should minimize the impact of statistical outliers while retaining a metric level scale.

Officer assignment

Community officers and beat officers may act differently during police-citizen encounters due to the varying roles each perform when policing in the community (Mastrofski et al 1995; Novak 1999). This makes it a necessary variable to control for in the present study. Officer assignment measured whether officers were assigned as patrol/beat officers or if they were assigned as community officers (Community oriented policing officers). Officer assignment was coded as a “0” if the officer was a beat/patrol officer or a “1” if the officer was a community officer.

Officer cynicism index

The officer survey asked officers a variety of questions about their perceptions of their job and the impact that being a police officer has had on them. Nine of these questions were used to construct a measure of officer cynicism. Officers were asked if they “Strongly Disagreed”, “Disagreed”, “Agreed”, or “Strongly Agreed” with the following statements: (1) I feel emotionally drained by my work; (2) I feel burned out from my work; (3) I feel frustrated by my job; (4) I feel I’m positively influencing other people’s lives though my work; (5) I have accomplished many worthily things in this job; (6) I’ve become more callous towards people since I took this job; (7) I feel citizens blame the police for some of their problems; (8) I worry that this job is hardening me emotionally; (9) I have no regrets about my decision to become a police officer. The purpose of this index is to measure the officer cynicism concept that Klinger argues impacts the use of officer vigor. Klinger states that officers who are more cynical about police work will be more likely to use less vigor in police-citizen contacts.

Questions 4, 5, and 9 above were reverse coded to make their numerical responses in the same direction as the other questions. Next, all nine item responses were used to create an additive scale. This scale ranges from 10 to 32 with a mean 19.19 and a standard deviation of 3.95. Officers with a lower score have less cynicism about their job than officers with a higher score. The officer Cynicism Index had a Cronbach's Alpha of .767.

Officer normal deviance index

Central to Klinger's theory is the concept of normal crimes or normal deviance. Klinger (1997) argues that police develop perceptions about what is "normal" deviance in the beats they patrol. Police will have normal methods of dealing with these occurrences of "normal" deviance. However, when crimes occur that are different from the "normal" deviance for that beat or community, officers may react with more vigor since these acts (or deviant deviance as Klinger (1997) calls it). This concept is similar to Sudnow's (1965) discussion of normal crimes and how the courtroom work group deals them with.

In order to tap in to the amount of deviance that officers perceive as "normal" in their primary beat, survey questions that asked about common problems they see in their patrol neighborhoods were used to create a Normal Deviance Index. The questions used focus on serious forms of crime (as compared to disorder crimes such as trash, parking issues, loud neighbors, etc). Four questions were used to create this index. Officers were asked to rank the following problems as either big problems, somewhat of a problem, or no problem: (1) people using drugs in the neighborhood; (2) gang activity; (3) things being stolen from homes; (4) people being robbed.

Officer responses were coded as: 0 for “no problem”, 1 for “somewhat of a problem”, and 2 for “a big problem”. All four questions had their responses combined to make an additive scale. The Normal Deviance Index has a range from zero to seven with a mean of 3.27 and a standard deviation of 1.80. Additionally, the Normal Deviance Index had a Cronbach’s Alpha of .722.

Officer workload

Police officers participating in the study were asked what percentage of the time they spent dealing with calls for service in a typical shift. Officers could respond on the survey from 0% of the time to 100% of the time. The percentage of time officers spend responding to calls for service is a good measure of Klinger’s officer workload concept (Klinger 1997) since officers are required to respond to calls in their patrol areas. Calls for service are a major part of a police officers job and constitute a significant amount of work officers must perform (Wilson 1968). Since Klinger (1997) argues that the amount of work an officer has to do will have an impact on the amount of vigor an officer will use, the percent of time an officer spends dealing with service related issues during a shift should tap in to the idea of how busy an officer is.

Individual Citizen Variables

Citizen gender

Citizen gender was measured as a dichotomous variable. Male citizens were coded as “0” and female citizens were coded as “1”.

Citizen age

Citizen age was measured as an ordinal variable in the main data collection. However, for this study, citizen age was coded as a dichotomous variable. Citizens who were 17 years of age or younger were coded as a “0” (juvenile) while citizens who were 18 years of age or older were coded as a “1” for adult.

Citizen race

Citizen race in the original data collection instrument was measured as white, African-American, Hispanic, Asian, American Indian, and other. However, white and African-American citizens made up over 98% of the citizen sample. Because such a significant proportion of the sample was either white or black, citizens of other demographic groups were dropped from the analysis. Citizen race was measured as “0” for white and “1” for black.

Situational Variables

Situational variables are variables that relate to the police-citizen encounter. Some variables may seem to be individual traits (such as citizen intoxication); however, they are seen as situational variables (citizens are not constantly intoxicated—it is a temporary status). Often times, these variables refer to events, qualities, or conditions during the police-citizen encounter.

Undeserving victim

Klinger (1997) discusses the concept of victim deservedness as a factor that can impact police use of vigor. In particular, he argues that police will use less vigor in police-citizen contacts that involve undeserving victims. According to Klinger (1997), an undeserving victim is: (1) a victim who engages in risky conduct that could very well have helped precipitate their own victimization, or; (2) a victim who is also a criminal (the label is transitory as Klinger states) (Klinger 1997).

While Klinger (1997) discusses the fact that deserving victims will have more vigor used in their situation, he does not talk about qualities that make a victim deserving. Rather, the discussion is focused on what makes a victim undeserving. Because of this, the only way to tap this variable is to label conduct by victims in police-citizen encounters that makes them undeserving.

In order to construct an undeserving victim variable, the first step was to identify all individuals who were considered a victim at the end of the police-citizen encounter. Only individuals who were considered victims qualified for this label. After identifying these individuals, each victim was coded as an “undeserving victim” if they engaged in behavior that was identified as criminal (Ex: assaulting someone) or could be logically seen as contributing to their victimization (Ex: alcohol or drug use). In particular, individual victims who had done the following were coded as undeserving victims: (1) committed a non-violent offense in the presence of an officer; (2) were under the influence of alcohol or

drugs; (3) were involved in drug sales; (4) officer observed evidence of the victim engaging in an illegal act; (5) police heard claims that the victim was engaged in a criminal offense; (6) police heard a confession from the victim implicating them in criminal activity.

All of these factors either point towards the victim engaging in conduct that could have led to their victimization, or that they were involved (or implicated) in criminal activity. It is possible that some may criticize this measure for using claims that the victim was engaging in criminal offenses. However, the reality of whether or not the individual was actually involved is not as important as the officer's perception—since this is the factor they will be using to take formal action.

After identifying the victims who would qualify as “undeserving victims” according to Klinger (1997), the undeserving victim code was associated to any police-citizen encounter that involved an undeserving victim. Police-citizen contacts that involved an undeserving victim were coded as “1” and any contacts that did not involve an undeserving victim were coded as “0”.

Citizen under influence of drugs or alcohol

There is a body of research that indicates citizen intoxication may impact the probability for arrest (Brown and Frank, 2006; Mastrofski et al, 1995) Observers recorded whether the citizen seemed to be under the influence of alcohol or drugs during police-citizen encounters. Citizens who were not under the influence of drugs or alcohol were coded as “0” in this study and citizens who were under the influence were coded as “1”.

In presence crime

A variety of situational factors can contribute to officer decision-making. One major factor that has been supported in the decision-making literature is the concept of crime or deviance committed or preformed in the presence of an officer. This can apply to a variety of activities of this study, in presence crime will include: having possession of a weapon, threatening or assaulting an officer or another citizen, and fleeing from the police.

Possession of a weapon is a particularly important characteristic to record during police-citizen contacts. Citizens who have a weapon in their possession could be a danger to police officers. Because of this, it is possible that police may seek to control these individuals and it could result in the use of more formal authority (Smith, 1987; Mastrofski, et al 1995).

Similar to having a weapon, citizens who threaten to assault or actually assault an officer or assault another citizen, while in the presence of an officer, may have more formal authority used against them (Klinger 1994). Because of this, it is important to account for any aggressive activity towards an officer during police-citizen encounters.

Some citizens will attempt to flee from the police. Individuals who run from the police are perceived as being suspicious and are more likely to be scrutinized by the police and receive a formal response. For this reason, it is expected that individuals who flee from the police may be more likely to have higher levels of vigor used against them.

Any citizen who either fled from the police, assaulted or threatened an officer, assaulted or threatened a citizen while in the presence of an officer, or possessed a weapon was coded as a "1" for in presence crime and "0" if none of these factors applied.

Citizen demeanor

Citizen demeanor towards the police during police-citizen contacts has been subject to a significant amount of research. Most research has indicated that this variable needs to be controlled for in one way or another (Klinger 1994, Lundman 1994; Worden and Shepard 1996; Lundman, 1996). In the original data collection, citizen demeanor was recorded as: (1) very deferential (citizen cooperates and makes attempts to please the officer); (2) merely civil (citizen cooperates, but doesn't go out of the way to please officer); (3) passive aggressive (body language or verbal cues hint that the citizen is upset); (4) moderate hostile or disrespectful (citizen verbally expresses that the citizen is upset with the officer, and this is obvious to the officer as well); (5) highly hostile or disrespectful (blatant disrespect such as swearing or personal insults about the officer). Much of the literature on citizen demeanor has used a dichotomous variable for civil and hostile demeanor with out. For this study, demeanor has been coded into a dichotomous variable with "1" indicating moderate or highly hostile/disrespectful behavior, and "0" indicating deferential, civil, or passive aggressive (but not hostile) demeanor.

Proactive vs. reactive encounters

Several studies indicate that police officers may use more formal authority during proactive encounters (encounters that police initiate) when compared to reactive encounters (situations where police attention has been called for or requested) (Black, 1971; Mastrofski, 1995). Officers who engage in reactive encounters have may have more information about the situation and a greater perception of legitimacy than officers involved in proactive encounters (McCluskey, Mastrofski, and Parks 1999). In this study,

police-citizen encounters that were initiated by the police were coded as a “1” and reactive encounters were coded as a “0”.

Evidence

The strength of evidence that police have indicating a citizen may be engaged in illegal conduct can be a significant predictor of arrest. As police gain more evidence, the likelihood of arrest, or the use of formal authority, increases (Black, 1971; Mastrofski et al., 1995; Mastrofski et al. 2000). For this study a measure reflecting the strength of evidence that police had was used. A point scale that ranges between 0 and 7 points was constructed. Two points were assigned if the officers observed or witnessed the crime or violation, two points were assigned for physical evidence implicating the citizen, two points were assigned for a full confession, one point was assigned for a partial confession, and one point was assigned if the officer has witness testimony implicating the citizen. This evidence scale has been used in previous systematic social observation studies (Mastrofski, 1995).

Offense severity

Being a measure of the legal gravity of the incident, offense severity can impact the probability of police use of formal authority (Black, 1971; Mastrofski et al., 1995; Brown and Frank, 2006; Terrill and Paoline 2007). During data collection, the observer coded the incident using a list of offenses. These offenses have been recoded in to one of three categories: (1) no offense; (2) minor or misdemeanor offense; (3) serious or felony offense.

Preference towards arrest

There is some literature that indicates police officers may be influenced by preferences about arrest by other citizens (Black, 1971; Smith 1987; Mastrofski et al. 2000). In order to control for this, the current study incorporates this variable into the model. If a citizen had a preference for arrest, it was coded as a “1”, and it was recorded as a “0” if there was not a preference for police to arrest the citizen.

Number of spectators: citizens and police

There is some evidence that indicates police may use formal authority contextually depending on the number of people present at the police-citizen encounter (Smith and Visher, 1981; Riksheim and Chermak, 1993). In situations where there are a lot of citizen bystanders, police may be more likely to use force or formal authority to maintain control of the situation (cite). Similarly, in situations where there are a large number of other police officers present, there is the possibility that officers may feel a need to “take charge” and demonstrate their willingness to use their authority to their peers (Hunt 1985). Either way, social science evidence indicates that the presence of bystanders—whether they are citizens or other officers—can exert a force on police decision making. Because of this, for each encounter, the number of other police present and the number of citizen bystanders was collected.

One note should be made about number of police officers present. Frequency distributions did detect outliers; in order to avoid the influence of outliers in the data set,

the number of officers at a single incident was capped at 15. Therefore, the number of officers at an encounter should be interpreted as a metric ranging from 1 to 15 or more.

Crime Data and Census Variables

District level deviance

The amount of deviance in a police district or beat is a critical variable for Klinger's theory. In order to measure district and beat level deviance, crime data were collected for each one of the police beats in Cincinnati. Once again, because of the redrawing of police beats in 1994, Cincinnati neighborhoods align with police beats. For each police beat, crime data for all Part I index crimes were collected. However, raw counts of index I crimes do not account for variation in population between police beats. In order to control for this within the measure, the number of people who live in each police beat was collected and used to make a rate. The number of Index I crimes was divided by the population of each district in order to create a measure of crimes per person for each district. This value can be interpreted as the number of Index I crimes per person in the district.

DESCRIPTIVE STATISTICS

This section of the study briefly describes the sample that was used in the analysis section. Since the focus of this study is on how police officers use formal authority, suspects are the proper unit of analysis (Terrill and Paoline 2007). This study only includes cases that meet two criteria: (1) the encounter must be a full encounter (53.4% of the sample) instead of brief or casual encounters; and (2) the citizen must have been

identified as a suspect or disputant (someone who police were unclear if the individual was or was not a suspect) during the police-citizen encounter (43.6% of the sample)

Descriptive Statistics for the Dependent Variable: Vigor

The dependent variable is an ordinal variable that ranges from 0 to 5, with higher levels indicating more vigor or use of formal authority by the officer. In all full encounters with individuals who, at some point in the encounter, were suspects, 220 of those encounters (26.9%) involved no vigor or formal authority on the part of the officer and in 133 (16.3%) cases the officer asked or told the citizen to stop a particular behavior. In 173 (21.3%) cases, the officer threatened the citizen with a citation or arrest. Officers issued a citation in 128 (15.7%) of encounters, and in 162 (19.8%) cases the officer arrested the citizen. Remember that only the highest level of vigor was recorded.

Table 3.2 Dependent Variable: Vigor

Variable	Values	Frequency
Vigor (use of formal authority)	0 = no vigor	220 (26.9%)
	1 = ask or tell citizen to stop	133 (16.3%)
	2 = threaten to cite or arrest	174 (21.3%)
	3 = issue citation	128 (15.7%)
	4 = arrest citizen	162 (19.8%)

Descriptive Statistics for Officer Survey Variables

In the officer survey, there were a total of 147 officers who participated. Of those 147 officers, 81.5% (n = 120) were male and 56.9% (n = 82) were white (Table 3.2). A total of 28 (19%) officers were assigned as a community policing officer. Additionally, the typical officer has been with Cincinnati Police Department for 5.4 years (with a standard deviation of 3.8 years).

There were two indices created from questions on the officer survey. The first was the officer cynicism index, which had a minimum score of 10 and a maximum score of thirty-two. Officers who scored higher were more cynical about their job. For the sample of officers there was a mean score of 19.2 and a standard deviation of 3.95. The second index was the normal crime index. The range of scores was between 0 and 7, with a mean of 3.26 and a standard deviation of 1.80 (see Table 3.2). A higher score on the normal crime index indicates that more severe crime is more common or typical in the neighborhoods that the officer patrols based on the officer's perception.

Lastly, survey questions were used to create a measure of how busy officers are during the course of a normal day. Officers were asked what percent of the time they had to handle calls for service during a typical day. This measure gives us an idea of the workload that officers must deal with. Officers in the survey indicated they spend about 60% of a typical day answering calls for service (59.87%; sd= 27.7).

Table 3.3 Descriptive Statistics for Officer Survey Variables

Variable	Values	Frequency
Officer Gender	0 = male	120 (81.6%)
	1 = female	27 (18.4%)
Officer Race	0 = white	82 (56.9%)
	1 = non-white	62 (43.1%)
Officer Assignment	0 = beat officer	119 (81.0%)
	1 = community officer	28 (19.0%)
Years of Service	number of years	x = 5.44 (sd = 3.76)
Officer Cynicism Index	higher = more cynical	x = 19.19 (sd = 3.947)
Normal Crime Index	higher = serious normal crime	x = 3.27 (sd = 1.798)
% Time answering calls for service	percent of normal shift	x = 59.87 (sd = 27.7)

Descriptive Statistics for Citizen and Situational Variables

When looking at all of the citizens in the sample, 557 (68.1%) of the citizens were male, 295 (36.7%) were white, and 615 (75.2%) were adults. Out of the 818 citizens who were considered a suspect during the encounter, 31 (3.8%) of them were involved in an incident where the victim was undeserving, 120 (14.7%) of the citizens were drunk or under the influence of drugs, 16 (2%) made a threat or assaulted the police, 45 (5.5%) tried to flee or evade the police, 87 (10.6%) had a disrespectful demeanor towards the officer.

Of the citizens in this analysis, 284 (34.7%) were stopped proactively by the police (as opposed to the police responding to a call for service). As for legal severity of the

incident, most encounters did not have a recorded crime (no offense accounted for 437 cases or 53.4%) while 325 cases (39.7%) involved minor or misdemeanor crimes and 39 (4.8%) involved serious or felony crimes. Additionally, when a citizen encountered an officer, the officer was most likely to be male (83.6% of encounters), white (56.5% of encounters) and a beat officer (72.7% of encounters).

Situational aspects of the police-citizen encounter are important (Table 3.3). During police-citizen encounters, citizens appeared to be under the influence in about 120 cases (14.7% of the time). Additionally, 67 (8.2%) of citizens engaged in some form of crime while in the presence of an officer. This activity included assaulting an officer, threatening an officer, assaulting a citizen in the presence of an officer, threatening a citizen in the presence of an officer, possessing a weapon, and fleeing from the police.

Table 3.4 Descriptive Statistics for Citizen and Situational Variables

Variable	Values	Frequency
Undeserving Victim during the encounter	0 = no	787 (96.2%)
	1 = yes	31 (3.8%)
Citizen Gender	0 = male	557 (68.1%)
	1 = female	261 (31.9%)
Citizen Age	0 = adult	615 (75.2%)
	1 = juvenile	203 (24.8%)
Citizen Race	0 = white	295 (36.7%)
	1 = non-white	509 (63.8%)
Influence of drugs/alcohol	0 = no	698 (85.3%)
	1 = yes	120 (14.7%)
In Presence Crime	0 = no	750 (91.8%)
	1 = yes	67 (8.2%)
Citizen demeanor	0 = respectful/civil	545 (66.6%)
	1 = disrespectful/hostile	87 (10.6%)
Proactive encounter	0 = reactive	531 (64.9%)
	1 = proactive	284 (34.7%)
Evidence scale	0 to 7 point scale	x = 1.81 (sd = 1.96)
Offense seriousness	0 = no offense	437 (53.4%)
	1 = minor/misdemeanor	325 (39.7%)
	2 = serious/felony	39 (4.8%)
Preference for arrest	0 = no	752 (91.9%)
	1 = yes	66 (8.1%)
Maximum # officers	number	x = 2.19 (sd = 2.12)
Maximum # bystanders (citizen)	number	x = 3.99 (sd = 4.90)

Descriptive Statistics for Crime and Census Data

The district deviance measure is the only measure in this study that was created from Cincinnati crime data and Census data for Cincinnati. As mentioned earlier in the methods section, the district deviance measure is the number of Index I crimes in the police beat divided by the population of the beat. In Cincinnati, the average police beat had a deviance of .0949 (sd = .0948). This means that for approximately every thousand citizens, there were about 94 Index I crimes. However, while the average of beats in Cincinnati was .0938, the median beat Index I crime rate was .0871: about 87 crimes per 1000 people in the police beat. The highest crime rate of all Cincinnati beats was .65 (650 Index I crimes per 1000 citizens) and the lowest was .03 (about 30 Index I crimes per 1000 citizens).

Table 3.5 Descriptive Statistics for Crime and Census Data

Variable	Values	Frequency
District Deviance	Proportion of Index I Crimes per person	$x = .0949$ (sd = .0948)

STUDY ANALYTICAL METHOD

Since the dependent variable in this study is an ordinal measure, the primary analytical technique is ordinal regression. However, since there are multiple levels of analysis (citizen level, officer level, beat level, district level), this study utilizes Hierarchical

Linear Modeling in order to control for auto correlation between levels of aggregation when creating ordinal regression models. HLM 6.08 software was used to analyze the data and SPSS and STATA were used to do basic descriptive statistics, variable creation, and management of the data.

CHAPTER SUMMARY

This study uses systematic social observation data collected in Cincinnati from April 1st, 1997 to April 30th 1998 (Frank, Novak, and Smith 2001). These data were originally collected to investigate the differences between patrol officers and community officers, but these data are well suited to test other theories, including Klinger's (1997) Ecological and Organizational theory of policing. This chapter has reviewed the methods used to collect the Cincinnati study data, and it also discussed why the collection methods make these data so well suited to test the research questions to be investigated. Additionally, this chapter has reviewed how the data from the original systematic social observation have been modified and operationalized to better fit the concepts in Klinger's theory. Also, this chapter has reviewed the descriptive statistics for each of the measures that have been created from the Cincinnati study data. This is important because it gives the reader an understanding of the measures for baseline and diagnostic purposes. In other words, the reader can understand what the sample in the study looks like and it can be used to assess what methods are appropriate to analyze the data.

CHAPTER 5: ANALYSIS

STATISTICAL TECHNIQUE

The purpose of this chapter is to present findings from an empirical test of Klinger's (1997) theory regarding police use of formal authority. In order to do this, systematic social observation data were combined with survey data, census data, and crime data to create measures for each of Klinger's theoretical constructs. The data has cases nested within cases; in other words, there are several levels of data and lower levels of data (individual data) nested or clustered within higher levels of analysis. The particular data used in this study have four distinct levels of data: police districts, police beats/communities, officers and citizens. Therefore, each citizen contact is nested within a particular officer, who made contact with the citizen within a beat/community that is contained in a particular police district.

Because of the nested structure of this data, multi-level modeling is the appropriate analytical technique. Hierarchical Linear Modeling (HLM) is software that performs statistical analysis in multi-level modeling was used in the current study. This software accounts for a variety of assumptions of regression that could potentially be violated due to the nested nature of the data (Raudenbush and Bryk 2002). These problems can include heteroskedasticity, correlated error, and biased hypothesis testing due to pooled models. However, these problems can be corrected by using a software designed for multi-level modeling (Raudenbush and Bryk 2002). For this dissertation, Hierarchical Linear

Modeling (HLM) was used to model all statistical relationships. This software corrects for a variety of statistical issues that would exist if the data were analyzed in a pooled regression.

To check for multicollinearity, a correlation matrix was run between each of the variables used in the analysis. None of the relationships exceeded $r = .70$. However, to further protect against multicollinearity, variance inflation factors were obtained for all variables in the analysis and no problems were detected (no VIF factors exceeded 2.1). All of these findings indicate that there are no issues with multicollinearity.

It would be preferable to conduct a test of citizens nested within officers who are nested within beats/communities and police districts; however, there is an issue with the data. Some officers worked in more than one community/beat or district. HLM cannot handle a data point that falls in more than one level two unit of analysis. Because officers worked in more than one beat or district, and because there are too many officers to simply exclude them from the analysis, statistical analysis of the data was conducted in three separate stages.

The first analytical stage is an analysis of citizen contacts within police districts. For this analytical stage, all officer attributes were pooled at the same level of analysis as citizen and situational variables. The purpose of this analysis is to examine differences in the use of vigor between police districts. It is also a possible examine at individual level factors (legal, situational, officer, and citizen factors) to understand if there is a difference in the impact of these variables when police district is the second level of analysis when compared to the community model (which will have the community as the second level of analysis).

The second analytical stage is an analysis of citizen contacts within communities/beats. Police beats were redrawn before these data were collected to have congruent boundaries with communities in Cincinnati. Thus, for purposes of this study, communities and beats indicate the same geographic unit. For this analysis, all officer attributes were pooled at the same level of analysis as citizen and situational variables (similar to the previous stage—police district). The purpose of this analysis is to examine differences in the use of vigor between communities. Additionally, it is also possible to examine the individual level factors to see if they have the same influence as in the police district analysis.

The third analytical stage is an analysis of citizen contacts nested within police officers. For this analytical stage, all community-level variables (community crime rate) were pooled at the first level as situational factors (crime rate for the community where the contact occurred). This analysis examines differences in the use of formal authority between officers. In particular, it describes how Klinger's theoretical concepts impact the vigor of an officer during police citizen encounters.

For each of the above analytical stages, three models were ran (assuming that the data are robust enough to support all stages of the analysis). The first model is an Analysis of Variance (ANOVA). The purpose of this model is to find out if there is unique variation in the dependent variable (vigor) between units of analysis at level two (districts, communities, or officers depending on which analysis). If there is unique variation in vigor between the level two units of analysis, the next model (means-as-outcomes model) can be run. The means-as-outcomes model introduces level two predictors to explain variance at level two. If the predictors are significant they will reduce the variance at level two

(measured as Tau). If there is still unique variation at level two (after running the means-as-outcomes model) the third model can be run. The analysis of covariance (ANCOVA) is the third, and last, model that will be used. This model expands upon the means-as-outcomes model by introducing level one predictors (legal, situational, individual factors) to explain variance at level one. This model has the final impacts for all variables and, for this study, will consider the full or complete statistical model utilizing all theoretical and control variables.

It is worth mentioning that there are more models beyond ANOVA, means-as-outcomes, and ANCOVA. For these data, further models were run and do not demonstrate any difference from the ANCOVA models. Because of this, no statistical HLM models are discussed in this study beyond ANCOVA models.

In summary, there are three different sets of analysis: district, community, and officer. For each of these sets of analysis, there were three statistical models run (ANOVA, Means-As-Outcomes, and ANCOVA) assuming that the data can support the models. Tables for each of the Means-As-Outcomes and ANCOVA models are included with the text. These tables include the coefficients, standard error, odds ratio, and significance level for all of the variables in that model. However, the text only discuss statistically meaningful relationships from the analyses.

RESEARCH HYPOTHESES

The purpose of this chapter is to empirically test the six hypotheses derived from Klinger's theory of the ecological and organizational impacts on police vigor. These hypotheses are as follows:

(1) Higher levels of deviance in the geographic area (district or neighborhood) should decrease the probability that higher levels of vigor will be used in police-citizen encounters. In other words, as district/beat level deviance increases, the probability of vigor should decrease.

(2) Police-citizen contacts involving victims who are deemed “undeserving” should result in less vigor when compared to contacts involving “deserving” victims.

(3) Police-citizen encounters involving officers who are more cynical should result in less vigor when compared to contacts involving less cynical officers.

(4) Officers who perceive more serious forms of crime as “normal” in their beats will use less vigor, on average, when compared to officers who perceive the same crimes as being “atypical or abnormal” in their beats. In other words, as the normal crime index increases, officers will use less vigor in police-citizen contacts.

(5) Officers who indicate that they spend a higher percentage of their shift answering calls for service will use less vigor, on average, when compared to officers who spend a lower percentage of their shift answering calls for service. In other words, as the percentage of time used for calls for service increases, an officer will be less vigorous during police-citizen contacts.

(6) If the data allows, the last research question is to understand the differences between factors influencing vigor at the district level and factors influencing vigor at the beat level. Additionally, this dissertation examines beats and districts to see if there is more variation between districts or if there is more variation between beats in Cincinnati. Klinger predicts that there will be greater variation between districts than between beats.

STATISTICAL MODELS

A total of three different sets of analyses were conducted; the first examines police-citizen contacts nested within districts, the second examines police-citizen contacts nested within communities (a representation of beats), and the last looks at police-citizen contacts nested within officers. Each one of these sets of analyses gives us a different perspective on the various research questions.

District Level Analysis of Vigor

The first analysis examines the difference in vigor across police districts in Cincinnati. According to Klinger, the district level is the appropriate organizational level of analysis to examine differences in vigor (Klinger 1997). This is because many of the group functions that work to create group-work rules and norms operate at this level; factors such as role call and briefings occur at the district level. Additionally, while officers have their assignment rotated between different patrol beats within the district, officers are rarely asked to move between districts. For these reasons, Klinger believes that the district is the appropriate unit of analysis to examine the impact of group rules and norms and how these rules and norms influence the vigor of formal authority.

Because we have officers and citizens nested within districts, multi-level modeling is the appropriate quantitative method of analysis. Hierarchical Linear Modeling (HLM) software (version 1.08) is used to conduct analyses of the data. For the district level model, there are two levels of analysis. The first (individual level) is both officers and citizens. The second level consists of the five districts in Cincinnati. Because of some data nesting

issues (including some officers that did have contacts in more than one district), this model does not utilize a three-level approach with citizens nested within officers nested within districts.

District Level of Analysis: Analysis of Variance (ANOVA) Model

The first model in HLM is an Analysis of Variance (ANOVA). This entails entering only the dependent variable (vigor) to see if there is a significant amount of variation in the dependent variable to predict. In this case, if there is not a significant amount of variation in vigor, then Klinger's theory cannot be tested at the district level.

The ANOVA model for districts in Cincinnati revealed that there is not significant variation in vigor between districts in Cincinnati. The final estimation of variance components for the ANOVA model was not significant ($p = .084$; $df = 4$). While this finding does not support Klinger's theory, there may be explanations beyond Klinger's theory for this finding.

The first explanation is that there is not enough statistical power in this particular model to produce significant findings. More specifically, since there are only five police districts in Cincinnati, there are only 4 degrees of freedom in the ANOVA model. This significantly hampers the probability of a significant finding. Because of this, the inability to test Klinger's theory further may be due to a statistical artifact. The best conclusion, due to this limitation, is that the data does not allow us to fully explore this question.

The second explanation is related but goes beyond the first explanation. Klinger's theory may only be applicable to particular types of departments. In particular, Klinger's theory describes dynamics in very large police departments; these departments need to be

large enough to require administrative organization beyond a simple beat level. It is distinctly possible that Klinger's theory may not apply to Cincinnati because the Cincinnati Police Department is not a large enough police department. In other words, Klinger's argument mandates a department that is large enough where officers tend to socialize almost exclusively with officers within their particular district. This creates the group norms and rules that regulate officer behavior. However, if the department is not sufficiently large enough, these distinct district groups or cultures may not occur, simply because officers in one district often socialize with officers in other districts; therefore, the group rules and norms about vigor are not solely isolated by district. The Cincinnati Police Department is the 44th largest police department in the United States (Hickman and Reaves, 2003); however, with only 1,030 full-time sworn officers in 2000, they are significantly smaller when compared to other departments, including New York (with 40,435 full-time sworn officers), Chicago (with 13,466 full-time sworn officers), Los Angeles (with 9,341 full-time sworn officers), and Philadelphia (with 7,024 full-time sworn officers)(Hickman and Reaves, 2003: 2). Support for this perspective can be found in the fact that officers in Cincinnati did work between districts (approximately 10% of officers had full police citizen encounters in more than one District), whereas Klinger argues that officers operate almost exclusively in one district and only rarely are transferred between districts. However, it is also worth noting that larger departments would have more districts and hence more degrees of freedom in a ANOVA analysis. Because of this, it would be difficult (if not, impossible with ANOVA statistical techniques) to test this explanation.

Once again, it is important to remember that the likely reason there is not a statistically significant difference in vigor between districts is due to low degrees of

freedom on the ANOVA analysis. However, because of this limitation in the data, we are unsure if there is or is not meaningful differences in vigor between districts. With the current data and analytical techniques, the best conclusion is that we are unable to draw a conclusion about the variation in vigor between districts.

Community/Beat Level of Analysis

While there is not enough variation at the district level, there are theoretical reasons to attempt to model the variation of vigor at the beat level. While the beat level will also likely be too small of an organizational unit to develop an individual norm or culture that differs between beats, there could be characteristics about the beat that may influence decisions about vigor. For example, Klinger (1997) contends that the amount of deviance will influence police officer decisions to use vigor. This same relationship may exist at the beat level as well; deviance at the beat level may impact the decision to use formal authority.

Klinger (1997) argues that serious crimes need to be used as measures of deviance in a district and recommends using homicide as an appropriate measure of deviance. While homicide may be the preferred measure of deviance, homicide is generally a rare crime and does not occur frequently enough to have sufficient variation between beats. For this reason, this analysis uses the proportion of Index I crimes per person as a measure of serious crime. These crimes occur more often, making the use of Index I crimes superior for statistical analysis; furthermore, the use of Index I crimes as a measure of deviance is not without precedent in the empirical literature (see Sobol 2010).

This second analysis is of citizen contacts (including citizen characteristics, situational characteristics, and officer characteristics) nested within communities/beats. As discussed in previous chapters, prior to this study the Cincinnati Police Department adjusted the patrol beats to align with communities in Cincinnati (Frank, Novak, and Smith 2001). Because of this, communities will be the unit of analysis; they represent both police beats and the distinct communities in Cincinnati. Additionally, while Cincinnati has 53 distinct communities, only 48 of them are used in the analysis for various reasons: because of missing data, due to being a business district with no residents (therefore Index I crime rates cannot be calculated), or because there were no police citizen contacts that qualified for this study within those areas (full encounters with citizens labeled as suspects).

Community Level of Analysis: Analysis of Variance (ANOVA) Model

The first statistical model in the analysis of communities is an ANOVA of vigor by community. The purpose of this model is to examine if significant variation in vigor between communities exists. If there is no significant variation between communities, no further modeling can occur. The ANOVA of vigor by community is significant. This indicates that there is some variation in vigor between communities in Cincinnati ($p = .008$; $df = 47$). Tau is a value that represents the variance in the level two aggregate in HLM. In this particular model, $\text{Tau} = 0.076$.

Community Level of Analysis: Means-As-Outcomes Model

Because there is significant variation in vigor between communities, the next model is a means-as-outcomes model in HLM. This model adds level two predictors to the ANOVA in order to explain variation in the dependent variable—vigor. The only level-two predictor is the community Index I crime rate (number of index I crimes per person in the community).

The means-as-outcomes model for vigor by community indicates that community Index I crime rate is not a significant predictor of variation in vigor ($p = 0.958$). Because Index I crime rate is not significant, we also do not see a reduction in Tau (Tau = .08318). The slight increase in Tau indicates that community crime rate may actually introduce some noise into the model. Because the level two predictor (Community crime rate) did not predict significant variation in vigor (the variance in vigor between communities for this model is still significant; $p = .006$; $df = 46$), level one predictors need to be added to the model in order to explain the remaining variation.

Table 5.1 Estimation of Effects: Community Means-As-Outcomes Model

Variable	Coefficient	S.E.	Odds Ratio	Sig
Intercept	-1.017079	.123544	.361650	0.000
Community Index I Crime rate	-0.037453	.705470	.963240	0.958

Community Level of Analysis: Analysis of Covariance (ANCOVA) Model

The third community model is a one-way analysis of covariance (ANCOVA). This model introduces level one variables into the analysis with level two variables in order to explain the dependent variable. It should be noted that in this model the level two effects only impact the intercept for each level two unit of analysis (Raudenbush and Bryk 2002). In other words, community crime rate will only impact the intercept for each police-citizen encounter based on the community where the police-citizen contact occurred. In this way, level two predictors are not directly predicting variation in vigor at the individual level; instead, they are simply modifying the effect by increasing or decreasing the amount of vigor for all encounters in the community.

The one-way analysis of covariance (ANCOVA) indicates that the level one variables, in conjunction with the level two variable of Index I crime, explain a significant amount of vigor in the community model since the variation that is left unexplained is not significantly different between communities ($p = .240$; $df = 46$) (Tau = .06136 for the ANCOVA model). Therefore, the ANCOVA model explains approximately 19.5% of the variance in vigor between communities.

Table 5.2 Estimation of Effects: Community ANCOVA Model

Variable	Coefficient	S.E.	Odds Ratio	Sig
Intercept	-.412465	.765130	.662016	0.592
<u>Klinger Theoretical Variables</u>				
Community Crime Rate	-1.739731	.473375	.175568	0.001
Undeserving Victim	.355553	0.400837	1.426970	0.376
Percentage CFS	0.007239	0.003861	1.007239	0.061
Normal Crime Index	0.062398	0.058425	1.064386	0.286
Officer Cynicism Index	0.000426	0.028822	1.000426	0.988
<u>Legal Variables</u>				
Offense Severity	-1.776525	0.204883	0.169225	0.000
Quality of Evidence	-.0204828	0.044545	0.814787	0.000
In Presence Crime	-1.171326	0.389277	0.309956	0.003
<u>Situational Variables</u>				
Number of Officers	.022250	.078975	1.022499	0.778
Number of Citizens	.0108801	.015112	1.01086	0.475
Demeanor	-.592144	.251756	.553140	0.019
Pro Active Encounter	-0.440894	0.203222	0.643461	0.030
Preference for Arrest	-0.480387	0.330629	0.618544	0.147
Citizen Drug/Alcohol Use	-0.758321	0.280411	0.468452	0.007
<u>Citizen Variables</u>				
Citizen Gender	0.465360	0.210451	1.592588	0.027
Citizen Age	-.0204891	0.362858	0.814736	0.572
Citizen Race	0.028250	0.204966	1.028653	0.891
<u>Officer Variables</u>				
Officer Gender	0.096184	0.268886	0.908297	0.720
Officer Race	0.105606	0.190494	1.111384	0.579
Officer Years of Service	-0.039446	0.026813	0.961322	0.142
Officer Assignment	0.773886	0.310051	2.168175	0.013

The odds ratios describe the change in the cumulative odds ratios for a one unit increase in the explanatory variable. However, these odds ratios should only be interpreted for variables that are statistically significant.

In this model a total of nine variables achieved statistical significance. The community Index I crime rate (formerly insignificant variable in the previous model) increases the probability that a citizen will receive a higher category of vigor during a police citizen contact; this probability 469% (odds ratio = .176), with a one point increase in community crime rate. While this impact seems quite large, it is important to keep in mind the scaling of this variable (a one crime per community member would be a sizable increase). Additionally, it is important to note that Klinger's theory posits that an increase in community deviance will decrease vigor; however, these data indicate that the relationship is in the opposite direction hypothesized by Klinger: police citizen contacts that occur in communities with higher deviance will, on average, have a greater probability for higher levels of vigor.

The percentage of a normal shift dedicated to answering calls for service for an officer can be interpreted to be a significant predictor of vigor. Since Klinger's hypothesis about the impact of workload on police vigor is directional, the use of a $p = .10$ significance level can be used since the relationship is in the hypothesized direction. However, while the relationship is significant, the effect of the variable is somewhat weak. For each percentage increase in calls for service measure, there was a 0.7% decrease in the probability of using a higher level of vigor during a police citizen encounter (odds ratio =

1.007). While this variable can range from 0 to 100, the magnitude of this relationship is still fairly weak when compared to other variables.

The eight remaining predictors that were statistically significant were level-one predictors. Overall, legal variables were the strongest factor in this model. Officers were almost five times more likely (odds ratio = .169) to use a higher level of vigor for a one level increase in severity of the crime and 22% more likely (odds ratio = .815) to use a higher level of vigor for each point in quality of evidence. Additionally, when a crime was committed in the presence of the officer, there was a 220% increase (odds ratio = .310) in the probability that a higher level of vigor would be used and if the suspect was intoxicated or under the influence of drugs, the odds of more vigor being used during the encounter doubled (odds ratio = .469). These findings are typical in studies of police decision making. Typically, variables relating to severity of the crime, evidence, or other kinds of deviance in the presence of the officer increase the probability of official sanctions significantly (Riksheim and Chermak, 1993; National Research Counsel 2004).

Two extra legal factors were significant in the model as well. Females were 59% less likely (odds ratio = 1.593) to have a higher level of vigor used against them when compared to males. Additionally, citizens who had a hostile or uncivil demeanor towards the police during the encounter were about 80% more likely to have more vigor used against them when compared to individuals who were civil and respectful (odds ratio = .553).

Two other variables that represent characteristics of the officer or the police-citizen encounter were significant in the community model. Police-citizen contacts that were proactive, where the officer initiated the contact as compared to responding to a citizen

request or call for service, were 55% more likely to result in higher levels of vigor (odds ratio = .644). Situations that warrant an officer to intervene are more likely to necessitate officer control or authority. This relationship has been found in the existing decision-making literature (Black, 1971; Mastrofski, 1995). Moreover, beat officers were a little more than twice as likely to use more vigor as opposed to community policing officers (odds ratio = 2.168).

Other than community crime rate and calls for service, none of Klinger's theoretical variables were significant in the community model. Deserving victims, officer perceptions of normal crime, and officer cynicism failed to achieve statistical significance.

District and Community Summary

Overall, Klinger's theory finds mixed support, at best, from the Cincinnati Data. The District level model (District being the level two unit of analysis and police-citizen contacts being the level one unit of analysis) was not able to support Klinger's theory. This is likely because of a limitation in the data. With Cincinnati only having five different police districts, the statistical models do not have enough degrees of freedom and therefore it is difficult to conclude if there is a substantive difference in the use of vigor between police Districts. Because of this, there is not variation in the dependent variable and the analysis could not continue. However, this should not be directly seen as a rejection of Klinger's theory; at best it calls his theory into question. It is possible that the realities of police organizational structure in Cincinnati do not reflect the appropriate conditions for Klinger's theory. In particular, Klinger's theory may be more applicable to larger departments where more districts exist.

At the same time, analysis at the community level did uncover partial support for Klinger's theory. Two of the theoretical variables, community crime rate and workload (percentage of calls for service), were statistically significant; however, the measure of community deviance (Index I crime) was not in the direction hypothesized by Klinger. These findings, however, do replicate the findings of Sobol (2010). Specifically, Sobol (2010) also found a significant positive relationship between district level deviance (violent crime rate) and officer vigor during police-citizen encounters using the POPN data; namely, districts with higher levels of deviance were more likely to have higher levels of vigor during the encounter. It is important to note that the impact of these variables are weak when compared to legal variables. This finding is common in the police decision-making literature: legal variables are typically the strongest variables in statistical models of police decision-making.

While two of Klinger's concepts were statistically significant, three others were not and one of the significant relationships was not in the predicted direction. Deserving victims, police cynicism, and perceptions of normal crime were all insignificant in the community model while community deviance was significant but in the wrong direction. The infrequency of undeserving victims in the data could play a role in the insignificance of deserving victims variable (only 31 case involved an undeserving victim); still, neither officer cynicism nor how officers perceive normal crime in their beat were significant predictors of vigor.

Citizen and Officer Analysis

Klinger's theory argues that while district and community are influential, ultimately, it is the officers who formulate group work rules that dictate the use of vigor. According to this theory, significant differences in the probability to use more or less formal authority should be present between officers. In order to conduct this analysis, officers are entered as the level 2 unit of analysis with citizen and situational variables at level 1.

Officer Level of Analysis: Analysis of Variance (ANOVA) Model

The first model is a one-way analysis of variance (ANOVA). This model looks to see if there is a significant difference in vigor among officers. The estimation of variance components indicates that there is a significant difference in vigor between officers ($p < .001$; $df = 105$). Additionally, Tau (which represents the variance at the officer level) was .511.

Officer Level of Analysis: Means-As-Outcome Model

The means as outcomes model is the second model and introduces level two predictors (officers) in order to explain variation. The officer-level variables entered into the model include: officer gender, officer race, officer years of service, officer assignment, officer percentage of normal shift dedicated to calls for service, officer perceptions of normal crime, and officer cynicism. The introduction of these variables into the model, however, did not predict a significant amount of the variance in vigor across officers. The $\text{Tau} = .565$ in the current model and is not a decrease from the ANOVA (ANOVA Model $\text{Tau} = .511$). This indicates that the officer variables failed to predict any meaningful variation

in vigor across officers. Variance components indicate that there is still significant variation between officers ($p < .001$; $df = 98$).

The failure of the level 2 predictors to explain any significant variation in vigor between officers is most likely due to the fact that none of the officer level predictors were significant when entered into the model. This is a substantial problem for Klinger's theory, as three of the variables are directly derived from his theory about officer vigor.

Table 5.3 Estimation of Effects: Officer Means As Outcomes Model

Variable	Coefficient	S.E.	Odds Ratio	Sig
Intercept	-1.706108	0.676758	0.181571	0.014
<u>Klinger Theoretical Variables</u>				
Percentage CFS	0.005528	0.005613	1.005544	0.328
Officer Normal Crime Index	0.074949	0.067849	1.077829	0.272
Officer Cynicism Index	-0.008254	0.029304	0.991780	0.779
<u>Officer Variables</u>				
Officer Gender	0.242967	0.261495	1.275026	0.355
Officer Race	0.012385	0.232574	1.012462	0.958
Officer Years of Service	-0.004482	0.027581	0.995528	0.872
Officer Assignment	0.444638	0.341063	1.559925	0.196

Officer Level of Analysis: Analysis of Covariance (ANCOVA) Model

The third statistical model is an analysis of covariance (ANCOVA) and it introduces level one predictors into the model, along with the level two predictors. The level one predictors include: number of officers present during the encounter, number of citizens present during the encounter, crime rate of the community where the encounter occurred (Index I crime rate), presence of an undeserving victim, citizen gender, citizen age, citizen race, offense severity, demeanor of citizen, proactive police encounter, citizen preference for arrest, quality of evidence, crime committed in the presence of the officer, and citizen intoxication (drugs or alcohol).

Table 5.4 displays the coefficients, odds ratios, and significance levels for all variables in the ANCOVA model. A total of nine variables in the ANCOVA model are significant. The Index I crime rate in the community where the police citizen contact occurred was statistically significant ($p = .017$): a one point increase results in a 667% increase (odds ratio = .130) in the probability for officers to use a higher category of vigor. As mentioned before, because of the measurement of this metric (Index I crimes per person in the community), this impact may seem stronger than it actually is. For example, if the operationalization had been standardized to crimes per 1000, a one point increase in the scale would result in a 6.6% increase in vigor. Community crime rate is theoretically important since community crime rate is a measure of deviance (a central theoretical construct for Klinger's theory); however, similar to the community model, the effect of community crime rate is in the opposite direction hypothesized by Klinger (1997). This seems to conflict with Klinger's theory.

Table 5.4 Estimation of Effects: Officer ANCOVA Model

Variable	Coefficient	S.E.	Odds Ratio	Sig
Intercept	-0.075232	0.777336	0.927529	0.924
<u>Klinger Theoretical Variables</u>				
Community Crime Rate	-2.038259	0.851739	0.130255	0.017
Undeserving Victim	0.425143	0.415025	1.529809	0.307
Percentage CFS	0.003694	0.004963	1.003701	0.458
Officer Normal Crime Index	0.063408	0.063212	1.065461	0.319
Officer Cynicism Index	-0.005316	0.031908	0.994698	0.868
<u>Legal Variables</u>				
Offense Severity	-1.890696	0.190456	0.150967	0.000
Quality of Evidence	-0.203301	0.063644	0.816032	0.002
In Presence Crime	-1.305633	0.386823	0.271001	0.001
<u>Situational Variables</u>				
Number of Officers	0.039305	0.082023	1.040088	0.632
Number of Citizens	0.001015	0.018304	1.001016	0.956
Demeanor	-0.468016	0.217925	0.626244	0.032
Proactive Encounter	-0.402091	0.225617	0.668920	0.075
Citizen Preference for Arrest	-0.59043	.281100	0.554062	.0360
Citizen Drug/Alcohol Use	-0.736406	0.248994	0.478832	0.004
<u>Citizen Variables</u>				
Citizen Gender	0.479306	0.173746	1.614953	0.006
Citizen Age	-0.088111	0.275984	0.915659	0.749
Citizen Race	-0.127944	0.214646	0.879903	0.551
<u>Officer Variables</u>				
Officer Gender	-0.009262	0.270694	0.990781	0.973
Officer Race	0.107722	0.262737	1.113738	0.682
Officer Years of Service	-0.055662	0.030670	0.945859	0.072
Officer Assignment	0.794340	0.353984	2.212980	0.027

Similar to the community model, many of the legal and law-related variables in the ANCOVA model were statistically significant. Crime seriousness was statistically significant ($p < .001$) and increased the probability of higher levels of vigor by 562% (odds ratio = .151). Quality of evidence was statistically significant ($p = .002$) and increased the odds of higher levels of vigor by 22.5% per point on the evidence scale (odds ratio = .816). Crime committed in the presence of the officer was significantly related to an increase in vigor ($p = .001$) and increased the probability of higher levels of vigor by 269% (odds ratio = .271) when compared to citizens who did not engage in criminal activity in the presence of an officer. Also, individuals who were under the influence of alcohol or drugs at the time of the police citizen contact were nearly twice as likely to have higher levels of vigor used against them ($p = .004$; odds ratio = .479).

Several extra legal factors were also predictive of the amount of vigor used. Some of these factors involved situational variables, including demeanor and preference for arrest. During encounters where a citizen voiced a preference for the suspect to be arrested, the likelihood of a more vigorous response increased by about 80% ($p = .036$; odds ratio = .554). Similarly, citizens who were disrespectful or hostile to officers during the encounter were almost 60% more likely to have more vigor used against them when compared to citizens who acted in a civil manner towards officers ($p = .032$; odds ratio = .626). Females were 61% less likely to have more vigor used against them compared to males ($p = .006$; odds ratio = 1.615).

Officer Model Summary

Overall, the officer model does not provide much support for Klinger's theory. Only one of the theoretical constructs directly from Klinger's theory is statistically significant; however, like the community model, it was not in the hypothesized direction. Again, Klinger argues that deviance should decrease the probability of vigor; however, community crime rate (as measured as Index I crimes) increased the probability that police would act in a vigorous manner. In other words, officers who encountered suspects in communities with a higher Index I crime rate were more likely to use higher levels of vigor than if the encounter had occurred in a community with a lower Index I crime rate. This finding is problematic for Klinger's theory, and it is not the first time this relationship has been found in the empirical literature (see Sobol 2010). Additionally, none of the other theoretical constructs derived from Klinger's theory were significant in the officer model. Officer workload (the average percentage of an officer's shift spent on calls for service), officer cynicism, officer perception of normal crime, and the presence of undeserving victims were all insignificant factors in the model.

While most of the theoretical variables were insignificant, a variety of legal and situational variables did significantly impact the probability of vigor. Offense severity, quantity of evidence, use of drugs or alcohol, committing a crime in the presence of the officer, uncivil or hostile demeanor, citizen preference for an arrest, and citizen gender were all significant predictors of vigor used during the police citizen encounter. Most of these variables were also significant in the community model. Additionally, many of these variables are commonly found to influence a variety of officer decision-making (see Riksheim and Chermak 1993; National Research Council 2004).

ASSESSMENT OF RESEARCH HYPOTHESES

Overall, the data analysis did not provide much support for the study's research hypotheses. The first hypothesis predicted that deviance would result in lower levels of vigor; however, results from the community and officer model indicate that deviance in the community works in the opposite direction. Therefore, this research hypothesis is not supported.

The second, third, and fourth research hypotheses state that the theoretical variables of undeserving victims, officer cynicism, and officer perception of normal crime should have a statistical impact on vigor. However, data indicate that none of these variables are significantly related to how much vigor officers use during contacts with citizens. Because of this, research hypothesis two, three, and four are rejected.

Research hypothesis number five predicted that, as the percentage of time officers spend on calls for service (a measure of workload) increased, the use of vigor would decrease. The community model did find that percentage of time officers perceived they spend on calls for service did decrease the amount of vigor by about .7%. While this is weak, it is a significant finding and supports the idea that higher workload equates to lower levels of vigor. However, the officer model did not find this same relationship. In the officer model, the percentage of shift officers believed they spend on calls for service was insignificant in predicting variation in vigor. Because these findings are split, there is only partial and weak support for the workload vigor relationship in research hypothesis number five.

Research hypothesis number six predicted that there would be more variation in vigor found between districts than between beats (communities). One-way ANOVA models indicated that there was not significant variation in the use of vigor between districts; however, there was a significant difference between communities (a proxy measure for beat). This could be interpreted as evidence that the hypothesis should be rejected. However, since this model was restricted by degrees of freedom, it is probably more prudent to consider this research hypothesis unanswerable with the current data.

CHAPTER SUMMARY

Three different models were used to empirically test Klinger's theory about the influence of organizational and ecological variables on the vigor used in police citizen encounters. The first model looked at police citizen contacts nested within police districts; however, there was not enough variation in vigor across districts in order to run any further models. The second model looked at contacts nested within communities in Cincinnati. Since beat and community boundaries are congruent, this is a measure of the influence of beat organization of police-citizen encounters. This model indicated that there is a significant difference in vigor between communities in Cincinnati; however, most of the variance in vigor is explained by individual level variables (legal and extra legal factors). Overall, theoretical variables from Klinger's theory were either weak (workload measures), insignificant (officer cynicism, perception of normal crime, and deserving victims), or predictive in the wrong direction (community crime rate).

The last statistical model nested police citizen encounters within officers to examine the impact of officer characteristics and differences on vigor. This model also did not provide much support for Klinger's theory. All of the theoretical variables were from Klinger's theory were insignificant except for community crime rate. However, community crime rate, as in the community model, was predictive in the wrong direction. According to Klinger's theory, police-citizen contacts that occur in high crime neighborhoods should have less vigor compared to similar contacts in low crime neighborhoods. However, the Cincinnati data indicate that contacts that occur in high-crime neighborhoods were more likely to have higher levels of vigor. These findings are generally problematic for Klinger's theory.

The most important variables in predicting the amount of vigor that officers will use during police citizen contacts are the same types of variables that are found in the general police decision-making literature (Riksheim and Chermak 1993; National Research Council 2004). These variables include (but are not limited to) offense severity, amount of evidence, demeanor, requests to arrest, intoxication due to drugs or alcohol and crime committed in the presence of the officer.

CHAPTER 6: CONCLUSION

OVERVIEW OF THE STUDY

Overview of Theory and Methodology

The purpose of this study was to conduct a complete test of David Klinger's theory of ecological and organizational impacts on officer use of formal authority. Klinger argues that districts are the primary unit of analysis to examine group behavior of officers (Klinger 1997). More specifically, districts are large geographic based units of organization that officers are assigned to on a semi-permanent basis. Because of this, officers within an individual district will start to form group rules; these group rules will impact how they exercise their formal authority in police-citizen contacts. This socialization process is very similar to the research on courtroom workgroups (Sudnow, 1965; Eisenstein and Jacob 1997; Eisenstein, et al 1988). More specifically, Klinger argues that the amount of deviance in the district will make a significant impact on the vigor an officer uses; the more deviance that exists in the district, the less likely an officer is to use higher levels of vigor in police citizen contacts.

In addition to the impact of districts and district deviance, Klinger (1997) argues that the formation of officer work rules includes concepts such as deserving victims, officer cynicism, and perception of normal crimes. Each of these concepts are reinforced by the work group and have a predictable impact on officer vigor. Encounters that involve an individual who exposes him or herself to victimization or contributes to his/her own victimization by engaging in crime is considered an undeserving victim, and the work rules predict that officers should use less vigor in contacts where the victim is 'undeserving'.

Additionally, officers often see miscarriages of justice where offenders who were previously arrested seem to receive little to no sanctions from the criminal justice system after arrest. Over time, officers perceive their work as failing to make an impact and therefore are more likely to develop a cynical outlook. This cynical outlook, according to Klinger, will cause an officer to use less vigor in police-citizen contacts. Lastly, officers will become accustomed to the crime that occurs in their district and beat. In areas where severe crime is commonplace, officers will be more likely to be lenient or use less vigor in police citizen contacts. However, this impact is based on the officer's own perception of neighborhood problems and issues.

In addition to the work rules that exist in their districts, officers will also adjust their vigor based on practical workload constraints. Klinger (1997) argues that officers who have higher workloads will use less vigor in their routine duties when compared to officers with lower workloads. This is a method of dealing with and getting through calls with the limited resources available.

Based on Klinger's theory, five primary research hypotheses and one conditional research hypothesis were developed. In order to test these hypotheses, systematic social observation data, collected between April 1st 1997 and April 30th 1998, were used and combined with survey data, crime data, and census data. Data from these sources were used to operationalize variables in order to test Klinger's constructs.

Overview of Findings from Analysis

Three different sets of analyses were conducted using HLM to create multi-level models in order to understand the impact of the theoretical variables on vigor. The first

analysis consisted of police-citizen contacts nested within districts. This analysis was unable to find a statistically significant difference in vigor between districts. However, it is possible that this finding could be due to a limitation in the degrees of freedom at the district level. With the current data and statistical techniques, it is impossible to make a certain conclusion. Because of lack of statistically significant variation between districts, further analysis was unable to be conducted using the district model.

The second set of models examined police-citizen contacts nested within communities (a measure congruent with beats in Cincinnati). This analysis found that community crime rate (a measure of deviance in police beats) was significantly related to vigor; however, the impact of community crime rate was not in the predicted direction. In the model, higher community crime rates predicted higher levels of vigor used by officers. Only one other variable derived from Klinger's theory was related to vigor. The workload measure (% of an average shift used for calls for service) was related to vigor; as officer workload increases, the use of vigor becomes less likely. The other theoretical variables (deserving victims, officer cynicism, and officer perceptions of normal crime) were all found to be statistically insignificant. A variety of non-theory related variables were significant: offense severity, evidence, citizen request for arrest, crime committed in the presence of the officer, citizen demeanor, use of alcohol or drugs, proactive encounter, and citizen gender. These variables are often found to be significant in studies of police decision-making and use of force (see National Research Council 2003).

The third and final set of models examined police-citizen encounters nested within officers. This analysis mirrored many of the findings in the community model. Community crime rate was significantly related to vigor; however, as in the community model, higher

levels of community crime rate increased, rather than decreased, the probability for higher levels of vigor to be used by officers. Other than community crime rate, all other theoretical variables were insignificant (workload, deserving victims, officer cynicism, and officer perception of normal crime). A variety of non-theory related variables were significant in the officer model and often mirrored the significant variables in the community model. Offense severity, evidence, in presence crime, use of alcohol or drugs, preference for arrest, citizen demeanor, and citizen gender were all significant predictors of vigor in the officer model.

Overall, support for Klinger's theory was lacking in the analysis. Workload was the only theoretical variable to be significant in the hypothesized direction. However, the impact of workload was relatively weak when compared to other variables in the model. Deserving victim, officer cynicism, and officer perceptions of normal crime failed to have an impact on police vigor. Deviance was a significant predictor of vigor, but the relationship operated opposite to the hypothesis. This indicates the variable is of theoretical interest; however, the relationship needs to be reconceptualized. Additionally, the Cincinnati data is not the only data to find this relationship between community deviance measures and vigor. Sobol (2010) found a similar positive association between district level deviance and police vigor in the POPN data. This indicates that this finding is not idiosyncratic to Cincinnati and that the relationship between district level deviance and vigor needs to be reassessed theoretically.

DISCUSSION OF FINDINGS

The findings from the current study indicate that Klinger's theory is not predictive of police use of vigor in Cincinnati. Community deviance did not predict vigor in the correct direction and all other theoretical variables, besides workload, were statistically insignificant. While the workload measure was significant, it was only weakly related to vigor.

The analysis of the Cincinnati data does indicate that legal and situational variables are important in understanding police decision-making and vigor. As has been found in a variety of police decision-making studies, legal variables like offense severity, evidence, crime committed in the presence of an officer, and intoxication are significant predictors of more formal authority by officers (National Research Council, 2003). However, this should be expected from a theoretical standpoint; the public and the legal system want officers to make decisions based on the legal characteristics of a situation. The fact that these variables are the strongest predictors of vigor in the statistical model indicates that officers are using the law to guide their decision-making. It is assumed that this is a desirable characteristic for police in a modern democracy.

While legal variables exercised a significant impact on vigor, situational variables also exerted substantive impact on police vigor. The legitimacy of some variables, including demeanor and citizen request for arrest, is mixed and is currently a public policy question. Other variables, such as gender, are typically seen as extra-legal influences that should not impact officer decisions about vigor.

The general implication from this study is that, on average, legal and situational factors are the strongest influences on officer decisions to use vigor. Additionally, the idea that group impact officers rules about deserving victims, normal crime, and cynicism does not find support in these data.

DISCUSSION OF THEORETICAL CONCEPTS

While the variables from Klinger's theory are not generally supported by these data, it is important to try and understand why and to think about what modifications may be made to improve upon these concepts instead of dismissing the theory. This next section reviews each of Klinger's concepts and discuss the factors that may have impacted findings and what future research should address in order to further test and understand the role of these variables in predicting officer vigor.

Vigor

The use of vigor in this study represents the quantity of formal authority. For this study, vigor was operationalized using five different categories: no action, asking or telling a citizen to do something, threatening a citizen, citing a citizen, and lastly arresting a citizen. Each step represents a higher level of formal authority than the step before. Therefore, as we go up the scale, police actions become "more vigorous".

The assumption with this measure is that each step represents an incremental increase; however, it is possible that some elements are missing from this measure of vigor. Klinger (1997) spends time talking about alternative operationalizations of vigor, such as

time or duration of an investigation and filing a report. These operationalizations were not incorporated into this operationalization of vigor; future studies may want to examine alternative operationalizations of vigor. It is possible that the theoretical variables discussed by Klinger may have different effects on alternative operationalizations of vigor.

Additionally, the impact that vigor has across each level of action in the vigor scale may not be equal in all circumstances. For example, the influence of workload on each level of vigor may not be equal. Doing nothing, asking, or threatening a citizen (levels 0, 1 and 2, on the vigor scale) may not result in any additional work for the officer beyond this contact; however, issuing a citation (depending on the citation) may increase the officer workload by a minimal amount while an arrest is a significant amount of effort and time. Therefore, it is possible that while police citizen contacts may have scores of 1 and 2 for vigor, the impact of officer effort and time is not an equal increase. This could have an impact on measures such as workload and district/community level deviance.

Ultimately, future studies need to address new measures of vigor by incorporating a variety of different activities beyond what has been done in this study and by Sobol (2010). By doing this we gain a better understanding on how and under what circumstances officers use formal authority.

Deserving and Undeserving Victims

The concept of deserving and undeserving victims plays a significant role in Klinger's theory. This variable is one measure of how officers assess the worthiness of a victim. This study found that the deservingness of a victim, as operationalized in the

present study, is not predictive of the vigor an officer will use during a police-citizen encounter. This finding should be interpreted with caution.

As operationalized, only 31 encounters (under 4% of the cases) involved an undeserving victim who, theoretically, should receive less vigor used on his or her behalf. It is very possible that, because of the limited number of encounters involving undeserving victims, there was a limitation as to the ability of this variable to achieve statistical significance.

Additionally, it is possible that alternative operationalizations of this variable could be more predictive of vigor. This study looked at individuals who were coded as victims at the end of the police encounter. It may be worthwhile to examine other citizen roles (for example, disputants) to see if they could be included in this category. According to Klinger, there were two particular attributes that qualified the victim as undeserving: engaging in criminal activity and engaging in risky behavior (non-criminal) that increases the likelihood of victimization. For this study, these activities included intoxication, involvement in drug sales, committing an offense in the presence of an officer, police hearing others claim the victim was involved, and confessions from victim that they were involved in criminal activity. However, for future studies, it may be possible that other kinds of activity should be looked at and included in the criteria for coding deserving victims.

Lastly, while it may not be theoretically consistent with Klinger's theory, the demeanor of the victim also should be considered as at least a potential factor for inclusion. The relationship between demeanor and police activity does find empirical support in the literature. It could be theoretically feasible that victims who are uncivil or hostile could

receive less police vigor on their behalf. Additionally, it could very well be possible that victims may not want intervention from the police and will act in a rude or disrespectful manner in order decrease the probability of the police taking action (for example—domestic violence as described by Muir (1977)).

Overall, this study should by no means be a definitive statement towards the empirical reality of this variable. Tests with larger distributions of undeserving victims should be tested as well as different conceptualizations and operationalizations of the variable.

Officer Cynicism

In the current study, officer cynicism, as operationalized, did not find any empirical support. It failed to significantly predict vigor in any of the models. However, this may be due to operationalization of the measure and data limitations in the current study.

Cronbach's alpha for officer cynicism was .767. This indicates that all the measures of officer cynicism are generally measuring the same construct. However, there could be alternative ways to measure officer cynicism. Many of the questions used in the current study were closely linked to perceptions of the job (burn out, frustration, regrets), however, it fails to measure other concepts that may be related to officer cynicism. For example, Klinger (1997) cites officer frustration with effectiveness of the criminal justice system, a measure that was not included in this variable. While this study does measure officer cynicism, it is possible a variety of elements that make up cynicism and this study did not sufficiently measure additional dimensions. This is inherently one of the limitations of secondary data analysis. Future studies should incorporate additional survey

questions to measure officer perceptions including efficiency of the criminal justice system to punish offenders.

Another issue that could impact the effectiveness of the cynicism measure in predicting vigor is the presence of missing data. The officer cynicism measure consisted of the summed scores of nine questions that tapped into the concept of cynicism from the officer survey. However, seven officers who took the survey did not answer one or more of the questions used to create the measure. This, combined with the fact that HLM will not allow any missing data at the second level of analysis, meant that these officers had to be excluded from the analysis. While none of these officers failed to answer all of the questions, if only one question was missing, the officer (and all police-citizen contacts associated with that officer) could not be used. This is simply a limitation of nested data and the analysis technique chosen for this study.

Officer Perception of Normal Crime

Similar to the officer cynicism, officer perception of normal crime was not significant in the current study; however, this could be due to several methodological issues. First, the Cronbach's alpha for officer perception of normal crime was .722 (barely over the generally accepted level of .70). This variable was constructed from officer perceptions of crime in the community they most frequently patrol and work in. This measure was constructed based on perceptions of more severe crime: drug crime, gang activity, robbery, and burglary. It could be possible that this construct could become stronger if all the included items incorporated a wider variety of severe crimes (for example, assault) or potentially all Index I crimes. This could add a new dimension to the

index. Similar to the officer cynicism, this measure had five officers excluded from the analysis (and all of the related police-citizen contacts by these officers) because there were missing responses on at least one of the questions used to create the normal crime measure.

However, a unique issue to the measure of normal crime may be related to how the survey questions were phrased in the officer survey. Officers were asked to rank the four crime problems as either big problems, somewhat of a problem, or no problem. It is possible that from this phrasing, officers could make two interpretations out of the questions. Looked at one way, officers could interpret a “big problem” as a current issue that is confronting the community; however, this current issue may not be a typical occurrence (community panic over a particular crime issue). Under another interpretation, a “big problem” could represent a problem that is frequent and common in the neighborhood. Unfortunately, these two interpretations could mask the true predictive power of this variable. Under one, officers would indicate a “big problem” for crimes that are rare but have the communities focus (for example, a recent home burglary occurred, but it is not a common event). Under another interpretation, officers could answer a “big problem” if this is a typically occurring crime that is normal in the community (home burglary is a common place event in the neighborhood). In this way, answering “big problem” for these questions may not indicate the same kind of normal crime problems in the community. Future studies need to consider other measures of perceptions of normal crime by officers.

Workload

The workload measure in the current study was found to be significant in the community model, but was not significant in the officer model. Additionally, this predictor was only significant under a directional one tailed significance test ($p = .061$). The workload measure used for this study was a question that asked officers what percentage of a typical shift was allocated to answering calls for service. This is an innovative measure because it focuses on the officer's perception and not on the actual proportion of calls for service or time spent on calls for service. However, the use of official calls for service data may have added an additional element and could have captured unique dimension of workload that the perceptual measure did not. Future studies may want to incorporate multiple measures of workload in to triangulate the relationship.

District/Beat Level Deviance

In the present study, deviance is measured at the community level using index I violent crime. Klinger (1997) argues that homicide (either counts or rates) should be used as the ideal measure of community deviance. For Klinger, homicide is the best measure of district level deviance simply because officers cannot make the decision to not take action in a situation of homicide. Future studies should also incorporate measures of homicide as additional measures of deviance.

One significant issue with Klinger's theoretical influence of deviance is that two empirical studies now find the opposite relationship from that which Klinger details in his theory. In the current study, community crime rate was associated positively with vigor;

police citizen contacts that occurred in higher crime communities were more likely to have more vigor than contacts in lower crime communities. Because this is a reoccurring finding, it is possible that we need to reconceptualize the relationship between district level deviance and vigor.

Reconceptualizing the Deviance-Vigor Relationship

It could be possible that the relationship Klinger outlines in his theory is misspecified; Klinger states that that district level deviance only works in one direction. This is inconsistent with the current data. However, it may be possible that the relationship between deviance and vigor can act in two ways: one way is when officers decide not to take action, and in another manner when officers do decide to intervene.

The negative relationship that Klinger delineates may apply to situations where officers decide not to take action. For example, if an officer identifies a suspicious looking individual in a community, Klinger argues that the action the officer takes is contextual based on the community. In a good community (or low deviance community) officers are more likely to use some level of vigor towards the suspicious person (perhaps stop and interrogate the individual). However, in neighborhoods characterized by higher levels of deviance, the officer is more likely not to become involved and simply ignore the suspicious individual. In this way, the negative relationship Klinger theorizes may apply to situations where officers must make the decision to either ignore the situation (less vigor) or to become involved (more vigor).

The other way deviance may influence vigor is after the officer has made the decision to become involved in a situation. In these situations, officers may use the

deviance in the community as a guide for their actions. More specifically, when officers become involved with suspects in more deviant neighborhoods, they may make assumptions about the individual or crime by inferring characteristics about the individual based on the neighborhood context. The use of vigor in a more deviant community may be greater because the officer assumes that the crime was more likely to occur or be serious because deviant types of behavior are typical for the area. It could also be that the invoking of higher levels of vigor is more acceptable for deviant neighborhoods than in less deviant neighborhoods. In other words, the application of more vigor is more appropriate and less scrutinized in higher crime neighborhoods because they are seen as more common and typical responses (since crime is a more typical occurrence compared to communities with lower crime rates). In this way, high levels of crime and deviance almost liberates the officer to use more vigor simply because these neighborhoods create a context where vigor is assumed and understandable in deviant neighborhoods.

One of the problems in testing this conceptualization of vigor is that we never measure the situations where an officer noticed something (suspicious individual, odd situation, etc) but made the decision not to make contact. In these cases, we do not have a police citizen contact and therefore, lack the data. Systematic social observation only measures the situations where an officer either did decide to make a contact or situations where the officer was requested to respond (either by a citizen or dispatch). Because of this, we are unable to tell if the deviance-vigor relationship Klinger discussed could explain the decision to become involved.

LIMITATIONS

There are several limitations to the current study. First, limited case numbers significantly inhibit some analysis. For example, cross-level interactions in the officer and community models could be explored if more cases existed. Additionally, there were a variety of officers who had very low numbers of citizen contacts that qualified for this study. Limited cases nested within the level two cases could make it difficult to explain both variation between aggregates and interactions between level one and level two slopes. Sample size can also play a major role in significance testing. It is possible that some variables could be found significant and the odds ratios could be interpreted if the sample size were larger. Future studies may want to collect additional data, however, this is always a monetary call

Another limitation in this study is the operationalization of theoretical constructs. As covered in the discussion section, there are theoretical reasons that different operationalizations could have a different effect on vigor. It would have been useful to use multiple measures of the theoretical constructs in order to triangulate. If multiple measures resulted in similar findings, there would be greater confidence that the findings are truly theoretical findings and not artifacts of operationalization. However, since this study is an analysis of preexisting data, there is no way to customize the measures or add additional measures to supplement the analysis. Future studies should incorporate multiple measures of the theoretical constructs to see if findings are similar.

The fact that this study focuses only on one department is a limitation. It is possible that Cincinnati is simply a police department that is not aligned (for one reason or another) to be predictive of Klinger's theory. However, since this study only looks at Cincinnati, there is no way of telling if the failure of Klinger's theory to be predictive of vigor is an anomaly in Cincinnati Police Department, or this finding would be generalizable to other departments. If possible, future studies could try to get samples from several different police organizations. This would allow for comparisons between institutions and could be more informative to the theory than studying only one department at a time.

Lastly, there is a possibility that some decisions are not measurable by systematic social observations but could have theoretical impacts regarding this theory. As outlined in the discussion section, it is possible that district level deviance could play a role in an officer's decision not to intervene or ask questions. However, because the officer never makes contact with the citizen, there is not a record of it. Essentially, in order to measure such instances, social scientists would have to find a methodology that could measure officer suspicion and the decision to either investigate or to ignore a situation or individual. Particularly, since making contact with a citizen is a time investment, this could have ramifications for Klinger's theory. However, since we do not have any data reflecting these decisions, it is a limitation in the current study.

POLICY IMPLICATIONS

One of the policy implications for this study is understanding and assessing the fairness of policing. The use of formal authority by an officer represents the power of the

state; this is not a trivial power. It is important that we understand the factors that impact the decision to use formal authority and assess if these are just criteria for such decisions (Tyler, 1990). The strongest variables in these models of police vigor were legal and situational variables. Legal variables such as offense severity, evidence, and in presence crime are all factors that should influence police decisions; however, some discussion can surround other situational variables such as demeanor, intoxication (to some degree), and citizen preference for arrest. This research indicates that all these variables influence the officer decision and can increase the public discussion about the fairness of these factors being used to make decisions of formal authority.

One major implication from the study is that a variety of individual citizen and officer characteristics were not significant. Race and age of the citizen were unrelated to decisions to use vigor. This could support arguments that officers are not using demographic factors. However, gender of the citizen was a factor. While not a primary variable of theoretical interest to this study, it could indicate areas for further investigation to understand why officers are more lenient to females than they are males. Other than gender, it does seem like policing is fairly equitable in Cincinnati.

Additionally, this data also seem to indicate that differences between officers are not a significant factor in decisions to use formal authority. Officer cynicism, gender, age, race, and perceptions of crime where they patrol were all insignificant in predicting vigor. This tends to indicate that there is a level of equality between officers (at least as much as this study investigated) that would generally favor the idea of Cincinnati policing being more equitable. This could also be a factor of training; officers are trained to act on the situation confronting them instead of acting on personal biases. All of these factors go towards

supporting the idea that policing in Cincinnati is equitable and that initiatives including training and other policies, programs, and practices that strive for equality are working as intended.

Two theoretical variables that did have significant impacts on vigor included deviance in the community and workload. Police administrators should take these factors into consideration. For example, if administrators want to increase the amount of vigor that officers use, it is possible that decreasing the workload that officers may be one way to attain this end. This could include bringing more officers on to a particular beat or shift in order to reduce the calls per officer. This, according to the theory and data, would give officers more time to engage in more substantive and vigorous contacts with citizens. However, such action needs to be balanced against the political reality of such decisions.

REFERENCES

- Bayley, D.H. "The Tactical Choices of Patrol Police Officers." *Journal of Criminal Justice* 14: 329-348.
- Bittner, E. "The Police on Skid-Row: A Study of Peace Keeping." *American Sociological Review*. 32: 699-715.
- Black, D. 1971. "The Social Organization of Arrest." *Stanford Law Review* 23: 1087-1111.
- Black, D., and A.J. Reiss. 1970. "Police Control of Juveniles." *American Sociological Review* 35: 63-77.
- Brown, R.A., and J. Frank. 2006. "Race and Officer Decisions Making: Examining Differences in Arrest Outcomes between Black and White Officers." *Justice Quarterly* 23: 96-126.
- Cole, G.F., and C.E. Smith. 2010. *The American System of Criminal Justice*. Belmont, CA: Wadsworth Publishing.
- Crank, J.P. 2004. *Understanding Police Culture*. Cincinnati: Anderson Publishing Company.
- Eisenstein, J., and H. Jacob. 1977. Felony Justice. Little, Brown and Company: Boston, MA.
- Eisenstein, J., R.B. Flemming, and P.F. Nardulli. 1988. The Contours of Justice: Communities and Their Courts. Little, Brown and Company: Boston, MA.
- Frank, J., K.J. Novak, and B.W. Smith. 2001. "Street-Level Policing in Cincinnati: The Content of Community and Traditional Policing and the Perceptions of Policing Audiences." Grant 96-IJ-CX-0075. Washington, DC: National Institute of Justice.
- Feder, L. 1996. "The Importance of Offender's Presence in Arrest Decisions When Police Respond to Domestic Violence Calls." *Journal of Criminal Justice* 24: 1-10.

- Friedrich, R.J. 1980 "Police use of Force: Individuals, Situations, and Organizations." *Annals of the American Academy of Political and Social Science* 452: 82-97.
- Grinc, R.M. 1994. "Angels in Marble: Problems with Stimulating Community Involvement in Community Policing." *Crime and Delinquency* 40: 437-468.
- Goffman, E. 1961. *Encounters: Two Studies in the Sociology of Interaction*. Indianapolis: Bobbs-Merrill Educational Publishing.
- Gottfredson, M.R. and D.M. Gottfredson. 1988. *Decision Making in Criminal Justice: Towards the Rational Exercise of Discretion.* 2nd ed. New York: Plenum Press.
- Hawley, A. 1950. *Human Ecology: A Theory of Community Structure*. New York: Ronald Press.
- Herbert, S. 1998. "Police Subculture Reconsidered." *Criminology* 36: 343-370.
- Hickman, M.J. and B.A. Reaves. 2003. Local Police Departments 2000. Bureau of Justice Statistics, U.S. Department of Justice. NCJ 196002.
- Hunt, J. 1985. "Police Accounts of Normal Force." *Urban Life* 13: 315-341.
- Kappeler, V., R. Slunder, and G. Alpert. 1998. "Breeding Deviant Conformity: The Ideology and Culture of Police." in *Critical Issues in Policing* 5th ed. Edited by R.G. Dunham and G.P. Alpert. Illinois: Waveland Press.
- Klinger, D.A. 1994. "Demeanor or Crime? Why 'Hostile' Citizens Are More Likely to be Arrested." *Criminology* 32: 475-495.
- Klinger, D.A. 1997. "Negotiating Order in Patrol Work: An Ecological Theory of Police Response to Deviance." *Criminology* 35: 277-306.
- Lundman, R.J. 1979. "Routine Police Arrest Practices: A Commonwealth Perspective." *Social Problems* 22: 127-141.

- Lundman, R.J. 1994. "Demeanor or Crime? The Midwest City Police-Citizen Encounter Study." *Criminology* 32: 631-356.
- Lundman, R.J. 1996. Demeanor and Arrest: Additional Evidence from Previously Unpublished Data." *Journal of Research in Crime and Delinquency* 33: 306-323.
- Lundman, R.J. 1998. "City Police and Drunk Driving: baseline Data." *Justice Quarterly* 15: 527-546.
- Mastrofski, S.D., J.B. Snipes, R.B. Parks, and C.D. Maxwell. 2000. "The Helping Hand of the Law: Police Control of Citizens on Request." *Criminology* 38: 307-342.
- Mastrofski, S.D., R.E. Worden, and J.B. Snipes. 1995. "Law Enforcement in a Time of Community Policing." *Criminology* 33: 539 -569.
- McCluskey, J.D., S.D. Mastrofski, and R.B. Parks. 1999. "To Acquiesce or Rebel: Predicting Citizen Compliance with Police Requests." *Police Quarterly* 2: 389-416.
- Messerschmidt, J.W. 1993. *Masculinities and Crime: Critique and Reconceptualization of Theory*. Lanham, MD: Rowman and Littlefield.
- Muir, W.K. 1977. Street Corner Politicians. University of Chicago Press: Chicago, Il.
- National Research Council. 2004. *Fairness and Effectiveness in Policing: The Evidence*." Washington, D.C: National Academies Press.
- Novak, K.J. 1999. "Assessing Police-Citizen Encounters: Do Community and Beat Officers Differ?" Unpublished Dissertation. University of Cincinnati.
- Novak, K.J., J. Frank, B.W. Smith, and R.S. Engel. 2002. Revisiting the Decision to Arrest: Comparing Beat and Community Officers." *Crime and Delinquency* 48: 70-98.
- Paoline, E.A. 2001. *Rethinking Police Culture*. LFB Scholarly Publishing.

- Piliavan, J., and S. Briar. 1964. "Police Encounters with Juveniles." *American Journal of Sociology* 70: 206-214.
- Raudenbush, S.W., and A.S. Bryk. 2002. *Hierarchical Linear Models: Applications and Data Analysis Methods*. Second Edition. Sage Publications: Thousand Oaks, CA.
- Reuss-Ianni, E. 1982. *Two Cultures of Policing*. Transaction Publishers.
- Riksheim, E.C. and S.M. Chermak. 1993. "Causes of Police Behavior Revisited." *Journal of Criminal Justice* 21: 353-382.
- Smith, D.A. 1984. "The Organizational Context of Legal Control." *Criminology*: 22: 19-38.
- Smith, D.A. 1984. "Police Response to Interpersonal Violence: Defining the Parameters of Legal Control." *Social Forces* 65: 767-782.
- Smith, D.A. 1986. "The Neighborhood Context of Police Behavior." In *Communities and Crime*, Volume 8 of *Crime and Justice: A Review of Research*, edited by A.J. Reiss and M. Tonry. Chicago: University of Chicago Press.
- Smith, D.A. and J.R. Klein. 1984. "Police Control of Interpersonal Disputes." *Social Problems* 31: 468-481.
- Smith, D.A., C.A. Visher. 1981. "Street Level Justice: Situational determinants of Police Arrest Decisions." *Social Forces* 29: 167-177.
- Smith, D.A., C.A. Visher, and L.A. Davidson. 1984. "Equity and Discretionary Justice: The Influence of Race on Police Arrest Decisions." *The Journal of Criminal Law and Criminology* 75: 234-249.
- Sobol, J.J. 2010. "Social Ecology and Police Discretion: The Influence of District Crime, Cynicism, and Workload on the Vigor of Police Response." *Journal of Criminal Justice* 38: 481-488.

- Skolnick, J. *Justice Without Trial*. New York: John Wiley and Sons.
- Spano, R. 2003. "Concerns about Safety, Observer Sex, and the Decisions to Arrest: Evidence of Reactivity in a Large-Scale Observational Study of Police." *Criminology* 41: 909-932.
- Sudnow, D. 1965. "Normal Crimes: Sociological Features of the Penal Code in a Public Defenders Office." *Social Problems* 12: 255-276.
- Sun, I.Y. and B.K. Payne. 2004. "Racial Differences in Resolving Conflicts: A Comparison between Black and White Police Officers." *Crime and Delinquency* 50: 516-541.
- Terril, W., E.A. Paoline. 2007. "Non-arrest Decision Making in Police-Citizen Encounters." *Police Quarterly* 10:308-331
- Terrill, W., E.A. Paoline, and P.K. Manning. 2003. "Police Culture and Coercion." *Criminology* 41: 1003-1035.
- Tyler, T.R. 1990. *Why People Obey the Law*. New Haven: Yale.
- Visher, C.A. 1983. Gender, Police Decisions and Notions of Chivalry." *Criminology* 21: 5-28.
- Walker, S. 1992. "Origins of the Contemporary Criminal Justice Paradigm: The American Bar Foundation Survey, 1953-1969." *Justice Quarterly* 9: 47-76.
- Wilson, J.Q. 1968. *Varieties of Police Behavior*. Cambridge, MA: Harvard University Press.
- Worden, R.E. 1989. "Situational and Attitudinal Explanations of Police Behavior: A Theoretical Reappraisal and Empirical Assessment." *Law and Society* 23: 667-711.
- Worden, R.E., and S.M. Meyers. "Police Encounters with Juvenile Suspects." Report to the National Institution of Justice. New York: University of Albany.
- Worden, R.E., and R.L. Shepard. 1996. "Demeanor, Crime, and Police Behavior: A Reexamination of the Police Services Study Data." *Criminology* 34: 83-105.