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by

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ABSTRACT

THE OUTCOMES AND PROCESSES OF DETECTIVE DECISION MAKING IN BURGLARY AND ROBBERY INVESTIGATIONS

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This study described the cognitive processes associated with detective decision making and examined the influence of case (victim and offense) characteristics on detectives' decisions to (1) select a case for a follow-up investigation and (2) allocate varying amounts of time to a follow-up investigation. The data were gathered from a medium sized Midwestern police department. Three methodologies were used. First, case characteristics were coded from burglary (N = 857) and robbery (N = 305) investigative reports and the resulting data were used in OLS regression analyses to determine the relationship between case characteristics and decision outcomes. Second, an information board was used to collect verbal protocol data from burglary and robbery detectives (N = 10). These data provided insight into the depth, content, and linearity of search. Third, observations (370 hours) of detectives allowed for additional insight into the factors which influence decisions and the cognitive processes associated with decision making. The OLS multiple regression analyses

showed that victim age, race, sex, income, employment status, and identifiability of the stolen property did not affect decision making. Dollar value of the stolen property, strength of suspect information, and presence of physical evidence did have a significant impact on decision making. Victim type, victim desire for effort, victim-offender relationship, presence of a suspect vehicle description and license number displayed inconsistent effects across decisions. Observations and verbal protocol analyses showed interaction and dependency effects among many of the variables and illustrated the extensive use of linear decision making strategies by investigators. These findings are discussed in relation to their theoretical contribution to the detective, police, and criminal justice decision making literature.

To Kara
who has made countless sacrifices
and provides so much support

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CHAPTER ONE

INTRODUCTION

Chapter One contains an introduction to the research. The problem and purpose of the study are discussed and the definitions used in the study are presented. Chapter One concludes with an overview of the dissertation.

Problem

The criminal justice system, that mechanism of society created to deal with crime and criminals, can be conceptualized as a sequential series of decision stages. Research attention has been directed at examining the critical decisions of participants within each of the stages. For example, the victim's decision to report a crime has been analyzed (Hindelang & Gottfredson, 1976; Laub, 1981), along with the police decision to arrest (Black, 1971; Smith & Visher, 1981; Visher, 1983; Worden & Pollitz, 1984; Smith, 1987) and investigate (Bynum, Cordner, & Greene, 1982), judicial decision to grant pretrial release

(Frazier, Bock, & Henretta, 1980; Nagel, 1983), prosecutor decision to charge (Adams & Cutshall, 1987; Albonetti, 1986; Schmidt & Steury, 1989), and plea bargain (Holmes, Duadistel, & Farrell, 1987), juridic decision to convict (Brooks & Doob, 1975), judicial decision to sentence (Baldus, Pulanski, & Woodworth, 1983; Platt-Jendrek, 1984; Welch & Spohn, 1986), and parole board decision to grant release (Von Hirsch & Hanrahan, 1979).

While most of these stages and participants have been the objects of extensive research attention, little research has focused specifically on investigative decisions by detectives. In fact, only one study in the literature has taken this as its primary focus (Bynum, Cordner, & Greene, 1982). Other studies with a broader focus on the investigative process (e.g., Eck, 1983; Greenwood, Chaiken & Petersilia, 1977; Sanders, 1977) have contributed only indirectly to our understanding of detective decision making.

There appear to be at least two reasons for the lack of research on this topic. First, unlike many other decision stages in the justice process (e.g., arrest, plea bargain, convict, sentence) the decision to investigate is characterized by a relatively low degree of visibility (Ericson, 1981). The decision occurs "backstage" and therefore, is not often open to public scrutiny. As a result, the topic may be simply overlooked by researchers.

Second, detective decision making has been widely portrayed as being "routine" (Eck, 1983; Greenwood et al., 1977; Sanders, 1977) where the strength of the evidence is assumed to automatically determine the disposition of the case. Given this widely shared (but untested) reality, few researchers have deemed this topic as particularly worthy of research attention.

The lack of research on detective decision making is troubling. A substantial amount of police resources and activities are allocated to follow-up investigations yet we know very little about this decision stage. From the perspective of developing an adequate understanding of police decision making in total, this is inherently unsettling. Relatedly, students of investigative management have long called for strategies to increase the capacity of the police to apprehend offenders. However, a prerequisite for improving the effectiveness of the criminal investigation process is a sound understanding of the process. As Ericson (1981) explains, "perhaps most of the proposals for reform have little impact because reformers know too little about what it is they are trying to reform" (p. x). One dimension of a more complete understanding of the investigative process is the identification of the premises and cognitive processes associated with detective decision making.

Purpose of the Study

The purpose of this study is to analyze detective decision making. To do so, two broad research questions are addressed. First, what case (victim and offense) characteristics influence the decisions to (1) select a case for a follow-up investigation and (2) allocate varying amounts of time to a follow-up investigation? As research has illustrated, the selection of a case for a follow-up investigation does not necessarily mean that attention is given to the case (Bynum et al., 1982; Greenwood et al., 1977; Sanders, 1977). Thus, to provide a thorough inquiry, both decisions within the follow-up investigation are examined.

Second, how do detectives treat case information in making decisions? Whereas the first question is most concerned with specifying the relationship between the input (information) and the outcome of the decision process (the decision), the second question is concerned primarily with describing the cognitive processes involved in decision making. As such, the two questions emerge from different theoretical perspectives on decision making and require the use of different methodological approaches in order to be addressed. By studying the decision behavior of detectives through the "outcome" and "process" perspectives, it is possible to attain a better understanding of investigative decision making and ultimately, the complexities of the criminal investigation process.

A Definitional Model of the Investigative Process[1]

The municipal police organization provides three valued outputs -- service, order maintenance, and law enforcement (i.e. "crime control") (Wilson, 1968). These outputs also comprise the major categories of work activities within the police organization. "Service" refers to the provision of assistance to the public in regard to non-crime related matters. "Order maintenance" involves activities oriented around maintaining the public peace. "Crime control" activities involve intervening in situations where a law has been violated and the identity of the perpetrator needs to be determined. Conceptually, the criminal investigation process can be placed within the crime control aspect of the police mission.

Typically, criminal investigations are of a "reactive" nature, where the police respond to the report of a criminal offense. Some investigations however, especially those associated with vice offenses, are proactive or police initiated (see Manning, 1980; Wilson, 1978). The focus of this study is on the more typical "reactive" type investigation.

At the simplest level, the criminal investigation process involves activities oriented around the collection of crime related information in order to: (1) determine if a crime has been committed; (2) identify the perpetrator(s); (3) apprehend the perpetrator(s); and (4) provide evidence

to support a conviction in court (Eck, 1983; Greenwood et al., 1977; Kuykendall, 1982). With the arrest rate as the primary measure of investigative effectiveness, arresting offenders (attaining the second and third objective above) has been most often portrayed as the overriding concern of investigators (Greenwood et al., 1977; Waegel, 1981).

According to Willmer (1970), the criminal investigation process can be viewed as a battle between the police and the perpetrator over crime related information. That is, the perpetrator, in committing a crime, emits signals (information) which the police attempt to collect through investigative activities. If the perpetrator is able to minimize the amount of information available for the police to collect, or if the police are unable to recognize the information left behind, then the perpetrator will not be apprehended and therefore, the perpetrator wins the battle. Conversely, if the police are able to collect a significant amount of signals from the perpetrator, then the perpetrator will be apprehended and the police win.

For definitional purposes, the (reactive) criminal investigation process can be organized into several stages: initial discovery and response, preliminary investigation, follow-up investigation, and closure. Each of these stages is discussed below.

Initial Discovery and Notification

In order for the criminal investigation process to be invoked, the police must discover that a crime has taken place and then notify the victim, or the victim (or witness) must discover that a crime has occurred and notify the police. In the vast majority of cases it is the victim who first discovers that a crime occurred and who contacts the police (Greenwood et al., 1977). Then, in most cases, a patrol officer is dispatched to the crime scene.

Initial Investigation

If, upon arrival, the officer actually defines the matter as a crime (see Black, 1971), then an initial (or preliminary) investigation is conducted. The initial investigation consists of the immediate post-crime activities of the patrol officer who arrives at the crime scene. The officer may proceed to gather information ("signals") concerning the crime by questioning the victim and/or witness(es), searching the crime scene, etc. The specific activities engaged in by the officer may be a function of the particular case at hand. All of the information relating to the crime would then be recorded in an initial investigation report.

Follow-up Investigation

If a perpetrator is not arrested during the initial investigation, the case may be selected for a follow-up investigation -- the second stage whereby "signals" may be collected. Typically, detective supervisors take the initial investigation reports from the case pool which appear relevant to their unit (e.g., "Homicide," "Crimes Against Persons," etc.) and then decide which of the cases should receive a follow-up investigation. If a case is selected for a follow-up, then the detective assigned to the case must decide what activities to perform in the investigation. Depending on the particular case, the follow-up investigation may involve a variety of activities ranging from recontacting and re-interviewing the victim, to submitting evidence to the crime laboratory, to seeking out informants (Eck, 1983). The information which is cultivated as a result of these activities would be recorded in a follow-up report. It is the complexities of the follow-up investigation as well as the case transition process, from the initial investigation to the follow-up investigation, that is of direct interest in this study.

Closure

At any time during the investigative process the case may be closed and investigative activities terminated. For instance, the case could be closed due to a lack of leads or

as a result of the offender being apprehended. In the latter situation, the crime would be considered "cleared by an arrest" and primary responsibility for the case would shift from the police department to the prosecutor's office. However, the detective(s) assigned to the case would still have the responsibility of assisting the prosecutor in preparing the case for prosecution.

Definition of Terms

The following are definitions of terms used in this study.

Crime: A crime is the commission of an act prohibited by criminal law or the failure to act as required by criminal law for which punishment is prescribed (Reid, 1989). Specifically, the present study focuses on the crimes of burglary and robbery. As defined by the F.B.I. Uniform Crime Report:

> "Burglary" refers to the unlawful entry of a structure to commit a felony or theft. The use of force to gain entry is not required to classify an offense as a burglary. (For purposes of this study attempted burglary is not included.)
>
> "Robbery" refers to taking (or the attempt to take) anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or by putting the victim in fear.

Detective: A detective holds a specialized position within the police organization being concerned primarily with the "law enforcement" function of the police mission. Typically, a detective becomes involved in a criminal

investigation only after the initial investigation has been completed by a patrol officer. Normally, a detective has the sole responsibility of conducting a follow-up investigation.

Detective Sergeant: A detective sergeant is the first line supervisor of detectives within an investigative unit. Detective sergeants have the primary task of deciding which initial investigation reports to assign to detectives for follow-up investigations.

Follow-up investigation report: Follow-up reports are produced by detectives and identify the information cultivated as a result of follow-up investigation activities.

Investigator: For purposes of this study, an investigator refers to either a detective or a detective sergeant.

Official complainant records: Official complainant records are reports completed by patrol officers which detail the nature of the police-citizen contact. In criminal incidents, these reports contain information on the victim and the offense which is obtained through the initial investigation activities. These reports are also known as initial investigation reports. Complainant records are maintained within the police department.

Patrol Officer: A patrol officer has broad and diverse responsibilities within the municipal police organization. A patrol officer is concerned with the order maintenance,

service, and law enforcement functions of the police mission. In the case of a criminal incident, a patrol officer typically responds to the scene of the crime (and/or the location of the victim) and is responsible for conducting the initial investigation.

Personal crime: A personal crime involves the victim directly -- the crime is an attack on the individual. If the crime is directed toward an individual who is a representative of a business establishment, then the crime would be considered a crime against a business. The personal crime of interest in this study is robbery.

Property crime: A property crime is directed toward a victim's property and hence, is an indirect attack on the individual. Again, the property of a business establishment may be the focus of the crime and, in such an instance, the crime would be considered a crime against a business. Burglary is the property crime of interest in this study.

Victim: For purposes of this study, a victim is an individual (either a representative of a business or not) that is the object of a criminal act (burglary or robbery) and suffers injuries and/or material losses as a result of the act.

Overview of the Study

In Chapter Two, the decision tasks of detectives are discussed, the analytical foundations for research on decision making are outlined, and previous research is

reviewed. In Chapter Three the research site is described. In Chapter Four, the methodologies used in this study are outlined. The results of the study are presented in Chapter Five. Chapter Six contains the discussion and conclusions.

Footnotes

1 This discussion represents a general and generic definitional overview of the criminal investigation process. The mechanics of the investigative process, as found in the present study site, are discussed in Chapter Three.

CHAPTER TWO

LITERATURE REVIEW

Chapter Two begins by discussing the decision tasks of detectives. Attention then turns to the analytical approaches used in studying decision making. Studies which have adopted these approaches in analyzing decisions are reviewed. Through the review, the propositions and research questions addressed in the study are developed.

The Decision Tasks of Detectives

Myriad studies have highlighted the discretionary nature of police work. Discretion, in this context, refers to "autonomy of decision making" (Black, 1968, p. 25). As stated by Davis (1969), "a public officer has discretion whenever the effective limits on his power leave him free to make a choice among possible courses of action or inaction" (p. 4). Simply put, discretion exists when one has the freedom and authority to make decisions. A decision, at the most basic level, is a choice among alternatives based on

information and guided by preferences.

Just as the criminal justice system can be conceptualized as a sequential series of discretionary decisions, so too can the criminal investigation process. While a model of the criminal investigation process was presented earlier (Chapter One), the purpose of the following discussion is to describe the two critical decision tasks of investigators which correspond to the two stages of the follow-up investigation process: the case selection decision and the "time allocation" decision.

Case Selection Decision

Case selection, or screening, the first stage of the follow-up investigation process, typically involves a detective sergeant deciding whether or not the initial investigation report should be assigned to a detective for a follow-up investigation. Depending on the department (or the decision maker) the case screening decision may reflect an aided-analytic strategy, an unaided-analytic strategy, or a non-analytic strategy (Beach and Mitchell, 1978). It is also possible that in some departments, the screening decision does not technically exist.

According to Beach and Mitchell (1978), an aided-analytic strategy requires the decision maker "to apply a prescribed procedure utilizing tools such as pencil and paper, mathematics, calculator, or computer, etc. in a

guided, systematic attempt to analyze the decision and evaluate its components" (p. 441). Specifically, if a "screening decision model" is used, the decision may resemble the aided analytic strategy. As defined by Eck (1983), the use of a screening decision model...

> involves simply making a decision to assign or not to assign investigative resources to cases by applying a fixed set of criteria to information contained in preliminary investigative reports (p. 274).

Gaines, Lewis, and Swanagin (1983) add...

> A case screening process identifies those cases which have the potential for being solved and allows investigators to spend more time on them by eliminating from officers' caseloads cases which probably cannot be solved due to absence of substantive evidence (p. 22).

If an investigative unit used a case screening model, each initial investigation report would be examined in light of the case screening assessment criteria ("solvability factors") and then the utility of a follow-up investigation would be mathematically determined. For example, in the decision model presented by Eck (1983), various information elements (e.g., presence of suspect identification, fingerprints, etc.) are combined in a weighted sum and those cases with a score higher than a certain predetermined score are selected for a follow-up investigation.

While the advantages of a case screening system have been noted (Hastings, 1980), there is often much resistance given to the formal use of this type of device in investigative decision making (Eck, 1983). As a result, some departments have instituted policies which identify

certain solvability factors to sensitize decision makers to the information on which the screening decision should be based; but weights are not assigned to these elements. As such, the decision to select a case for a follow-up investigation often resembles an "unaided-analytic strategy." With an unaided-analytic strategy, "an attempt is made to explore the dimensions of the problem but... no tools are used, and the decision maker restricts processing to the confines of his or her mind" (Beach & Mitchell, 1978, p. 441). They continue, "unaided analytic strategies have the advantage of reducing information processing by restricting attention to only part of the available information about the alternatives, but they have the disadvantage of introducing possible irrationalities" (p. 442).

The screening decision may also reflect a non-analytic strategy where "little information is procured or processed, little time is needed, and the rules do not require that the decision be decomposed nor that its multiple aspects be considered" (p. 442). Examples include flipping a coin or such conventions as "eeny, meeny, miney, mo..." Decisions made by habit, an "extreme example of rote application of a rule," (p. 442) are also non-analytic in nature.

When the screening decision does not technically exist in a department, all initial investigation reports are given to the detectives and the detectives determine not necessarily which ones to select for an investigation, but

which cases should receive the most attention. This is a subtle distinction in practice but one important for analytical purposes.

The literature on detective decision making has tended to consider the follow-up investigation process as a whole and as a result, the selection decision as a distinct stage in the process has not received much attention. When the screening decision does receive comment, it is usually only in passing. For example, Sanders (1977) notes, "the sergeant would give one of us researchers the batch of reports to go over and determine which ones would be worked and which ones would not. The selection process was so routine that we rarely made mistakes" (p. 77). No other discussions in the text are devoted to the selection decision. Even Bynum et al. (1982), in an empirical study which focused specifically on detective decision making, did not discuss the screening decision.

There exists at least two reasons for this lack of attention. First, the structure and organization of the investigative process in the departments previously studied may not have provided for a "screening decision." Or, second, the decision may have been simply ignored, overshadowed by the other decision stage within the follow-up investigation -- the "decision" as to how much time to devote to an investigation. It is to this stage of the investigative process that attention now turns.

Time Allocation Decision

To be accurate, the decision concerning how much time to spend on a given follow-up investigation is not really a single decision, as is the screening decision, but rather a series of interrelated decisions. That is, upon receiving and reviewing an initial investigation report, a detective does not decide how much time to spend on the investigation. Rather, after receiving the report, the detective may (or may not) decide to contact the victim, then he may (or may not) decide to query departmental records, then he may (or may not) decide to interview witnesses, etc. It is only after the detective decides to discontinue any further investigative activities that one can identify the total amount of time the detective spent on the investigation. With a slightly broader perspective, one form of decision making at this stage is case prioritization (Eck, 1979; Ericson, 1981). Detectives are likely to be more willing to spend time on certain cases than on others. Conceptually, case prioritization represents the aggregate outcome of many decisions, decisions which are likely to be at least partially based on victim and offense characteristics.

The selection decision is relatively well defined and structured with much (but perhaps not all) of the information considered in making the decision likely to be contained within the initial investigation report (Eck, 1983). On the other hand, decisions concerning the amount

of time to devote to a case may be based on not only information contained within the initial investigation report but also on other information gathered directly by the detective through investigative activities. While the search for information in a screening decision could be completed within a matter of minutes, the search and collection of information in the "time allocation decision" could take place over a period of hours, days, or even weeks, thus increasing the complexity of this stage of the follow-up investigation.

Previous research on detective decision making has focused most directly on this decision stage. In the previous studies, the time spent on a follow-up investigation, or investigative effort, has been measured in several different ways. For example, Bynum et al. (1982), in an analysis of detective decision making in a "medium sized midwestern police department," examined the extent to which follow-up investigations were conducted on a sample of 1,124 personal and property crimes reported during a five week time period in 1978 and 1979. The "extent of follow-up investigation" variable had the values of (1) reviewing report only; (2) making a few phone calls; and (3) conducting a more extensive investigation including examining the crime scene, searching for additional witnesses, interviewing suspects, etc. Data on the variable were obtained from a review of follow-up investigation reports completed by detectives. In describing

investigative effort, the researchers found that "82 percent of all cases that come to detective attention receive little or no investigative effort" (i.e., fall into categories one and two; p. 315).

Eck (1983), in his analysis of preliminary and follow-up investigations and their relative impact on the solution of burglaries and robberies, collected data on 320 robberies and 3,360 burglaries from three police departments -- DeKalb County (GA), St. Petersburg (FL), and Wichita (KS). These departments ranged in size from 374 officers to 445 officers. Data on the time spent by detectives on case investigations came from "activity-time logs" completed by detectives for every case worked. Three measures of investigative time were used: (1) the number of days the case remained open; (2) the number of days on which the case was worked; and (3) the number of minutes actually spent investigating a case. In regard to the last measure of time, Eck found that a mean of 167 minutes (2.8 hours) were spent on robbery follow-up investigations across all study sites and 77 minutes (1.3 hours) were spent on burglary investigations.

In Ericson's (1981) qualitative (observation) study of detective work in "a jurisdiction in the Canadian province of Ontario" (p. 24), it was found that approximately 30 percent of all cases that came to the attention of the detective bureau received one or more hours of investigative time. In this study, time spent on investigations was

estimated on the basis of detailed field observations.

According to the study by Greenwood et al. (1977), less than half of all crimes reported to the Kansas City (MO) Police Department "received serious consideration by an investigator" (p. 109). Specifically, based on their review of the department's "computer-readable case assignment file," it was found that 63 percent of robberies, 36 percent of non-residential burglaries, and 30 percent of residential burglaries received "at least half an hour of a detective's time" (p. 130).

In regard to how investigative time was actually spent, Ericson (1981) noted that detectives interviewed one or more victims, complainants, and/or informants in 31.5 percent of the cases and suspects in 27.5 percent of the cases. Eck (1983) found that as investigations progressed, they became less routine. The activities performed later in the investigation were more uncommon than those performed earlier in the investigation. For example, the frequency with which victim interviews and crime scene checks were conducted declined over each investigative day while the frequency of suspect interviews increased.

With a basic understanding of the decision stages within the follow-up investigation process, attention turns to a discussion of the approaches used to study decision making and a review of the related literature.

Analytical Foundations for Research on Decision Making

Studies of human decision making have taken one of two analytic approaches (Hogarth, 1974; Payne, 1976). In the first approach, referred to here as "outcome oriented," the focus is on specifying the relationship between information stimuli and the decision outcome. Typically, information "input" is represented in terms of cues to which the decision maker responds. Through the use of statistical procedures (e.g. linear regression), the strength of the stimulus-response relationships can be measured and decision choices can be predicted. While implicit assumptions about cognitive processes are made in such models, the actual nature of the processes remain hidden within an inaccessible "black box" (Hogarth, 1974).

The "process oriented" approach, the other stance adopted by decision making research, attempts to cast light into the "black box" of outcome oriented studies by examining the thought processes involved in decision making. Accordingly, the intent is to describe <u>how</u> decisions are made (Abelson & Levi, 1985). Studies which have attempted to illuminate (or "trace") the processes of decision making have employed several methods. One of the more formal and rigorous methods involves the collection and analysis of decision maker's verbal protocols. Usually with the aid of an information board (see Payne, 1976), decision makers are asked to "think aloud" while performing a decision task. The resulting verbal statements are

recorded, broken into short task assessment phrases, and then content analyzed for evidence of different decision strategies (Payne & Ragsdale, 1978; Payne, 1976). Through an analysis of the verbal data, the processes by which information input is transformed into decision outcomes can be described.

Observationally based studies can also be used to gain insight into the cognitive processes of decision makers. In such studies, observers ask decision makers, during their normal course of work activities, to describe the cognitive processes which were involved in resolving a given decision situation (Mastrofski & Parks, 1990). While this method of collecting process data is often viewed as being less rigorous than verbal protocol analysis, it offers the potential advantage of keeping the study of decision making it its natural environment. It also appears most appropriate when the decision tasks are not naturally well defined or structured. Regardless of the approach however, both "methods" can provide at least <u>preliminary</u> insight into how decision makers go about making decisions.

Decision making studies which have adopted the "outcome" and "process" approaches are discussed below. The research highlighted in the outcome oriented section focuses specifically on decision making within the criminal justice system. The review of process oriented studies focuses on the psychological literature of process tracing and highlights the contributions a process oriented approach can

make to the more traditional outcome oriented inquiry. In each of the sections, the general research propositions and questions which are addressed in this study are developed.

Decisions as Outcomes

Myriad studies have attempted to identify the case characteristics (stimuli) which influence the decision responses of participants within the justice system. In defining case characteristics, one can distinguish between "legal" and "extra-legal" factors. Legal factors include characteristics of the offense such as the amount and type of evidence and the amount of harm done (Nagel, 1983). Extra-legal factors include most often characteristics of the victim and/or offender such as sex, age, race, etc.

Since an ideal in the administration of justice is the fair and equal application of the law, it is considered irrational to base decisions on "irrelevant" extra-legal considerations. As explained by Karmen (1984)...

> The Fourteenth Amendment to the Constitution promises "equal protection of the law" for all citizens. The standard interpretation of this pledge is that [the criminal justice system] ought to regard factors like social class, race, nationality, religion, and sex as irrelevant to the administration of the law (p. 164).

Because of the complexity and uncertainty inherent in many decision making tasks within the criminal justice system however, it is difficult to structure or "program" decision situations with rules, guidelines, and instructions (Lipsky, 1980; Thompson, 1967). Therefore, since there is often not

any method by which extra-legal factors can be absolutely ruled out of decision making, research to understand the stimuli which affect decision making must examine the relative importance of both sets of variables.

Victim characteristics and decision making

A great deal of previous criminal justice decision making research has demonstrated how characteristics of <u>offenders</u> affect decisions of legal actors (e.g. Platt-Jendrek, 1984; Nagel, 1983; Spohn, Gruhl, & Welch, 1987). However, at the criminal investigation stage, the offender is often unknown to the police and the victim (U.S. Department of Justice, 1988). Therefore, it is more appropriate to examine how the characteristics of <u>victims</u> influence decisions.

Black's (1976) theory of the behavior of law provides the foundation for much of the research which has attempted to predict the relationship between victim characteristics and criminal justice decision making. Black presents a series of propositions which attempt to predict the way law behaves, or in specific reference to criminal law, the <u>responses</u> of decision makers within the criminal justice system (e.g., victims, police, judges, etc.).[1] Law, as defined by Black, is "governmental social control" which can vary quantitatively (as well as qualitatively)[2] across time, space, and individuals. By the quantity of law, Black refers to the extent to which legal action is initiated,

invoked, or applied. For example, an arrest by the police is more law than no arrest, a long prison sentence is more law than a short prison sentence and, in specific reference to this study, an investigation is more law than no investigation.

According to Black, the amount of law invoked as a result of a particular incident varies with the perceived seriousness of the incident; with more seriousness corresponding to "more law." However, unlike other conceptions of seriousness where seriousness is attributable to the objective nature of the act itself (e.g., amount of harm done), seriousness is viewed by Black as a function of the contextual (or social structural) factors of the victim and/or offender. For example, if two homicides occurred and only the characteristics of the victims varied (i.e., offender characteristics were unknown or controlled for), then the perceived seriousness of the incidents (and the amount of law invoked) would vary in the way predicted by the theory. The social structural variables of importance in Black's theory are: stratification, morphology, culture, organization, and social control.

In the discussion which follows, the propositions associated with these variables, as derived by Black, are presented. Previous criminal justice, police (patrol officer), and detective decision making research which has examined these propositions is then reviewed.

Stratification. Stratification, as discussed by Black,

is "the vertical aspect of social life... the uneven distribution of material conditions of existence" or "inequality of wealth" (p. 11). According to Black, one's wealth is equatable to one's position or rank in society. Holding the offender's rank constant, "law varies directly with the rank of the victim" (p. 26). Because crimes against the wealthy are viewed as more serious than crimes against the poor, according to Black, "the lower ranks have (or get) less law than the higher ranks" (p. 17). Black adds that "it is even possible to rank entire neighborhoods. This may be done either according to the distribution of wealth among residents or according to the wealth of the... area itself" (p. 20). Black explicitly states, "the wealthier the victim of a crime, the more likely is an investigation by the police" (p. 27). Accordingly:

> Victim income influences the amount of law invoked as a result of a criminal incident.
>
> Specifically, wealthy crime victims get more law than poor victims.

In addition, according to Black, sex is associated with one's rank (p. 17) -- with females receiving less law than males. Therefore:

> Victim sex influences the amount of law invoked as a result of a criminal incident.
>
> Specifically, male crime victims get more law than female crime victims.

In examining the relationship between victim income and

decision making, Smith and Klein (1984) found that "the police respond differently to interpersonal disputes depending on the socioeconomic status of the neighborhood in which it occurs" (p. 475). Specifically, the police were more likely to make arrests in low status areas (which were presumably populated with lower status victims). Smith (1987) reported that "economic status of the neighborhood," measured by the percent of households with an annual income below $5,000, had a significant impact on police decision making in violent disputes with an arrest more likely to occur in lower status neighborhoods. Black (1970) however, found that the police were less likely to file a felony complaint report when the complainant was a "blue collar" individual as opposed to a "white collar" individual.

In reference to the affect of victim income on detective decision making, Ericson (1981) found that "cases with high status or otherwise special victims were sometimes given immediate priority because of orders that could ultimately be traceable to the upper echelons of the police organization" (p. 79). Waegel (1981) explained that in burglary cases the victim's class position had a "decisive impact" on the amount of attention given to the case. According to Bynum et al. (1982), burglary cases with victims who lived in census tracts with higher median incomes were more likely than victims who lived in tracts with lower incomes to receive extensive investigative attention. This variable was not found to affect decision

making in personal offenses however.

Concerning the influence of victim gender on decision making, Williams (1978), in a comprehensive examination of the role of the victim in the prosecution of violent offenses, found that cases with female victims were more likely to be rejected by the prosecutor. Similarly, Smith and Klein (1984) and Smith (1987) found that the police were significantly less likely to arrest in situations involving female complainants. With detective decision making however, Bynum et al. (1982) found that the victim's gender did not have an effect on decision making in either property or personal offenses.

Morphology. Morphology is defined as "the horizontal aspect of social life, the distribution of people in relation to one another, including their division of labor, networks of interaction, intimacy, and integration" (p. 37). Individuals "may participate more or less in social life itself. Some participate fully and usefully; others stay at the margin, hardly involved at all" (p. 48). "Some people work; others idle or loiter" (p. 48). According to Black, employment status serves as an indicator of integration. Hold constant the offender, "and law varies directly with the integration of the victim" (p. 53). Black claims that crimes against integrated (employed) victims are viewed as more serious than crimes against non-integrated (not employed) victims, and as a result, those who are non-integrated get less law than those who are integrated.

"The closer to the center he is... the more extensive is an investigation of his problem" (p. 53). Accordingly:

> Victim employment status influences the amount of law invoked as a result of a criminal incident.
>
> Specifically, victims who are employed get more law than victims who are not employed.

In addition, "people vary in the degree to which they participate in one another's lives" (p. 40). "It is possible to measure relational distance in many ways, including the scope, frequency, and length of interaction between people, the age of their relationship, and the nature and number of links between them in a social network" (p. 41). According to Black, "law is inactive among intimates, increasing as the distance between people increases" (p. 41). Therefore:

> The victim-suspect relationship influences the amount of law invoked as a result of a criminal incident.
>
> Specifically, victims who are not acquainted with the suspect get more law than victims who are acquainted with the suspect.

Previous research, to one degree or another, has addressed both of these predictions. Only one study in the literature, Bynum et al. (1982), examined the impact of victim employment status on decision making. They found that employment status did not affect the amount of effort devoted to follow-up investigations.

The victim-suspect relationship has been found to influence decision making. According to Schmidt and Steury (1989), domestic assault cases in which victims shared a

dwelling with the offender and were sexually intimate with the offender prior to the assault were less likely to be continued. Similarly, Albonetti (1986) discovered that victims who were acquainted with the suspect were more likely to have their cases discontinued than were victims who were strangers to the suspect.

According to Black (1971), the police were more likely to arrest an offender when he was a stranger to the victim as opposed to when the offender and the victim were friends, acquaintances, or relatives (also see Smith & Visher, 1981; LaFave, 1965; Friedrich, 1977). Similarly, Worden and Pollitz (1984) found that in domestic disturbance situations, the offender was more likely to be arrested if the disputing parties were not married. No studies have examined the impact of the victim-offender relationship on detective decision making.

Culture. Black defines culture as "the symbolic aspect of social life including expressions of what is true, good, and beautiful" (p. 61). Because of variance in ideas, information, languages, and customs, some societies and "individuals have more culture than do others" (p. 64). While education is presented as the primary indicator of culture, Black also suggests that certain groups in a society are closer to the mainstream of culture or are more "conventional." Holding the offender's characteristics constant, "law varies directly with the conventionality of the victim" (p. 70). For example, a crime against a

cultural minority is claimed to be viewed as less serious than a crime committed against a cultural majority and consequently, it is predicted that cultural minorities receive less law than cultural majorities. Therefore:

> Victim race influences the amount of law invoked as a result of a criminal incident.
>
> Specifically, white crime victims get more law than non-white victims.

Concerning the influence of racial identification, Smith (1987) found that the police were significantly less likely to make an arrest when the situation involved a black complainant. However, Smith and Klein (1984) did not find such a relationship. As for detective decision making, Waegel's (1981) observations led him to believe that the victim's race had an impact on the amount of attention given to the case. However, Bynum et al. (1982) found that victim race did not affect the extent of effort spent in a follow-up investigation.

Organization. Black refers to organization as "the corporate aspect of social life, the capacity for collective action" (p. 85). "Measures of organization include the presence and number of administrative officers, the centralization and continuity of decision making, and the quantity of collective action itself" (p. 85). "Any group is, by definition, more organized than an individual on his own" (p. 86). According to Black, "law varies directly with organization" (p. 86) and "the more organized the victim of a crime, the more serious is the offense" (p. 95).

Therefore:

> The type of victim influences the amount of law invoked as a result of a criminal incident.
>
> Specifically, businesses get more law than non-businesses.

Only one study in the literature, Albonetti (1986), assessed the impact that the type of victim (individual or organized collective) had on decision making. In this study, the type of victim did not affect the decision of whether or not to continue prosecution at the post-indictment stage.

Social Control. Black describes social control as "the normative aspect of social life. It defines and responds to deviant behavior specifying what ought to be... It divides people into those who are respectable and those who are not" (p. 105). Respectability refers to one's normative status, the degree to which a person has been subject to law and other forms of social control. According to Black, "law varies directly with respectability" (p. 112) with more respectable victims receiving more law than non-respectable victims. Since an indicator of victim respectability was not available in the data collected here, a hypothesis relating to this component of Black's theory could not be formulated or tested.

In addition to the victim characteristics identified by Black, previous research has also suggested that the preferences, or wishes, of the victim are important in

predicting decision responses of criminal justice actors. In reference to police decision making, when the victim prefers no arrest, the police will likely comply with the request. In fact, in a study by Smith and Klein (1984), the strongest determinant of an arrest was the complainant's request to have the offender arrested (also see Berk & Loseke, 1981; Black, 1980; Friedrich, 1977; Lundman, Sykes, & Clark, 1978; LaFave, 1965). Hence, on the basis of previous research, one could expect that:

> Victim desire for formal action influences the amount of law invoked as a result of a criminal incident.
>
> Specifically, victims who desire formal action get more law than victims who do not desire formal action.

Finally, it is of interest in this study to explore the impact of victim age on decision making. Only Bynum et al. (1982) included age as a predictor of decision outcomes. They found that victim age did not influence the amount of effort devoted to follow-up investigations. Due to the lack of "theory" and previous research on this issue, a hypothesis on this issue is not specified.

In sum, while the relationship between victim income, victim-suspect relationship, and victim preferences and criminal justice decision making is generally well established and congruent with Black's theory, the impact of gender, racial identification, employment status, and victim type is not. Furthermore, when focusing exclusively on the research which has examined the impact of victim

characteristics on detective decision making in follow-up investigations, it becomes apparent that the empirical evidence is scant and often contradictory. As a result, theoretical benefits could be realized from the provision of additional evidence on these issues.

Offense characteristics and decision making

Along with victim characteristics, a host of studies have examined the impact of offense ("legal") characteristics on criminal justice decision making. These studies, either implicitly or explicitly, have tested an alternative conception of seriousness from that proposed by Black (1976); specifically, that seriousness of the offense is reflected not through the social structural characteristics of the participants but through the nature of the offense -- most commonly, the extent of injury, the amount of property loss, and the involvement of a weapon. Also considered an offense characteristic, but not reflective of "seriousness," is the strength of the evidence. In the discussion which follows, research findings concerning the influence of offense characteristics on decision making are reviewed and, on the basis of this review, hypotheses are developed.

Degree of Injury. Several studies have addressed the expectation that more injury is reflective of a more serious offense, and therefore deserving of "more law." According to Schmidt and Steury (1989), victims who suffered moderate

or severe injury were more likely to see the case result in a charge against the defendant. However, in relation to police decision making, numerous studies (Berk & Loseke, 1980; Smith & Klein, 1984; Worden & Pollitz, 1984; Smith, 1987) found that the likelihood of arrest did not increase if one of the disputing parties was injured (but see Waaland & Keeley, 1985). In regard to detective decision making, Bynum et al. (1982) found that the degree of injury did not have a significant impact on the extent of the follow-up investigation in personal offenses ("injury" was not included in the analysis of property offenses).

In accord with the original expectation concerning the relationship between degree of injury and decision making, the following is hypothesized:

> Degree of injury influences the amount of law invoked as a result of the criminal incident.
>
> Specifically, cases which involve more injury will get more law than cases which involve less injury.

Value of Property Loss. Similar to the degree of injury, one might expect cases with much property loss to be viewed as more serious, and more deserving of attention, than cases which involve little property loss. Adams and Cutshall (1987) and Bynum et al. (1982) are the only available studies which have examined the effect of property loss on decision making. Adams and Cutshall (1987) found the value of property loss to be of "marginal significance" in the decision to prosecute. Bynum et al. (1982) found

that the extent of property loss did not have a significant impact on the extent to which property offenses were investigated ("loss" was not included in the analysis of personal offenses). On the basis of the original expectation, it is hypothesized that:

> The value of property loss influences the amount of law invoked as a result of a criminal incident.
>
> Specifically, cases which involve much property loss get more law than cases which involve little property loss.

Weapon Use. Several studies have examined the impact of weapon use on decision making. The rationale for this examination is that crimes which involve a weapon have a potential for greater personal harm and are therefore "more serious" and deserving of increased attention. In a study conducted by Schmidt and Steury (1987), it was found that cases which involved the use of a weapon in the commission of the crime were more likely to proceed to court. However, Nagel (1983) found that the commission of a crime with a weapon did not affect the pre-trial release decision. In reference to police decision making, Smith and Klein (1984) and Smith (1987) found that the presence of a weapon at a dispute did not significantly increase the probability of arrest. No studies of detective decision making have examined this relationship. In accord with the underlying rationale for this examination, the following is suggested:

> Weapon use influences the amount of law invoked as a result of a criminal incident.
>
> Specifically, crimes committed with a weapon get more law than crimes not committed with a weapon.

Evidence. Adams and Cutshall (1987), Albonetti (1986), Burnstein, Kelly, and Doyle (1977), Schmidt and Steury (1989), and Forst and Brosi (1977) found that the strength of the evidence was an important factor in the prosecutor's determination of whether or not to issue charges or continue prosecution of an offender; the stronger the evidence, the more likely charges would be pursued. A similar relationship between strength of the evidence and disposition has been found concerning the decisions to release on recognizance or bail (Frazier, Bock, & Henretta, 1980), sentence (Platt-Jendrek, 1984), and release on parole (Heinz, Heinz, Senderowitz, & Vance, 1976).

Previous research also indicates that evidence plays a major role in the police decision to arrest -- "the stronger the evidence in the field situation, the more likely is an arrest" (Black, 1971). Specifically, Black (1971) found that police were more likely to make an arrest when they actually witnessed a criminal incident as opposed to merely learning of the incident through a citizen report.

Prior research on the criminal investigation process suggests that detective decision making is also affected by the strength of evidence. For example, in the seminal research by Greenwood et al. (1977), it is stated that "investigators choose the [cases] they will work by considering... whether sufficient leads are present to indicate that the chances of clearing the crime are high" (p. 110). The observational studies conducted by Sanders

(1977) and Ericson (1981) also come to the same general conclusion. Eck (1983) provides additional support to this conclusion by finding that robberies receive more investigative attention than burglaries because first, robberies are viewed as more serious than burglaries and second, robberies have a greater potential for better evidence. Additionally, Bynum et al. (1982) found that the amount of evidence was strongly related to the extent of investigative effort in property offenses (i.e., more evidence led to a more extensive investigation) but not in personal offenses. In the Bynum et al. (1982) study, "amount of evidence" was measured as an interval level index through the presence of ten solvability factors: was there a witness? can suspect(s) be named? can suspect(s) be located? can suspect(s) be described? can suspect(s) be identified? is the stolen property traceable? is there a significant M.O. present? is there physical evidence present? has evidence technician work been performed?

In accord with the previous research which has found a relationship between strength of evidence and decision making responses, it expected that:

> Evidence influences the amount of law invoked as a result of a criminal incident.
>
> Specifically, the stronger the evidence, the more likely the case will receive more law (where "more law" equals "selected for an investigation").

In regard to the amount of time spent on the follow-up investigation, one might expect that when there is weak

evidence in the case there will be little time spent on the investigation because the detective does not expect much chance of solution regardless of the activities performed (Eck, 1979). Similarly, when the evidence associated with a crime is very strong, the detective may not need to spend much time on the investigation because the suspect can easily be identified and arrested. However, cases in which the evidence is of moderate strength may lead to much time being spent on the investigation because the investigation has a reasonable chance of solution if further information becomes available. Therefore:

> Crimes with evidence of moderate strength get more law than than crimes with weak or strong evidence (where "more law" equals "more time spent on an investigation").

In sum, similar to the research on the relationship between victim characteristics and decision making, there is empirical support for the claim that criminal justice decision making is influenced by offense characteristics. While one might infer the same to be true in regard to detective decision making, the relationship here is generally not well established. As a consequence, there is a need for additional research to assess the impact of offense characteristics on detective decision making.

Decisions as Processes

The process tracing approach to decision making allows for the examination of the actual cognitive processes

invoked to perform a decision task. Inferences are made as to the nature of these processes not on the basis of mathematical computations as with statistical models, but rather on subjects' search patterns and/or verbal reports of the cognitive steps taken in order to make a decision. Currently, in the criminal justice decision making literature, there are no studies which have attempted to cultivate such data. This is unfortunate because process data would contribute additional insight into the complexities of detective decision making and ultimately further our understanding of the investigative process.

Process tracing data have been collected from decision makers performing various decision tasks including consumer product selections (Payne & Ragsdale, 1978; Olshavsky, 1979), clinical diagnosis (Einhorn, Kleinmuntz, & Kleinmuntz, 1979; Hogarth, 1974), securities selection (Clarkson, 1962), and problem solving type tasks such as verbal analogies (Grundin, 1980), geometry theorems (Greeno, 1976) and playing chess (DeGroot, 1975).

Many of these studies used an information board to present the stimuli for the decision task. An information board consists of a matrix of alternatives (the thing to choose; e.g., an apartment) and dimensions (information about the thing to choose; e.g., cost of rent) for a particular decision situation. Information boards are either mechanically operated (Payne, 1976) or computerized (Gilliland, 1990). With mechanically operated information

boards, cards with pieces of information are placed face down to form the matrix of information and then subjects are asked to manually turn over the cards on which information is desired. Computerized information boards provide for the display and search of information by pressing computer terminal command keys. Regardless of the type of information board used, information search patterns can be observed through manifested actions and supplemented with verbal reports of thoughts and actions.

The majority of process oriented studies have been conducted in laboratory settings with student subjects.[3] As a result, this methodology has not been well tested in field settings. Given this factor along with the observation that detectives (and the police in general) are protective of their work, suspicious of outsiders, and generally non-cooperative (cf. Ericson, 1981), an issue of concern in this study is whether it is feasible to collect process data through the use of an information board from detectives in the field setting (this issue is discussed in the final chapter).[4]

The process tracing literature has identified two decision making strategies -- linear (compensatory) and non-linear (non-compensatory) (Payne, 1976). An individual who uses a linear strategy in making a decision examines a constant number of dimensions across alternatives, mentally assigns weights to each of the dimensions, sums the negative

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and positive weights for each alternative, then chooses the alternative with the highest overall score (Payne, 1976). A linear strategy of decision making is evident in the following verbal protocol obtained from a student selecting a hypothetical apartment:

> O.K., we have an A and a B. First look at the rent for both of them. The rent for A is $170 and the rent for B is $140. $170 is a little steep, but it might have a low noise level. So we'll check A's noise level. A's noise level is low. We'll go back to B's noise level. It's high. Gee, I can't really very well study with a lot of noise. So I'll ask myself the question, is it worth spending that extra $30 a month for, to be able to study in my apartment (Payne, 1976, p. 378).

Apparently for this individual less expensive rent could compensate for a higher noise level in selecting an apartment.

Conversely, with a non-linear strategy, a variable number of dimensions across alternatives are examined (Payne, 1976) and "a low score on one dimension cannot be compensated for by a high score on another dimension" (Ford et al., 1989, p. 77). Within the non-linear strategy, several "substrategies" of decision making have been identified -- conjunctive, disjunctive, lexographic, and elimination by aspect (Svenson, 1979; Olshavsky, 1979; Payne, 1976). A <u>conjunctive</u> strategy is used when the decision maker assigns an acceptable value to each important dimension, and if the acceptable value is not obtained for each dimension, then the alternative is eliminated. With the <u>disjunctive</u> strategy, the decision maker once again establishes acceptable values for each important dimension.

However, the alternative which is chosen exceeds the minimum value on at least one dimension while all of the other alternatives would be equal or fall below the minimum value. With the lexicographic strategy, dimensions are rank-ordered in terms of importance. An alternative is then selected based on the ranking of the most important dimension. Finally, a decision maker who uses the elimination by aspect strategy once again rank-orders dimensions within each alternative but the alternatives in which a dimension does not meet a minimum value are eliminated from consideration. A non-linear (elimination by aspect) decision strategy is apparent in the protocol below:

> Since we have a whole bunch here, I'm going to go across the top and see which noise levels are high. If there are any high ones, I'll reject them immediately (Payne, 1976, p. 375).

Apparently, an attractive dimension of an alternative, such as inexpensive rent, could not compensate for a high noise level.

Statistical models of decision making assume that decision makers use linear decision strategies. Research has shown, however, that under certain conditions this assumption is inaccurate. For example, increased task complexity, generally defined in terms of the amount of information available to the decision maker, has been associated with the use of non-linear, non-compensatory decision strategies (Payne, 1976; Onken, Hastie, & Revelle, 1985; Olshavsky, 1979). Non-linear strategies serve to

limit the amount of information to be processed by the decision maker thus simplifying the decision task (Onken et al., 1985). These simplifying strategies may be used early in the task and then, when some of the alternatives have been eliminated from consideration, the decision maker may switch to linear strategies (Payne, 1976).

Given the amount of information available to detectives when making decisions, and therefore the seemingly complex nature of the decision tasks, one might expect that detectives employ, to a large extent, non-linear decision making strategies. Previous research on investigative decision making has not addressed this expectation. Therefore, another question addressed in this study is the extent to which detectives use linear (vs. non-linear) strategies in making decisions.

Process tracing research has also illustrated that decision making involves search processes -- processes which vary in depth, sequence, content, and latency (Ford et al., 1989). Of direct concern in this study are depth of search and content of search. Depth of search refers to the proportion of total information examined prior to rendering a decision. Through an examination of a decision maker's depth of search, it is possible to infer the existence of linear or non-linear decision making strategies (Payne, 1976). For example, searching a large proportion of information implies a linear strategy while the search of a small proportion indicates the use of a non-linear

strategy. In addition, as explained by Payne (1976), searching a constant number of dimensions (information) across alternatives implies the use of a linear strategy while searching a variable number of dimensions across alternatives suggests that the decision maker was using non-linear strategies (also see Ford et al., 1989). Therefore, it is useful to examine the proportion of case information searched by detectives in making decisions.

Content of search refers to the specific elements of information examined by a subject in making a decision. From an examination of search content, one can specify the dimensions upon which decisions are (at least partially) based. For example, Payne and Ragsdale (1978) attempted to describe the extent to which certain consumer product attributes (e.g., price) were mentioned (and presumably considered) in making decisions to purchase grocery items. Similarly, through an analysis of detectives' search patterns and verbal reports, insight into the case factors most often considered in decision making can be obtained and the influence of other factors on decision making can be illuminated. An examination of search content offers an alternative means by which the hypotheses concerning case characteristics and decision making can be examined. Accordingly, the process data will be used to identify the information elements (case characteristics) which are most important to detectives in making decisions.

Summary

Chapter Two has provided the theoretical and analytic foundation for this study. The case selection decision and the time allocation decision were presented as the two major decisions of detectives. The outcome and process oriented approaches were identified as the two approaches used in the study of decision making. Propositions which predict the decision responses of detectives were derived from Black's theory of the behavior of law and previous research, and research questions concerning the cognitive processes of detectives were developed on the basis of the process tracing literature.

Footnotes

1 As Hembroff (1987) illustrates, the theory is not limited to predicting the actions of individuals within the criminal justice system. Rather, the theory predicts when and how much law will be invoked by any individual in all types of situations. While the decisions may differ by the actor, all can be equated with "more or less law" as discussed by Black.

2 Qualitatively, law can take several forms: penal, compensatory, therapeutic, or conciliatory.

3 Clarkson, 1962; Hogarth, 1974; and Payne and Ragsdale, 1978, are notable exceptions.

4 As discussed earlier in this chapter and in detail in Chapter Four, along with the information board as a method of collecting process data, the less rigorous method of field observations and interviews was also used to collect data on how detectives make decisions. The use of this method in this manner is also a move into unchartered territory (Mastrofski & Parks, 1990).

CHAPTER THREE

RESEARCH SITE

Chapter Three contains a description of the study site. The city in which the police department is located is briefly described, the features of the police department are discussed, and the mechanics of the criminal investigation process within the department are outlined.

The City

The City of Landau (a pseudonym) is a medium sized midwestern city with a (1990) population of approximately 130,000 people, approximately 33 percent of which are non-white. The greater metropolitan area has a population of approximately 450,000 people. The city is located on 34 square miles of land. In 1980, the city contained 49,516 households. Landau is administered by a council-mayor form of government. The major employers in the City of Landau are manufacturing and assembly plants, state government, retail, and health care. The unemployment rate in 1986 was 7.0%.

The Landau Police Department

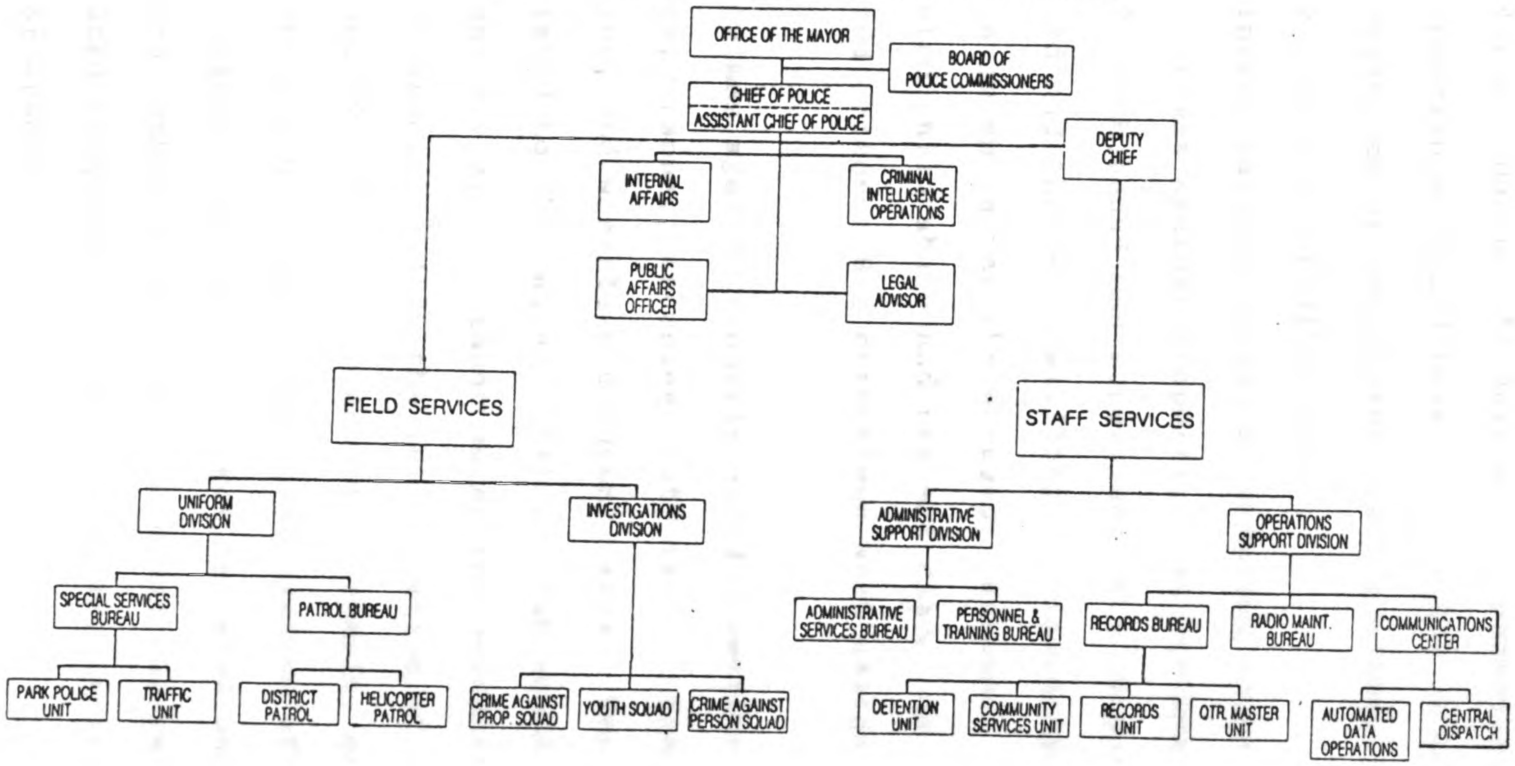
At the time of this study, the Landau Police Department employed 245 sworn officers, eleven non-sworn officers, and 91 civilians. In 1989, the department responded to 128,442 calls for service. The operating budget for 1989 was $12,388,532.

In Figure 1, the organizational chart of the L.P.D. is illustrated. As seen, the department is managed by a chief of police. A deputy chief and assistant chief are responsible for the two major operating components of the department -- staff services and field services, respectively. The staff services component consists of the administrative support division (administrative services, personnel and training) and the operations support division (records, radio maintenance, and communications center). The field services component consists of the uniform division (special services and patrol) and the investigations division. Each division within the department is supervised by a captain.

During this study, 30 of the 245 sworn officers in the department were assigned to the investigations division. Twenty-two of these personnel were the rank of detective, one was a patrol officer temporarily assigned to the division, four were sergeants, two were lieutenants, and there was one captain. All of the detectives worked primarily a fixed shift of 8 a.m. to 4 p.m., Monday through

FIGURE 1

LANDAU POLICE DEPARTMENT ORGANIZATIONAL CHART



Friday. One detective was on-duty every Saturday from 8 a.m. to 4 p.m. During off-duty hours, detectives (and any of the supervisors) could have been called in to investigate (or supervise) major crimes such as homicides, bank robberies, serious assaults, etc.

The investigations division contained three squads: "youth," "crimes against property," and "crimes against persons." Each squad was supervised by a sergeant. The youth squad had the responsibility for investigating crimes in which a juvenile was the accused. However, they also investigated child abuse and neglect cases, as well as all sex-related crimes. Six detectives were assigned to this squad.

The crimes against property squad investigated burglaries, arsons, larcenies, auto thefts, fraud, malicious destruction, and worthless document cases. Ten detectives were assigned to this squad. Within this squad, there was an informal division of labor among the detectives -- detectives specialized in the investigation of one or, in some cases, two types of crime. For example, one detective specialized exclusively in the investigation of burglaries and as a result, this detective got assigned only burglary cases. Four other detectives (including the patrol officer) investigated burglaries along with either larcenies, auto thefts, or arsons.

The crimes against person squad was responsible for

investigating homicides, assaults, robberies, and other lesser crimes against the person. Eight detectives were assigned to this squad. Like the crimes against property squad, there was an informal division of labor among the detectives. For example, two detectives specialized in robbery investigations and as a result, these two detectives got assigned the vast majority of robbery cases. Homicide investigations were assigned, on a rotating basis, to teams of typically two detectives from the squad. Six of the eight detectives were routinely used in homicide investigations.

Prior to their assignments as detectives, all but one of the detectives in the investigations division were assigned to the patrol unit as patrol officers. All of the detectives were assigned on a permanent basis to their respective squads. When a detective position became vacant in another squad, detectives were able to apply for the position. If an inter-squad transfer occurred, it was usually from the youth squad to either the crimes against person or crimes against property squad.

Detectives were evaluated on their performance annually. Detectives were judged on the basis of "job knowledge," "cooperation," "acceptance of supervision," etc. They were not formally evaluated on the disposition of the cases they were assigned. The same performance evaluation form was used for all municipal employees in Landau.

The investigations division occupied one of six floors in the police department building. Each squad had its own partitioned area on the floor.

The Investigative Process at the Landau Police Department

The criminal investigation process of the Landau Police Department was similar to the process described in Chapter One. However, in order to understand the context and complexities of the L.P.D. criminal investigation process, it is helpful to describe the details of the process.

During the time of this study, the L.P.D. operated a Differential Police Response (DPR) strategy of call management (McEwen, Connors, & Cohen, 1986). As part of this strategy, certain types of citizen reports are identified as not requiring mobile police responses. Instead, these designated complaints are taken over the telephone by police telephone operators. At the L.P.D., complaints handled in this manner were assigned a "No Report Forthcoming" (NRF) status and were very rarely brought to the attention of the investigations division.

The decision of whether or not to dispatch a mobile police unit for the complaint was the discretion of the telephone operator but was guided by departmental policy. According to departmental policy, for a report to be taken over the telephone, none of the following circumstances could exist:

1) there are known suspects, or a description of an accused subject or vehicle is available
2) there is a witness to the crime
3) there is evidence to be tagged into the Quartermaster (evidence room) or processed at the scene
4) the incident involved the use of weapons or resulted in serious injury
5) property loss or damage exceeds $1,000
6) there is damage to public or police property
7) the offense is related to another offense in which a report is required
8) important or potentially useful information regarding the incident exists that should be included in a written report

The absence of these circumstances was necessary for a telephone report but were not sufficient -- complaints which did not contain these criteria may have still received a mobile police response.

When a complaint was assigned a mobile police response, a patrol officer had the responsibility of performing the initial investigation. The activities performed and the information collected by the patrol officer during the initial investigation were recorded on a series of report forms: the investigative report form (Appendix A) and supplements for the narrative (Appendix B), the modus operandi descriptor form (Appendix C), the personal descriptor form (Appendix D), the vehicle descriptor form (Appendix E), and the property form (Appendix F). Depending on the particular crime and the amount of information available, any combination of these reports may have been completed (however, the investigative report was always completed). The forms were completed by the responding officer and were most often in handwritten form. After the

reports were completed, they were held in the uniform division office until the beginning of the next morning shift when each of the detective sergeants received the reports pertinent to their squad.

The sergeant from each squad then had the task of deciding which cases to assign to the detectives for follow-up investigations. At the Landau P.D. this decision was guided by solvability factors. Solvability factors are key pieces of crime related information which, when present, increase the probability of the perpetrator being apprehended and hence, the crime being "solved" (Hastings, 1980). The solvability factors used by the L.P.D. were listed on the back of the investigative report form and consisted of the following:

1) Were suspects arrested?
2) Was there a witness to the crime?
3) Can the suspect be identified by a witness?
4) Can a suspect be named?
5) Is a suspect described?
6) Is the suspect known and/or can he/she be located?
7) Was there a significant modus operandi present?
8) Was there significant physical evidence present?
9) Is the stolen property identifiable?
10) Is there a significant suspect vehicle description?
11) Are there undeveloped leads?
12) Gravity of offense...
    - Value over $1,000?
    - Damage over $1,000?
    - Serious injuries / hospitalization required?
    - Weapons involved?

These factors were used on an <u>informal</u> basis to sensitize the sergeant to factors which should be considered when determining which cases to assign for a follow-up investigation. The factors were <u>not</u> used to calculate a

solvability score as is common with the use of screening devices (Eck, 1983). In fact, often the presence of these factors was not noted on the investigative report form. Therefore, the case screening decision at the L.P.D. most closely resembled an unaided-analytic strategy as described in Chapter Two.

Cases where the suspect was arrested (the first "solvability factor" listed above) involved situations where a patrol officer made an arrest prior to the selection decision. These cases were formally referred to as "in-custody cases" -- where the culprit was, at the time of the initial review of the report, being held in the police department detention facility. All "in-custody" cases were assigned to a detective for a follow-up investigation.

Detectives were responsible for conducting follow-up investigations on those cases they were assigned. In conducting follow-up investigations, detectives recorded on the "case log" or "turn back sheet" (Appendix G) the activities they performed in the investigation (e.g., reviewed report, interviewed victim, interviewed witness, talked to prosecutor, etc.) as well as the total amount of time spent on the investigation (from when the case was received until it was closed in some manner -- see below). In nearly all of the cases, a narrative of the activities performed, and the information produced, was provided on supplemental sheets and was attached to the case log. These reports were most often handwritten although more detailed

and complicated investigations tended to have typewritten narratives.

Cases were assigned one of several statuses upon conclusion of the follow-up investigation. Each case status represented a means by which the case could be "closed." They were:

1) Closed - Accused in Other Prosecution (COP) - This status is entered when the accused has been charged with another crime and will not be charged under this incident. (Must meet first four criteria [a-d] for exceptional clearance below).

2) Exceptional Clearance (EXC) - This status is used when all of the following questions (a through d) can be answered "yes":
   a) Has the investigation definitely established the identity of the offender?
   b) Is there enough information to support an arrest, and an acceptance by the prosecutor?
   c) Is the exact location of the offender known so that he could be taken immediately into custody?
   d) Is there some reason outside police control that prevents an arrest, charge, and acceptance by the prosecutor?

   In addition, for an offense to be exceptionally cleared it must fall into one of the following categories:
   e) Is there no other more specific Landau Police Department status definition?
   f) Did the offender commit suicide?
   g) Was the offender a victim of a homicide?
   h) Did the offender die after making a confession?
   i) Was the offender killed by the police?
   j) Was extradition denied?
   k) Was the incident referred to a non-police agency such as Probation, Parole, Postal Service?

3) No Further Investigation (NFI) - This status is used when all leads have been exhausted and without additional information the investigation can go no further.

4) Prosecutor Refused to Issue (PRF) - This status is used when a completed investigation is reviewed by

the prosecutor's office and they refuse to issue a warrant to the victim or detective.

5) Referred to Probate Court (RPC) - This status is used when a juvenile accused is identified and petitioned to probate court.

6) Unfounded (UNF) - This status is assigned when it has been determined that a reported crime was not committed.

7) Victim Cancels Investigation (VCI) - This status is assigned upon verification with the victim that he/she no longer desires to pursue the complaint, or when the victim fails to take effective action in the investigation within a reasonable amount of time.

8) Victim Refuses to Prosecute (VRP) - This status is assigned upon verification with a victim that he/she does not wish to prosecute, or when the victim fails to take effective action toward prosecution within a reasonable period of time.

9) Warrant Pending Arrest (WPA) - This status is assigned when an offender has been identified and a valid warrant is received by the prosecutor's office.

When a case was closed with a "WPA" status, the outstanding warrant ("want") was entered into the LEIN (Law Enforcement Information Network) computer system. The patrol division then executed the warrant and an arrest would be made. As a result, the detectives made extremely few physical arrests.

In addition, to the above statuses, two others were used when the complaint was currently being investigated or was not assigned for a follow-up investigation:

10) Open Assigned (OPA) - This status is used when the squad supervisor initially assigns a case to a detective.

11) Open Unassigned (OPU) - This status is used when the squad supervisor determines that the case will not be assigned to a detective. This status also represents a case closure.

There were no formal policies or procedures on how investigations should be conducted or on how long cases may remain open ("OPA") before they needed to be closed in some manner. There were no formal guidelines regarding the completion of the turn-back sheet or the calculation of amount of time spent on the investigation (an assessment of the accuracy of the reports is offered in Chapter Six).

After a case was closed, some case information (complaint number, sergeant who made screening decision, detective assigned case, and amount of time spent on the investigation) was entered into the department's "Data-Flex" computer program. After the entry of this information, the cases were taken to the records bureau where each case (initial and/or follow-up reports) was placed in an envelope and filed in chronological (complaint number) order within the established filing system.

The Landau Police Department operated a Law Enforcement Management System (LEMS) computer system which contained case data (complaint number, type of crime, victim name, address, age, race, sex, value of property loss, sergeant who selected the case for an investigation, detective assigned to the case, and status of the investigation) on all of the complaints taken by the police department. Also contained within the LEMS system was a name file which listed all individuals who had a criminal contact (as either a victim or an accused) with the Landau Police Department during the past ten years. The file provided the queried

individual's identifying data (date of birth, sex, race, age, etc.) and criminal history.

Another capability of the LEMS system was the tracking of pawn shop property. All pawn shops were required by state law to furnish to their local police agency a listing of all property which they purchased. The store was required to complete a form which contained the seller's name, address, sex, age, race, thumbprint, and the serial number (if applicable) of the merchandise being sold. This form had to be submitted to the police department within forty-eight hours of the transaction. Once received by the police department, the information was entered into the pawn shop property file within the LEMS system.

Summary

This chapter contained a description of the study site. The City of Landau and its police department were described and the mechanics of the investigative process within the Landau Police Department were discussed.

CHAPTER FOUR

METHODOLOGY

Three data collection methods were used in this study. First, case characteristics were coded from investigative reports and the resulting data were used to determine the relationship between the case characteristics and decision outcomes. Second, an information board was used to collect verbal protocol data from detectives. These data provided insight into the cognitive processes associated with decision making. Third, observations of, and interviews with, detectives allowed for additional insight into the factors which influence decision making and the cognitive processes associated with decision making. The observations and interviews also provided a means by which the meanings ascribed to case characteristics could be explored. Each of these methods and their associated procedures are discussed in this chapter. In addition, the variables of interest in the study are defined and the research questions and hypotheses are stated.

Decisions as Outcomes

The data for this component of the study came from investigative reports completed by patrol officers and detectives. Reports which identified: (1) a burglary or robbery; (2) the initial investigation report as being referred to the investigations division for a possible follow-up investigation; (3) an arrest of a suspect as not having occurred prior to case assignment; and (4) the crime as having occurred between July 1, 1989 and June 30, 1990 (a one year time frame) were included in the sample. In addition, cases which were investigated only after information was obtained which would enable the cases to be immediately closed were excluded from the sample. The rationale for each of these criteria is discussed below.

Burglary and robbery investigations were the focus of this study for two reasons. First, burglary and robbery are relatively common offenses which consume a large proportion of a police department's investigative resources. Therefore, to understand the investigation of these crimes is to understand much of police investigations more generally. Second, the strength of the evidence associated with the two crimes is often quite different (e.g., there is often an eyewitness in a robbery but not in a burglary). Thus, it is possible to examine the relative impact of evidence strength on decision making not only within each crime type but also across crime types.

Only criminal incidents where a mobile police response unit was dispatched to conduct an initial investigation were included in the study. Because reports taken over the telephone ("NRF reports") very rarely came to the attention of the investigations division, it would be inappropriate to include these types of cases in the sample.

Crimes in which an arrest was made prior to case assignment (e.g., an arrest was made during the initial investigation; "in-custody" cases) were not included in this study because all of these cases received investigative attention. Thus, variance in the dependent variables of interest would not be provided.

Criminal incidents which occurred between July 1, 1989 and June 30, 1990 were included in this study. The twelve month time frame balanced the need for adequate frequencies with the limited project resources.

Finally, cases assigned to a detective only after information became known which would enable the case to be immediately "closed" were excluded from the population. As a result, two types of cases were eliminated from the population. First, cases where a person confessed to committing a crime (which was not initially selected for an investigation) while being questioned about another crime were excluded. Second, cases where the detective(s) inferred that an identified individual was responsible for several other crimes (which were not initially selected) were eliminated.

Case Selection Procedure

The case selection process consisted of several steps. First, a computer print-out of all of the burglaries and robberies which were reported between July 1, 1989 and June 30, 1990 was obtained from the department's LEMS computer system. The print-out listed the cases in chronological order by complaint number and also identified the status of each case. The list identified 339 robberies and 1,674 burglaries.

All of the reports which identified a "No Report Forthcoming" (NRF) status were then excluded from the list. No robberies were excluded while 679 burglaries (of 1,674; 41%) were excluded due to a NRF status.

All of the remaining cases were then reviewed and, as discussed above, several more categories of cases were eliminated. First, all of the reports which stated that an arrest was made prior to case assignment were excluded from the population of cases. This resulted in the exclusion of 32 robberies and 73 burglaries.

Second, all of the cases which were assigned to a detective only after information became available which would allow the case to be immediately closed were excluded from the population. On the basis of this criterion, no robberies were excluded while 32 burglaries were excluded. Third, all of the cases which were missing from the files were excluded from the population. Accordingly, two robberies and 33 burglaries were excluded.

As a result of the entire case selection procedure, 305 robbery cases and 857 burglary cases were included in the sample for a total N of 1,162 cases. For each of the 1,162 cases, the initial and/or follow-up investigation reports were content analyzed and a case data form (Appendix H) was completed.

Variables

The independent variables included in this portion of the study consisted of victim and offense characteristics. Data on most of the independent variables were obtained from the initial investigation reports and were transcribed as recorded by the patrol officer who completed the report. Specifically, the victim characteristic variables consisted of: victim type (business/individual), age, sex, race (white/non-white), employment status (employed/not employed), victim-offender relationship (yes/no), desire for investigative effort (yes/no), and income.

When a crime was directed toward a business (as in a burglary) or a representative of a business (as in a robbery) the other demographic characteristics of the victim (i.e., age, sex, race, income, and employment status) were coded as missing. Based on discussions with detectives, an assumption was made that the business characteristic would override the influence of any other victim characteristics. For example, it was assumed that a robbery perpetrated

against a bank would carry a significance not mitigated by whether or not the teller was a male or female.

Data on the presence of a relationship between the victim and offender were obtained from the initial investigation reports and recorded as disclosed by the victim. As defined here, a relationship between a victim and an offender could have taken the form of acquaintances, friends, lovers, spouses, children, etc. Also included were terminated relationships (e.g., ex-lovers, ex-spouses, etc.). These data were based on who the victim and/or witness believed to be the culprit. This belief however, was not always based on eyewitness knowledge. For example, burglary victims often offered a guess as to who they thought might have perpetrated the act. If it was not "known" who committed the crime at the time of the initial investigation, a relationship was considered as being absent.

Data on desire for investigative effort were obtained from the follow-up investigation reports. If, upon detective contact with the victim, it was learned that the victim no longer wished to pursue or prosecute the complaint, or if the victim failed to cooperate in the investigation (e.g., return phone calls), desire for effort was coded as "no." In these situations, the case would be closed by the detective as either "VCI" (victim cancels investigation; if the culprit was not positively identified)

or "VRP" (victim refuses to prosecute; if the culprit was positively identified). If the victim did not state that effort was not desired and the victim cooperated in the investigation, or if the victim was not contacted, then desire for effort was coded as "yes." Because the wishes of the victim first became explicit during the follow-up investigation, this variable was not included in the analysis of the case selection decision.

Victim income was measured by the median income of the census tract in which the victim resided at the time of the incident. To obtain these data, the victim's address was first recorded from the initial investigation report and then, using a map of the city, the address was placed in its respective census tract. Using 1980 census data, the median income of the victim's census tract was then obtained. This procedure was the same as that used by Bynum et al. (1982) and similar to that used by Smith (1987). The estimation of an individual's income (or any other characteristic) based on aggregate data poses certain analytical difficulties. However, if detectives wish to consider "income" in making choices, they are likely to infer this information from the address listed on the initial investigation report because no other more direct information is provided in the report.

Offense characteristic variables consisted of: weapon used in offense (yes/no), dollar value of stolen property, degree of personal injury (none / minor [bruises, black

eyes, cuts, swelling] / serious [broken bones, broken teeth, loss of consciousness, stitches]), and several evidence type variables: physical evidence available (yes/no), suspect vehicle described (yes/no), suspect vehicle license plate known (yes/no), stolen property identifiable (yes/no), and the cornerstone of all evidence, strength of suspect information. Weapon use and degree of personal injury were included only in the analysis performed on robbery investigations.

The dollar value of the stolen property was defined as the value of the property taken by the culprit as a result of the crime. The amount of loss was recorded as estimated by the victim at the time of the initial investigation.

For significant physical evidence to be available, fingerprints had to be lifted from the crime scene, shoe or foot prints had to be photographed or tracked, or what was believed to be the culprit's personal belongings (clothing, tools, notes, etc.) had to be present at the crime scene. Tool marks and unphotographed shoe/foot prints were considered insignificant (but common) types of physical evidence.

In order for stolen property to be identifiable, the serial number or some other engraved number (or name) had to be known and reported by the victim at the time the initial investigation was conducted. For stolen property to be of value in an investigation, it had to be traceable (e.g.,

through pawn shop records). In order to be traceable, the property had to have identifying information such as serial numbers, etc.

The suspect information variable incorporated what was known about the culprit (description, identification, name) and how this information was produced (on the basis of a victim [or witness] guess, an eyewitness to the incident, or some other witness account). A description refers to information about the physical characteristics of the culprit while an identification means that the witness could recognize the culprit if seen again (either in person or by photograph). This measurement scheme appears to capture more of the construct's complexity than a simple tally of how many suspect related solvability factors were present at the conclusion of the initial investigation (e.g., suspect named? suspect described?, etc.; as in Bynum et al., 1982).

As collected, the strength of suspect information variable had ten values with (1) representing the weakest of information and (10) being the strongest: (1) no significant suspect information available, (2) a suspect was described and could be identified on the basis of a (victim) guess only, (3) the culprit could be described by an eyewitness to the crime, (4) a suspect could be named by a guess, (5) the culprit could be described and identified by an eyewitness to the crime, (6) the culprit could be named by being seen in the area at about the time the crime occurred, (7) the

culprit could be named on the basis of a guess which was supported by other witness information, (8) the culprit could be named by an individual who saw the culprit with stolen property or heard the culprit confess to committing the crime, (9) the culprit could be named in some other way (i.e., through patrol activities), (10) the culprit could be named by an eyewitness to the crime. Based on observations and detailed discussions with detectives, and given the expectations outlined in Chapter Two, this scale was divided into three categories for the analyses: weak suspect information (1,2,3), moderate suspect information (4,5,6,7,8,9), and strong suspect information (10).

Data on the dependent variables, case selected for follow-up investigation (yes/no) and amount of time spent on the follow-up investigation (in hours), were obtained from detectives' follow-up investigation reports which were contained in the case files. If a case had a follow-up report contained in the file, then the case was considered as having been selected for a follow-up investigation. If a follow-up report was not in the file, and the computer print-out verified that the case was not selected for a follow-up investigation, then the case was considered as not having been selected for a follow-up investigation.

Data on the amount of time spent on follow-up investigations were obtained from the "turn back sheets" which required the detectives to record the total amount of

time spent investigating the case from the point when the case was received until the case was closed. Completion of the "turn back sheets" was an existing procedure of the department, one not introduced by the researcher.

Along with the total amount of time spent on investigations, descriptive data were also collected on how time was spent -- on the activities performed during the follow-up investigations. Through a review of the follow-up investigation narratives, it was possible to identify (at least most of) the activities which were performed in each of the investigations. An initial sample of 43 burglary and robbery follow-up reports were reviewed and, on the basis of this review, 13 activities were identified as consuming the vast majority of all investigative time. These activities, which were similar to those specified by Eck (1983), were then listed on the case data form. The activities consisted of: victim interviewed, witness(es) interviewed, witness canvass conducted, others interviewed (e.g., individuals other than those involved in the crime -- mother of suspect, non-Landau police personnel, probation officer, pawn shop personnel, etc.), crime scene searched, physical evidence submitted for analysis, computer files searched, photo line-up conducted, mug-shot books shown, physical line-up conducted, suspect interviewed, informants ("street sources") interviewed, and prosecutor consulted. Two activities were constant for all investigations: reviewed

initial investigation report and wrote the follow-up investigation report. Because of their non-variability, these activities were not included on the data form or in the univariate analysis.

Analysis

The data in this component of the study were analyzed through the use of univariate, bivariate, and most importantly, multivariate statistical procedures. The first set of analyses had "selected for a follow-up investigation" as the dependent variable. Because the overwhelming majority of all robberies were assigned for a follow-up investigation (96%), the selection decision did not often exist in the investigation of robberies. Therefore, the only selection decision that was analyzed was in reference to burglaries. Because linear regression and analysis of variance approaches are often considered inappropriate when employing a dichotomous dependent variable (King, 1986), a loglinear regression (probit) model was used to determine the relative impact of the independent variables on the dependent variable.[1] The second set of analyses were conducted on those burglary and robbery cases which were selected for follow-up investigations. In these analyses, the amount of time spent on the follow-up investigation (in hours) was used as the dependent variable in a linear regression procedure. The case characteristic variables

were then used to predict this variable. Separate analyses were conducted on cases within each crime type.

Hypotheses

Congruent with the propositions developed in Chapter Two, the hypotheses examined in this component of the study were:

Hypothesis 1: Victim income influences detective decision making. Crime victims who live in higher income census tracts are more likely than victims who live in lower income census tracts to have their cases selected for an investigation and have more time spent on the investigation.

Hypothesis 2: Victim gender influences detective decision making. Male crime victims are more likely than female crime victims to have their cases selected for an investigation and have more time spent on the investigation.

Hypothesis 3: Victim employment status influences detective decision making. Crime victims who are employed are more likely than victims who are not employed to have their cases selected for an investigation and have more time spent on the investigation.

Hypothesis 4: Victim-suspect relationship influences detective decision making. Victims who do not have a relationship with the suspect are more likely than victims who do have a relationship with the suspect to have their cases selected for an investigation and have more time spent on the investigation.

Hypothesis 5: Victim race influences detective decision making. White crime victims are more likely than non-white victims to have their cases selected for an investigation and have more time spent on the investigation.

Hypothesis 4: The type of victim influences detective decision making. Businesses are more likely than non-businesses to have their cases selected for an investigation and have more time spent on the investigation.

Hypothesis 5: Victim desire for effort in an investigation influences detective decision making. Victims who desire effort are more likely than victims who do not desire effort to have more time spent on their investigation. (Time as dependent only).

Hypothesis 6: Degree of injury influences detective decision making. The more injury which results from the crime, the more likely the case will be selected for an investigation and have more time spent on the investigation. (Robberies only).

Hypothesis 7: Value of property loss influences detective decision making. Cases with a higher value of stolen property are more likely than cases with lesser value to be selected for an investigation and have more time spent on the investigation.

Hypothesis 8: Weapon use influences detective decision making. Cases which involve the use of a weapon are more likely than cases which do not involve a weapon to be selected for an investigation and have more time spent on the investigation. (Robberies only).

Hypothesis 9: Evidence influences detective decision making. Specifically:

Hypothesis 9a: Cases with stronger suspect information are more likely than cases with weaker suspect information to be selected for an investigation. (Selection as dependent).

Hypothesis 9b: Cases with suspect information of moderate strength are more likely than cases with weak or strong suspect information to have more time spent on the investigation. (Time as dependent).

Hypothesis 9c: Cases with physical evidence are more likely than cases without physical evidence to be selected for an investigation and have more time spent on the investigation.

Hypothesis 9d: Cases with a suspect vehicle description are more likely than cases without a vehicle description to be selected for an investigation and have more time spent on the investigation.

Hypothesis 9e: Cases with a suspect vehicle plate known are more likely than cases without a vehicle plate known to be selected for an investigation and have more time spent on the investigation.

Hypothesis 9f: Cases with identifiable stolen property are more likely than cases without identifiable stolen property to be selected for an investigation and have more time spent on the investigation.

Decisions as Processes

Data on the cognitive processes associated with detective decision making were collected through the use of an information board as well as through observations of, and interviews with, detectives while they performed their decision tasks. Discussed below are first, the details of the information board data collection effort and second, the observational methodology. While the information board data were collected and analyzed in reference to each particular investigative decision, the data which were derived from the observations focused only on the time allocation decisions.

The Information Board Method / Verbal Protocol Analysis

Subjects

For the case selection decision in burglaries, the three

detective sergeants who were assigned to the investigations division during the data collection time period and within the crimes against property squad for at least some time in the past year participated in this segment of the study. For the prioritization of burglary cases, all five detectives[2] who were assigned to the property squad during the data collection time period and routinely investigated burglary cases participated in the information board exercise. For the prioritization of robbery cases, both of the detectives who were assigned to the crimes against persons squad during the data collection time period and routinely investigated robbery crimes participated in the exercise. Considered together then, ten of the ten eligible investigators (100%) participated in this component of the study.[3]

Information board structure and content

The decision task for the detective sergeants was to decide which of five cases to assign to detectives for follow-up investigations. The decision task for the detectives (burglary and robbery) was to identify which case, out of the five they were assigned, would receive top priority (defined as the case on which they would be willing and likely to spend the most investigative time) and then prioritize the remaining four cases. As discussed in Chapter Two, both of these decision tasks reflect the

typical sort of decisions the actors must make on a daily basis.

In each situation, an information board was used to present case information. The information board consisted of small index cards arranged in a matrix (alternatives [case numbers] x dimensions [case characteristics]) and required the decision maker to manually turn over the cards on which information was desired. The information board used for the case selection decision (burglaries) contained thirteen elements of information on five cases (see Appendix I, p. 196, for an illustration of the information board as presented to the detective sergeants). The information elements contained within the information board were consistent with the independent variables used in the outcome oriented analysis (e.g., sex of victim, physical evidence present, etc.; in Appendix I, p. 197, the values for each alternative-dimension pair in the information board are specified). The information board used for the prioritization decision in burglaries contained five cases and fourteen information elements (see Appendix J, p. 198, for an illustration of the information board as presented to the burglary detectives). The information elements were once again consistent with the independent variables included in the burglary investigation regression analysis (in Appendix J, p. 199, the values for each alternative-dimension pair in the information board are specified).

Finally, the information board used for the prioritization decision in robbery investigations contained information on five cases and sixteen information elements (see Appendix K, p. 200, for an illustration of the information board as presented to the robbery detectives). These elements were once again congruent with those included in the robbery regression analysis (in Appendix K, p. 201, the values for each alternative-dimension pair in the information board are specified). For each information board, the alternative-dimension values which were specified provided for some variation yet were typical of the sort of cases the detectives normally confronted.

Procedure

Each subject attended one session which occurred near the end of the participant observation period. Subjects participated in the exercise individually. A small interview room in the investigations division of the police department was used for the exercise. At the beginning of each session, the subject was provided a brief introduction as to the purpose of the exercise and instructions on how to proceed. Each sergeant was asked to imagine that he had five burglary cases to either "OPU" (not assign) or "OPA" (assign). Each detective was asked to imagine that he was assigned five cases to work, and he was to determine the priority each case would receive. Accordingly, at the

beginning of the exercise, before searching any information, the investigator knew only that the cases were either burglaries or robberies. In order for any other information concerning the cases (e.g., sex of victim, dollar value of property loss, etc.) to be disclosed, the cards on which information was desired had to be turned over by the investigator. The subjects were told to begin their search for information with what they considered to be the most important and to discontinue their search when they felt they knew enough about the case to make a judgement. The investigators were free to search for the information in any way they wished (i.e., within or across alternatives). Each subject was then familiarized with the information board and each information dimension was defined and the possible values were specified.

Each subject was also instructed to "think aloud" while reviewing and deciding upon the cases. The subjects were asked to state the information they were looking at and what they were thinking while looking at the information. The subjects were also asked to state any other information not provided in the information board which would have been helpful in making their decisions (for example, see Appendix L for the instructions provided to the detective sergeants in the selection of burglaries exercise). The verbal reports provided by each of the subjects were mechanically recorded (through the use of a tape recorder and with the

subject's consent) and from this, complete transcripts of the verbal reports were made. The verbal protocols provided the means by which search behavior, and ultimately decision strategies and processes, could be identified. As a safety net for the procedure, the researcher also used pencil and paper to record the order and content of each subject's search. No time constraints were placed on the decision makers during the exercise. The sessions ranged from sixteen to forty-four minutes depending on the subject's extent of search and verbal activity. The mean amount of time for the exercise across subjects was approximately 30 minutes.

Research Questions

The following questions were addressed in this part of the study:

Question #1: It is feasible to collect process data from detectives through the use of an information board?

Question #2: What proportion of case information do detectives search in deciding whether or not to select a case for an investigation and prioritizing cases which are assigned for an investigation? (Depth of search).

Question #3: What case information elements are most often considered by detectives in deciding whether or not to select a case for an investigation and prioritizing cases which are assigned for an investigation? (Content of search).

Question #4: To what extent do detectives use compensatory (vs. non-compensatory) strategies in deciding whether or not to select a case for an investigation and prioritizing cases which are assigned for an investigation? (Linearity of search).

Analysis

To address the first question, an overall assessment as to how the detectives performed in the exercise and the quality of the verbal reports was made. This issue is discussed in Chapter Six.

To measure the depth of search, and address the second question, the specific information elements accessed by each of the subjects were noted from the verbal protocols. The number of elements accessed was summed across dimensions and this number indicated depth of search. When this number was divided by the total number of information elements available, the proportion of case information searched was determined. (Appendix M contains the formula and examples of calculations for depth of search.)

Content of search was measured by determining which information elements were accessed in the information board matrix and the order in which they were accessed. As with the studies conducted by Payne and Ragsdale (1978) and Einhorn et al. (1979), the accessed attributes were viewed as the most important stimuli in the decision task. In addition, congruent with the instructions provided to each subject, the elements accessed in the beginning of the search were viewed as more important than those accessed later in the search. Accordingly, to determine the importance of the items searched, an "importance scale" was created. The first dimension searched in each alternative

received a score equal to the total number of dimensions available in that alternative (n). The second dimension searched received a score of n-1. The third dimension searched received a score of n-2, etc. If a dimension was not accessed in a given alternative, it received a score of zero. Through this procedure, a mean importance rating was calculated for each information element within and across subjects. (Appendix N contains the formula and examples of computations for content of search.)

To measure linearity in decision making, the procedure developed by Doherty (1987) and refined by Gilliland (1990) was used. As discussed in Chapter Two, the examination of a constant number of dimensions across alternatives suggests the use of linear strategies and the examination of a variable number of dimensions across alternatives implies the use of non-linear strategies (Payne, 1976). With this realized, the following linearity measure was used. First, the alternative with the largest number of dimensions accessed was identified. These dimensions were treated as the "standard dimensions" by which information search of the other alternatives was compared. If a tie existed among two or more alternatives in terms of the number of dimensions accessed, the standard was the alternative examined first. When comparing the standard dimensions with the dimensions accessed on other alternatives, each time a standard dimension was not examined, a score of one (1) was assigned

to that alternative-dimension pair. To determine the extent of linearity in decision making, the number of one (1), alternative-dimension scores were tallied and then divided by the following denominator: ((the number of dimensions accessed in the standard * the number of alternatives used in the comparison, including the standard) - (the number of dimensions in the standard + the number of alternatives used in the standard - 1)). This index produced coefficients between zero and one, with zero (0) indicating perfect linearity and one (1) indicating perfect non-linearity. (Appendix O contains a summary of the linearity index formula and several computational examples.) A separate index was calculated on each subject and then a mean linearity index was calculated across subjects.

The Observation Method

"The researcher must get close to the people he studies; he understands that their actions are best comprehended when observed on the spot - in the natural, ongoing environment where they live and work" (Schatzman & Strauss, 1973, p. 5). Accordingly, for a period of thirty weeks, from September 1990 to March 1991, investigators were observed for approximately 370 hours. This constituted a total of approximately fifty eight-hour shifts with observations usually taking place during two shifts per week. On some days however, observations were limited to a few hours on a given shift.

Time was split equally between the crimes against property squad (burglaries) and the crimes against person squad (robberies). Robbery detectives were the focus of the initial observations and then, after a period of about twelve weeks, observations switched exclusively to burglary investigations and detectives. For the final seven weeks, observations of robbery and burglary detectives were made on an alternating basis. With robberies, time was equally split between both of the detectives who investigated robberies. With burglaries, time was spent with three of the five detectives who investigated burglaries. These burglary detectives were identified by the sergeant early in the observation period as the ones who "didn't mind having someone along and would be good to work with."

The observations usually began during the morning briefing session when the sergeant assigned cases to the detectives. During this time a determination would be made as to who would be observed for the day. This determination was primarily a function of detective availability. As a general rule, detectives who were to spend much of the shift "in court" or engaged in administrative type tasks were avoided. Most often after the detective read the newly assigned reports he would provide the researcher with the reports to review. By about 9:00 a.m., one hour after the beginning of the shift, most all of the detectives would be out of the station and "on the road."

During the observations, the tactic of "tracing" was used. Schatzman and Strauss (1973) define tracing as when "the researcher attaches himself to a single person and follows him about through the entire course of a single task, or even an entire shift" (p. 41). All of the activities the detective performed during the course of the day would be observed. This included suspect interrogations, street stops, victim interviews, witness interviews, discussions with other detectives, etc. At no time was the researcher prohibited from observing any event, situation, or interaction. During the shift, discussions (or "informal interviews") also took place with the detective. Most conversations took place in the detective's car while traveling from one point to another but discussions also took place at the prosecutor's office (while waiting for a case to be "screened" for an arrest warrant), at restaurants, and at the police station.

The conversations with detectives usually focused on several related and overlapping issues and were most often in reference to particular cases. First, how does the detective view this particular case? What is significant about this case? Is this case viewed as a particular "type" of case? If so, what features make this case "fit the mold" of a "type?" Second, how does the information about the case (e.g., "case characteristics") guide the conduct of the investigation? Do certain features of the case make the

performance of certain activities more or less likely? Do certain features of the case make the case more or less worthy of effort? Or more or less likely to receive effort? Essentially, what factors determine how the case is worked? Finally, what meanings are attached to significant features of the case? What does it mean, for example, if the case is viewed as "a drug related (type of) case"? By addressing these questions, insight into the thought process associated with detective decision making could be obtained. At the same time, insight could be obtained on the factors which influenced decision making, which was of primary concern in the outcome oriented analyses. In addition to these questions and observations, it was also of interest to explore the validity of the investigative reports as a source of data. Accordingly, questions regarding the process of completing reports and the detective's perception of report accuracy were often asked.

On the basis of the observations and questioning, detailed field notes were written. The notes were usually written away from the research setting although sometimes they were written while the detective completed his paperwork. The notes consisted of several sections which were congruent with the question categories outlined above. In addition, a summary of events which occurred during the shift was written. Notes were most often written in reference to particular cases that were worked. Along with

the raw field notes, a few short draft essays were written which brought together various observations from the field. As a result of the field observations, approximately 200 notebook pages of field notes were produced.

The data which were produced from this effort were intended to compliment the data collected through the other methods. Hence, these observational data offered a means by which the other data could be supported or refuted. The observational data were also used extensively in the interpretation of the outcome oriented (statistical) analyses. The observational component of the study also provided an opportunity to build rapport with the detectives thus creating a more favorable atmosphere for the collection of the verbal data through the information board exercise.

Footnotes

1 However, as seen in Chapter Five, several statistical problems with the probit analysis required the use of linear regression to assist in the analysis of the data.

2 One of the burglary detectives was a patrol officer temporarily assigned (for two years) to the investigations division.

3 The seemingly small number of research subjects (N=10) is not uncommon when using this methodology. For example, in the study by Payne (1976), six subjects were used. In Eihnhorn, Kleinmuntz, and Kleinmuntz (1979), one subject was used. In Isen and Means (1983), 22 subjects were used.

CHAPTER FIVE

RESULTS

In this chapter the results of the data analyses are presented. The results are organized into two primary sections -- decisions as outcomes and decisions as processes. Within the "decisions as processes" section, the results of the information board exercise and the observations are presented separately.

Decisions as Outcomes

The following results were obtained from the analysis of investigative reports completed by patrol officers and detectives. The results of each of the decisions of investigators are presented separately.

The Selection of Burglaries

Table 1 presents descriptive data on the independent (victim and offense) variables and dependent (case selected

TABLE 1

INDEPENDENT AND DEPENDENT VARIABLES: # VALUES AND DESCRIPTIVE STATISTICS BY ALL BURGLARIES

Variable	Value	N	%
Victim Type	0=Individual	637	74
	1=Business	220	26
Victim Sex	0=Male	330	52
	1=Female	307	48
Victim Race	0=White	460	72
	1=Non-white	177	28
Victim Employment Status	0=Not employed	128	28
	1=Employed	329	72
Victim Age (in years)	N=	631	
	$\bar{X}$=	40	
	SD=	14.5	
	Min/Max=	15-95	
Victim Income ($/year)	N=	609	
	$\bar{X}$=	16,070	
	SD=	4,212	
	Min/Max=	4,212-31,672	
Victim-Offender Relationship Present	0=No	604	71
	1=Yes	244	29
Strength of Suspect Info	0=Weak	678	79
	1=Moderate	113	13
	2=Strong	66	8
Physical Evidence	0=No	694	81
	1=Yes	163	19
Suspect Vehicle Described	0=No	825	96
	1=Yes	32	4
Suspect Vehicle Lic Plate Known	0=No	850	99
	1=Yes	7	1
Stolen Property Identifiable	0=No	722	85
	1=Yes	131	15
Weapon Used	0=No	e	e
	1=Yes	e	e
Degree of Injury	0=No injury	e	e
	1=Minor Injury	e	e
	2=Ser Injury	e	e
Value Stolen Property (in dollars)	N=	802	
	$\bar{X}$=	1,207	
	SD=	2,199	
	Min/Max=	0-30,000	
Case Selected For Follow-up Investigation	0=No	540	63
	1=Yes	317	37

missing data are excluded from table
e variable not appropriate for burglaries

for investigation) variable for all of the burglary cases (N = 857). Table 1 also reflects the coding scheme used in the bivariate and multivariate analyses.

As seen in Table 1, 637 of the 857 burglary cases (74%) involved individuals as victims while 220 (26%) involved businesses. A slight majority of the cases with individuals as victims, 330 of 637 (52%), involved male victims. In approximately three-quarters of the cases, 460 of 637 (72%), the victims were white. The same percentage, 329 of 457 (72%), involved victims who were employed. The mean age of burglary victims was 40 years old and their mean "income" was $16,070. In 244 of the 848 cases (29%), the victim had some sort of relationship with the suspected offender.

The vast majority of cases, 678 of 857 (79%), contained weak suspect information; 113 of 857 (13%) contained suspect information of moderate strength; and 66 of 857 (8%) contained strong suspect information. Of the 678 cases which contained weak information, 491 (72%) had "no significant suspect information." Most cases, 694 of 857 (81%), did not have physical evidence available. It is also seen that there is little variance in the vehicle information evidence variables. In only 32 of 857 cases (4%) was a vehicle described and in only 7 of the 857 cases (1%) was a vehicle license plate known. The great majority of cases, 722 of 853 (85%), involved property which was not identifiable. The mean value of the stolen property was

$1,207 with a range from zero to $30,000. Finally, it is seen in Table 1 that 317 out of the 857 burglary (37%) cases brought to the attention of the crimes against property squad were selected for a follow-up investigation.[1]

Table 2 contains the correlation coefficients (Pearson's r) among the independent variables and the dependent variable. As for multicollearity among the independent variables, at least as evident through simple associations, there appears to be relatively little. The strongest associations are .46, .32, and .25 with the remainder at or below .17.

Concerning the variables related to whether or not the case was selected for an investigation, strength of suspect information and the presence of a victim-offender relationship are the strongest (.55 and .51, respectively). Although not tabled, bivariate analyses indicated that 156 of the 678 cases (23%) which contained weak suspect information were selected for a follow-up; 96 of 113 cases (85%) which contained moderate suspect information were selected; and 66 out of 66 cases (100%) which contained strong suspect information were selected for a follow-up investigation. This pattern clearly illustrates that the stronger the suspect information, the more likely the case was to be selected for a follow-up investigation. As for the victim-offender relationship, 127 out of the 604 cases (21%) without a victim-offender relationship were selected

TABLE 2

CORRELATION COEFFICIENTS AMONG VARIABLES FOR ALL BURGLARIES (N=857)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1.00													
2	#	1.00												
3	#	.05	1.00											
4	.03	-.05	-.09	1.00										
5	#	-.07	-.11	-.06	1.00									
6	.02	.01	-.10	.09	.17	1.00								
7	-.13	.16	.16	-.06	-.17	-.10	1.00							
8	-.11	.12	.15	-.07	-.12	-.10	.32	1.00						
9	.04	-.02	-.10	.12	.14	.08	-.07	-.06	1.00					
10	-.07	.08	.03	.06	.05	.06	.00	.12	.00	1.00				
11	-.05	.05	-.03	.01	.04	.08	.03	.13	-.01	.46	1.00			
12	-.03	-.01	-.01	.07	.01	-.06	-.10	-.05	-.03	.02	.03	1.00		
13	.05	-.08	-.01	.09	.11	.25	-.10	-.11	.15	.01	.00	.05	1.00	
14	-.09	.11	.09	.02	-.09	-.07	.51	.55	.04	.17	.12	-.02	.01	1.00

missing data; coefficient cannot be computed

1 = Victim Type
2 = Victim Sex
3 = Victim Race
4 = Victim Employment Status
5 = Victim Age
6 = Victim Income
7 = Victim-Offender Relationship
8 = Suspect Information
9 = Physical Evidence
10 = Vehicle Described
11 = Vehicle Plate Known
12 = Property Identifiable
13 = $ Value of Stolen Property
14 = Case Selected for Investigation

for a follow-up while 183 out of 244 cases (75%) with a victim-offender relationship were selected for a follow-up investigation. Therefore, with a relationship between the victim and offender, the case was more likely to get assigned. It is of some consequence to note however, that the relationship between the suspect information variable and the victim-offender relationship variable is .32; when there was a relationship between the victim and offender, a name of the suspect was usually provided. None of the other correlation coefficients between the independent variables and the dependent variable are of appreciable strength.

Because it was of primary interest to isolate the relative influence of the victim and offense variables on the case selection decision, multivariate statistical procedures were used. In Table 3, the coefficients, standard errors, t-values, and standardized weights from probit and OLS regression analyses are presented.

Although it is generally considered inappropriate to conduct OLS regression analyses on a dichotomous dependent variable, two anomalies in the probit results make consideration of OLS regression analyses necessary. First, the derivative at the mean[2] for strength of suspect information is quite small (.05) yet significant at the $p < .01$ level. Second, the derivative at the mean for suspect vehicle plate known is extremely large (.72) but not significant ($p = .989$). It appears that these seemingly

TABLE 3

PROBIT (AND MULTIPLE REGRESSION) ANALYSIS OF
BURGLARY CASE SELECTION
AS A FUNCTION OF VICTIM AND OFFENSE CHARACTERISTICS
(regression results in parentheses)

Independent Variables	Coefficient	Standard Error	t	derivative (beta)
Victim Type	-.033 (.012)	.361 (.028)	-7.622 (.406)	.00 (.01)
Victim Sex	.054 (-.013)	.125 (.029)	.429 (-.466)	.02 (-.01)
Victim Race	.136 (-.036)	.142 (.032)	.955 (-1.125)	.05 (-.03)
Victim Emp Status	.293 (.053)	.170 (.038)	1.721 (1.398)	.11* (.04)
Victim Age	-.004 (.000)	.004 (.001)	-.870 (.345)	.00 (.01)
Victim Income	.000 (.000)	.000 (.000)	-.497 (-.019)	.00 (-.02)
Victim-Off. Rel	.489 (.423)	.069 (.029)	7.089 (14.396)	.19** (.39**)
Suspect Information	1.750 (.354)	.152 (.022)	11.495 (16.020)	.05** (.44**)
Physical Evidence	.342 (.098)	.130 (.032)	2.625 (3.075)	.13** (.08**)
Vehicle Described	.931 (.298)	.310 (.073)	3.000 (4.081)	.36** (.12**)
Vehicle Plate Known	5.170 (-.015)	386.788 (.154)	.013 (-.098)	.72 (.00)
Property Id'able	-.040 (.045)	.089 (.034)	-.452 (1.304)	-.01 (.03)
$ Value of Property	.000 (.000)	.000 (.000)	-1.459 (3.095)	.00 (.08**)

R^2	= .32
(Adjusted R^2	= .46)
Significance	= .00
(Significance	= .00)
N_1	= 857
(N_1	= 857)

* p<.05; ** p<.01 (one-tailed test)
1 the mean of each variable was substituted for missing data

unreliable coefficients are at least a partial result of multicollinearity.[3] As a result of these anomalous probit results, the attractiveness of the multiple regression analyses increases. In short, it appears that given the nature of these data, the regression results (beta weights) are less biased than the probit results (derivative at the means).

It is of comfort to note that the probit and regression analyses are quite similar in terms of those factors which display a significant impact on the case selection decision.[4] As seen in Table 3, both sets of results indicate that strength of suspect information, the presence of a victim-offender relationship, description of a suspect's vehicle, and availability of physical evidence exert a significant impact on the case selection decision. The only inconsistencies in the results are that the dollar value of the property loss is significant in the regression analysis but not in the probit analysis while employment status of the victim is significant in the probit analysis but not in the regression.

According to the regression results, the largest impact on the case selection decision is exerted by the strength of suspect information; the stronger the suspect information, the more likely the case was selected for an investigation ($b = .44$; $p < .01$). Presence of a relationship between the victim and offender also exerts a significant influence; cases where a relationship existed were more likely to be

selected (b = .39; p < .01). The variable with the third strongest impact was a description of the suspect's vehicle; when this information was known, the case was more likely to be selected (b = .12; p < .01). The final two variables which display a statistically significant effect on case selection are presence of physical evidence and the dollar value of the stolen property. When physical evidence was available or when more value loss was involved, the case was more likely to get selected (b = .08; p <.01 for each).

On the basis of these analyses, the following hypotheses are supported:

Hypothesis 7: Cases with a higher value of stolen property are more likely than cases with lesser value to be selected for an investigation.

Hypothesis 9a: Cases with stronger suspect information are more likely than cases with weaker suspect information to be selected for an investigation.

Hypothesis 9c: Cases with physical evidence are more likely than cases without physical evidence to be selected for an investigation.

Hypothesis 9d: Cases with a suspect vehicle description are more likely than cases without a vehicle description to be selected for an investigation.

In addition, the opposite of the following hypothesis is supported:

Hypothesis 4: Victims who do not have a relationship with the suspect are more likely than victims who do have a relationship with the suspect to have their cases selected for an investigation.

Time Allocation in Burglary Investigations

Table 4 presents the frequency distribution for the independent variables (victim and offense) and dependent variable (time spent on the follow-up investigation) on the subset of burglary cases which were selected for a follow-up investigation (N = 317). Table 4 also reflects the coding scheme used in the bivariate and multivariate analyses.

As illustrated in Table 4, 252 of the 317 burglary cases (80%) which received a follow-up investigation involved victims who were individuals, while 65 of the 317 cases (20%) involved businesses. A slight majority of the selected cases, 138 of 252 (55%), involved female crime victims. Most of the cases, 169 of 252 (67%), involved victims who were white, and employed 126 of 172 (73%). The mean age for the burglary victims who had their cases selected was 36 years and the mean "income" was $15,687. In 45 of 308 cases (15%), the victim did not desire investigative effort. A relationship between the victim and the suspected offender was present in 184 of 310 cases (59%) selected for an investigation.

It is also evident from Table 4 that while 96 of the 317 selected cases (30%) contained moderate suspect information, 221 of 317 (70%) cases contained weak or strong suspect information. Specifically, 155 of the 317 cases (49%) contained weak suspect information while 66 of 317 (21%) contained strong information. Physical evidence was

TABLE 4

INDEPENDENT AND DEPENDENT VARIABLES: VALUES AND DESCRIPTIVE STATISTICS BY "SELECTED" BURGLARIES #

Variable	Value	N	%
Victim Type	0=Individual	252	80
	1=Business	65	20
Victim Sex	0=Male	114	45
	1=Female	138	55
Victim Race	0=White	169	67
	1=Non-white	83	33
Victim Employment Status	0=Not employed	46	27
	1=Employed	126	73
Victim Age (in years)	N=	249	
	$\bar{X}$=	36	
	SD=	13.8	
	Min/Max=	17-95	
Victim Income ($/year)	N=	247	
	$\bar{X}$=	15,687	
	SD=	4,785	
	Min/Max=	7,260-31,672	
Victim Desires Effort	0=No	45	15
	1=Yes	263	85
Victim-Offender Relationship Present	0=No	126	41
	1=Yes	184	59
Strength of Suspect Info	0=Weak/Strong	221	70
	1=Moderate	96	30
Physical Evidence	0=No	250	79
	1=Yes	67	21
Suspect Vehicle Described	0=No	292	92
	1=Yes	25	8
Suspect Vehicle Lic Plate Known	0=No	310	98
	1=Yes	7	2
Stolen Property Identifiable	0=No	270	85
	1=Yes	46	15
Weapon Used	0=No	@	@
	1=Yes	@	@
Degree of Injury	0=No injury	@	@
	1=Minor Injury	@	@
	2=Serious Injury	@	@
Value of Stolen Property (in dollars)	N=	317	
	$\bar{X}$=	1,243	
	SD=	2,680	
	Min/Max=	0-30,000	
Time spent on Follow-up Investigation (in hours)	N=	317	
	$\bar{X}$=	3.7	
	SD=	4.6	
	Min/Max=	.1-52.5	

missing data are excluded from table
@ variable not appropriate for burglaries

available in 67 of the 317 cases (21%). In 25 of the 317 selected cases (8%), a suspect's vehicle was described and in 7 of 317 cases (2%) a license plate number was known. In 270 of 316 cases (85%) the stolen property was not identifiable. The mean value of the stolen property was $1,243 with a range of zero to $30,000. Finally, the mean amount of time spent on burglary follow-up investigations was 3.7 hours with a range of .1 hours to 52.5 hours.

To gain an understanding of how time was spent on investigations, the activities performed in each investigation were recorded from the follow-up reports. Table 5 contains these findings. Briefly, it is seen that the most common activity performed in burglary follow-up investigations was interviewing victims. In 213 of the 317 investigations (67%), the victim was interviewed at least once. The second most frequently performed activity was interviewing others who were not directly involved in the crime in question (e.g., mother of suspect, pawn shop personnel, parole officer, etc.); in 126 of 317 cases (40%), this activity was performed. The third most common activity was interviewing suspects; in 116 of the 317 cases (37%) a suspect was interviewed at least once. The remainder of the activities, rank-ordered in frequency, are: searched computer files (23%), consulted prosecutor (21%), interviewed witnesses (20%), submitted physical evidence (15%), searched crime scene (6%), conducted photo line-up

TABLE 5

FREQUENCY OF DETECTIVE ACTIVITIES
IN BURGLARY FOLLOW-UP INVESTIGATIONS (N=317)

Activity	Investigations in Which Activity was Performed	
	N	%
Victim Interviewed	213	67
Others Interviewed	126	40
Suspect Interviewed	116	37
Computer Files Searched	72	23
Prosecutor Consulted	67	21
Witness(es) Interviewed	62	20
Physical Evidence Submitted	47	15
Crime Scene Searched	18	6
Photo Line-up Conducted	16	5
Witness Canvass Conducted	15	5
Informants Interviewed	7	2
Physical Line-up Conducted	6	2
Mug-shot Books Shown	4	1

(5%), canvassed for witnesses (5%), interviewed informants (2%), conducted physical line-up (2%), and showed mug shot books (1%).

Table 6 presents the correlation coefficients (r) among the independent variables and the dependent variable for those burglaries selected for a follow-up investigation. It is seen that several of the coefficients between the independent variables are of at least moderate strength (.51, .34, .32), however, none appear to approach "dangerous" proportions in terms of collinearity.

As for the variables related to the time spent in the follow-up investigation, the dollar value of the stolen property is the strongest (.29). The higher the value of the stolen property, the more likely more time was spent on the investigation. Although not displayed, a cross-tabulation procedure showed that 36 of 163 cases (22%) which involved under $300 of stolen property received over 3.7 hours (the mean) of investigative time. Twenty-seven of 82 cases (33%) which involved $300 to $1,300 of stolen property received over 3.7 hours. Twenty-nine of 72 cases (40%) which had over $1,300 of property taken received over 3.7 hours of investigative time.

Three variables, suspect information, physical evidence, and victim income, are all positively related to the amount of time spent (r = .21). With suspect information, a crosstab procedure demonstrated that 34 of 155 cases (22%)

TABLE 6

CORRELATION COEFFICIENTS AMONG VARIABLES FOR "SELECTED" BURGLARIES (N=317)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1.00														
2	#	1.00													
3	#	.08	1.00												
4	.05	-.21	-.07	1.00											
5	#	-.13	-.05	-.08	1.00										
6	.03	.02	-.12	.11	.18	1.00									
7	.16	-.18	-.19	.15	.17	.18	1.00								
8	-.13	.14	.20	-.10	-.21	-.10	-.22	1.00							
9	.11	-.17	-.06	.02	.03	.01	.13	-.30	1.00						
10	.06	-.05	-.14	.10	.21	.18	.17	-.16	.08	1.00					
11	-.09	.09	.04	.05	.12	.12	-.02	-.16	.01	-.01	1.00				
12	-.08	.06	-.07	.01	.09	.14	.00	-.05	-.01	-.03	.51	1.00			
13	-.03	-.04	-.01	.12	.02	-.04	.07	-.14	.06	-.04	.01	.06	1.00		
14	.09	-.05	-.08	.09	.24	.34	.11	-.17	-.04	.32	.00	.00	-.01	1.00	
15	.07	-.09	-.16	.00	.19	.21	.18	-.16	.21	.21	.10	.20	-.01	.29	1.00

missing data; coefficient cannot be computed

1 = Victim Type
2 = Victim Sex
3 = Victim Race
4 = Victim Employment Status
5 = Victim Age
6 = Victim Income
7 = Victim Desires Effort
8 = Victim-Offender Relationship
9 = Suspect Information
10 = Physical Evidence
11 = Vehicle Described
12 = Vehicle Plate Known
13 = Property Identifiable
14 = $ Value of Stolen Property
15 = Time Spent on Investigation

with weak suspect information received more than 3.7 hours of time. Similarly, in cases which contained strong suspect information, 14 of 66 (21%) received over 3.7 hours of time. However, in cases which contained moderate suspect information, 44 of 96 (46%) received more than 3.7 hours of investigative time. In addition, when suspect information is treated as three distinct categories and then correlated with the amount of time spent on the investigation (in raw form) the correlation coefficient drops to .03 from .21. With this evidence, there is at least initial support for the theoretical expectation that cases with moderate suspect information receive more time than those cases with weak or strong suspect information. More importantly, there is justification for combining weak and strong suspect information into one analytic category for the multivariate analyses.

To assess the relative impact of the independent variables on the dependent variable, an OLS multiple regression procedure was used. Table 7 contains the results of these analyses. Although the primary intent of these analyses was to test a limited set of hypotheses which predict the amount of time spent in an investigation, it is of interest to note that 17 percent of the variation in time spent on burglary investigations is accounted for by victim and offense characteristics.

As seen in Table 7, the greatest impact on time spent is

TABLE 7

MULTIPLE REGRESSION OF
TIME SPENT ON BURGLARY FOLLOW-UP INVESTIGATIONS
AS A FUNCTION OF VICTIM AND OFFENSE CHARACTERISTICS

Independent Variables	Standardized Beta
Victim Type	.03
Victim Sex	-.04
Victim Race	-.07
Victim Employment Status	-.06
Victim Age	.06
Victim Income	.05
Victim Desires Effort	.08
Victim-Offender Relationship	.00
Suspect Information	.19**
Physical Evidence	.09*
Vehicle Described	.00
Vehicle Plate Known	.19**
Property Identifiable	-.03
$ Value of Stolen Property	.22**
Multiple R	.46
R^2 Adjusted	.17
F	5.73
Significance[1]	.00
N	317

* p<.05; ** p<.01 (one-tailed test)
1 the mean of each variable was substituted for missing data

exerted by the dollar value of the stolen property; cases with greater loss were more likely to have more time devoted to them (b= .22; p < .01). Strength of suspect information also has a significant impact -- cases with moderate information were more likely to receive more time than cases with weak or strong suspect information (b = .19; p < .01). The only other variables which display a statistically significant effect on time spent are knowledge of the suspect's vehicle plate number (b = .19; p < .01) and physical evidence (b = .09; p < .05). When a plate number was known or when physical evidence was present, more time was likely spent on the investigation.

On the basis of these analyses, the following hypotheses are supported:

Hypotheses 7: Cases with a higher value of stolen property are likely to have more time spent on the investigation than cases with lesser value.

Hypothesis 9b: Cases with suspect information of moderate strength are likely to have more time spent on the investigation than cases with weak or strong suspect information.

Hypothesis 9c: Cases with physical evidence are likely to have more time spent on the investigation than cases without physical evidence.

Hypothesis 9e: Cases with a suspect vehicle plate known are likely to have more time spent on the investigation than cases without a vehicle plate known.

Time Allocation in Robbery Investigations

In Table 8, descriptive data are presented on the independent variables and dependent variable for the robberies which were selected for a follow-up investigation (N = 292). Also reflected in Table 8 is the coding scheme used in the bivariate and multivariate analyses.

Because bank robberies are unique from other robberies in that they often involve very large sums of money and necessitate the involvement of other law enforcement agencies (i.e., F.B.I.), it was of interest to explore the impact of bank robberies (N=9) on the overall distribution of scores. To do so, analyses were conducted on two sets of robbery investigations: robberies with bank robberies included and robberies with bank robberies excluded. It is apparent in Table 8 that the nine bank robberies affect the distribution of scores in two important, but not surprising, ways: value of stolen property and the amount of time spent in the investigation. First, in the inclusive robbery category, the value loss ranges from zero to $9,132 with a mean value loss of $260. With the exclusion of bank robberies, the loss ranges from zero to $4,000 and the mean amount of loss drops to $173.[5] Second, when bank robberies are included, the mean amount of time spent on robbery follow-up investigations is 4.5 hours with a range of .4 to 50.8 hours. When bank robberies are excluded, the mean amount of time spent on an investigation decreases

TABLE 8

INDEPENDENT AND DEPENDENT VARIABLES: #
VALUES AND DESCRIPTIVE STATISTICS BY "SELECTED" ROBBERIES

Variable	Value	Robberies w/bank N	%	Robberies w/o bank N	%
Victim Type	0=Individual	189	65	189	67
	1=Business	103	35	94	33
Victim Sex	0=Male	121	65	121	65
	1=Female	66	35	66	35
Victim Race	0=White	132	71	132	71
	1=Non-white	54	29	54	29
Victim Employment Status	0=Not employed	77	50	77	50
	1=Employed	78	50	78	50
Victim Age (in years)	N=	186		186	
	$\bar{X}$=	31		31	
	SD=	12.4		12.4	
	Min/Max=	12-75		12-75	
Victim Income ($/year)	N=	145		145	
	$\bar{X}$=	14,940		14,940	
	SD=	5,163		5,163	
	Min/Max=	7,260-37,238		7,260-37,238	
Victim Desires Effort	0=No	64	24	64	25
	1=Yes	200	76	191	75
Victim-Offender Relationship Present	0=No	260	90	251	89
	1=Yes	30	10	30	11
Strength of Suspect Info	0=Weak/Strong	103	35	102	36
	1=Moderate	189	65	181	64
Physical Evidence	0=No	258	78	256	90
	1=Yes	34	12	27	10
Suspect Vehicle Described	0=No	249	85	242	86
	1=Yes	43	15	41	14
Suspect Vehicle Lic Plate Known	0=No	275	94	266	94
	1=Yes	17	6	17	6
Stolen Property Identifiable	0=No	285	98	278	98
	1=Yes	7	2	5	2
Weapon Used	0=No	109	37	108	38
	1=Yes	182	63	174	62
Degree of Injury	0=No injury	191	66	182	65
	1=Minor Injury	58	20	58	21
	2=Serious Injury	40	14	40	14
Value of Stolen Property (in dollars)	N=	278		272	
	$\bar{X}$=	260		173	
	SD=	855		387	
	Min/Max=	0-9,132		0-4,000	
Time spent on Follow-up Investigation (in hours)	N=	279		270	
	$\bar{X}$=	4.5		3.7	
	SD=	5.5		2.9	
	Min/Max=	.4-50.8		.4-16.0	

missing data are excluded from table

to 3.7 hours with a range of .4 to 16.0 hours.[6]

As for the distribution of the values for other variables (as presented within the inclusive category), it is seen that in the majority of cases, 121 of 187 (65%), the victims were male. In 132 of 186 cases (71%) the victims were white. Seventy-seven of 155 cases (50%) involved victims who were employed. The mean age of robbery victims was 31 years and their mean "income" was $14,940. In 64 of 264 cases (24%) the victim did not desire investigative effort. In 30 of 290 cases (10%) the victim had some sort of relationship with the suspected offender.

Most of the cases, 189 of the 292 (65%), contained moderate suspect information while 103 of the 292 cases (35%) contained weak or strong suspect information. Specifically, 68 of the 292 cases (23%) contained weak information while in 35 of 292 cases (12%) the information was strong. Physical evidence was available in 34 of the 292 cases (12%). In 43 of the 292 cases (15%) a suspect's vehicle description was available and in 17 of the 292 cases (6%) a suspect's vehicle license plate was known. In only 7 of the 292 cases (2%) was stolen property identifiable. Weapons were used in 182 of 291 cases (63%). The majority of cases, 191 of 289 (66%), involved no injury to the victim; 58 of 289 (20%) involved minor injury; and 40 of 289 (14%) involved serious injury.

As with burglary investigations, it was of interest to

highlight the activities performed most consistently in robbery follow-up investigations. Table 9 contains these findings. As seen, the most common activity performed was interviewing victims. In 245 of the 292 cases (84%), the victim was interviewed at least once. The second most common activity was interviewing others; in 106 of the 292 cases (36%) this activity was performed. In 82 of the 292 cases (28%) a photo line-up was conducted -- the third most common activity. The remainder of activities, rank ordered in frequency, are: searched computer files (26%), interviewed witnesses (23%), consulted prosecutor (23%), interviewed suspect (19%), showed mug shot books (19%), canvassed for witnesses (14%), searched crime scene (11%), interviewed informants (11%), submitted physical evidence (10%), and conducted physical line-up (10%).

Table 10 contains the correlation coefficients (r) between all variables for those robberies selected for a follow-up investigation. In looking for collinearity among the independent variables, it is seen that there are several potential problematic associations (.60, .44, .22) but such associations do not appear to be pervasive.

Concerning the correlations between the independent variables and time spent on the follow-up investigations, it is seen that the dollar value of the stolen property has the strongest association (.62). The higher the value of the stolen property, the more likely more time was spent on the

TABLE 9

FREQUENCY OF DETECTIVE ACTIVITIES
IN ROBBERY FOLLOW-UP INVESTIGATIONS (N=292)

Activity	Investigations in Which Activity was Performed	
	N	%
Victim Interviewed	245	84
Others Interviewed	106	36
Photo Line-up Conducted	82	28
Computer Files Searched	76	26
Witness(es) Interviewed	68	23
Prosecutor Consulted	66	23
Suspect Interviewed	55	19
Mug-Shot Books Shown	54	19
Witness Canvass Conducted	40	14
Crime Scene Searched	31	11
Informants Interviewed	31	11
Physical Evidence Submitted	30	10
Physical Line-up Conducted	30	10

TABLE 10

CORRELATION COEFFICIENTS AMONG VARIABLES FOR "SELECTED" ROBBERIES (N=292)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	1.00																
2	#	1.00															
3	#	-.07	1.00														
4	#	.10	-.21	1.00													
5	#	.11	-.01	.04	1.00												
6	#	.18	-.06	.11	-.07	1.00											
7	.23	.05	-.09	.15	.13	.02	1.00										
8	-.20	.10	.11	-.17	-.08	.01	-.18	1.00									
9	.24	-.06	-.05	.15	-.08	-.13	-.03	-.44	1.00								
10	.28	.09	-.12	.07	.01	.01	.18	-.12	.11	1.00							
11	.01	.05	.14	-.02	-.13	.08	.01	-.01	.12	.03	1.00						
12	.01	.15	.19	.05	-.13	.01	-.04	-.04	.06	-.04	.60	1.00					
13	-.07	.02	-.03	-.08	-.01	.22	.09	.02	.02	.22	.00	-.04	1.00				
14	-.23	.10	-.06	-.10	.04	.13	-.10	.21	-.17	-.13	-.12	.07	.06	1.00			
15	-.33	-.16	.04	.00	-.04	.04	-.06	.06	-.20	-.11	-.14	-.06	.04	.22	1.00		
16	.08	-.01	.10	.02	.12	.02	.10	-.03	.03	.26	-.01	-.03	.24	-.04	-.09	1.00	
17	.25	.00	-.09	.04	.00	-.08	.28	-.10	.20	.47	.08	.00	.21	-.15	-.17	.62	1.00

missing data; coefficient could not be computed

1 = Victim Type
2 = Victim Sex
3 = Victim Race
4 = Victim Emp. Stat.
5 = Victim Age
6 = Victim Income
7 = Victim Desire for Effort
8 = Victim-Offender Relationship
9 = Suspect Information
10 = Physical Evidence
11 = Vehicle Described
12 = Vehicle Plate Known
13 = Property Identifiable
14 = Weapon Used
15 = Degree of Injury
16 = $ Value of Stolen Property
17 = Time Spent on Investigation (in hours)

investigation. Results from a cross-tabulation (not illustrated) showed that 54 of 179 cases (30%) which involved stolen property of under $100 received more than 4.5 hours of investigative time (the mean amount of time spent). Twenty-eight of 80 cases (35%) which involved losses ranging from $100 to $650 received more than 4.5 hours of time. And 21 of 33 cases (64%) which involved over $651 of stolen property received over 4.5 hours of time spent on the follow-up investigation. Five other variables had at least a slight relationship with the amount of time spent: availability of physical evidence (.47), desire for effort (.28), victim type (.25), identifiability of stolen property (.21), and suspect information (.20).

In regard to suspect information, a cross-tab procedure showed that 11 of 68 robbery cases (16%) with weak information received more than 4.5 hours of investigative time. Similarly, of the 35 cases which contained strong suspect information, six (17%) received over 4.5 hours of time. However, in cases which contained moderate suspect information, 87 of 189 (46%) received more than 4.5 hours of investigative time. In addition, when suspect information is treated as three distinct categories and then correlated with the amount of time spent on the investigation (raw form), the correlation coefficient drops to .03 from .20. As with burglaries, this evidence provides at least initial support for the hypothesis that cases with moderate suspect

information receive more time than cases with weak or strong suspect information. More importantly, this evidence is justification for combining weak and strong suspect information into one analytic category for the multiple regression procedure.

To determine the relative impact of the victim and offense variables on the amount of time spent on the investigation, and hence test the hypotheses stated in Chapter Four, OLS multiple regression was used. These results are presented in Table 11.

As seen in Table 11, analyses on robberies with bank robberies included are very similar to the analyses with bank robberies excluded with one important exception -- the influence of victim type. When bank robberies are included, victim type exerts a significant impact on the amount of time spent on an investigation; "business" robberies were more likely to receive more investigative time ($b = .14$; $p < .01$). However, when bank robberies are excluded from the analysis, the impact of victim type disappears ($b = .02$; $p > .05$).

In robbery investigations, the dollar value of the stolen property once again exerts by far the most influence on the amount of time spent on an investigation; greater property loss led to the expenditure of more time even with bank robberies (which account for much of the variance in property loss) excluded ($b = .50$; $p < .01$ with bank

TABLE 11

MULTIPLE REGRESSION OF
TIME SPENT ON ROBBERY FOLLOW-UP INVESTIGATIONS
AS A FUNCTION OF VICTIM AND OFFENSE CHARACTERISTICS

Independent Variables	Standardized Beta	
	Robberies w/bank	Robberies w/o bank
Victim Type	.14**	.02
Victim Sex	.00	.01
Victim Race	-.03	-.02
Victim Employment Status	-.02	-.03
Victim Age	-.02	-.02
Victim Income	-.02	-.01
Victim Desires Effort	.16**	.19**
Victim-Offender Relationship	.07	.06
Suspect Information	.14**	.15**
Physical Evidence	.22**	.25**
Vehicle Described	.05	.04
Vehicle Plate Known	.00	.00
Property Identifiable	.03	.02
Weapon Used	.04	.05
Degree of Injury	-.01	-.03
$ Value of Property Loss	.49**	.50**
Multiple R	.72	.71
Adjusted R^2	.49	.48
F	18.78	17.82
Significance	.00	.00
N[1]	292	292

** p<.01 (one-tailed test)
1 the mean of each variable was substituted for missing data

robberies excluded and b = .49; p < .01 with bank robberies included). The availability of physical evidence also displays a significant impact on time spent; when physical evidence was available, more time was spent on the investigation (b = .22 inclusive; b = .25 exclusive; p < .01 for both). Another significant contribution is made by the victim's desire for an investigation. If the victim did not wish an investigation, less time was spent on the investigation (b = .16 inclusive; b = .19 exclusive; p < .01 for both). The strength of suspect information also influences the amount of time spent on the case. Cases with moderate suspect information were likely to receive more time than cases with weak or strong suspect information (b = .14 inclusive; b = .15 exclusive; p < .01 for both). Finally, in terms of the variance explained by the victim and offense variables, the model did quite well accounting for 49 percent in the inclusive category and 50 percent in the exclusive category.

On the basis of these analyses, the following hypotheses are supported:

Hypothesis 4: Businesses are likely to have more time spent on their investigation than non-businesses (only when bank robberies are included).

Hypothesis 5: Victims who desire effort are likely to have more time spent on their investigationthan victims who do not desire effort.

Hypothesis 7: Cases with a higher value of stolen property are likely to have more time spent on the investigationthan cases with lesser value.

Hypothesis 9b: Cases with suspect information of moderate strength are likely to have more time spent on the investigation than cases with weak or strong suspect information.

Hypothesis 9c: Cases with physical evidence are likely to have more time spent on the investigation than cases without physical evidence.

Summary

By considering the findings across the three analyses, one can identify several patterns. First, none of the victim demographic variables (i.e., age, race, sex, income, employment status) displayed significance (except, of course, victim type in robberies with bank robberies included). Second, the dollar value of the stolen property exerted an impact on all three decisions, and was the most influential in both of the time allocations decisions. Third, strength of suspect information displayed a significant influence across all three analyses. Fourth, the presence of physical evidence had a significant impact on all of the decisions. Fifth, identifiability of the stolen property did not have an effect on any of the decisions. Finally, victim desire for an investigation, the presence of a victim-offender relationship, knowledge of the suspect's vehicle license number, and vehicle description displayed inconsistent effects across decisions.

Decisions as Processes

Information Board / Verbal Protocol Analysis

The following data were derived from the analysis of information board search patterns and the verbal protocols. The results for each investigative decision are presented separately.

The Selection of Burglaries

To identify the amount of information searched (depth of search) in deciding whether or not to assign burglary cases to detectives, the proportion of thirteen case information elements accessed was calculated for each alternative and then across alternatives and sergeants. In Table 12 it is seen that the mean amount of information searched across alternatives and detectives was 46 percent. There exists substantial variance among subjects with Detective Sergeant A searching, on average, 26 percent of the available information and Sergeant B searching 57 percent. An examination of the variability of search within subjects and across alternatives shows that the depth of search is generally quite similar with relatively little variation from the mean.

Table 13 presents data on the importance[7] of case information in the decision of whether or not to select a burglary case for a follow-up investigation. With the

TABLE 12

PROPORTION OF AVAILABLE INFORMATION SEARCHED
IN THE BURGLARY SELECTION DECISION

Case Alternatives	Detective Sergeant			
	A	B	C	Mean
1	.31	.62	.46	.46
2	.23	.62	.38	.41
3	.23	.46	.62	.46
4	.23	.62	.69	.51
5	.31	.54	.62	.49
Mean	.26	.57	.55	.46

TABLE 13

THE IMPORTANCE OF CASE INFORMATION
IN THE BURGLARY SELECTION DECISION

Case Information	Detective Sergeant			
	A	B	C	Mean
Victim Type	13.0	6.8	9.6	9.8
Victim Sex	0.0	0.0	0.0	0.0
Victim Race	0.0	0.0	0.0	0.0
Victim Employment Status	0.0	0.0	0.0	0.0
Victim Age	0.0	0.0	1.0	.3
Victim Address	0.0	1.2	3.6	1.6
Victim-Offender Relationship	0.0	2.8	5.6	2.8
Suspect Information	12.0	12.4	13.0	12.5
Physical Evidence	11.0	12.6	10.0	11.2
Vehicle Described	2.0	10.4	3.2	5.2
Vehicle Plate Known	0.0	9.4	4.2	4.5
Property Identifiable	2.0	9.8	8.6	6.8
$ Value of Stolen Property	0.0	6.8	11.4	6.1

largest scores representing the most important information, it is seen that suspect information (12.5), physical evidence (11.2), and victim type (9.8) are, on average, the most important pieces of case information. These elements were generally accessed the soonest within each alternative. None of the subjects searched victim sex, race, or employment status within any of the alternatives (0.0).

When analyzing the content of search in the verbal protocols, the importance of other considerations in deciding whether or not to assign cases for investigations were highlighted as well. For example:

> Ok, let me see here. Case number one. First, one of the considerations I would be making is how many people I've got available to work... (Detective Sergeant C).
>
> ... Depending on case load this case might get assigned... (Detective Sergeant B).
>
> ... Sometimes a residential ah, canvass can be done. Only if I had detectives standing around with hands in their pockets [would this case get assigned]... (Detective Sergeant B).
>
> ... Chances are that I would assign that case unless I was very short of people... (Detective Sergeant C).
>
> ... but it would also go along with whether or not we've got a problem in that area, got suspects that are working that area, and perhaps the type of property that is taken and if its something that is unique and we've got people that are hitting that type of stuff... (Detective Sergeant C).
>
> ... there is some relationship. Again, now when I see this I want to know what the relationship is, if its an ex-boyfriend, or girlfriend, whatever the situation is here that we are talking about. And now the problem, we have an individual occupied dwelling, and there is some relationship and it could be an ex-husband, or ex-wife.

> Did in fact they now have legal standing in that residence?... (Detective Sergeant C).
>
> ... we've got a lead here, a vehicle. And here again, if that is something that would click with myself or any of the investigators, then it would give us something to go on... (Detective Sergeant C).
>
> ... There again, I would want to know if that's an area where we've been hit hard or not... (Detective Sergeant C).

In Table 14 the linearity scores, as calculated through the procedure outlined in Chapter Four, are presented for each of the subjects in the decision to select a burglary case for a follow-up investigation. The mean linearity index score is .28 which reflects a high degree of linear (or compensatory) decision making (0 reflects perfect linearity and 1 represents perfect non-linearity). Although the linearity scores vary from .14 to .38 across subjects, all of the scores fall on the linear side of the decision strategy "continuum."

In an analysis of the sergeants' verbal protocols, the linear style of decision making is also apparent. Compensatory decision strategies are most often reflected when the decision maker considers and weighs a range of information elements before rendering a decision. When a sergeant uses a compensatory strategy in deciding whether or not to assign a case for an investigation, a combination of information elements is considered and the additive

TABLE 14

LINEARITY OF SEARCH
IN THE BURGLARY SELECTION DECISION

Detective Sergeant	Linearity Score
A	.33
B	.14
C	.38
Mean	.28

weight of these elements determine whether or not the case will get assigned. For example, the following two excerpts from the protocols reflect compensatory decision making styles:

> Case number five. Ah, look for physical evidence. Yes there is physical evidence. Do we have a suspect? Described and could be identified on the basis of an eyewitness to the crime but no name. Ok, we've got a good description. I've got good physical evidence. Stolen property is identifiable. That is enough right there probably, we'd have an investigator assigned. Because the value of the property is up to $1,000, that confirms it even more (Detective Sergeant B).

> With case number three we really don't have a whole lot to go on except for some physical evidence. Right now I'm kinda wondering, on this particular case, what neighborhood this might be in. So I guess somewhere 8 along the line here I'd be kinda reading that. Ok, -- Street. But it would also go along with whether or not we've got a problem in that area, got suspects that are working that area, and perhaps the type of property that's taken and if its something that's unique and we've got people that are hitting that type of stuff. That would make the assignment of this case more likely (Detective Sergeant C).

Although the linear index scores indicate a high degree of linear decision making, this is not to imply that selection decisions are made exclusively through the use of this type of strategy. In the analysis of the verbal protocols, the use of non-compensatory strategies are evident as well. For example, the partial protocols from Detective Sergeant A:

> Ok, on case number one, I'm going to look at the victim type. I'm looking to see if it's a business or an individual. It is a business and ah, looking for a suspect. Name provided, accused was seen committing the crime. Ok, ah, physical evidence? No physical evidence. Was anything taken? No serial number. Ok, I would probably assign this case simply because I have a

> witness who saw an individual commit the crime and provided his name. If he didn't provide a name, I wouldn't assign the case.

In this protocol it is seen that the lack of other information such as physical evidence could not distract from the weight attached to the knowledge of a suspect's name. However, given the apparent importance of suspect information in the selection decision for this subject, it is difficult to understand the reason for the search of any other information elements. It appears that the same decision outcome would have been rendered if "suspect information" was the only dimension searched. Perhaps if other information was found to be present, the qualifier of "probably" would not have been necessary.

> And case number five. Individual unoccupied dwelling. Let's find out if we have a suspect. <u>As you can see, if I don't have a suspect, they don't get assigned.</u> Described and could be identified on the basis of an eyewitness to the crime but no name. Ok, let's see if we have any physical evidence here so we can come up with an identification. Ok, yes. See if there was a vehicle involved. No vehicle. Probably not assign this case even though you have an eyewitness. Without a name its just a shot in the dark and I probably would not assign that case (emphasis added).

In this excerpt, it is seen that other factors, such as the presence of physical evidence, could not compensate for the lack of a named accused and could not move the case over the "assignable" threshold.

Prioritization of Burglaries

Table 15 contains data on the proportion of the fourteen

TABLE 15

PROPORTION OF AVAILABLE INFORMATION SEARCHED IN THE PRIORITIZATION OF BURGLARY CASES

Case Alternatives	Detective					
	A	B	C	D	E	Mean
1	.64	.43	.50	.43	.64	.53
2	.57	.79	.64	.43	1.00	.67
3	.50	.71	.64	.36	.79	.60
4	1.00	.86	.64	.50	1.00	.80
5	.86	.71	.57	.57	.93	.73
Mean	.71	.70	.60	.49	.87	.67

information elements searched in each alternative for each of the detectives when prioritizing burglary cases. It is seen that the mean amount of information accessed across alternatives and detectives was 67 percent. The amount of information searched ranges from, on average, 49 percent (Detective D) to 87 percent (Detective E). An examination of the variability of search within subjects and across alternatives shows that the depth of search is generally quite variable but some subjects display more search variability (Detectives A & E) than others (C & D).

Table 16 contains data on the importance of case information in the prioritization of burglary cases. It is seen that the presence of a victim offender relationship (12.2), followed by suspect information (12.0), and presence of physical evidence (11.9) are, on average, the most important pieces of case information. The factors of least importance are victim race (.2), employment status (.6), and address (2.4).

With these general patterns realized, it is worthwhile to highlight the variation in importance scores across individual detectives. For example, victim desire for effort received a score of 13 with Detective C and a score of 7.4 with Detective A. Knowledge of a suspect's vehicle plate received a score of 11 with Detective B but 0.0 with Detective D. With other examples available, it is clear that there are individual differences among detectives on

TABLE 16

THE IMPORTANCE OF CASE INFORMATION
IN THE PRIORITIZATION OF BURGLARY CASES

Case Information	Detective					
	A	B	C	D	E	Mean
Victim Type	14.0	5.6	14.0	14.0	8.0	11.1
Victim Sex	.4	1.6	0.0	0.0	5.6	1.5
Victim Race	.2	0.0	0.0	0.0	.8	.2
Victim Emp. Status	1.4	0.0	0.0	0.0	1.8	.6
Victim Age	3.2	9.0	0.0	1.6	4.6	3.7
Victim Address	1.8	2.8	0.0	1.8	5.6	2.4
Victim-Off. Rel'ship	11.2	14.0	11.0	13.0	12.0	12.2
Victim Desires Effort	7.4	10.0	13.0	9.4	9.0	9.8
Suspect Information	13.0	13.0	9.0	12.0	13.2	12.0
Physical Evidence	10.6	12.0	12.0	11.0	13.8	11.9
Vehicle Described	8.6	5.8	4.6	0.0	4.6	4.7
Vehicle Plate Known	5.0	11.0	6.0	0.0	1.0	4.6
Property Identifiable	8.8	5.0	10.0	7.4	11.0	8.4
$ Value of Property	6.6	4.2	6.6	1.6	10.0	5.8

the degree of importance attached to case information.

The verbal protocol content of search analyses illustrates the importance of other factors in the prioritization of burglaries as well. For example:

> The categories that you have here, A through M, all represent very important information. You could hardly work a case without knowing this information. I think the only other thing is, ah, say under H, nature and source of suspect information. I want to know more about that person because I want to take that person to the computer, to LEMS, to LEIN. I'm going to research him before I do anything. I want to know who I'm talking to. Does he have accessibility to that area? Has he committed a number of crimes? Crimes like this before? I want to know as much about him before I talk to him. An investigation is not as clear cut as a lot of people think. In terms of knowing about the victim, I would like to know how often he reported crimes in the past. I could find that out through LEMS. I'd want to know who lives at the location of the crime. Does the suspect live there? Did he used to live there? (Detective D).
>
> ... If you can't put the case together and information doesn't seem to come, or you're not getting any closer, you dump it because you don't have <u>time</u> (Detective B; emphasis added).
>
> ... Another thing to do on case one is find out how many crimes have occurred at this business [which did not desire effort]. I'd see if there was a certain trend or a certain picture here. If they had one last month and one the month before, then you find out who the insurance company is and go from there (Detective E).
>
> If its a high value loss and the victim doesn't want to prosecute, I want to see why. I want to see if they are insured. I want to see if they are employed or not employed. I want to see where they live. And I want to see if they were an accused in a crime somewhere themselves. So I'll usually look up their [criminal] history as soon as I see that there is a large property loss and they don't want to prosecute (Detective A).

The linearity score for each of the burglary detectives is presented in Table 17. As seen in the table, the mean

TABLE 17

LINEARITY OF SEARCH
IN THE PRIORITIZATION OF BURGLARY CASES

Detective	Linearity Score
A	.38
B	.25
C	.09
D	.32
E	.15
Mean	.24

linearity score for all of the detectives is .24 which again represents a high degree of linear, or compensatory, decision making. Although the index scores range from .09 to .38, all of the scores reflect extensive use of linear decision making strategies.

The compensatory style is also reflected in the partial protocols provided below. In reading the protocols, it is apparent that an understanding of each case (on which decisions of priority are based) is achieved only after particular pieces of information are considered and weighed together. Hence, the meaning of each case develops only after all the information elements are "added together" in a compensatory style. In addition, it is seen that in several of the following excerpts (as well as some of those previously presented) certain "questionable circumstances" lead to an increased depth of search. For example:

> Case number four... ... What's the value of it? $795. That's a lot of property. Let's see if there was any evidence available? No evidence available. Well, what does the victim want to do? Yes they want to prosecute. With that much property taken I'm kind of curious as to where they live. What side of town? What area they live in? That's getting to be pretty high in value. -- Avenue. My first thought is that that is a lot of property taken from that area up there. There are some nice houses over there but there are also a bunch of dirt-baggy houses too. I'd be interested in what type of property was taken. If it was cash I would really question the situation. I would go down and see where this guy works. His employment status. Not employed. Now I've got some real questions about it. The first thing that comes to my mind is that it is an insurance rip. This is a more common situation for a male so I'm going to look at victim sex. It's a male. I'll look at the race. Non-white. <u>This kind of case, the more I see the more I want to know</u> before I even go talk to somebody. I want to know as much as I can because there

are some real unusual circumstances. I might put this case on the back burner until I see what comes up for awhile (Detective A; emphasis added).

From the same detective:

> Case five... ... Ok, how much was it worth? $1,000. I'm assuming that the person is going to want to prosecute with that much loss. Yes, they want to prosecute. I'll see where they work and live with that much property loss. -- Avenue. Kind of a working class neighborhood. Ok, they're employed. That's not too unreasonable then. How old is this person if they've got that kind of property to lose? 47. That is about what I would have expected... This case appears to be probably the case which would be the most time consuming.

From Detective E:

> Ok, normally on my regular case investigations, all of the information, if it's available, you go ahead and correlate everything together...
>
> Now another thing that I look at here is that in case four we got a male, 32 years old, non-white, not employed, and lives on -- Avenue here in Landau. -- Avenue is an area where, it was a good area years ago but now we got a lot of problems with narcotics, dope, cocaine, and so forth and so on. So associating -- Avenue with a non-white male and $795 ripped off, first thing I'm going to be looking at is a dope rip-off of some sort. (Priority was fourth of five cases.)

Another example of the need for an increased depth of search is provided below:

> In terms of property loss... if it is a real high value single piece of property, the owner is going to have something to prove that they own it. Like a $1,000 T.V. There are not a lot of $1,000 T.V.s and they don't come in neighborhoods where, you know, there are dirt-bag houses. If someone lives in a house that is a twenty, twenty-two, twenty-three thousand dollar house and they've got a $1,500 T.V. and they don't have a receipt for it? Now I got a real problem with that, right off the bat. Now I want to see where the guy works. See what other pieces of property he has in the house that is going to show me that he's going to spend $1,500 on a T.V. (Burglary Detective A).

In the analysis of the burglary detectives' protocols, the existence of non-compensatory decision making is evident as well but only in reference to when the victim did not desire investigative effort. For example:

> ... and the last [dimension] I'm going to look at as far as all cases is victim desires effort. The reason that this is done is that before you get too involved in the case you want to know if your victim gives a shit. I'm going over the categories that I've turned over to try and determine if I want to turn over some more of these before I make a determination or if I'm ready to make or get rid of some of these cases. Ok, at this point in time, case number one, I would not follow-up. We have a business that doesn't care. Under victim desires effort there is a no so I'd dump it at that point. This one would not be worked on (Detective B).

> ... What's big to me is this right here, victim desires effort, because I could be working a case and spending five, six, seven days on it. So this is big to me. I don't want to waste seven days on even a legitimate crime if you're not going to get cooperation from the victim (Detective C).

> ... then I would have to look at victim desires effort. No. So that closes this case. That's the determining factor for closing this case out (Detective D).

> ... in most cases if the victim desires no effort, basically I don't, I go on to the next case because number one, the prosecutor will never authorize [an arrest warrant] (Detective E).

The excerpt from Detective A's protocol (below) concerning the victim's desire for effort is unique from those above in that although it initially reflects non-compensatory decision making, it allows for the possibility of other factors (i.e., strong suspect information) to compensate:

> Case one... ... Victim desires effort? No. Well, that puts this one on the bottom burner real quick. Although I might still be interested in it because it might be a case that I'm working in conjunction with something

> else. However, the most valuable piece of information here is that we've got a name provided, the accused was seen committing the crime. That leaves me still real interested in the case because I still may be able to convince somebody that I still want the case. So this case, I would not can it. It's a good case, not a piece of junk. So I may go over his head or at least pressure him a little bit.

With four of the five burglary detectives then, nothing could apparently compensate for the victim not desiring effort -- even the fact that the accused was named and seen committing the crime. Accordingly, with four of the five detectives, this case was assigned the lowest priority of all the cases reviewed.

Prioritization of Robberies

Table 18 contains data on the proportion of the sixteen information elements searched within each alternative by robbery detectives when prioritizing robbery cases. As seen in Table 18, the mean amount of information accessed across alternatives and detectives is 59 percent. The mean amount of information searched ranges from 42 percent (Detective A) to 75 percent (Detective B). An examination of the variability of search within subjects and across alternatives shows that there is more variance with the search of Detective B than with Detective A.

In Table 19, data on the importance of case information in the prioritization of robbery cases is presented. As seen, victim desire for effort (12.2), suspect information

TABLE 18

PROPORTION OF AVAILABLE INFORMATION SEARCHED IN THE PRIORITIZATION OF ROBBERY CASES

Case Alternatives	Detective		
	A	B	Mean
1	.13	.25	.19
2	.13	.81	.47
3	.56	.88	.72
4	.63	.94	.79
5	.63	.88	.76
Mean	.42	.75	.59

TABLE 19

THE IMPORTANCE OF CASE INFORMATION
IN THE PRIORITIZATION OF ROBBERY CASES

Case Information	Detective		
	A	B	Mean
Victim Type	0.0	16.0	8.0
Victim Sex	0.0	7.0	3.5
Victim Race	0.0	0.0	0.0
Victim Employment Status	0.0	.8	.4
Victim Age	0.0	5.0	2.5
Victim Address	0.0	6.4	3.2
Victim-Offender Relationship	16.0	7.2	11.6
Victim Desires Effort	10.8	13.6	12.2
Suspect Information	9.0	14.8	11.9
Physical Evidence	8.4	7.8	8.1
Vehicle Described	7.8	4.2	6.0
Vehicle Plate Known	4.8	5.4	5.1
Property Identifiable	6.8	6.4	6.6
Degree of Injury	5.2	8.4	6.8
Weapon Used	10.8	9.2	10.0
$ Value of Stolen Property	6.2	5.6	5.9

(11.9), and the presence of a victim-offender relationship (11.6) are, on average, the most important elements of case information. These elements were generally accessed the earliest in each of the alternatives. The information elements of least importance are victim race (0.0), employment status (.4), and victim age (2.5). In this exercise at least, these information elements were rarely considered in determining case priority.

With these general patterns realized, it is important to call attention to the apparent individual differences which exist in the data. For example, victim type was generally one of the first information elements accessed by Detective B, while Detective A never accessed this information in any of the alternatives. Detective A never searched any of the victim demographic characteristics, while Detective B did.

The content of search analyses calls attention to other factors which are considered in prioritizing robbery cases. For example:

> I want to know where this thing happened but that information is not provided. I want to know if there are any parallels in these cases. Maybe the same guy did several of these. That is something that I would be looking for. Then you would bunch these cases together. My biggest concern with everything that has happened over the weekend, do we have a guy who wants to go out and rob everybody or not (Detective B).

Table 20 contains the linearity scores for detectives in the prioritization of robbery cases. The mean linearity score is .35 which, congruent with the other decisions, represents a high degree of linear decision making. With

TABLE 20

LINEARITY OF SEARCH
IN THE PRIORITIZATION OF ROBBERY CASES

Detective	Linearity Score
A	.47
B	.23
Mean	.35

the two linearity scores being .47 and .23, individual differences among detectives are once again highlighted.

An example of compensatory decision making is provided in the following partial protocol from Detective B. It is seen that all of the information elements considered and weighed together (especially, degree of injury, suspect information, age of victim, and sex of victim) elevate the priority given to the case.

> Let's go to case number three. Victim type? See suspect information. Property identifiable? See how much it was worth? $180. Does she want to prosecute? Yes. Victim Sex? Female. I knew it. I don't really care if its a male or female victim. I don't really care about the race of the victim. That's the least of my concerns. Weapon used? No. Was she hurt? Yes, serious, broken bone. Ok, so now I need to know a whole lot of information. She deserves some immediate contact. She doesn't appear to know who the accused was in this thing and she doesn't have a relationship or she isn't giving up that she has one with the suspect. She wants to prosecute. She is out some money. I would want to find out how old she is. Above 50? 69. I knew it. Seeing as to that she is older, I have a soft spot in my heart. I got some real concerns about her. Before I even read case number four I might give her a call and just find out how she is doing... Case three will receive top priority. I base that on the fact that she did receive an injury, there wasn't a weapon, but I want to know more about the case. She might be able to identify. If she can't identify, then she drops in priority to maybe third.

Non-compensatory decision making is also evident in the protocols of the robbery detectives. As with burglaries, non-compensatory strategies were used when the victim did not desire effort. For example:

> Case number one would be the last case that I would work. I would call the victim, ask why he didn't want to follow through on prosecution, and then close the case with no further action (Detective B).

> ... so the next thing that is important in these two cases would be ah, desire for effort. I guess that would be the next thing. Ok, case number one, that case would be gone right away. Unless you see that there is an on-going problem, you might push that victim a little harder. So this one could be a real quicky (Detective A).

Summary

Consideration of the findings across the three analyses shows that the greatest amount of information was searched in the prioritization of burglaries (67%), followed by the prioritization of robberies (59%), and then the selection of burglaries (46%). In all of the decisions, the offense characteristics appeared to be of more importance than victim characteristics. Suspect information was the most consistently important factor across all decisions. Victim race and employment status appeared to be the least important across all the the decisions. Regarding the extent to which detectives use linear strategies in decision making, it was found that all of the detectives (and detective sergeants), used a primarily compensatory style. The highest degree of linearity was displayed in the prioritization of burglaries, (.24), then the selection of burglaries (.28), and then the prioritization of robberies (.35).

Observations

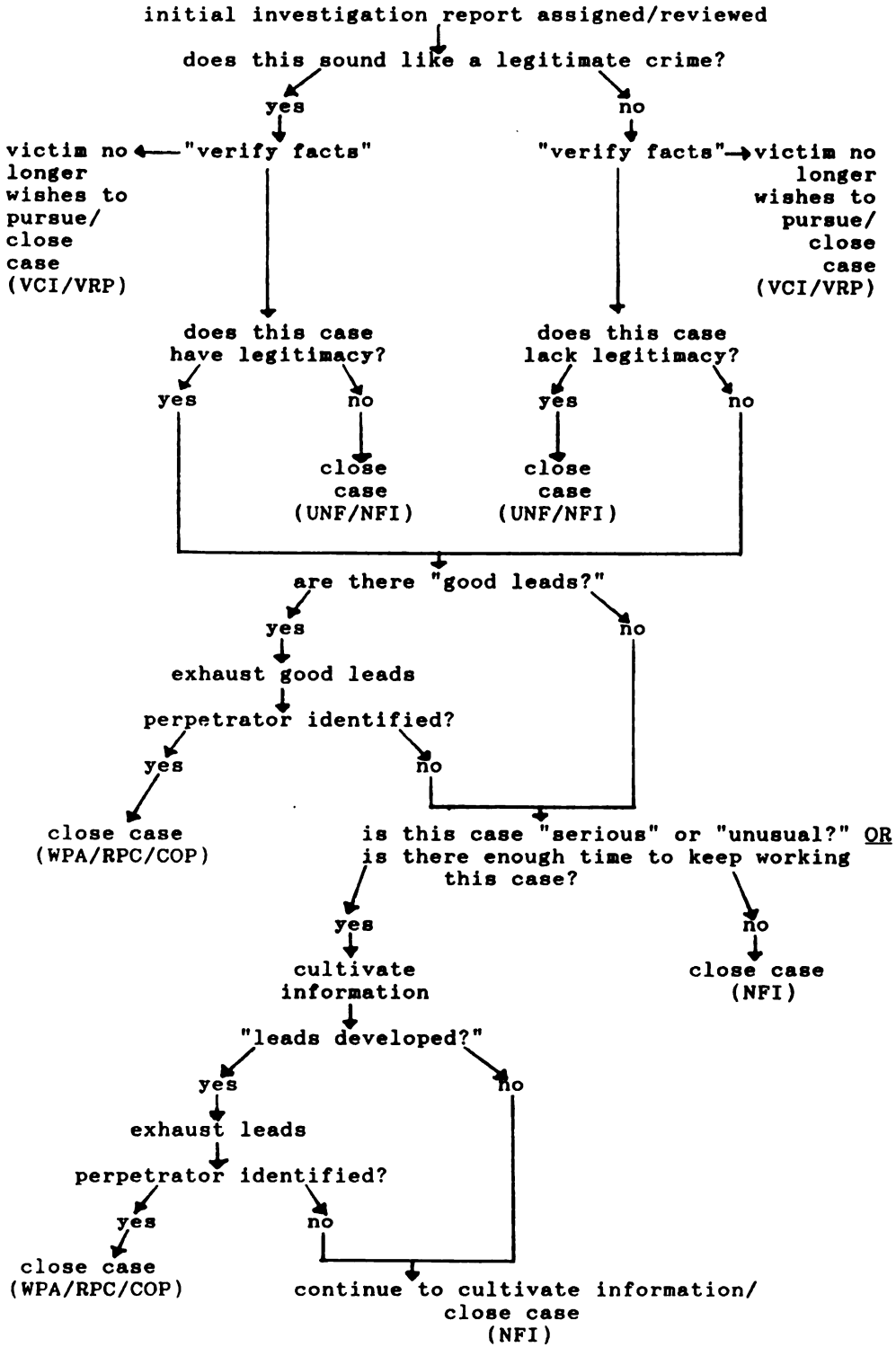
The following discussion is based primarily on observations of, and interviews with, burglary and robbery detectives. Detective sergeants were not systematically observed and therefore, these data do not reflect the complexities of the case selection decision. While the data derived from the observations were broad and diverse, the discussion presented here focuses specifically on describing how cases are processed by detectives. Accordingly, additional light is cast on the decisions made by detectives, how detectives make these decisions, and how these decisions determine the amount of time spent on a case.

The discussion centers around Figure 2 which is an illustration of the process by which cases are interpreted and disposed of by detectives. The organizationally recognized case dispositions (means by which cases can be "cleared") are noted within the parentheses (see Chapter Three pp. 59-60 for definitions of the statuses). This illustration also represents the framework for some of the discussion presented in Chapter Six.

As portrayed in Figure 2, a follow-up investigation consists of a series of decision stages. The decisions made at each of these stages reflect the meanings attached to the case and guide the conduct of the investigation. The model is a simplification, and perhaps an over-rationalization, of

FIGURE 2

A DECISION MAKING MODEL
OF BURGLARY AND ROBBERY INVESTIGATIONS



a very complex process but it does seem to capture much of how burglary and robbery detectives think, and how they go about "working" cases.

The process begins when the patrol officer's report is assigned to, and reviewed by, a detective. After reviewing the report, the first determination is whether or not the reported crime sounds legitimate. That is, is the victim's "story" truthful? and/or has there really been an "injustice" done here?

As evident in the protocols provided earlier, "stories" told by certain types of victims, and incidents which involve certain circumstances, are viewed by detectives as questionable in their truthfulness. Most fundamentally, did a crime really occur? Is this a phony report to rip-off an insurance company? Or, say in the context of a robbery of a taxi cab driver or a gas station attendant, did the "victim" pocket the money and then claim to have been robbed? Reports are also questioned on their legitimacy if it appears that the crime resulted from illegal activities in the first place. For example, given the facts and circumstances of the incident, does it appear that the "robbery" was really "a drug deal gone bad?" Was it a "payback" where "the victim got what he deserved?" Was the "victim," for example, carrying money to buy drugs? Or was it money received from selling drugs? Did a "hooker rip him off?" Generally, crimes with young black male victims, or

crimes which occurred in a "bad" (high drug, high crime, high non-white population) part of town, especially after dark, are questioned the most in terms of their overall legitimacy. Crimes with older white females are questioned the least.

By "reading between the lines" of the patrol officer's report and considering the details of the incident, the detective formulates an idea of what <u>really</u> happened -- he gets "a feel" for the case. At this point in the investigative process, the detective can make a tentative judgement that yes, this does sound like a legitimate crime, or no, this does not sound like a legitimate crime. With either interpretation, there is a need for the detective to "verify the facts" of the case and find out what actually happened -- to "see if the victim's story check's out." In doing so, the detective's preliminary assessment regarding the legitimacy of the case can be confirmed or disconfirmed. This is most often accomplished by recontacting the victim and asking him to once again to tell what happened. Specifically, this recontact can have several purposes. First, it is a means by which the patrol officer's interpretation of the incident can be verified. Second, additional information which would help in the investigation could possibly be produced. Third, by recontacting and re-interviewing the victim, the detective can "test" the victim to see if he can provide the same

story twice. If there are inconsistencies between the patrol report and the account provided to the detective, it may signal an untruthful victim and a report lacking in legitimacy.

Fourth, a personal contact with the victim allows the detective to see the victim and judge his credibility in person. As one burglary detective stated in a protocol, "I think case four... that's a go-down-and-see person. I wouldn't do any of that over the telephone. I'd want to see the person in person to judge their credibility." When "judging credibility," the victim's "body language" can be observed when asked "the tough questions." With such observations, further evidence could be offered as to the (il-) legitimacy of the complaint. The following message, which was on a note attached to one of the follow-up investigation reports reviewed for the statistical analyses, provides an example of how detectives use the victim's body language to give meaning to a case: "He did fair in the interview. When I asked him if he knew who robbed him, he dropped his eyes and said no. Maybe a little payback?"

Finally, as a result of the contact, it may be learned that the victim, for whatever reason, does not wish to pursue the complaint. While detectives may question the motivations of the victim for such a desire (i.e., is this a false burglary to rip off an insurance company?), the case is most often closed without much hesitation (Victim Cancels

Investigation; "VCI," if culprit is not known; Victim Refuses to Prosecute; "VRP," if culprit is known). In some cases, when questionable circumstances exist, the first question the detective asks the victim during the interview is whether or not he would "be willing to go to court and testify against the the person who committed the crime." If the victim says no, it means that the victim does not desire effort and the case is closed (as either "VCI" or "VRP"). In addition, if attempts are made to contact the victim but the victim never responds, it is assumed by the detective that the victim does not wish to pursue the complaint which also allows the investigation to be quickly closed ("VCI," "VRP").

The information produced by "verifying the facts" can contribute additional weight to the initial judgement that the report is either legitimate or lacking in legitimacy. As stated by a burglary detective in a protocol, "I think that case number four would be easy enough to either figure out and write off as a bullshit case or maybe it is a legitimate case." If there is a strong conviction that the case is "bullshit" or "not legitimate" after the facts are verified, then the case would most likely be closed (as Unfounded, "UNF;" or No Further Investigation, "NFI").

For the large proportion of cases which remain, the question becomes: "are there 'good leads' for an investigation?" A "good lead" is a piece of information

which is likely to "lead" directly to the culprit and accordingly, is associated with a specific investigative activity. For example, a suspect's name provided by an eyewitness to the crime is a "good lead" and an "interview" of the suspect is the specific activity. If a robbery victim feels that she can identify the perpetrator, and the description she provided matches that of a known robber (leads), then a photo line-up would be the specific activity. If there are are fingerprints available and a named accused is known or suspected, then the prints could be submitted for a comparison, etc.

If there are "good leads" and, as a result of performing the activities associated with these leads, the perpetrator was positively linked to the crime ("tied down"), the case could be closed (Warrant Pending an Arrest, "WPA" if an adult; Refer to Probate Court, "RPC" if a juvenile; or Accused in Other Prosecution, "COP" when identified but not charged with the present crime). If good leads were exhausted and a perpetrator was not positively identified, or if there were no good leads to begin with, then, before more time was spent on the investigation, the following questions had to be answered: (1) is this case "serious" or "unusual" in any way? and (2) is there enough time to keep working this case?

A case can be defined as "serious" or "unusual" in myriad ways. For example, the victim could have been

severely injured, a large amount of property may have been taken, the crime may be part of a pattern, the victim may be of high status and have "connections," the perpetrator(s) may be seen as particularly dangerous (e.g., an "Asian gang"), or the suspected perpetrator may have personally challenged the detective at some time in this or other investigation (e.g., "come back when you can arrest me but now get the fuck out of my face"). These factors are always considered in relation to the legitimacy of the crime and the circumstances surrounding the incident.

Consideration of time pressure is also important in determining how much time will be spent on a given investigation (and if the case is assigned at all as seen in the earlier protocols). If the detective is assigned numerous cases on a daily basis (vs. only a few cases per week), there is less time to work on any one case and, in order to maintain control of the workload ("avoid being swamped"), there is more pressure to close cases more quickly. If there is not enough time to keep working the case, or if the case is not unusual or serious in any way, the detective might tell the victim to call if s/he finds out who committed the crime. The case would most likely then be closed ("NFI").

If a great deal of time pressure is not perceived, or the case is serious or unusual, then the task of the (self-motivated) detective is to cultivate information, the

most time consuming aspect of a follow-up investigation. The importance and usefulness of cultivating information is also increased when it is believed that just "a little bit more" information is needed to identify the culprit. When cultivating information, the activities performed do not emanate from specific pieces of information. As a result, the activities do not have as much direction as those associated with "following leads;" information which is cultivated is often of poor quality sometimes leading the detective "in the wrong direction." Detectives may be able to cultivate information by showing mug shot books, conducting neighborhood canvases, talking with parole or probation officers to see if they know of anyone matching a given description, searching the crime scene, interviewing informants, talking to detectives from other departments to see if "anything rings a bell" with them, or "patrolling" the area of the crime and (1) making "street stops" to ask individuals if they know anything about the crime (e.g., "Who rides the white mountain bike around here?" "Has anybody been talking about the old lady who was ripped off?") or (2) trying to locate someone who matches a given description. As a result of these activities, "good leads" may be developed. If, in exhausting these leads, a perpetrator is identified, the case would be closed ("WPA;" "RPC;" "COP"). If a perpetrator is not identified as a result of exhausting the newly created leads, or if no leads

were present in the first place, activities oriented around cultivating information could continue indefinitely or cease immediately ("NFI"). The continuation of effort and the allocation of time to such a case would once again be a function of time pressure, and the seriousness or uniqueness of the crime.

In conclusion, as portrayed here, the follow-up investigation resembles a filter where cases with certain combinations of characteristics get the most amount of time devoted to them and other cases with other combinations of characteristics get the least amount of time devoted to them. Given the "big picture" sketched here, decision making of detectives sometimes reflects the non-compensatory style and at other times it reflects the compensatory style. For instance, little if anything can compensate for a victim who does not wish to pursue the complaint in determining the amount of time to devote to the case. Similarly, if a case is interpreted as "bullshit," nothing can compensate to allow the case to receive more time or effort. Alternatively, the uniqueness or seriousness of the crime or the availability of time (lack of time pressure) can compensate for the lack of evidence in a case. Cases are not always closed simply because there is a lack of evidence. Evidence is the fuel of the investigation but for some cases, as described here, efforts are made to create fuel. In the next chapter, this perspective on

investigations, its implications, and some of the causal linkages on which it rests are discussed further.

Footnotes

1 If one included those burglaries which received a "No Report Forthcoming" status, the percent of burglaries assigned to detectives would drop to 21% (317 out of 1,536).

2 The derivative at the mean is analogous to the standardized beta weight in linear regression.

3 This is particularly true in explaining the inconsistency in the derivative for "suspect vehicle plate known." Suspect vehicle plate known and suspect vehicle described have a correlation of .46. This appears to be reflected in the standard error of the "plate known" variable (SE[B] = 386.788). The inflated standard error ultimately distorts the derivative at the mean statistic (.724) in the probit analysis. The multicollinearity does not appear to affect the regression results, however.

4 However, although common in the literature (e.g., Sommers & Baskin, 1990; Smith & Klein, 1984), it is not appropriate to rank the impact of variables based on their degree of significance (except if the variables are measured on the same scale). With consideration of the significance levels, one may reject the null hypothesis but that is all (Johnson, Johnson, & Buse, 1987).

5 The value losses involved in the bank robberies were: $460, $926, $2,000, $2,145, $5,100, $7,576, $9,132 (two missing).

6 The following were the total amounts of time (hours) spent in the bank robbery follow-up investigations: 6.0, 16.7, 18.0, 20.0, 27.8, 31.8, 37.0, 37.5, 50.8.

7 It is necessary to distinguish between "importance" and "influence." To determine influence, the value of the dimension searched and its impact on the decision outcome must be assessed. The determination of importance, as outlined in Chapter Four, rests with simply identifying when the dimension was accessed in each alternative. Because of the conceptual and empirical differences between "importance" and "influence," any causal inferences which are made on the basis of "importance" must be interpreted with caution.

8 For confidentiality reasons, street names are not included in the protocols.

CHAPTER SIX

DISCUSSION

Chapter Six contains a discussion based on the results of the study. The chapter is divided into five sections. In the first section, the decision outcomes of detectives are placed in the context of previous research. The second section discusses the impact of case characteristics on the decision outcomes of detectives. The third section discusses the "black box" of the outcome oriented results -- the cognitive processes associated with detective decision making. The chapter concludes with a discussion of the study's limitations and directions for future research.

Decision Outcomes in Context

Before discussing the stimuli which provoke the decision responses of detectives and the cognitive processes associated with the decisions of detectives, it is necessary to briefly compare the decision outcomes obtained in this study with those identified in previous research. This task is complicated by the fact that only one study in the

literature provides statistics on a comparable population of cases. For example, Bynum et al. (1982) state that 82 percent of "all property and personal crimes" "received little or no investigative effort" (p. 315). According to Ericson (1981), 30 percent "of all cases" that came to the attention of the detective bureau received "one or more hours" of investigative time. Greenwood et al. (1977) report that approximately 63 percent of robberies, 36 percent of non-residential burglaries, and 30 percent of other burglaries received "at least a half hour of a detective's time" (p. 130). Eck (1983) however, does provide comparable figures. In Table 21, the percent of burglary and robbery cases assigned to detectives along with the mean amount of time spent on the cases in the three jurisdictions studied by Eck are presented along with those same figures obtained in this study.[1]

In examining the burglary statistics, it is seen that in Landau the lowest percentage of cases were assigned. Perhaps for this reason, those burglary cases that were assigned, on average, received a relatively large amount of investigative time. With robberies, there was little variance across jurisdictions in the percent of cases assigned but Landau was second to DeKalb in the amount of time devoted to them. From this comparison it appears as though the screening of burglaries in Landau followed rather stringent criteria, at least in relation to those

TABLE 21

DECISION OUTCOMES FOR BURGLARY AND ROBBERY CASES IN ECK (1983) AND PRESENT STUDY

Jurisdiction	% Burg's Assigned	Hours Spent	% Robb's Assigned	Hours Spent
DeKalb	45.4	1.9	100.0	5.1
St. Petersburg	35.3	1.1	100.0	.9
Wichita	76.1	.8	100.0	2.4
Landau	20.6	3.7	96.0	4.5

jurisdictions examined by Eck. Accordingly, although devoid of case load information (number of cases assigned / number of detectives available), the time spent on cases in Landau does appear reasonable given the context of Eck's study.

Case Characteristics and Decision Outcomes

According to Black's (1976) theory of the behavior of law, the seriousness of a criminal incident, and thus the "amount of law" mobilized as a result of the incident, is a function of the social structural characteristics of victims (and/or offenders). To test Black's theory, the influence of victim characteristics on the case selection and time allocation decisions of detectives was examined. Overall, the findings of this study do not lend support to Black's theory. In the statistical analysis, neither victim sex, race, employment status, income, nor age[2] had an appreciable effect on the "amount of law" invoked by detectives in any of the three decision situations analyzed. Only the "organization" of the victim ("victim type") appeared to affect decision responses; robberies of "businesses" were more likely than robberies of "non-businesses" to have more time spent on the follow-up investigation but only when banks were included in the analysis. When bank robberies were excluded from the analysis, the impact of "organization" disappeared.

In addition, opposite of the expectations outlined by

Black, it was found that the presence of a relationship between the victim and the offender increased the likelihood that a burglary report would be selected for a follow-up investigation. If Black's hypothesis on this issue would have been supported, the presence of a relationship between the victim and the offender would have decreased the likelihood of a report being selected. In the two time allocation decisions, this variable did not have a significant effect in either direction. In short, of the 18 hypotheses (6 variables x 3 decision situations) derived from Black's theory which asserted a causal relationship between victim characteristics and decision outcomes, 16 were not supported, one was partially supported, and one was contradicted.

Results from the information board exercise, specifically the content of search analysis, are also generally non-supportive of Black's predictions. Although it is difficult to make causal inferences on the basis of these data, it does appear that the social structural characteristics of victims are less important than offense characteristics in the case selection and time allocation ("prioritization") decisions of detectives. In the case selection decision, of the six victim characteristics which predict decision outcomes according to Black, only one (victim type) received an "importance score" which ranked in the top half of all scores. In the prioritization of

burglaries and robberies, the "importance scores" for only two of the six victim characteristics (victim offender relationship and victim type) ranked in the top half of all scores.

While the regression and content of search analyses indicate that the social structural characteristics of victims do not, for the most part, affect decision outcomes of detectives, the observational data, along with several of the verbal protocols presented in Chapter Five, suggest that victim characteristics do have an impact on detective decision making. However, these influences do not take the form of independent causal relationships as assumed by Black. Rather the influences result from the combination of certain characteristics. For example, in the statistical analyses it was found that victim sex and age did not have independent effects on the time allocated to an (burglary or robbery) investigation. However, observations suggest that crimes which involved older female victims[3] were more likely to be viewed as legitimate, and, in robberies particularly, much more likely to be viewed as "unusual" or "serious" than crimes with younger male, younger female, or even older male victims. On the other hand, robbery and burglary cases with younger, non-white, male victims[4] were more likely viewed as lacking in legitimacy or as "bullshit," than cases with older, white, female victims. However, due to the relative rarity of such victim

characteristic combinations in the data, it is not possible to test these observations through statistical analyses, at least with the data available here.

In addition to the victim characteristic hypotheses derived from Black, this study also examined the expectation that the preferences, or wishes, of the victim affect the decision responses of detectives. In the statistical analyses, victim desire for investigative effort was found to be influential in robbery and, to a lesser (statistically non-significant) extent, burglary time allocation decisions; victims who desired effort were more likely than victims who did not desire effort to have more time spent on their investigations ("desire for effort" was not included in the case selection decision).

The content of search analyses were generally congruent with the statistical results although once again, causal inferences are problematic with these analyses. Victim desire for effort was ranked as the most important case information element (of sixteen) in the prioritization of robberies and fifth most important (of fourteen) in the prioritization of burglaries.

Based on observational data, "desire for effort" was the only victim characteristic which had a direct and independent effect on time allocation decisions. If the victim did not wish to pursue the complaint, then typically any additional investigative effort was viewed as "a waste

of time" by the detective because the prosecutor's office would not issue a warrant for the arrest of the perpetrator even if s/he was identified. Closing a case due to victim preferences was a "quick and easy" way of disposing of a case (cf. Ericson, 1981). The predictive power of this variable was perhaps mitigated in the statistical analyses by the fact that even if a victim desired effort, it did not necessarily mean that time was spent on the investigation. The case could have been quickly closed for a variety of other reasons (e.g., lack of legitimacy, lack of good leads, etc.).

In placing the present "victim characteristic" findings into the context of previous detective decision making research, it is seen that the findings of this study are similar to those presented by Bynum et al. (1982). Recall, these authors found that victim sex, race, age, and employment status did not (at least directly) influence detective decision making in terms of the effort expended in follow-up investigations, although victim income in burglary cases did. Support for the expectation that victim income affects detective decision making also received support from Ericson (1981) and Waegel (1981). In addition, Waegel (1981) found that the race of the victim had an impact on detective decision making. However, none of the available studies provide a discussion of the influence of other victim characteristics on detective decision making.

Therefore, this study supplements those studies previously reported by providing insight into the effect (or non-effect) of victim type, victim-offender relationship, and victim desire for effort, as well as providing additional support for the previous findings that victim age, race, sex, and employment status do not directly affect detective decision making. Finally, the observational component of this study, as well as the verbal protocol analysis, further contributes to our understanding of the influence of victim characteristics by highlighting the complex calculus by which these causal influences are manifested in the decisions of detectives.

When placing the "victim characteristic" findings of this study (as well as of the other detective decision making studies) into the larger literature on police (patrol officer) and criminal justice decision making, it appears that victim characteristics are more influential on the decisions of police (patrol officers) and other criminal justice actors than they are on the decisions of detectives. For example, Smith and Klein (1984), Smith (1987), and Black (1970) all found victim income to have a direct and independent impact on the decisions of patrol officers (decisions to arrest or file a complaint). Victim sex was also found to affect the decisions of patrol officers (Smith & Klein, 1984; Smith, 1987) and prosecutors (Williams, 1978). Smith (1987) found that the race of the

victim influenced the decision of patrol officers (but see Smith & Klein, 1984). Similarly, numerous studies have found that the presence of a victim-offender relationship (or a particular type of relationship) influenced the decisions of patrol officers (Black, 1971; Smith & Visher, 1981; LaFave, 1965; Friedrich, 1977; Worden & Pollitz, 1984) and prosecutors (Schmidt & Steury, 1989) in the manner predicted by Black.

The inconsistencies which appear when comparing detective decision making research with this larger body of police and criminal justice decision making research allow for the possibility that the follow-up investigation represents a unique decision stage in the justice system, distinguishable from "police decision making" and "criminal justice decision making" more broadly, in that victim characteristics generally do not have (at least independent and direct) effects on the decisions of investigators.

Alternatively, one could argue that the number of null findings produced here (especially in reference to those victim characteristics identified as important by Black) raise questions about the appropriate conception of crime "seriousness," if "seriousness" can predict the decision outcomes of detectives. It may be the case, for example, that the behavior of law is not so much a function of victim characteristics as it is characteristics of the offense, specifically those indicative of harm -- value of stolen

property, use of a weapon, and degree of victim injury.

Of the offense characteristics which reflect the actual (or potential) harm done, only the value of the stolen property was significant in the statistical analyses. In fact, of all the case characteristics included in this study, the amount of property loss was the most influential in both of the time allocation analyses. This variable also displayed a significant impact in the case selection analyses although to a lesser degree than in the other decision situations.

Despite the major impact property loss displayed in the statistical analyses, the content of search analyses shows that none of the importance scores for "value of stolen property" ranked even within the top third of all scores. This inconsistency may be explained by the frequency in which detectives use compensatory strategies in making decisions. With compensatory strategies, a high value on one dimension (e.g., $15,000 of stolen property) can compensate for a low value on another (e.g., weak suspect information) regardless of the order in which the information elements are accessed. Therefore, given extensive use of compensatory strategies and the previously discussed inability of "importance scores" to reflect the values of the accessed dimensions, it is seen once again that "importance scores" based on content of search are not necessarily valid indicators of "influence."

The influence of the value of stolen property on the amount of time allocated to follow-up investigations was evident in the observations as well. However, as seen in several of the protocols presented in Chapter Five, when the circumstances which surrounded the incident seemed "fishy," a large amount of property loss often raised questions about the legitimacy of the crime (recall the protocol with the theft of the $1,000 TV in the "dirt-baggy" area of the city). However, most of the the cases which involved an "extreme" amount of stolen property involved victims who were known in the community, and known to have such property to lose. Perhaps for this reason alone were these types of cases viewed as deserving of investigative attention.

Case in point: During the observation period, a burglary was reported by a well known real estate developer in the city of Landau. This individual was described by the detectives as "owning half of the city." The claim of this victim was that $10,000 in cash was taken from his residence and the likely culprit was the exterminator (the "bug man") who had access to the house the morning the cash was discovered missing. None of the detectives doubted the ability of this victim to have $10,000 in cash taken. After numerous hours of time were allocated to the investigation (including several polygraph examinations of the suspect and a discussion of the possibility of "staking-out" the accused) the investigation was terminated without an arrest.

If the victim would have been "Joe Nobody," the legitimacy of the incident would have most likely been questioned perhaps to the point of being "written off as bullshit." But the important point for consideration here is that "Joe Nobody" does not report a loss of "$10,000." Maybe $100, $500, or even $1,000, but not $10,000.

One of the detectives elegantly summarized the way in which property loss affects the time allocated to cases:

> The police department is a political animal. Somebody that has got $25,000 has got some political touchings. So therefore, I've got to pay attention to that person over the person who gets robbed of his [newspaper] money. Plus the higher the money, the more likely of that going into the press which means that my captain and my chief are going to want to know what is going on here. The media is more interested in the big money losses than the small ones.

While the dollar value of the property loss was influential in the statistical analysis, neither the degree of injury nor the use of a weapon were found to affect the amount of time allocated to robbery follow-up investigations (these indicators of harm were not, of course, appropriate for burglaries). In the content of search results, degree of injury and weapon use both obtained "importance scores" which ranked among the top half of all scores (seventh and fourth, of 16 respectively).

The results of the statistical analyses were generally confirmed through the observations. The only time weapon use, by itself, elevated the priority of a case or led to an increased amount of time being spent on the investigation

was when the culprit used some "unusual" weapon like a sawed-off shotgun or a machine gun (i.e., "an Uzi") to perpetrate the act; again, a statistically infrequent occurrence and one not captured in the operationalization of the "weapon use" concept. An individual who used such a weapon was viewed as particularly dangerous, likely to cause great harm to someone in the future and hence, one who needed to be "dealt with."

When serious injury was inflicted on a victim as a result of a robbery, it often (but not always) gave the case enhanced credibility. However, this "enhanced credibility" did not always translate into additional time being spent on the case. For instance, the detectives told numerous stories about "victims" who caused self-inflicted injuries and then claimed that the injuries were a result of a robbery. In one memorable incident, for example, an employee of a tire store stole cash from the store and then, once the cash was secured, hit himself over the head with a tire-iron, causing unconsciousness. It was not until other employees discovered the "victim" on the floor lying unconscious in a pool of blood that a "robbery" was reported. Because of such incidents, detectives know that injuries are not necessarily "the truth." In addition, consideration of the person injured (e.g., old female vs. young male) and the circumstances of the event (e.g., occurred on the street at 3:00 a.m. or in the victim's house

at 4:00 p.m.) add additional meaning to the case. Finally, degree of injury is not "serious" in the same way that property loss is "serious." According to the detective's statement cited earlier, an extensive amount of property loss is serious not because of the amount of property taken per se, but rather it is serious because of who the victim may be -- not anyone can have "$25,000" taken, but anyone can be injured.

In placing these offense characteristic findings into the context of previous detective decision making research, the first realization is that very little of a context exists. Bynum et al. (1982) is the only study which directly examined the impact of property loss and victim injury on detective decision making; no studies provide insight into the impact of weapon use on detective decision making. Bynum et al. did not find property loss or injury to affect the extent of effort devoted to follow-up investigations. Therefore, this study supplements Bynum et al. in finding weapon use to not affect decision making, provides additional evidence that injury has no additive effect, and also contributes strong contrary evidence as to the effect of property loss. The study also provides insight into the meanings attached to these case characteristics and thus, how these case characteristics come to affect (or not affect) the decisions of detectives.

When considering these findings in relation to those of

the larger police decision making literature, several parallels emerge. For example, both studies which examined the impact of weapon use on patrol officer decision making (Smith & Klein, 1984; Smith, 1987) found that weapon use did not affect decisions. Similarly, four of five studies which examined the effect of victim injury on police decision making (Berke & Loseke, 1981; Smith & Klein, 1984; Worden & Pollitz, 1984; Smith, 1987) found no (direct) effect (but see Waaland & Keeley, 1985). No studies of police decision making have assessed the impact of property loss on decision making. The consistencies between this study and studies of police decision making more broadly in terms of these offense characteristics suggest that detective decision making is similar to patrol officer decision making in that direct effects of weapon use and injury do not exist.

In comparing these findings to those of previous criminal justice decision making research however, several inconsistencies do emerge. For example, Adams and Cutshall (1987) found property loss to affect prosecutorial decision making. However, Schmidt and Steury (1989) found the extent of victim injury and weapon use did impact on prosecutorial decision making. Nagel (1983) did not find weapon use to affect judicial (pre-trial release) decision making.

The final set of offense characteristics examined in this study consisted of evidence, or solvability factors, associated with the crime. Of the evidence variables

examined (strength of suspect information, presence of physical evidence, description of suspect vehicle, knowledge of vehicle plate number, and identifiability of stolen property) only suspect information and physical evidence were found to influence decision making in all three decision situations. If physical evidence was available, the report was more likely to be selected and have more time spent on the investigation. Further, the stronger the suspect information, the more likely the report was to be selected and when there was moderate suspect information more time was spent on the investigations than when there was weak or strong suspect information. Identifiability of the stolen property did not display an effect on any of the decisions examined. The other evidence variables displayed inconsistent effects. When a suspect vehicle was described, the report was more likely to be selected. When a suspect's vehicle plate was known, the burglary case was more likely to receive more time.

In the content of search analysis, the "importance scores" for suspect information and physical evidence consistently ranked in the top one-third of all scores. In fact, suspect information ranked either first or second in all of the decision situations. The remaining evidence variables achieved importance scores of varying strengths.

The observations support the other analyses which illustrate the impact of suspect information and physical

evidence on decisions of investigators. However, the impact of the other evidence factors could not be isolated through the observations. In the selection decision, the strength of suspect information most often had a direct impact on decision outcomes. In fact, in reviewing the reports for the statistical analyses, it was not difficult to successfully predict those cases which were not assigned -- if a name of a suspect was not provided (or was provided only on the basis of the victim's guess), the case was very rarely selected for an investigation. In order for physical evidence to be predictive of case selection however, generally other evidence (albeit minimal) had to be present as well. For example, a case where a name of a suspect was provided only on the basis of the victim's guess (weak suspect information), and fingerprints were available, would have had an increased chance of selection. Given this combination of evidence it would be relatively easy for the detective to either "make" or eliminate the named suspect. Therefore, it was seen that all of the evidence weighed together (again, in a compensatory style) was more important than each evidence element considered individually.

In the time allocation decisions, <u>most</u> "good leads" were derived from suspect information. If no leads were present (e.g., there was weak suspect information), then the detective typically did not realistically expect much chance of an arrest clearance regardless of the time spent in the

investigation. As a result, the investigation was most often quickly closed through some other means (i.e., "NFI"). The only exception to this, as described in Chapter Five, was when the case was viewed as "serious" or when time was available; when either of these conditions were present, the investigation may have still had considerable time devoted to it (e.g., time was spent cultivating evidence). At the other extreme, when suspect information was quite strong (i.e., the name of the accused was provided by someone who saw the accused committing the crime), little time was needed to identify the culprit -- perhaps an interview of the suspect and a visit to the prosecutor's office. When suspect information was of moderate strength however, it was believed that there was at least a possibility that the case "could be broken" with just a bit of additional information. These cases were therefore considered more promising and consequently, time was often "created" for them. Once again however, strength of suspect information could have been enhanced by the presence of other evidence which could affect the overall "strength of evidence" in the case and ultimately, the amount of time devoted to the case.

In looking at the detective, police, and criminal justice decision making literature, it becomes apparent that evidence (however defined) has a consistent effect on decision making across all decisions in the justice system;

more evidence leads to "more law" (e.g., Adams & Cutshall, 1987; Albonetti, 1986; Schmidt & Steury, 1989; Black, 1971; Eck, 1983; Greenwood et al., 1977; Bynum et al., 1982). Accordingly, considering the previous discussions in this chapter, it seems reasonable to conclude that evidence strength is the one factor on which decisions of all criminal justice actors turn. At the same time however, this study empirically demonstrates the seemingly unique curvilinear relationship between strength of suspect information and the time allocated to follow-up investigations.

The Processes of Decision Making

This is the first known study which has attempted to explicitly trace the cognitive processes associated with the decision making of detectives, or any criminal justice actor. Accordingly, this study should be considered as only a first step toward an understanding of how detectives make decisions. In the previous section of this chapter, the statistical results and observations were discussed in relation to the factors which influence the decisions of detectives. In this section, the results of the information board exercise and observations are discussed in order to cast light on the processes by which detectives transform information inputs into decision outcomes. Specifically,

search behaviors of detectives are discussed in terms of their linearity, depth, and content.

When detectives were presented with case information and asked either to decide which cases to select for a follow-up investigation or determine which case would receive top priority and rank the rest, it was found that all of the detectives used, to a large extent, linear decision making strategies. This result is rather surprising given the expectations outlined in Chapter Two. A substantial amount of the process tracing literature has illustrated that decision tasks characterized by a high degree of complexity (i.e., the amount of information available -- number of alternatives, number of dimensions, or both) are associated with the use of non-compensatory decision strategies (Payne, 1976; Ford et al., 1989). Although task complexity was not manipulated in this study, the amount of information available in the information boards provided what would be considered a relatively complex task in the context of previous research.

In the bigger picture, the observations also lead one to believe that decision making of detectives is accomplished through primarily (but not exclusively) compensatory strategies. Based on the description of the investigative process provided in Chapter Five, it was seen that there are basically five determinations made in an investigation: (1) Is the case legitimate? (2) Does the victim wish to pursue

the complaint? (3) Are there good leads? (4) Is the case serious or unusual? and (5) Is there enough time to keep working the case? Each of these determinations is either directly or indirectly influenced by case information. In considering these factors, and hence determining the amount of time to spend on a case, compensatory and non-compensatory strategies are used. For example, non-compensatory strategies are used when the victim does not wish to pursue the complaint or when the case is viewed as lacking in legitimacy; if the case does not have legitimacy or the victim does not wish to pursue, little time is spent on the case. Conversely, compensatory strategies are used when the case is serious; seriousness can compensate for lack of evidence ("good leads"). Availability of time (lack of time pressure) can also compensate for the lack of evidence (or the lack of strong evidence); if time constraints are not perceived, the case, regardless of the amount of evidence or degree of seriousness, will have time allocated to it (cf. Sanders, 1977). Hence, on the basis of the observations of detectives, one is left to conclude that detective decision making involves a mix of compensatory and non-compensatory strategies, with most decisions made through the use of compensatory strategies.

Regarding the amount of information searched in the information board exercise, it was seen that the detective sergeants searched, on average, less information in the

selection decision than the detectives in the prioritization decision. Although determination of statistical significance is problematic give the small N, a possible explanation for this finding is that the detective sergeants have a lesser burden for action. As evident in several of the protocols, the primary task of the detective sergeants in reviewing initial investigation reports was to look for leads which a detective could pursue. If leads were not available, then the seriousness of the case would have to be established (vis-a-vis time pressure) before the case would be assigned. While the sergeants may formulate initial impressions about the legitimacy of the complaint, it was not their task to verify its legitimacy. Therefore this information was not necessary in order to make a determination as to whether or not to assign the case. The detective assigned the case, on the other hand, not only had to determine if there were leads and the seriousness of the incident, but he also had to be concerned with information which could assist in making an overall determination of legitimacy.

Perhaps the most interesting results of the search pattern and verbal protocol analysis related to the detective's content of search. As discussed in the previous section, victim characteristics were generally considered "less important" than offense characteristics in the search for information. More importantly perhaps is the evidence

provided in the protocols which supports a "gestalt theory" of decision making -- with detective decision making, the sum of the information which relates to a given case is greater than each of its individual parts. As a consequence, a case takes on meaning only when the information relating to the case is considered and weighed together. This "gestalt theory" also, of course, has direct implications for the depth of search in decision making. In Chapter Five this was referred to as "the more I see, the more I want to know" phenomenon.

Limitations of the Study

There are several limitations to this study. First, the data used for the statistical analyses were obtained from official reports completed by patrol officers and detectives. Official records have been questioned as an accurate reflection of objective reality (Manning, 1980; Meehan, 1986). Particularly troubling for some is the validity of the self-report measure of time spent on an investigation. On the basis of the observations, it is believed that very little error in this measure was intentionally introduced by the detectives. While detectives were required to state the amount of time spent on the investigation, the information was not monitored or organizationally reported in any fashion. There was no feedback to the detectives or supervisors on the basis of

these statistics. Detectives were not evaluated on this information. In addition, supervisors rarely questioned the amount of time stated on the report. Therefore, it appears that there was little reason to intentionally inflate or deflate the stated amount of time spent on a case. However, the measure did contain at least two types of errors -- memory errors and calculation errors.

Concerning memory errors, through the course of a shift, a detective may have worked on five or more cases, performing one activity on one case and then another activity on another case, etc. However, sometimes the case log would not be completed until the case was closed which forced the detective to recall the activities performed and the time spent on each activity. At the other extreme, where the least amount of memory errors would be reflected, the detective would record the activity and the time spent on the activity as the activity was performed. However, most of the detectives recorded the activities performed and the time spent on the activities on a daily basis, at the end of the shift.

Calculation errors resulted from the difficulties associated with estimating the time spent on various activities. For example, because of the difficulties in allocating driving time to particular investigations, it was most often excluded by the detectives. An exception to this was when a detective traveled to another jurisdiction in

reference to a specific case. Time spent on other activities which were not attributable to individual cases (e.g., discussions with other police personnel in the department, "patrolling" high crime ["slum"] areas) were generally not included in the summary of activities or time spent on a particular case. Finally, certain activities which consumed a relatively insignificant amount of time (e.g., departmental record computer checks) were often not recorded on the case log and therefore, were not often counted in the total amount of time spent on an investigation.

Second, the observations and protocol analysis made it clear that several theoretically important variables were omitted from the analysis, most important an indicator of time pressure. Although time pressure is a slippery construct to measure, for the analysis here, a dummy coded variable could have been sufficient. Given that the greatest frequency of criminal incidents occur during the summer months and that this is also when the fewest number of detectives are available (i.e., vacations), a "crime occurred" variable could have been constructed with 1 = crime reported during summer and 0 = crime reported at all other times.

A third limitation of the study is that the relatively small case sample sizes did not allow for the quantitative examination of the interaction and dependency effects

discussed qualitatively in this chapter. However, since the sample of burglary and robbery cases used in this study represented the population of cases which were reported in a one year time period, correcting this limitation may have required performing such a study in a jurisdiction with more (or at least more varied) burglary and robbery incidents or perhaps expanding the time frame of the study from one year to three or four years.

Fourth, several problems emerged from the information board and verbal protocol analysis methodology. First, as evident in several of the protocols, decisions of investigators are based on more information than what was presented in the information board. Therefore, if this information was available in the information board, thus making the decision tasks more complex, subjects may have used non-compensatory strategies more frequently than what was observed here. Second, the information board may be criticized for removing the study of decision making from the natural work environment and thus, its artificiality. However, the decision was made to use an information board rather than hypothetical initial investigation reports in order to reduce the likelihood of order effects on the search for information. Based on preliminary observations of detectives reviewing reports, it was seen that they most often began by looking at the information placed on the top of the first page and concluded with the information on the

bottom of the last page. Logical perhaps, but with such a pattern, a meaningful description of content, depth, and linearity of search would have been very difficult. Third and relatedly, while the cooperation received from all of the investigators was outstanding, several of the investigators seemed, at least initially, uncomfortable with the format of the board. They were used to a narrative "to find out what happened." As a result of this unfamiliar format, natural decision processes may have been inhibited. Fourth, as discussed previously, the content of search importance scores were sometimes misleading especially when compared to statistics which indicated "influence." As discussed in Chapter Five, this problem was further compounded by the frequency in which detectives used compensatory strategies.

A final limitation of this study relates to its degree of external validity. Are these results generalizable to other populations? This remains unknown, an issue perhaps which should be of concern for future research. Regardless, given the 100% case selection rate for burglaries and robberies and the 100% cooperation rate for detectives and detective sergeants in the information board exercise, the results of this study would appear representative of the populations studied.

Directions for Future Research

As a result of this study, several directions for future research have been identified. The first area which could benefit from further research is the influence of time pressure on detective decision making. In the observations as well as in several of the protocols, attention was drawn to the importance of time pressure in determining whether or not a case was selected for an investigation (or the likelihood of a case being selected) and how much time was to be spent on the investigation. Yet this research, and other criminal justice decision making research, has not provided an adequate understanding of this important constraint on decision making. Previous psychological research has examined time pressure on decision making and has generally found that time pressure affects the processes associated with decision making. However, in such studies, time pressure is easily defined (e.g., "Subject A had 15 minutes to perform the decision task, Subject B had 5 minutes"). In the natural work context however, time constraints are more difficult to define and identify. Hence, future research could examine where time pressure, or perceptions of it, emanates from in the natural work environment, and the effects of the perceived time pressures on the outcomes and processes of investigative decision making.

Second, during the observations and in the analysis of

information board search patterns, numerous differences between detectives were seen. Specifically, in the observations some detectives were seen as more motivated, more ambitious, and more skillful than others. In the search patterns it was seen that some considered certain information very important while others considered it irrelevant. While this study provides preliminary evidence that individual differences exist, future research could explore in detail the nature and sources of these individual differences and their effects on the outcomes and processes of investigative decision making as well as on other outcomes associated with the investigative process (e.g., how cases are closed).

Third, additional research is needed on the proper measurement of evidence strength. This study made a significant step by dissecting "strength of suspect information" and demonstrating the differential impact of various elements of evidence across decision situations. With this study as a foundation, future research could identify the effect of various combinations of evidence on investigative decision making thus constructing a more complete index of "evidence strength."

Finally, since detectives base many of their decisions upon the information provided in the patrol officer's initial investigation reports, and efforts of patrol officers are related to the amount of information collected

during the initial investigation (Eck, 1979), it would be useful for future research to examine the determinants of effort and the decision processes of patrol officers during initial investigations. Accordingly, a study similar to the one conducted here, except focused on patrol officers and initial investigations, would add another dimension to our understanding of the investigative process.

Footnotes

1 Because important details concerning the processes by which cases were referred to the various investigation bureaus and the validity of the self-report measure of time allocation are not provided by Eck (1983), one should be cautious in drawing inferences from this table.

2 Victim age is not included as a social structural characteristic in Black's theory and therefore, an absence of a relationship between age and the decision responses of detectives should not be considered as additional evidence not supportive of the theory. Because age is a demographic characteristic (as is sex, race, etc.), it is included in the discussion here.

3 In the data analyzed in this study, there were three (of 292; 1%) robbery cases which involved female victims over 50 years of age, and fourteen (of 317; 4%) burglary cases which involved female victims over 50 years of age.

4 Eighteen (of 292; 6%) robbery cases involved non-white, male victims under the age of 30. Ten (of 317; 3%) burglary cases involved non-white, male victims under 30 years of age.

APPENDICES

APPENDIX A

Initial Investigation Report Form

POLICE DEPARTMENT

INVESTIGATIVE OFFENSE FORM

OFFENSE

OFFENSE INCIDENT CODE	ATTEMPT ☐Yes ☐No	VIOLATION LEVEL ☐Local ☐State ☐Federal ☐Other	NATURE OF OFFENSE	COMPLAINT NUMBER

DATE-TIME

		Year	Month	Day	Time	OFFENSE OCCURRED	☐(1)Sun ☐(2)Mon ☐(3)Tue ☐(4)Wed ☐(5)Thu ☐(6)Fri ☐(7)Sat ☐(8)Unknown
OFFENSE OCCURRED	On						
	Between						☐(1)Daylight ☐(2)Darkness ☐(3)Unknown
REPORTED TO OFFICER							

LOCATION

NUMBER	DIRECTION	NAME - TYPE	BLDG.	APT NO	FLOOR

IF INTERSECTION, NAME - TYPE	NAME - TYPE

SUBJECT ROLE VT-Victim CP-Complainant WT-Witness DC-Discovered Crime PS-Person Securing Premise LP-Last Person in Possession

VICTIMS ONLY

☐VT ☐CP ☐WT ☐DC ☐PS ☐LP	NAME (Last, First, Middle, Suffix)	SEX	RACE	DOB/Age	IDENTIFY ☐Yes ☐No	INTERVIEW ☐Yes ☐No	PROSECUTE ☐Yes ☐No	LIVES ALONE ☐Yes
	ADDRESS (Number, Direction, Name-Type, Bldg., Apt. No., Floor) Res						TELEPHONE (X=cav) Res	
	Employer (Name, Address)				Work Hrs		Bus	
SEQ NO	VICTIM INJURED ☐(1)No Injury ☐(2)Possible, But Unknown ☐(3)Non-Incapacitating ☐(4)Incapacitating ☐(5)Fatal							

☐VT ☐CP ☐WT ☐DC ☐PS ☐LP	NAME (Last, First, Middle, Suffix)	SEX	RACE	DOB/Age	IDENTIFY ☐Yes ☐No	INTERVIEW ☐Yes ☐No	PROSECUTE ☐Yes ☐No	LIVES ALONE ☐Yes
	ADDRESS (Number, Direction, Name-Type, Bldg., Apt. No., Floor) Res						TELEPHONE (X=cav) Res	
	Employer (Name, Address)				Work Hrs		Bus	
SEQ NO	VICTIM INJURED ☐(1)No Injury ☐(2)Possible, But Unknown ☐(3)Non-Incapacitating ☐(4)Incapacitating ☐(5)Fatal							

ADDITIONAL SUBJECTS

ROLE	NAME (Last, First, Middle, Suffix)	SEX / RACE	ADDRESS (Number, Direction, Name - Type, Bldg, Apt. No.)	TELEPHONE (X=Cav)
☐CP ☐WT ☐DC ☐PS ☐LP			Res	Res
	SEQ NO / IDENTIFY ☐Yes ☐No / INTERVIEW ☐Yes ☐No / DOB/Age		Employer	Bus
☐CP ☐WT ☐DC ☐PS ☐LP			Res	Res
	SEQ NO / IDENTIFY ☐Yes ☐No / INTERVIEW ☐Yes ☐No / DOB/Age		Employer	Bus
☐CP ☐WT ☐DC ☐PS ☐LP			Res	Res
	SEQ NO / IDENTIFY ☐Yes ☐No / INTERVIEW ☐Yes ☐No / DOB/Age		Employer	Bus
☐CP ☐WT ☐DC ☐PS ☐LP			Res	Res
	SEQ NO. / IDENTIFY ☐Yes ☐No / INTERVIEW ☐Yes ☐No / DOB/Age		Employer	Bus

MISC

SCENE TYPE (code)____OTHER	VICTIM/OFFENDER RELATIONSHIP (code)____OTHER		
CSI PROCESSED ☐Yes ☐No	ASSISTING JURISDICTION	ASSISTING JURIS INCIDENT NUMBER	MAL DEST VALUE $

CERT

REPORTING OFFICER	BADGE NO	DATE COMPLETED	TIME	PAGE ____OF ____

ASSISTING OFFICERS	SUPERVISOR	SUPERVISORY JUDGEMENT (CODE)

A

INVESTIGATIVE OFFENSE FORM

NOTE 1: If additional victims, complainants, or subjects are present, use additional Investigative Offense Forms.

NOTE 2: ***Mandatory Information:*** All reports must contain ***all*** Res Gestae witnesses, statements, address, and what each witness can testify to, accused DOB, address, rights form and where evidence can be located.

NOTE 3: Use the following abbreviations where applicable: "NA" for Not Applicable, "REF" for Refused, and "UNK" for Unknown

LOCATION	Number	Direction	Name - Type	Bldg	Apt. No	Floor
(examples)	125	W	Claremore Dr.	2	H	3
	100 Blk	E	Michigan Ave.			

If the offense occurred without a specific address, state in the 'Number' box the block number as in the second example. (Blk=Block)

If you are using a block number as in the second example, use the even numbered block numbers (100, 200, 300, etc.) to represent the even numbered side of the street and the odd numbered block numbers (101, 201, 301, etc.) to represent the odd numbered side of the street.

REPORTED TO OFFICER: Refers to the time the officer is investigating the complaint.

ATTEMPT: A crime can only be classified as an Attempt when all the following elements exist:

1. A physical act is committed (e.g. burglary where ladder is placed on window or CSC where victim is grabbed)
2. The perpetrator's intentions are stated by the accused or indicated by physical evidence.
3. The crime is not completed.

ADDRESS: Include the city name if the address is other than Lansing.

TELEPHONE: If a telephone does not exist, print "NONE" in the space provided. If a telephone number is outside the (517) area code, include the area code.

SEQ. NO.: A unique number should be entered in the SEQ. NO. boxes for every victim, subject, arrestee or suspect who is listed on the forms. (1, 2, 3, 4, etc.)

LIVES ALONE: Place an "X" in the "yes" box when the offense occured in a residence, the victim lives in that residence and the victim is the only adult living in the residence. Otherwise, enter "NA".

SCENE TYPE

Residential

01 Apartment
02 Duplex
03 Single Family
04 Residential Garage
05 Storage Shed
06 Yard/Lawn/Driveway

Business

07 Amusement/Arcade
08 Appliance
09 Auto Dealer/RV Center
10 Bar/Restaurant
11 Commercial Retail
12 Convenience Store
13 Drug Store
14 Financial Institutions
15 Gas Station/Garage
16 Hotel/Motel
17 Indoor Recreational
18 Jewelry Store
19 Laundromat
20 Cleaners
21 Medical Facility
22 Office/Business

Industrial

23 Commercial Storage
24 Construction Site
25 Manufacturing/Factory
26 Undeveloped Area
27 Warehouse

Public Premise

28 Cemetery
29 Church
30 Park/Playground
31 Public Building
32 School

Street/Parking

33 Alley
34 Street/Highway
35 Parking Lot
36 Parking Ramp
37 Dumpster (arson only)
38 Vehicle (arson only)
39 Other Mobile (arson only)

OTHER

40 Other (use space provided after Scene Type) (code)

SEX: M - Male
F - Female
B - Business
U - Unknown

RACE: W - White
B - Black
I - Indian (American)
H - Hispanic
A - Asian
U - Unknown

VICTIM/OFFENDER RELATIONSHIP

A Suspect and Victim are Married
B Ex-spouses
C Suspect and Victim are Romantically Involved
D Parent/Child Relationship
E Brother(s)/Sister(s) Relationship
F Other Family Relationship
G Long Term Personal Acquaintance
H Short Term Personal Acquaintance
J Employer/Employee
K Self-inflicted
L Police Officer is Victim
M Stranger
N Other (use space provided after Other)
99 Unknown

PATROL SUPERVISORY JUDGEMENT

1 Departmental Policy
2 Geographical Circumstances
3 Inability to Locate Witnesses, Victims, Suspects
4 Evidence Results Not Available
5 Absence From Work
6 Other (Enter code and description of other)

SOLVABILITY FACTORS	YES
Was there suspect(s) arrested?	1 ☐
Was there a witness to the crime?	2 ☐
Can the suspect be identified by witness?	3 ☐
Can a suspect be named?	4 ☐
Is a suspect described?	5 ☐
Is the suspect known and/or can he/she be located?	6 ☐
Was there significant M.O. present?	7 ☐
Was there significant physical evidence present?	8 ☐
Is the stolen property identifiable?	9 ☐
Is there significant suspect vehicle description?	10 ☐
Are there undeveloped leads?	11 ☐
Grade of Offense	12 ☐
Value over $1,000	
Damage over $1,000	
Serious injuries/hospitalization required	
Weapons involved	

APPENDIX B

Supplemental Report Form

POLICE DEPARTMENT

SUPPLEMENT FORM

NARRATIVE

MISC	OFFENSE INCIDENT CODE	VICTIM'S NAME	NATURE OF OFFENSE	COMPLAINT NUMBER

CERT	STATUS	REPORTING OFFICER	BADGE NO.	DATE COMPLETED	TIME	
	CODE ____	ASSISTING OFFICERS				PAGE ____ OF ____

B

APPENDIX C

Modus Operandi Descriptor Form

POLICE DEPARTMENT

MODUS OPERANDI DESCRIPTOR FORM

ENTRY - EXIT

POINT OF ENTRY

1 Front
2 Rear
3 Side
4 Above
5 Beneath
99 Unknown

CODE ____

ENTERED THROUGH

A Attic
B Vent/Air Condition
C Door
D Patio/Sliding Glass
E Fire Escape
F Attached Garage
G Wall
H Interior Wall
J Window
K Floor
L Roof
M Concealment
99 Unknown
N Other:

CODE ____

MEANS OF ENTRY — PROPERTY

1 Physical Force
2 Blunt Object
3 Cutting Instrument
4 Prying Tools
5 Explosives
6 Power Tools
7 Bypass Instrument
99 Unknown
8 Other:

CODE ____ ____

POINT OF EXIT

1 Front
2 Rear
3 Side
4 Above
5 Beneath
99 Unknown

CODE ____

EXITED THROUGH

A Attic
B Vent/Air Condition
C Door
D Patio/Sliding Glass
E Fire Escape
F Attached Garage
G Wall
H Interior Wall
J Window
K Floor
L Roof
99 Unknown
M Other:

CODE ____

SAFE JOBS

1 Attempt
2 Carried Away
3 Worked at Scene

CODE ____

SUSPECT - VICTIM ACTIONS

SUSPECT CHARACTERISTICS

A Ransacks/Mal. Dest.
B Selective in Loot
C Neat Burglar
D Smash & Grab
E Avoids/Removes Prints
F Eats/Drinks on Premise
G Arson/Attempt
H Matches/Candle Used
J Smokes
K Multiple Participants
L Hostages
M Disables Telephone/Alarms
N Blinds/Curtains Drawn
P Brings Own Containers
R Does Not Talk, Motions
S Victims Vehicle Used
T Cut Power Wire
U Unusual/Abnormal
V Uses Notes
W Jumps Over Counter/Bar
X Left Note Behind
Y Threatens to Kill
Z Other:

CODE ____ ____ ____ ____ ____ ____

INSTRUCTIONS TO VICTIM

1 Lie Down
2 Enter Cooler/Vault
3 Commit Illegal Acts
4 Open Safe/Cash Register
5 Face Wall
6 Enter Vehicle
7 Abnormal Instructions
99 Unknown
8 Other

CODE ____ ____ ____ ____

MEANS OF ATTACK - VICTIM

A Physical Force
B Bottle/Broken Glass
C Belt/Cord/Rope
D Vehicle
E Fire/Explosive
F Firearm
G CS Gas
H Striking Instrument
J Threat/Verbal
K Cutting Instrument
L Chemical/Poison
M Missile/Rock
99 Unknown
N Other:

CODE ____ ____ ____ ____

VICTIM ABUSE

1 Tortured
2 Blindfolded
3 Bound/Gagged
4 Shots Fired
5 Stabbed
6 Victim Searched
7 Hit With Weapon
99 Unknown
8 Other:

CODE ____ ____ ____ ____

FIREARM

FIREARM TYPE

1 Handgun
2 Simulated/Hand in Pocket
3 Rifle/Shotgun
4 Sawed Off Shotgun
5 Other:

CODE ____

CARRIED FIREARM IN

1 Newspaper
2 Pocket/Coat
3 Belt/Waistband
4 Holster
5 Boot
6 Hand
7 Other:

CODE ____

FIREARM HANDLING

1 Shown to Victim
2 Cocks or Racks Firearm
3 Pointed at Victim
4 Lays Weapon on Counter/Bar
5 Puts Weapon to Victims Body
6 Other:

CODE ____ ____ ____ ____

CALIBER/GAUGE

A 22
B 25
C 32
D 38
E 357
F 45
G 9 mm
H 410 Gauge
J 20 Gauge
K 16 Gauge
L 12 Gauge
99 Unknown
M Other

CODE ____

HANDGUN DESCRIPTION

1 Nickel/Chrome/Stainless
2 Blue Steel
3 Unusual Grips
4 Rusty
5 Defective
99 Unknown
6 Other:

CODE ____ ____

ARSON

AREA

1 Hallway
2 Mechanical
3 Storage
4 Utility Room
5 Other:

CODE ____

MOTIVE

1 Abnormal Behavior
2 Boredom
3 Cover Other Crime
4 Domestic
5 Fraud
6 Hired Arsonist
7 Protest
8 Revenge
99 Unknown
9 Other:

CODE ____

NUMBER OF FIRES SET

1 One Fire
2 Multiple
3 Multiple With Trailers

CODE ____

FUEL SUPPLY

1 Flammable Liquids
2 Combustible Solids
3 Combustible Gasses
4 Chemicals
99 Unknown
5 Other:

CODE ____

HEAT SOURCE

1 Matches
2 Lighter
3 Candle
4 Timing Device
5 Electricity
6 Smoking Material
7 Cooking Stove
8 Heating Unit
9 Molotov Cocktail
99 Unknown
0 Other

CODE ____

REPORTING OFFICER

Assigned To

COMPLAINT NUMBER

PAGE____OF____

C

APPENDIX D

Personal Descriptor Form

POLICE DEPARTMENT — PERSONAL DESCRIPTOR FORM

NATURE OF OFFENSE	OFFENSE DATE	OFFENSE TIME	LOCATION OF OFFENSE	LPD COMPLAINT NUMBER

SUBJECT ROLE: ☐ S-UNNAMED SUSPECT ☐ A-ARRESTEE/ACCUSED ☐ R-RUNAWAY ☐ M-MISSING PERSON

NAME (Last, First, Middle, Suffix)	D.O.B.	ADDRESS (Number, Name-Type, Bldg., Apt. No.)	TELEPHONE
		Res	Res
AKA	☐ JUVENILE	Employer/School	Bus

HAT	SHIRT/BLOUSE	SKIRT/DRESS
COAT	PANTS/SLACKS	SHOES

☐ FATHER ☐ GUARDIAN	ADDRESS	DAY TELEPHONE
MOTHER	ADDRESS	DAY TELEPHONE

DISPOSITION/RELEASED TO:

RACE — CODE ____
W White
B Black
I Indian
H Hispanic
A Asian
U Unknown

SEX — CODE ____
M Male
F Female
U Unknown

AGE — CODE ____
1 0- 9
2 10-13
3 14-17
4 18-25
5 26-35
6 36-45
7 46-55
8 56+
99 Unknown

HEIGHT — CODE ____
1 4'7"-Under
2 Very Short (4'8"-5'2")
3 Short (5'3"-5'6")
4 Medium (5'7"-5'9")
5 Tall (5'10"-6'1")
6 Very Tall (6'2"-Over)
99 Unknown

BUILD — CODE ____
1 Thin
2 Medium
3 Muscular
4 Heavy/Stocky
5 Obese
99 Unknown

SUBJECT WORE — CODE ____ ____ ____ ____
A Costume/Uniform
B Bag/Cloth with Eyeholes
C Ski Mask
D Stocking Over Head
E Halloween Mask
F False Beard/Mustache
G Handkerchief/Scarf
H Makeup (males only)
J Nude/Partially Nude
K Clothes of Opposite Sex
L Gloves
M Nothing Unusual
99 Unknown
N Other:

FACIAL HAIR — CODE ____ ____
1 No Facial Hair
2 Unshaven/Stubble
3 Mutton Chops
4 Mustache
5 Goatee
6 Fu Manchu
7 Full Beard/No Mustache
8 Beard & Mustache
99 Unknown
9 Other:

HAIR TYPE — CODE ____
1 Dyed
2 Processed
3 Wig/Toupee
4 Streaked/Frosted
5 Afro
6 Pony Tail
7 Cornrows/Braids
8 Nothing Unusual
99 Unknown
9 Other:

HAIR LENGTH — CODE ____
1 Bald/Thin
2 Crew Cut
3 Above Ear
4 Below Ear
5 Collar Length
6 Shoulder Length
7 Longer than Shoulder
99 Unknown

HAIR COLOR — CODE ____
1 Black
2 Blond/Strawberry
3 Brown
4 Gray/White
5 Red/Auburn
6 Sandy
7 Brown/Partly Gray
8 Black/Partly Gray
99 Unknown
9 Other:

HAIR FIBER — CODE ____
1 Wavy
2 Kinky
3 Bushy
4 Curly
5 Straight
99 Unknown/NA
6 Other:

TEETH — CODE ____ ____
1 Missing
2 Protruding
3 Stained/Decayed
4 Gold/Silver
5 Chipped
6 Gapped
7 Nothing Unusual
99 Unknown
8 Other:

EYES — CODE ____ ____
1 False
2 Crossed
3 Sunglasses
4 Glasses (plain)
5 Bulging
6 Squint/Blink
7 Irregular
8 Nothing Unusual
99 Unknown
9 Other:

EYE COLOR — CODE ____
1 Brown
2 Blue
3 Hazel
4 Green
5 Gray
6 Pink
7 Unmatched
99 Unknown
8 Other:

EYE BROW — CODE ____
1 Thin
2 Bushy
3 Connected
4 Nothing Unusual
99 Unknown
5 Other:

EARS — CODE ____ ____
1 Cauliflower
2 Protruding
3 Earring
4 Missing
5 Nothing Unusual
99 Unknown
6 Other:

COMPLEXION A — CODE ____
1 Light
2 Medium
3 Dark
4 Albino
5 Reddish
99 Unknown
6 Other:

COMPLEXION B — CODE ____
1 Pockmarks/Acne
2 Moles
3 Freckles
4 Nothing Unusual
99 Unknown
5 Other:

SPEECH — CODE ____
1 Impediment/Stutters
2 Accent (American)
3 Accent (Foreign)
4 Foreign Language
5 Nothing Unusual
99 Unknown
6 Other:

SCARS
1 Yes
2 No
If Unknown, Leave Blank
____Face
____Neck
____Arm
____Hand/Wrist
____Torso
____Leg

TATOO/BIRTHMARKS (Describe)
1 Insignia
2 Pictures/Designs
3 Names/Words
4 Initials
5 Numbers
6 Birthmark
7 None
8 Other:
If Unknown, Leave Blank
____Face ____Finger
____Arm ____Torso
____Hand ____Leg

DEFORMITIES — CODE ____ ____ ____ ____
1 Arm
2 Hand
3 Fingers
4 Torso
5 Leg
6 Foot
7 Limp
8 Nothing Unusual
99 Unknown
9 Other:

AMPUTEE (Describe) — CODE ____
1 Yes
2 No
99 Unknown

DEXTERITY — CODE ____
R Right
L Left
99 Unknown

SUBJECT INJURED — CODE ____
1 No Injury
2 Possible, but Unknown
3 Non-Incapacitating
4 Incapacitating
5 Fatal

REPORT WRITTEN BY:	BADGE NO	OTHER OFFICER IN VEH.	BADGE NO.	DATE-TIME REPOF	DESCRIPTION GIVEN BY	PAGE____ OF____
						CR Use Only (PIN)

D

APPENDIX E

Vehicle Descriptor Form

POLICE DEPARTMENT

VEHICLE DESCRIPTOR FORM

ROLE

VEHICLE ROLE: ☐(S)Suspect Vehicle ☐(A)Arrestee Vehicle ☐(U)Stolen Vehicle

STOLEN VEHICLE DISPOSITION: ☐(S)Stolen & Not Recovered ☐(R)Stolen & Recovered in Lansing ☐(F)Recovered *FOR* Outside Jurisdiction

REG OWNER VEHICLE

REGISTERED OWNER (Last, First, Middle, Suffix) | TELEPHONE

ADDRESS (Number, Name - Type), Apt. No.) | STATE | ZIP CODE

VEHICLE DESCRIPTORS

INTERIOR
1 Bucket Seats
2 Bench Seats
3 Customized
4 Torn
5 Equipment Added
6 Equipment Missing
7 Unique Items
8 Stereo/Tape
9 Floor Shift
99 Unknown
0 Other:
CODE ____ ____ ____ ____

EXTERIOR
1 Painted Inscription
2 Sticker/Decal
3 Rust
4 Vinyl Top
5 Decor Paint
6 Flocked Paint
7 Nothing Unusual
99 Unknown
8 Other:
CODE ____ ____ ____ ____

GENERAL CONDITION
1 Poor
2 Fair
3 Good
4 Excellent
99 Unknown
CODE ____

BODY DAMAGE
1 Left
2 Right
3 Front
4 Rear
5 Top
6 No Damage
99 Unknown
CODE ____ ____ ____

WHEELS
1 Mags
2 Chrome Rims
3 Over Size
4 Wire Rims
5 Nothing Unusual
99 Unknown
6 Other:
CODE ____ ____

MODIFIED
1 Front
2 Rear
3 Jacked-Up
4 Nothing Unusual
99 Unknown
.5 Other:
CODE ____ ____

WINDOWS
1 Damaged Side Windows
2 Damaged Windshield
3 Damaged Rear Window
4 Tinted
5 Covered
6 Decal/Plaque
7 Curtains
8 Nothing Unusual
99 Unknown
9 Other:
CODE ____ ____

LIGHTS OUT
1 Left Front
2 Right Front
3 Left Rear
4 Right Rear
5 Brake Lights
6 License Plate
99 Unknown
CODE ____ ____ ____ ____

UDAA CIRCUMSTANCE
Key in Ignition/Vehicle ☐(1) Yes ☐(2) No
Forced Entry ☐(1) Yes ☐(2) No
Payments Current ☐(1) Yes ☐(2) No

VEHICLE INFORMATION

VEHICLE YEAR | VEHICLE MAKE | VEHICLE MODEL | VEHICLE STYLE (code) | COLORS - Top / Bottom

LICENSE NUMBER | LICENSE STATE | LICENSE MONTH and YEAR | LICENSE COLOR - Plate / Numbers

AUTO VIN/ MOTORCYCLE FRAME NUMBER | VEHICLE INSURED BY (UDAA only) | FINANCE COMPANY (UDAA only)

REG OWNER PLATES

NAME (Last, First, Middle Suffix) | ADDRESS (Number, Direction Name - Type, Apt. No.)

YEAR | MAKE | STYLE | VIN/ MOTORCYCLE FRAME NUMBER

RECOVERY INFORMATION

ADDRESS UDAA RECOVERY | SCENE TYPE (code)____ | DISTRICT NUMBER __ __ | DATE RECOVERED | TIME RECOVERED

PERSONAL BELONGINGS IN VEHICLE | JURISDICTION WHERE STOLEN | OUTSIDE JURIS COMPLAINT NO

VEHICLE CONDITION (any 4)
☐(1) Stripped ☐(2) Ignition Damaged ☐(3) Mat. Dest. ☐(4) Torched ☐(5) No Damage ☐(6) Other

TOW

TOWED ☐Yes ☐No | RELEASED TO OWNER ☐Yes ☐No | TOWED BY: | WHERE STORED | REASON TOWED

MISC

DEFENDANT'S NAME 1 | DOB | DEFENDANT'S NAME 3 | DOB | OFFENSE INCIDENT CODE

DEFENDANT'S NAME 2 | DOB | DEFENDANT'S NAME 4 | DOB | COMPLAINT NUMBER

CERT

REPORTING OFFICER | BADGE NO. | DATE COMPLETED | TIME

ASSISTING OFFICERS

PAGE____OF____

E

CR Use Only (Auto Number)

APPENDIX F

Property Form

REPORTING OFFICER | POLICE DEPARTMENT | COMPLAINT NUMBER

PROPERTY FORM

PROPERTY CODES: S-Stolen, R-Recovered, L-Lost or Stolen, J-Recovered for Other Jurisdiction

HOW RECOVERED CODES: F-Found, L-Located in Second Hand Store, G-Goods Purchased, N-NCIC/LEIN, C-Confiscated, P-Computer, O-Other (Explain)

PROPERTY 1

PROP. CODE	BRAND/MAKE NAME	SPECIFIC PRODUCT/TYPE	MODEL NAME/NUMBER	STYLE

MODEL YEAR	PRODUCT ID/SERIAL NO	OPERATION ID NUMBER	LPD NUMBER	SIZE	COLOR

LICENSE PLATE NO.	YR./MO. OF PLATE	☐Womens ☐Mens	VALUE	LOCATION OF PROPERTY WHEN STOLEN	YR. PURCHASED

PURCHASED AT	VALUE ESTIMATED BY	VALUE (code)	INSURANCE COMPANY	INSURANCE AGENT

FINANCE COMPANY	LOCATION OF PROPERTY WHEN RECOVERED	WHERE STORED	HOW RECOVERED CODE

PROP. RELEASE FORM	LEIN CHECK FOR STOLEN	GUN REG. REQUEST	DESCRIPTION
☐Yes ☐No	☐Hit ☐Neg	☐Reg ☐Unreg	

PROPERTY 2

PROP. CODE	BRAND/MAKE NAME	SPECIFIC PRODUCT/TYPE	MODEL NAME/NUMBER	STYLE

MODEL YEAR	PRODUCT ID/SERIAL NO	OPERATION ID NUMBER	LPD NUMBER	SIZE	COLOR

LICENSE PLATE NO	YR./MO. OF PLATE	☐Womens ☐Mens	VALUE	LOCATION OF PROPERTY WHEN STOLEN	YR. PURCHASED

PURCHASED AT	VALUE ESTIMATED BY	VALUE (code)	INSURANCE COMPANY	INSURANCE AGENT

FINANCE COMPANY	LOCATION OF PROPERTY WHEN RECOVERED	WHERE STORED	HOW RECOVERED CODE

PROP. RELEASE FORM	LEIN CHECK FOR STOLEN	GUN REG. REQUEST	DESCRIPTION
☐Yes ☐No	☐Hit ☐Neg	☐Reg ☐Unreg	

PROPERTY 3

PROP. CODE	BRAND/MAKE NAME	SPECIFIC PRODUCT/TYPE	MODEL NAME/NUMBER	STYLE

MODEL YEAR	PRODUCT ID/SERIAL NO	OPERATION ID NUMBER	LPD NUMBER	SIZE	COLOR

LICENSE PLATE NO.	YR./MO. OF PLATE	☐Womens ☐Mens	VALUE	LOCATION OF PROPERTY WHEN STOLEN	YR. PURCHASED

PURCHASED AT	VALUE ESTIMATED BY	VALUE (code)	INSURANCE COMPANY	INSURANCE AGENT

FINANCE COMPANY	LOCATION OF PROPERTY WHEN RECOVERED	WHERE STORED	HOW RECOVERED CODE

PROP. RELEASE FORM	LEIN CHECK FOR STOLEN	GUN REG. REQUEST	DESCRIPTION
☐Yes ☐No	☐Hit ☐Neg	☐Reg ☐Unreg	

F

PAGE____OF____

APPENDIX G

Follow-up Investigation Case Log

POLICE DEPARTMENT
CASE LOG

DATE REC'D:_____ COMP #:_____

DATE COM'T:_____ CRIME TYPE:_____

ASSIGNED BY:_____ INVESTIGATOR:_____

DATE	CODE	TIME	REMARKS
		.	
		.	
		.	
		.	
		.	
		.	
		.	
		.	
		.	
		.	
		.	
		.	
		.	
		.	
		.	
		.	
		.	
		.	
		.	
TOTAL TIME:		.	

03	Prosecutor	09	Case Review	14	Surveillance	16	Evidence
04	Subpoena Ser.	10	Case Research	15	Report Writing	21	Search Warrant
05	Court	11	Scene Invest.	16	Meetings	25	Autopsy
06	Misc/Invest.	12	Interview	17	Arrest		
07	Misc/Other	13	N. Canvass				

COMMENTS:_____

FINAL STATUS:_____

APPENDIX H

Case Data Coding Form

INVESTIGATIVE DECISION MAKING CASE DATA FORM

1. P.D. complaint number _____ Computer ID number _ _ _ _

2. Crime type? 0 = BURGLARY 1 = ROBBERY _
3. Victim type? 0 = INDIVIDUAL 1-8 =BUSINESSES _
4. Victim sex? 0 = MALE 1 = FEMALE 8 = MIXED _
5. Victim race? 0 = WHITE 1 = NON-WHITE 8 = MIXED _
6. Victim age? _____ 00 = MIXED 99 = MIS'G _ _
7. Victim address? / $ of census area _____/_ _ _ _ _ _
8. Victim employment status? 0 = NOT 1 = EMPL'D 8= OTHER _

9. Number of witnesses to the crime? _____ _
10. Could suspect be identified? 1 = YES 0 = NO _
11. Could suspect be named? 1 = YES 0 = NO _
12. Could suspect be described? 1 = YES 0 = NO _
13. Strength of suspect information? 1-2-3-4-5-6-7-8-9-10 _
14. Was there physical evidence present? 1 = YES 0 = NO _
15. Can vehicle be described? 1 = YES 0 = NO _
16. Is vehicle plate # known? 1 = YES 0 = NO _
17. Is stolen property identifiable? 1 = YES 0 = NO _

18. Victim-offender relationship? 1-2-3 _

19. Was a weapon used? 1 = YES 0 = NO _
20. Degree of injury? _____ 1-2-3 _
21. Amount of property loss? $_____ 99999 _ _ _ _ _

22. Was case selected for f-u investigation? 1 = YES 0 = NO _
23. Detective assigned case? _____ 10-11-12...88...99 _ _
24. Sgt. who screened report? _____ 1-2-3-4-5-9 _

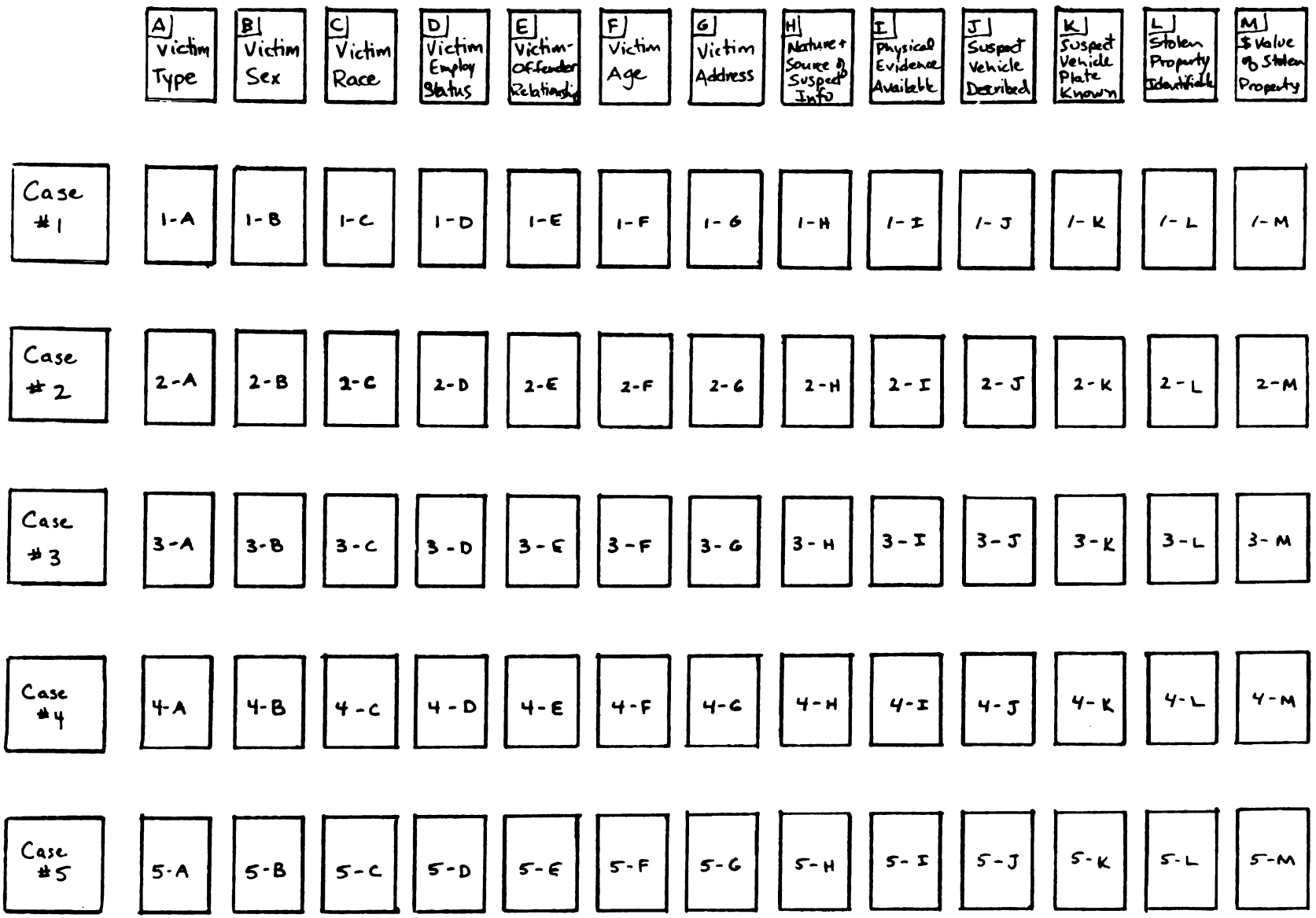
During the follow-up investigation....

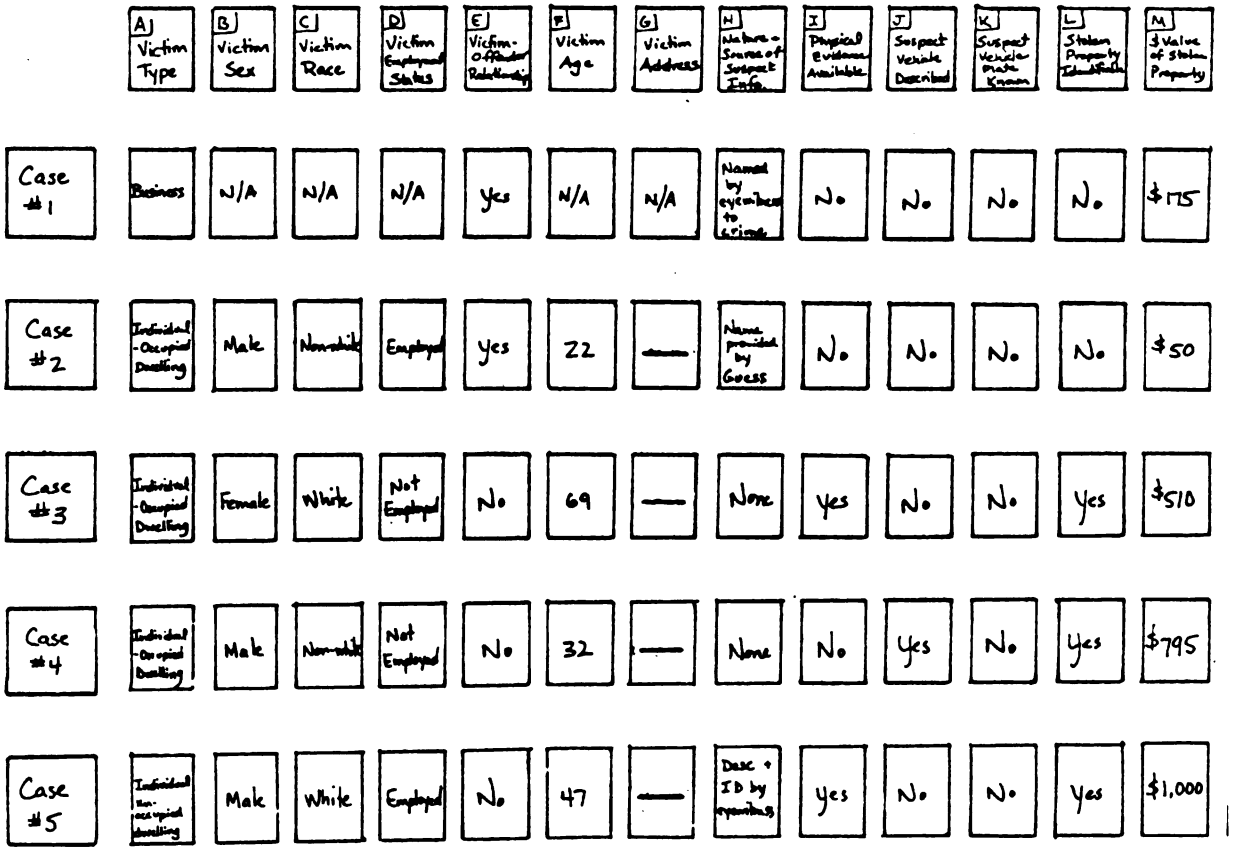
25. Number of victim interviews _____ _
26. Number of witness(es) interviewed _____ _
27. Number of witness canvasses _____ _
28. Number of others interviewed _____ _
29. Number of times crime scene searched _____ _
30. Number of physical evidence items submitted _____ _
31. Number of times computer searched _____ _
32. Number of photo line-ups conducted _____ _
33. Number of times mug pictures shown _____ _
34. Number of suspect line-ups conducted _____ _
35. Number of suspects (or times) interviewed _____ _
36. Number of informants interviewed _____ _
37. Number of times prosecutor consulted _____ _

38. Does victim desire investigative effort? 1 = YES 0 = NO _
39. Status of the investigation _____ 1-2-3-4-5-6-7-8 _
40. Total time spent on investigation _____ _ _._

APPENDIX I

Information Board: Selection of Burglaries

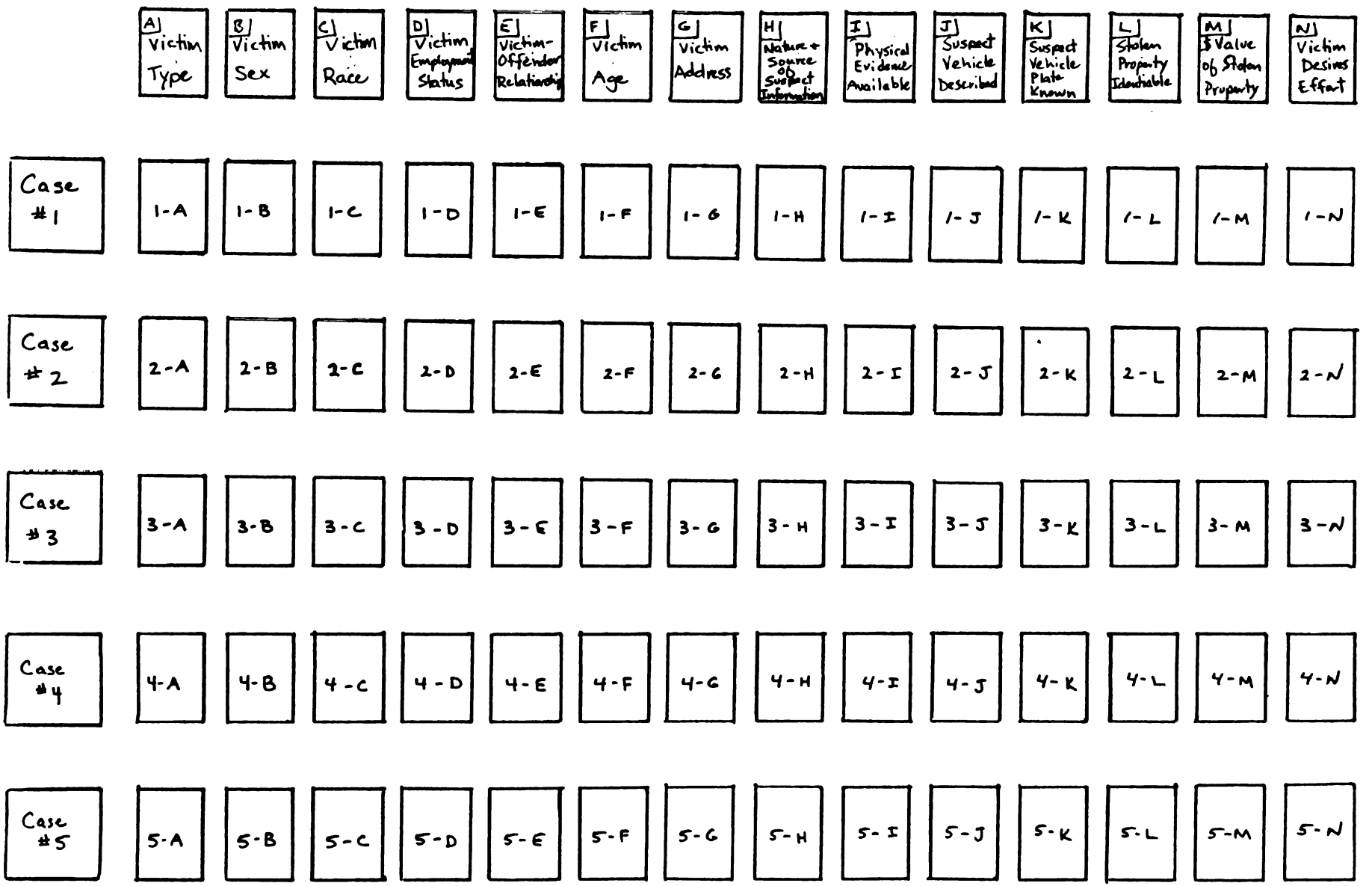

A Victim Type
B Victim Sex
C Victim Race
D Victim Employ Status
E Victim-Offender Relationship
F Victim Age
G Victim Address
H Nature & Source of Suspect Info
I Physical Evidence Available
J Suspect Vehicle Described
K Suspect Vehicle Plate Known
L Stolen Property Identifiable
M $ Value of Stolen Property
Case #1
1-A 1-B 1-C 1-D 1-E 1-F 1-G 1-H 1-I 1-J 1-K 1-L 1-M
Case #2
2-A 2-B 2-C 2-D 2-E 2-F 2-G 2-H 2-I 2-J 2-K 2-L 2-M
Case #3
3-A 3-B 3-C 3-D 3-E 3-F 3-G 3-H 3-I 3-J 3-K 3-L 3-M
Case #4
4-A 4-B 4-C 4-D 4-E 4-F 4-G 4-H 4-I 4-J 4-K 4-L 4-M
Case #5
5-A 5-B 5-C 5-D 5-E 5-F 5-G 5-H 5-I 5-J 5-K 5-L 5-M



Note: For confidentiality reasons, "victim address" (street names) is not included in the information board presented here.

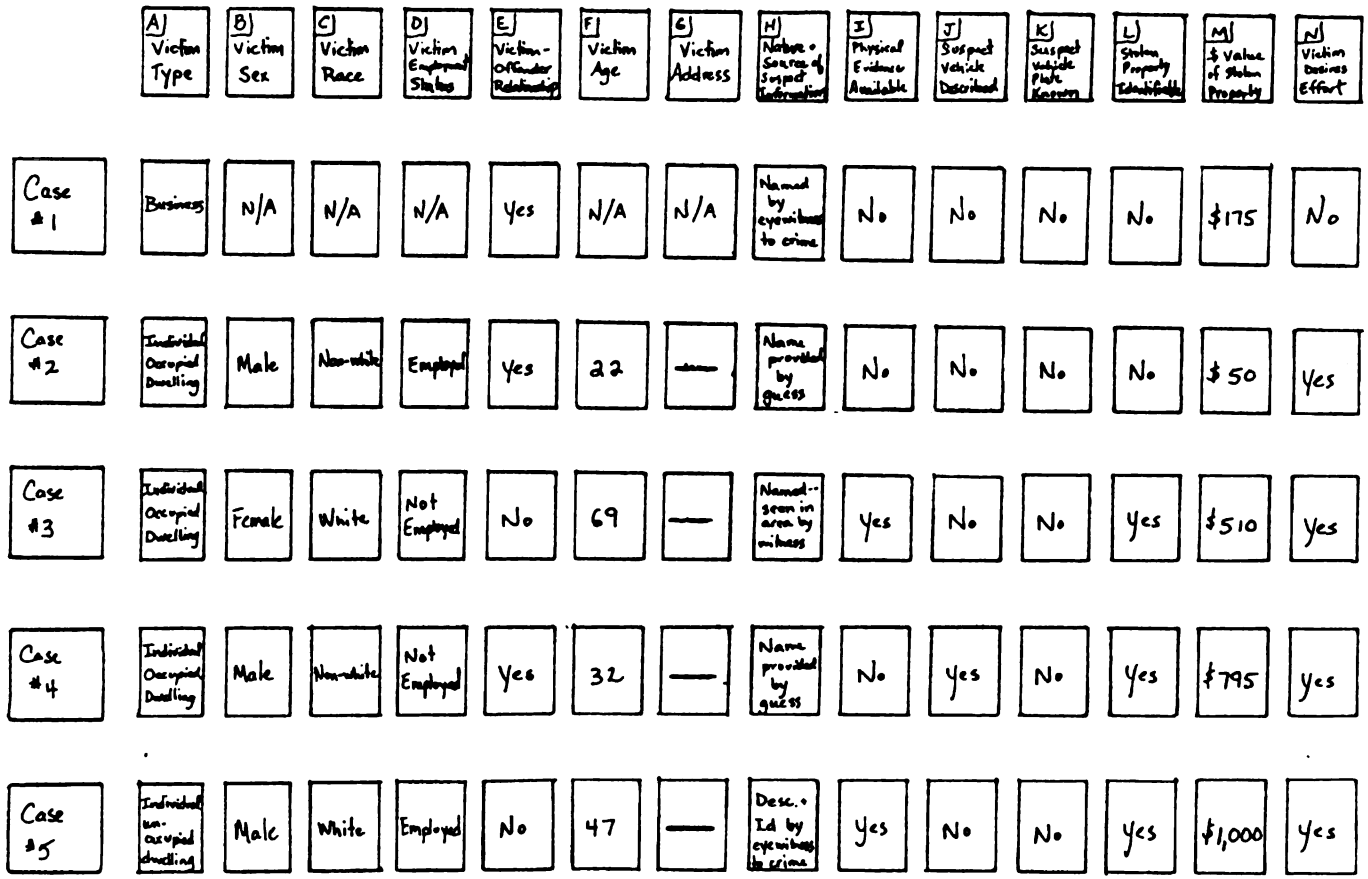
APPENDIX J

Information Board: Prioritization of Burglaries


A Victim Type
B Victim Sex
C Victim Race
D Victim Employment Status
E Victim-Offender Relationship
F Victim Age
G Victim Address
H Nature + Source of Suspect Information
I Physical Evidence Available
J Suspect Vehicle Described
K Suspect Vehicle Plate Known
L Stolen Property Identifiable
M $ Value of Stolen Property
N Victim Desires Effort
Case #1
1-A 1-B 1-C 1-D 1-E 1-F 1-G 1-H 1-I 1-J 1-K 1-L 1-M 1-N
Case #2
2-A 2-B 2-C 2-D 2-E 2-F 2-G 2-H 2-I 2-J 2-K 2-L 2-M 2-N
Case #3
3-A 3-B 3-C 3-D 3-E 3-F 3-G 3-H 3-I 3-J 3-K 3-L 3-M 3-N
Case #4
4-A 4-B 4-C 4-D 4-E 4-F 4-G 4-H 4-I 4-J 4-K 4-L 4-M 4-N
Case #5
5-A 5-B 5-C 5-D 5-E 5-F 5-G 5-H 5-I 5-J 5-K 5-L 5-M 5-N

APPENDIX K

Information Board: Prioritization of Robberies

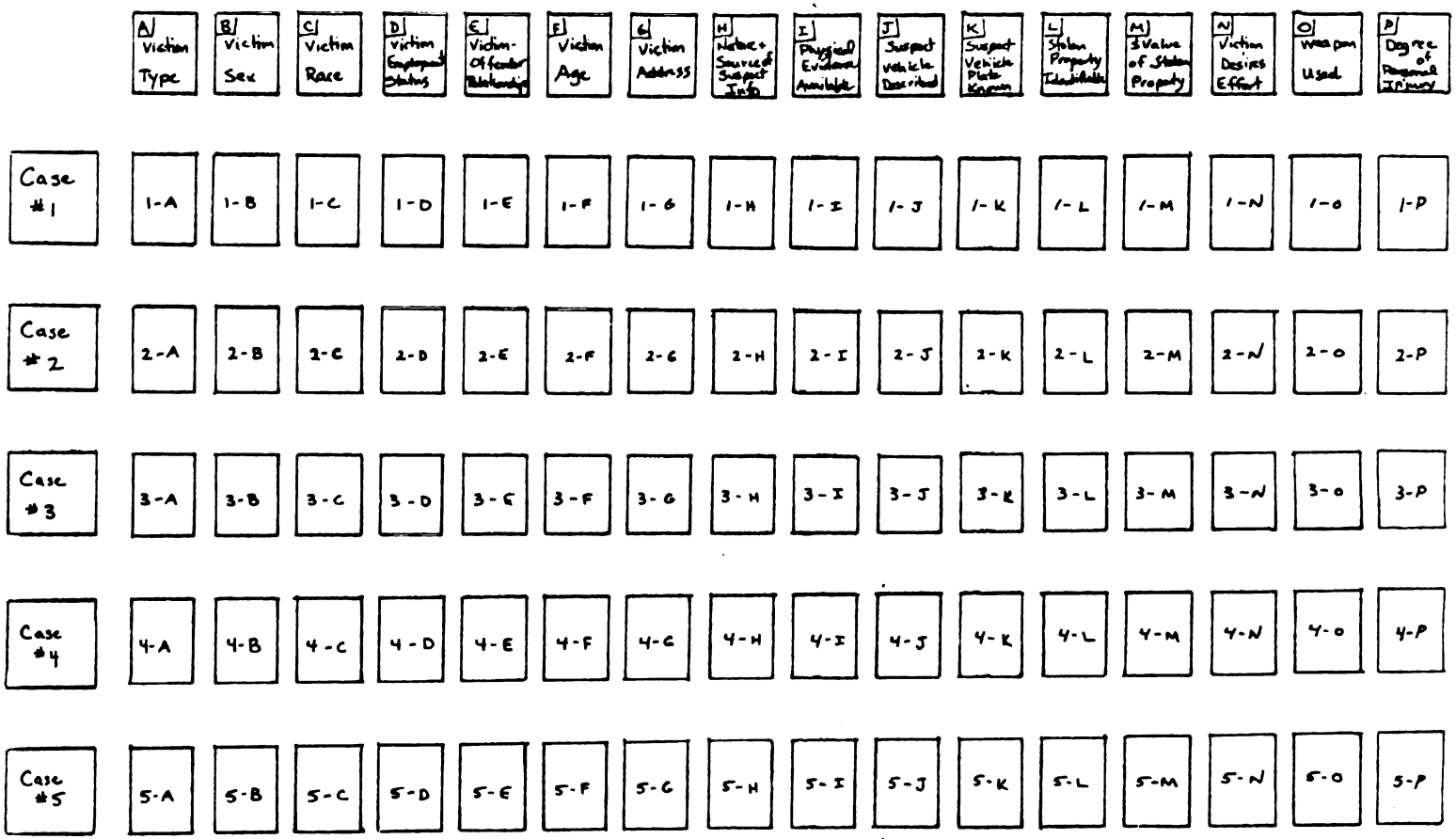


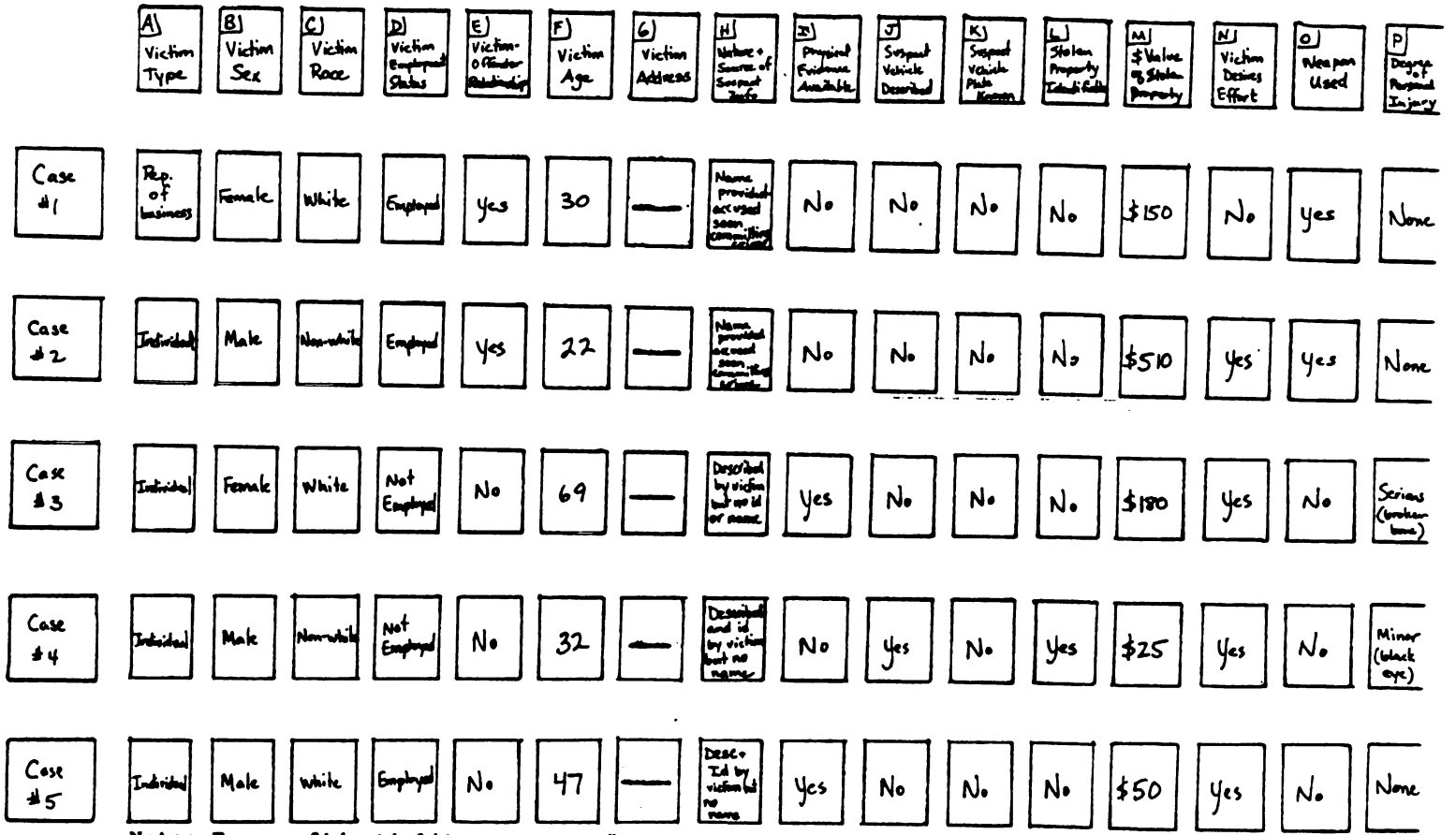
	A] Victim Type	B] Victim Sex	C] Victim Race	D] Victim Employment Status	E] Victim-Offender Relationship	F] Victim Age	G] Victim Address	H] Nature & Source of Suspect Information	I] Physical Evidence Available	J] Suspect Vehicle Described	K] Suspect Vehicle Plate Known	L] Stolen Property Identifiable	M] $ Value of Stolen Property	N] Victim Desires Effort
Case #1	Business	N/A	N/A	N/A	Yes	N/A	N/A	Named by eyewitness to crime	No	No	No	No	$175	No
Case #2	Individual Occupied Dwelling	Male	Non-white	Employed	Yes	22	—	Name provided by guess	No	No	No	No	$ 50	Yes
Case #3	Individual Occupied Dwelling	Female	White	Not Employed	No	69	—	Named--seen in area by witness	Yes	No	No	Yes	$510	Yes
Case #4	Individual Occupied Dwelling	Male	Non-white	Not Employed	Yes	32	—	Name provided by guess	No	Yes	No	Yes	$795	Yes
Case #5	Individual un-occupied dwelling	Male	White	Employed	No	47	—	Desc. & Id by eyewitness to crime	Yes	No	No	Yes	$1,000	Yes

Note: For confidentiality reasons, "victim address" (street names) is not included in the information board presented here.

APPENDIX L

Information Board Instructions for the Selection of Burglaries


A Victim Type
B Victim Sex
C Victim Race
D Victim Employment Status
E Victim-Offender Relationship
F Victim Age
G Victim Address
H Nature + Source of Suspect Info
I Physical Evidence Available
J Suspect Vehicle Described
K Suspect Vehicle Plate Known
L Stolen Property Identifiable
M $ Value of Stolen Property
N Victim Desires Effort
O Weapon Used
P Degree of Personal Injury
Case #1
1-A 1-B 1-C 1-D 1-E 1-F 1-G 1-H 1-I 1-J 1-K 1-L 1-M 1-N 1-O 1-P
Case #2
2-A 2-B 2-C 2-D 2-E 2-F 2-G 2-H 2-I 2-J 2-K 2-L 2-M 2-N 2-O 2-P
Case #3
3-A 3-B 3-C 3-D 3-E 3-F 3-G 3-H 3-I 3-J 3-K 3-L 3-M 3-N 3-O 3-P
Case #4
4-A 4-B 4-C 4-D 4-E 4-F 4-G 4-H 4-I 4-J 4-K 4-L 4-M 4-N 4-O 4-P
Case #5
5-A 5-B 5-C 5-D 5-E 5-F 5-G 5-H 5-I 5-J 5-K 5-L 5-M 5-N 5-O 5-P



Note: For confidentiality reasons, "victim address" (street names) is not included in the information board presented here.

INSTRUCTIONS

This exercise provides a simulation of the decision of whether or not to assign a burglary case to a detective for a follow-up investigation. You should imagine that you have five cases to either "OPU" or "OPA." Your task is to decide which case(s) you would most likely assign to a detective.

Presented here are thirteen different types of information you can consider in choosing which of five cases to assign. For example, you can look at the age of the victim, the nature and amount of suspect information, the dollar value of the stolen property, etc., all of which are typically contained in the initial patrol report. Your task is to uncover and look at as much information as you need to, and then decide which of the five cases should be assigned.

While reviewing and deciding upon the cases, it would be most helpful if you "think aloud." State the information you are looking at and considering. State what you are thinking as you look at the information. State any other information which would help you in making the decision. Say anything that comes to your mind. Finally, identify the cases you would assign.

All responses will be anonymous.

Thank you very much for your participation.

APPENDIX M

Depth of Search: Formula and Examples

Depth of Search

The following formula was used in calculating depth of search:

$$\text{depth of search} = \frac{\text{NDA}}{\text{TND}}$$

where:

NDA = the number of dimensions accessed for a given alternative

TND = the total number of dimensions available to be accessed for a given alternative

The following is an example of how the equation is computed (note: an "x" indicates an accessed dimension):

		Dimensions				
		1	2	3	4	5
	1	x	x	x	x	x
Alts	2	x	x			
	3	x	x	x		
	4	x	x		x	x

for...

Alternative 1: NDA=5; TND=5; depth of search = 1.0
Alternative 2: NDA=2; TND=5; depth of search = .4
Alternative 3: NDA=3; TND=5; depth of search = .6
Alternative 4: NDA=4; TND=5 depth of search = .8

In this example, the mean depth of search across all alternatives = .7 or 70% of information was accessed.

APPENDIX N

Content of Search: Formula and Examples

Content of Search

The procedure outlines below was used to calculate "importance scores."

In assigning scores to each dimension within each alternative, the following conventions were used:

TND = total number of dimensions available to be accessed for each alternative

TND^ = the first dimension accessed in each alternative

TND-1 = the second dimension accessed in each alternative

TND-2 = the third dimension accessed in each alternative, etc.

A score of "zero" indicated that the dimension was not accessed in that alternative

Accordingly, in an information board with four alternatives and five dimensions, the following search pattern could result:

		Dimensions				
		1	2	3	4	5
	1	0	5	4	3	0
Alts	2	0	4	5	3	2
	3	0	5	4	0	0
	4	1	4	5	3	2

where, for example, in Alternative 1, Dimension 2 was accessed first, 3 second, and 4 third. Dimensions 1 and 5 were not accessed.

To determine the overall "importance score" for each dimension, the mean of the assigned scores was calculated. Therefore:

		Dimensions				
		1	2	3	4	5
	1	0	5	4	3	0
Alts	2	0	4	5	3	2
	3	0	5	4	0	0
	4	1	4	5	3	2
	X	.25	4.5	4.5	2.25	1

In this example, dimensions 2 and 3 are tied as "most important," followed by dimensions 4, 5, and then 1.

APPENDIX O

Linearity of Search: Formula and Examples

Linearity of Search

The following formula was used in calculating the degree of linearity in decision making (from Gilliland, 1990):

$$\text{Degree of Linearity} = \frac{NA}{((DS * AU) - (DS + AU - 1))}$$

where:

NA = the number of times a standard dimension was not accessed on a given alternative that had at least one standard dimension accessed

DS = the number of dimensions accessed in the standard alternative

AU = the number of alternatives used in the comparison, including the standard alternative

The rationale for the components of the equation is as follows:

1. The numerator gives an indication of the degree of dissimilarity between the standard and those alternatives accessed on at least one dimension of the standard. Alternatives are limited to those accessed on at least one dimension of the standard because perfect linearity can exist even when all alternatives are not accessed.

2. The multiplicative component of the denominator gives the size of the matrix examined for linearity.

3. The additive component of the denominator adjusts the denominator for those elements that do not add into the numerator. Specifically, the number of dimensions in the standard are excluded because they never add into the numerator. Additionally, one dimension of each alternative will never add into the numerator because each alternative must be accessed on at least one dimension to be included.

The following are examples of how the equation is computed (note: an "x" indicates an accessed dimension; 0 = perfect linearity, 1 = perfect non-linearity):

1.

		Dimensions				
		1	2	3	4	5
	1	x	x	x	x	x
Alts	2	x	x	x	x	x
	3	x	x	x	x	x
	4	x	x	x	x	x

NA=0; DS=5; AU=4; Linearity Score = 0

2.

		Dimensions				
		1	2	3	4	5
	1	x	x	x	x	x
Alts	2	x				
	3	x				
	4	x				

NA=12; DS=5; AU=4; Linearity Score = 1

3.

		Dimensions				
		1	2	3	4	5
	1	x	x	x	x	x
Alts	2	x	x			
	3	x	x			
	4	x	x			

NA=9; DS=5; AU=4; Linearity Score = .75

4.

		Dimensions				
		1	2	3	4	5
	1	x	x	x	x	x
Alts	2	x		x		
	3		x			x
	4	x			x	

NA=9; DS=5; AU=4; Linearity Score = .75

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