Police Performance and Case Attrition

Joan Petersilia, Allan Abrahamse,
James Q. Wilson

RAND

The research described in this report was supported by the National Institute of Justice, U.S. Department of Justice, under Grant 84-IJ-CX-0072.

Library of Congress Cataloging in Publication Data

Petersilia, Joan.
Police performance and case attrition / Joan Petersilia, Allan Abrahamse, James Q. Wilson ; prepared for the National Institute of Justice, U.S. Department of Justice.
p. cm.
"R-3515-NIJ."
Bibliography: p.
ISBN 0-8330-0814-5
1. Arrest (Police methods) 2. Arrest—California—Los Angeles County—Statistics. 3. Sentences (Criminal procedure)—California—Los Angeles County—Statistics. 4. Police administration—California—Los Angeles County—Evaluation. I. Abrahamse, Allan F. II. Wilson, James Q. III. National Institute of Justice (U.S.) IV. RAND Corporation. V. Title.
HV8080.A6P47 1987
363.2'32—dc19 87-27687
CIP

The RAND Publication Series: The Report is the principal publication documenting and transmitting RAND's major research findings and final research results. The RAND Note reports other outputs of sponsored research for general distribution. Publications of The RAND Corporation do not necessarily reflect the opinions or policies of the sponsors of RAND research.

Published by The RAND Corporation
1700 Main Street, P.O. Box 2138, Santa Monica, CA 90406-2138

R-3515-NIJ

Police Performance and Case Attrition

Joan Petersilia, Allan Abrahamse,
James Q. Wilson

October 1987

Supported by the
National Institute of Justice,
U.S. Department of Justice

RAND

PREFACE

This study was supported by the National Institute of Justice (NIJ) as part of its continuing effort to evaluate criminal court processing and to identify factors that contribute to high case attrition. The study highlights the importance of both community and police department characteristics in case-attrition patterns. The findings should be useful to police, prosecutors, researchers, and public policy officials. Because the study attempts to provide a statistical explanation for cross-jurisdictional attrition patterns, it should be of methodological interest as well.

SUMMARY

In the United States, less than half of all felony arrests result in convictions. This deterioration of cases, called case attrition, has been the subject of extensive case-study research, but no major attempt has been made to provide a statistical explanation of cross-jurisdiction variations in attrition, using factors such as community characteristics and police practices.

The present study examines the effects of community and organizational characteristics on felony case attrition. It describes the differences in felony case attrition among 25 large police agencies in Los Angeles County; analyzes the extent to which these differences can be explained by crime characteristics, community characteristics, and police expenditures; and explores the relationship between police policies and practices and case attrition.

Using the percentage of arrests that end in conviction as the measure of attrition, we found a great deal of variation in attrition rates for robbery and burglary arrests: Some of the 25 police departments studied had attrition rates twice as high as others. We found no relationship between this variation in attrition rates and such community characteristics as age, race, and poverty, but high attrition rates do appear to be connected to high overall crime rates in the community and low per-arrest expenditures by the police. Community characteristics explained 35 percent of the variance in attrition rates for robbery and 44 percent for burglary.

We identified nine police practices that seem to have some connection to attrition rates. Statistical analysis indicated that departments using arrests as a performance measure had higher attrition rates for robbery than those that did not. Departments that provided computerized crime reports to investigators showed lower attrition rates for burglary.

Using both community characteristics and our findings concerning police practices, we were able to explain about 50 percent of the variation in attrition rates for both robbery and burglary. Case attrition occurs at different points in different police departments, and there appears to be no pattern in this variation.

A detailed investigation of six departments that had similar crime rates, community characteristics, and resources indicated that detectives had little interest in either attrition statistics or systematic feedback from prosecutors.

Some important assumptions made by prior research appear to be questionable—for example, the assumption that police departments make arrests and attempt to file cases for the same reasons. Moreover, because of the broad statutory definition of burglary and the varying practices observed in processing burglary suspects, attrition rates for burglary mean different things in different departments. Finally, the study challenges the assumption that police policies reflect the same objectives and motivation that inform research and policy assessments of police operations.

The report concludes that future research and reform efforts will fail if the traditional assumptions about case attrition are not seriously questioned and reevaluated. A set of behaviorally specific definitions of crimes should be developed that can be used in future research. Factors such as the level and detail of the initial patrol investigation, the collection of physical evidence, and the use of special investigative files, proactive investigative techniques, and reward systems might then be shown to explain some of the interdepartmental variation in case attrition.

ACKNOWLEDGMENTS

James Stewart, Director of the National Institute of Justice, provided the opportunity to pursue this research. A special thanks is extended to Bernard Auchter, the study's grant monitor, for his sustained encouragement and review of preliminary drafts.

This study would not have been possible without the extensive cooperation of the police departments in Los Angeles County. Officials in these departments generously shared their data, as well as their knowledge of policing practice. Participating counties always run the risk of "looking bad" when research findings become known. Los Angeles County's agencies were willing to run that risk in the hope that the resulting research would help them and others to learn more about case attrition. We could not have asked for better cooperation.

We are grateful to James Rasmussen, Chief of the California Bureau of Criminal Statistics (BCS), who provided us with Offender-Based Transaction Data. The continued assistance of the BCS in making available the data collected by their agencies is a great service to the research community.

Our gratitude extends to Floyd Feeney, of the University of California, Davis, and Albert Reiss, of Yale University, who reviewed this report and provided useful comments and advice. Joyce Peterson, a RAND communications analyst, assisted in drafting preliminary materials. Careful reviews were also provided by Allan Lind and Robert MacCoun, of RAND. Their comments significantly improved the final draft. Thomas McMorrow, a RAND summer intern during the project, collected background information from the participating police agencies.

Finally, we are grateful to Barbara Williams, Director of RAND's Criminal Justice Program, for her assistance in both administrative and substantive matters.

CONTENTS

PREFACE iii

SUMMARY v

ACKNOWLEDGMENTS vii

Section
I. INTRODUCTION 1

II. BACKGROUND AND NATURE OF THE STUDY 4
Conclusions and Recommendations of Previous Case-Attrition Studies 4
Advantages of the Study Site 7
Nature of the Study 11
Community Factors that May Influence Case Attrition . . . 12

III. EXPLAINING DIFFERENCES IN CASE-ATTRITION RATES 14
Measuring Case Attrition 14
The Effect of Community Factors 17
How Much of the Variation Do Department Differences Explain? 24
Results 28

IV. WHAT DO CASE-ATTRITION RATES IMPLY? 31
Implications of the Case Studies 34
Conclusions and Implications for Future Study 42

Appendix
A. Disposition Calculations 45
B. Data Used in the Analysis 47
C. Questionnaire Used for Survey of Police Department Characteristics 50

REFERENCES 55

I. INTRODUCTION

Across the United States, less than half of all felony arrests result in convictions (Boland and Sones, 1986). This failure of arrests to come to trial, referred to as case attrition, has become a matter of serious public and policy concern. Many arrestees whose cases are dropped quickly return to crime and are rearrested, only to slip through the system again. This pattern creates an impression of "revolving door" justice that not only undermines public confidence, but may also make criminals cynical about their chances of being punished, thus undercutting the deterrent effect of "swift and certain punishment."

The gravity of the situation has made case attrition a major target for reform efforts, most of them focused on the police. Although attrition may occur anywhere in the process of arrest, filing, and prosecution, most of the onus has fallen on police handling of cases. Statistics play a part in this placing of blame. On average, 80 percent of the cases *accepted for prosecution* nationwide result in conviction. However, only about 50 percent of arrests are accepted for prosecution.[1] Thus, it is clear that most case attrition occurs between arrest and filing.

But why should the police be held more responsible than the prosecutor for attrition at this point? The traditional assumption has been that a district attorney's office accepts any case for which the police present "proof beyond a reasonable doubt" that a crime was committed and that the suspect committed it. If prosecutors are not convinced that this standard can be met, they usually refuse to file charges. The relative filing and conviction rates indicate that prosecutors generally do a good job of assessing the quality of the evidence. Thus, the high rate of prefiling attrition suggests that the police simply are not providing adequate evidence for a large percentage of cases.[2] A growing body of research supports these conclusions, and reforms that might reduce prefiling attrition have been proposed.

Attrition rates are regularly used as a measure for assessing and comparing police departments and as a justification for demands for

---

[1]These basic patterns have been documented in Forst et al. (1977, 1982); Vera Institute of Justice (1977); Brosi (1979); Feeney et al. (1983); Boland and Brady (1985); and Boland and Sones (1986).

[2]For a complete discussion of these issues, see McDonald et al. (1982); and McDonald (1985).

reform.[3] Case-attrition research has operated largely on the same assumptions that inform these comparisons and demands for reform:

- Case attrition necessarily implies that the police are not "doing a good job."
- Factors that influence attrition can be identified by comparing the policies and practices of police departments that have significantly different case-attrition rates.
- Reforms that improve policies and practices will result in higher conviction rates.

Our research began with those assumptions. However, our approach differed from that of prior research in that we used statistical analysis to identify possible extraneous influences on attrition rates, e.g., community characteristics. Our purposes were (1) to examine case-attrition variance among police departments in Los Angeles County;[4] (2) to see how much of the variance could be explained by differences in police policies and practices, after other elements that might influence attrition had been controlled for; and (3) to identify those policies and practices that were related to higher conviction rates.

Our analysis did reveal variation among police departments, but it failed, with a few exceptions,[5] to reveal strong relationships between the major variables and our primary case-attrition measure—the proportion of robbery and burglary arrests leading to court convictions (or guilty pleas). None of the purely demographic differences between communities (i.e., age, race, poverty level) appeared related to case attrition.

It is possible that our inability to detect statistically significant relationships was due to the relatively small size of our sample (25 police departments).[6] But when no statistical relationships appeared between variables that conventional wisdom suggested should be related, we

---

[3]For example, Feeney et al. (1983), Brosi (1979), Boland and Brady (1985), Boland and Sones (1986), and Bureau of Justice Statistics (1985) all compare patterns across jurisdictions.

[4]Los Angeles was selected as the study site primarily because its police departments utilize a common definition of arrest and they file felony cases with a single district attorney's office. Other reasons for selecting Los Angeles are discussed in Section II.

[5]As discussed fully in Section III, the analysis of robberies and burglaries revealed that (1) communities with high overall crime rates do experience slightly higher attrition; (2) the more the police spend per arrest, the lower the case attrition, particularly for burglaries; and (3) departments that use arrest rates as a performance measure have consistently higher case attrition.

[6]This possibility is discussed more fully in Section III.

began to question our case-attrition measure itself.[7] We subsequently visited six of our sample police departments to learn more about the interpretation of key processes such as "case presented by the police" and "case rejected by the prosecutor."

We concluded that the prevailing assumptions about attrition rates should be seriously reexamined by criminal justice researchers, policymakers, and managers. *Statistics reflecting case-attrition patterns are not a valid basis for comparative evaluation of police departments.* They may not even be valid performance indicators for individual police departments. Comparative evaluations assume that case attrition has similar causes and similar significance across departments. Their use for individual departments assumes that attrition has a normative significance. Our analyses contradict both of these assumptions.

Section II discusses the research background of this study, the study site, the data used, and our methodology. Section III describes the findings of our statistical analyses and the conclusions that led us to question our original assumptions, reconsider the significance of some of our data, and undertake a case study of selected departments. Section IV discusses the implications of both the quantitative and qualitative analyses for research and policy.

---

[7]Our case-attrition measure was derived from the Offender-Based Transaction System (OBTS), the database maintained by the California Bureau of Criminal Statistics, which records the processing of all felony arrests. OBTS data are provided by criminal justice agencies throughout the state.

II. BACKGROUND AND NATURE OF THE STUDY

CONCLUSIONS AND RECOMMENDATIONS OF PREVIOUS CASE-ATTRITION STUDIES

Over the past decade, many jurisdictions across the country have instituted reforms to reduce case attrition. Most of those efforts have reflected the research conclusion that the filing of charges and the conviction of offenders are basically determined by the quality of the evidence police give to prosecutors, and that this quality depends on the quality of police investigation and communication between police and prosecutors.[1]

Both researchers and policymakers have identified the differences between arrest and filing criteria as a fundamental problem. The prosecutor relies on the police to provide the evidence needed to prosecute and convict suspects. Although the police certainly provide sufficient evidence to justify an arrest, they often fail to provide sufficient evidence for filing a charge. Arrest requires only grounds for a reasonable belief that a crime was committed and that the offender committed it, but the prosecutor needs proof beyond a reasonable doubt. If the evidence the police provide does not meet this standard, the district attorney usually refuses to file a charge.[2]

What the police officer does has considerable influence on whether or not arrests result in convictions. Using data from the Prosecutor's Management Information System (PROMIS), researchers at the Institute for Law and Social Research (INSLAW) concluded that:

> When the arresting officer manages to recover tangible evidence, the prosecutor is considerably more likely to convict the defendant. When the police manage to bring more cooperative witnesses to the prosecutor, the probability of conviction is, again, significantly enhanced. When the police are able to make the arrest soon after the offense—especially in robberies, larcenies, and burglaries—tangible evidence is more often recovered and conviction is, once again, more likely (Forst et al., 1977).

Police failure to bring prosecutors the kind of evidence they need is primarily the result of insufficient follow-up investigations, lack of

---

[1]Forst et al. (1977, 1982); Vera Institute of Justice (1977); Brosi (1979); Feeney et al. (1983); Greenwood et al. (1977); McDonald et al. (1982); and McDonald (1985).

[2]Jacoby (1977) found that most, but not all, prosecutors use the "beyond a reasonable doubt" standard.

adequate police training and organizational incentives, and lack of effective communication between prosecutors and police.

There are also difficulties inherent in the conduct of criminal investigations. Patrol officers are the first on the crime scene and the first to question the victim. It is well known that the information victims (or witnesses) provide at the scene of a crime is critical to whether the case will eventually be solved (Greenwood et al., 1977). But patrol officers are usually less senior officers with less formal training; they are often unmotivated or simply too pressed for time to conduct thorough preliminary investigations. The "cold" case is then transferred to the detective division, which usually has to recontact the victim or witnesses and fill in the missing pieces of information. Detectives may find that witnesses have disappeared, memories have faded, or crucial information is now unobtainable. Equally problematic, information originally reported to the patrol officer is often "lost" to the detective (and later, the prosecutor) simply because it does not become part of the written crime report.

The investigative process has undergone a number of reforms designed to redress these deficiencies—patrol officers have been given more time and training to conduct thorough investigations, cases with a low probability of case clearance are screened out, detectives and patrol officers are now rotated, and police are receiving feedback regarding final case outcomes.

The success of these investigative reforms will probably be partly dictated by improvements in training and changes in organizational incentives (Boydstun et al., 1981; Eck, 1979; Pate et al., 1976). Training is important because it teaches new skills, ritualizes the transition from old practice to new, and creates a camaraderie among the participants. But even better training will not motivate the police to make the extra effort to obtain stronger evidence unless certain organizational incentives are also provided. In general, police view their role as ending with arrest; preparing a case beyond what is needed for filing is regarded as "doing the prosecutor's job." Further, very few police departments evaluate their officers on the basis of conviction rates.[3] Hence, police departments themselves provide little organizational incentive for officers to seek convictions.

The reforms needed to address these generic problems seem to center on police departments. However, even with the best will in the world, the police are not likely to provide the kind of evidence

[3]A survey of 180 officers from New York City and Washington, D.C., indicated that in the officers' view, the number of arrests that result in conviction is the least important of 16 criteria their supervisors might use to rate individual officer performance (McDonald et al., 1982).

prosecutors need unless the prosecutors communicate their needs and thus influence police investigations. The lack of communication between these agencies is a recurrent theme in case-attrition research.

William McDonald studied major police and prosecution agencies throughout the nation and concluded that the police often do not *know* what kinds of information prosecutors need concerning a case, not only because of a lack of legal training but also because of lack of experience in trying and negotiating cases (McDonald et al., 1982). In most jurisdictions, prosecutors fail to make police aware of their information needs or to inform them about final case dispositions. Police officers therefore remain largely unable to develop the investigative skills necessary to provide the evidence needed to win convictions.

A variety of reforms have been recommended to deal with these problems, including:

- Providing checklists of evidentiary items needed prior to filing.
- Having a single officer in the department responsible for filing all cases.
- Providing more police training concerning evidence.
- Rotating detectives and patrol officers.
- Making prosecutors more accessible to the police (e.g., having them on call 24 hours a day).
- Preparing more readable and more detailed investigation reports.
- Providing written feedback concerning final case outcome.
- Using case outcomes in police performance evaluations.

Police departments have experimented with various recommendations from this list. For example, the Baltimore County (Maryland) State's Attorney is providing the police departments within the county frequent feedback on felony case dispositions, to enable officers to learn more about the types of evidence required to produce convictions and to help make conviction rates an important organizational value. In New York, specially trained criminal investigators are being assigned to a number of district attorneys' offices. These officers will learn of the evidentiary requirements of each prosecutor's office and will assist in developing a formal screening checklist which, in turn, will be distributed to all police agencies.

Police departments in Garden Grove (California), Indianapolis (Indiana), and Newport News (Virginia) have each identified an experienced detective supervisor who will prescreen all felony cases, using formal standards developed in cooperation with the prosecutor's office. And police in Nashville (Tennessee) are experimenting with a computerized

intake program to obtain the standard information items found on manual crime report forms, as well as to probe for additional information. This system is designed to improve the accuracy and quantity of information transmitted from the police to the prosecutor.[4]

If the assumptions informing both research and reform policy are correct, these attempts to improve investigation, training, and communication should have some effect on case-attrition rates. We have examined those assumptions, using a sample of police departments in Los Angeles County.

ADVANTAGES OF THE STUDY SITE

We chose Los Angeles as the site for this study for a number of reasons: It has uniform filing policies, which are applied to numerous large police departments utilizing different procedures; the departments use a common definition of "arrests"; the police departments in Los Angeles make a large number of arrests, which enabled us to control statistically for various community characteristics and still retain large samples; and the police and prosecution agencies were highly cooperative with our research effort.

Los Angeles County has one of the largest and most complex criminal justice systems in the country, involving more than 40 arresting agencies, 24 municipal court districts, and 8 superior court districts—all of which are serviced by the Los Angeles District Attorney's Office (LADA).

Like agencies across the nation, Los Angeles police departments have instituted a number of reforms to improve the quality of evidence provided to prosecutors. Several of the departments have designated a single detective who is responsible for all felony filings, to assure that all relevant information is present prior to formal filing. Some departments use "solvability factors" to decide which cases will receive follow-up attention; only those cases with promising leads are formally investigated. And some departments rely more heavily than others on investigative aids such as computerized "mug shot" and modus operandi files, latent-fingerprint systems, and known-offender files. Los Angeles appears to encompass the range of policies and procedures being implemented nationwide.

Because the individual police departments all request felony filings from a single district attorney's office with (published) uniform filing standards, there is less variation due to prosecutorial filing policy than

[4]Evaluations of these police-prosecutor experiments are under way, supported by the National Institute of Justice (NIJ), U.S. Department of Justice (DOJ).

would be the case if each department operated an independent police-prosecutor organization. Consequently, Los Angeles provides an appropriate environment for examining which, if any, department policies and practices are related to lower case attrition.

Filing Policy

Prior to this study, several Los Angeles district attorneys indicated that they believed some of the county's police departments had much lower case-attrition rates than others—that is, a much higher percentage of their felony arrests resulted in felony filings and subsequent convictions. They did not believe this variation resulted from differences in filing policies, since, officially, filing policies are similar across jurisdictions. A 1973 RAND study of the LADA also concluded that:

> There are large disparities within Los Angeles County in the exercise of prosecutorial discretion and in the disposition of adult felony defendants. These differences may be only partially explained by appealing to different prosecutorial management styles. But the large differences themselves should be cause for concern on the part of police chiefs, the DA, and the judiciary, because they mean that justice is not meted out evenhandedly in the county (Greenwood et al., 1973).

A number of policy changes were subsequently made to reduce the disparities among branch offices. A formal policy statement entitled *Uniform Crime Charging Standards* was drafted and published, and training sessions were held to advise deputies of the new policies regarding filing of cases that can be charged as either felonies or misdemeanors and plea bargaining. Two years later, filing policy had clearly become more uniform (Greenwood et al., 1977). The *Standards* have since been revised, and as a result of closer coordination among branch offices and the full implementation of a computerized case-tracking system, uniformity of filing procedures has continued to improve.

Because Los Angeles County has a single district attorney's office, variations in attrition rates appear to primarily reflect differences in police productivity, e.g., thoroughness of investigations, willingness to perform backup investigations, and interest in obtaining convictions.

Definition of Arrest

Arrests are variously defined as contacting suspects on the street, transporting suspects to the police station, detaining suspects at a

police station, formally booking suspects, or formally filing charges against suspects. In Los Angeles County, the police departments use a common definition: An arrest is the "formal booking of a suspect at a police station." This situation gives our arrest measure reasonable uniformity.

Number of Arrests

The cities whose police departments made up our study sample range in population from about 25,000 to over 360,000 (see Table 2.1). Each of the departments makes thousands of arrests every year (felony, misdemeanor, juvenile), of which hundreds result in adult felony dispositions. Collectively, the sample departments serve about 30 percent of Los Angeles County's population.[5] We limited our study to 25 departments for several reasons. First, we needed to control for community factors, and data on those factors had to be available from a reasonably convenient source. Consequently, we eliminated departments for which data were not included in the 1983 *County and City Data Book.* Second, we eliminated small departments, i.e., those that make fewer than 300 felony arrests per year, for statistical-analysis reasons. Finally, two of the 40 departments declined to participate.

Only four other counties in the United States have populations exceeding the total served by these 25 departments, and the population of each of these four counties is primarily concentrated in a single large city (New York City, Chicago, Detroit, and Houston). Thus, Los Angeles County may be the only area in the United States with a relatively large number of moderate- to large-sized police departments, all filing complaints with the same district attorney, and all receiving dispositions in the same superior court system.

Filing and Prosecution

All of the police departments in our sample file criminal cases with the LADA. This is the largest prosecutor's office in the country, employing approximately 525 deputy district attorneys. The LADA has jurisdiction over all felonies in the county and all misdemeanors in cities within the county that do not maintain a city prosecutor. Mis-

[5]The Los Angeles Police Department (LAPD) makes about 50 percent of all the felony arrests in Los Angeles County, but it declined to participate in this study. We eliminated the Los Angeles Sheriff's Office (LASO), which is responsible for about 20 percent of all felony arrests in the county, because it serves (through contracts) a number of small communities as well as the unincorporated part of Los Angeles County. It would have been impossible to compute single demographic variables that adequately measure the variety of communities the LASO or the LAPD serves.

Table 2.1

CITIES REPRESENTED IN THE LOS ANGELES COUNTY STUDY SAMPLE

City	Population (1980)	Arrests (1981)	Felony Dispositions (1981)
Alhambra	64,615	3,535	441
Azusa	29,380	2,910	260
Baldwin Park	50,554	2,511	391
Bell Garden	34,117	1,487	260
Beverly Hills	32,367	3,347	792
Burbank	84,625	3,942	601
Compton	81,286	4,982	456
Covina	33,751	3,484	449
Downey	82,602	4,227	559
El Monte	79,494	5,250	773
Gardena	45,165	3,403	799
Glendale	139,060	7,146	872
Hawthorne	56,447	6,837	452
Huntington Park	46,223	3,886	526
Inglewood	94,245	7,995	1,306
Long Beach	361,334	30,210	3,621
Montebello	52,929	2,733	512
Pasadena	118,550	9,864	1,837
Pomona	92,742	6,833	1,067
Redondo Beach	57,102	5,663	314
Santa Monica	88,314	7,491	984
South Gate	66,784	7,573	880
Torrance	129,881	8,443	954
West Covina	80,291	5,481	628
Whittier	69,717	3,974	552
Total	2,071,575	153,207	20,286
L.A. County total	7,477,503	536,723	78,251

SOURCES: Population data from the *County and City Data Book*, 1983; arrest data are from the computerized Arrest and Citation Register, and data on dispositions are from the machine-readable OBTS database. Arrests comprise felonies and misdemeanors made in 1981. Dispositions are adult felony dispositions made in 1981, some of which deal with arrests made in 1980 and earlier.

demeanors are prosecuted in municipal court; felonies are prosecuted in superior court after they pass the preliminary hearing stage.

The LADA headquarters is in Central Operations, in the Los Angeles Hall of Justice. Central Operations prosecutes all felony cases arising in the Central Judicial District—more than one-third of the total office caseload. The remaining felony cases are handled by eight branch offices, located adjacent to the superior court branches, and fourteen area offices, located near municipal courts.

Since area offices serve only municipal courts, they handle misdemeanor trials, felony arraignments, and preliminary hearings, but no felony trials. The deputy in charge handles most of the filings. A felony case originating in an area office is transferred to a branch office when the defendant is held to answer (i.e., is bound over to the Superior Court).

NATURE OF THE STUDY

Our major research objectives were:

1. To determine what variation in robbery and burglary case attrition rates, if any, exists among the large police departments in Los Angeles County.
2. To determine how much of that variation can be explained by crime characteristics (e.g., crime mix, overall level), community characteristics (e.g., income level, minority representation), and police expenditures (i.e., dollars spent per crime reported).
3. To determine the relationship between police policies and practices and case attrition when the above factors are statistically controlled for.

Differences in attrition rates might be the result of a program being implemented in one police department and not in another. Differences also could be attributable to factors that are not related to the program, such as the personalities of the police chiefs and how well each of them interacts with the prosecutor; demographic differences among communities; differences in the financial and manning resources of the communities served by the departments relative to the number and types of crimes that are committed; and the availability of the evidence needed to secure a conviction (e.g., whether witnesses will cooperate).

To reduce the possibility of serious errors induced by factors that are not program-related, we used a combination of statistical and empirical procedures: We studied groups of police departments,

employed statistical controls for community differences, and compared case-attrition rates among sites.

The research design is based on comparisons between groups of police departments that have been made analytically similar using statistical controls but that use different police procedures. We assumed that if departments using case-attrition reduction programs have lower attrition rates, it may be inferred that (all other things being equal) the programs reduce case attrition. The use of several departments should balance out any unique characteristics that might bias the results, such as political differences between the police and the prosecutor.

COMMUNITY FACTORS THAT MAY INFLUENCE CASE ATTRITION

The community factors we assumed would have the greatest potential effect on case attrition are the overall type and level of crime, the demographic characteristics of the community, and the police department's financial resources.

The Mix of Crimes Reported. The mix of felony arrests for personal and property crimes may differ among police departments because of the socioeconomic characteristics of their communities, and these case-mix differences may influence case-attrition patterns. It is well known that crimes vary in their "inherent convictability" (Forst et al., 1982). For example, domestic assaults where the victims later refuse to testify in court and bad-check cases where the defendant later makes restitution are known to have consistently low probabilities of conviction. Therefore, if a large portion of a police department's arrests are for these hard-to-convict offenses, the department's conviction rate might look significantly lower than that in another community. Thus, case-attrition patterns may reflect the crime mix, rather than the quality of the police investigation. To control for this possibility, we limited our analysis to arrests for burglary and robbery.[6]

Demographic Characteristics of the Community. The demographic characteristics of the population served can affect case attrition in a number of ways. In a primarily non-English-speaking community, it may be difficult to obtain accurate information or court testimony. Victims may appear to be uncooperative because they are unfamiliar with the criminal justice system and its processes (Cannavale and Falcon, 1976). Also, research has shown that minorities have a greater distrust of the police and the courts and a greater fear of reprisal from

[6]Robbery accounts for approximately 10 percent, and burglary 19 percent, of all adult felony dispositions in the 25 cities in our sample.

their assailants. Both of these factors may influence willingness to participate in the prosecution process. Also, working-class or elderly individuals may have difficulty making arrangements to appear in court, and this might affect the attrition rates in their communities.

Financial Resources. The funding available to police departments could certainly affect attrition. A police department with inadequate resources will be limited in its ability to complete initial and follow-up investigations. Financial resources could also affect investigative support systems—for example, the ability to maintain updated modus operandi and known-offender files, to use evidence technicians, and to adapt computer technology. Moreover, serious resource constraints could influence police departments to eliminate cases earlier (and more frequently) in order to keep their caseloads manageable.

These factors must be statistically measured and controlled prior to examining the relationship between police policy and case attrition. For each of our 25 cities, we merged the relevant demographic data from the *County and City Data Book* with the computerized OBTS case-attrition data. We first examined the relationship between the demographic variables and the 1981 conviction rates for robbery and burglary arrests. We subsequently ran a stepwise regression of those conviction rates against the demographic variables to estimate the effect of these community characteristics on case attrition, holding all other known major factors constant. The results are discussed in Section III.

III. EXPLAINING DIFFERENCES IN CASE-ATTRITION RATES

No previous case-attrition study, to our knowledge, has analyzed even as many as 25 police departments at once. Nevertheless, 25 cases is not a large number. Thus it is possible that important effects have not been identified because of small sample size. We first consider the potential magnitude of such "hidden" effects.

Let us assume that a rate (e.g., the conviction rate) depends on some department characteristic possessed by approximately half of the departments in our sample (e.g., the department has a powerful computer). We can test whether the "true" conviction rate among the departments having the characteristic is the same as that among those without it by using a simple t-test for proportions. To have at least a 50 percent chance of rejecting the null hypothesis—i.e., that the characteristic has no effect—at a 10 percent significance level, the difference between the true rates must be at least 25 percent. For example, if the true conviction rate is 60 percent for departments with a computer and 40 percent for those without, we have less than a 50 percent chance of detecting this difference with a sample size of only 25.

On the other hand, we have a 90 percent chance of detecting a 50 percent difference. Thus, if the true conviction rate is 75 percent for departments with a computer, but only 25 percent for those without one, there is a high probability that we can detect the difference with 25 cases. If few effects are discovered, we cannot rule out the existence of moderate effects that we are unable to detect.

MEASURING CASE ATTRITION

The Attrition Measure

Case attrition can be defined and measured in a number of ways. Our choice of a measure was limited by the available data in the 1981 OBTS file,[1] which tracks the progress of all adults arrested on felony charges in California through the criminal justice system. The data record the disposition for each individual defendant at each stage in

[1]We chose 1981 as the study period to ensure that sufficient time had elapsed for all arrests to have reached final disposition.

the process—law enforcement, prosecution, lower courts and superior courts. About 200,000 felony dispositions are recorded annually in the OBTS database.

The information is taken from the JUS 8715 forms that accompany adult arrestees as they move through the criminal justice system. The agency making the final disposition completes the form and sends it to the Bureau of Criminal Statistics (BCS).[2] Final dispositions include release by the arresting agency without any referral to the district attorney, refusal by the prosecutor to file, and dismissal, acquittal, or conviction by the court.

Appendix A describes the disposition information in the OBTS and how we used it. We classified each arrest into one of the following disposition categories:

- Release: Offender released by police without referring the case to the district attorney.
- Denial: Case was referred to the district attorney, but the district attorney refused to prosecute.
- Acquittal: Case was referred to the district attorney, who attempted to prosecute it, but it was either dismissed or the offender was acquitted.
- Probation: Case went to trial, and the offender was found guilty and given a nonincarceration sentence (usually involving probation, or probation in combination with a fine; occasionally, only a fine).
- Jail: Case went to trial, and the offender was found guilty and given a jail sentence (often in combination with probation).
- Prison: Case went to trial, and the offender was found guilty and given a prison term.

Using these outcomes, many different case-attrition measures having some face validity can be defined. From the number of arrests, for example, we can calculate the following:

- Forward rate: The percent of all arrests released by the police and sent forward to the district attorney.

[2]However, there is convincing evidence that the BCS gets only about 70 percent of the dispositions it is supposed to receive (a disparity that varies from place to place and year to year). It is not known whether this disparity depends on the type of disposition, the agency making the final disposition, or any other factor. Nevertheless, even with this limitation, the OBTS is widely regarded as one of the most complete and accurate case-flow databases in the nation and is frequently utilized for research purposes. For a complete description, see *Adult Felony Arrest Dispositions in California*, published annually by the California BCS.

- Filing rate: The percent of all arrests accepted by the district attorney for the purpose of filing a complaint.
- Conviction rate: The percent of all arrests for which a conviction is eventually obtained.
- Incarceration rate: The percent of all arrests for which an incarceration sentence (jail or prison) is obtained.

We explored all of these measures, but only the results for the conviction rate are reported here. This measure is familiar and easy to define, and it should be sensitive to the joint efforts of the police and prosecutor, whereas incarceration rates involve more of the court's discretion and decision.

Furthermore, the four rates are closely correlated, so any one might serve as a rough proxy for another. The correlation coefficients are shown in Table 3.1.

Table 3.1

CORRELATION COEFFICIENTS BETWEEN CANDIDATE OUTCOME MEASURES

Offense	Forward	Filing	Conviction
Robbery			
Filing	0.75	—	—
Conviction	0.79	0.95	—
Incarceration	0.72	0.86	0.92
Burglary			
Filing	0.71	—	—
Conviction	0.73	0.97	—
Incarceration	0.56	0.86	0.82

The cities in our sample have different mixes of crimes. Santa Monica, for example, a beach community with many apartments and a large number of visitors, has the highest rate of reported property crimes but ranks eighth in violent crimes. Compton, a much poorer city with few tourists, has the highest violent crime rate but ranks about sixth in property crimes. It is important to control for the mix of crimes, since different crimes have different conviction rates.

Rather than attempting to control statistically for all crime types, we confined the study to robbery and burglary (and only selected penal codes within those crime types). Robbery and burglary are relatively easy to define, and they occur frequently enough to provide adequate samples for meaningful analysis. (Appendix A discusses how robberies and burglaries are identified in the OBTS file.)

Variation in Case Attrition

As shown in Figs. 3.1 and 3.2, case attrition varies considerably across the police departments studied.[3] For both crime types, the highest conviction rates exceed the lowest by more than a factor of two, i.e., some departments convict twice as many of their robbery and burglary arrestees as other departments do. The factors that may account for such wide variation are examined below.

THE EFFECT OF COMMUNITY FACTORS

We considered three classes of community characteristics that might affect case-attrition rates:

1. Age, race, and poverty.
2. Crime rate.
3. Police expenditures.

We measured the age structure of the communities in our sample by (1) the percent of the population between ages 5 years and 17 years, because young men in their late teens have very high arrest rates,[4] and (2) the percent of the population aged 65 or older, because this segment of the population may be more prone to be victimized or less able to cooperate actively in the prosecution process. We measured racial composition by percent black and percent Hispanic. We measured poverty by the percent of all families living below the poverty level and the percent of all families headed by females.

Overall crime rates strain criminal justice resources at all levels and therefore may affect robbery and burglary case attrition in a community. To test this possible effect, we included the number of index crimes per 100,000 population in our calculations.

A police department's resources will obviously influence policies and may constrain practices. To explore the relationship between resources and attrition, we considered police per capita expenditures (dollars spent on police protection divided by the community's population) and police expenditures per arrest (dollars spent on police protection divided by the total number of index arrests per year). Police expenditures per arrest serves roughly as a proxy for the amount of effort spent collecting evidence following arrest.

---

[3]Participating police departments are not identified individually because they requested anonymity in the presentation of the study results.

[4]More specific variables, such as the percent of males aged 14 to 17, were not available to us.

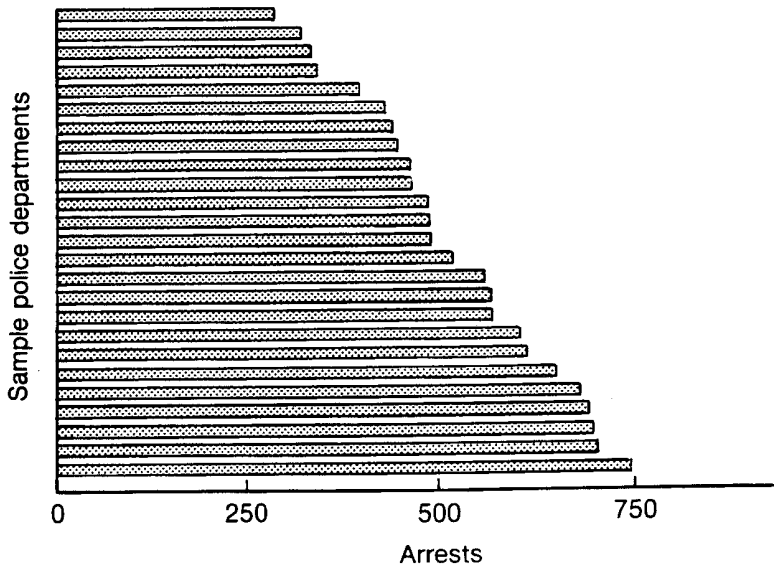


Fig. 3.1—Convictions per 1000 robbery arrests

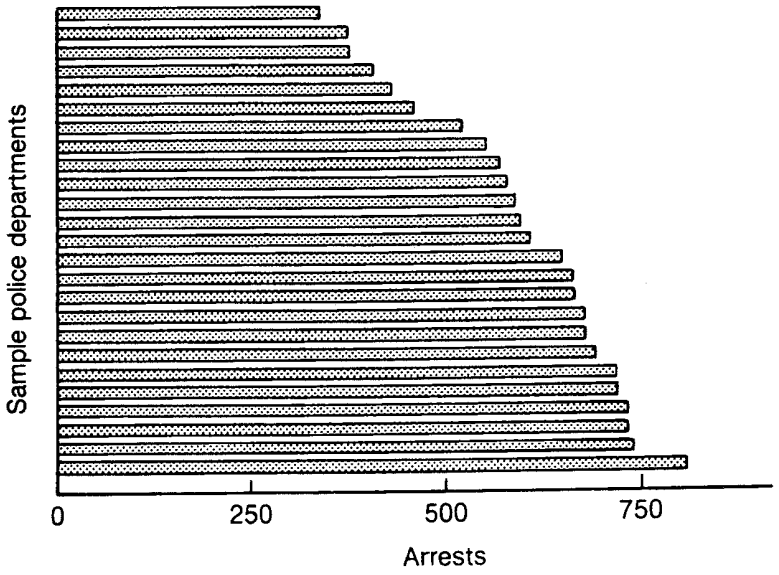


Fig. 3.2—Convictions per 1000 burglary arrests

The data used in the analysis are shown in Tables B.1, B.2, and B.3 in Appendix B.

Exploratory Analysis

Power calculations suggested that the above characteristics would have to be strongly related to case attrition to be detected using simple graphical techniques. We plotted conviction rates versus community factors but were unable to discern any effects. As shown in Fig. 3.3, there was a mild decrease in the robbery conviction rate as the crime rate[5] increased, but there is considerable variation around the fitted trend line, and there are several large outliers.

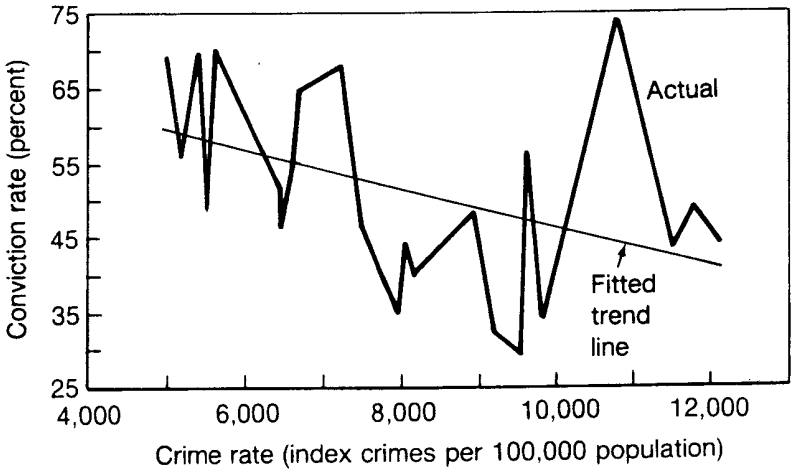


Fig. 3.3—Conviction rate vs. crime rate: robbery

Stepwise Regression

Having failed to identify strong relations between the outcome measures and the independent variables with simple exploratory techniques, we performed a stepwise regression on the same data.

We recognize the problem of overidentification inherent in stepwise regression. We are aware that the percent variance explained (R^2) will

[5]The crime rate is defined as the number of (reported) index crimes per 100,000 resident population.

be overestimated, and we may identify some variables as statistically significant that would not be statistically significant in a properly specified regression. Measuring the amount of overidentification is technically difficult, however, so we performed a simple simulation exercise to serve as a guide.

We simulated 10 different datasets, each with 25 cases, 1 dependent variable, and 17 independent variables, each variable having the same mean and standard deviation as in our data (we used the log of the robbery conviction rate as the independent variable). A stepwise regression on each of the 10 datasets yielded the following results:

Regression	Number of "Significant" Variables	R^2
1	0	—
2	0	—
3	0	—
4	0	—
5	0	—
6	1	0.12
7	1	0.13
8	1	0.18
9	2	0.43
10	3	0.64

We conclude that a stepwise regression using purely random data similar to ours is likely to identify at least one "significant" independent variable and explain at least 10 percent of the variance. Also, identifying 2 or more "significant" variables and explaining more than 40 percent of the variance would not be unusual.

We next ran stepwise regressions on the actual data, using the following independent variables: the "forward" rate, the filing rate, the conviction rate, and the incarceration rate. The overall results were as follows:

	Robbery		Burglary	
Independent Variable	Number of "Significant" Variables	R^2	Number of "Significant" Variables	R^2
Forward	2	0.29	1	0.14
Filing	1	0.16	3	0.54
Conviction	1	0.15	1	0.34
Incarceration	2	0.29	2	0.48

The performance of these regressions is slightly better overall than the 10 random regressions in our simulation. These regressions do not use different sets of independent variables, and the dependent variables are highly correlated within offense groups. Nevertheless, the simulation suggests that there is a 20 percent chance of explaining over 40 percent of the variance with a "purely random" dataset similar to ours; yet our dataset exceeds that performance only twice (i.e., in 25 percent of the cases).

Regression Results

We regressed robbery and burglary conviction rates on each class of variables separately, and then combined all the groups in a stepwise regression.[6] Our results indicate that:

- Age, race, and poverty factors bear almost no relation to robbery and burglary case attrition.
- The overall crime rate has a weak, but statistically significant, negative relationship to the robbery conviction rate—that is, the higher the overall crime rate, the lower the robbery conviction rate. The relationship is negative but not statistically significant for the burglary conviction rate.
- Police expenditure per arrest has a strong, statistically significant relationship to both conviction rates, while police per capita expenditure has a weak, statistically insignificant, negative relationship.
- All the demographic factors together explain at most 35 percent of the variance in robbery and 44 percent of the variance in burglary conviction rates.

Age/Race/Poverty. Regressions on the age/race/poverty variables are summarized in Table 3.2. The regression is insignificant as a whole, and none of the coefficients is significant. The adjusted coefficient of determination (R^2) is negative in both regressions and is therefore meaningless. Thus, the demographic characteristics we have measured appear to be unrelated to a police department's robbery or burglary conviction rate.

[6]We used raw conviction rate as the dependent variable. By definition, this rate lies between 0 and 1000 and thus cannot technically be regarded as normally distributed. However, as Figs. 3.1 and 3.2 indicate, the rates exhibit a reasonable spread, from about 750 to about 250. Furthermore, the mean value of each rate coincides almost exactly with its median, and statistical tests indicate that the distribution of these rates over the 25 cities was reasonably normal. Finally, alternative specifications (taking logs, logit transformations) gave essentially the same results. Therefore, we feel justified in using the conviction rates without further transformation.

Table 3.2

SUMMARY OF AGE/RACE/POVERTY REGRESSIONS

	Robbery Conviction Rate[a]		Burglary Conviction Rate[b]	
Variable	Estimate	Sig.	Estimate	Sig.
Percent black	−3.66	0.39	−1.78	0.68
Percent Hispanic	−3.67	0.19	−3.43	0.23
Percent young	11.34	0.51	−25.69	0.15
Percent old	−10.20	0.35	−14.90	0.18
Percent poor	0.73	0.96	22.51	0.13
Percent female-headed	5.08	0.76	−6.43	0.71
(Constant)	451.32	0.38	1,263.22	0.02

[a]F = 0.78; significance of F = 0.60.
[b]F = 0.74; significance of F = 0.62.

Crime Rate. Regressions on the crime rate are summarized in Table 3.3, which suggests that when robbery and burglary conviction rates decrease, a community's overall crime rate tends to increase. The result is statistically significant for robbery convictions (it explains up to 17 percent of the variance), but not for burglaries (it explains only 4 percent). The crime rate here is scaled to the number of index crimes per 1,000 population rather than the usual 100,000 population, to make the regression coefficient easier to interpret.

Table 3.3

SUMMARY OF CRIME-RATE REGRESSIONS

	Robbery Conviction Rate[a] (adj. R^2 = 0.17)		Burglary Conviction Rate[b] (adj. R^2 = 0.04)	
Variable	Estimate	Sig.	Estimate	Sig.
Crime rate	−2.64	0.02	−1.70	0.16
(Constant)	727.22	0.00	732.97	0.00

[a]F = 5.79; significance of F = 0.02.
[b]F = 2.07; significance of F = 0.16.

Police Expenditures. Our regressions on police expenditures, summarized in Table 3.4, are statistically significant, especially for burglary. In both robbery and burglary cases, the conviction rate increases as the police expenditures per arrest increase. This seems to be reasonable: Police expenditures per arrest probably translate directly into

the resources a department can devote to each arrest. The coefficient of police per capita expenditures is negative, but not statistically significant, so it should be regarded as having no influence on conviction rates, especially since the sign is not in the expected direction.

Table 3.4

SUMMARY OF POLICE-EXPENDITURE REGRESSIONS

	Robbery Conviction Rate[a] (adj. R^2 = 0.22)		Burglary Conviction Rate[b] (adj. R^2 = 0.44)	
Variable	Estimate	Sig.	Estimate	Sig.
Per arrest	6.53	0.01	9.12	0.0002
Per capita	−1.14	0.12	−1.05	0.09
(Constant)	451.19	0.00	460.55	0.00

[a]F = 4.46; significance of F = 0.02.
[b]F = 10.48; significance of F = 0.00.

Combining the Community Characteristics

Finally, we specified a stepwise regression, using all the independent variables and a relatively liberal significance level for inclusion (0.10). Since the robbery conviction-rate regression used a different set of variables from the burglary conviction-rate regression, we will discuss each model separately.

Table 3.5 summarizes the robbery regression. Of the three variables that entered into the equation, crime rate was the most significant; police expenditures and percent black were not regarded as statistically significant. The regression explains about 35 percent of the variance in the robbery conviction rate—probably an overestimate because of the overfitting that results from a stepwise procedure.

Table 3.5

OUR "BEST" ROBBERY CONVICTION-RATE REGRESSION[a]

	Adj. R^2 = 0.35	
Variable	Estimate	Sig.
Expenditure/arrest	3.99	0.095
Crime rate	−3.78	0.0084
Percent black	2.78	0.084
(Constant)	693.02	0.0000

[a]F = 5.30; significance of F = 0.01.

Thus, we conclude that the community characteristics we measured explain at most 35 percent of the variation in robbery conviction rates.

The results of the stepwise regression on burglary conviction rate coincided exactly with those of the regression for police expenditures (Table 3.4). We conclude that community characteristics can explain at most about 44 percent of the variation in burglary conviction rates.

HOW MUCH OF THE VARIATION DO DEPARTMENT DIFFERENCES EXPLAIN?

Identifying Relevant Policies and Practices

The departments we studied were highly diverse and had unique organization and management styles. Some spend $1,500 per index crime reported, whereas others spend $5,500. The resource-rich departments may be able to purchase computer-aided dispatch systems, hire evidence technicians, and so on. Some departments allocate 25 percent of their sworn officers to the detective division, while others allocate only about 10 percent. Some departments encourage patrol officers to complete a thorough initial investigation, while others have the patrol officer simply record the most basic facts, leaving any follow-up investigation to the detective division. Some departments rotate personnel between the detective and patrol divisions; in others, assignment to the detective division is a civil service promotion.

The interaction between prosecutor and police personnel also differs significantly across the county. In some departments, the police are on quite friendly terms with the deputy district attorneys and have formal scheduled meetings to inform one another of any organizational difficulties. In others, interaction is minimal and strictly professional. For our research purposes, the key question is whether these variations in policies and procedures significantly affect case attrition.[7]

To identify differences in department policies and practices, we examined the major organizational differences that Greenwood et al. (1977) and Eck (1983) had previously identified as possibly related to police productivity.[8]

We conducted detailed surveys of 12 police departments selected because they represented a full range of values for each community

[7]This was an exploratory exercise. A more valid test of the effectiveness of these variations would require assigning cases randomly to departments with different operating procedures, so that factors other than the procedure of interest would not systematically affect the outcome.

[8]Neither the Greenwood et al. nor the Eck study was designed to measure case attrition per se; both were more narrowly concerned with the detective function.

characteristic and the full spectrum of arrests resulting in convictions. During 2- to 3-day site visits, we gathered information on about 60 organizational variables, including the following:[9]

Resources

- Police budget as a percent of city's total operating budget.
- Ratio of residents to total police personnel.
- Ratio of detectives to patrol officers.

Organization

- Organization of detective units (e.g., crime-specific, geographically organized).
- Use of solvability factors to determine whether to undertake follow-up investigations.
- Assignment of responsibility for requesting the complaint from the prosecutor (e.g., to the investigator, to a liaison officer).
- Extent of prescreening of cases prior to filing.

Patrol/investigator interface

- Way in which cases are assigned to detectives (e.g., by speciality, by rotation).
- Extent of patrol input into the investigation.
- Whether detectives and patrol officers rotate positions.

Use of police investigator aids

- Use of computer-aided modus operandi or offender-based files.
- Use of computer-generated crime-incident and arrest reports.
- Use of evidence technicians.

Police-prosecutor interface

- Proximity of the local district attorney's office to the department.
- Average time taken to file a felony case.
- Extent of prosecutor's involvement in a post-arrest investigation.
- Whether formal written feedback is provided to the police regarding case disposition.

Performance evaluation criteria

- Whether arrest, filing, or conviction statistics are used in police performance evaluations.

---

[9]The complete questionnaire is reproduced in Appendix C.

Survey Responses

Analysis of the responses to this survey revealed that:

1. Many questions were answered in the same way in almost every department; the answers were informative but provided little variation.
2. The answers to other questions had no apparent relationship to robbery and burglary conviction rates.[10]

We identified nine questions related to conviction rate that split the surveyed departments into roughly equal groups. The sample size was so small, however, that this relationship was generally statistically insignificant. We sent these nine questions to the remaining 13 departments in our survey, to determine whether the additional responses would reinforce the trends suggested by the original survey responses.

Table 3.6 lists the nine questions and gives the distribution of the responses and the average conviction rate, controlling for whether the department answered "yes" or "no" to each question. None of the differences shown in the table are statistically significant. However, the correlation between response and conviction rate is usually in the expected direction—that is, departments that followed certain practices had higher conviction rates.

Using these responses, we continued the stepwise regression begun with the community characteristics. We first forced the community characteristics into the regression equation and then stepped in the set of nine responses. For each conviction rate, a single, but different, survey question appeared as statistically significant: For example, for robbery it was the question concerning arrests as a performance measure; for burglary, it was the question concerning the availability of computerized crime reports to investigators.

The stepwise regression suggests that departments using arrest statistics as a performance measure have *lower* conviction rates for robbery. This was highly significant; in fact, the significance of the community factors improved, and the resulting regression equation explained about half of the total variance. Using the community factors alone, we could explain 35 percent of the variance in attrition rates for robbery arrests. Entering the use of arrest statistics in performance appraisals into the regression enabled us to explain 52 percent of the variance (see Table 3.7). This result seems intuitively sound:

[10]We also analyzed the relationship between survey responses and filing rate (i.e., the percent of cases accepted by the district attorney). The relationships were quite similar to those between responses and conviction rate.

Table 3.6

DISTRIBUTION OF SURVEY RESPONSES AND CONVICTION RATES

Survey Question	Number of Responses	Percent of Responses	Average Conviction Rate[a] (%)	
			Robbery	Burglary
Are felony cases prescreened by someone other than the investigator, prior to being taken to the prosecutor?				
No	11	44	49	57
Yes	14	66	54	62
Does the department have a formal crime analysis unit?				
No	12	48	49	57
Yes	13	52	54	62
Does the department have a formal unit devoted specifically to positive identification of suspects?				
No	17	68	52	58
Yes	8	32	52	63
Are crime reports computerized and accessible in computerized form to the investigators?				
No	10	40	47	54
Yes	15	60	55	64
Does the department maintain a modus operandi (MO) file?				
No	12	48	50	58
Yes	13	52	53	61
Does the department maintain a known-offender file?				
No	9	36	49	57
Yes	16	64	54	61
Does the department maintain a known-burglar file?				
No	11	44	54	59
Yes	14	56	50	61
Are arrests statistics used as a performance measure of the investigator's work?				
No	11	44	56	61
Yes	12	48	47	59
No response	2	8	—	—
Does the department have any special programs for victims or witnesses that it sponsors to keep these people involved with the case?				
No	19	76	52	61
Yes	6	24	51	57
All departments	25	100	52	60

[a]Defined as the percentage of all arrests made in 1981 for burglary or robbery that resulted in a conviction, whether for the arrest charge or a lesser included offense.

Departments that use arrests as a performance measure may encourage officers to make more arrests, raising the odds of "weaker" arrests being made.

Table 3.7

OUR "BEST" ROBBERY CONVICTION-RATE REGRESSIONS

	Community Factors Alone[a] (adj. R^2 = 0.35)		Dept. Characteristics Included[b] (adj. R^2 = 0.52)	
Variable	Est. B	Sig. T	Est. B	Sig. T
Expenditure/arrest	3.99	0.095	3.89	0.060
Crime rate	−3.78	0.008	−3.94	0.002
Percent black	2.78	0.084	3.20	0.025
Use arrest stats?	NA[c]	NA	−106.45	0.008
(Constant)	693.02	0.000	754.87	0.000

[a]F = 5.30; significance of F = 0.01.
[b]F = 7.59; significance of F = 0.00.
[c]Not applicable.

Departments in which computerized crime reports were available to investigators showed slightly higher conviction rates for burglary. The significance of this result was only marginal, however, and it did not significantly increase the fraction of variance explained. Nevertheless, it is consistent with the view of McDonald et al. (1982) that computerization of crime reports may result in more timely and complete information being transferred to police agents and to the prosecutor, and that more complete information may decrease case attrition.

RESULTS

How Much Variation Did the Analysis Explain?

The results of our analyses of robbery and burglary arrests indicate that:

- Purely demographic differences between communities (i.e., age, race, poverty) appear to account for little, if any, variation in case attrition.
- Crime rate, by itself, may affect case attrition; communities with a high overall crime rate may experience slightly higher case attrition.
- The amount a community spends on its police department relative to the number of arrests the department makes appears to be related to case attrition (the more spent per arrest, the less

attrition). Expenditures per arrest account for at most 16 percent and 39 percent of the variation in robbery and burglary conviction rates, respectively.

- With the exception of using arrest rates as a performance measure, the department practices we included in our questionnaire explain very little of the variation in attrition rates.

The measured community and departmental characteristics taken together explain at most 50 percent of the variation in burglary and robbery conviction rates.

Reconsidering the Bases of Case-Attrition Research

In sum, even using statistical techniques, we are not able to explain much of the difference among robbery and burglary conviction rates. The combined effect of all the variables in our model accounts for only 50 percent of the variance. Demographic factors make almost no difference, police skills make some small difference, and police resources and workload make a somewhat significant difference. It is difficult to derive policy recommendations at this point; the most that can be said is that individual departments may differ in ways that are hard to observe, impossible to measure, and difficult to transplant. Moreover, we cannot be optimistic that current efforts to implement new organizational arrangements (for example, crime-analysis units or modus operandi files) will have any measurable effects on conviction rates.

Perhaps there are no real differences among the conviction rates of the different departments and thus there is nothing to explain. Or perhaps there are real differences, but they are not accurately measured in our study. In short, the fault may lie, not with our independent variables (community characteristics, police resources, etc.), but with the dependent variable (the conviction rate).

Research has consistently assumed that a given measure of attrition rates provides a valid, logical basis for comparing the performance of police departments. That is, it has been assumed that attrition is a phenomenon that can be singly defined, has the same causes in every department, and implies the same things about police "productivity" across departments. "Productivity" is assessed by comparing the percentage of arrests that result in conviction for departments that have similar resources and similar community conditions. Research has also tended to accept generalizations about the relationships between various attrition measures based on averages. For example, based on averages, filing rates are virtual proxies for conviction rates. The

possibility that attrition may not be a single phenomenon with the same implications across departments has generally been overlooked. It may be that comparisons are not merely invidious for evaluating police departments, but they cannot be expected to provide any basis for identifying practices that necessarily affect attrition rates.

The only way to know what the dependent variable is measuring is to examine the behavior to which it refers. We therefore conducted case studies of the arrest and filing process in six departments that were similar in resources, crime rate, and community characteristics, but that differed in their *apparent* productivity. These results are discussed in Section IV.

IV. WHAT DO CASE-ATTRITION RATES IMPLY?

The use of conviction rates as the primary attrition measure masks the complexity of the attrition phenomenon. The figures on burglary and robbery conviction rates in Section II imply an orderly ranking and decrease in attrition along the spectrum from lowest to highest department conviction rates. However, Figs. 4.1 and 4.2 show that there is in fact considerable diversity among the actual attrition points at the right of the conviction rate.

If case attrition were the singly defined phenomenon that comparisons assume, and if it did provide a valid comparative measure of police departments' productivity, we would expect to find patterns among the possible attrition points. For example, departments with lower conviction rates would show a consistently greater percentage of cases denied filing by the prosecution. Instead, the figures reveal virtually no patterns in the dispositions that actually drive the conviction rates.

In some departments with very low and very high conviction rates, the departments' own decisions to release suspects account for most of the "non-convictions." The same is true for prosecutors' denials of cases presented for filing. And some departments near the ends of the scale have similar proportions of cases acquitted, denied, and released.

Acquittal rates are particularly interesting, given the tendency of research and policy to deal in averages. While average filing rate may be a virtual proxy for average conviction rates, the relationship does not necessarily hold for individual departments. Further, acquittal, like the other attrition points, shows no pattern as one moves from the low-conviction-rate to the high-conviction-rate departments. Are relatively high acquittal rates the result of the prosecutor's accepting weak cases or doing a poor job of prosecution, or the police building weak cases? Do the variations in denials and acquittals imply that the LADA does not have consistent filing practices, after all, or that police practices vary widely? If police practices vary, they do not do so in tandem with conviction rates.

We believe that the wide and apparently random variation in dispositions reflects some important facts about case attrition, several of which emerged from our six case studies, discussed below.

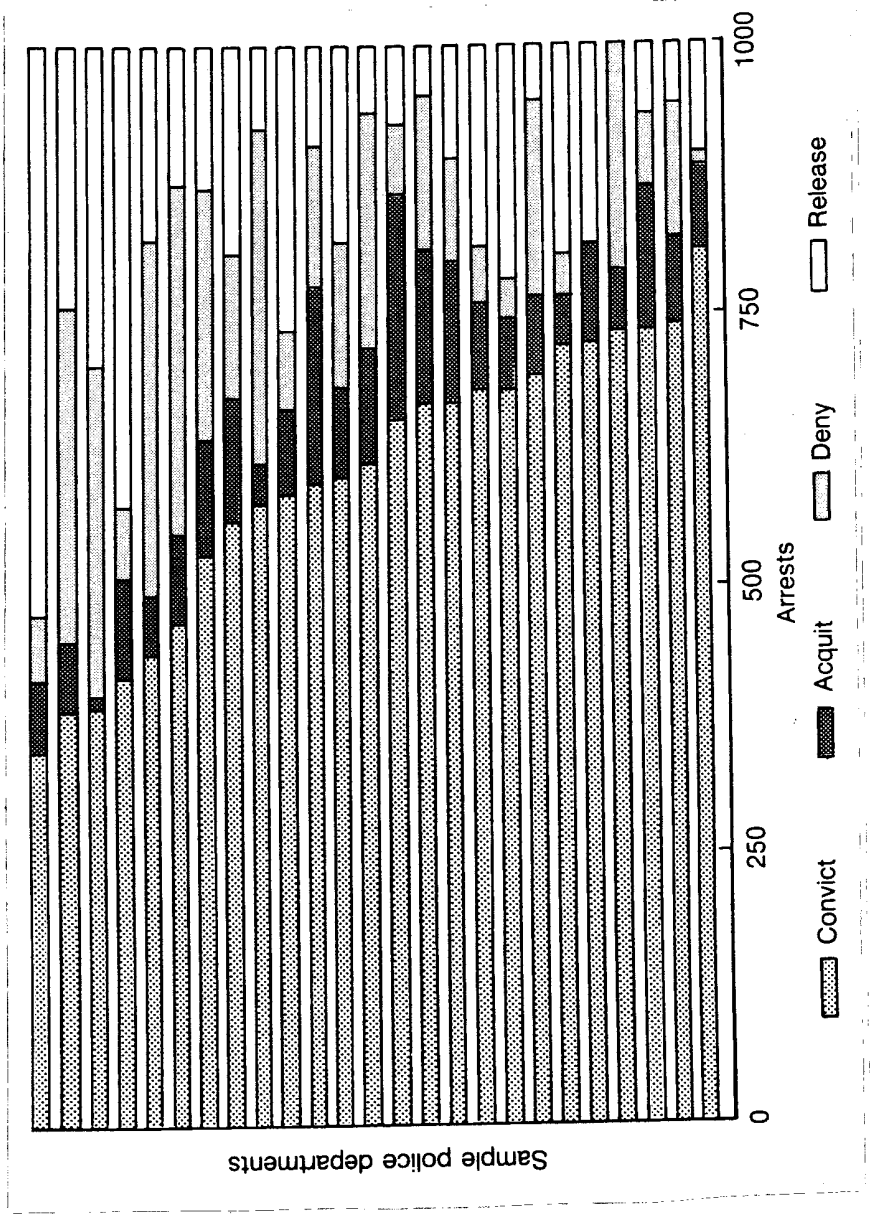


Fig. 4.1—Dispositions per 1000 burglary arrests

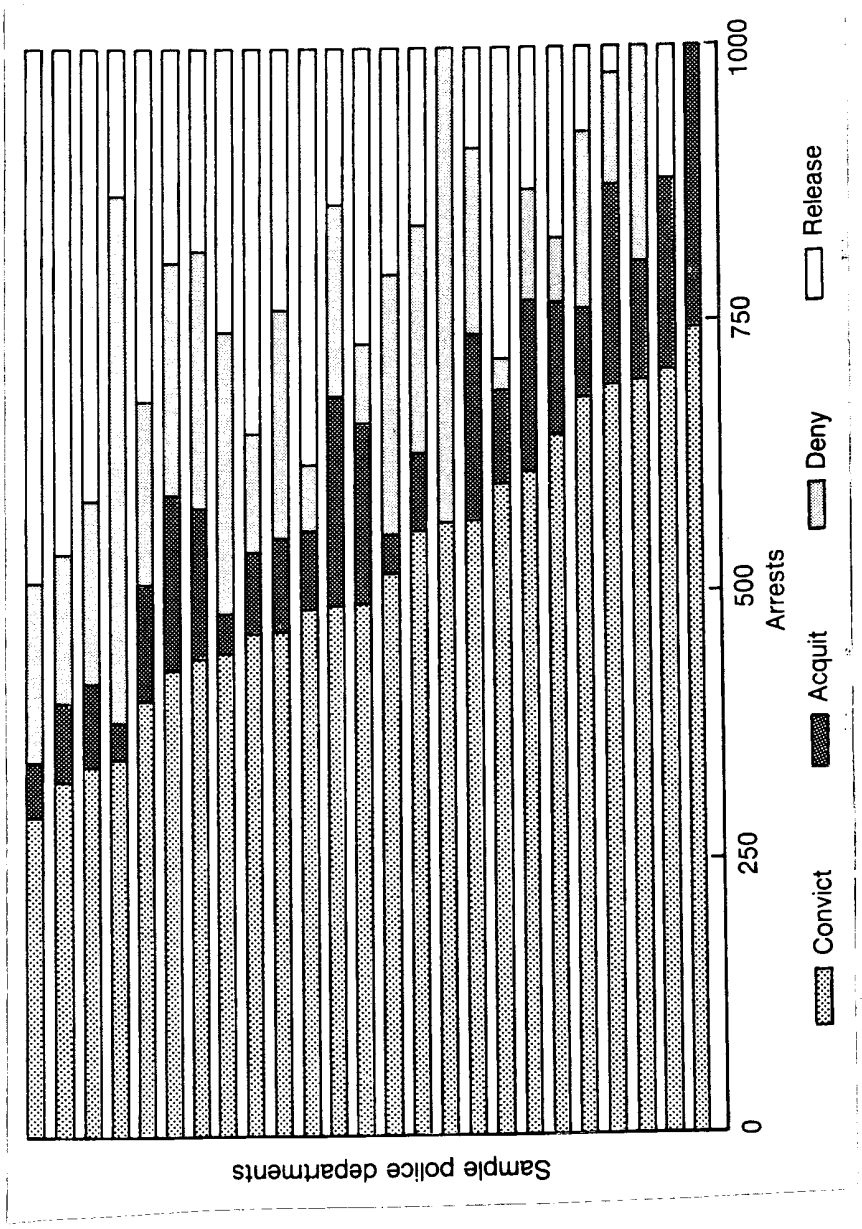


Fig. 4.2—Dispositions per 1000 robbery arrests

IMPLICATIONS OF THE CASE STUDIES

We undertook the case studies to further investigate the relationship between police department characteristics and case attrition. We selected departments that had different performance but that seemed similar in other aspects that our analysis indicated were associated with productivity (e.g., resources, crime rate).[1]

How the Police Departments View Attrition Rates

Detectives in the six cities we studied displayed little interest in the kinds of performance measures that lie at the heart of most efforts to judge and improve police productivity. Neither the detectives nor their supervisors in any of the cities knew what proportion of their cases were accepted or rejected by the prosecutor. No supervisor or chief of detectives evaluated his officers in terms of the percentage of cases presented that led to filings or convictions. In many instances, the detectives did not know whether suspects they had arrested were convicted or acquitted. No detective we interviewed had sought out, or seemed particularly interested in, feedback from the prosecutor as to how the case preparation might have been improved.

This response is not unique to these departments. It has been noted in other research (e.g., Greenwood and Petersilia, 1975; Greenberg and Wasserman, 1979). Also, it does not imply that we are dealing with "unprofessional" behavior. Most of the departments we visited are, by various measures, highly professional. The lack of interest in what many reformers believe ought to be central concerns does not spring from indifference among the officers to the importance of what they are doing. In every city we visited, the detectives were impressively intelligent and hard-working. The deputy district attorney in charge of the office to which two of these departments brought their cases also spoke approvingly of the officers, characterizing them as "high-quality, good people who are easy to work with."

Challenging the Assumptions of Case-Attrition Research

If what we found in Los Angeles is true in other jurisdictions (and we suspect that it is), the traditional assumptions underlying research and experimentation aimed at improving police productivity may be seriously flawed. The usual assumptions are that:

[1]This selection procedure was not based on any formal statistical technique. We did not expect to analyze the narrative accounts statistically, so there was no need for a formal selection process.

- High attrition rates mean that the police are not doing a good job.
- Research can identify the factors that influence case attrition by comparing policies and operations of departments that have different attrition rates.
- Reforms based on the results of such research will help lower attrition rates.

These assumptions in turn rest on various premises. One of these premises is that all police departments make arrests and attempt to file cases for the same reasons. Prior research shows—and our case studies indicate—that the police in fact have reasons for making arrests other than evidence of a crime. They may make arrests to quiet a situation, to assert a presence, to prevent a crime, to bring in an informant, etc. Further, "sweeping the streets" may be a high priority in communities that have high crime rates. Our case studies suggest that the police in affluent neighborhoods may also arrest "suspicious outsiders" to maintain community confidence. In such circumstances, the departments may have no intention of formally submitting the arrests to the prosecutor for filing, but these arrests may help explain the random pattern of "releases" in Figs. 4.1 and 4.2.

It has traditionally been assumed that departments that submit many cases for filing and have a large percentage rejected are making "bad" arrests and are unaware that their cases are too weak for filing. Researchers typically use the "prosecutorial rejection rate" as a measure of police performance, interpreting higher rejection rates as a reflection of poorer performance. That may be valid in many instances, and indeed, the percentage of denials for some departments in Figs. 4.1 and 4.2 would suggest an inept and/or naive handling of cases—*if the police really believe that every case they submit is strong enough to be filed.* But it is unlikely that any department could remain so unaware of the requirements for submitting cases to prosecutors. Thus, there are reasons for submitting weak cases. For example, in the presence of certain kinds of community pressure, a rejection from the prosecutor can be valuable: A department that is under heavy pressure from victims to "do something" may submit whatever case it has to show that the department has done its best, and it is the prosecutor who will not proceed. Similarly, when superiors or the public complain about crimes in general, a department may deliberately court a rejection to get the case off their books.

In one city, the police present every case in which they have a suspect, even though they know that many will be rejected. This behavior does not reflect any disagreement between the police and the

prosecutor about what constitutes a "fileable" case. Rather, the department makes a deliberate effort to build a record of charges against certain suspects that can be used in later investigations. Such a record may help assure that repeat arrestees will eventually be prosecuted as "repeaters."[2]

The departments that gave the above reasons for presenting "weak" cases still had relatively low filing (and thus conviction) rates. The filing data alone (i.e., the percentage of cases presented by the police that were rejected) could lead one to conclude that these were very inefficient police departments, but in fact, by almost any other measure, they were models of energetic and efficient work.

Another premise is that comparisons of attrition rates for specific crimes ensure that departments are being judged similarly for their handling of crime. This assumption should be challenged particularly in investigations of the reasons why some departments have higher conviction rates for felony arrests than others do. However, it should also be challenged in research on attrition rates in general.

We avoided the effects of different crime mixes by limiting our study to arrests for burglary and robbery. However, this may not have been realistic, because it is dangerous to assume that even two crimes having the same Penal Code number are actually "alike."

The Problem of Definition

The California Penal Code (Section 459) defines a burglary as entering a place with intent to commit a theft or any felony. If the place entered is an inhabited dwelling, the burglary is of the first degree, is charged as a felony, and will lead, upon conviction, to incarceration in state prison for two, four, or six years. If the place entered is a commercial establishment, the offense is burglary in the second degree and may be charged as either a felony or a misdemeanor, depending on the circumstances of the crime, the prior record of the criminal, and the judgment of the prosecutor. A misdemeanor burglary will lead, upon conviction, to a sentence of less than one year in the county jail, or to probation, or to some combination of the two. If the police apprehend someone who has stolen something in a store but they cannot prove that he or she entered the store with *intent* to steal, they can only charge the suspect with theft (grand theft if the amount stolen exceeds $400, petty theft otherwise). Grand theft can be filed as either a felony or a misdemeanor. If the police catch a burglar in a house but cannot

[2]The LADA filing guidelines allow the prosecutor to take into account the record of charges (not just convictions) for any type of criminal conduct demonstrating the likelihood of excessive criminality on the part of the accused within the prior five years.

show that he or she entered with intent to steal, the charge can be no more than trespass (a misdemeanor).

The LADA has a written policy stating that a burglary or theft that can be charged as either a felony or a misdemeanor is to be "prosecuted as a felony unless the prosecutor believes that a misdemeanor sentence is warranted under all the circumstances of the case." The primary factors that must specifically be considered are prior record, probability of continued criminal conduct, and ineligibility for probation.

Prior Record. A felony charge should ordinarily be brought if the offender has been convicted of the same type of crime within the past five years or has served prison time for the same type of crime within the past ten years, has been committed to the California Youth Authority (CYA) for any felony during the last five years, has a prior conviction for drug use or a violent crime, or demonstrates by his record of charges and convictions during the prior five years the "likelihood of excessive criminality."

Probability of Continued Criminal Conduct. A felony charge should ordinarily be brought if the accused demonstrates by his modus operandi or his criminal associations that he is a "professional criminal."

Ineligibility for Probation. A felony charge should ordinarily be brought if the accused is by law ineligible for probation.

Certain "secondary" factors may also be taken into account, such as whether the accused voluntarily confesses, makes restitution, or cooperates in the investigation by providing information about other crimes or criminals. Many police officers believe that prosecutors who are in doubt about their ability to win a felony case often charge burglars with either misdemeanor burglary or theft in order to maintain a high conviction rate; however, a prosecutor we interviewed denied this.

These legal and procedural factors interact with the available criminal opportunities in a community to determine the kinds of burglaries that will be committed. One city in our sample that has a large shopping mall has recently experienced an increase in the number of commercial burglaries, while the number of residential burglaries has gone down. Detectives assigned to the burglary detail believe that knowledgeable burglars have shifted from residences to the shops in the mall because a residential burglary is automatically charged as a felony, while commercial burglary is, at worst, a misdemeanor charge.

To prove that a commercial burglary has been committed, the police must show that the suspect entered the premises "with the intent" to commit a theft. Usually, intent must be inferred from the circumstances of the offense, and this is often difficult to do in a shopping mall. A person may be apprehended after taking merchandise

from the store without paying, but the accused can argue that he or she did not enter the store intending to steal, but that the theft was purely impulsive. Unless the police have evidence of prior intent to steal, they can at most charge the suspect with shoplifting (petty or grand theft, depending on the value of the merchandise stolen). Evidence of intent might include wearing a coat with large pockets sewn into the lining or carrying a box with a trap-door bottom that can be used to pick up goods from counters.

In one city, the police were able to arrest hundreds of commercial burglars because a shopping mall employed a skilled security guard who had become expert at spotting thieves. The guard would stand on top of a building, using binoculars to watch customers entering and leaving the parking lot. She was in touch by radio with security guards inside the stores and with the police patrol cars outside.

It is clear that comparing police productivity without attending to distinctions among kinds of burglaries would be misleading. The California Bureau of Criminal Justice compiles data on burglary arrests; the district attorneys' offices compile data on burglary filings. All the burglaries are violations of Section 459 of the Penal Code, but some are residential burglaries, some are commercial burglaries involving surreptitious entry into closed premises, and some are commercial burglaries involving shoplifting during business hours by people for whom intent could be established (or people who had so many prior offenses that the prosecutor would seek a felony charge).

To take a hypothetical example, suppose City A has no shopping mall and City B has several large malls. The police in City A arrest only residential burglars, whereas those in City B arrest primarily commercial burglars. In both cities, the police persuade the prosecutor to file on *all* of their suspects. Since residential burglary is always a felony, the police in City A obtain felony filings on all their suspects, while those in City B obtain felony filings on only a small percentage of the commercial burglars they arrest. The other commercial burglars are charged with misdemeanor burglary or grand or petty theft, with the distribution of filings as follows:

	City A	City B
Arrests made	100	100
Residential burglary	100	25
Commercial forced-entry burglary	—	25
Commercial shoplifting burglary	—	50
Felony charges	100	25
Residential burglary	—	5
Commercial forced-entry burglary	—	10
Commercial shoplifting burglary		

	City A	City B
Misdemeanor charges		
Commercial forced-entry burglary	—	10
Commercial shoplifting burglary	—	10
Other charges		
Commercial forced-entry burglary, trespass	—	10
Commercial shoplifting burglary, theft	—	10

Depending on how the filing (or conviction rate) is calculated, the two city police departments would have very different productivity measures, as shown in these four examples:

	City A	City B
All filings/all arrests	100	100
All burglary filings/all arrests	100	60
All felony filings/all arrests	100	40
All felony filings/all burglary arrests	100	67

None of the filing rates shown is more "correct" than the others; everything depends on what criminal behaviors we are interested in. The police in Cities A and B may be considered equally productive, because they each get the prosecutor to accept every case they present. But because the criminal behaviors differ due to the opportunities available in each city, and because the data reported by police, prosecutors, and state agencies do not discriminate among these behaviors, the observer who accepts these data at face value without studying the particulars of each case is likely to draw erroneous conclusions. It is also possible that City B is in fact less productive than City A, and that if it had worked its cases better, it could have persuaded the prosecutor to file felony charges in all the thefts, as City A would have done had any commercial burglaries occurred within its jurisdiction. There is no way of knowing.

Robbery is a somewhat more straightforward offense. Under the Penal Code (Section 211), a robbery is a theft from a person involving force or fear. It is a felony. Holding up a bank or liquor store is obviously a robbery. Forcibly taking a purse from a woman struggling to hold it is also a robbery. But there are ambiguities. If the woman is not holding on to her purse (say, it is lying in her shopping cart) or is holding on but does not struggle, the crime may be charged as grand theft from a person, which could be either a felony or a misdemeanor. In one city, the police arrested a man who brandished a knife and demanded that a woman hand over her car keys; she complied and he

drove away. The prosecutor could have charged this as a robbery (fear and the threat of force seemed to be present), but he elected instead to file it as a misdemeanor.

Without examining comparable criminal behaviors, not defined simply by identical penal codes, it is impossible to draw firm conclusions about differences in police productivity. The data reported to county and state agencies in California (and undoubtedly elsewhere) do not refer to sufficiently comparable criminal behaviors to warrant inferences about police productivity.

In general, the robbery classification seems to refer to a somewhat more homogeneous set of behaviors than the burglary classification, since robbery is invariably a felony. Of course, there may be major differences between robberies—for example, between schoolyard robberies and liquor store hold-ups—but the estimating relationships in this report may be more valid for robbery than for burglary; in general, we are able to explain less of the variance in robbery conviction rates than burglary conviction rates.

A third premise is that police policies, procedures, and practices necessarily reflect the same objectives and motivations that inform research and policy assessments of their operations. This premise was immediately contradicted by the responses of our case-study departments to questions about attrition and conviction rates. None of the respondents knew or cared where they stood in relation to other departments. We believe these opinions reflect the very different measures of performance that police officers value and accept, the management of the detective function, and the resulting motivations and incentives of police personnel.

The job of the detective is to handle cases, and each detective gets about 25 to 50 new cases each month. Most cases cannot be solved, because there is no witness, no evidence, no leads. The detective works hardest on the most promising cases (those in which there are leads) and, to a degree, on the most important ones (those involving large losses, major injury, or death).

If the detective finds a suspect, he usually knows from experience whether he has enough evidence to get a filing. If he is in doubt, he asks the local prosecutor. By the time he takes the case over to the prosecutor's office, he is fairly sure he will get a filing (unless he wants a rejection "for the record" in order to build up the suspect's criminal history). He shows his paperwork, briefs the filing deputy orally on the essential features of the case, answers a few questions, and then leaves. Occasionally, the prosecutor calls back to ask for more information. The detective and the arresting officer will then appear at the preliminary hearing in municipal court (usually within 48 hours of the

arrest), where the judge either adjudicates the case as a misdemeanor or binds it over for trial in superior court (where felonies are heard). After that, the detective usually has no further contact with the case (most of the felony cases that go to superior court are settled by a plea, with no trial).

In short, the detective's involvement with a case is specific, individual, and (after a suspect is in hand) short-lived. Our interviews suggest that he gets and wants little systematic feedback from the prosecutor, because the process of presenting a given case is an interactive one that provides all the information the detective wants: whether the case is filed or not; and, if not, why not. The detective sees his job as conducting an investigation and presenting a case; what happens after that is of only casual interest to him. In the case-study police departments that provided some formal mechanism for case feedback to detectives and/or patrol, the information was usually given only perfunctory attention.

In most officers' view, their work is making arrests, not finding out what happens after that; this view is reinforced by their superiors. Whatever pressure the department as a whole gets about its investigative work comes from victims who want to know what happened in their cases or from the public (or the media) who want to know what can be done about the crime rate. In both cases, the department feels that it is being asked to "solve crimes." A solution occurs when an arrest is made. What happens after that is, by law, the responsibility of other agencies.

That attitude is clearly reinforced by the policy of using arrest statistics as a performance measure. As the statistical analysis showed, this seems to correlate with lower conviction rates and thus may provide incentives that work against broader system objectives.

Supervisors, like detectives, believe that a detective's performance must be evaluated on the basis of the kinds of cases he works. In this view, any effort to evaluate performance statistically is unwise, because the statistics do not distinguish between cases with cooperative and uncooperative victims, between cases that are easy to convict and those that are hard, between crimes committed by professionals and crimes committed by amateurs, or between thefts in stores that have skilled, cooperative security guards and thefts in stores that do not. One police captain categorized officer evaluation as "pretty much subjective." And this captain was by no means a complacent, "old-school" cop; he was a strong advocate of using the most modern and sophisticated investigative tools. But a statistical "success rate" was not, in his opinion, one of those tools.

It is possible, of course, that if these officers worried about their filing rates and conviction rates and gathered information about why those rates were high or low, they could improve their productivity. But we must caution against the easy acceptance of that possibility. First, the professional judgment and experience of these officers cannot be lightly dismissed. If the police and prosecutors are generally satisfied with their present relationships, it should not be assumed that there is something wrong with those relationships that has not occurred to them. Second, our statistical analysis indicates that reforms aimed at improving communications between police and prosecutors have made very little difference in attrition rates among the 25 departments we studied. Third, even if improvements could be made in those relationships, neither party has any incentive to adopt and implement such improvements. *Organizational changes unaccompanied by organizational incentives are likely to be meaningless.*

CONCLUSIONS AND IMPLICATIONS FOR FUTURE STUDY

Our results suggest that case-attrition research and policies may be based on some questionable assumptions. The weakness of these assumptions is implied by the failure of a variety of reforms to significantly lower case attrition. Although few empirical attempts have been made to discover how these reforms correlate with conviction rates, statistics have shown no significant drop in attrition since researchers began recommending them.[3]

Future research and reform efforts based on the traditional assumptions are not likely to come to grips with the problem. It is important to recognize that:

- Although the quality of arrests may be the basic determinant of attrition, not all arrests are intended to result in filings or convictions, and not all rejections and acquittals indicate that the police are doing a "bad job."
- Without examining comparable criminal behaviors, it is impossible to draw any firm conclusions about differences in police productivity.

[3]See Feeney et al. (1983). Also, as Eck (1983) notes, it may be unreasonable to expect that changes in police practices will produce large (statistically significant) differences in case-attrition patterns, since police involvement in crimes is basically victim-initiated, and the police rely heavily on the cooperation and information supplied by the victim.

- The data reported to county and state agencies do not necessarily refer to sufficiently comparable criminal behaviors to support statements about police productivity.
- Useful measures of police performance must reflect the incentives built into the structure of police work.

We do not conclude that it is a mistake to compare police departments or to seek ways of explaining real differences in police productivity. We do conclude that such comparisons (and any recommendations for change) must be based on a close and detailed inspection of the actual criminal and police behaviors in question. Even in California, where criminal justice data are much more detailed and accurately recorded than in many other states, well-grounded inferences cannot be made about case attrition. The legal categories within which crime and arrest records are reported are too broad to permit valid comparisons among departments. We are doubtful that any feasible improvements in the California data system will correct this problem; indeed, as matters now stand, departments tend to use the most general crime-type categories to report their arrests.

We propose instead that researchers develop a set of behaviorally specific definitions of crimes and use those definitions in extracting information from police and prosecutor records. Such definitions might include:

- Burglary from a residence: taking something of value from an occupied dwelling unit.
- Burglary from a commercial establishment: taking something of value from a store, having entered with the intent of committing a crime.
- Grand theft from a commercial establishment: taking something worth more than $400 from a store.
- Robbery from a person: taking something from a person by use of force or fear.
- Robbery from a commercial establishment: taking something from a store by use of force or fear.

Such definitions could be further refined as necessary (to distinguish, for example, among burglaries or robberies involving varying amounts of money or valuables).[4]

Data from several departments based on standardized behavioral definitions could then be compared to identify any significant within-

[4]The algorithm used by the National Crime Survey to standardize victim reports of crimes provides one way of standardizing the definitions of burglary, robbery, and other crimes.

category differences in the probability that an arrest will lead to a filing and a filing to a conviction. Departments showing extreme differences could be studied to discover what factors are responsible for those differences. Such factors might include:

- The level and detail of the initial patrol investigation.
- The collection or non-collection of physical evidence.
- The use of special investigative files (modus operandi files, known-offender files, etc.).
- The use of proactive investigative techniques ("stings," stakeouts, etc.).
- The reward system for patrol and detective officers.
- The caseloads of investigators.

The results of such comparative case studies could reveal far more than is now known about the nature of productivity differences and the reasons for them. They would not, of course, confirm the explanations or provide an estimate of the relative importance of explanatory factors. The number of cases would be too small for that. Conceivably, such comparative case studies could identify one or more easily measured variables that could be used to measure or explain differences in productivity. This would enable more systematic and quantitative comparisons to be carried out. But it is also likely that no valid, macroscopic variables will be identified. If that is the case, studies of police productivity can be carried further only by making planned, experimental changes in departments based on factors identified through the comparative case studies. Such changes have been attempted in the past, but they do not appear to have been based on reliable information about case attrition. And such interventions might not lead to useful results because the data on which the evaluations are based are too highly aggregated.

The present study has produced mixed and largely negative findings. But the recommendations proposed here may point the way for more conclusive future studies of police productivity.

Appendix A

DISPOSITION CALCULATIONS

This appendix explains how disposition outcomes were assigned to the arrests recorded in the OBTS files:

- OBTS "point of disposition" variables coded "police (release)" were assigned to the disposition "release."
- OBTS "point of disposition" variables coded "prosecution (denial of complaint)" were assigned to the disposition "deny."

For OBTS "point of disposition" variables coded either "lower court" or "superior court," we used the OBTS variable "type of disposition" and "sentence" as follows:

- If the disposition was one of the following, we assigned the disposition "acquitted":

  Acquitted—transcript 1118PC
  Acquitted—jury
  Acquitted—court or court 1118PC
  Certified to juvenile court
  Guilty—jury: not guilty by reason of insanity (treat as an acquittal)
  Guilty—court: not guilty by reason of insanity (treat as an acquittal)
  Defendant deceased
  Dismissed
  Dismissed—1538.5 PC
  Dismissed—1538.5 and 995 PC
  Dismissed—995 PC and 11116(e) PC
  Dismissed—successful completion of 1000.2 PC diversion program
  Dismissed—successful completion of diversion program other than 1000.2 PC

If the disposition is not listed above, the "sentence" variable was used as follows:

- The disposition "probation" was assumed for

  Probation
  Probation and fine
  Fine only
  Entire sentence suspended
  No sentence given

For other cases where the sentence was not prison, the disposition was assumed to be "jail." This category may include a few offenders sent to the California Youth Authority, to the California Rehabilitation Center, or classified as Mentally Disordered Sex Offenders.

In the OBTS file, a three-digit code describes the arrest charge. These codes and the corresponding California penal codes for robbery and burglary are as follows:

Crime	Code	Penal Code	Charge
Robbery	200	211	Robbery
	201	12022.5/211	Robbery/firearm
	230	664/211	Attempted robbery
	240	220/211	Assault to commit robbery
Burglary	400	459,460,461	Burglary
	401	Various	Burglary with GBI, armed, etc.

Most of the robbery charges are Code 200s, and most of the burglary charges are Code 400s. Overall, robbery accounts for approximately 10 percent, and burglary for 19 percent, of all adult felony dispositions in the 25 cities of our sample.

Appendix B

DATA USED IN THE ANALYSIS

Table B.1

ATTRITION AND DEMOGRAPHIC VARIABLES: SUMMARY STATISTICS AND DESCRIPTIONS

Variable	Mean	Std. Dev.	Description
ROBR	519.12	130.05	Robbery convictions/1000 arrests
BURR	598.84	130.92	Burglary convictions/1000 arrests
POLPCP	79.00	33.95	Police per-capita expenditures
ARRCOST	24.26	9.87	Police expenditure/arrest
CRIMR	78.76	22.07	Crimes/1000
HISPP	29.93	21.31	Percent Hispanic
BLACKP	9.73	18.48	Percent black
YUNGP	19.48	4.18	Percent young
OLDP	10.59	4.25	Percent old
FEMP	18.31	4.74	Percent female-headed
POORP	10.29	5.78	Percent poor

Table B.2

LISTING OF DEMOGRAPHIC VARIABLES

City	POLPCP ($)	ARRCOST ($)	CRIMR (crimes/1000)	HISPP (%)	BLACKP (%)	YUNGP (%)	OLDP (%)	FEMP (%)	POORP (%)
Alhambra	63.81	22.17	65	37.6	1.0	16.2	15.8	18.6	9.0
Azusa	52.69	18.43	80	42.4	1.7	20.6	7.7	17.7	9.4
Baldwin Park	50.03	20.73	67	58.0	1.0	26.3	6.2	16.5	13.3
Bell Gardens	40.16	16.12	52	64.4	0.3	28.0	5.6	19.8	23.3
Beverly Hills	209.13	18.55	98	4.6	1.3	16.2	21.3	16.7	6.4
Burbank	99.86	40.83	55	16.2	0.6	16.3	15.1	16.2	5.9
Compton	72.32	35.85	108	21.1	74.9	29.2	4.0	32.8	24.2
Covina	80.92	14.45	72	12.7	1.4	20.3	9.4	13.4	4.6
Downey	66.61	24.13	54	16.9	1.0	16.9	11.1	13.5	5.3
El Monte	44.47	16.29	82	61.3	0.6	23.5	8.0	18.8	16.7
Gardena	99.08	10.36	92	17.1	22.6	18.2	9.4	16.8	7.1
Glendale	64.43	37.65	55	17.8	0.3	15.6	16.3	16.0	8.1
Hawthorne	75.79	26.41	96	20.9	13.3	18.1	8.0	20.5	7.3
Huntington Park	47.90	9.58	75	80.7	0.4	21.7	8.8	18.6	20.5
Inglewood	94.24	20.51	115	18.9	57.3	19.9	8.3	30.3	13.1
Long Beach	112.23	38.51	89	14.0	11.2	15.7	14.0	19.2	10.8
Montebello	81.58	26.01	65	59.1	0.5	19.3	10.8	18.8	10.3
Pasadena	87.69	19.08	95	18.4	20.7	16.4	14.9	20.1	10.8
Pomona	84.64	21.99	121	30.5	19.0	22.5	8.9	18.6	13.7
Redondo	61.42	42.77	67	11.5	1.4	15.2	6.7	18.7	5.7
Santa Monica	75.72	21.43	118	13.0	4.0	11.8	16.4	21.2	6.6
South Gate	73.28	17.11	60	58.3	1.8	21.9	10.8	16.9	12.2
Torrance	117.59	43.14	56	8.4	0.6	19.0	8.5	13.5	3.6
West Covina	58.25	23.98	81	21.1	5.7	21.2	5.6	12.1	4.2
Whittier	61.28	20.44	50	23.3	0.7	17.1	13.2	12.4	5.2

NOTE: See Table B.1 for definition of column heads. Data were calculated from the machine-readable version of the *County and City Data Book*, 1983, U.S. Department of Commerce, Bureau of the Census.

Table B.3

CORRELATION COEFFICIENTS OF ATTRITION AND DEMOGRAPHIC VARIABLES

Variable	ROBR	BURR	POLPCP	ARRCOST	CRIMR	HISPP	BLACKP	YUNGP	OLDP	FEMP
BURR	.57									
POLPCP	−.22	−.16								
ARRCOST	.44	.64	.15							
CRIMR	−.44	−.28	.29	−.17						
HISPP	−.12	−.16	−.56	−.48	−.26					
BLACKP	.01	−.02	.08	.08	.62	−.23				
YUNGP	.16	−.19	−.37	−.24	−.00	.57	.34			
OLDP	−.27	.03	.58	.04	.00	−.35	−.31	−.73		
FEMP	−.06	.01	−.01	.06	.61	.03	.84	.30	−.22	
POORP	−.05	−.03	−.34	−.24	.19	.64	.43	.75	−.41	.63

NOTE: See Table B.1 for definitions of variable names.

Appendix C

QUESTIONNAIRE USED FOR SURVEY OF POLICE DEPARTMENT CHARACTERISTICS

1. What is the department's total annual budget?
2. What is the city's total annual budget?
3. What is the resident population of the department's jurisdiction?
4. What is the approximate daily commuter/workforce population within this department's jurisdiction?
5. How many sworn personnel does the department have?
6. What is the number of the total personnel of the department?
7. How many sworn investigative personnel does the department have?
8. How many personnel, total, are involved in the investigative function?
9. How many deputy district attorneys does the local prosecutor's office have?
10. How many of these are available to work on your detectives' cases?
11. How many prosecutors are available for case filing at any one time?
12. Is the office at which felony case filings are taken within:
    — walking distance of the station?
    —a mile of the station?
    —five miles of the station?
    —more than five miles of the station?
13. How long, on average, does it take for an officer to file a single felony case with the prosecutor? (Time from when he leaves the station until his return):
    —less than an hour?
    —between one and two hours?
    —two to three hours?
    —more than three hours?

14. Do all the investigative personnel work on the same shift?
15. Does this department have an officer whose duties include the filing of felony cases with the prosecutor's office? Does the person handle all filings?
16. Does someone, other than the case investigator, prescreen felony filings before they go to the district attorney? If so, who?
17. Is there a form used to prescreen felony cases before they are taken for filing? Who does the screening?
18. Is there any means by which an investigator can obtain legal advice regarding cases other than by talking to the prosecutor or to fellow officers?
19. Does this department have any form of solvability factors it uses to determine the handling of a case? Who applies these factors to a case?
20. Does this department have a crime analysis unit? How long has it been operational?
21. Does the department have a unit devoted to making positive identification of suspects? How long has it been operational?
22. Does the department have specially trained teams or personnel for evidence gathering?
23. If so, are these technicians sent to all crime scenes, or is their use left to the discretion of the responding officer?
24. Is there computer aid available to facilitate the investigators work? What does it help him do?
25. Are crime reports computerized and available in that form to the investigators? How are they computerized?
26. Are arrest reports computerized and available in that form to the investigators? How are they computerized?
27. Are case disposition reports computerized and available in that form to the investigators? How are they computerized?
28. Do any of the following files exist? Are they computerized, utilized, and accessible in computerized form to the investigators?
    —an MO file
    —a fingerprint file
    —a known-offender file
    —a recently released/paroled felons file
    —a known-drug-dealer/user file
    —a hot-car sheet for your area

—a mug-shot file
—a known-burglar file

29. Are there any regularly scheduled meetings between members of this department and members of the prosecutor's office? How often are they held and what is their purpose?

30. Does the department have any formal arrangements with neighboring or other local departments that enhance the investigative ability of this department? What are they and how do they help?

31. What determines who is assigned a particular felony case to investigate?

32. Does this department attempt to send its investigators to training schools more often than is required by state standards? Are you successful in this attempt?

33. Are new investigators sent to a specialized school:
—before assuming the new position?
—as soon as possible after assuming the new position?
—not sent to a specialized school, except as required by state standards?

34. In your opinion, does the academy that your recruits attend offer any more training in the skils of investigation than do other academies? Why?

35. Are certain investigators, because of the nature of their work, sent to specialized schools more often than other detectives? Which ones and why?

36. Do the investigators in this department or in any of its units usually work in pairs or on teams? Which ones and why?

37. Are the local pawn shops consistently and formally monitored?

38. How often are the investigators formally evaluated in terms of performance?

39. When a detective's performance is evaluated, are arrest statistics, clearance statistics, or case disposition statistics used as a performance measure? Describe.

40. Is every case that an investigator files for charges reviewed by someone other than the prosecutor? Are these cases measured as indicators of an investigator's performance?

41. Do the prosecutors provide case feedback to investigators on all felony filings? What form does this feedback take?

42. Do the prosecutors provide reasons for all felony case filings that are rejected as to why they have been rejected? What form does this feedback take?
43. Are this department's personnel policies based on a civil service or merit system? Are the investigator's pay scales judged on civil service or merit?
44. Has the department changed its investigative policies in any substantial way over the last two years? Are there any major changes planned for the next year?
45. Does the department have any programs or policies expressly designed to reduce the attrition of felony cases? Please describe them.
46. Does the department sponsor any special programs for victims or witnesses to keep these people involved with their cases? Please describe them.

Discuss the following individually in terms of felony assault, burglary, drugs, and robbery investigations.

47. Is a representative of the district attorney's office never, rarely, sometimes, or usually involved in an investigation prior to an arrest?
48. Is a representative of the district attorney's office never, rarely, sometimes, or usually involved in an investigation after an arrest?
49. Is a representative of the district attorney's office rarely, sometimes, usually, or always involved in an investigation after case filing?
50. Is a representative of the district attorney's office never, rarely, sometimes, or usually involved in advising whether or not to make an arrest?
51. Does the prosecutor's office have its own investigative personnel? What are their duties?
52. Is morale among the detectives of this department poor, average, good, or excellent in comparison with other departments? In your opinion, what accounts for this?

REFERENCES

Alschuler, Albert W., "Blighted Trees in a Benighted Forest: The Police Officer's Cases, the Prosecutor's Screening and Bargaining Practices, and the Social Scientist's Numbers," in William A. Geller (ed.), *Police Leadership in America,* New York: Praeger, 1985.

Boland, Barbara, and Elizabeth Brady, *The Prosecution of Felony Arrests, 1980,* Bureau of Justice Statistics, U.S. Department of Justice, 1985.

Boland, Barbara, and Ronald Sones, *The Prosecution of Felony Arrests, 1981,* Bureau of Justice Statistics, U.S. Department of Justice, 1986.

Boydstun, John, et al., *Evaluation of the San Diego Police Department's Career Criminal Program,* System Development Corporation, 1981.

Brosi, Kathleen B., *A Cross-City Comparison of Felony Case Processing,* Institute of Law and Social Research, Washington, D.C., 1979.

Bureau of Justice Statistics, *Felony Sentencing in 18 Local Jurisdictions,* Special Report, U.S. Department of Justice, Washington, D.C., May 1985.

California District Attorneys Association, *Uniform Crime Charging Manual,* Sacramento, Calif., 1973, 1983.

Cannavale, Frank J., and William D. Falcon, *Improving Witness Cooperation,* U.S. Department of Justice, Washington, D.C., 1976.

Eck, John E., *Solving Crimes: The Investigation of Burglary and Robbery,* Police Executive Research Forum, Washington, D.C., 1983.

——, *Managing Case Assignments: The Burglary Investigation Decision Model Replication,* Police Executive Research Forum, Washington, D.C., 1979.

Feeney, Floyd, F. Dill, and A. Weir, *Arrests Without Conviction: How Often They Occur and Why,* National Institute of Justice, Washington, D.C., 1983.

Forst, Brian, F. Leahy, J. Shirhall, H. Tyson, J. Bartolomeo, and E. Wish, *Arrest Convictability as a Measure of Police Performance,* National Institute of Justice, Washington, D.C., 1982.

Forst, Brian, J. Lucianovic, and S. J. Cox, *What Happens After Arrest? A Court Perspective of Police Operations in the District of Columbia,* Institute for Law and Social Research, Washington, D.C., 1977.

Greenberg, Ilene, and Robert Wasserman, *Managing Criminal Investigations,* U.S. Department of Justice, Washington, D.C., 1979.

Greenwood, Peter, Jan M. Chaiken, Joan Petersilia, *The Criminal Investigation Process,* Lexington, Mass.: D. C. Heath and Company, 1977.

Greenwood, Peter, and Joan Petersilia, *The Criminal Investigation Process, Vol. I: Summary and Policy Implications,* The RAND Corporation, R-1776-DOJ, October 1975.

Greenwood, Peter, S. Wildhorn, E. Poggio, M. Strumwasser, and P. deLeon, *The Prosecution of Adult Felony Defendants in Los Angeles County: A Policy Perspective,* Lexington, Mass.: D. C. Heath and Company, 1973.

Jacoby, Joan E., *The Prosecutor's Charging Decisions: A Police Perspective,* Washington, D.C.: Government Printing Office, 1977.

Jacoby, Joan E., L. R. Mellon, and W. F. Smith, *Policy and Prosecution,* National Institute of Justice, Washington, D.C., 1980.

Jacoby, Joan E., et al., *Prosecutorial Decisionmaking—A National Study,* National Institute of Justice, Washington, D.C., 1972.

Kaplan, John,, "Prosecutorial Discretion—A Comment," *Northeastern University Law Review,* Vol. 60, 1965.

McDonald, William F., "Prosecutors, Courts, and Police: Some Constraints on the Police Chief Executive," in William A. Geller (ed.), *Police Leadership in America,* New York: Praeger, 1985.

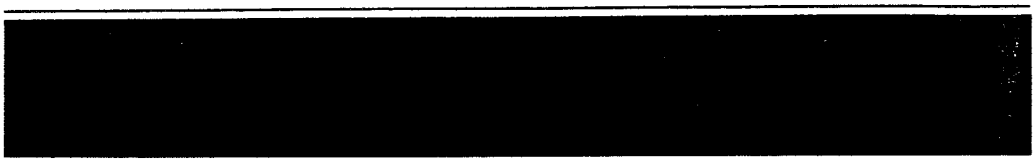
McDonald, William F., H. Rossman, and J. A. Cramer, *Police-Prosecutor Relations in the United States,* National Institute of Justice, Washington, D.C., 1982.

Pate, Tony, R. A. Bowers, R. Parks, *Three Approaches to Criminal Apprehension in Kansas City: An Evaluation Report,* Police Foundation, Washington, D.C., 1976.

Petersilia, Joan, *An Inquiry into the Relationship Between Thoroughness of Investigation and Case Disposition,* The RAND Corporation, P-5576-DOJ, 1976.

U.S. Census Bureau, "The County and City Data Book," Washington, D.C.: U.S. Government Printing Office, 1983.

Vera Institute of Justice, *Felony Arrests: Their Prosecution and Disposition in New York City's Courts,* New York, 1977.

Zeisel, Hans, "The Disposition of Felony Arrests," *American Bar Foundation Research Journal,* Spring 1981.

RAND/R-3515-NIJ