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IN LOCAL AGENCIES WITH INVESTIGATORS

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AN EXPLORATORY STUDY REGARDING THE EFFECTS OF COMMUNITY POLICING ON INDEX CRIME CLEARANCE RATES IN LOCAL AGENCIES WITH INVESTIGATORS

By

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ABSTRACT

AN EXPLORATORY STUDY REGARDING THE EFFECTS OF COMMUNITY POLICING ON INDEX CRIME CLEARANCE RATES IN LOCAL AGENCIES WITH INVESTIGATORS

By

Robert Thomas Meesig

The police-public relationship is vital to the police investigation process because people are the primary source of crime information for the police. Yet, past research has shown that the traditional reactive, case-oriented police investigation process, wherein the police primarily respond to reported crime, is ineffective in collecting and using information to solve crime. Community policing, now one of the dominant forces in policing, also focuses on the police-public relationship and working with people, but mainly to prevent crime. The purpose of this study was to determine whether community policing has any effects on solving crime as well.

Clearance rates (the extent to which agencies solve crime) for the Index crimes of murder, robbery and burglary were operationalized as dependent variables. Six demographic Agency Variables, 16 Investigation Variables related to the investigation process, and two Community Policing Variables were created as predictor variables. Logistic regression was used to examine variable interrelationships.

It was found that some Agency and Investigation Variables have mixed (positive and negative) significant main effects on some clearance rates, and that community policing practices in agencies have significant positive main effects on murder clearance rates. Agency Variables show no significant interaction effects with community policing on clearance rates, but when community policing is practiced in conjunction with some

Investigation Variables, it has mixed significant interaction effects on murder and robbery clearance rates. No significant community policing interactions were found with any variables regarding burglary clearance rates.

Community policing factors that influence investigative outcomes are affected less by environmental factors than by internal management factors, over which agencies have greater control. The different effects of community policing are associated with the characteristics of the relative seriousness, visibility and extent of police investigative response regarding the different types of crimes. Community policing effects are associated with the collection of information, and technology effects are associated with the use of information, to solve crime. However, while the study findings indicate that clearance rates can be improved through the effective integration of community policing, investigations and technology, no evidence was found of any substantive internal agency management initiatives to do so.

A conceptual framework that describes crime in terms of phases, time, space and sources of information was used to put the study findings in context, and to develop a practical vision and common frame of reference for affecting change in the investigation process to better address the crime control needs of society. The results are discussed with regard to preventing and detecting crimes, as well as solving them, especially as they pertain to terrorism and national security.

DEDICATION

To Pyong Hwa, my beloved and loving wife of 35 years.

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

This study examines the effects of community policing on investigative outcomes in the United States. In this chapter, a statement of the problem is set forth, and the need for a study to address it is argued. Next, the purpose of the study is described and, finally, a brief overview of Chapters 2 through 5 is provided.

Statement of the Problem

The evolving nature of our society drives changes in the nature of the crime threat to society and, as the threat changes, society responds in different ways. Historically, formal police organizations developed in the United States about 160 years ago to address the emerging crime threat in rapidly growing urban areas. Ever since, crime control has been the core police mission, and the relationship between the citizenry and the police has affected the manner in which this mission is accomplished (Moore, Trojanowicz & Kelling, 1988). In establishing police organizations, society expects them to provide some reasonable level of crime control, but in turn, society must support the police sufficiently to permit them to accomplish that function. In controlling crime, police must use their resources appropriately, within the parameters of the social constraints placed upon them (Langworthy & Travis, 1999).

One of the key aspects of the relationship between the police and the public is the exchange of crime-related information. As the public is the primary source of such information for the police, the manner in which the police interrelate with the public can

affect the nature and quality of the information exchanged. This in turn affects the ability of the police to learn of, investigate and resolve many crime issues (Horvath, Meesig & Lee, 2001).

Over the past 160 years, our society has undergone a multitude of changes, many of which have directly affected the relationship between the police and the public. The way in which police investigate crime has also changed dramatically in response to societal needs, and the successes and failures of the police in solving crime have had repercussions throughout the criminal justice system (Horvath, Meesig & Lee, 2001; Manning, 1992; Redlinger, 1994).

The police serve essentially as a "gateway" to the criminal justice system, in that the productivity of their investigations of crime largely determines the extent to which other parts of the system become involved in dealing with crime issues (Horvath, Meesig & Lee, 2001). For example, if the police do not collect physical evidence during an investigation, then the capabilities of a crime laboratory and certain forensic analyses will not be useful in solving the crime. If the police do not investigate crime effectively, this may impair the productivity of other agencies in dealing with crimes of mutual interest or that cross investigative jurisdictions. And if the police fail to apprehend a suspect, then the prosecution, court and corrections systems will not become involved.

In the past three decades alone there have been many changes in both crime and policing, and community policing has emerged as the dominant form of policing (Langworthy & Travis, 1999). In general terms, the primary emphasis of community policing is to build close working partnerships between the police and the public, and to use problem-solving methods that are focused on the prevention of crime. Yet despite

the advent of community policing and its emphasis on the police-public relationship, the police continue to learn of only a small portion of the crimes that occur in our society, and they continue to solve only a small portion of the crimes they investigate (Horvath, Meesig & Lee, 2001).

The past three decades have witnessed a greatly expanding and intensified scientific scrutiny of the police crime control mission. However, the overwhelming bulk of this attention has been concentrated on the police role in maintaining public order and providing service to the community. As the patrol officer most frequently interfaces with the public in dealing with these issues, the patrol officer plays a key role in the practice of community policing. This is noteworthy as the patrol officer also plays a key role in investigations. It is the investigative activities of patrol officers that remain as the primary determinant of whether or not a crime will be solved (Greenwood, Chaiken & Petersilia, 1977).

Investigators also play an important role in the criminal investigation process, but their role is controversial and not well understood, even within policing itself (Ericson, 1981; Wilson, 1978). The investigation of crime and the apprehension of offenders by the police are also critical elements in the police mandate; yet, there has been surprisingly little scientific inquiry in this area (Horvath, Lee & Meesig, 2001). As a result, little is known about the investigation process that accounts for whatever success or lack of success that the police have in resolving crime, and much of what is known is based on research that is limited, often conflicting, and outdated (Horvath, Meesig & Lee, 2001). Additionally, even less information is available regarding the manner in which

community policing and the changing roles of patrol officers and investigators over the past twenty years have influenced the investigation process.

Need for the Study

It is argued here that the aim of community policing to prevent crime by promoting a better relationship between the police and the public should also be advantageous for the police criminal investigation process. It is important to recognize that, while the community policing philosophy identifies the role of the patrol officer as pivotal in forming working relations with people in the community, the research literature clearly points out that the patrol officer is also a critical link in the criminal investigation process (Horvath, Meesig & Lee, 2001).

In an environment where patrol officers work to build the trust and rapport between the police and community members to prevent crime, it seems reasonable to expect that the flow of useful crime-related information between patrol officers and the public would also contribute to the police crime investigation process. As the public is already the best and largest source of crime information for the police, this could enhance the effectiveness of the police in using that information to solve crimes as well as prevent them. However, the effects of community policing on the investigation process have not been explored (Horvath, Bucqueroux & Meesig, 1997; Wycoff, 2001). In order to improve the productivity of the investigation process, there is a need to better understand the process itself, and to examine how it is being affected by community policing.

Purpose of the Study

The purpose of this study is to explore how community policing has affected police practices in investigating and solving crime. Until recently, little or no information was available to explore this subject. Now, however, a study completed by Horvath, Meesig and Lee in 2001 has shed some light on this area. That study provides descriptive data on police policies and practices regarding their investigation process, including community-oriented investigative activities. The data from that study are used as the basis for analysis in the present study. Additionally, a conceptual framework is used to provide insights into the investigations process, and also to interpret the study results.

Study Overview

In Chapter 2, the major pieces of research literature on the police criminal investigation process pertinent to this study are summarized, and the major issues regarding the process are identified. In Chapter 3, the study research questions and the methodology used to explore them are described. In Chapter 4, the study results are reported, and in Chapter 5, they are discussed in the context of the conceptual framework, and also from a broader national security perspective.

CHAPTER 2

LITERATURE REVIEW

The purpose of this chapter is to provide an historical background and contextual framework for understanding the police investigative response to crime in the United States. The chapter presents a selective review of the empirical literature on the subject, and is designed to set the foundation for an exploration of the extent to which recent trends in the community policing approach to crime control have influenced the police criminal investigation process.

The chapter is organized into four sections. The first, **Crime, the Police and Change**, describes the major categories and costs of crime in the United States, how the police are organized to deal with crime, and changes in crime and policing during the past three decades. The second section, **Investigations**, considers some of the major issues regarding the collection and use of information by the police to solve crime, and the third section, **Investigators**, reviews the historical development of the police criminal investigation process and some recent findings about what police investigators do. The final section, **Theoretical Perspectives**, briefly outlines some current theoretical approaches regarding crime and the investigation process, and then presents a conceptual framework for viewing different categories and types of crime and the nature of the police investigative response.

Crime, the Police and Change

This section begins with a discussion of the major categories of crime and the costs of crime. This is done in order to provide some perspective to the overall crime problem, as local police agencies are primarily occupied with crime in only one major category. The section then presents reviews of police investigative jurisdictions and recent changes in crime and the police.

Crime

In the United States, one of the more common ways to categorize various types of crimes is as follows (Cole & Smith, 1998; Gaines, Kaune & Miller, 2001):

- Visible crimes (including murder, rape, robbery, assault, burglary, larceny, motor vehicle theft and arson, and lesser disorders such as vagrancy, shoplifting, vandalism and violations of local ordinances and codes)
- Victimless crimes (crimes such as drug offenses, prostitution and gambling, that involve a "willing and private exchange of goods or services that are in strong demand but are illegal")
- Occupational crimes ("violations of the law committed through opportunities created in the course of a legal business or profession," such as crimes committed in private or state-based organizations by professionals or organizational employees)
- Organized crimes (crimes committed by social frameworks organized "for the perpetration of criminal acts rather than specific types of offenses")
- Political crimes (activities such as terrorism, treason, sedition and espionage)

Of these Major Crime Categories, it is only in the Visible Crime Category that we have national crime statistics programs that assess the number of crimes committed in the United States on a recurring annual basis, and there are two programs. The first program is the Uniform Crime Reporting (UCR) program, which is a compilation of data reported by over 16,000 city, county and state law enforcement agencies regarding the types and numbers of offenses reported to them. The UCR is published annually by the Federal Bureau of Investigation (FBI) and it focuses primarily on Index crimes (the violent crimes of murder, forcible rape, robbery and aggravated assault, and the property crimes of burglary, larceny, motor vehicle theft and arson). These crimes serve as a general measure for gauging changes in the overall volume and rate of crime (United States Department of Justice, 2002). The National Crime Victimization Survey (NCVS) is the second program, and it consists of a continuing series of interviews of citizens to learn about crime and victims of crime. It is designed to generate estimates of victimization rates for all Index offenses except murder and arson, and it is sponsored by the United States Department of Justice Bureau of Justice Statistics (BJS) (Zawitz et al., 1993). So, the UCR is designed for the police to report all Visible crimes known to them, and the NCVS is designed to collect information about Visible crimes from victims, whether or not they were reported to the police.

The direct and indirect costs related to the Visible Crime Category are approximately $450 billion a year (Miller, Cohen & Wiersma, 1996). The annual costs of crimes in the other Major Crime Categories are difficult to determine, as the volume of crime in these categories is not systematically measured. However, some estimates are available. For Victimless crimes, the annual projected overall costs to society of drug

abuse in the United States were estimated to exceed $160 billion in 2000 (Spiess, 2003). Occupational crimes such as taxpayer fraud and error have been estimated to cost $195 billion annually (Feldman & Caplin, 2001), and annual health care fraud and abuse estimates exceed $100 billion (Sparrow, 1998). For Organized crimes, the costs are conservatively estimated to be about $114 billion a year (Myers & Myers, 2003). The approximate costs of Political crimes have not been aggregated or analyzed in detail, but the direct and indirect costs of the September 11, 2001, terrorist attacks in the United States, for example, would be included in this category.

In general, the dollar figure estimates associated with each of these crime categories deal mainly with directly related costs and do not include the more indirect societal costs that were estimated for Visible crimes. Nevertheless, it can be seen that crime in the United States is a big, expensive business for which we pay dearly both in economic and human welfare terms.

The Police

Criminal investigations are conducted at all government levels in the United States – by federal government and military agencies, by state agencies, and at the local level by county and municipal agencies. The types of investigations conducted by the various agencies are defined by specified legal and geographic jurisdictional responsibilities (BJS, 1988). For example, a federal agency may have the responsibility to investigate violations of certain federal laws throughout the United States (i.e., the FBI can investigate violations of various federal laws), but is limited with regard to investigating violations of state laws. The mandate of local sheriff or police agencies to investigate violations of state law may be much broader than federal agencies, but their

authority may extend only to the geographic jurisdictional limits of the county or city in which they are located (Langworthy & Travis, 1999).

At the federal level, more than 65 agencies (excluding military agencies) employ about 83,000 full-time personnel authorized to make arrests and carry firearms. About 42% (35,000) are assigned investigative or law enforcement duties (Reaves & Hart, 2000). At the state and local levels, over 18,000 agencies employ at least one full-time or part-time sworn officer with general arrest powers. This includes 49 state agencies (Hawaii does not have a state police agency), over 3,000 county sheriff agencies, more than 13,500 general-purpose (having general arrest powers) municipal police agencies, and about 2,000 other agencies. These agencies employ more than 660,000 full-time sworn officers and about 258,000 non-sworn or civilian personnel. One study indicated that approximately 15% (99,000) of the sworn personnel are assigned primarily criminal investigative duties (Reaves & Goldberg, 1998).

This present study focuses on the criminal investigation process of the more than 16,000 local (county and municipal) law enforcement agencies, as these organizations are the most numerous and are responsible for the bulk of the investigative work done within the United States criminal justice system. Additionally, as the Visible crimes investigated by these agencies are reported in the UCR, national level data are available to assess the effectiveness of their efforts.

Although all of the police functions are critical to understanding the role of police in American society, the crime control activities of the police related to their law enforcement function often seem to receive the greatest amount of attention in the eyes of the media and the public. However, the myths of law enforcement perpetuated by the

press and other media often severely distort and exaggerate the actual role of the police law enforcement in dealing with crime in the United States (Horvath, Meesig & Lee, 2001). In actuality, the police spend on average only about one-third of their time on crime control and investigative matters (Wilson, 1971, as cited in BJS, 1988, p. 62; Ostrum, Parks & Whitaker, 1978, and Whitaker, Mastrofski, Ostrum, Parks & Percy, 1982, as cited in Langworthy & Travis, 1999, p. 325).

Change

During the past three decades there have been numerous changes in the nature and amount of crime. The nature of the crime problem that police must deal with in our society has changed significantly with the explosion onto the scene of illegal drugs, international organized crime, transnational terrorism, corporate crime and computer crime, to mention a few (Meesig, Lee & Horvath, 1999). In addition, the amount of crime has also varied considerably. With regard to Visible crimes alone, the number of reported Index crimes per 100,000 inhabitants increased by almost one-third from 3,961 in 1972, to a high of 5,950 in 1980, and then declined to 4,267 by 1999 (Maguire & Pastore, 2001). Moreover, as indicated previously, the cost of crime has also never been higher.

Policing in American society has also undergone significant organizational, administrative and personnel changes (Manning, 1992; Redlinger, 1994). The amount of annual monies currently being spent on policing and on the overall criminal justice system (over $65 and $146 billion a year, respectively, as of 1999) is at an all-time high (Maguire & Pastore, 2001). An extensive body of research has been developed on crime and policing and, in conjunction with this, important reform efforts have been undertaken

with regard to the police role in our society, the education and training levels of police officers in general, community policing, technology and the computerization of information processing systems.

It could be expected that all of these recent changes in crime and policing have influenced the police investigation process; yet, very little has been documented about how, or even whether, they have done so to any significant degree. Prior to the 1960s, virtually no research had been conducted on investigations and, until recently, much of what was known came from a national-level assessment of investigator activities conducted in the 1970s (Greenwood, Chaiken & Petersilia, 1977), and also a number of ethnographic and other field studies conducted during the 1970s and early 1980s (Bloch & Bell, 1976; Eck, 1979, 1983; Ericson, 1981; Gay, Day & Woodward, 1977; Greenberg & Wasserman, 1979; Regan, Nalley & White, 1979; Sanders, 1977; Sherman, Milton & Kelly, 1973; Wilson, 1978). What emerged from the research is a picture of the police criminal investigation process as a traditional, reactive, case-oriented function that was marginally effective at best and seemed to offer little prospect for improvement. However, much of this research is relatively limited, often conflicting, and outdated, and it is frequently difficult to interpret and apply the past research within the context of our current-day society.

Investigations

For Visible crimes, the traditional, reactive, case-oriented police criminal investigation process can be described simplistically as the collection and use of information to solve crime (Meesig, Lee & Horvath, 1999).

- The collection of information relates to the interface between the police and the public – how the police recognize, detect, identify and obtain crime-related information.
- The use of information refers mainly to how police use it within the criminal justice system – how it is organized, analyzed, processed, stored and retrieved.
- Information is broadly defined here as the knowledge of opinions, facts and/or data, the source of which is either people or things.
- The solving, or resolution, of crime encompasses activities ranging from the informal discretionary disposition of complaints to the full investigation and prosecution of offenders (Meesig, Lee & Horvath, 1999).
- Crime is defined as human behaviors, usually categorized as felonies, misdemeanors and lesser violations, for which a society provides formally sanctioned punishment (BJS, 1988).

This description will be used as a framework for discussing major issues regarding the police criminal investigation process.

Criminal investigation is a complex process that can be more readily understood within the context of the social and criminal justice systems in which it is practiced. In this section, some of the major issues affecting the investigative function are presented with respect to how the police work in their community environments to collect and use crime information to solve crime.

Collecting Crime Information

Crime is a human behavior that occurs and exists only in the present. Information about criminal behavior exists in two forms – in the memories of people (victims,

witnesses, informants and offenders) and in things (this would include types of information systems that might range from telephone books to computerized databases, and physical evidence such as a bloody knife, fingerprint, body fluids, etc.) (Kuykendall, 1986; Unsinger, Rosa & Miller, 1977). However, the predominant and most important source of information regarding crime is people. Only people can remember and report crime, and only people can provide the critical information link between things and criminal acts (Horvath & Meesig, 1996). Because investigative work involves obtaining and processing information regarding criminal acts, it necessarily requires a much greater concentration on people than on things. The empirical research on the criminal investigation process clearly shows this emphasis on people as the primary source of information in investigative work, and that physical evidence is collected in less than 10% of police investigations (Eck, 1983; Ericson, 1981; Greenwood, Chaiken & Petersilia, 1977; Horvath & Meesig, 1996; Horvath, Orns & Siegal, 1998; Voelker & Horvath, 1997).

The relationship between police and the people they serve is critical in the reactive police investigation process. The manner in which the police interrelate with the citizenry in conducting criminal investigations directly affects whether or not they become aware of crime, how they investigate it, and the extent of their success in doing so. By not reporting more than half of the Index crimes committed in our society, the public serves as the largest filter of Visible crime information entering into the criminal justice system (Zawitz et al., 1993). Additionally, while the police may detect minor disorders such as traffic violations, vagrancy, loitering, etc., they uncover by themselves only around 5% of the Index crimes they deal with. Therefore, almost all of the Index

crimes that the police investigate are the ones that are reported to them by citizens, rather than those that they detect themselves (BJS 1988; Skogan & Antunes, 1979). In other words, the main function of police investigators is to react to Visible crimes that are reported to them by the public. Thus, the public is essentially a co-producer of Visible crime information with the police, and it follows that the relationship between the police and the communities they serve can critically affect both the quantity and quality of crime information that is exchanged (Eck, 1983; Horvath, Bucqueroux & Meesig, 1997; Skogan & Antunes, 1979).

Using Crime Information

The criminal justice system in the United States traditionally includes the police, prosecutor, court, and corrections components. However, it is the investigation process of the police, whether it be a brief on-scene arrest or a time-consuming, complex series of activities, and the evidence that it develops, that serves essentially as the gateway to this system, as most criminal matters that other justice system components deal with are initiated by the police (Meesig, Lee & Horvath, 2002a).

The patrol officer plays a critical role in this regard. The patrol officer is generally the first responder to the crime scene and is normally responsible for restoring order, securing the scene and conducting a preliminary investigation that will be used to assess the nature and extent of the police response. The investigative duties of patrol officers are generally relatively limited; however, officers are often tasked to continue to investigate many of the less serious crimes and disorders. The more serious crimes are generally referred to investigators for follow-up investigations as necessary to collect and

use information to sufficiently identify and prosecute the offender (Eck, 1983; Greenwood, Chaiken & Petersilia, 1977).

It is essentially the nature and quality of the information initially collected by the patrol officer from people in the area of the crime scene that primarily determines whether or not the crime will be further investigated. If sufficient information is not available or adequately collected there, the case is screened out for lack of investigative leads and not further pursued. This is a routine practice for most of the less serious crimes, and the likelihood of these crimes ever being solved is minimal (Eck, 1983; Greenwood, Chaiken & Petersilia, 1977; Skogan & Antunes, 1979). On the other hand, if sufficient information is developed, the police will continue to investigate. Overall, however, as the police solve only about 20% of the Index crimes reported to them, the remaining 80% or so are not further processed beyond the police.

This internal police gateway is the second largest filter of Visible crimes into the criminal justice system. The filter between the police and the public, together with the internal police gateway, combine to routinely eliminate from consideration by the other three components of the criminal justice system about 90% of the Visible Index crimes committed in our society.

Solving Crime

Most crimes in the Visible Crime Category are solved based on information provided to the responding officer by victims and witnesses at the crime scene (Skogan & Antunes, 1979). A crime is considered to be solved, or "cleared," when an offender has been arrested, charged with the commission of an offense, and turned over to a court for prosecution (United States Department of Justice, 2002). Although the police may clear

only about 20% of the Index crimes reported to them, more than 80% of those clearances are the result of the identification of perpetrators when a crime is initially reported, on-scene arrests made by patrol officers, other patrol officer investigative activity, or information provided spontaneously by the public. Patrol officers essentially conduct more investigations (albeit less serious ones) and clear more crimes overall than investigators (Skogan & Antunes, 1979; Greenwood, Chaiken & Petersilia, 1977).

Investigators

The role of the police investigator in the United States is a controversial one and is generally not well understood. In the past, American detectives have been criticized for, among other things, abuse of power, corruption, illegal practices, and resistance to change (Kuykendall, 1982; Sparrow, 1988). On the other hand, they have also been characterized as heroes, artists, craftsmen and scientists (Reppetto, 1978). Although detective work has been highly popularized in the fictional literature and the media, much of the empirical research aimed at providing a more accurate portrayal of their investigative function is both limited and outdated (Eck, 1992). In the present study, the terms "investigator" and "detective" are used interchangeably as they often are used that way in the research literature. However, the term "investigator" is generally considered to be more generic and inclusive of the broader investigation process.

The investigation of crime is a critical part of the police crime control function. As the police continue to evolve, it becomes increasingly more important to understand what investigators do and how they do it, because of the effect they have on the police-public relationship and the rest of the criminal justice system. This section begins with a

historical perspective of the development of the investigative role in local police agencies in the United States, and then summarizes some recent findings regarding the nature of that role.

History

In the early 19th century, the powerful economic, political and social forces unleashed by the Industrial Revolution brought with them burgeoning problems of social disorder in the dynamic and expanding society of the United States. Up until that time, the investigation of crimes was done mainly by sheriffs, constables and private detectives. However, their efforts were generally limited and ineffective, and the era of modern policing organizations began to emerge (Kuykendall, 1986; Langworthy & Travis, 1999). One of the first metropolitan police departments in the United States was modeled after the police reforms that had taken place in England in the 1830s. It was established in New York City in 1845, and the first detectives were officially assigned to the department in 1858 (Bizzack, 1992). By 1880, the local governments of most major American cities had created public police forces with investigative units.

The primary function of these new police organizations was to reduce the widespread civil disorder and urban unrest generated by growth, industrialization, urbanization and Western expansion (Langworthy & Travis, 1999). As part of this order maintenance function of the police, the focus of the investigators was essentially offender-oriented. Their job was mainly to associate with the criminal underworld community, either covertly or openly, in order to obtain information about criminals and their activities, and also to recover stolen property, generally by negotiating with and paying money to the thieves (Kuykendall, 1986). As the police and investigators were

organized and funded primarily by municipal governments, their activities were typically heavily influenced by powerful local politicians, and corruption and abuse of authority were not uncommon. This "Political Era" of the police continued into the 20th century (Kelling & Moore, 1988).

In the early 20th century, the broad-based Progressive reform movement in the United States brought about the reorganization and centralization of the police (Trojanowicz & Carter, 1988). The resulting new "Reform Era" of policing "professionalized" the police by reducing political influence, corruption and power abuse, and by increasing police accountability. The manner in which the reforms were implemented emphasized the police crime control function, and the investigator was seen as the primary crime solver (Roberg & Kuykendall, 1990; Trojanowicz & Carter, 1988). But the centralized case assignment and close supervision reforms of this new police management style fundamentally altered the way investigators did their job. Investigators no longer worked at their own discretion mingling among the underworld community to prevent or detect crime, or to barter with criminals. Instead, they were assigned to offices and spent their time responding to supervisory and administrative directives to work on solving crimes that had already been committed and reported to the police. In other words, the focus of the investigator's tasks evolved from being offender-oriented to that of being case-oriented (Geller, 1991). At the same time, however, the management controls placed on detectives served to restrict their information collection methods by limiting their contacts with and knowledge of their traditional sources of information in the community.

In the 1960s, amid widespread civil unrest and rising crime rates in urban areas, the police were often viewed by the public as both hostile and repressive, and the "professional" style of police response came under heavy criticism for having isolated the police from the social environment in which they operated (Kuykendall, 1986; President's Commission on Law Enforcement and Administration of Justice, 1968). As part of the "Great Society" movement of the 1960s, the United States government funded a number of research programs regarding this increasing problem of estrangement between the public and the police, and this marked the first time that any significant empirical research was conducted in this area (Langworthy & Travis, 1999).

The Rand Report

There is little doubt that the research reported by the Rand Corporation in the 1970s is widely considered to be the seminal study on the traditional, reactive, case-oriented police criminal investigation process. (The most common citation for that research is Greenwood, Chaiken & Petersilia, 1977; however the results were also published in other formats cited as Chaiken, 1975; Chaiken, Greenwood & Petersilia, 1976; Chaiken, Greenwood & Petersilia, 1977; Greenwood, Chaiken, Petersilia & Prosoff, 1975; Greenwood & Petersilia, 1975. In the present study, the terms Rand Report, or Rand research, refer to the Greenwood, Chaiken & Petersilia, 1977, publication, unless otherwise indicated). Although the research on which the Rand Report was based was conducted more than two decades ago, it remained, until just recently, as the only national-scale assessment of the police investigation process in the country. The major objectives of the Rand Report were:

- To describe, on a national scale, current investigative organization and practices.
- To assess the contributions that police investigation makes to the achievement of criminal justice goals.
- To ascertain the effectiveness of new technology and systems being adopted to enhance investigative performance.
- To reveal how investigative effectiveness is related to differences in organizational form, staffing, procedures, etc. (p. 2).

As part of the Rand research, a mailed survey of a non-random sample of police agencies was conducted. Questionnaires were sent to 300 of the largest county and municipal police agencies (agencies with more than 150 full-time sworn and civilian employees, or whose jurisdictions had populations of more than 100,000. A total of 153 agencies responded (153/300 = 51% response rate). The survey was complemented with onsite interviews and observations of investigative operations in up to 29 respondent agencies. A limited telephone survey of 36 out of 72 robbery and burglary victims identified in one police jurisdiction was also conducted. Additionally, a computer-readable file of the 1972 UCR files was obtained from the FBI in order to conduct workload analyses.

The research found that investigators comprised an average of only 17% of an agency's sworn officers, and that they generally investigated only the more serious crimes. Although their primary investigative task was talking to people, they spent less than one-third of their time actually investigating unsolved cases (45% on non-case

activities, 26% on post-arrest activities, 22% on cases that are never solved, and 7% on cases that are eventually solved).

While the details of the Rand Report findings will be covered later in this present study, the general conclusion of the report was that traditional, reactive, case-oriented approaches to criminal investigation by police agencies did not significantly affect the rate at which cases are solved. A number of investigative reforms to improve agency clearance rates were proposed, but with the caution that they would have only a marginal effect, as investigators had a relatively minor impact on agency arrest and clearance rates. Case resolution rates were much more heavily influenced by patrol officer activities and cooperation between citizens and the police.

Although the Rand Report provided some of the most comprehensive information available about the police investigation process, the study itself was limited in a number of respects. It was not a nationally representative sample of police agencies, in that it included responses from only 153 large agencies and, in some areas, its findings were based on research conducted in only a handful of large agencies.

Other research conducted during the same time period reported results that conflicted with some of the Rand findings, and that particularly highlighted the important role of investigators in the post-arrest phase of investigations (e.g., Eck, 1979, 1983; Greenberg & Wasserman, 1979). However, the general consensus among the studies was that, while the public is by far the largest source of crime information for the police, the amount of information available to police about people who commit crimes is mainly a function of the type of crime and the circumstances in which it occurs (i.e., some crimes may involve many witnesses and large amounts of physical evidence, whereas others

may not). For most crimes (i.e., burglaries, larcenies), the amount of information that can be supplied to police officers responding to reported crime is very low and, therefore, the capacity of the police to solve crime based on the reported circumstances is generally quite limited. As a consequence, the police actually clear only about one-fifth of the serious crimes reported to them, and most of the clearances result from information provided by victims to the patrol officer who initially responds to the reported crime (Eck, 1983; Greenberg & Wasserman, 1979; Greenberg, Yu & Lang, 1973; Greenwood, Chaiken & Petersilia, 1977; Skogan & Antunes, 1979). The research essentially supported the overall Rand assessment regarding the relative ineffectiveness of the reactive, case-oriented investigative approach.

In the 1970s, in an effort to ameliorate the problem of public hostility toward the police, one of the strategies that some agencies experimented with to improve the effectiveness of the reactive investigation process was team policing. Team policing is basically the assignment of patrol officers and investigators to work together as decentralized teams in specific neighborhood areas to combat crime. However, despite some promising initial results, the concept was virtually abandoned within a few years due to factors ranging from the lack of funding, to opposition by middle management (Gay, Day & Woodward, 1977; Sherman, Milton & Kelly, 1973; Walker, 1993). Another approach, called "Problem-Oriented Policing (POP), was also developed that urged officers and investigators to analyze groups of incidents in neighborhoods, and to coordinate with public and private community resources to solve them (Eck & Spelman, 1987, 1993; Goldstein, 1979). However, these and other emerging ideas gradually transitioned during the 1970s and 1980s into the current "Community Policing Era," in

which the police ideally focus on preventing crime by forming close working relationships within the community and by problem-solving (Kelling & Moore, 1988).

The Community Policing Era

Two of the major trends in policing that are worthy of note regarding investigations thus far during the Community Policing Era are community policing and technology (Meesig, Horvath & Lee, 2002). They are addressed below, along with more recent research bearing on the integration of community policing and investigations.

Community Policing

Community policing has been described as a fundamental shift away from traditional reactive policing and toward a broader, more comprehensive philosophy of crime prevention (Hickman & Reaves, 2001). It is arguably the dominant model of policing in the United States today, as about two-thirds of all local agencies practice some form of community policing (United States Department of Justice, 1999a). In general terms, its primary emphasis is to build close working relationships with the community and to use problem-solving methodologies with community partners to prevent crime (Trojanowicz, Kappeler & Gaines, 2002). As part of the community policing philosophy, the public continues to be recognized as the primary provider of information to the police, and the role of the patrol officer becomes even more specialized in the form of the Community Police Officer, who serves as the primary police interface with the public regarding the prevention and resolution of community-identified problems. This has relevance to the police criminal investigation process in two respects – the police-public relationship and the key role of patrol officers.

With regard to the police-public relationship, the aim of promoting a better relationship between the police and the public has advantages for both community policing crime prevention and criminal investigations. As mentioned previously, the public is the primary filter of crime information to the police, and the police-public relationship exerts strong influence on the investigative productivity of the police (Eck, 1979, 1983; Greenwood, Chaiken & Petersilia, 1977; Horvath & Meesig, 1996; Zawitz et al., 1993). Presumably, as the police-public relationship improves under effective community policing programs, the police will likely be in a better position to collect and use more and better information, not only to prevent crime, but to solve it as well.

With regard to the role of patrol officers, under the community policing philosophy Community Policing Officers are pivotal in forging close working relationships and partnerships with people in neighborhood areas of communities, in order to work with them more effectively in identifying and addressing crime-related issues of concern to them. And, as previously reported, in the traditional, reactive, case-oriented police investigation process, patrol officers play a key role as the first responder to crime incidents by collecting information initially available at the scene and solving most crimes (Eck, 1983; Greenwood, Chaiken & Petersilia, 1977; Skogan & Antunes, 1979). Thus, patrol officers serve as a critical link between community policing and investigations, in that they collect and use crime information to prevent crime in community policing programs, and to solve crime in investigation programs.

Technology

With regard to the use of crime information by the police, recent technological advances provide the means for improving the police management of crime information,

and almost all local agencies in the country report that they use computers in at least some aspect of their organizational functions (Hickman & Reaves, 2001). Additionally, police agencies recently identified advances in technology as one of the top three ways (together with increases in personnel and training) to improve crime clearance rates. More specifically, they cited the availability of sophisticated information management systems (computerized databases for criminal records and investigative support files, automated fingerprint identification systems, etc.) as one of the two primary research developments that have most directly influenced their agency policies and practices during the past five years. Although physical evidence is collected in less that 10 percent of the cases investigated by police, technological breakthroughs regarding the analysis of physical evidence, such as the use of DNA, to identify otherwise unknown suspects, were cited as the second major research development. While there was no clear evidence that these technologies have had any measurable effect on overall agency-level clearance rates as of yet, the increased capability of patrol officers and investigators to communicate, process, store, and retrieve crime information more efficiently, together with the enhanced ability to determine the identity of offenders based on physical evidence, was viewed by agencies as having an excellent potential for improving the investigation process (Horvath, Meesig & Lee, 2001).

Recent Research

In 1997, a review was conducted of the available community policing literature regarding agency efforts to adapt their investigation function to their community policing programs (Horvath, Bucqueroux & Meesig, 1997). Seven police agencies were identified as having integrated various aspects of investigations and community policing through

activities ranging from expanding the investigative role of Community Policing Officers to decentralizing investigators and changing their investigative responsibilities. However, this information was mainly anecdotal and not well documented, and the effects of the changes on investigative outcomes were not tested.

Then, in 2001, Wycoff reported the results of a national survey of over 800 local police agencies that employed more than 100 officers and served populations of 50,000 or more, that examined ways in which some agencies were integrating community policing and investigations. Among the 602 respondents (71% response rate), 68 (12.4%) reported that they had made initial or major changes within their investigative function in an effort to support community policing, indicating that some agencies were re-orienting their investigators toward a more community-based perspective. Three types of changes were identified: structural changes (physical decentralization of investigators and chain of command variations), procedural changes (degrees of decentralization of investigators, the use of generalist investigators, teamwork, case prioritization, working with citizen volunteers, interagency links, and technology), and functional changes (problem solving, community policing and crime prevention activities, training and cross-training). However, again, the effects of these changes on investigative outputs or outcomes were not tested.

The Horvath, Meesig and Lee (2001) Study

In 2001, Horvath, Meesig and Lee reported the results of the first-ever nationally representative survey regarding the police criminal investigation process. The purpose of that study was to collect and describe current and comprehensive information about police practices, policies, goals and perspectives regarding the process. The methodology

used in the study is described in more detail in Chapter 3. The survey instrument consisted of 87 base questions categorized into six major issue areas: (1) organizational matters; (2) patrol officers; (3) investigators; (4) investigation management; (5) investigative support; and (6) investigative effectiveness. A relatively detailed review of the Horvath, Meesig and Lee (2001) study is presented below by these major issue areas, and an additional area – community policing – is also included. A brief summary of pertinent past research and the related Horvath, Meesig and Lee (2001) study findings is provided in each area. The purpose for doing this is to establish the basis for identifying factors that will be operationalized as variables in Chapter 3 to examine the integration of community policing and criminal investigation.

- **Organizational Matters**. Pertinent issues in this area include the centralized vs. decentralized deployment of investigators, the employment of generalist vs. specialist investigators, and organizational effects on clearance rates.

  Centralized vs. Decentralized Investigators. In the 1970s, about two-thirds of agencies with geographic commands centrally assigned investigators to headquarters, about 15% assigned investigators to intermediate commands, and 22% assigned them to precincts or districts (Chaiken, 1975). The Horvath, Meesig and Lee (2001) study reported that 83% of all agencies (including agencies that do not have geographic commands) assign investigators to headquarters, and only 27% assign them to field units. Centralization is the predominant form of deployment of investigators and the proportion of centralized vs. decentralized investigators has essentially remained unchanged over the past three decades. The decentralized deployment of officers (and

presumably investigators) is a factor that is identifiable with the tenets of community policing (Horvath, Bucqueroux & Meesig, 1997; Trojanowicz, Kappeler & Gaines, 2002; Wycoff, 2001).

Generalist vs. Specialist Investigators. The Rand Report found that very few agencies assigned investigators as total generalists or total specialists; rather, about half of the agencies assigned investigators to specialized units, such as Crimes Against Persons or Crimes Against Property, where they worked as semi-generalists (Chaiken, 1975). It recommended that, in an effort to improve investigative efficiency, generalist investigators be assigned to local police commanders and used to conduct routine follow-up investigative leads. Other research, however, reported that agencies often struggled with the implementation of these recommendations in their operational environments (Greenberg & Wasserman, 1979). Nevertheless, the Horvath, Meesig and Lee (2001) study reported that 67% of agencies employ generalists (investigate all types of cases) and 31% employ specialists (investigate only certain types of cases). Although the terms were defined somewhat differently in the two studies, it appears that agencies in general are trending more toward the use of generalist investigators. The decentralized assignment of generalist investigators to specific geographic areas are practices that are identifiable with community policing (Horvath, Bucqueroux & Meesig, 1997; Trojanowicz, Kappeler & Gaines, 2002; Wycoff, 2001).

Organizational Effects on Clearance Rates. Ward (1971) and the Rand Report (Chaiken, 1975) both found that organizational factors such as centralized

vs. decentralized investigators and generalist vs. specialist investigators had no significant effects on clearance rates. However, a number of team policing experiments in the 1970s reported that these factors did in fact contribute to higher agency clearance rates (Bloch & Bell, 1976; Elliott, 1978; Gay, Day & Woodward, 1977; Public Systems Evaluation, 1977; Schwartz & Clarren, 1977). In the Horvath, Meesig and Lee (2001) study, agencies identified increases in personnel, technology and training (as opposed to any organizational changes) as the three main factors that would help improve clearance rates.

In summary, while the centralized vs. decentralized deployment of investigators has remained relatively unchanged over the past three decades, there appears to be a trend toward the assignment of investigators as generalists, rather than as specialists. The research is mixed regarding whether or not organizational factors affect clearance rates, but agencies do not tend to associate organizational factors with improving investigative outcomes.

- **Patrol Officers**. Pertinent issues in this area include the investigative training of patrol officers, patrol officer investigative duties, and the evaluation of patrol officer investigative performance.

Patrol Officer Training. The Rand Report found that, in the 1970s, more than 90% of the large agencies said that their patrol officers received at least some investigations training, apparently as part of their basic police academy program. Most of the training was less than two weeks in duration, and in-service training was not explored (Chaiken, 1975). In 1987, Meadows reported that, while the length of police academy training varied across the United States, the mean

duration was about nine weeks, approximately four-and-a-half weeks of which was related to patrol and investigations. Horvath, Meesig and Lee (2001) reported that about one-third of all agencies required patrol officers to undergo in-service classroom instruction on investigations beyond the police academy training.

Patrol Officer Duties. Past research emphasized the critical role of the patrol officer in the investigation process. Although the majority (58%) of agencies limited the patrol officer's role to preliminary and investigative support activities (e.g., secure crime scene, notify investigators, pick-up arrests, preparation of incident reports), as much as 80% of the cases solved by police are solved by patrol officers (Greenwood, Chaiken & Petersilia, 1977). The information provided by the victim to the responding patrol officer is the most important determinant of case resolution, and it is a critical factor in determining whether a follow-up investigation is conducted (Eck, 1979, 1983; Blakey, Goldstock & Rogovin, 1978; Greenwood, Chaiken & Petersilia, 1977; Miyazawa, 1992; Skogan & Antunes, 1979; Willman & Snortum, 1984).

A number of team policing efforts in the 1970s experimented with expanding the patrol officer's investigative role. They demonstrated that patrol officers could handle increased investigative responsibilities, and that they could work well in teams with decentralized investigators (Bloch & Bell, 1976; Elliott, 1978; Gay, Day & Woodward, 1977; Public Systems Evaluation, 1977; Schwartz & Clarren, 1977).

Horvath, Meesig and Lee (2001) reported that in the majority of agencies that employed investigators, patrol officers typically carried out a limited range of investigative tasks, but that in more than half of the agencies they also interviewed victims and witnesses. There appeared to be growing recognition of the importance of the patrol officers' investigative role, as 72% of the agencies reported efforts to enhance that role within the past five years.

Patrol Officer Evaluation. No information prior to the Horvath, Meesig and Lee (2001) study is available regarding the evaluation of the investigative performance of patrol officers. In that study, however, it was reported that 31% of all agencies said that the investigative performance of individual officers is evaluated separately.

In summary, it appears that patrol officers are increasingly being tasked to collect and use crime-related information, which can be of value to both community policing and investigations. However, they may not be appropriately trained or evaluated to do so effectively.

- **Investigators**. Pertinent issues in this area include the percentage of investigators employed in agencies, investigator training, the extent to which investigators work with patrol officers, and the evaluation of investigator performance.

Percentage of Investigators. Past studies reported that the percentage of officers who are assigned as investigators in police agencies ranged from 15% to 17% (i.e., Chaiken, 1975, reported 17%, and Reaves & Goldberg, 1998, reported 15%). The Horvath, Meesig and Lee (2001) study reported that some (286) of the

agencies in the study sample did not employ investigators. However, among those (1,460) agencies that did employ investigators, the percentage of officers who were assigned as investigators was 16%, which is consistent with other research over the past three decades.

Investigator Training. The Rand Report found that fewer than half of agencies provided any initial training to newly assigned investigators (Chaiken, 1975). In nationally representative surveys conducted in 1984 and 1988, agencies prioritized their training needs: 13 of the top 20 identified needs were investigations-related (Phillips, 1984, 1988). Horvath, Meesig and Lee (2001) reported that only 39% of agencies provided initial training to investigators; however, 59% provided investigators advanced or refresher training. Agencies identified training for investigators, along with more personnel and technology, as their top three needs for improving clearance rates.

Investigators Work with Patrol Officers. In a number of team policing experiments in the 1970s, patrol officers and investigators were assigned to work together in teams to deal with crime-related activities in specific geographic areas, and they reported some increases in clearance rates as a result (Bloch & Bell, 1976; Elliott, 1978; Gay, Day & Woodward, 1977; Public Systems Evaluation, 1977; Schwartz & Clarren, 1977). However, after the demise of team policing, the available data indicates that in general patrol officers and detectives reverted to their more traditional roles, as Horvath, Meesig and Lee (2001) reported that less than one-fourth of agencies said their investigators worked with patrol officers on teams, in decoy units or stakeouts, or on crime analysis.

Investigator Evaluation. In the Rand Report, the majority of agencies said that they used four criteria (prosecution, indictment, conviction and case audit) to assess investigator performance; however, the data necessary for such evaluations were often not readily available for such use. Horvath, Meesig and Lee (2001) identified the top three evaluation criteria as investigative success, report writing and clearance data, which are similar to the Rand-identified criteria.

In summary, not much has changed over the past three decades regarding the percentages of investigators in agencies, the initial training of investigators, work with patrol officers or evaluation criteria, even though agencies have long recognized and expressed the need for more investigator personnel and training. Although advanced or refresher training was not addressed in earlier research, more than half of agencies currently provide some such type of training.

- **Investigation Management.** Pertinent issues in this area include problems relating to investigators, investigation productivity, and relationships with the public.

Problems-Investigators. Past research reflects that about one-half of the agencies assigned cases to investigators according to their crime specialty. More than half reported the use of activity logs by investigators in order for supervisors to monitor their investigative activities (Chaiken, 1975).

Horvath, Meesig and Lee (2001) reported that most agencies followed traditionally case-oriented policies and procedures that empower supervisors to directly influence the investigation process and investigators' activities. Supervisors made decisions regarding what cases to investigate and to whom

cases were assigned. Additionally, they monitored the status of investigations through regular personal contact and reviews of activity logs and investigation reports. This indicates that supervisors in general continue to exert direct control over investigator activities. It also implies that, if so tasked by their agency, supervisors are in a position to redirect their investigators toward other, perhaps more community-oriented, offender-based investigative activities. Among the investigations-related problems that agencies identified as significant, the most important ones were the heavy workloads of uniformed officers, investigators and investigative supervisors.

Problems-Productivity. The Rand Report found that agency investigation management efforts were relatively ineffective in solving cases, and it recommended reforms to improve investigative efficiency. However, it noted that the reforms would likely have only a marginal effect, as investigators had a relatively minor impact on agency arrest and clearance rates (Greenwood & Petersilia, 1975). Relationships with prosecutors varied greatly across jurisdictions. In some areas, the police and prosecutors worked closely on serious cases, and in other areas they did not.

Contrary to the Rand Report findings, several other studies reported that formalized investigator selection techniques, case screening practices, case assignment and supervisory procedures did improve the performance of investigators (Cohen & Chaiken, 1989; Eck, 1979; Gaines, Lewis & Swanagin, 1983; Greenberg, Elliott, Kraft & Proctor, 1977; Greenberg, Yu & Lang, 1973). Additionally, in 1979, Greenberg and Wasserman conducted a study regarding

management initiatives in five police agencies that were designed to improve preliminary investigations, case screening, case assignment, follow-up investigations, and case management systems. Although the study results were clouded by numerous implementation and effectiveness measurement problems, the authors concluded that improvements in investigative effectiveness is possible, but that it takes a long time and only modest improvements can be expected at best.

More recently, Wellford and Cronin (1999) conducted a review of 798 murder cases in four cities and reported that improvements in agency investigative policies and procedures (e.g., on-scene activities of the first responding patrol officer; response time and subsequent actions of detectives; and the number of resources dedicated to the investigation) can substantially increase murder clearance rates.

Horvath, Meesig and Lee (2001) found that most agencies did not report any significant productivity-related problems. Only 15% of agencies said they had implemented significant innovative changes in investigations over recent years, and only 24% were planning major investigative changes in the near future. Most of the changes related to internal personnel and management issues, rather than productivity problems.

Problems-Public. The Rand Report found that, in one jurisdiction where a telephonic crime victim survey was conducted, the victims showed a strong interest in being notified by the police regarding the progress of the police investigation and disposition of their cases (Greenwood, Chaiken & Petersilia,

1977). It was recommended that agencies "initiate programs to impress on the citizen the crucial role he plays in crime solution" (Greenwood & Petersilia, 1975, p. xiii).

Horvath, Meesig and Lee (2001) reported that fewer than 10% of the agencies identified significant problems regarding public mistrust of the police, media relations, or public relations. However, there was broad agreement among agencies that a variety of investigation functions are misrepresented in the popular media, particularly with regard to the use of excessive force and interrogation practices.

In summary, aside from heavy investigative workloads, agencies did not identify any significant problems regarding investigations. Moreover, most agencies did not project any major changes in their investigation process in the future. There appears to be a general lack of recognition on the part of the police that a better public understanding of the police investigation function, together with more public support, as advocated in the community policing philosophy, could help the police in dealing with their heavy investigative workloads.

- **Investigative Support.** Only one issue – technology – was selected in this area for examination in the present study.

Based on its findings in the 1970s regarding how detectives spend their time and how crime is solved, the Rand Report recommended an increase in the use of information processing systems to scan and monitor crime information. At least three other studies conducted during the same time frame also concluded that police data processing, analysis and management systems were inadequate and

supported the Rand recommendation (Eck, 1983; Police Executive Research Forum, 1981; Skogan & Antunes, 1979). A later survey of police agencies reflected that the police implementation of computerized information systems for investigative purposes was increasing, but remained limited at best (Northrop, Kraemer & King, 1995).

The Horvath, Meesig and Lee (2001) study reported that only about one-half of the agencies with investigators indicated that a number of different types of crime records and investigative support files are available to investigators on computers. However, technology was identified by agencies as one of the three things (including more personnel and training) most needed to improve clearance rates, and about one-half of the respondents were planning to upgrade and/or enhance their investigative technology resources within the next year.

Clearly, there is an increasing emphasis in most agencies on improving their technological capabilities. However, there is little or no data available regarding how these capabilities could be used to improve police clearance rates or promote the integration of community policing and investigations.

- **Investigative Effectiveness.** Pertinent issues in this area include clearance rates and goals related to investigations.

Clearance Rates. As mentioned above, most of the past research reported that the police investigation process was relatively ineffective, and that only marginal improvements in efficiency could be expected in the future (e.g., Greenwood, Chaiken & Petersilia; 1977; Greenberg & Wasserman, 1979). Horvath, Meesig and Lee (2001) reported that 22% of the agencies experienced a

decline in clearance rates for serious crimes in the past ten years. The lack of time, prosecutor reluctance to take action, too many crimes, and lack of witness cooperation, were the top four factors identified by those agencies as accounting for that decline. Most agencies did not identify relationships with prosecutors or legal issues regarding investigations as problems. Across all agencies, increases in personnel, technology, and training were the three factors seen as necessary to enhance clearance rates, rather than any specific organizational or investigative management issues.

Goals-Traditional and Proactive. Investigation-related goals described in past research range from the traditional ones (locating and identifying witnesses and offenders, apprehending offenders, collecting and preserving evidence, recovery of property, and supporting the prosecution of offenders), to broader and more proactive goals relating to deterring, preventing and controlling crime and the pursuit of justice (e.g., American Bar Association, 1973; Geller, 1991; Greenwood, Chaiken & Petersilia, 1977; Pogrebin, 1976; Roberg & Kuykendall, 1990).

In the Horvath, Meesig and Lee (2001) study, agencies were provided a list of 19 goals identified in the literature and asked to rank them. Most agencies considered the more traditional goals that are related directly to investigation issues, protecting the public, and the recovery/return of property, to be slightly more important than proactive ones, such as problem solving, keeping victims and the community informed, collecting intelligence and crime prevention.

In summary, most agencies did not identify any significant problems regarding their clearance rates, despite the relative ineffectiveness of their investigative efforts. While increases in personnel, technology and training were identified as the key to enhancing clearance rates, the only significant improvements that have been made over the past three decades were in the area of technology. Additionally, traditional investigative goals continue to be the main guide for police investigative efforts.

- **Community Policing**. Although community policing is not one of the Major Issue Areas identified in the Horvath, Meesig and Lee (2001) study, a number of community policing related issues were addressed throughout the study regarding community policing in agencies, and specifically with regard to community policing in investigations. They are described below:

Community Policing Practices in Agencies. The 1997 LEMAS survey assessed community policing practices in agencies by using the following pertinent criteria [the data regarding which were incorporated into the Horvath, Meesig and Lee (2001) database]: assignments as full-time Community Policing Officers, the training of patrol officers, community policing-related activities, problem-solving partnerships, meetings with community groups, citizen surveys, and providing crime data to citizens. The survey found that one-third of all local agencies used full-time Community Policing Officers or their equivalent, and that Community Policing Officers comprised less than five percent (about 16,000) of all (about 600,000) local agency sworn officers. Eighty-seven percent of local agency patrol officers were employed by agencies that provided at least eight

hours of community policing training to all new recruits. About two-thirds of agencies used routine foot and bicycle patrols, 40% had problem-solving partnerships with citizens, and 69% regularly met with citizen groups. Thirty percent of agencies surveyed citizens to gather information, and 70% provided citizens routine access to crime statistics and maps.

Community Policing Practices in Investigations. The Horvath, Meesig and Lee (2001) study assessed community policing practices in investigations by using the following pertinent criteria: community policing training provided to investigators, community policing-related activities, providing information to the public, citizen contacts, public-related investigation problems, investigative goals, research influencing investigations-related policies and practices, and future investigations-related research interests. The study found that 51% of agencies provided at least eight hours of community policing training to agencies. With regard to community policing-related activities, sixty-seven percent of agencies prioritized cases, 37% self-assigned cases based on local area problems, and 28% did community problem-solving. In 41% of agencies investigators provided crime information to the public, and in 23% investigators regularly participated in community meetings. However, investigators worked with citizens on community outreach, used citizen volunteers, or worked in teams with citizen groups in less than 10% of agencies. Less than 10% of agencies identified any significant public-related investigation problems. Most agencies rated traditional investigation goals slightly higher than proactive community-oriented ones. Relationships between investigations and community policing was identified by

one-third of the agencies as the research area that has most directly influenced agency policy and/or practice in investigations within the past five years, and most agencies identified their top three future investigations-related research interests as training and technological improvements in investigative techniques and management.

In summary, community policing practices in agencies appear to be more widespread than community policing practices in investigations. However, the extent to which they influence investigative outcomes was not measured.

The overall picture presented by the Horvath, Meesig & Lee (2001) study was that the traditional reactive, case-oriented investigative approach remains predominant, even though the research over the past 30 years has characterized it as relatively ineffective. Of the top three things police said they needed to improve investigative effectiveness, increases in personnel and training have long been recognized by most agencies as needs. They are both well within the management abilities of the police to change. Yet, with the possible exception of providing refresher or advanced training to investigators, very few changes seem to have been made over the past three decades. Only the area of technology, which was the third agency-identified need, and which is perhaps driven more by external technological advances than by police influence, has seen substantial improvement. And, aside from technology, little else is projected to change by most agencies in the foreseeable future.

The Horvath, Meesig and Lee (2001) study concluded with the observations that, although some advances have been made among some agencies regarding community policing, in many fundamental respects "the investigation process seems to have been

relatively uninfluenced by significant changes in the crime problem, policing and technology that have transpired during this period. Progress in police investigative efforts remains largely isolated from broader attempts in policing to respond more efficiently, more effectively and more resolutely to the crime problem in general. Nevertheless, there have been some promising advances and many police administrators have expressed a keen interest in this area" (p. 113). "Perhaps, they await more solid information than what has been available in order to make decisions about their investigative efforts based on knowledge of the most useful developments in other jurisdictions" (p. 108).

It seems that the police criminal investigation process is not guided by a perspective of investigations that incorporates ongoing social or organizational change. Agencies do not appear to have a clear picture of how the evolving dynamics of their role in communities relates to the general purpose and productivity of their investigative function. This issue is addressed at greater length in the next section.

Theoretical Perspectives

If the changing social forces in our society prevail as they have in the past, then the predominantly reactive, case-oriented investigative style that the police have practiced since the Reform Era should eventually evolve into something more closely integrated with the community policing reforms and technological advances that are shaping the police organizations of today. Although there are no well-developed theories regarding the police criminal investigation process, there are several theoretical

perspectives regarding various aspects of crime and case-oriented investigations that can provide some insight in understanding how such a transition might occur.

Crime Theory

Since the theoretical and empirical works of Shaw and McKay in the 1920s and 1930s, the Chicago School of social ecological thought dominated American criminology for much of the 20th century (Einstadter & Henry, 1995). It was not until the effectiveness of criminal rehabilitation and deterrence in sentencing were brought into question in the 1970s that the focus of criminological theory expanded beyond the motivation of the criminal offender to commit crime into a broader analysis of other dimensions, specifically the spatial and temporal dimensions, of crime (Brantingham & Brantingham, 1991; Clarke, 1992).

In 1972, Newman was one of the first theorists to describe a concept of "defensible space," which advocated the use of building design and architecture to prevent crime by reducing anonymity, increasing surveillance and reducing escape routes in housing areas. At about the same time, Jeffery (1971) developed the concept of Crime Prevention Through Environmental Design, or CPTED, which focused on preventing crime primarily through changes in the physical environment. Newman and Jeffery popularized the notion that, in addition to the criminal's motives and the influence of social settings, crime is also affected spatially by the design of the location and site of the criminal event. This broader spatial perspective of the nature of crime was subsequently incorporated into three separate but complementary theoretical perspectives oriented toward preventing crime through environmental change – Rational Choice

Theory/Situational Crime Prevention, Routine Activities Theory, and Environmental Crime Theory (Brantingham & Brantingham, 1991).

Rational Choice Theory involves offenders making decisions and choices, which are constrained by factors such as time, availability of information, environmental factors and the offender's cognitive abilities (Einstadter & Henry, 1995). Situational Crime Prevention, often considered in conjunction with Rational Choice Theory, emphasizes the application of techniques and programs to alter the environment in order to minimize the opportunities for specific types of crime in specific locations (Clarke, 1983; 1992; Clarke & Cornish, 1985; 1987). These approaches are supported by recent developments in the field of geographic analysis, which is a set of computerized mapping and statistical techniques used to pinpoint crime locations in the context of other spatial dimensions. Geographic analysis has shown that the environments in which most crimes are committed are the homes, neighborhoods and work places where people conduct their routine activities.

The other two major theoretical approaches, Routine Activities Theory and Environmental Crime Theory also focus on the physical and social characteristics of crime sites and the manner in which crime locations are associated with offenders and targets to produce criminal events (Clarke, 1992; Cohen & Felson, 1979). Although all of these theories concern the temporal and spatial dimensions of crime, they are heavily weighted toward crime prevention and have not been examined specifically with respect to the reactive, case-oriented criminal investigation process used by the police to identify and apprehend criminals.

Case-oriented Investigations

Eck (1992) has approached the traditionally reactive, case-oriented police investigation process from a different perspective. He reviewed the empirical research regarding how detectives solved crimes and framed two hypotheses based on his examination of the literature (Eck, 1979; Gaines, Lewis & Swanagin, 1983; Greenwood, 1970; Greenwood, Chaiken & Petersilia, 1977; Isaacs, 1967; all as cited in Eck, 1992, p. 27). The first, which he called the circumstance-result hypothesis, suggests that random circumstances (i.e., whether a victim can identify a suspect, or the availability of physical evidence) essentially determine whether or a not a crime is solved. In other words, investigators merely routinely process the information that presents itself upon the police response to the reported crime, and the success of the investigation is in most cases insensitive to the extent of any other non-routine investigative efforts.

The second hypothesis that he found evident in the literature (e.g., Ward, 1971, and Folk, 1971) is the effort-results hypothesis, which he described as follows:

"According to this explanation, the investigative work of patrol officers and detectives contributes substantially to crime solution. Looking for witnesses, interviewing victims, checking records, cultivating informants, and other activities are efforts that increase the chances that an investigator may solve the crime. Initial leads spur investigative actions, which can produce further leads and arrests. Though factors outside police control play a role, the effort-result hypothesis asserts that police actions can substantially contribute to successful investigations" (pp. 27-28).

Eck then tested these hypotheses in a study of a number of burglary and robbery cases in three agencies. He found the results to be ambiguous in that both the

circumstances of crimes and police investigative activities influenced outcomes to varying degrees but were incomplete in their explanations (Eck, 1983; 1992). As a result of his research, Eck proposed his own hypothesis, called the triage hypothesis, which attempts to describe the investigation process in a broader context by dividing cases into the following three categories (Eck, 1992, pp. 31-32):

- Unsolvable: "Cases that cannot be solved with a reasonable amount of investigative effort."
- Solved: "Cases solved by circumstances, which only require that the suspects be arrested, booked, interrogated, and prosecutable cases prepared."
- Solvable: "Cases that may be solved if a reasonable level of investigative effort is applied to them, but will not be solved otherwise."

Although Eck's (1992) triage hypothesis did not incorporate spatial or temporal dimensions, it is perhaps the best explanation of the "professional," or traditional, reactive, case-oriented police investigation process that is currently available. It can also be used as a basis upon which to build a better understanding of the limitations and potential productivity of the process overall and, more specifically, within a community policing context.

A Conceptual Framework

In the 1970s and 1980s, a crime continuum model was developed (Kuykendall (1982, 1986; Unsinger, Rosa & Miller, 1977) that describes crime behavior in a temporal context. The model views the act of crime as a process consisting of a continuum of several phases. There is a crime Planning phase, and then an Action phase, wherein the crime is committed. After the Action phase, there is an Escape phase, during which the

offender escapes from the crime scene. The escaped offender then enters a Fugitive phase until he/she is caught or the statute of limitations regarding the crime expires. Additionally, in many types of crime there is a Disposal phase, in which the offender disposes of the fruits of the crime (i.e., sells stolen property, consumes illegally purchased, drugs, etc.).

Several years ago, based on a qualitative review of past research and experiential data, Meesig (1994) expanded upon the crime continuum model by proposing a broader investigations-oriented conceptual framework. The framework incorporates both the temporal and spatial dimensions of different types of crimes into the crime continuum phases, and also projects the various kinds of sources of information that may be available in each phase. The purpose for doing this was to determine where the most potentially productive sources of crime information are likely to exist in the crime continuum, and to compare that knowledge with police investigative efforts in an effort to determine the extent to which the police exploit available sources.

Sources of Crime Information

Using the conceptual framework of the crime continuum model, Meesig (1994) described an offender's activities in terms of time and space, by estimating the amount of time an offender may spend in each phase for various types of crimes), and the types of spatial areas such as a home, neighborhood or workplace in which the offender may spend time. Additionally, the various sources of crime information (people and things) that might be available within the time frames and spatial areas of each crime phase were inferred.

Based on this type of analysis, it was concluded that, for many of the crimes police deal with in the Visible Crime Category, it is the Fugitive phase where the typical offender could be expected to spend the most amount of time (months or years), and that most of that time would likely be spent in the spatial area of his/her home area or neighborhood. Additionally, while the sources of information regarding his/her crime (i.e., people who are aware of his activities, or things such as stolen property or other paraphernalia or crime artifacts) potentially exist in all five phases, it is likely that they will continue to exist for longer periods of time in the offender's neighborhood than in most other areas.

Therefore, it was posited that an offender's neighborhood could be identified in terms of time, space and sources of information as a critically important area for collecting crime information. This would be consistent with many of the aspects of the theories (Rational Choice Theory/Situational Crime Prevention, geographic analysis, etc.) mentioned previously in this section. And importantly, if the offender continues to commit more crimes (in other words, if he/she is becomes a serial offender), then his/her neighborhood area has the potential to become an increasingly larger repository of crime information (and a more lucrative area for the collection of that information by investigators) for multiple crimes (and for various types of crimes) over time. Furthermore, this would be the case for crimes not reported (and, therefore, unknown) to the police, as well as reported crimes.

Case-oriented Investigations

In using the conceptual framework to examine the police reactive, case-oriented approach to solving crime, it was found that the police traditionally do not focus heavily

on collecting crime information in neighborhoods or other spatial areas associated with an offender's activities in the Fugitive phase of the crime (Meesig, 1994; Unsinger, Rosa & Miller, 1977). Instead, in most cases the police are notified of a crime while the offender is in the Fugitive phase after the Action and Escape phases have passed (the offender has committed the crime, has escaped and remains a fugitive). The police then respond to the crime scene area where the crime occurred (the spatial area of the Action and Escape phases). As the crime behavior at the crime scene already occurred, it cannot be directly observed by the police. Therefore, they must attempt to locate and identify sources of crime information (people who observed the behavior or had knowledge of it, and were willing to provide information to the police; or things that someone might be able to link to the behavior) that may still be available there.

However, as mentioned previously (Skogan & Antunes, 1979), and also consistent with the circumstance-result hypothesis described by Eck (1992), in most cases the amount of source information in those phases is usually quite limited to begin with, and tends to decrease as time passes (witnesses travel away from the area, physical evidence is lost or contaminated, etc.). Nevertheless, unless information that may lead to the identity of the offender can be obtained from the crime scene area of the Action and Escape phases, so that they can be pursued as investigative leads, the reactive, case-oriented investigative approach does not generally extend beyond that point. In the absence of specific leads to guide them regarding where to go or what to do next for that case, investigators would very likely screen out the cases from further investigative attention, and the police would typically expend little or no further effort seeking information that may be available regarding the crime or the offender in other phases

(Meesig, 1994). This is consistent with the police treatment of "unsolvable" and "solved" cases as described in Eck's (1992) triage hypothesis, in that they would either remain unsolved or be solved by information generally available and collected in the vicinity of the crime scene.

Community Policing and Investigations

Community policing, on the other hand, promotes closer working relationships between the police and the community in order to collect and exchange crime information with citizens (the primary sources of crime information for police) for the purpose of preventing crime, particularly in neighborhood areas. As this police-public relationship develops, it follows that the opportunity to collect and exchange information with citizens in order to solve crimes could be enhanced as well. To the extent that it focuses on neighborhood areas, it could provide the police greater access to information regarding both the reported and unreported crimes of offenders that may be available after the commission of a crime in the Fugitive phase of offender activities (Horvath, Bucqueroux & Meesig, 1997; Meesig, 1994; Unsinger, Rosa & Miller, 1977). In other words, by improving coordination between patrol officers and investigators, the traditional reactive, case-oriented investigative process could be expanded by integrating it with a community policing approach toward the "solvable" cases of Eck's (1992) triage hypothesis. Such an approach would be a broader, more proactive kind of investigation consistent with the effort-result hypothesis. It would essentially blend many of the offender-oriented methods practiced by investigators in the Political Era of policing together with the current reactive, case-oriented investigation practices, within a community-oriented context.

Conclusions

In review, then, the conceptual framework provides a view of crime behavior in terms of time, space, and sources of information, for the purposes of identifying the most productive areas for collecting crime information and examining the police investigative response to crime. It incorporates other theoretical discussions of crime and offender-oriented vs. case-oriented investigations. It suggests that the traditional reactive, case-oriented approach of dealing only with reported crimes, and of treating them as isolated, one-time individual events, is consistent with solving only a small proportion of cases over the past three decades because it is so heavily dependent on the availability of crime information in the Action and Escape phases of crimes, and because it is limited primarily to only those two phases. It also suggests that a more offender-oriented investigative approach, combined with aspects of the community policing philosophy, could expand crime information collection activities beyond those phases into the Fugitive phase, where it is likely that more criminals and sources of crime information exist in neighborhood areas for longer periods of time, and for multiple crimes, both reported and unreported.

Specifically with regard to community policing, the conceptual framework supports the idea that community policing can and should, in principle, make an important contribution to the police criminal investigation process. The police must continue their case-oriented approach to investigations because they must respond to reports of committed crime, and past police practices have shown that multiple sources of information can be available in the Action and Escape phases of many crimes. However, by integrating their community policing and criminal investigative functions to expand

their efforts beyond these phases, the police may also gain access to crime information available in the Fugitive phase as well, and should then, at least conceptually, be in a better position to solve more crimes. If this were shown to be the case, then it would provide a rationale, and possibly some motivation, for the police to address their organizational and management programs in a comprehensive and purposeful way to improve investigative outcomes.

Thus, the conceptual framework can be used by police agencies as a guide toward developing a broader perspective of the police criminal investigation process in terms of crime and the collection and use of information to solve crime in a community context. In this present study, it will be used to interpret the study findings and to suggest how the integration of community policing and investigations can also contribute to the prevention and detection of Visible crimes as well.

Other Major Crime Categories

The conceptual framework can also be used to address the other Major (Victimless, Occupational, Organized and Political) Crime Categories described at the beginning of this chapter, including many of the crimes that generally fall within the primary investigative jurisdiction of federal, military and state agencies. While these types of agencies may not be as heavily invested in the community policing philosophy as local police agencies, the framework can be used to identify where the most sources of information may exist for the longest periods of time for the types of crimes over which they have jurisdiction. To the extent that such an analysis involves information sources located in communities, federal, military and state agencies have a stake in community policing at the local level, especially when they work closely with local agencies on

cross-jurisdictional crimes (in the Horvath, Meesig & Lee, 2001, study, 63% of the respondents reported that they participated in investigations task forces, 93% of which included multiple agencies). In these instances, the effective collection and use of crime-related information by local agencies can be critical to the successful investigation of crimes affecting local, regional and national interests. This particular point will be discussed more fully in Chapter 5 in conjunction with the findings of this study.

Summary

Despite the toll that crime takes in our society and the innovations in policing that have occurred over the past three decades, the overall effectiveness of the police criminal investigation process appears to have remained relatively limited and resistant to significant change. However, if history is a guide, then the new community policing philosophy could influence the traditional case-oriented investigative style. A conceptual framework of the crime continuum suggests that community policing could provide police officers and investigators with increased access to, and better relations with, more sources of information regarding offenders and crimes. If this were the case, then it could presumably lead to the collection and use of more and better crime-related information, which would increase the likelihood of improving clearance rates. Because of these potential benefits, it is prudent to gain a better understanding of the dynamics between community policing and investigations.

Two key issues in this regard are the extent to which community policing practices in agencies, and particularly in investigations, help agencies to solve crime. In the next chapter, the methodology used to explore these issues is set forth.

CHAPTER 3

METHODOLOGY

In the first section of this chapter, two research questions are stated. Following that is a section that provides an overview of the methodology used to examine them, and then subsequent sections describe in more detail the data collection, variable construction and data analysis processes.

Research Questions

The two major research questions addressed in this study are stated as follows:

1. **Do community policing practices in agencies (CPA) influence UCR Index crime clearance rates?**

2. **Do community policing practices in investigations (CPI) influence UCR Index crime clearance rates?**

Overview of Methodology

In this study, logistic regression models were developed to assess the effects of community policing practices and other factors on UCR Index crime clearance rates.

- In the **Data Collection** section, the database of the Horvath, Meesig and Lee (2001) study is described as the data source used in this study.

- In the **Variables** section, three dependent variables and 24 predictor variables are described for use in the logistic regression models.

- The dependent variables are the UCR clearance rates for the Index crimes of murder, robbery and burglary.
- The predictor variables are comprised of six agency (demographic) variables, 16 investigations-related variables, and two community policing-related variables.

- In the **Data Analysis** section, three logistic regression models were developed to test the effects of the predictor variables on the dependent variables.

Data Collection

The database of the Horvath, Meesig and Lee (2001) study is the data source used in this study. The study was sponsored by the National Institute of Justice under Grant Award #98-IJ-CX-0057. In March 2001, a draft technical report describing the results of the survey was submitted to the National Institute of Justice for peer review, and in November 2001, the final report was submitted.

Because the police investigation function is interrelated with other aspects of policing, the Horvath, Meesig and Lee (2001) study was designed so that its findings could be integrated with other projects that dealt with broader policing issues. Consequently, selected data from three separate projects that were conducted during similar time frames were merged into the database compiled by Horvath, Meesig and Lee (2001). This allowed for comparison between a wide variety of investigative and policing issues. The three projects are described below.

- **The Directory of Law Enforcement Agencies, 1996**. The Bureau of Justice Statistics periodically (1986, 1992, 1996) sponsors a census of law enforcement

agencies in the United States. The census includes all state and local (sheriff, county police and municipal) agencies that are publicly funded and who employ at least one full-time or part-time sworn officer with general arrest powers. The most recent census was published in 1996, and is hereafter referred to as the 1996 Directory. It identifies 18,778 general-purpose (having general arrest powers) and special-purpose (special jurisdictional or enforcement responsibilities) law enforcement agencies (United States Department of Justice, 1998).

- **The Uniform Crime Reporting Program Data: [United States] Part 95: Offenses Known and Clearances by Arrest, 1997**. An attempt was made to obtain 1999 UCR data regarding known offenses and clearances by arrest for the agencies in the present study's sampling frame; however, agency-level data were not available. The most currently available agency-level information of this type was located in this 1997 report, herein after referred to as the 1997 UCR Report. It was compiled by the FBI and contains data for seven of the eight Index crimes (arson was not included) for 18,921 agencies (United States Department of Justice, 1999b).

- **The Law Enforcement Management and Administrative Statistics (LEMAS): 1997 Sample Survey of Law Enforcement Agencies**. The LEMAS survey program is sponsored by the BJS and consists of periodic (1987, 1990, 1993, 1997, 1999, 2000) surveys of a nationally representative sample of police agencies in the United States to collect information on police personnel, expenditures, pay, operations, vehicles, weapons and armor, computerization, programs, policies and drug enforcement (United States Department of Justice,

1999a). However, the LEMAS surveys do not focus on investigations-related issues.

The LEMAS survey conducted in 1997, and hereinafter referred to as the 1997 LEMAS survey, was the one that was most recently available at the time the Horvath, Meesig and Lee (2001) study was conducted, and it was used in that study. The sampling frame for the 1997 LEMAS survey includes all state and local agencies in the 1996 Directory, described above, that employ 100 or more full-time sworn personnel, and a nationally representative sample of agencies that employ fewer than 100 sworn officers. A total of 3,591 agencies are included in the 1997 LEMAS survey sampling frame (3,123 general-purpose agencies and 468 special-purpose agencies).

The Horvath, Meesig and Lee (2001) Sample

The 1997 LEMAS survey sample was used as the Horvath, Meesig and Lee (2001) study sampling frame. In July 1999, the mailing list for the 1997 LEMAS survey was obtained from the United States Census Bureau, which was the agency that had previously collected and processed the LEMAS survey data for the BJS. The special-purpose agencies were eliminated from the list and the remaining 3,123 agencies were included in the sampling frame.

Thus, the Horvath, Meesig and Lee (2001) sample of 3,123 agencies consisted of a census of all state and local general-purpose law enforcement agencies that employed 100 or more full-time sworn officers (856 large agencies), and a nationally representative sample of general-purpose agencies that employed fewer than 100 sworn officers (2,267 small agencies).

Survey Instrument

The questionnaire for the Horvath, Meesig and Lee (2001) survey was developed during January 1998 through January 1999, based on a systematic reading of the extant literature, the authors' experiences in the field, and a number of other processes (field tests, advisory board, etc.). The finalized instrument was a 24-page booklet that included 87 questions organized around the six major issue areas: (1) organizational matters; (2) patrol officers; (3) investigators; (4) investigation management; (5) investigative support; and (6) investigative effectiveness. In October 1999, the instrument was mailed to the chief law enforcement administrator of the 3,123 agencies identified in the sample, and two follow-up mailings to non-respondents were made in December 1999 and February 2000. During November 1999 through August 2000, the completed questionnaires were received from agencies and the questionnaire data were entered into a computer-readable database.

Survey Response

A total of 1,746 agencies (56%) provided usable survey responses (605 large agency responses = 71%; 1,141 small agency responses = 50%). These agencies employed more than one-half (over 350,000) of the sworn police officers in the United States, and about 16% (over 50,000) of them are investigators. A total of 1,460 of these agencies employed investigators, and the remaining 286 did not.

Present Study Sample

As previously mentioned, the Horvath, Meesig and Lee (2001) study is the first-ever nationally representative survey of the police criminal investigation process in the United States, and it provides the most current and comprehensive investigations-related

data regarding state, county and municipal agencies of all sizes. It also addresses investigative issues related to community policing and crime rates. In addition to including the responses of 1,746 agencies to its own survey, it contains pertinent data from the merged 1996 Directory, the 1997 UCR Report, and the 1997 LEMAS survey.

As explained below in the **Variables** section, crime data and clearance rates from the 1997 UCR Report are used to create dependent variables for murder, robbery and burglary clearance rates in this present study. Upon examination of the UCR data, however, it was determined that only very limited crime and clearance rate data were available for two groups of agencies in the Horvath, Meesig and Lee (2001) database:

- Of the 49 state agencies (Hawaii does not have a state police agency), 44 responded to the Horvath, Meesig and Lee (2001) survey. However, usable crime data from only six of these respondents are contained in the 1997 UCR Report.
- Among the 286 agencies that did not employ investigators, 278 were local agencies (the other eight are state agencies). The median number of sworn officers in these local agencies was four, and most of them reported little or no crime data in the 1997 UCR Report. For example, fifty-four agencies reported no data at all, only 18 reported murder crime data (16 agencies reported one crime and two reported two crimes), and only 45 reported robbery crime data (27 agencies reported one crime and only three reported more than five).

Due to the minimal amount of crime data available for the 44 state agencies and the 278 local agencies that do not employ investigators, and also because agencies with investigators are of primary interest in the present study, those two groups were deleted from the sample. As a result, the sample used in this study was comprised of 1,424 local

(county and municipal) agencies with investigators. These agencies comprised about 9% of the approximately 16,000 general-purpose agencies in the United States. They employed about 46% (301,450) of the approximately 660,000 sworn officers, and about 48% (47,296) of the approximately 99,000 investigators, in local agencies in the country.

Variables

In this section, the dependent and predictor variables used in this study are defined. Additionally, the descriptive data are reported regarding the variables.

The Dependent Variables

UCR Index crime clearance rates, as reported by the agencies themselves in the 1997 UCR Report, are used to develop the dependent variables in this study. As with any large national data collection and reporting system, however, there are some problems with those data. Therefore, a brief description of the FBI UCR program is provided below, together with a discussion of some of the related data issues.

The UCR Program

In the 1920s, in response to a growing need in the United States for national crime statistics, the International Association of Chiefs of Police (IACP) selected seven types of crimes to serve as an index for measuring fluctuations in the overall volume and rate of crime in the country. They consisted of four violent crimes (murder, forcible rape, robbery and aggravated assault) and three property crimes (burglary, larceny and motor vehicle theft), all of which are included under the Visible Crimes Category that was described earlier. These crimes were selected because they were considered to be representative of the major types of crime in the United States with regard to their

seriousness, the frequency of their occurrence, their pervasiveness throughout the country, and the likelihood of their being reported to police agencies (United States Department of Justice, 2002). Data regarding these seven crimes were incorporated into the UCR Program, which was established in 1930 by the United States Congress and is administered by the FBI. In this program, over 16,000 municipal, county and state law enforcement agencies voluntarily report to the FBI on an annual basis information on crimes that come to their attention.

Because of the differences among state criminal codes in the United States, standardized offense definitions and reporting requirements are set forth in the UCR program for agencies to use in reporting specific types of crime data to the FBI. The FBI then consolidates the agency data and publishes an annual report that provides an overview of the general national crime situation. It does not include information regarding crimes dealt with by federal or United States military agencies, however (United States Department of Justice, 2002).

The UCR consists of two parts: Part I, which includes data regarding eight Index crimes (the seven selected by the IACP, plus arson, which was added in 1979); and Part II, which includes 21 other offense categories. Since the Part I crimes of the UCR serve as indicators (they are commonly referred to as the Index crimes) of national crime levels, the reporting requirements for these crimes are more detailed than for Part II crimes. For example, crime clearance data is reported for Index crimes but not for Part II crimes. A crime clearance is a crime that is said to be resolved, or "cleared," when an offender has been arrested, charged with the commission of an offense, and turned over to the court for prosecution. Crime clearance rates, expressed in terms of percentages,

represent the total number of reported crimes cleared by an agency divided by the total number of crimes, or offenses, reported by that agency. The primary source of data for measuring the number of reported crimes and clearance rates in law enforcement agencies in the United States is the UCR program (United States Department of Justice, 2002).

The data in the UCR program do present some problems, however, and some of the more commonly recognized ones are discussed below.

- The UCR program is voluntary and some agencies (usually fewer than 5% of the estimated number of agencies in the United States) choose not to provide information regarding their crime workload to the FBI for one reason or another (United States Department of Justice, 2002).
- As the public is the greatest source of crime information available to law enforcement agencies, the levels of trust and cooperation between the public and these agencies (e.g., distrustful vs. cooperative) can often influence whether or not a crime is reported to the police. Other reasons why Index crimes may not be reported to the police include whether the crime concerned a private or personal matter, whether it was considered to be important enough to report, and concerns over fear of reprisal. Therefore, it is important to recognize that the UCR does not include all crimes that occur in our society, or even all Index crimes, but only those Index crimes that are reported to the police (Hart & Rennison, 2003).

This point is demonstrated by comparing UCR data with data collected by the National Crime Victimization Survey (NCVS). The NCVS was established in 1972 and is an annual survey conducted by the BJS that collects data on nonfatal

crimes against persons age 12 or older, regardless of whether or not they were reported to the police. The NCVS does this by selecting a nationally representative sample of United States households and interviewing household members about their individual crime experiences as victims. The NCVS surveys consistently find that less than half of the violent crimes (rape, sexual assault, robbery, and simple and aggravated assault), and only about one-third of the property crimes (burglary, property theft and motor vehicle theft) are reported to the police (Hart & Rennison, 2003).

- There may be occasions when, even though a crime is reported, some agencies may not make an official record of the report, or they may not include it in their crime data reported to the FBI, for various reasons (e.g., a minor offense or error). Agencies have been found to falsify crime data to minimize crime problems (e.g., see Law Enforcement News, 2004, regarding under-reporting incidents in the New Orleans, New York and Baltimore police departments during 2002 – 2003). There can also be differences driven by political considerations and pressures levied upon law enforcement agencies (Banas & Trojanowicz, 1985; Bennett & Wiegand, 1994; Chaiken, 1975).

- Although standardized definitions and reporting requirements are set forth for the UCR program, there can be questions of interpretation regarding the specific categorization of a type of crime or the nature of its disposition. The crime type initially reported to the police may be different than the type of offense or offenses subsequently developed during the course of an investigation and used by the police to charge an offender. Additionally, even though an offender may

be charged with more than one type of crime, only the charge with the most serious legal sanction is documented in the UCR (United States Department of Justice, 2002).

- There can be situations in which agencies may report having cleared more than 100% of all cases of a certain type reported to them during the course of the year. This occurs because all crimes that are reported are not necessarily cleared in the same year they are reported. For example, an offender may be arrested for committing one particular crime such as burglary, and then admit to the commission of a large number of similar crimes over the previous several years. An agency may then report those crimes committed in earlier years as being cleared in the current year. Another example would be when 10 murders are reported to one agency in a year and only five of them are solved during the same year; the agency's murder clearance rate for that year is 50%. But if 10 more murders are reported in the following year and all of them, plus the five unsolved murders from the previous year, are cleared, then the agency's clearance rate is 150% for that year (Chaiken, 1975).

- Crime clearance rates fluctuate by crime type and by individual agency. For example, the 1997 UCR Report reflects an average of 54% of all reported violent crimes (murder, rape, robbery and assault) cleared, as opposed to an average of only 19% of all reported property crimes (burglary, larceny and motor vehicle theft) cleared. Additionally, 69% of murders were reported cleared versus only 15% of burglaries. Moreover, small agencies may not have any reported murders or other serious crimes in their jurisdictions for years and their UCR reports

would reflect no activity. Yet, a single reported murder, possibly solved with the assistance of other larger agencies, would be reflected as a 100% clearance rate. However, reported murder crimes and clearance rates in large agencies with more voluminous crime caseloads generally reflect a more consistent pattern of crime, and of clearance rates, that seldom, if ever, approach 100%.

Two more points regarding UCR Index crimes are pertinent here. First, reported murder crimes and clearance rate data for them are generally considered to be the most accurate of the Index crime types due to the nature of their seriousness, and they also have been shown to be generally consistent with other available homicide-related data sources (e.g., coroner reports to the National Center for Health Statistics). And secondly, crime and clearance rates for the crime of arson are generally not used, as in many jurisdictions investigative responsibility for arson crimes is either shared with, or is the exclusive responsibility of, fire departments (BJS, 1988; United States Department of Justice, 2002). Therefore, arson was not included as an Index crime in this study.

Clearance Rates Used as Dependent Variables

Despite these problems, there are several overriding reasons for using UCR crime clearance rates in this study:

- First, UCR data are simply the best information that is currently available regarding reported crime. Additionally, they are the only data that are available regarding clearance rates – there are no alternative sources (Zawitz et al., 1993).
- Second, and importantly, among both practitioners and researchers, the UCR data remain as one of the most widely used indicators of law enforcement investigative activity in the United States.

- Finally, the annual reported crime rates have fluctuated considerably over the past three decades (ranging from 3,961 offenses per 100,000 inhabitants in 1972, to 5,950 in 1980). However, in comparison, annual crime clearance rates aggregated at the national level have varied within a relatively small range of 2.6% (ranging from 19.2% in 1980 to 21.8% in 1996) (Maguire & Pastore, 2001). This indicates that clearance rates are a relatively consistent measure of the effectiveness of the traditional, reactive case-oriented police approach to investigating crime.

Therefore, the 1997 UCR Report clearance rates were used as dependent variables in this study. However, in recognition of the inherent problems described earlier that are associated with UCR data, and in order to minimize the distribution of error problems in those data, clearances rates are treated simply as dichotomous dependent variables.

The three dependent variables that were created for use in this study are the UCR clearance rates for the Index crimes of murder, robbery and burglary. They were chosen because they differ by the nature of each crime (murder and robbery are violent crimes against persons, whereas burglary is a property crime) and the extent of the police investigative response. Additionally they are ranked as high, medium and low among the seven Index crime clearance rates reflected for agencies in the present study sample (murder – 69% clearance rate; assault – 59%; rape – 51%; robbery – 36%; motor vehicle theft – 22%; larceny – 20%; burglary – 15%). It was of interest to explore whether any effects of community policing on clearance rates might be associated with these factors.

Murder clearance rates dependent variable.

In Table 1 below, the number of murder, robbery and burglary offenses reported in the 1997 UCR Report for agencies in this study sample are 11,414 for murder, 346,725 for robbery, and 1,223,254 for burglary. Murder data are considered to be the most accurate of the Index crime data (i.e., the number of crimes reported to the police most closely approximate the number of crimes actually committed); however, the number of murders reported in 1997 is relatively low compared to the other two reported crimes.

Due to the nature and seriousness of murders, offenders are more frequently identified by witnesses, and they generally receive a more intensive investigative effort by agencies, according to the United States Department of Justice (2002). Murder investigations also often involve the use of specialized investigative techniques and forensic methods, and they are normally conducted by investigators, while the investigation role of patrol officers is generally limited to investigative support tasks (Wellford & Cronin, 1999).

Murder clearance rates are typically the highest among the Index crimes. This is consistent with Eck's (1983) effort-results hypothesis, which suggests that a strong investigative effort can improve investigative outcomes. Therefore, the murder clearance rates dependent variable is used to examine the effects of community policing practices on a low-volume violent type of crime that typically receives a high degree of investigative effort by investigators and has relatively high clearance rates.

Robbery clearance rates dependent variable.

As it is estimated that only about 60% of robberies are reported to the police, robbery data are considered to be less accurate than murder data. The most common

reasons for not reporting robberies are because they were not considered important enough by victims, they involved personal/private matters, and there was a lack of proof of the crime (Hart & Rennison, 2003).

Normally, patrol officers conduct preliminary investigations in robbery cases, and all cases are then assigned to investigators for follow-up investigation. However, about three-fourths of robbery investigations are suspended for lack of leads after just one day of investigation (Eck, 1983). While all robberies may not be reported to the police or receive the degree of investigative effort of murders, the police nevertheless deal with a relatively high volume of robberies compared to murders.

Robbery clearance rates are typically lower than the other violent Index crimes of murder, assault and rape, but are higher than the property crimes of motor vehicle theft, larceny or burglary. Therefore, the robbery clearance rates dependent variable is used to examine the effects of community policing practices on a relatively high volume violent crime in which both patrol officers and investigators have investigative responsibilities; that typically receives a lesser degree of investigative effort; and that has lower clearance rates than murder. Additionally, the results of this examination may be useful in making comparisons with any noted community policing effects on the high murder and low burglary clearance rates.

Burglary clearance rates dependent variable.

Whereas murder and robbery are classified as violent crimes, burglary is one of the three Index property crimes. Due to the nature of burglaries (fewer direct person-to-person confrontations than in violent crimes), victims and witnesses are not as likely to be able to identify offenders, and they are also often less likely to report burglaries to the

police. Only about half of household burglaries are reported, and the most common reasons for not reporting them are because the property was subsequently recovered, the offender was unsuccessful in taking the property, and there was a lack of proof (Hart & Rennison, 2003; Zawitz et al., 1993). Nevertheless, as was noted above, the total number of burglaries that are actually reported to the police is consistently much higher than the total number of reported murders or robberies.

Patrol officers normally conduct preliminary investigations of burglaries. However, because of the limited amount of crime information normally available to and collected by patrol officers during this phase of investigation, more than half of the burglaries may subsequently be screened out from any follow-up investigation due to the lack of viable investigative leads. And for those cases that are not screened out, follow-up investigative responsibility often remains with patrol officers rather than investigators (Eck, 1983).

Burglaries have the lowest clearance rates of all Index crimes. Burglary investigations are consistent with Eck's (1983) circumstance – result hypothesis, which suggests that investigative outcomes are affected more by the circumstances surrounding the crime than investigative effort. Patrol officers are more likely than investigators to have the most influence on the investigative outcome of burglary cases (because of their preliminary and follow-up investigative responsibilities), and many of them are also often trained to use community policing practices during the normal course of their duties. Therefore, the burglary clearance rates dependent variable is used to examine the effects of community policing practices on a high volume property crime that typically receives a comparatively low degree of investigative effort and has low clearance rates. The

unique role of patrol officers in affecting burglary investigation outcomes allows for comparisons with murder and robbery clearance rates, wherein their investigative role is more restricted, and it may also provide insights regarding whether patrol officer community policing practices affect burglary clearance rates.

Construction of Dependent Variables

In order to create dichotomous (low and high clearance rates categories) variables from the murder, robbery and burglary clearance data, the 1997 UCR clearance rates of all agencies in the sample were summed for each type of crime, and the three aggregate median clearance rates were computed. Then, all agencies whose clearance rates were equal to or lower than the aggregate crime median clearance rate for each crime type were sorted into the low clearance rate category, and agencies whose clearance rates were above it were placed in the high clearance rate category. For ease of reference, the three dependent variables are described as follows:

- **Murder Clearance Rates** (0 = low, 1 = high).
- **Robbery Clearance Rates** (0 = low, 1 = high).
- **Burglary Clearance Rates** (0 = low, 1 = high).

Table 1 presents descriptive data for these variables. Variable correlations are presented in Appendix A-1.

Table 1 - Descriptive Data Regarding Offenses and Clearance Rates for Murder, Robbery and Burglary Reported by Local Agencies with Investigators

	Local Agencies with Investigators		
Category	**Murder**	**Robbery**	**Burglary**
Number of Agencies Reporting Clearance Rates	695	1,104	1,208
Total Number of Reported Offenses	11,414	346,725	1,223,254
Range of Reported Offenses	0 – 771	0 – 44,708	0 – 54,099
Mean Agency Clearance Rates	69%	36%	15%
Median Agency Clearance Rates	75%	32%	13%
Standard Deviation of Agency Clearance Rates	.43	.28	.13

As can be seen, the number of agencies reporting clearance rates ranged from 695 for murder to 1,208 for burglary. The total number of offenses reported by those agencies by crime type ranged between 11,414 for murder and 1,223,254 for burglary, and the number of offenses reported by each agency ranged between 0 and 771 for murder, to between 0 and 54,099 for burglary. The mean of all agency clearance rates by crime type ranged from a high of 69% for murder to a low of 15% for burglary, the median rates ranged from a high of 75% for murder to a low of 13% for burglary, and the standard deviation ranged from a high of .43 for murder to a low of .13 for burglary.

Predictor Variables

Twenty-four predictor variables were developed to measure their effects on clearance rates. The variables were selected because they address many of the most

common issues regarding investigations that were identified in the Horvath, Meesig and Lee (2001) study, and they relate to the two research questions. The variables were organized into three groups, which include six Agency Variables, 16 Investigation Variables, and two Community Policing Variables. They are described below.

Agency Variables

The research literature indicates that various demographic characteristics, specifically agency size, type, region and workload, have an effect on the organizational structure and management policies and practices of law enforcement agencies in the United States (see Chaiken, 1975, and Cordner, 1989, regarding agency size, type, region and workload; see Meesig & Horvath, 1995, and Weisheit, Falconer & Welles, 1999, regarding agency size, type and region). In the present study, the following six Agency Variables were created to represent these characteristics.

- **Size of Agency.** A dichotomous variable was created that identified small (0 = 99 and fewer officers) and large (1 = 100 or more officers) agencies. This small and large agency division was used because it is arguably one of the most commonly used ways to describe agency size (e.g., see the Chaiken, 1975, study, all of the LEMAS surveys, and the Horvath, Meesig & Lee, 2001, study). Additionally, other measures of size were found to be highly correlated with the number of officers in agencies (e.g., the Pearson's correlation coefficient between the number of officers and the total number of employees is r = .996, and between the total number of officers and officer salaries is r = .983).

- **Type of Agency.** A dichotomous variable was used to represent two categories of agencies (0 = sheriff and county police agencies, 1 = municipal

agencies). Sheriff and county police agencies were combined, as there were 399 sheriff agencies, 991 municipal agencies, and only 34 county police agencies in the sample. Additionally, county police agencies are routinely treated differently than municipal agencies in the research literature (e.g., Chaiken, 1975; Cordner, 1989) in that they are normally combined with sheriff agencies, which also have county-level areas of jurisdiction. No examples were found in the literature where they were treated as municipal agencies. By combining sheriff and county police agencies, interpretation of results and comparisons with the literature were facilitated.

- **Region.** A variable was created with four categories of geographic regional areas of the United States (1 = Northeast, 2 = North Central, 3 = South, and 4 = West)
    - o The Northeast Region included nine states (Connecticut, Massachusetts, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont).
    - o The North Central Region included 12 states (Iowa, Illinois, Indiana, Kansas, Mississippi, Minnesota, Michigan, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin).
    - o The South Region included 16 states and the District of Columbia (Alabama, Arkansas, District of Columbia, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia).

- The West Region included 13 states (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming).

The United States is often divided into different combinations of geographic areas, or regions, for various research purposes. These particular categories were selected because they are general groupings that are often used in studies where regional considerations are important. In the past these categories have been used, for example, by the United States Census Bureau (1989), and in studies related to various types of law enforcement organizational structures and management policies and practices (e.g., Meesig & Horvath, 1995).

Three variables representing investigative workloads were developed – one for each of the three types of Index crimes whose clearance rates were used as dependent variables. They were operationalized by dividing the total number of offenses reported by agencies in the 1997 UCR Report by the total number of sworn officers in those agencies. The variables are identified as follows:

- **Workload.**
  - **Workload - Murder. Represents the number of murder crimes** reported per sworn officer in agencies.
  - **Workload - Robbery.** Represents the number of robbery crimes reported per sworn officer in agencies.
  - **Workload - Burglary.** Represents the number of burglary crimes reported per sworn officer in agencies.

Investigation Variables

The 16 Investigation Variables described below pertain specifically to common issues in investigations that were identified in the Horvath, Meesig and Lee (2001) study. They are organized according to the six major issue areas in that study. Unless otherwise indicated, the variables were created in one of the following two ways:

- In the first way, some of the variables are identified as dummy variables. Dummy variables were created from individual survey questions that provided only "no" or "yes" response options. In these cases, all "no" responses and questions that were missing responses were coded as no = 0, and all "yes" responses were coded as yes = 1. For each question, this resulted in a dummy variable that reflected the number of agencies whose coded response values were no (0) and yes (1).

  In some cases, several questions with "no" and "yes" response options were converted into individual dummy variables, and then combined together into a composite dummy variable. This was done by adding the coded response values of the individual variables together. Those "yes" responses to two or more individual variables that produced a value of 2 or higher were recoded as yes = 1 in order to create a dichotomous composite dummy variable.

- In the second way, some variables were constructed from agency responses to survey question items. Response options in the question items were presented in the form of scales. Each response option was assigned a value, and agency responses to the items were coded with those values. For example, some item response options were never, sometimes, usually and always. These options were

assigned values from 1 to 4 (e.g., never = 1, sometimes = 2, usually = 3, and always = 4). Agency responses to the options were then coded with the appropriate values. Then, in order to construct a variable scale, each agency's coded responses to all items were summed. Agencies that did not respond to an item were excluded. Then all the summed agency coded responses were included in the variable, and were sorted according to their summed coded response scores on a scale ranging from lowest to highest.

A reliability analysis was conducted on all constructed scales, and the Cronbach's alpha measure was used to assess scale reliability. The computation of Cronbach's alpha is based on the number of items in the scale and the ratio of the average inter-item covariance to the average item variance (Norusis, 1999). Correlations lower than .5 are considered as indicators of relatively weak inter-item correlation. Correlations between .5 and .8 are moderate indicators, and those greater than .8 are high. When the reliability analysis indicated that an item in the scale was not closely related to other items (e.g., that the Cronbach's alpha would increase if the item was deleted), it was excluded from the scale in order to improve reliability.

Organizational matters.

- **Decentralized Investigators.** The decentralized deployment of investigators was measured by a dummy variable. Agencies were asked if any of their investigators were assigned to field level units (as opposed to the agency headquarters), and the response options were coded as no (0) and yes (1).

- **Generalist Investigators.** A dummy variable measured whether agencies employ generalist investigators. Agencies were asked if their investigators at headquarters-level units investigated all kinds of cases. Additionally, agencies with investigators at field level units were asked if they investigated all kinds of cases. The response options to both questions were coded as no (0) and yes (1), and the coded responses for both types of units were compiled into a "Generalist Investigator" variable. In this new variable, those "yes" responses to each individual variable that produced a value of 2 were recoded as yes = 1 in order to create a dichotomous composite dummy variable.

- **Specialist Investigators.** A dummy variable measured whether agencies have specialist investigators. Agencies were asked if their investigators at headquarters-level units investigated only certain types of cases. Additionally, agencies with investigators at field level units were asked if they investigated only certain types of cases. The response options to both questions were coded as no (0) and yes (1), and agency responses for both types of units were compiled into a "Specialist Investigator" variable. In this new variable, those "yes" responses to each individual variable that produced a value of 2 were recoded as yes = 1 in order to create a dichotomous composite dummy variable.

Patrol officers.

- **Patrol Officer Training.** Investigations training for patrol officers was measured by a dummy variable. Agencies were asked if their uniformed (patrol) officers are required to undergo classroom instruction on investigations after basic academy training. Additionally, they were asked if they are required to undergo

any refresher or advanced investigations training. The response options to both questions were coded as no (0) and yes (1), and agency responses for both questions were compiled into a "Patrol Officer Training" variable. In this new variable, those "yes" responses to each individual variable that produced a value of 2 were recoded as yes = 1 in order to create a dichotomous composite dummy variable.

- **Patrol Officer Duties.** A patrol officer investigative duties variable was developed by creating a scale from the responses to a question that listed 16 types of investigation functions (canvass area for witnesses; collect physical evidence from crime scene; collect physical evidence from suspect; conduct drug field tests; conduct records checks; conduct surveillance; conduct undercover activities; coordinate investigations with prosecutors; interrogate suspects; interview suspects; interview victims; interview witnesses; notify investigation units; secure crime scene; submit evidence for forensic analysis; testify in court). The question asked agencies to indicate the extent to which their patrol officers performed each duty, and the response options for each one were never = 1, sometimes = 2, usually = 3, and always = 4 for each one. An "Investigative Duties" scale was then constructed by summing respondent answers to the 16 items (Cronbach's alpha = .8750). The scale ranged from 16 to 64, where 16 = never perform any of the 16 duties, and 64 = always perform all of the 16 duties. The midpoint in the scale was 40.

- **Patrol Officer Evaluation.** A dummy variable measured agency responses to a question that asked if the investigative performance of individual uniformed

officers is evaluated separately. The response options were coded as no (0) and yes (1).

Investigators.

- **Percentage of Investigators.** The percentage of investigators in each agency was operationalized by dividing the number of investigators by the number of sworn officers, and then multiplying by 100.

- **Investigator Training.** Investigations training for investigators was measured by a dummy variable. Agencies were asked three questions: if a probationary period is required for newly selected investigators; if newly appointed investigators are required to undergo classroom instruction on investigations; and if investigators are required to undergo any refresher or advanced classroom investigations training. The response options for each question were no (0) and yes (1), and agency responses to all three questions were compiled into an "Investigator Training" variable. In this new variable, those "yes" responses to two or more individual variables that produced a value of 2 or 3 were recoded as yes = 1 in order to create a dichotomous composite dummy variable.

- **Investigators Work with Patrol Officers.** A variable measuring working relationships between investigators and patrol officers was developed by creating a scale from the responses to a question that asked agencies to indicate the extent to which their investigators worked with patrol officers on three types of tasks: in teams; on decoy units, stakeouts, etc.; and to analyze crime patterns. The response options for each of the three task items were never = 1, sometimes = 2,

usually = 3, and always = 4. Agency responses to the three task items were compiled into a single "Investigators Work with Patrol Officers" scale (Cronbach's alpha = .5867).). The scale ranged from 3 to 12, where 3 = never work with patrol officers, and 12 = always work with patrol officers. The midpoint in the scale was 7.5.

- **Investigator Evaluation.** A variable for measuring ways to evaluate investigators was developed by creating a scale from the responses to a question that listed 18 evaluation items (analysis of unresolved cases; arrest statistics; audit; caseload statistics; clearance statistics; community policing related activities; conviction statistics; crime pattern detection activities; evidence collection/handling; hot spot reduction activities; incident reduction/prevention activities; peer review; periodic caseload review; periodic written evaluation by supervisor; property recovered; report writing; prosecution statistics; success in major investigations). The question asked agencies to indicate whether or not each item was used, and the response options were used (1) or not used (2) for each one. An "Investigator Evaluation" scale was then constructed by summing respondent answers to the 18 items (Cronbach's alpha = .8557).). The scale ranged from 0 to 18, where 0 = no items used, and 18 = all items used. The midpoint in the scale was 9.

Investigation management.

Problems regarding investigations were measured by three variables that were developed by creating scales from the responses to a question that asked agencies to specify the extent to which various investigations-related factors were a

problem in their agency. The question had multiple components comprised of a total of 23 items that addressed problems related to investigators, productivity rates and the public. The response options for all items were none (1), slight (2), moderate (3) and large (4). The three variables are as follows:

- **Problems-Investigator.** The variable included 15 items addressing investigator-related problems (heavy administrative workload; heavy investigative workload; heavy supervisor workload; lack of accountability for investigations; lack of group cohesion; lack of investigative expertise; lack of promotion opportunity; lateness of follow-up investigation; low levels of experience; low investigator job satisfaction/morale; not enough overtime for investigations; not enough training on investigations; poor communication between investigators; poor communication between officers and investigators; poor investigation skills). A "Problems – Investigator" scale was constructed by summing responses to the 15 items (Cronbach's alpha = .8735).). The scale ranged from 15 to 60, where 15 = none are problems, and 60 = all are large problems. The midpoint in the scale was 37.5.

- **Problems-Productivity.** The variable included four items addressing productivity-related problems regarding investigations (low arrest rates; low clearance rates; low prosecution rates; low conviction rates). A "Problems – Productivity" scale was constructed by summing responses to the four items (Cronbach's alpha = .8635).). The scale ranged from 4 to 16, where 4 = none are problems, and 16 = all are large problems. The midpoint in the scale was 10.

- **Problems-Public.** The variable included four items addressing public-related problems (poor public relations; poor relations with the media; public mistrust of the police; unauthorized information leaks about investigations). A "Problems – Public" scale was constructed by summing responses to the four items (Cronbach's alpha = .7813). The scale ranged from 4 to 16, where 4 = none are problems, and 16 = all are large problems. The midpoint in the scale was 10.

Investigative support.

- **Technology.** The use of technology in investigations was measured by a variable developed by creating a scale from the responses to two questions that asked agencies to indicate the extent to which different types of crime records and investigative support files are available to investigators. The crime records question included six items (crime reports; arrest reports; case disposition; prosecution disposition; court disposition; summary crime statistics). The investigative support files question included nine items (fingerprint; known offender; M.O. files; mug shot; organized crime intelligence; narcotics intelligence; sex offender; stolen property; stolen vehicles). The response options for both questions were: not readily available (1), available manually (2), and available on computer (3). A "Technology" scale was constructed by summing responses to all 15 items (Cronbach's alpha = .8613). The scale ranged from 3 to 45 (3 = none readily available; 45 = all available on computer) (Midpoint = 24).

Investigative effectiveness.

Goals in investigations were measured by two variables that were developed by creating scales from the responses to a question that asked agencies to indicate

how important they considered a list of investigations-related goals to be with regard to criminal investigations. The question had two components: "crime-related goals," listing more traditional investigation goals, and "other goals," including investigation goals generally considered to be broader and more proactive in nature. The response options for all items were none (1), slight (2), moderate (3) and large (4). The goal variables were constructed as follows:

- **Goals-Traditional.** The "crime-related goals" component listed 10 items (clear cases; collect intelligence about other crimes; convict suspects; investigate all crimes; investigate all serious crimes; prevent crime; prosecute suspects; protect victims and witnesses; reduce crime; solve crime). A "Goals - Traditional" scale was then constructed. Six items were eliminated (a reliability analysis indicated they were not closely related to the other items) and the remaining four items (clear cases; collect intelligence about other crimes; convict suspects; prosecute suspects) comprised the scale (Cronbach's alpha = .7501). The scale ranged from 4 to 16, where 4 = no goals are important, and 16 = all goals are of large importance. The midpoint was 10.

- **Goals-Proactive.** The "other-crimes goals" component listed nine items (citizen satisfaction; inform the community; maintain community support; plan/implement crime prevention strategies; prevent crime; protect the public; provide support/feedback to victims; recover/return property; secure justice in the community). A "Goals - Proactive" scale was then constructed. Four items were eliminated (a reliability analysis indicated they were not closely related to the other items) and the remaining five items (plan/implement crime prevention

strategies; prevent crime; protect the public; provide support/feedback to victims; secure justice in the community) comprised the scale (Cronbach's alpha = .8280). The scale ranged from 5 to 20, where 5 = no goals are important, and 20 = all goals are of large importance. The midpoint was 12.5.

Community Policing Variables

Two community policing variables were created – one to measure community policing practices in agencies (Research Question 1), and one to measure community policing practices in investigations (Research Question 2):

- **Community Policing Practices in Agencies (CPA).** A composite variable representing community policing practices in agencies was operationalized by summing item responses from eight conceptually related questions. The questions asked about the number of Community Policing Officers assigned; the provision of at least eight hours of community policing training to officers; types of community policing activities agencies engaged in; participation in citizen group meetings; the conduct of citizen surveys; the use of citizen surveys; methods by which citizens can access crime statistics; and the types of crime statistics that are accessible to citizens. Because the questions used several methods to measure agency responses (scales, multiple response options, etc.), the items in each of the questions were summed and standardized by converting them to eight z-score variables. These variables were then compiled into a single "CPA" scale. After eliminating the z-score variable representing the number of Community Policing Officers assigned (a reliability analysis indicated that this

item was not closely related to the other items), the scale showed a high reliability (Cronbach's alpha = .8027).

- **Community Policing Practices in Investigations (CPI).** A composite variable representing community policing practices in investigations was operationalized by summing item responses from eight conceptually related, multiple-component questions. These questions asked about the provision of at least eight hours of community policing training to investigators; types of investigations-related community policing activities investigators engage in; the extent to which investigators provide crime information to the public; community-related citizen contacts that investigators make; investigation problems related to the public; community-related investigative goals; the influence of past community policing and investigations-related research on their investigation function; and future research interests regarding community policing and investigations. All of the questions used four-point item scales to measure agency responses, but the point labels on the scales differed somewhat (in some items 1 was labeled Never, and in others it was labeled None; 2 was labeled either Some, Slight or Low; 3 was labeled either Usually or Moderate; and 4 was labeled either Always, Large or High). Therefore, the items in each of the questions were summed and converted to eight z-score variables. These variables were then compiled into a single "CPI" scale. After eliminating the z-score variable regarding investigation problems related to the public (a reliability analysis indicated that this item was not closely related to the other items), the scale showed a moderate reliability (Cronbach's alpha = .7192).

Descriptive data regarding the categorical predictor variables are presented in Table 2, and data regarding the quantitative predictor variables are presented in Table 3. A table summarizing variable scales and reliabilities is attached in Appendix A-1.

Table 2 – Descriptive Data for Categorical Predictor Variables for Local Agencies with Investigators

		Local Agencies with Investigators	
Variables	**N**	**Frequencies**	**%**
Agency Variables			
Size of Agency	1,424	Small – 871	61.2
		Large – 553	38.8
Type of Agency	1,424	Sheriff/County – 431	30.3
		Municipal – 993	69.7
Region	1,424	Northeast – 262	18.4
		North Central – 400	28.1
		South – 506	35.5
		West – 256	18.0
Investigation Variables			
Organizational Matters			
Decentralized Investigators	1,424	Yes – 369	25.9
		No – 1,055	74.1
Generalist Investigators	1,424	Yes – 887	62.3
		No – 537	37.7
Specialist Investigators	1,424	Yes – 446	31.3
		No – 978	68.7
Patrol Officers			
Patrol Officer Training	1,424	Yes – 601	42.2
		No – 823	57.8
Patrol Officer Evaluation	1,424	Yes – 457	32.1
		No – 967	67.9
Investigators			
Investigator Training	1,424	Yes – 1,115	78.3
		No – 309	21.7

As can be seen in the table, large agencies comprised 61.2% of the 1,424 agencies in the sample, and small agencies comprised 38.8%. A total of 30.3% were sheriff or county agencies and 69.7% were municipal agencies. The proportion of agencies in the four

regions ranged from 18% (West Region) to 35.5% (South Region). A total of 25.9% of agencies decentralized at least some of their investigators, 62.3% used generalist investigators, and 31.3% used specialist investigators. Investigative training for patrol officers was provided by 42.2% of agencies and 32.1% evaluated patrol officer performance separately. Training for investigators (including probationary periods, initial and refresher/advanced training) was provided by 78.3% of agencies.

Table 3 – Descriptive Data for Quantitative Predictor Variables for Local Agencies with Investigators

	Local Agencies with Investigators			
Variables	**N**	**Mean**	**SD**	**Range**
Agency Variables				
Workload-Murder	1,404	.22	.43	0 – 5
Workload-Robbery	1,404	.55	.77	0 – 6
Workload-Burglary	1,404	4.16	3.37	0 – 24
Investigation Variables				
Patrol Officers				
Patrol Officer Duties	1,413	40.87	7.1	16 – 64
Investigators				
Percentage of Investigators	1,420	.14	.11	0 – 100
Investigators Work with Patrol Officers	1,415	6.05	1.39	3 – 12
Investigator Evaluation	1,424	9.49	4.45	0 – 18
Investigation Management				
Problems- Investigator	1,379	28.36	6.88	15 – 55
Problems-Productivity	1,404	6.94	2.38	4 – 16
Problems-Public	1,402	6.32	2.00	4 – 15
Investigative Support				
Technology	1,424	22.78	7.02	3 – 45
Investigative Effectiveness				
Goals-Traditional	1,411	14.0	1.82	8 – 16
Goals-Proactive	1,390	17.35	2.57	5 – 20
Community Policing (CP) Variables				
CP Practices in Agencies	1,369	.76	4.74	-7.7 – 15.6
CP Practices in Investigations	1,279	.01	4.26	-12 – 15

As can be seen in the table, the mean of all agency workloads ranged from 0.22 cases per officer for murder to 4.16 cases per officer for burglary. The mean of the extent to which patrol officers performed 16 types of investigative duties, as measured on the "Investigative Duties" scale (which ranged between 16 and 64) was 40.87, which is essentially at the midpoint (52nd percentile) of the scale. This is interpreted as a medium level of patrol officer investigative activity with regard to the 16 specified duties. The percentage of investigators assigned in agencies ranged from less than 1% to 100%, and the mean was 14%.

The mean of the extent to which investigators work with patrol officers, as measured on the "Investigators Work with Patrol Officers" scale (which ranged between 3 and 12) was 6.05, which is a relatively low (at the 34th percentile of the scale). The mean of the number of criteria used by agencies to evaluated investigators, as measured on the "Investigator Evaluation" scale (which ranged from 0 to 18) was 9.49 criteria, which is essentially at the scale midpoint (53rd percentile) of the scale.

The mean of the extent to which agencies considered 15 investigations-related factors to be problems in their agency, as measured on the "Problems-Investigator" scale (which ranged from 15 to 55) was 28.36, which is relatively low (30th percentile of the scale). The mean of the extent to which agencies considered four productivity-related investigative factors to be problems in their agency, as measured on the "Problems-Productivity" scale (which ranged from 4 to 16) was 6.94, which is relatively low (25th percentile of the scale). The mean of the extent to which agencies considered four public-related investigative factors to be problems in their agency, as measured on the

"Problems-Public" scale (which ranged from 4 to 15) was 6.32, which is relatively low (19th percentile of the scale).

The mean of the extent to which technology (15 types of crime records and investigative support files) in agencies is available to investigators, as measured on the "Technology" scale (which ranged from 3 to 45) was 22.78. This is at the midpoint (47th percentile) of the scale.

The mean of the extent to which agencies considered four traditional goals to be important, as measured on the "Goals-Traditional" scale (which ranged from 8 to 16) was 14, which is relatively high (83rd percentile of the scale). The mean of the extent to which agencies considered five proactive goals to be important, as measured on the "Goals-Proactive" scale (which ranged from 5 to 20) was 17.35, which is relatively high (82nd percentile of the scale).

The mean of the composite z-score of the Community Policing Practices in Agencies (CPA) variable was .76 (SD = 4.74, range between –7.7 and 15.6). The mean of the composite z-score Community Policing in Investigations (CPI) variable was .01 (SD = 4.26, range between –12 and 15). Correlations for the nine categorical and twelve quantitative variables are presented in Appendix A-2.

Data Analysis

The purpose of the data analysis conducted in this study was to explore the influence of the different predictor variables on clearance rates, and to examine the interrelationships between the community policing and other variables in this regard. Logistic regression was used to test the two research questions, as follows:

- **Statistical Package.** The Statistical Package for the Social Sciences (SPSS), Version 10, was used to develop logistic regression models. The binary logistic regression statistic was used because, as previously noted, the clearance rate dependent variables have only two values (low and high), and logistic regression is appropriate for analyzing dichotomous dependent variables. Additionally, logistic regression requires fewer assumptions than linear regression and it allows for the results to be interpreted in terms of probabilities (Norusis, 1999).

- **Models.** A total of three logistic regression models were developed, one for each of the three clearance rates dependent variables. All Predictor Variables and the interactions with the two Community Policing Predictor variables were entered simultaneously in each model and tested for significance. In each model, the variable or interaction with the highest p value was deleted. (No variable was deleted unless all interactions regarding that variable were deleted first. Additionally, the Region variable was not deleted as long as one of the region p values remained significant.) Then the model was rerun and the same process repeated until only significant variables and variables with significant interactions remained.

- **Model Performance.** Models containing cases with high residuals were identified and the influence of the values was analyzed. As the influences on the models were found to be minimal in all cases, no cases were deleted from the final models.

The Nagelkerke R^2 is used to estimate the proportion of variance explained by the predictor variables in the models. While no single statistic has

been universally accepted as an analogue to the R^2 in a linear regression model, the Nagelkerke R^2 is similar in intent in that it describes variation in the outcome variable in terms of percentages (Norusis, 1999). It is used in this study because the SPSS package that was used provided it as an appropriate estimator of variance in logistic regression models. Nagelkerke R^2 statistics produced by the models are described as weak if they range between 1% and 25%; as moderate if they range between 26% and 50%; and as strong if they are higher than 51%.

CHAPTER 4

RESULTS

In the first section of this chapter, the results of the logistic regression models that were developed are presented in table format. The next three sections describe the results for each of the three models. In the final section, the results are summarized with respect to the two research questions.

Logistic Regression Model Results

The results of the three logistic regression models are presented in Table 3. They are described using the Beta (B) coefficient statistic, the standard error (S.E.) of Beta, and the estimated odds ratio [exp(B)]. The Beta coefficient is the regression coefficient expressed in standardized (z-score) form. The S.E. of the Beta coefficient is the standard deviation of the expected values for the variable. The exp(B) statistic is an exponent of the Beta coefficient estimated in the analyses. The exp(B) statistic can be interpreted as the estimated odds ratio representing the proportionate change in the odds of the dependent variable resulting from a unit change in the predictor variable (Norisus, 1999; George & Mallery, 2001). For example, if the exp(B) value is 1.15 (greater than 1), then the likelihood, or the odds, of an event occurring can be said to increase by 15%. If the exp(B) value is 1, then the odds of an event occurring are unchanged, and if it is 0.80, then the odds of occurrence are decreased by 20%.

Table 4 – Results of Three Logistic Regression Models Testing the Influence of Predictor Variables on Murder, Robbery and Burglary Clearance Rates in Local Agencies with Investigators

	Local Agencies with Investigators					
	Model 1 Murder Clearance Rates (N = 610)		Model 2 Robbery Clearance Rates (N = 958)		Model 3 Burglary Clearance Rates (N = 1,182))	
Predictor Variables	B	S.E. exp(B)	B	S.E. exp(B)	B	S.E. exp(B)
Agency Variables						
Size of Agency	.80	.21 2.23**				
Region[a]						
Northeast	1.19	.33 3.28**				
South					.64	.17 1.89**
Workload-Murder	-.54	.27 .58*				
Workload-Robbery	-.43	.13 .65**	-1.03	.12 .36**	-.30	.10 .74**
Workload-Burglary					-.08	.02 .92**
Investigation Variables						
Organizational						
Decentralized Investigators			-.42	.19 .66		
Generalist Investigators	-.50	.19 .61*			-.28	.13 .76*
Specialist Investigators	-.18	.20 .83	-.05	.16 .95		
Patrol Officers						
Patrol Officer Training	.38	.21 1.46				
Patrol Officer Evaluation			.33	.15 1.39*		
Investigators						
Investigator Evaluation	-.01	.03 .99				
Investigation Management						
Problems-Productivity					-.07	.03 .93*
Problems-Public					.07	.03 1.07*
Investigative Support						
Technology	-.01	.01 .99			.02	.01 1.02*

Table 4 (cont'd)

Community Policing (CP) Variables					
CP Practices in Agencies (CPA)	.06	.03	-.02	.02	
		1.06*		.98	
CP Practices in Investigations (CPI)	-.08	.08	-.02	.02	
		.92		.98	
CP Interactions					
CP Practices in Agencies (CPA) by Decentralized Investigators			.09	.04	
				1.09*	
CP Practices in Agencies (CPA) by Patrol Officer Training	-.08	.04			
		.92*			
CP Practices in Investigations (CPI) by Specialist Investigators	.11	.05	.07	.04	
		1.12*		1.08*	
CP Practices in Investigations (CPI) by Investigator Evaluation	-.01	.01			
		.99*			
CP Practices in Investigations (CPI) by Technology	.01	.00			
		1.01*			
Nagelkerke R^2		.19		.16	.09

[a] The reference category is West region.
* $p < .05$
** $p < .01$

The results in the above table are described below for each model.

The Murder Clearance Rates Model

Most of the variables in this model produced non-significant results. Only four Agency Variables, one Investigation Variable, one Community Policing Variable and four interactions show significant results. The model is the most robust of the three models ($R^2 = .19$, a weak estimator of variance) (N = 610).

Agency Variables

The Agency Size variable was found to significantly affect murder clearance rates. Small agencies are about two times [exp(B) = 2.23, which equates to 223%] more likely than large agencies to have high murder clearance rates. The Region variable

shows significant positive effects on clearance rates in the Northeast Region. In that region, agencies are 3.28 times more likely to have high murder clearance rates. Two Workload variables also show significant effects, but the effects are both negative. Increases in murder workloads are associated with a 42% decrease in murder clearance rates and increases in robbery workloads are associated with a 35% decrease in murder clearance rates.

Investigation Variables

Only one of the 16 Investigation Variables was found to have a significant effect in the model. Agencies that employ generalist investigators are 39% more likely to be associated with low murder clearance rates.

Community Policing Variables

Of the two community policing variables included in the model, only the Community Policing Practices in Agencies (CPA) variable shows a significant effect. Community policing practices in agencies are associated with a 6% increase in murder clearance rates.

Community Policing Interactions

A significant negative interaction was found between the Community Policing Practices in Agencies (CPA) and Patrol Officer Training variables. The main effect of the community policing variable is significant and positive in the model, but the interaction with the Patrol Officer Training variable, whose main effects are not significant, increases the odds of low murder clearance rates by 8%.

A significant positive interaction was found between the Community Policing Practices in Investigations (CPI) and Specialist Investigators variables. The main effects

of both variables are not significant in either model; however, the interaction between them increases the odds of high murder clearance rates by 12%. Agencies with specialist investigators that apply community policing practices are more likely to have high murder clearance rates.

A significant negative interaction was found between the Community Policing Practices in Investigations (CPI) and Investigator Evaluation variables. The main effects of both variables are not significant in the model; however, the interaction between them increases the odds of low murder clearance rates by 1%. When agencies apply community policing practices in investigations, the more criteria they use to evaluate investigator performance, the more likely they are to negatively affect murder clearance rates.

A significant positive interaction was found between the Community Policing Practices in Investigations (CPI) and Technology variables. The main effects of both variables are not significant in the model; however, the interaction between them increases the odds of high murder clearance rates by 1%. Agencies that practice community policing in investigations and provide investigators with increased access to crime-related records and files are more likely to have high murder clearance rates.

The Robbery Clearance Rates Model

Again, most of the variables in this model produced non-significant results. Only one Agency Variable, one Investigation Variable and two interactions show significant results. The model is the second most robust of the three models ($R^2 = .16$) ($N = 958$).

Agency Variables

The Workload-Robbery variable shows a significant negative effect. Increases in robbery workloads are associated with a 64% decrease in robbery clearance rates.

Investigation Variables

The only Investigation Variable found to have a significant effect in this model was Patrol Officer Evaluations. Agencies that separately evaluate the investigative performance of patrol officers in investigations are 39% more likely to have high robbery clearance rates.

Community Policing Variables

Neither the Community Policing Practices in Agencies (CPA) variable nor the Community Policing Practices in Investigations (CPI) variable shows a significant main effect in this model. Community policing practices in agencies and investigations do not significantly affect robbery clearance rates.

Community Policing Interactions

A significant positive interaction was found between the Community Policing Practices in Agencies (CPA) and Decentralized Investigators variables. The main effects of both variables are not significant in the model; however, the interaction between them increases the likelihood of high robbery clearance rates by 9%. Agencies with decentralized investigators that apply community policing practices are more likely to have high robbery clearance rates.

A significant positive interaction was found between the Community Policing Practices in Investigations (CPI) and Specialist Investigators variables. The main effects of both variables are not significant in the model; however, the interaction between them

increases the odds of high robbery clearance rates by 8%. Agencies with specialist investigators that apply community policing practices are more likely to have high clearance robbery rates.

The Burglary Clearance Rates Model

As with the other two models, most of the variables in this model produced non-significant results. Only three Agency Variables and four Investigation Variables show significant results. This is the least robust of the three models ($R^2 = .09$) (N = 1,182).

Agency Variables

The Region variable shows significant positive effects on clearance rates in the South Region. In that region, agencies are 1.89 times more likely to have high burglary clearance rates. Two Workload variables show significant effects in the model, but the effects are negative. Robbery workload increases are associated with a 26% decrease in burglary clearance rates, and burglary workload increases are associated with an 8% decrease in burglary clearance rates.

Investigation Variables

Four of the 16 investigation variables were found to have a significant effect. Agencies with generalist investigators are 24% more likely to be associated with low burglary clearance rates. Agencies that have problems with productivity rates (as measured by arrests, clearances, prosecutions and convictions) are 7% more likely to have low burglary clearance rates. Agencies that have problems with the public (as measured by poor public relations; poor relations with the media; public mistrust of the police; and unauthorized information leaks about investigations) are 7% more likely to

have high burglary clearance rates. Technology (increased access to crime records and investigative support files) is positively associated with high burglary clearance rates, although the size of the effect is relatively weak (2%).

Community Policing Variables and Interactions

In measuring the effects of community policing practices on burglary clearance rates, no significant results were found. Neither the Community Policing Practices in Agencies (CPA) variable nor the Community Policing Practices in Investigations (CPI) variable shows a significant main effect, and neither shows any significant interactions with the other variables in the model.

Summary

In each of the three models, a total of 24 variables (six Agency Variables, 16 Investigation Variables and two Community Policing Variables) and 45 interactions were tested. Model 1 produced 10 significant effects related to murder clearance rates (four with Agency Variables, one with an Investigation Variable, one with a Community Policing Variable, and four interactions with a Community Policing Variable). Model 2 produced four significant effects related to robbery clearance rates (one with an Agency Variable, one with an Investigation Variable, none with the Community Policing Variables, and two interactions with a Community Policing Variable). Model 3 produced seven significant effects related to burglary clearance rates (three with Agency Variables, four with Investigation Variables, none with the Community Policing Variable, and no interactions with the Community Policing Variables).

With respect to the predictor variables, five of the six of the Agency Variables and five of the 16 Investigation Variables show significant results in at least one of the models. One of the two Community Policing Variables shows significant results in one model. Of the total number of 135 interaction tests conducted between the two community policing variables and the 22 other predictor variables (45 interaction tests in each model) only five show significant results in at least one model.

Overall, the results reflect that, in local agencies with investigators, community policing practices in general have only minimal effects on murder and robbery clearance rates, and no effects on burglary clearance rates.

- With regard to Research Question 1, community policing practices in agencies increase the odds of high murder clearance rates, but they have no significant main effects on robbery or burglary clearance rates. They have mixed significant interaction effects with some other factors (Patrol Officer Training, Decentralized Investigators) on murder and robbery clearance rates, but no significant interaction effects on burglary clearance rates.

- With regard to Research Question 2, community policing practices in investigations do not have any significant main effects on murder, robbery or burglary clearance rates. They have mixed significant interaction effects with some other factors (Specialist Investigators, Investigator Evaluation, Technology) on murder and robbery clearance rates but no significant interaction effects on burglary clearance rates.

CHAPTER 5

DISCUSSION

Earlier in this study, an examination of the policing literature was conducted regarding how the evolving nature of our society generated changes in the crime threat in the past, and how society's responses to those changes led to the creation of police agencies whose core mission is to control the crime threat. It was found that, because people are the primary source of crime information for the police, the police-public relationship plays a critical role in the police effort to collect and use information to solve crime.

During the past three decades, community policing has emerged as the dominant form of policing. This movement advocates the prevention of crime by promoting better relationships between the police and the public. Conceptually, it seems that as improvements in this critical relationship are designed to enhance the overall ability of the police to prevent crime, they should also enhance the prospects of the police in collecting crime information from the public, in addition to preventing crime. As patrol officers play a key role in both community policing and the police investigation process, they should also be able to collect information from the public and use it to solve crime as well as prevent it. However, aggregate Index crime clearance rates have not improved during this period.

Major changes in society and policing in the past have redirected the police criminal investigation process from a proactive, offender-oriented focus to the current, predominantly reactive, case-oriented style of investigation. Therefore, it was deemed prudent to explore the community policing – investigations relationship in order to

determine whether or not the advent of community policing has affected the police criminal investigation process, and to gain insights with regard to how to productively manage this relationship in the future.

The purpose of this study, therefore, was to determine the extent to which community policing practices in agencies and in investigations influence Index crime clearance rates. In order to accomplish this purpose, clearance rates for the Index crimes of murder, robbery and burglary were operationalized as dependent variables. Six demographic Agency Variables, 16 Investigations Variables related to the investigation process, and two Community Policing Variables were created as predictor variables. Three logistic regression models were developed that examined the relationship between the dependent and predictor variables.

It was found that some Agency and Investigation Variables have mixed significant effects on some clearance rates. Additionally, it was found that community policing practices in agencies have a significant positive effect on murder clearance rates. Moreover, when community policing is practiced in agencies, and also in investigations, in conjunction with some other investigations-related factors, it has mixed significant effects on both murder and robbery clearance rates. However, no community policing-related effects were found regarding burglary clearance rates.

Only 29% (21) of the 72 Predictor Variables, and 4% (6) of the 135 interactions, in all three models produced significant results, and the proportions of variances explained by the Predictor Variables in the models were relatively low (R^2 = .19, .16, and .09, in the Murder, Robbery and Burglary Clearance Rates models, respectively). However, many of the study findings are supported with past research, consistent with

historical trends, and compatible with the conceptual framework regarding the effects of community policing on the investigation process.

This chapter consists of seven sections. The first two sections discuss the study results relating to the Agency and Investigation Variables. The third section addresses the effects of community policing on clearance rates. In the fourth section, the conceptual framework is used to interpret the study findings in the context of the criminal investigation process, and the ramifications of the study results are depicted from a broader societal perspective in the fifth section. The final two sections identify some study limitations and potential future research activities.

Agency Variables Have Mixed Effects on Clearance Rates

As shown in Table 4, five of the six Agency Variables were found to have a significant effect in at least one model (the Type of Agency variable was not significant in any model). This is consistent with previously cited research indicating that demographic factors affect agency clearance rates. Pertinent results are briefly discussed below.

- **Size of Agency.** The finding that small agencies are about two times more likely than large agencies to have high murder clearance rates is not entirely unexpected, as small agencies normally have higher total Index crime clearance rates than large agencies (United States Department of Justice, 2002). Most small agencies are located in small-town areas where people are more likely to know each other than in large cities. Most small agencies have relatively few murder cases (in the sample, 607 of the 863 small agencies reported no murder crimes,

and only 25 reported more than five in the 1997 UCR Report). In small-town areas, where in general the level of acquaintanceship is high and serious crimes are rare, murders might be taken more seriously and receive greater visibility among the public, thus increasing expectations of a more intensive and focused police response. Small agencies may have a more personal relationship with the public, and this could enhance the collection of information from the public to solve crime. Some small agencies may rely on the investigative resources and expertise of large agencies for support in solving serious crimes and, therefore, their clearance rates can by influenced by their combined efforts. Also, stranger-on-stranger crimes, such as some drive-by or drug-related shootings, which may be more difficult to solve than crimes where the victim and offender know each other, may be less likely to occur in small-town areas.

- **Region.** The significant positive effects on murder clearance rates in the Northeast Region in Model 1, and the significant positive effects on burglary clearance rates in the South Region in Model 3, reflect that clearance rates vary by geographic area. This is consistent with reports in the research literature that clearance rates differ by region (e.g., Chaiken, 1975; Cordner, 1989), although the reasons for this have not been explored in depth.

- **Workload Variables.** All three workload variables (Murder, Robbery and Burglary) show significant effects in at least one model, but the effects are all negative. In each model, as the workload for that type of crime increases, clearance rates are likely to decrease. Chaiken (1975) reported similar findings regarding workload effects on clearance rates.

It was also noted that robbery workloads could negatively affect clearance rates for murder and burglary, as well as for robbery. A possible explanation for this may be that the most common investigation units in agencies are Crimes Against Persons, which include murder and robbery (Horvath, Meesig & Lee, 2001). As robbery workloads in agencies (.55 cases per officer; see Table 3) were more than double murder workloads (.22 cases per officer), increases in robbery workloads could have a strong effect on the availability of investigative resources to solve either type of crime. Crime sprees, serial crime incidents, or high-visibility crimes involving public figures could also cause agencies to shift their resources away from the less serious or visible crimes (see Ericson, 1981; Simon, 1991).

On the other hand, workloads for the property crime of burglary (4.16 cases per officer) are much larger than robbery workloads, yet they are still negatively affected by robbery workload increases. This may be because of the availability of investigative resources also. Patrol officers conduct most burglary investigations, but they may be redirected away from burglary cases in order to provide greater support to the more serious, higher visibility robbery cases when robbery workloads increase. However, while the effects of investigative workloads on clearance rates are documented elsewhere in the research literature (e.g., Chaiken, 1975; Cordner, 1989), they have not been fully examined or explained.

Investigation Variables Have Mixed Effects on Clearance Rates

Only five of the 16 Investigation Variables were found to have a significant effect in at least one model. Pertinent results are described below.

- **Generalist Investigators.** Agencies that employ generalist investigators (defined as investigating all kinds of cases) are 39% more likely to have a negative effect on murder clearance rates (Model 1). As murder investigations often entail the use of sophisticated investigative techniques and forensic methods, generalist investigators may be less proficient in applying such measures than investigators who specialize in murder or other violent crime cases, and that may account for this finding (ex.: Simon, 1991).

  Additionally, agencies with generalist investigators are also 24% more likely to be associated with low burglary clearance rates (Model 3). Here again, it may be that generalist investigators are less proficient in solving burglary cases than investigators who investigate only certain types of cases, such as burglary or other property crimes.

  These findings stand in contrast to the trend toward the use of more generalist investigators in agencies that was noted in the earlier research (Chaiken, 1975; Horvath, Meesig & Lee, 2001). They suggest that the employment of generalist investigators should, at the very least, be considered carefully and monitored closely to avoid less than successful investigation results.

- **Patrol Officer Evaluation.** Agencies that separately evaluate the investigative performance of patrol officers in investigations are 39% more likely to have high robbery clearance rates (Model 2). However, no similar significant

effects were found with regard to murder and burglary clearance rates. Although the reasons for this are not clear, a possible explanation may be that investigators conduct most murder investigations and patrol officers conduct most burglary investigations, while investigative responsibilities in robbery investigations may be shared (patrol officers conduct preliminary investigations and investigators conduct follow-up investigations). The evaluation of patrol officer efforts in these types of cases may somehow serve as an incentive for higher performance.

But the point of interest here is that the evaluation of the investigative efforts of patrol officers has an effect on clearance rates. The Horvath, Meesig and Lee (2001) study reported that 31% of agencies evaluated the investigative performance of patrol officers separately; however, no prior research examined how such practices might affect clearance rates. A better understanding of the dynamics involved in this relationship might identify evaluation practices that could enhance this effect, and positively influence other types of crime clearance rates as well.

- **Problems-Productivity.** In the burglary clearance rate model (Model 3), agencies that have problems with overall productivity rates (as measured by arrests, clearances, prosecutions and convictions) are 7% more likely to have low burglary clearance rates; however, no significant effects were noted in the other two models. One possible explanation for this may be due to the differences in the sample size between the three types of crime. Burglary alone accounted for 15% of all crimes in the sample, while murder accounted only for 0.1% and robbery accounted only for 4%. Decreases in the number of cleared burglary crimes could

have a larger proportionate influence on overall agency productivity measures. However, despite the historically documented research reflecting the relative ineffectiveness of the police criminal investigation process (e.g., Chaiken, 1975; Greenberg & Wasserman, 1979), Horvath, Meesig and Lee (2001) reported that most agencies did not themselves identify any significant problems regarding productivity, even if they had relatively low clearance rates.

- **Problems–Public.** In the burglary clearance rate model (Model 3), agencies that have problems with the public (as measured by poor public relations; poor relations with the media; public mistrust of the police; and unauthorized information leaks about investigations) are 7% more likely to have high burglary clearance rates. This could be an anomalous finding, as one might expect that increases in problems with the public would impair the effectiveness of the police in clearing burglary crimes. However, another possible explanation for the finding is addressed below in the **Differential Effects between Models** sub-section with regard to the nature of different types of crimes and the police investigative responses to them.

- **Technology.** The technology variable shows a significant positive effect on burglary clearance rates (Model 3). Increased access to crime records and investigative support files is 2% more likely to be positively associated with high burglary clearance rates. This indicates that technology can affect case outcomes when used in high volume property crimes. However, the variable shows no significant effects in the murder and robbery clearance rate models (Models 1 and 2). The reasons for this are unclear. It may possibly be that the use of technology

generally tends to be emphasized more so in these violent crimes than in property crimes, due to their serious nature. The findings may indicate that technology is already more broadly and uniformly available for these crime types than for burglary crimes.

The past research reported little or no empirical data regarding how technology interrelates with clearance rates, but reflected that over the past 30 years agencies were placing more and more emphasis on improving their technological capabilities (Greenwood, Chaiken & Petersilia, 1977; Northrup, Kraemer & King, 1995; Horvath, Meesig & Lee, 2001). The finding regarding the effect of technology on burglary clearance rates is noteworthy because it indicates that the use of computerized information to solve crime could be a relatively efficient way of enhancing the productivity of critical patrol officer resources in investigating high volume property crimes that suffer from chronically low clearance rates.

Community Policing Variables Have Mixed Effects on Clearance Rates

In this section, the study results regarding community policing effects on clearance rates are discussed four ways: the main effects; the interaction effects; the different effects on the three models; and effects grouped by major issue area. A summary of the findings is presented at the end of the section.

Main Effects

Community policing practices in agencies have different effects on clearance rates than community policing practices in investigations. They are discussed below.

- **Community Policing Practices in Agencies.** Community policing practices in agencies are shown to improve clearance rates in murder crime investigations (6% more likely to be associated with high murder clearance rates). This is perhaps the most important finding related to the purpose of this study, because it serves as a clear marker that the community policing philosophy can in fact positively influence investigative outcomes, and that at least one type of criminal investigation is currently already benefiting from that effect. It also raises questions as to whether and how community policing might be able to positively affect the clearance rates of other types of crimes.

- **Community Policing Practices in Investigations.** Community policing practices specifically in the investigation function show no significant main effects in any of the three clearance rates models. This means that community policing as an agency program currently has a stronger effect on murder clearance rates than community policing practices in investigations, and it is consistent with the research indicating that community policing practices have been more broadly implemented within and across agencies in general than in the specific investigative functions of agencies (Hickman & Reaves, 2003; Horvath, Meesig & Lee, 2001; Wycoff, 2001).

Interaction Effects

When community policing is practiced in agencies and investigations in conjunction with other investigation-related factors, it can have mixed influences on clearance rates. Significant positive and negative interactions, together with pertinent non-significant interactions that were observed in this study are discussed below.

Positive Interaction Effects

The positive effects of community policing are demonstrated in the study findings regarding the decentralized deployment of investigators, specialist vs. generalist investigators, and technology. They are addressed separately below.

- **Community Policing Practices in Agencies and Decentralized Investigators.** While community policing practices in agencies do not by themselves significantly affect robbery clearance rates, they do improve robbery investigation outcomes in agencies that have decentralized investigators (investigators assigned to field units, as opposed to an agency headquarters). In other words, when investigators are assigned to field units, and when they are more likely to be more exposed to agency community policing practices designed to promote community support, the odds of solving more robbery crimes are increased.

  As shown by the research over the past 30 years, most agencies centrally assign their investigators to headquarters levels, and no significant trends toward deploying investigators into the field were noted. However, two recent studies (Horvath, Bucqueroux & Meesig, 1997; Wycoff, 2001) did show that some agencies were experimenting with decentralization, and Horvath, Meesig and Lee (2001) reported that 26% of agencies assigned investigators to the field. But the present study shows that the decentralization of investigators by itself has no significant effects on clearance rates unless it is done in conjunction with community policing in agencies, and then its effects are limited to robbery cases.

The effects of the decentralization of investigators appear to be related to community policing and only one case type.

- **Community Policing Practices in Investigations and Specialist vs. Generalist Investigators.** Community policing practices in investigations by agencies that employ specialist investigators (who investigate only certain types of cases) increase the odds of high murder and robbery clearance rates. Additionally, while the employment of generalist investigators (who investigate all case types) in agencies was shown to have a significant negative effect on murder and burglary clearance rates, this effect is essentially neutralized (becomes non-significant) in agencies that also apply community policing practices in investigations.

These findings indicate that community policing practices in investigations can make an important contribution to the successful investigation of crime. They can improve murder and robbery clearance rates when used in conjunction with specialist investigators, and they can minimize the negative effects of the use of generalist investigators in murder and burglary cases.

In assessing the applicability of these findings, it is noted that 31% of the agencies in the present study sample employed specialist investigators, and that 62% employed generalist investigators. The adoption and implementation of the study findings regarding these factors and community policing could potentially affect murder, robbery and burglary clearance rates in a relatively large proportion of agencies.

- **Community Policing Practices in Investigations and Technology.** Technology (access to crime records and files) shows no significant effect by itself on murder clearance rates. However, when it is used in agencies in conjunction with community policing practices in investigations, murder clearance rates are improved.

The past research identified a growing emphasis among agencies on improving their technological resources (Chaiken, 1975, Northrop, Kramer & King, 1995; Horvath, Meesig & Lee, 2001). The present study findings demonstrate some of the benefits of this investment on agency clearance rates. Increasing access to crime records and files can improve burglary clearance rates, and can be used in conjunction with community policing practices in investigations to improve murder clearance rates.

Negative Interaction Effects

The above results demonstrate the positive effects of community policing on clearance rates. However, two findings in particular serve as cautionary notes for agencies.

- **Community Policing Practices in Agencies and Patrol Officer Training.** Community policing practices in agencies can improve the investigative outcomes of murder investigations; however, the training that patrol officers receive on investigative matters appears to conflict with agency community policing practices and can produce a counterproductive effect on murder investigation outcomes. As stated earlier, patrol officers play key roles in both community policing and investigations, and they serve essentially as the linchpins for

integrating the two programs at the street level. If the training that they receive detracts from, or at least does not support, the effective integration of the programs, then patrol officer performance will likely be impaired and both programs can suffer as a result.

- **Community Policing Practices in Investigations and Investigator Evaluation.** The extent to which investigators are evaluated when applying community policing practices in investigations can also negatively affect murder clearance rates. These results may be due to the fact that the Investigator Evaluation variable is based on a question asking agencies how many criteria they used to evaluate investigator performance. Of the 18 criteria agencies were asked about, at least nine of them (arrest statistics; caseload statistics; clearance statistics; conviction statistics; evidence collection/handling; property recovered; report writing; prosecution statistics; success in major investigations) are related to more traditional investigative performance measures, as opposed to community policing-oriented measures (e.g., community policing-related activities; crime pattern detection activities; hot spot reduction activities; incident reduction/prevention activities). It is possible that both the number and the types of performance measures used by agencies may influence investigative outcomes, and that an emphasis on traditional measures may not be compatible with community policing practices in investigations, at least in murder cases.

These findings demonstrate that, in addition to the positive effects of community policing in agencies and in investigations on investigative outcomes, there can be negative effects as well. This denotes the importance of gaining a more in-depth

understanding of the community policing-investigations relationship, and of developing informed agency management policies and practices that address the integration of community policing and the investigation function in a productive way.

No Interaction Effects

Most of the interactions between the Community Policing and Investigation Variables that were tested in the three models were not significant, which highlights the limited nature of the relationship between them that exists in agencies in general today. Two such findings in particular are worthy of further comment.

- **Agency Variables.** Although agency size, region and workload factors were found to have a number of significant main effects in the three models, no Agency Variables were significantly associated with community policing. This means that these external environmental factors, over which agencies have little control, do not significantly shape the effects of community policing on clearance rates. Rather, the noted significant interaction effects between Community Policing and Investigation Variables, support the idea that internal agency factors, over which agencies have greater management control, play a more dominant role in affecting investigative outcomes.

- **Burglary Clearance Rates.** In the burglary clearance rates model, community policing practices in agencies and in investigations show no significant effects on burglary investigative outcomes. In these types of cases it might be expected that a strong agency community policing program, in which police and the citizenry work closely on crime matters, would produce more information to solve burglary crimes, just as was found to varying degrees in

murder and robbery crimes. However, the absence of any such effects suggests alternative explanations, which are addressed next with regard to the differential effects of community policing on clearance rates.

Differential Effects between Models

In Chapter 2, murder, robbery and burglary, together with the other UCR crimes, were grouped under the Visible Crimes Category because they generally have a clearly identified victim and they are more likely to be reported to the police than crimes in other categories. Murder, robbery and burglary clearance rates were selected as dependent variables in this study because of the differential nature of these crimes and the extent of the police response to them, and to examine whether the effects of community policing on their clearance rates varied by crime type. It was found that community policing effects on clearance rates are strongest for murders, which have the highest clearance rates, and weakest for burglaries, which have the lowest clearance rates. In an attempt to understand this relationship better, comparisons are made in this section between the three types of crimes according to the nature (the seriousness and visibility) of the crimes, and the extent of the police investigative response to them.

Murder

Of the three sets of clearance rates used in this study, community policing has its greatest overall effects on murder clearance rates. Murders are differentiated from robberies and burglaries in that they are the most serious, and the visibility (e.g., person-to-person contact, the presence of the body of the victim and other physical evidence, the availability to people of information regarding the crime, public attention, etc.) of

murders is generally the highest. Therefore, they provide a greater opportunity for people (the primary source of crime information) to obtain information regarding them.

These seriousness and visibility factors affect the extent of the police investigative response. Due to their seriousness, murders normally receive the most intensive investigative response (particularly by investigators, as opposed to patrol officers). Because of the high visibility of the crimes, people are likely to have more information about them, which increases the likelihood that the police will collect more information about them, especially if they exert a strong investigative effort. It is generally accepted that the high levels of seriousness, visibility and investigative response associated with murders are the primary reasons why murders have the highest clearance rates of all Index crimes (United States Department of Justice, 1999b, 2002).

This is consistent with a community policing perspective, in which the community policing philosophy promotes the building of strong partnerships between the police and the community on matters of mutual interest (Trojanowicz, Kappeler & Gaines, 2002). Community policing increases the chances that people will provide that information to the police, who in turn make a strong investigative effort to collect and use that information to solve crime.

Robbery

Community policing also has some significant relationships with robbery clearance rates, but to a lesser degree than with murder clearance rates. And, following the same pattern, robberies can be described according to their seriousness, visibility and police response in the same way as murders, but perhaps to a lesser degree. They are generally considered to be serious, but less serious (no fatalities) than murders, and they

are normally visible, but less visible (limited interpersonal contact, less physical evidence, generally less information available to the public, and less public attention) than murders. Patrol officers typically have more preliminary investigation responsibilities than for murders, and while investigative responses overall are greater than for burglary cases (police are less likely to screen out robbery cases, and they routinely spend more time on follow-up investigations), they are often less intensive than for murder cases. Concomitantly, robbery clearance rates are lower than murder clearance rates, but are still higher than burglary clearance rates (Eck, 1983; United States Department of Justice, 1999b).

Thus, the two crimes on whose clearance rates community policing has at least some significant effect can be characterized in general as being violent, serious, visible, and receiving relatively strong investigative responses. Murder fits this characterization more strongly than robbery, and the effects of community policing on clearance rates are also stronger for murder than for robbery.

Burglary

Community policing does not significantly affect burglary clearance rates. Burglaries are property crimes. A high number (about half) of these crimes committed in our society are not even reported to the police by victims. This implies that they are considered by people to be less serious in nature than murders or robberies, and that people are less motivated to be forthcoming to the police with burglary crime information. Additionally, they are generally less visible (no interpersonal contact, little physical evidence, not observed by or coming to the attention of people), and people are less likely to learn of any information about the crime that can be reported to the police.

This in turn limits the amount of information that police can collect from people. Nevertheless, the volume of burglaries that are actually reported to the police is relatively high compared to murders and robberies, and can easily overtax police resources that must often be committed to other matters of greater interest and concern to the public. The police respond to these conflicting demands by screening out more than half the burglaries that are reported to them, due to the poor prospects of solving them based on the limited available information. Additionally, they reprioritize limited investigator resources by increasing the role of the patrol officer in conducting both preliminary and follow-up investigations (Eck, 1983). These combined factors contribute to making burglary clearance rates the lowest among all Index crimes.

Therefore, burglaries can be characterized as property (non-violent) crimes that, in general, are the least serious, the least visible, and receive the weakest investigative response of the three crimes examined.

Seriousness, Visibility and Investigative Response Factors

It is observed that the factors of seriousness, visibility and investigative response correspond with the effects of community policing on clearance rates. For the violent crime of murder, which has high clearance rates and shows the strongest community policing effects, the three factors are likely to be more preponderant. However, for burglary crimes, which have low clearance rates and show no community policing effects on clearance rates, the three factors are likely to exist in the least degree.

These observations are compatible with Eck's (1983) circumstance-result and effort-result hypotheses. With regard to the seriousness and visibility of a crime, the crime-oriented circumstance-result hypothesis argues that the very nature of some crimes

(the occurrence of interpersonal contacts, the availability of information to people, the likelihood that people know of the crime, etc.) affects the amount of information regarding them that is readily available to the police, and this affects the extent to which the police may be able to solve them. As most crimes (i.e., property crimes) have by their very nature little information available to the police, the police are generally less successful in solving them. Instead, based on the limited available information that was collected at the locations of the Action and Escape phases of crimes during the Fugitive phase, they screen out cases deemed to be "unsolvable" based on the preliminary investigation results, and they limit follow-up efforts to investigating crimes that appear to be "solvable."

With regard to the extent of the police investigative response to a crime, the investigation-oriented effort-results hypothesis (a stronger investigative effort increases the likelihood of more successful outcomes) focuses on the level of the police response to crimes as a key factor affecting the solvability of a crime. This often means the commitment of greater investigative resources to more fully investigate the available information collected at the locations of the Action and Escape phases during the Fugitive phase, and it could also include a more proactive information collection effort at other locations during the Fugitive and other phases of the crime continuum.

Caveats

Several other points regarding the seriousness, visibility and investigative response to crimes are made here.

- The seriousness of an offense in the Visible Crimes Category seems for the most part to be related mainly to the physical level of violence involved, where

murder is the most violent and burglary is among the least violent. For other Major Crime Categories it may be appropriate to broaden the definition of "seriousness" to include socioeconomic impact, for example, to account for large corporate scandals, and national security effects, to account for crimes such as espionage or terrorism.

- Visibility pertains to the two main sources of crime information – people and things. The extent to which people are directly involved (person-to-person contact, witness, etc.) or hear of a crime from other people determines the amount of information they have available regarding it. Additionally, things (physical evidence or artifacts of crime, or information systems containing pertinent data) can enhance the visibility of a crime if people can link them to criminal behaviors. The term "people" includes members of the public. However, it can also include patrol officers and investigators, especially if the "visibility" of a crime is expanded with regard to the collection of information by the scientific analysis of physical evidence or the searching of information systems).

- The extent of the police investigative response appears to be influenced by the seriousness and visibility factors. The degree to which people consider a crime to be serious can affect whether or not they report it to the police, the level of effort they may expect from the police in response, and the prioritization of police resources. The visibility factor influences the amount of information the police can collect and use in their investigation.

- It is clearly recognized that the characterizations of murder, robbery and burglary regarding seriousness, visibility and investigative response are

essentially generalizations drawn from a perspective of the different types of crimes in the aggregate, and that they can have much different effects in individual cases. For example, while the murder of a vagrant is a serious crime under the law, it may not attain the same level of visibility in the public eye, or receive the same level of investigative response from the police, as a well-publicized murder (or perhaps even a robbery or burglary) involving a celebrity or well-known government or corporate official. Additionally, the robbery or burglary of high value items from commercial establishments (e.g., a bank robbery in broad daylight, or the burglary of masterpiece paintings from a public art gallery, which are less serious than murder, but have high visibility) will likely generate relatively intensive police responses. However, these variations are generally considered to be the exception rather than the rule for most cases.

- Earlier in the study it was reported that agency problems with the public (poor public relations; poor media relations; public mistrust of the police; and unauthorized leaks regarding investigations) increase the odds of high burglary clearance rates. While it might be expected that increases in these types of problems would impair the efficiency of the police in clearing burglary crimes, just the opposite was found to occur. An alternate explanation is provided here. It is possible that, as the police experience increasingly greater problems with the public, people become less inclined to report the less serious or visible burglary crimes to them. This can have the effect of reducing the police burglary crime workload, as only the more serious and more highly visible burglary crimes are brought to their attention. These are the kinds of crimes that are more likely to

have more information available for the police to collect, and police are then more likely to intensify their investigative response to them. This in turn could result in higher clearance rates for reported burglaries in agencies experiencing problems with the public.

- Although seriousness and visibility can influence the extent of the police investigative response, it has also been reported in this study that other factors bear on the "effectiveness" (rather than the "extent") of their response. Factors relating to the effectiveness of the police response include the availability and manner of response of police resources (Wellford & Cronin, 1999). Additionally, as shown in the present study, other variables can influence police investigative effectiveness, including agency demographic factors (size of agency, region and workloads), investigation factors (generalist investigators, patrol officer evaluation, productivity-related problems, public-related problems and technology), community policing practices in agencies, and the interaction effects between community policing and other investigation factors (decentralized, specialist and generalist investigators, patrol officer training, investigator evaluation, and technology).

Community Policing Effects by Major Issue Area

In the Horvath, Meesig and Lee (2001) study, a number of factors affecting investigation programs were identified and categorized into six Major Issue Areas (Organizational Matters, Patrol Officers, Investigators, Investigation Management, Investigative Support, and Investigative Effectiveness). These factors were operationalized as Investigation Variables in the three logistic regression models in the

present study. Significant community policing interrelationships with the variables in each area are reviewed below in order to determine the extent of their effects.

Organizational Matters

Three variables (Decentralized Investigators, Generalist Investigators, and Specialist Investigators) are included in this Major Issue Area, and two of them were found to interact significantly with Community Policing Variables (when community policing is practiced in agencies that have decentralized investigators, the odds of high robbery clearance rates are increased; and when agencies that employ specialist investigators apply community policing practices in investigations, the odds of high clearance rates increased for both murders and robberies). The third variable in this area (Generalist Investigators) was found to significantly increase the odds of low clearance rates in murder and burglary investigations, but then interactions with the community policing variables were determined to be not significant. This suggests that community policing practices in agencies may diminish the negative main effects associated with the use of generalist investigators.

Past research (e.g., (Bloch & Bell, 1976; Chaiken, 1975; Elliott, 1978; Gay, Day & Woodward, 1977; Public Systems Evaluation, 1977; Schwartz & Clarren, 1977) reported mixed effects of organizational factors on clearance rates. The present study also shows mixed effects in the Organizational Matters area. In doing so, it identifies this area as the most potentially productive of all six Major Issue Areas for affecting clearance rates. By decreasing the employment of generalist investigators, and increasing the use of decentralized and specialist investigators in conjunction with community policing practices, improvements in crime clearance rates can be expected.

Patrol Officers

Of the three variables (Patrol Officer Training, Patrol Officer Duties, and Patrol Officer Evaluation) included in this Major Issue Area, only one significant interaction with a Community Policing Variable was found. When community policing in agencies is practiced in conjunction with the increased investigation training of patrol officers, the odds of low murder clearance rates are increased. There were no significant interactions with regard to the Community Policing Practices in Investigations (CPI) variable.

Earlier research indicated trends among agencies toward increasing community policing and increasing patrol officer investigative tasks (Chaiken, 1975; Horvath, Meesig & Lee, 2001; United States Department of Justice, 1999a). Yet, even though patrol officers play a key role in both programs, the present study reveals a problem regarding the training of patrol officers that conflicts with these two trends. Although it is not clear what the training problem is, it may be a contributing cause for the finding that patrol officer investigative duties do not significantly affect clearance rates. It appears that management initiatives are needed to address these issues, particularly in light of the finding that some management actions (such as the positive effects that the separate evaluation of patrol officer investigative performance have on robbery outcomes) can positively affect clearance rates.

Investigators

Four variables (Percentage of Investigators, Investigator Training, Investigators Work with Patrol Officers, and Investigator Evaluation) are included in this Major Issue Area, but only one was found to interact significantly with a Community Policing Variable (when agencies apply community policing practices in investigations, the more

criteria they use to evaluate investigator performance, the more likely they are to negatively affect murder clearance rates). There were no significant interactions with the Community Policing Practices in Agencies (CPA) variable.

Overall, as the past research indicates (e.g., Chaiken, 1975; Horvath, Meesig & Lee, 2001), the role of investigators does not appear to have been significantly altered by changes in policing over the past three decades. And, as the present study demonstrates, the community policing effect on investigators (considered independently from organizational factors regarding investigators) is minimal. Percentages of investigators, investigator training, and investigator work with patrol officers have not been significantly altered by the advent of community policing practices, and some evaluation practices used in conjunction with community policing can negatively affect clearance rates.

Investigation Management

Three variables (Problems-Investigator, Problems-Productivity, and Problems-Public) are included in this Major Issue Area, and no significant interactions with either of the community policing variables was found. This means that agency investigation management efforts regarding problems (which is one of the main avenues that agencies can address in managing programs) are not significantly associated with community policing practices.

Past research (Chaiken, 1975; the team policing studies; Wellford & Cronin, 1999) indicated that management initiatives in agencies can affect investigative outcomes. Additionally, the Horvath, Meesig and Lee (2001) study reported that a small proportion of agencies had recently made innovative changes, or were planning major

changes, in their investigation programs. Although agencies have demonstrated that they can implement management initiatives, their current focus appears to be on internal issues that do not include the integration of community policing and investigations to any noticeable degree.

Investigative Support

Only one variable (Technology) is included in this Major Issue Area, and it was found to interact significantly with one community policing variable. Agencies that practice community policing in investigations and provide investigators with increased access to crime records and files are more likely to have high murder clearance rates. No significant interactions were found with the Community Policing in Agencies (CPA) variable, or with either of the community policing variables in the other two models. However, this finding, together with the previously noted positive effects of technology on burglary clearance rates, clearly demonstrates that this type of investigative support can play an important role, both by itself and in conjunction with community policing, in enhancing investigative outcomes. As the past research (Horvath, Meesig & Lee, 2001; Northrup, Kraemer & King, 1995) reports a growing emphasis among agencies on improving their technological capabilities, it is possible that, with proper focus and management, the positive effects of technology on clearance rates could increase also.

Investigative Effectiveness

Two variables (Goals-Traditional and Goals-Proactive) are included in this Major Issue Area. Neither was found to have any significant effect on clearance rates, and neither was found to have any significant interaction with the community policing variables with regard to clearance rates. In fact, the interactions between these two

variables and the Community Policing Practices in Agencies (CPA) variable minimized the significant positive effect that the CPA variable was found to have on murder clearance rates. The Horvath, Meesig and Lee (2001) study reflects that police rank the importance of traditional and proactive goals to be equally high. However, despite their high ratings, neither type of goal appears to be significantly associated with the enhancement of clearance rates or the integration of community policing and investigations. As community policing has been described as a fundamental shift away from traditional policing (Hickman & Reaves, 2001; Trojanowicz, Kappeler & Gaines, 2002), this suggests that, while agencies may consider traditional and proactive investigation goals to be similar in importance, they do not necessarily apply them in practice.

Summary

Community policing, the current dominant style of policing, can positively affect murder clearance rates. Relationships between community policing practices and investigation-related factors can have both positive and negative effects on clearance rates, which points to the need to manage the integration of community policing and investigations in a productive way.

The effects of community policing on clearance rates has different effects on different types of crimes. The more serious and visible a crime is in the eyes of the public, the greater the extent of the police response is likely to be, and community policing can enhance the effectiveness of that response. A better understanding of the dynamics involved might also improve the effectiveness of the police investigative response to less serious or visible crimes. The study results suggest that the effects of

community policing are related primarily to the collection of information to solve crime, and that the effects of technology are related primarily to the use of information to solve crime.

Police agencies can control the factors that are most likely to improve clearance rates. Organizational matters and technology (Investigative Support) are the two Major Issue Areas that offer the greatest potential for change. However, the absence of any significant relationship between community policing and agency problems and goals indicates that agencies in general lack management initiatives to promote the integration of community policing, investigations and technology in order to improve clearance rates in a purposeful way.

The Conceptual Framework

The conceptual framework of the crime continuum (Kuykendall (1982, 1986; Meesig, 1994; Unsinger, Rosa & Miller, 1977) can be used to interpret the study findings in a broader context. It can also be helpful in seeking direction regarding the development of more effective ways to collect and use information to solve crime.

To briefly review, the framework was described earlier essentially as viewing the crime act in terms of phases, time frames, spaces and sources of information. Its purpose is to identify the most potentially productive areas for collecting crime information, and to determine where in the crime continuum police investigative efforts can be most effective. Using the framework, it was argued that the Fugitive phase of the crime continuum is where it is likely that more criminals and sources of crime information about multiple reported and unreported crimes exist in neighborhood areas for longer

periods of time than in other phases. It was further argued that the traditional reactive, case-oriented police investigative effort is relatively ineffective in solving crime in part because the scope of the response is limited primarily to the reported locations of the Action and Escape phases of crimes after those phases had elapsed, and because it is so heavily dependent on the availability of crime information in those two phases. It was proposed that a more offender-oriented approach, combined with aspects of the community policing philosophy, could expand police investigative activities beyond those phases to seek sources of information in neighborhood areas during the Fugitive phase of crimes. The idea was that community policing can make an important contribution to the police criminal investigation process by improving relationships and exchanges of crime information between the police and people (the primary sources of crime information) who live and work in neighborhood areas, and by putting police in a better position to collect information from them for use in solving crime. In the following five sub-sections, the conceptual framework is used first to interpret the study findings in context, and then to suggest how it can be helpful in integrating community policing and investigations specifically with regard to burglaries and technology. Finally, some observations are made with regard to the definition of the police criminal investigation process and the applicability of the conceptual framework to other Major Crime Categories.

Study Findings and the Conceptual Framework

The results of the present study are generally consistent with the perspectives drawn from the conceptual framework. It was found that community policing does in fact improve some crime clearance rates, but that it has differential effects according to

crime types. These effects were characterized as being related to the seriousness, visibility and investigative response associated with the different crime types. The seriousness of a crime can affect its visibility, which in turn can determine the extent of the police investigative response. The traditional police response is focused on the Action and Escape phase locations of a crime, even though by the time the police respond, and probably for a long time after their response, the offender is likely to be in a neighborhood area in the Fugitive phase. However, it was found that community policing practices, which generally focus on developing working relationships with people who reside in neighborhood areas, can improve the effectiveness of the traditional police investigative response for murder and robbery crimes, which are characterized by relatively high levels of seriousness and visibility.

The conceptual framework suggests that the effectiveness of the police response to crimes characterized by low levels of seriousness and visibility can also be enhanced by integrated community policing and investigation programs that extend the police investigative response to the collection of information regarding these crimes that is available in the Fugitive and other crime phases. As community policing and investigation programs are both subject to internal agency control, agencies have it within their power to manage them in ways that can improve the effectiveness of their investigation function. But the study findings also show that agency management initiatives in the Investigation Management and Investigative Effectiveness Major Issue Areas are not associated with either the integration of community policing and investigations or the enhancement of clearance rates. No clear evidence was found of a viable management effort among agencies in general that links these programs in a

purposeful way to address agency problems and goals. However, agencies have expressed a common interest in learning more about this type of effort.

Thus, the conceptual framework and study findings make a case for agencies to develop comprehensive agency management initiatives designed to systematically integrate community policing and investigations in order to improve clearance rates. Such initiatives could further enhance the benefits already demonstrated in the study regarding the effects of community policing on violent crimes characterized by high levels of seriousness, visibility and investigative response. But it is also with respect to burglary, and quite possibly other property crimes, that important benefits could be realized.

Burglary and the Conceptual Framework

Burglaries are characterized by typically low levels of seriousness, visibility and investigative response, which are important reasons why they suffer from low clearance rates. Public and legal conceptions of seriousness may be the most difficult for police to influence. However, the development of management initiatives that focus on increasing the visibility of crimes specifically to patrol officers, who are the critical link between community policing and investigations, seems to be within the current capabilities of most police agencies.

Take, for example, a patrol officer who is familiar with a neighborhood area, and with the people and activities in that area, and who is also trained to recognize that information regarding less serious crimes with inherently lower levels of visibility may be available in neighborhoods during the Fugitive phase of those crimes. Such an officer could be directed to orient his or her area knowledge and contacts toward the collection

of such information. Information obtained this way might be entirely innocuous, or it might not be readily associated with specific crime acts. However, it could also be an indication of crime-related behaviors that typically occur during the Fugitive (or perhaps the Disposition) phase of property crimes in general. Such indicators might include reports regarding the possession of questionably large amounts of money or income by people; unusual nocturnal activities; the presence, transportation or turnover of quantities of different types of property in neighborhood areas; the frequent presence of strangers; associations with flea markets, pawnshops or other suspected outlets routinely used to dispose of stolen property; etc. These are types of crime information that people may have but may not recognize as potentially crime-related. Or they may be reluctant to report the information because of their inability to connect it to specific known crimes.

Patrol officers and investigators who receive training that integrates community policing and investigation tasks could be alerted to seek access to information regarding these behavior patterns, and also could be trained to recognize them as being associated with crime acts that the police may have dealt with and documented in information systems in the past or in other areas of their jurisdiction. Thus, by training patrol officers to increase the visibility of indicators of less serious crimes, they may be in a better position to collect and use that information to solve crime.

Technology and the Conceptual Framework

Patrol officers play a key role in both community policing and investigation programs, and the study findings show that access to crime records and files (technology) improves clearance rates for burglary crimes, the types of crimes for which patrol officers have significant investigative responsibilities. By better understanding the role of

technology in this process, agency management initiatives can be designed to enhance the performance of patrol officers in both programs.

As discussed earlier, the two main sources of crime information for the police are people and things, which include physical evidence and information systems. With regard to physical evidence, it is necessary to recognize that most such evidence cannot identify unknown offenders. For example, the examination of a hair sample found at a crime scene cannot by itself reveal the exact identity of the person from whom it came. Laboratory examination can attempt to identify and classify the hair, but in order to link it to a suspect, an evidentiary standard must be taken from a person already identified as a suspect and compared to the sample. And even then, it may only associate a suspect's standard as being of the same type, or class, as the crime scene sample - it will not conclusively identify an offender. A fingerprint or DNA sample, however, can identify an individual with a higher degree of certainty than hair, but they also require either an evidentiary standard from a suspect or an information system (in which the standard from the suspect is already included) for comparison, plus a sophisticated analysis process (Horvath & Meesig, 1996).

By providing storage, search, matching and retrieval capabilities for some types of physical evidentiary standards (e.g., fingerprints, DNA) from suspects, information systems can play a critical role by enhancing the ability of the police to identify otherwise unknown suspects based on physical evidentiary samples alone. The computerization of information systems and the volume of people whose evidentiary standards are included in the systems can significantly enhance this capability with regard to these types of physical evidence. It is well recognized that technological developments regarding the

forensic analysis of physical evidence and their related information systems offer great potential for the investigation process. The big problem, however, is that the best documented information currently available (Eck, 1983; Ericson, 1981; Greenwood, Chaiken & Petersilia, 1977; Horvath & Meesig, 1996; Horvath, Orns & Siegal, 1998; Voelker & Horvath, 1997) indicates that physical evidence is collected only in less than 10% of police investigations, and that evidence that can identify otherwise unknown suspects (fingerprints and DNA samples) consist of only a portion of this small amount. Additionally, evidence processing laboratories and computerized information systems, while growing apace, also remain relatively limited in their ability to respond in a timely manner to current police physical evidence processing needs (Horvath, Meesig & Lee, 2001).

Computerized information systems can, however, play a critical role as repositories of crime information from people, and it is people who provide the great bulk of crime information to the police. Such information is included in information systems containing crime records (e.g., arrest reports, written statements, investigation reports, case disposition records, crime statistics) and investigative support files (crime histories, evidence lists, stolen property data, intelligence information). Just as computerized fingerprint and DNA sample information systems can provide the identity of otherwise unknown suspects to police based on physical evidence samples, they can provide increased visibility of crime information from people to patrol officers that may be otherwise unknown to them. They can enhance the ability of patrol officers to link information collected and reported by themselves and other police during the Action and Escape phases of crimes with crime indicator information collected in neighborhoods by

themselves and other police during the Fugitive phase of the same and other reported crimes, in an effort to solve crime. The present study finding regarding the positive effect of technology on burglary clearance rates indicates that this may already be the case. The finding regarding the positive effect on murder clearance rates in agencies that practice community policing in investigations and provide investigators with increased access to crime-related records and files also indicates the essential role that community policing can play in this dynamic. Moreover, information systems can also in some instances increase the opportunity for police to prevent and detect crimes as well, by providing greater access to information that might allow them to observe or interrupt criminal behaviors in the Planning and other phases.

Preventing, Detecting and Solving Crime

In the context of the conceptual framework and the study findings, the limitations of the traditional reactive, case-oriented police investigative approach to crimes in the Visible Crime Category are addressed by identifying the need for management initiatives to develop a broader, more expansive and encompassing community-oriented approach. This extended view of the police criminal investigation process distinguishes between the reactive police role, wherein they respond mainly to reported crime, and a more proactive role, wherein they develop strategies that enhance the effectiveness of their resources by actively engaging the community in collecting more and better information that could improve their ability to prevent crimes from occurring, detect unreported crimes, and solve more reported crimes. Accordingly, the description of the police reactive investigation process that was presented earlier in this study as the collection and use of

information to solve crime can be expanded for the community-oriented approach to include the collection and use of information to prevent, detect and solve crime.

Other Major Crime Categories

In summary, the conceptual framework can be used to describe the study findings in terms of the traditional, reactive case-oriented investigation of crimes in the Visible Crimes Category that are characterized by both high and low levels of seriousness and visibility. It can also be used to understand the role of technology (computerized information systems) in investigations, and how community policing has the potential to extend the collection of crime information to locations in all crime phases.

As the extent of police information collection and investigative activities expands beyond the traditional, reactive case-oriented focus on the Action and Escape crime phases and into the Fugitive and other phases, they become more useful in dealing with crimes and investigative activities in the other (Victimless, Occupational, Organized and Political) Major Crime Categories. The visibility of many serious crimes in these categories (e.g., drug-related, counterintelligence and terrorist activities) is characteristically low, and the prevention and detection of such activities becomes paramount. Although an in-depth exploration of such an effort is beyond the purview of the present study, some pertinent issues are briefly described in the next section with regard to preventing, detecting and solving terrorism crimes in the Political Crime Category.

A Broader Perspective

In Chapter 2, the consequences of crime in our society were discussed in terms of some of the direct and indirect social costs, the relationships between the police and the

community, and the effects on our criminal justice system. Additionally, the general approaches used in policing to collect and use information to solve crime were reviewed. In Chapters 3 and 4, the role of community policing practices in agencies and in the investigation process was examined. The results reflect that community policing can affect crime clearance rates to some extent, and that it can improve organizational and technology related aspects of the investigation process as well. However, viewed in a wider context, it can be seen that the ramifications of ineffective community policing and investigation programs, particularly with respect to the collection and use of information to prevent and detect crimes, in addition to solving them, can extend well beyond the parochial interests of local police agencies and communities. They can have national security implications as well, and this has become the case even more so recently in light of the war on terrorism that began after the destruction of the twin towers of the World Trade Center in New York City and the attack on the Pentagon in the Washington, D.C. area by terrorists on September 11, 2001.

Collecting Crime Information

Numerous governmental and non-governmental programs exist in our society that are designed specifically to appeal to the general public in order to collect crime-related information. Examples of some of these programs (e.g., "Ten Most Wanted Fugitives," "America's Most Wanted," "Crime Stoppers," "National Neighborhood Watch," etc.) are described briefly in Appendix A. The programs provide mechanisms, and often monetary rewards, to facilitate the collection of that information by appropriate legal authorities. The continuing successes of these programs clearly demonstrate that the general citizenry possesses a great deal of crime-related information that it is willing to

report, but that it does not report directly to the police, for whatever reasons. Additionally, it is likely that most of this information is reported after the Action and Escape phases of the crimes and during the Fugitive phase. This highlights the need for police to integrate and expand their community policing and investigation programs to include the collection of crime information in all phases of the crime continuum, if they are to prevent and detect crime, in addition to solving it.

Using Crime Information

With the advances in technology in recent years, both governmental and non-governmental organizations are developing computerized information systems in order to manage crime-related information more effectively. Examples include the Automated Fingerprint Identification System, Coplink, the Combined DNA Index System, and the Multi-state Anti-terrorism Information Exchange (see Appendix B for brief descriptions). These systems share the basic concept that, once information is collected, it must be sorted, classified and stored in a manner that provides for comprehensive searches in order to match and retrieve pertinent information in a timely fashion. Additionally, they address criminal history record matters and related cross-jurisdictional and inter-agency access issues. However, for local agencies their full value is dependent on the extent to which patrol officers and investigators in agencies can gain ready access to them and obtain pertinent information from them for use in ongoing investigation activities.

The Community Policing Link

Spurred on by the war on terrorism and the reported failures of federal-level agencies to exchange critical elements of information regarding the September 11, 2001,

attacks and the recent military interventions in Afghanistan and Iraq over the past three years, there has been an increasing cacophony of demands to improve technological systems to enhance information-sharing between agencies at the federal, state and local levels (National Commission on Terrorist Attacks Upon the United States, 2003). However, the often overlooked point to be made here is that community policing is a key link in this process, in that it relates to the collection and use of information not just between agencies, but within the agencies themselves, and more specifically, within local agencies, because by their very nature local agencies have the greatest access to the most crime information.. As reported in Chapter 2, there are about 18,000 police agencies in the United States, with a combined strength of over 660,000 sworn officers. This is a large, trained and experienced work force, and many of these agencies already participate extensively in many of the above programs. Additionally, they are generally ideally situated by the nature of their missions and relationships with their communities to take advantage of the opportunity to improve their internal information management processes. But, as the study findings indicate, there appears almost to be a disconnect in police management perspectives regarding community policing, the investigation process and technology, even though the integration of these three programs offers the potential to collect more crime information at the basic grass-roots level where it is most likely to be available to prevent and detect many types of crimes, including terrorism, as well as to solve them.

This disparity has other ramifications as well. Federal, military and state agencies are comprised of fewer than 150,000 sworn officers, and are generally constrained to operate within limited geographic and legal jurisdictions. In order to function effectively

across jurisdictions and in unfamiliar environments, they often must rely upon local agencies for their personnel resources, local area knowledge and expertise, and contacts with citizens and organizations. The contributions of local agencies can serve as a tremendous force multiplier for federal, military and state agencies, who in turn have resources, expertise and cross-jurisdictional contacts at their respective levels of government that can be helpful to local agencies that are prepared to make use of them.

Preventing, Detecting and Solving Crime

To the extent that the energies of local agencies are not directed and managed to effectively address both local and national crime priorities in a comprehensive conceptual context, the entire process of collecting and using information to prevent, detect and solve crime at the local and national levels is diminished. It is incumbent on local agencies to comprehend the importance and nature of their role and responsibilities in this context, and to recognize the potential risks and consequences of inaction to both their communities and to the country in general.

Study Limitations

Due to the nature and size of the sample of agencies used (about 9% of all general-purpose agencies, employing almost half of all the local agency sworn officers and investigators in the country), the study findings can be said to be generalizable to all local agencies with investigators in the United States. These findings, in summary form, are as follows:

- Agency-related factors affect some clearance rates.
- Some investigation-related factors affect some clearance rates.

- Community policing practices affect some clearance rates.
- The community policing effects are not associated with agency factors, but are associated with some investigation factors (mainly organizational matters and technology).

However, the study does have limitations that suggest that the findings should be viewed with appropriate caution and prudence. Some of the major limitations are identified below:

- As is common in most research, outcomes are driven by inputs. The use of clearance rates as dependent variables in this study is problematic for the reasons enumerated earlier, and the operationalization of clearance rates into dichotomous variables necessarily influences the statistical treatment of the data and limits the potentially observable effects of the predictor variables that were used. Different approaches to the use of clearance rates as dependent variables may produce different outcome effects.
- While the 24 predictor (Agency, Investigation and Community Policing Variables) variables are generally representative of the major factors influencing clearance rates, they are certainly not all-inclusive. This is demonstrated by the relatively weak Nagelkerke R^2 estimations of the proportion of variance that the predictor variables explained in the three logistic regression models.
- The manner in which the predictor variables were created influenced their performance in the models. The Community Policing Variables, for example, are composites developed from a variety of community policing-related factors. However, those factors were selected from agency responses in several large

surveys that addressed a variety of agency-related issues, of which community policing was just one. Survey data inherently suffer from reliability and validity concerns, and community policing is by no means a clearly defined concept that is systematically and consistently applied across agencies. Agency responses to different measures of the extent to which community policing practices are applied in agencies and in investigations will produce different results, and they may lead to conclusions other than those reported in the present study.

- The Community Policing Practices in Agencies (CPA) variable was found to significantly affect only murder clearance rates, and the Community Policing Practices in Investigations (CPI) variable shows no significant main effects on murder, robbery or burglary clearance rates. Only six significant interactions were found between the two community policing variables and the 22 other predictor variables in the three models. It is clear that community policing practices in general currently have only limited significant effects on murder and robbery clearance rates and no significant effects on burglary clearance rates. The conclusions drawn from the study findings must necessarily be considered in this context.

- The conceptual framework of the crime continuum and the characterizations of murder, robbery and burglary in terms of seriousness, visibility and investigative response that were used to explain the differential effects of community policing on clearance rates appear to have value in interpreting and understanding the study findings. However, they are descriptive in nature and have not been empirically tested.

Nevertheless, this present study employs an appropriate testing methodology on data obtained from multiple research projects. It has produced results that are generally consistent with, and a rational extension of, other research studies. Its findings present a reasoned argument for management initiatives to integrate community policing, investigations and technology in order to improve clearance rates. Therefore, it provides a useful basis for consideration with regard to future research.

While the analysis of aggregated national-level data is instructive, when macro level study results are applied to individual agencies, it is often necessary that they be constrained and informed by unique environmental and organizational factors that may not have been fully accounted for otherwise. In other words, the degree to which the present study findings and conclusions can be effectively applied in the operational context of individual agencies remains a testable question.

Future Directions

The Horvath, Meesig and Lee (2001) study described the lack of change in the investigation process over the past three decades despite police efforts to respond more efficiently, effectively and resolutely to the crime problem. It was suggested that this may be attributed to the lack of a clear perspective regarding the law enforcement role in communities as it relates to the general purpose and productivity of investigations.

It is argued here that the conceptual framework of crime, as described in the present study, can be used to provide that perspective. When applied by agencies in conjunction with the descriptions of the Major Crime Categories, the definition of the investigation process, the Major Issue Areas of investigations, and the study findings

regarding the effects of community policing and technology on investigative outcomes, agencies can develop a practical vision of the investigation process and a common frame of reference for affecting change in the process to meet the crime control needs of our society.

- The conceptual framework can serve as a management tool for agencies and investigators to assess the crime threat by projecting the time frames, locations and information sources regarding both individual crimes and types of crimes in each Major Crime Category.
- The conceptual framework can also serve as a management tool for agency leaders to ask "What is my organization doing in each of these phases to collect and use information to prevent, detect and solve crime?" and then ask "What do we need to do?" They can use the six Major Issue Areas as a guide to assess the full range of their activities in each phase by examining how they are organized to accomplish their mission; what the status of their officers and investigators is; whether they have the appropriate managerial policies and procedures necessary to do the job; what their investigative support requirements are; and how effectively they are defining the full scope of their mission and achieving their goals. These types of questions could eventually lead to a greater uniformity of professional standards and goals among agencies.
- Beyond examining their internal posture, the conceptual framework can be used by agencies to assess the extent to which they must interface with other agencies at the local, state and federal levels in order to work effectively to prevent, detect and solve crime.

- The conceptual framework can be used by agencies in the intelligence community in the same manner as used by law enforcement agencies to identify and clarify the full extent of their responsibilities and the degree to which they must interface in order to work effectively to prevent, detect and solve crime in all five Major Crime Categories.
- By using the conceptual framework, agencies can provide transparency and consistency to the overall crime control process so that political leaders at the local and state levels of government, and especially at the federal level, can make more publicly informed and supported decisions regarding legal and budgetary constraints that govern the law enforcement and intelligence process. This is particularly important as the legislative and executive branches of our federal government are currently considering the reorganization of our national intelligence agencies.
- The training of investigators has been a long recognized, and long neglected, need (Horvath, Meesig & Lee, 2001). However, a number of law enforcement training programs do currently exist at the federal (i.e., the FBI National Academy; the Federal Law Enforcement Training Center), state (Police Officer Standards and Training councils; police basic training academies) and local (in-house agency field training procedures) levels for law enforcement personnel (Meesig, 1995). Additionally, at least two-thirds of the agencies in the present study sample have programs that provide their officers with a minimum of eight hours of community policing training. These existing organizational processes can serve as a key medium for integrating the conceptual framework and study

findings into the organizational management and operational environments of police administrators, managers and line personnel

- At the university educational level, a content analysis was conducted of 21 of the major criminal investigation textbooks published between 1975 – 1995 (Horvath & Meesig, 1998). The analysis disclosed an overwhelming emphasis on practical and applied investigative techniques and little or no discussion of theoretical, conceptual or management-related investigative issues. Additionally, the role of the patrol officer (who conducts and solves most investigations, and is the key link between community policing and investigations) and the critical importance of interpersonal communications were underemphasized in the texts and, even as investigations-related research findings became known after 1975, only minimal change was noted in the more recently published texts in the analysis. Clearly, the instructional and educational materials used to educate the next generation of criminal justice professionals need to address in a more comprehensive way what we already know about the broader crime control, investigative and intelligence-related issues that threaten our society at all levels.
- If the purpose of research is to identify a problem, and then to describe it and understand it in order to manipulate it, then the research literature has clearly identified the problem of the ineffective traditional, case-oriented investigation process, and the Horvath, Meesig and Lee (2001) study has described it for the first time based on nationally representative data. This present study helps to understand the relationship between community policing and the investigation

process and how the various factors can affect investigative outcomes. A logical next step is to manipulate the data by testing it in local agencies.

One very real lesson that can be drawn from the past research is that the design, implementation and evaluation of change in police agencies in an operational environment can be a difficult process. Police agencies are faced with the problems of carrying out multiple functions in complex operational environments, and within the constraints of constantly evolving legal norms and diverse social expectations. There is, however, a growing body of literature specifically targeted at police audiences to guide them in effectively managing this type of change. For example, a recent article in Police Chief Magazine (a law enforcement-oriented periodical written specifically for practitioners) sets forth a "road map" for police leaders and managers to bring about "transformational change" in their agencies (Ford, Boles, Plamondon & White, 1999). The article incorporates aspects of organizational theory, applied research and experiential information into a six-stage process of exploration, commitment, planning, implementation, monitoring and institutionalization. By applying the conceptual framework within the context of this process, individual agencies may test the present study findings and conclusions regarding the integration of community policing, investigations and technology.

- Research is based on data, and the problems with the UCR that were enumerated earlier clearly indicate that we need better data regarding crime. Fortunately, since 1987, the development of the National Incident-Based Reporting System (NIBRS) has been under way (www.fbi.gov). Although it is a

more comprehensive formulation of the UCR program data, it is still not functional at the national level and it is limited to Visible crimes. Additionally, there is still a great research need for the development of comprehensive, recurring national data collection systems for crimes in the Victimless, Occupational, Organized and Political Crime Categories.

- Finally, over the course of the past four decades, the federal government has played a vital role in the direction and funding of research regarding criminal justice issues. The massive efforts to promote community policing in the 1990s and the current emphasis on technology regarding the development of forensics and computerized information systems are primary examples of this. Just as the conceptual framework and study findings regarding the integration of community policing, technology and investigations can provide a role in developing a clear perspective for agencies regarding the crime problem in our society, they can also serve as a tool for assessing the research needs and allocating the resources necessary to most effectively address the national crime threat, both internally and from abroad. Crime is, after all, a human behavior that exists only in the present, and people are the primary source of crime information. Law enforcement and intelligence communities must also rely on people to collect and use information to prevent, detect and solve crime. An unbalanced or disproportionate orientation of research programs that is not designed to counter this threat in a comprehensive and effective way does not serve the nation well.

APPENDIX A

APPENDIX A-1

Table 5 - Variable Scales and Reliabilities

Variable Name	Number of Items	Scale Range & Midpoint	Reliability (Cronbach's alpha)*
Patrol Officer Duties	16	16 (never perform any) – 64 (always perform all) 40	.8750
Investigators Work with Patrol Officers	3	3 (never on any tasks) – 12 (always on all tasks) 7.5	.5867
Investigator Evaluation	18	0 (no items used) – 18 (all items used) 9	.8557
Problems-Investigators	15	15 (none are problems) – 60 (all are large problems) 37.5	.8735
Problems-Productivity	4	4 (none are problems) – 16 (all are large problems) 10	.8635
Problems-Public	4	4 (none are problems) – 16 (all are large problems) 10	.7813
Technology	15	3 (none readily available) – 45 (all available on computer) 24	.8613
Goals-Traditional	4	4 (none are important) – 16 (all are important) 10	.7501
Goals-Proactive	5	5 (none are important) – 20 (all are important) 12.5	.8280
Community Policing Practices in Agencies (CPA)	7	-7.7 – 15.6 (z-scores) 0	.8027
Community Policing Practices in Investigations (CPI)	7	-12 – 15 (z-scores) 0	.7192

*Inter-item correlation (< .05 = weak; .05 - .08 = moderate; > .08 = high)

APPENDIX A-2

Table 6 - Pearson Correlations for Three Dependent Variables

		Murder Clearance Rates	Robbery Clearance Rates	Burglary Clearance Rates
Murder Clearance Rates	Corr	1.000		
	N	1404		
Robbery Clearance Rates	Corr	.574**	1.000	
	N	1404	1404	
Burglary Clearance Rates	Corr	.464**	.562**	1.000
	N	1404	1404	1404

* Correlation significant at the 0.05 level (2-tailed)

** Correlation significant at the 0.01 level (2-tailed)

Table 7 - Spearman's rho Correlations for Nine Categorical Variables

		Agency Size	Agency Type	Region	Decentra-lized	Generalist	Specialist	PO Training	PO Evaluation	Invr Training
Agency Size	Corr	1.000								
	N	1424								
Agency Type	Corr	-.090**	1.000							
	N	1424	1424							
Region	Corr	.166**	-.152**	1.000						
	N	1424	1424	1424						
Decentra-lized	Corr	-.219**	.144**	-.132**	1.000					
	N	1424	1424	1424	1424					
Generalist	Corr	.034	-.093**	.076**	.050	1.000				
	N	1424	1424	1424	1424	1424				
Specialist	Corr	-.161**	.020	-.123**	.368**	-.312**	1.000			
	N	1424	1424	1424	1424	1424	1424			
PO Training	Corr	.057*	.053*	-.059*	.053*	.031	.033	1.000		
	N	1424	1424	1424	1424	1424	1424	1424		
PO Evaluation	Corr	-.026	.042	-.084**	.026	-.021	.064*	.134	1.000	
	N	1424	1424		1424	1424	1424	1424	1424	
Invr Training	Corr	.007	.117**	-.043	.059*	.009	-.045	.219**	.066*	1.000
	N	1424	1424	1424	1424	1424	1424	1424	1424	1424

* Correlation significant at the 0.05 level (2-tailed)

** Correlation significant at the 0.01 level (2-tailed)

Table 8 - Pearson Correlations for Twelve Quantitative Predictor Variables

		CPA	CPI	PO Duties	Percent Invrs	Invrs Work PO	Invr Evalua-tion	Pblms – Invrs	Pblms-Produc tivity	Pblms-Public	Tech-nology	Goals-Trad'l	Goals-Proactive
CPA	Corr	1.000											
	N	1369											
CPI	Corr	.182**	1.000										
	N	1227	1279										
PO Duties	Corr	.023	.222**	1.000									
	N	1359	1272	1413									
Percent Invrs	Corr	.115**	.005	-.061*	1.000								
	N	1366	1275	1409	1420								
Invrs Work w/POs	Corr	.056*	.415**	.196**	-.013	1.000							
	N	1360	1278	1405	1411	1415							
Invr Evaluation	Corr	.192**	.395**	.141**	.072**	.213**	1.000						
	N	1369	1279	1413	1420	1415	1424						
Pblms-Invrs	Corr	.060*	.006	-.053	.071**	-.060*	.016	1.000					
	N	1325	1249	1373	1375	1372	1379	1379					
Pblms-Product'y	Corr	.022	.034	.002	.089**	-.003	.042	.534**	1.000				
	N	1350	1271	1397	1400	1397	1404	1369	1404				
Pblms-Public	Corr	.060*	-.004	-.063*	.061*	.000	.026	.508**	.432**	1.000			
	N	1347	1276	1394	1398	1395	1402	1367	1393	1402			
Tech-nology	Corr	.198**	.231**	.018	.071**	.125**	.226**	-.095**	-.067*	-.058*	1.000		
	N	1369	1279	1413	1420	1415	1424	1379	1404	1402	1424		
Goals-Tradit'l	Corr	.063*	.276**	.135**	.002	.140**	.198**	-.079**	-.095**	.099**	.139**	1.000	
	N	1356	1277	1403	1407	1403	1411	1372	1397	1395	1411	1411	
Goals-Proactive	Corr	.061*	.472*	.158**	.016	.161**	.229**	-.144**	-.114**	-.109**	.167**	.502**	1.000
	N	1337	1263	1382	1386	1383	1390	1353	1376	1375	1390	1386	1390

* Correlation significant at the 0.05 level (2-tailed)

** Correlation significant at the 0.01 level (2-tailed)

APPENDIX B

APPENDIX B

PROGRAMS FOR COLLECTING CRIME INFORMATION

Ten Most Wanted Fugitives

One of the better-known governmental programs is the FBI's "Ten Most Wanted Fugitives" list, which, since 1950, has solicited public assistance and offered rewards for information. This program has led to the capture of 145 of the most dangerous fugitives from justice (www.fbi.gov, 2003).

America's Most Wanted: America Fights Back

Since 1988, the commercial television show, "America's Most Wanted: America Fights Back," has recreated crimes and profiled many of the FBI-identified fugitives for the purpose of motivating viewers to provide information regarding the fugitives. Thus far, the show claims to have generated information that has resulted in the capture of more than 750 fugitives (www.amw.com, 2003).

Crime Stoppers

Begun in New Mexico in 1976, there are now more than 1,000 "Crime Stoppers" programs worldwide. These are non-profit volunteer civilian charity organizations that enable citizens to anonymously report crime information to law enforcement authorities. Crime Stoppers programs often offer rewards through the local news media for information received, and they claim that their worldwide programs "have solved over half a million crimes and recovered over 3 billion dollars worth of stolen property and narcotics" (www.crimestopusa.com, 2003).

National Neighborhood Watch Program

Since the late 1960s, the National Sheriff's Association has sponsored the "National Neighborhood Watch Program." In this popular countrywide program, police agencies work together with citizens on organizing local neighborhood activities, particularly in rural and suburban areas, that are designed to prevent and reduce burglaries and disorders (www.usaonwatch.org, 2003).

Amber Alert Plan

Created in 1996, the "Amber (America's Missing: Broadcast Emergency Response) Alert Plan" is a cooperative voluntary partnership between law enforcement agencies, the National Center for Missing and Exploited Children, and media broadcasters that disseminates information to the public regarding missing children and their suspected abductors (http://www.missingkids.com, 2003).

PROGRAMS FOR USING CRIME INFORMATION

Terrorism Information and Prevention System (TIPS)

The controversial "Operation TIPS" was proposed by the Department of Justice in 2002, to train citizens who work in selected industries to observe and report suspicious activities related to the war against terrorism (www.citizencorps.gov, 2003).

Internet Alert System

The Internet Alert System, which is a four-part software package developed by a commercial company, is now reportedly being used by law enforcement agencies across the country to provide information to participating businesses, residents, schools and interested citizens by e-mail and access to Web sites regarding local area crimes, offenders and threats. The system also permits participants to respond by submitting crime information back to the police (Crime and Justice News, 2003).

Automated Fingerprint Identification Systems (AFIS)

AFIS systems, which began developing in the 1960s, use computerized networks to capture and scan fingerprints, and to search large automated local and national databases for matching impressions, with the intent of identifying people of interest to legal authorities. Similarly, the FBI and many state agencies are developing automated systems that store computerized information regarding DNA analyses of biological samples, which are often collected from crime scenes and known felons. These systems are also used for searching and matching samples to identify people of interest (www.fbi.gov, 2003).

Coplink

"Coplink," a commercial computer software package developed in 1998, is now available to law enforcement agencies to "find hidden connections among people and events." It claims to do this by searching through "millions of police records, from 911 calls to homicide investigations" to match up pieces of information related to specific individuals and crime incidents (Mnookin, 2003).

Combined DNA Index System (CODIS)

The FBI's CODIS project became operational in 1998, and is designed to allow federal, state and local crime laboratories to exchange and compare DNA profiles electronically at the national level. Currently, over 100 laboratories participate in the system, and it contains more than 200,000 profiles submitted by 24 states and the FBI (www.fbi.gov, 2003).

MATRIX

The Multi-state Anti-terrorism Information Exchange (MATRIX) system is a one-stop, federally funded search engine designed to enhance the exchange of sensitive terrorism and criminal information between local, state and federal agencies. It combines criminal, motor vehicle and other restricted government records with billions of commercial files. It can produce dossiers on individuals that include address histories, crime information, property and business records within minutes. Currently, fewer than 15 states participate in this system (www.matrix-at.org, 2003).

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