A METHODOLOGICAL STUDY OF THE EFFECTIVENESS OF PROACTIVE SPECIALIZED POLICE UNITS IN MICHIGAN

Thesis for the Degree of M. S.

MICHIGAN STATE UNIVERSITY
STEVEN MICHAEL EDWARDS

1977

ABSTRACT

A METHODOLOGICAL STUDY OF THE
EFFECTIVENESS OF PROACTIVE SPECIALIZED
POLICE UNITS IN MICHIGAN

By

Steven Michael Edwards

Purpose. Due to the increased concern by the public about crime, police agencies have committed substantial resources in an effort to measure their efficiency. As a result of this deepening concern the public has about crime, its costs and accountability, public attention has been directed toward police agencies' response to the crime problem. This concern has forced police administrators to implement organizational changes to impact upon crime problems or to better utilize existing resources. One of the impact responses that police administrators have developed and implemented for prevention, control and investigation of crime is the proactive specialized police unit, whose primary emphasis is to anticipate criminal activity and crime targets.

The purpose of this study was to explore ways of measuring police agency performance after the introduction of a new organizational technology - proactive specialized police units. These units were created as a new technology to attempt to achieve a measurable reduction in crime and criminal activity by improving the investigative capability of the police organizations to which they were attached.

Method. This study is a subset of a broader evaluation project conducted by the Criminal Justice Systems Center at Michigan State University for the State of Michigan Office of Criminal Justice Programs. The broader evaluation project was designed to evaluate approximately twenty-three specialized police units, ranging from regionalized detective bureaus to crime specific task forces, which sought to achieve a reduction in crime and criminal activity by improving the investigative capability of the parent organization. Six of the twenty-three specialized police units were selected for intensive evaluation in the broader study; from these six research sites, two were selected for this study.

When conducting evaluation research of a social intervention, serious contextual problems arise which make the use of the true experimental design difficult, if not impossible to achieve. Because of these conditions, as well as limitations concerning site selection, the research design selected to evaluate the projects was the Time-Series design. This design is not a true experimental design, but one termed a quasi-experimental design. Basically, it attempts to approximate the conditions of a true experiment for research situations, which do not provide the opportunity for experimental control, or for random selection of the subject, while at the same time maximizing the internal validity of the findings.

The data which was used in the analysis came from both monthly and annual level state uniform crime reports for the years 1971-1976. Though there are criticisms of the uniform crime report data, they remain the best generally available data sources on crime and police activities throughout the state.

From a general research question, three operational hypotheses were used to examine differences in offense-clearance rates, offense-charged conviction rates and offense-founded conviction rates for each of the target crimes - robbery, burglary, and larceny. Two hypotheses, offense-charged conviction rates and offense-founded conviction rates were tested using a two-phased approach. The first phase used a multiple-group time-series design on the annual level data, just as conducted for the first two hypotheses. The second phase used monthly level crime statistics in a one-group time-series analysis. The objective of this statistical analysis was to extract the effects of other possible causal factors from the effects of the intervention, in order to determine whether the introduction of an SPU increased, decreased or did not affect departmental productivity.

Findings. In neither phase one nor phase two of the analysis of annual or monthly level data were there any statistically significant results to indicate that the establishment of the special police unit in either research jurisdiction had a positive effect on the investigative

capabilities of the departments in which they were located. Some of the data displayed in the tables for phase one did indicate a positive effect (increasing rate). There were also equal numbers of decreases, so that no consistent pattern supporting the hypotheses could be established. Moreover, from phase two of the analysis, which allowed for greater adjustments in the data due to the mathematical sophistication of the model, no support was found for the hypothesis concerning clearance rates. There were no statistically significant results to indicate that SPU's improved the investigative capabilities of the departments in which they were located.

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By

Steven Michael Edwards

A THESIS

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

MASTER OF SCIENCE

School of Criminal Justice

1977

Dedicated to my wife

Janis

and son

Gregory

ACKNOWLEDGEMENTS

It is without a doubt that a graduate program demands that a serious student have access to several types of assistance and support, with which to successfully complete the degree requirements. And in the preparation of this thesis, some demands for assistance and support become more intense. I know that I cannot thank everyone by name, therefore I wish to thank family, friends, fellow students, faculty and university staff for their patience, assistance and support these past two and one-half years.

My sincere appreciation to my thesis committee members who have played very important and yet different roles: Kenneth E. Christian my chairman, whose assistance and encouragement made this document a reality; Louis A. Radelet, whose kind words and critical perspective were always refreshing; and Ralph G. Lewis, R^2, who literally drove me over and beyond many real and artificial barriers. These men are good friends and most capable critics. Without their efforts, ideas and assistance this study would have never been possible.

To undertake this study, I was fortunate to be a staff member on the Michigan Model Evaluation Project, conducted by the Criminal Justice Systems Center, School of Criminal Justice, Michigan State University, for the Michigan Office

of Criminal Justice Programs. For this I would like to thank the Director, John H. McNamara, and Research Director, Ralph G. Lewis, for without this grant, data collection and computer analysis would have been impossible for any one individual.

No study can be complete without much clerical and technical support. For this I would like to thank Deborah A. Celland and Judith R. Baker, who assisted on the specialized police unit section of the Model Evaluation Project with data collection and coding. And a special note of thanks to Denise Wootton, who did the typing of this manuscript.

I am also indebted to a very good personal friend, John E. Angell, who has played a very important role in guiding my interest in criminal justice.

Lastly, I again wish to thank my wife Jan and son Gregory, for their patience, understanding, and devotion, that has made this all possible.

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CHAPTER I

THE PROBLEM

Introduction

> Over the years, many police agencies have committed considerable resources to the collection and analysis of crime statistics in an effort to measure efficiency of police operations. Most of these agencies have had limited success in selecting the best indicators and interpreting them in terms of effective performance.[1]

In June of 1975 President Gerald R. Ford sent a special message to Congress on a subject that has long troubled the Nation and frustrated local, state, and federal officials: the Nation's growing crime problem. By any measurement, crime has become an ominous national concern. "Since 1961, the rate for all serious crimes has more than doubled. From 1973 to 1974, it jumped 17 percent - the largest increase in the 44 years that national statistics have been collected."[2] In response to the mounting fear of personal harm, loss of property and public disorder in recent years, municipal police expenditures increased 70 percent; from $2.1 billion in 1967 to $3.5

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[1] National Advisory Commission on Criminal Justice Standards and Goals, Police (Washington, D.C.: U. S. Government Printing Office, 1973), p. 151.

[2] Time, June 30, 1975, Vol. 105, No. 27, p. 10.

billion in 1971. Total federal, state, and local expenditures for police services reached $6.2 billion in 1971, a 20 percent increase over the previous year.[3] These soaring crime rates and law enforcement costs have produced widespread disillusionment and disenchantment with our criminal justice system.

The job of the police manager, as with any administrator, is to exercise control over the use of scarce resources, to "guarantee" that the results of the work effort (output) are commensurate with the level of resource input. Limited public resources and citizen concern about crime are forcing public policy-makers to seek substantial increases in police productivity. As a result of the deepening concern the public has about crime, its costs, and accountability, public attention has been directed toward police agencies' response to the crime problem. This concern has forced police administrators to implement organizational changes to impact upon crime problems or to improve the utilization of existing resources.

One of the impact responses that police administrators have developed and implemented for the prevention, control and investigation of suppressible crimes is the proactive specialized police unit,[4] whose primary emphasis is to anticipate criminal activity and crime targets. Their response varies from covert

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[3] Report of the National Advisory Group on Productivity in Law Enforcement, Opportunities for Improving Productivity in Police Service, National Commission on Productivity, 1973. p. 1.

[4] See Appendix A for Definition of Terms.

(surveillance) to overt (saturation patrol) activities as the crime analysis dictates. However, very little is known about the effectiveness (productivity) of these specialized units. This study will investigate the effectiveness of these specialized units on improving the performance capabilities of the police departments in which they are located.

Purpose

The purpose of this study is to explore ways of measuring a police agency's performance after the introduction of a new organizational technology - proactive specialized police units. These units were created as a new technology to attempt to achieve a measurable reduction in crime and criminal activity by improving the investigative capability of the police organization to which they were attached. It was through the following basic impact model[5] that this reduction was to be realized.

Improved investigative capability will:

increase the costs (risks) associated with criminal activity by,

increasing the probability of apprehension and/or the probability of conviction once apprehended,

which will remove individuals from circulation (through arrest and detention) or deter individuals from committing crimes.

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[5] For an analysis of this comment, see: George L. Kelling, Tony Pate, Duane Dieckman and Charles E. Brown, The Kansas City Preventive Patrol Experiment - A Summary Report. Police Foundation, 1974.

It appears that the creation of the proactive specialized police unit is in response to the recognition, that the reactive nature of most patrol operations (uniformed divisions) is only marginally effective as a response to the increase of crime.[6] While the concept of proactive specialized police units has been more fully developed in terms of vice, gambling, and narcotics enforcement for some time, only recently has the concept been applied to the criminal activity of burglary, robbery and larceny. As a result, the utilization of specialized operational units may be viewed as the development of an operational technology, specifically designed to enhance the proactive capabilities of a police department.

It is the purpose of this study to analyze whether proactive specialized police units improve the effectiveness of the investigative capabilities of departments in which they are located.

Research Question and Hypothesis

Before the specific research question and hypothesis are developed it is necessary to review conceptual points as they relate to the issue of effectiveness (productivity). Since proactive specialized police units are intended to achieve a reduction in crime and criminal activity by improving the investigative capability of the police departments, a basic

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[6] Basic causal assumptions relating project activities to anticipated outcomes.

intermediate question arises concerning their operation; Have improved investigative capabilities resulted from the establishment of the proactive specialized police unit? It is from this question that a general research question will be generated that will lead to an examination of the performance (productivity) issue by analyzing the effects proactive specialized police units have on the productivity (effectiveness) of the departments in terms of three crimes - burglary, robbery and larceny.

Research Question

> Do proactive specialized police units improve the investigative capabilities of departments in which they are located?

As a part of the effort to answer this question the following hypotheses will be tested:

H_1: There will be significant differences in offense clearance rates, for the crimes of burglary, robbery and larceny, in the research jurisdictions between the pre/post intervention periods.

H_2: There will be significant differences in offense-founded conviction rates, for the crimes of burglary, robbery and larceny in the research jurisdictions between the pre/post intervention periods.

H_3: There will be significant differences in offense-charged conviction rates, for the crimes of burglary, robbery and larceny, in the research jurisdictions between the pre/post intervention periods.

Overview

This thesis is presented in five chapters. Chapter I has been an introduction to the necessity for establishing

productivity measures. The present day circumstances of rising law enforcement costs as well as rising crime rates have combined to make the improvement of police productivity a desired goal. One such approach has been the development of proactive specialized police units. Though the concept of specialized police units is not new, in that they have been used to deal with crimes of vice, gambling, and narcotics enforcement, they have only recently been applied in a proactive nature to the crimes of robbery, burglary, larceny, rape, and auto theft. What is not known about these units is, how effective (productive in improving the investigative capabilities) these units have been.

Chapter II is a review of the literature related to the detective (investigative) function and to performance measurement. The detective (investigative) function is examined from early views of police scholars and administrators on through the development of proactive specialized police units. Given the nature of crimes upon which special police units were designed to impact, i.e., crimes of burglary, robbery, and larceny and the means and methods that were employed, the special police unit personnel came the closest to performing the function(s) of detective(s) rather than traditional patrol officers. The section on police performance measurement begins with early views, attempts and difficulties in the development of performance measures. In addition, there is a discussion of the establishment and development of the

Federal Bureau of Investigation's Uniform Crime Reports, as the only accepted operating method currently available for accurately assessing an important aspect of police activity. In Chapter III, the research and sample populations and the measures and the analysis are explained. Each hypothesis is restated in agency operational terms, with the terms defined. The results of the analysis for each hypothesis are presented in Chapter IV. The summary and conclusions are presented in Chapter V.

CHAPTER II

REVIEW OF THE LITERATURE

> The detective bureau - A branch of the police service as essential to the preservation of public security as the uniform division itself. Operating for the most part after crimes have been committed, its duty is to apprehend those offenders who have escaped arrest at the hands of the uniformed force. To that end it requires a degree of talent and specialization in its personnel distinct from the qualifications of the uniformed men.[1]
>
> Raymond B. Fosdick, 1920

Early Views of the Detective Function

Historically, there has always been a mystique regarding the detective function, and much of this image can be directly traced to the time of the "Bow Street Runners and Peel's guinea-a-week policeman; for detective work during much of the nineteenth century, was the cinderella of the police service."[2] Detective work was a rather drastic change in operational style from the uniformed officers; detectives were 'allowed' to work in plain clothes and associate with criminals, to gain information about crime.

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[1] Raymond B. Fosdick, American Police Systems (New York: The Century Publishing Company, 1920), p. 326.

[2] T. A. Critchly, A History of Police in England and Wales (Montclair, New Jersey: Patterson Smith, 1972), p. 160.

But, the cinderella image and unconventional methods of operation for detectives also led early writers and scholars in the police field to develop diminished opinions of them. Many considered the detective to be beneath the uniformed patrolman, but necessary to the operation of the department's goals. Leonard Fuld wrote:

> The detective is a policeman who is detailed to duty in citizen's clothes for the purpose of discovering and arresting the criminal responsible for a particular crime. The work of the detective is essentially that of the spy and the class of men that are attracted to this work is such as one would naturally find there. In the historical development of the police force the detectives are generally and almost invariably criminals who consider spying more profitable than the commission of a felony.[3]

Though Fuld was critical of the detective function, he did admit that the detective's life was not an easy one. He stated:

> The detective's work is a combination of mystery and hard grind. Mystery is a valuable assistance to the detective in his work and besides is impressive; anything that is not understood is bound to be more or less impressive.[4]

Early Attempts at Assessing Detective Performance

Fuld was also one of the earliest police scholars to advocate that the selection of personnel for the position of detective should be on the basis of demonstrated ability. He stated:

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[3] Leonard F. Fuld, Police Administration (New York: The Knickerbocker Press, 1909), p. 171.

[4] Ibid., p. 172.

> Successful detective work does not, as so many seem to think depend very much upon theory; it depends rather upon sound common sense . . . men of limited education may be naturally endowed and may be able to get at the heart of things with much greater quickness than men who have enjoyed a much better education but who are conscious of the mechanical part of the reasoning process.[5]

Fuld continued to press for performance criteria, when he stated:

> Furthermore the tenure of the detective should not be permanent. His tenure should be dependent on the pleasure of the chief, which in turn should mean under an efficient police administration that the chief can reduce a detective to patrol duty whenever his work is inefficient . . .
>
> Diaries are supplied to officers of the detective force and these form a most valuable record of their conduct and official acts. They become the property of the police department, when filled, and can be used by the Assistant Commissioner or by any other officer of the detective force. General entries in these diaries are not permitted. When an inquiry is made the diary must contain a full statement of the purpose and the object of the inquiry, and similarly, the object in view in visiting a certain place must be inserted . . . the entry 'patroling' is not accepted as sufficient because it is almost impossible that an intelligent police officer sees nothing worthy of closer investigation and notice.[6]

Raymond Fosdick, another early scholar found in his analysis that detective bureaus lacked an ordinary amount of business sense, or to put it in contemporary terms, were very inefficient. This was particularly evident when he examined the arrest records and annual reports of departments and found

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[5] Ibid., pp. 172-173.

[6] Ibid., pp. 182-183.

that arrest statistics "were something of a badge of distinction - a certificate that time had not been wasted."[7]

What is indicative of these early police scholars, is that from the inception of the detective function there have been attempts at assessing detective performance. Though these attempts were rather simplistic, the issues had been raised, and when one parallels the development of the detective function with the development of police performance measures, it is apparent that the identification of performance measures for specific police tasks has not progressed very far in the last forty years.

Development of Specialized Police Units

The concept of specialized police investigative units, that is the distinction between patrolmen in uniform and those police officers uniquely assigned to detective functions in plainclothes, has been developing since the time of Peel. In the United States, Leonard Fuld made the distinction that the "detective function may be divided into two closely related categories - the prevention, and detection of crime."[8] What appears to have contributed to this increased specialization were the passage of laws and the resultant sophistication of criminal acts and activity. This developed into a challenge

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[7] Raymond B. Fosdick, American Police Systems, (New York: The Century Publishing Company, 1920), p. 340.

[8] Leonard F. Fuld, Police Administration, (New York: The Knickerbocker Press, 1909), pp. 171-172.

for the criminal investigator, attracting those officers who were more motivated, or who possessed special talents and interests. As a result, detective bureaus began to further specialize into crime specific sections, i.e., homicide, robbery, burglary, etc. This concept of investigative specialization was limited for a number of years to the above definition. However, only recently, due to an increased emphasis on crime, has the concept of investigative specialization been expanded to the contemporary terminology of proactive specialized police units.

One of the early movements which led to the expansion of investigative specialization evolved from uniform patrol activities - task forces. O. W. Wilson, a proponent of 'special task forces' viewed them from the uniform patrol perspective. He stated:

> "A mobile strike force is of value in those situations which call for the saturation of an area either to prevent the outbreak of criminal activity or a racial, religious, or national conflict, or when an emergency of major proportions necessitates the assistance of additional personnel."[9]

Wilson was emphasizing that the essential characteristic of the task force was its flexibility.

As an expansion of Wilson's view, the President's Commission on Law Enforcement and the Administration of Justice in 1967, and more recently the National Advisory Commission

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[9] Orlando W. Wilson, Police Administration, (second edition; New York: McGraw-Hill Book Company, 1963), p. 250.

on Criminal Justice Standards and Goals in 1973, made recommendations and standards for the use of special crime tactical units. Among the recommendations and standards were the following:

- establishment of written policies and procedures that govern deployment of the tactical force against any problem.
- tactical force be deployed on the basis of current crime pattern analysis or validated current information on expected crime activity.
- tactical force deployment strategy be based on an objective analysis of the (enforcement) problem.[10]

Because of the increased exposure the task force strategy gained popularity and programs were developed with and funded by the Law Enforcement Assistance Administration, launching the police into an era of proactive crime prevention.

Historically, police operational strategies, in an effort to reduce crime, have relied almost exclusively on the concept of preventive patrol. The Fielding brothers and Peel were the principal innovators of this concept, which has had great influence upon American police administration. The preventive patrol concept is reflected in the early police writings of Fuld, Fosdick, Vollmer, Smith, and O. W. Wilson. The assumption underlying the concept of preventive patrol, is that given a high probability of being observed in the commission of a crime, only potential offenders would be deterred from committing

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[10]National Advisory Commission on Criminal Justice Standards and Goals, Police, (Washington, D. C.: U. S. Government Printing Office, 1973), p. 238.

that crime. However, indications are that the preventive patrol approach has not been sufficiently tested[11] for a variety of reasons, i.e., increased calls for all types of activity.

One of the responses that police agencies have operationalized, due to increased federal, as well as citizen support, has been the proactive specialized police unit. It appears that the creation of the proactive specialized unit is in response to the recognition that the reactive nature of most uniformed patrol operations is only marginally effective as a response to the crime problem. Though the concept of specialized police units has been more fully developed for the crimes of vice, gambling and narcotics, only recently has the concept been applied to the criminal activities of burglary, robbery, and larceny.

Though the concept of developing specialized police units to impact on the crimes of burglary, robbery, and larceny is relatively new, the idea of assessing investigative performance is not. As previously noted, both Fosdick and Fuld were concerned with the issue, but the early attempts were rather simplistic in that emphasis was given to the keeping of diaries and activity reports to insure that 'time had not been wasted.' The next section will review the development of police performance measures.

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[11]For an analysis of this comment, see: George L. Kelling, Tony Pate, Duane Dieckman and Charles E. Brown, The Kansas City Preventive Patrol Experiment - A Summary Report. Police Foundation, 1974.

Development of Performance Measures

The concept of police performance measurement is far from being a novel idea. For in a generic sense the measurement of police performance can be traced back to Sir Robert Peel.[12] Peel[13] demonstrated to Parliament in his analysis of police reform, that prior to the 1820's the traditional patrol programs of London were seriously inadequate. As a result of this analysis, Peel was allowed to develop and establish a uniformed patrol force of "Bobbies", that is now considered the model of modern police organization.

In the years since Peel, police performance measurement has continued, but in a less than organized manner. In the United States, the first state to systematically collect criminal statistics with the dual purpose of using the information for administrative purposes, as well as to give an index of the nature and extent of criminality, was New York, in 1829.

In 1850, under a law which governed the census of 1860 and 1870, the gathering of federal statistics was attempted. However, most of the information gathered concerned prisoner dispositions, which entailed examination of court records; the venture failed. Then in 1880, Fredrick H. Wines sought to enlarge the scope of the inquiry on crime through the use of court dockets, prison records, records of justices of the

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[12]T. A. Critchley, A History of Police in England and Wales, (Montclair, New Jersey: Patterson Smith, 1972), pp. 47-50.

[13]Melville Lee, A History of Police in England, (Montclair, New Jersey: Patterson Smith, 1971), pp. 227, 228, 230.

peace, and reports from police departments, for the 1890 census. But what information appeared in the census was of little or no value, due to the incompleteness of the information.

The period of 1920-1930[14] produced a great deal of discussion concerning the best measures of assessing police activity. Police leaders (chiefs) of the early 1900s continuously judged programs or departmental performance in an informal, 'seat-of-the-pants' manner. That is, methods or tactics were considered and appraised, but the process was not recorded or retained. Criteria underlying decisions of adequacy or deficiency were not clearly articulated, and sometimes bore little relation to program objectives.

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[14]For a comprehensive analysis of the development of criminal statistics see, Louis A. Robinson's article, "History of Criminal Statistics (1908-1933)" Journal of Criminal Law and Criminology, Vol. 24, pp. 125-139; Crimes of Violence, A Staff Report to the National Commission on the Causes and Prevention of Violence, Vol. II, December, 1969, pp. 13-42; Sanford Bates, "Criminal Records and Statistics," Journal of Criminal Law and Police Science, Vol. 19 (1928) p. 8; Joseph A. Hill, "Cooperation Between State and Municipal Bureaus and the Federal Census Bureau in the Compilation of Criminal Statistics," Journal of Criminal Law and Police Science, Vol. 12 (1922), p. 529; Fred A. Knoles, "The Statistical Bureau - A Police Necessity," Journal of Criminal Law and Police Science," Vol. 19 (1928), p. 383; John Koren, "Report of Committee on Statistics of Crime," Journal of Criminal Law and Police Science, Vol. 1 (1910), p. 417; Thorsten Sellin, "The Basis of a Crime Index," Journal of Criminal Law and Police Science, Vol. 22 (1931), p. 335.

One of the best early examples of this 'seat-of-the-pants' management was found by Raymond Fosdick in his analysis of detective bureaus. Fosdick noted that there was an "amazing lack of an ordinary business system in the prosecution of work." He stated:

> The head of a detective force deals with crimes which come to him generally in the shape of specific complaints. It would seem, therefore, that some knowledge of the relation between complaints and arrest - that is, between crimes known to the police and crimes 'cleaned-up' - was absolutely indispensable to adequate supervision. In only a few departments, however, were records maintained upon which this knowledge can be based . . . In most departments the records of complaints have no relation to the records of arrest, with the result that it is impossible for the head of the (detective bureau) department to establish any standard for measuring the effectiveness of his effort.[15]

Fosdick further reported:

> The annual report of most chiefs of police in the United States solemnly set forth the number of arrests during the preceding year as if this number large or small as it may be were something of a badge of distinction - a certificate that time had not been wasted.[16]

It was not until 1929 when International Association of Chiefs of Police Committee[17] on Uniform Crime Records published its

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[15]Raymond B. Fosdick, American Police Systems, (New York: The Century Publishing Company, 1920), pp. 339-340.

[16]Ibid., p. 340.

[17]Acting on the recommendation of the International Association of Chiefs of Police Committee, Congress, on June 11, 1930, gave the Federal Bureau of Investigation the responsibility for supervising the collection of data as well as publishing it in the Uniform Crime Reports.

report - "Uniform Crime Reporting," that any systemized procedure became known. It was this report which was to "consider all phases of police records and statistics in so far as (they) are related to national and state reporting."[18] As it developed, what the Committee on Uniform Crime Reports accomplished, was the difficult task of establishing the foundation for the collection of police statistics of crimes and arrests. The Committee established a recording and classification procedure to be followed when various crimes had been committed. The Committee was of the opinion that when a crime had been committed, established recording and classification procedures should be set, based upon the facts of the crime. Therefore, the best way to establish these facts was to rely on statutory definitions. With this in mind, a preliminary study was made, surveying 29 states and the District of Columbia.[19]

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[18]Bennett Mead, "Police Statistics," The Annals, November, 1929. In the development of the report, the International Association of Chiefs of Police committee conducted research in the following areas: 1) a survey of what other countries were doing in the field; 2) a study of existing records in which the desired data would be found; 3) consideration of the inherent problems posed by the nature of a federal system with its multiple jurisdictions; 4) consideration of the plans for uniform schedules and forms; 5) the drafting of instructions for filling out reports; 6) a recommendation of the development of a plan of organization for the entire system. See, Louis A. Robinson, "History of Criminal Statistics (1908-1933)," Journal of Criminal Law and Criminology, Vol. 24 (1933), p. 133-134.

[19]See Appendix B for a list of the states.

Since the Committee survey clearly demonstrated that there was widespread variation in the statutory definitions of crime, offenses such as "robbery, burglary, and larceny were broadly defined so that crimes committed under each of the varying state statutes could, for statistical purposes, be embraced by the uniform classification system."[20] The crime definitions were then divided into two major categories - Part 1 offenses and Part 2 offenses.

The category of Part 1 offenses included the following: criminal homicide, forcible rape, robbery, aggravated assault, burglary, larceny, and automobile theft. The rationale for using these seven offenses as the "Crime Index", was and still is today:

> The total number of criminal acts that occur is unknown, but those that are reported to the police provide the first means of a count. Not all crimes come readily to the attention of the police, not all crimes are of sufficient importance to be significant in an index; and not all important crimes occur with enough regularity to be meaningful in an index. With these considerations in mind, the above crimes were selected as a group to furnish an abbreviated and convenient measure of the crime problem.[21]

All other crimes were classified as Part 2 offenses. When the function of developing crime reports was finally

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[20] Crimes of Violence. A Staff Report to the National Commission on the Causes and Prevention of Violence. Vol. II, December, 1969. p. 15.

[21] Crime in the United States, Uniform Crime Reports, 1968. Federal Bureau of Investigation, Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. p. 57.

placed in the Bureau of Investigation - later known as the Federal Bureau of Investigation - it was rather remarkable at the outset in 1930, 400 cities were voluntarily reporting crime statistics to the Bureau of Investigation.[22]

Since this period had generated a great deal of interest in assessing the type and amount of crime by the establishment of a crime index, other formal measures were being developed due to the concern for increasing formality as well as administrative utility. One such attempt was made a few years after the establishment of the Uniform Crime Reports, by Arthur Bellman in 1935. Bellman developed an extensive evaluation scale to systematically evaluate a police organization's overall quality. In essence, the scale was a qualitative list of significant items designed to be completed by 'experienced police analysts', or as Bellman put it:

> Inexpert persons or groups, looking for a chance to 'stir up something,' will come to grief if they attempt to use the score sheets, which are intended to be used by experts only. Many of the matters listed on the sheets are technical and require professional diagnosis. A rating by a layman would in all probability, not present a true existing state of affairs at all.[23]

What Bellman did to refine his scale was to develop broad functional areas, and then break them down into six hundred eighty-five (685) different questions that concerned

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[22]Bruce Smith, "Crime Reporting As A Police Management Tool," The Annals of the American Academy, Vol. 291, January, 1954, p. 127.

[23]Arthur Bellman, "A Police Service Rating Scale," Journal of Criminal Law and Criminology. Vol. 26 (1935), p. 79.

departmental policies, procedures and equipment. This process was based on the available literature concerning the topic, discussions with numerous police officials, and from Bellman's personal investigation of police agencies in the United States. It was his belief that the development of such a method would "accomplish a two-fold purpose: the rating of a police organization according to certain standards, and the improvement of the service."[24]

Regarding the detective function, Bellman prepared a list of duties and then developed a rating process by assigning a maximum value of two points for each duty. An example of how a "perfect score" could be achieved for a detective involved in the investigation of a crime is shown below. Three hundred seventy-six (376) points could be earned as follows:[25]

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[24] Ibid., p. 75.

[25] See, Arthur Bellman, "A Police Service Rating Scale," Journal of Criminal Law and Criminology, Vol. 26 (1935), p. 74-114, for a complete breakdown of the scale.

		Number of Total Duties Performed per Function	Total Possible Score
1.	General duties of detectives	11	22
2.	Pawnshop	20	40
3.	Fugitive	15	30
4.	Forgery	17	34
5.	Narcotics	19	38
6.	Burglary	15	30
7.	Homocide	15	30
8.	Arson	13	26
9.	Robbery	12	24
10.	Auto theft	18	36
11.	Bunco-pickpocket	13	26
12.	Adult missing person	15	30
13.	Post Office	5	10
	"Perfect Score"		376

Despite the fact that this effort by Bellman was rather massive and a novel approach to examining a police organization to determine functional efficiency, it fell to attack in less than a year. Critiquing the Bellman Scale in the same journal was Spencer D. Parratt,[26] who questioned the arbitrary weighting process that Bellman assigned to the duties under each function. The basic question asked by Parratt was, "To what extent is the Bellman instrument analogous to a yardstick,

[26]For a full account of the questions raised, consult Spencer D. Parratt, "A Critique of the Bellman Police Service Rating Scale," Journal of Criminal Law and Criminology, Vol. 27 (1937), pp. 895-905.

a balance or a thermometer as a measuring device?[27] What Parratt was pointing out was that 'quality' and 'efficiency' in a police department did not necessarily mean a high score, since there were no instructions in the Bellman Scale, as to what was included or excluded in the terms 'quality' and 'efficiency'. To illustrate his point, Parratt said that the "modern police department is at least as complicated as vegetable soup,"[28] and since soup can be evaluated as to its quality only by listing every ingredient, the use of the "Bellman instrument as the formula for qualitatively describing a complete department is obviously deficient since it is highly selective in its classification."[29] It is this rather selective classification process, with regard to quality that makes police administration so complex. As Parratt pointed out:

> Police administration is a composite of many continua, or variables, in behaviors, states of mind or attitudes and external conditioning factors. Quality is an abstract moral term which might be significantly applied in the balance of constituent elements in what the evaluator considers correct proportions of each. A police administering system is more or less of many things, but quality is a relationship between these many things in their operative conditioning. One cannot aspire to measure quality as a moral abstraction without first providing for evaluating the constituent elements contributing to its

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[27] Spencer D. Parratt, "A Critique of the Bellman Police Service Rating Scale," Journal of Criminal Law and Criminology, Vol. 27 (1937), p. 895.

[28] Ibid., p. 897.

[29] Ibid., p. 898.

> totality. The Bellman instrument has undertaken an insurmountable task in disregarding the fundamental and seeking to measure the composite. It seeks to erect superstructure where no foundation has been built.[30]

So, as Parratt perceived the issue, one should isolate a large number of significant criteria which are concerned with police operation and then treat them separately. Once this is done, that necessary foundation will have been cast, allowing for what he termed a superstructure to be built.

After Parratt had written his critique of the Bellman scale and in an attempt to build what Parratt termed the superstructure for measuring police performance, he developed an alternative instrument to measure the effectiveness of policing in a democracy. It was Parratt's reasoning that the objective of the police in a democracy was to serve the citizenry and a standard of police performance, under such conditions, must be in compliance with citizen opinions. So, Parratt designed a public attitude survey to measure public confidence in the police. The instrument that he developed consisted of three hundred forty-two (342) statements grouped under eight (8) major headings: 1) characteristics of personnel; 2) selection, discipline, training and equipment; 3) influence of politics; 4) public and press relations and crime prevention; 5) treatment of groups and minorities, 6) treatment of suspects and witnesses; 7) apprehension and

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[30]Ibid., p. 899.

investigation; and 8) vice. It was Parratt's intention to overcome the deficiencies of the Bellman attempt and to obtain a more realistic measure of public effectiveness in a democracy. However, there were problems with this method, especially when contrasted with the Bellman instrument. The major and most obvious problem was that the Bellman scale was concerned excessively with functional tasks, whereas the Parratt scale was only concerned with citizen perceptions. Any time one relies on citizen perception (public opinion polls) of performance, a clouding effect develops. The public is not able to make the fine distinctions that are necessary to develop performance criteria, nor are they aware of what is entailed in the job, since most people do not know what policemen actually do, nor do many citizens know policemen.

There have been, since the Bellman and Parratt attempts, efforts to establish other police evaluation procedures, i.e., Program, Planning, Budgeting, Systems (P.P.B.S.), Management by Objectives (MBO) and program evaluation. But, they have not operated to the extent or have they been accepted by police agencies, as have the Uniform Crime Reports (UCR). The UCR is the only uniform measurement system established which covers 95 percent[31] of the national population through

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[31]During the calendar year 1975, crime reports were received from law enforcement agencies representing 97% of the United States population living in the standard metropolitan statistical areas, 93% of the population in other cities and 83% of the rural population. The combined coverage accounts for

reporting police agencies. Though there are problems and criticisms concerning the use of the Uniform Crime Reports as indicators of crime, by placing the information in perspective, the Uniform Crime Report information can be a valuable police management tool in assessing the performance of specialized police units. Police scholar Bruce Smith had the following caution for users of UCR data:

> It cannot be denied that the size, training and general efficiency of the police departments have some effect on the local crime picture. On the other hand, there are other factors affecting the amount of crime which merit careful consideration. These include such matters as the composition of the population of the city, as regards to age, sex, and race, as well as the size and characteristics of the population of any adjacent metropolitan area; the economic status of the population, the climate of the area; the general nature of the community, that is residential, recreational and religious facilities of the community; and the attitudes of public prosecutors, the courts, the public in general toward the problems of law enforcement.
>
> A comparison of the raw figures or even the crime rate of one community with another may not be particularly significant. The important thing is the extent to which the local crime rates exceed or fall short of the average for cities of the same population group. geographic division or state. Such a comparison sheds light on the relative size of the problem at hand.[32]

95% of the total national population." Federal Bureau of Investigations, U. S. Department of Justice, Uniform Crime Reports, 1975. (Washington, D. C.: U. S. Government Printing Office, 1975), p. 3.

[32]Bruce Smith, "Crime Reporting as a Police Management Tool," The Annals of the American Academy, (Vol. 291, January, 1954), P. 132.

Summary and Conclusions

The concept of specialization for detectives as well as the development of performance measures for the police, have not been recent innovations. The early police scholars, Peel, Fuld, Fosdick, Smith, Bellman and Parratt were certainly aware of the importance of these issues. What is significant in this review is the heavy reliance that has been placed on these founders in shaping the specialization and performance measurement of the investigative function.

The purpose for presenting this material has been to illustrate the development and difficulties that have been encountered in arriving at a method for assessing police performance, specifically the police investigative function. What is evident in this review is that there is not a 'tested formula' for assessing police performance, that has functioned as have the Uniform Crime Reports.

Using the preceding summary of the literature on the development of the detective function and performance measures, as well as the information contained in the previous section, a methodology will be developed to examine the effectiveness of special police units.

CHAPTER III

DESIGN OF STUDY

Introduction

This study is designed to examine an issue of police performance measurement (productivity) by analyzing the effects which proactive specialized police units have on a police department's ability to deal with three crimes - burglary, robbery and larceny.[1] This study is a subset of a broader evaluation project conducted by the Criminal Justice Systems Center at Michigan State University for the State of Michigan Office of Criminal Justice Programs. The broader evaluation project is designed to evaluate approximately twenty-three specialized police units, ranging from regionalized detective bureaus to crime specific task forces which sought to achieve a reduction in crime and criminal activity by improving the investigative capability of the parent organization. Thus the logic of this impact model (See Table 3.1) is as follows:

Improved investigative capability will:

increase the costs (risks) associated with criminal activity by,

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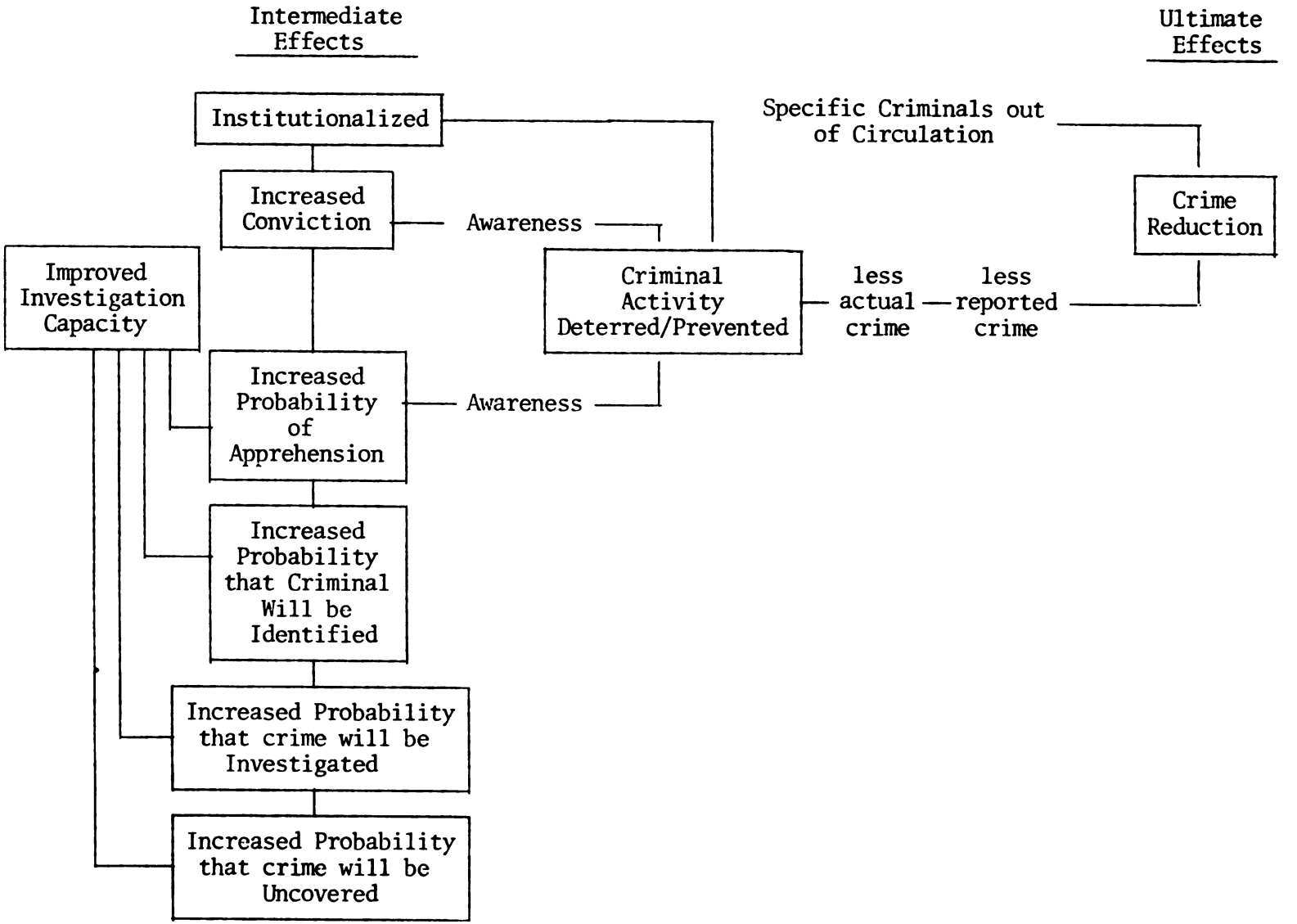
[1]See Appendix D, Reasons and Rationale for the Selection of the Target Crimes - Burglary, Robbery, and Larceny.

TABLE 3.1. SPECIAL POLICE UNIT IMPACT MODEL



> increasing the probability of apprehension or the probability of conviction once apprehended,
>
> which will remove individuals from circulation (through arrest and detention) or deter individuals from committing crimes.

Six of the twenty-three specialized police units were selected for intensive evaluation in the broader study. From these six, two research sites were selected for the study. The primary criteria for their selection was the completeness of the data and the degree of cooperation received from the parent agencies in which the units were located.

Ideally, when conducting intensive evaluation research of a social intervention such as a proactive specialized police unit, procedures to maximize causal inferences must be followed. These procedures are possible with the application of true experimental research designs (Pretest-Posttest Control Group Design)[2] which allow the experimenter direct manipulation of factors (treatment and contextual variables) to be studied, through the randomization of the treatment variables, helping to control for the problem of internal and external validity.[3]

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[2] Donald T. Campbell and Julian C. Stanley, Experimental and Quasi-Experimental Designs for Research, (Chicago: Rand McNally and Co., 1963).

[3] By internal validity it is meant the degree to which observed changes in the dependent variable can be attributed to the assumed causal variable, rather than some other factor including measurement of description error. External validity refers to the generalizability of findings beyond the confines of a particular study.

However, when conducting evaluation research of a social intervention, serious methodological limitations arise which make the use of the true experimental designs unfeasible, if not impossible, due to the complexity of the research task. Since this study is a subset of a broader evaluation of specific specialized police units, funded by the Office of Criminal Justice Programs (OCJP), there was neither random selection of research sites nor random selection of control group sites due to the particular "nuances" of the OCJP funding process. This issue of site selection/funding, also affected evaluator control of the actual implementation as well as intervention activities, which allowed for a variety of unmeasured, as well as unknown factors, to influence the projects and their outcomes.

Because of the limitations concerning the research sites the research design selected and utilized to evaluate projects is the time-series design. The time-series design is not a true experimental design, but one that is termed a quasi-experimental design.[4] This design attempts to approximate the conditions of a true experiment for research situations, which do not provide the opportunity for experimental control or for random selection of the subject, while at the same time maximizing the internal validity of the findings. In essence, the quasi-experimental design is only a more sophisticated version of the pre-experimental designs,[5] one

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[4] Ibid.

[5] Ibid.

shot case studies, one group pretest-posttest designs and static group comparisons, all of which are extremely weak in controlling for the sources of internal and external validity. For example, in the pre-experimental one-group pretest-posttest design only one measurement is taken immediately before and after an intervention to determine the extent to which there has been a change. Whereas, in the time-series designs suggested by Campbell and Stanley, there are a larger number of observations of both the target and comparison groups at different points in time. These designs are represented as a series of data observations ("0") across time of an outcome (dependent) variable interrupted by some form of social intervention "I", the assumed causal (independent) variable and presented in Table 3.2.

TABLE 3.2. TIME-SERIES DESIGN

One-Group Pretest-Posttest Design

O_9 I O_{10}

One Group Time-Series Design

O_7 O_8 O_9 I O_{10} O_{11} O_{12}

Multiple Time-Series Design

O_7	O_8	O_9	I	O_{10}	O_{11}	O_{12}
O_7	O_8	O_9		O_{10}	O_{11}	O_{12}

Borg and Gall used the following simple example to explain the time-series design:

> A researcher might count the mean attendance of college students at six consecutive lectures in several different courses. Suppose that the mean attendance at the first three lectures is 100, 115, 104 (out of a mean total enrollment of 175 students). Between the third and fourth classes, all enrolled students are informed that the professor will conduct a question-and-answer session instead of giving a lecture. The attendance at the fourth class session subsequently increases to a mean of 160 students. For the fiftn and sixth class sessions the professor again gives lectures and the attendance falls back to a mean of 112 and 107 students, respectively. These hypothetical results suggest quite strongly that the use of question-and-answer sessions leads to an increased student attendance.[6]

In addition to what has already been stated as to why the time-series design was selected for this study, three practical administrative advantages were also prominent in its selection. First, data (Uniform Crime Reports) existed within each of the special police unit research jurisdictions, making it possible to collect pre and post intervention information. Second, the collection of the Uniform Crime Reports is an established, ongoing effort for the research jurisdictions and did not require special procedures for research jurisdiction personnel to make it available to the researcher/evaluator.[7] And last, the two special police

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[6] Walter R. Borg and Meredith D. Gall, Educational Research (Second Edition; New York: David McKay Company, Inc., 1971), p. 395.

[7] See Data Sources in this chapter for further discussion.

unit projects that were selected for evaluation had each been funded for more than a year, which meant that more than one post-intervention data point (observation) would be available for study.

Along with the three practical administrative advantages that were prominent in the selection of the time-series design for this study, a major methodological advantage also influenced its selection. This was the design's ability to control for the sources of invalidity. Table 3.3 presents a summary of Campbell and Stanley's discussion of the ability of the time-series design to deal with the problems of internal validity.[8]

From an examination of Table 3.3 it is apparent that the quasi-experimental design represents an improvement over the pre-experimental one group pretest-posttest design, and in fact, the time-series designs do a very good job of approximating the control characteristics of the true experimental design.

One particularly important characteristic for which the time-series design was selected for this study, was its ability to deal with the problems of data "instability". Data instability as defined by Campbell means, "unreliability

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[8] In this study, the primary concern is the issue of internal validity. Are the changes in the dependent variable attributed to the assumed causal variable, rather than some other factor? For this reason the concept of external validity - which refers to the generalizability or transferability of the finding beyond the confines of a particular study - has not been addressed.

TABLE 3.3. SOURCES OF INSTABILITY FOR SELECTED RESEARCH DESIGNS[9]

		Internal							
	Instability	History	Maturation	Testing	Instrumentation	Regression	Selection	Mortality	Interaction of Selection and Maturation, etc.
Pre-Experimental Design:									
One Group Pretest-Posttest Design 0 X 0	-	-	-	-	-	?	+	+	-
True Experimental Design:									
Pretest-Posttest Control Group Design R 0 X 0 R 0 X 0	-	+	+	+	+	+	+	+	+
Solomon Four-Group Design R 0 X 0 R 0 0 R X 0 R 0	-	+	+	+	+	+	+	+	+
Posttest-Only Control Group Design R X 0 R 0	-	+	+	+	+	+	+	+	+
Quasi-Experimental Design:									
One Group - Group Time Series Design 0 0 0 0 X 0 0 0 0	+	-	+	+	?	+	+	+	+
Multiple Group Time Series Design 0 0 0 0 X 0 0 0 0 0 0 0 0 X 0 0 0 0	+	+	+	+	+	+	+	+	+

[9] Modified from, Donald T. Campbell and Julian C. Stanley, Experimental and Quasi-Experimental Designs for Research, Chicago: Rand McNally and Co., 1963), p. 5.

Note: In the chart, a Minus (-) indicates a definite weakness, a plus (+) indicates that the factor is controlled; a question mark indicates a possible source of concern; and a blank indicates that the factor is not relevant. See Appendix C for a definition of the nine sources of instability identified by Campbell and Stanley.

of measures, fluctuations in sampling persons or components, autonomous instability of repeated or 'equivalent' measures."[10] In general terms, instability refers to the fact that all time-series data are unstable (fluctuate from time to time, even when no planned interventions are involved. These fluctuations may be classified into four main types and one or more of them may be present in the same series of data observations. The four main types of fluctuations are:

1. long term movements - which indicate the general direction the series is going over an extended period of time;

2. cyclical movements - which indicate repeated oscillations about the general trend line;

3. seasonal movements - which indicate identical or almost identical patterns which a time-series appears to follow during corresponding months of successive years;

4. irregular or random movements - which indicate sporadic motions of a time-series due to chance events.[11]

In reality it is the factor of data instability which limits the value of the pretest-posttest designs where there is only one pre- and one post-intervention data point, because such designs cannot eliminate the possibility of normal fluctuations in the data series as the probable cause of any observed changes in the dependent variable. Time-series though,

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[10]Donald T. Campbell, "Reforms as Experiments," Evaluating Action Programs, Carol H. Weiss, Ed. (Boston: Allyn and Bacon, Inc., 1972), p. 190.

[11]Scarvia B. Anderson, Samuel Ball, Richard T. Murphy and Assoc. Encyclopedia of Educational Evaluation. (San Francisco: Jossey-Bass Publishers, 1975), p. 436-39.

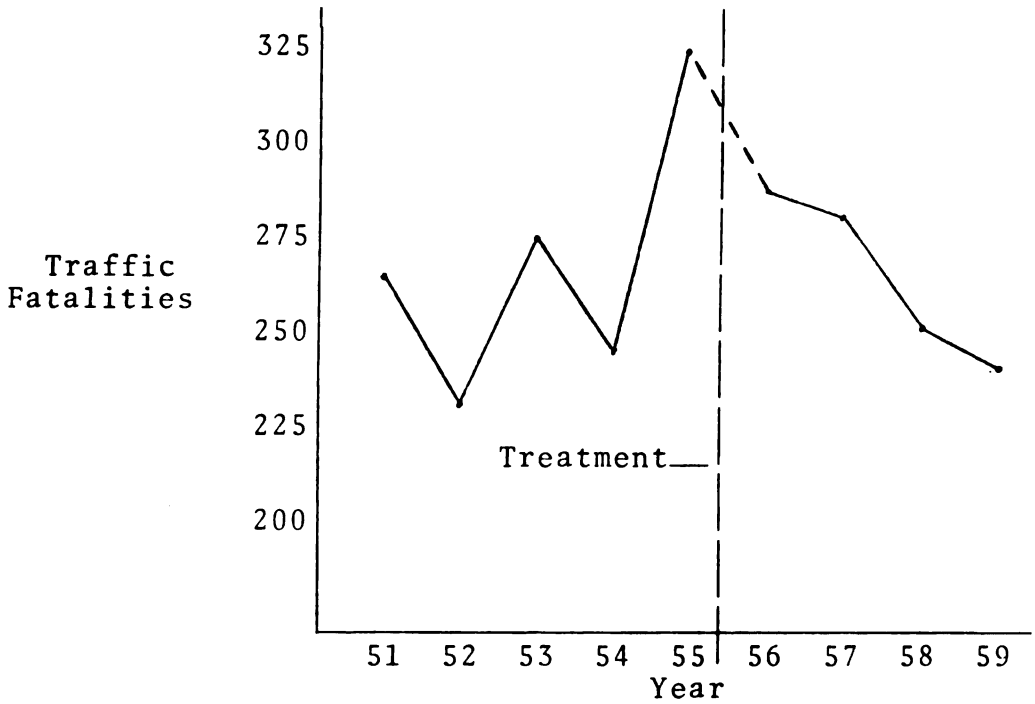
controls for the problem of data instability by extending the number of time points, which make it possible to identify and if necessary eliminate other patterns of movement in the data series.

Table 3.4 presents an example of Campbell's time-series analysis of a crackdown on speeding in Connecticut which was initiated as a response to an unusually large number of traffic fatalities in 1955. If one only examines the decrease in the number of fatalities between 1955 and 1956, it appears as though the crackdown was successful. Looking at the extended time-series, however, raises some doubts about this interpretation. The cyclical pattern of pre-intervention fatalities could indicate that the 1956 decrease was merely a continuation of a well-established pattern. The constant downward trend of post-intervention fatalities does provide some support for believing that the speeding crackdown did contribute to the decrease in traffic fatalities. It is obvious then that the number of data points available for the analysis make a substantial difference in evaluating the effects of the intervention.

Limitations of Study Design

Referring back to Table 3.3, one can see that the quasi-experimental designs are an improvement over the pre-experimental designs since they come the closest to the true experimental designs in controlling against the problem of internal validity. However, the most definite weakness of the time-series design

TABLE 3.4. TIME-SERIES OF CONNECTICUT TRAFFIC FATALITIES[12]



is its failure to control for history and instrumentation. History is defined by Campbell and Stanley as "specific events occurring between the first and second measurement in addition to the experimental variable."[13] That is, this design does not control for the possibility that some event unrelated to the intervention is responsible for observed changes in the dependent variable. In this study the potential for historical invalidity is very high, because the research was conducted on a complex problem in a multi-faceted social system. Under these

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[12]Donald T. Campbell, "Reforms as Experiments", Evaluating Action Programs, Carol H. Weiss, editor (Boston: Allyn and Bacon, Inc., 1972), p. 201.

[13]Donald T. Campbell and Julian C. Stanley, Experimental and Quasi-Experimental Designs for Research. (Chicago: Rand McNally and Co., 1963), p. 5.

conditions it is very difficult to sort out the effect of one intervention from the effects of other interventions. For example, over time there may be a variety of factors that could produce changes in the occurrence and reporting of crimes. The police may change their enforcement policy for a particular crime and such a change could obviously produce changes in crime statistics. Or, general economic conditions such as unemployment or inflation could change, thereby producing changes in the number of individuals committing crimes or the value of property involved. In a similar manner, changes in the characteristics in the local population could produce changes in the occurrence and reporting of criminal acts.

In general, historical factors are beyond the control of researchers and beyond even those who are directly responsible for implementation of social interventions. Thus, in many cases all that a researcher can do is to attempt to learn all that he can about rival events or conditions that might cause a change in the dependent variable and attempt to make informed judgments concerning the likelihood that they produce the observed effects.

Instrumentation is the other possible source of invalidity which is not sufficiently controlled for in the time-series design. This type of error can occur if there is a drastic "change in the methods of observing the outcome variable".[14]

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[14]Ibid., p. 59.

Campbell and Stanley give the following example of instrumentation:

> The term refers to autonomous changes in the measuring instrument which might account for an O_1-O_2 difference. These changes would be analogous to the stretching or fatiguing of spring scales, condensation in a cloud chamber, etc. Where human observers are used to provide O_1-O_2, processes of learning, fatiguing, etc., within the observers will produce O_1-O_2 differences. If essays are being graded, the grading standards may shift between O_1-O_2 (suggesting the control technique of shuffling the O_1-O_2 essays together and having them graded without knowledge of which came first).[15]

The reason for the question mark under instrumentation in Table 3.3 is that it calls attention to possible instances where the measurement instrument could possibly be misinterpreted as the effect (change) of the intervention variable. For this study, the issue of instrumentation would be particularly important if there were major changes in the record-keeping procedures for crime statistics during the course of the special police unit project. However, the best estimate is that this problem does not exist: 1) at the national level, the last major change in the proscribed procedures for reporting crime statistics under the Uniform Crime Reporting system was 1958.[16] This predates the initiation of any special police unit project by over 20 years and is obviously not likely to influence the statistics in this study; 2) at the state level, major changes in UCR procedures were instituted between 1970

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[15] Ibid., p. 59

[16] Federal Bureau of Investigation, U. S. Department of Justice, Uniform Crime Report, 1958, Special Issue. (Washington, D.C.: U. S. Government Printing Office, 1958).

and 1971, but the statistics available for this study all came from the period after the changes were made; and 3) at the local level attempts were made to check on all project jurisdictions, and to the best estimate possible none of them have made any changes in their reporting procedures since the initiation of the special police unit projects.

Finally, one additional source of invalidity must be mentioned as a limitation to this study design, that is, change in experimental unit composition. Although this problem was not specifically identified by Campbell and Stanley in their original work (it is related to the issues of selection and experimental mortality) it is important in terms of evaluating social interventions. Glass defines the problem as:

> When the experimental unit comprises a number of individuals (persons, geographical units, etc.) the composition of this group may change across time. The loss of several individuals from the experimental unit immediately before the intervention could cause the time-series to change its course abruptly, even though under other circumstances the intervention would have not altered the series. Incorrectly attributing a change in the series to an intervention when in fact the change is due to the loss or gain of subjects between time points n_1 and $n_2 \pm 1$ is invalidation due to change in experimental unit composition.[17]

In this study the potential for this issue does exist, since the data base consists of city and county population, which could change during the time these special police unit

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[17]Gene V. Glass, Victor L. Wilson and John Gottman. Design and Analysis of Time-Series Experiments. (Boulder, Colorado: Associated University Press, 1975), p. 62.

projects were in operation. However, the demographic trends have been analyzed and there is no reason to conclude there have been any significant changes in the research jurisdictions for the time period used in the evaluation.

Data Sources

The data which is used in the analysis for this study comes from both monthly and annual level state uniform crime reports for the years 1971 through 1976. In Michigan crime data is collected monthly[18] from every law enforcement jurisdiction, which is provided the standardized reporting forms[19] by the Michigan Department of State Police. The Department of State Police then tabulates the crime information collected into crime rates and trends, etc. for presentation in quarterly preliminary and annual published reports.[20] Though these

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[18]On July 3, 1968 every law enforcement agency in the State of Michigan was required to report certain criminal information to the Michigan Department of State Police as authorized by Act 319, Public Act of 1968: The Michigan Uniform Crime Reporting Act. In essence this act mandated law enforcement agencies in the state to report the same type of information that is requested by the Federal Bureau of Investigation for its annual published Uniform Crime Report.

[19]For a detailed description of the Michigan Department of State Police crime reporting procedure, see: Uniform Crime Reporting Handbook (East Lansing, Michigan: Department of State Police, 1974).

[20]The Department of State Police publishes for the State of Michigan both quarterly and annual reports known as the Michigan Uniform Crime Report. Nationally, the Federal Bureau of Investigation publishes, Crime in the United States, a composite of reported crime, as reported by 95% of the law enforcement agencies in the U. S. The information that Michigan reports for the state is then forwarded to the Federal Bureau of Investigation.

reports were available they did not provide information specific enough for this study. The design required the use of both annual and monthly level jurisdiction specific data for the offenses of burglary, robbery and larceny including information concerning arrests, clearances and court dispositions. The formally published reports contained some but not all of this data at the annual level but no jurisdiction specific monthly statistics.

Since the published reports were unable to provide the necessary information for the annual level data, computer printouts, from which the published reports are compiled, were obtained from the Michigan Department of State Police for each of the jurisdictions included in the evaluation. However, only five years (1971-1975) of annual level reports were obtained, since printouts later than 1971 were no longer retained. Even though this was a limited number of observation points, it was felt that the multiple group time-series analysis, using pre-post intervention trends, could be explored concerning the effect of special police units. The necessary information was then extracted from these printouts and processed to create annual level Uniform Crime Report data files which were project specific for the multiple-group analysis.

For the monthly level data, a different data collection procedure was involved. Since monthly published reports did not exist, due to the large amount of crime data collected each

month from every reporting jurisdiction in the State, and computer printouts were not retained by either the individual jurisdictions or the Michigan Department of State Police, due to storage problems, copies of Uniform Crime Report data tapes for the years 1972-1976 were obtained from the state UCR data center. Each of these tapes contained all of the UCR statistics for all of the law enforcement jurisdictions in the state-approximately 690 jurisdictions.[21] However, these original tapes had to be processed to produce tapes that were compatible with the Michigan State University Control Data Corporation 6500 computer, containing only the monthly level statistics for each of the crimes, for each specific special police unit jurisdiction in the evaluation. These monthly level data files provided the input for the Correl and TSX time-series programs described in Chapter 4.

Limitations of Data Sources

Despite the fact that the Uniform Crime Reports provide the only state and national view of crime data collected from law enforcement agencies in the United States, they have still been the focal point of a great deal of criticism. Much of this criticism is due in part because the Uniform Crime Reports are quoted as the Index of Crime (official summary of crime) by politicians, the public and the media. This has led to misuse and misrepresentation. The most frequent criticisms

[21]The data tapes were obtained from the State Police in September 1976 and as a result only eight months of data for 1976 (January-August) exists.

generally attack the UCR on its structural integrity. There are arguments that: "The system can never measure the real crime rate, since it only counts those offenses known to the police,"[22] and that the statistics "fail to consider that the crime among the most crime-prone age group has increased disproportionately (standardization by age and sex is perhaps necessary for any index); joyriding does not belong in the serious crime category (nine out of ten "stolen" cars are returned to their owners); and, that the definition of grand larceny as 'theft of more than $50.00' is not in keeping with the great increase in prosperity."[23]

The criticisms emphasize that the Uniform Crime Reports do not take into account the volume of crime which is committed but not reported to the police[24] and as a result there is a "lack of any constant ratio in the UCR . . . between the known quantity (i.e., offenses known to the police) and the unknown 'universe', (i.e., the total number of offenses actually

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[22]U. S. Department of Justice, Crime in the United States: Uniform Crime Report, 1971, (Washington, D. C.: U. S. Government Printing Office, 1971), p. 5.

[23]Criminal Statistics, National Institute of Mental Health, (Washington, D. C.: U. S. Government Printing Office, 1973), p. 13.

[24]The questioning of police statistics has not begun with the UCR, for in 1897, a British commentator noted, "It would be a mistake to suppose that the number of crimes known to the police is a complete index of the total yearly volume of crime. The actual number of offenses annually committed is always in excess of the number of officially recorded crimes." LX Journal of the Royal Statistical Society, 1, 4 (1897), cited in Albert Biderman and Albert J. Reiss, "On Exploring the 'Dark Figure' of Crime." The Annals, Vol, 374 (1967), p. 1.

committed), including the unreported crimes."[25] Without this ratio, it is difficult to determine when an increase or decrease is reported and if it is reported, whether it is the result of the number of crimes committed or a change in the number of crimes reported. For example, even though the actual number of robberies is the same, the UCR may indicate a robbery decrease simply because fewer victims reported them.[26]

Closely akin to the misuse and misrepresentation issues is the emotionalism issue surrounding the crime problem, which has resulted in manipulation and the distortion of the crime data. For example, it has been charged that the FBI generates the maximum amount of terror from the crime reports by publishing only the upward side of the crime charts, claiming that there are record all-time highs in crime. The use of crime clocks are another example, for every year they depict a shorter time period between the commission of crimes without correcting for the large growths in population.

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[25]Lawrence J. Center and Thomas G. Smith, "Crime Statistics - Can they be Trusted?", American Criminal Law Review, Vol. II, No. 4, (1973), p. 1052.

[26]In a nationwide victimization survey, conducted by the National Opinion Research Center of the University of Chicago, for the Presidents Commission on Law Enforcement and the Administration of Justice, it was found that victims who did not report offenses to the police did so for a variety of reasons. Many felt it was a private matter, or did not want harm to come to the offender (50% of aggravated assault victims and 30% of burglary victims gave these answers). Other victims did not want to take the time to report the accident (9% of the robbery victims and 7% of the larceny victims gave this answer. Some were just too confused by the incident or didn't know what to do to report it (18% of the robbery victims and 8% of the aggravated assault victims gave this answer). Most significantly, the survey found that the reason

In addition to these described misuses, misinterpretations and manipulations, concern has been expressed regarding the reliability and comparability across time and jurisdictions. Administrative changes within a particular police jurisdiction concerning the compilation of crime statistics from year to year may create "paper" fluctuations in that jurisdiction's crime rate, compounding interpretation of the crime data. Sigi and Wellford found that UCR crime rates have varied directly with the number of civilian employees preparing and recording the data.[27] Additionally researchers have found slight changes from year to year in classification guidelines and practices,[28] and variations within jurisdictions on the amount of discretion a "beat patrolman" has in recording crime.[29] These are all recognized as factors which play a

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most often given for not reporting a crime was that the police would not be effective or would not want to be bothered by the crime (63% for burglary, 62% for larceny, 60% for auto theft, and 45% for robbery). The President's Commission on Law Enforcement and the Administration of Justice, Task Force Report: Crime and Its Impact - An Assessment, (1967), p. 17-18.

[27]Sigi and Wellford, "Age Composition and Patterns of Change in Criminal Statistics", Journal of Criminal Law and Criminology, Vol. 59 (1968), p. 29, 33.

[28]Report of the President's Commission in the District of Columbia (1966) p. 67, quoted in Task Force Report: Crime and Its Impact - An Assessment, (1967), p. 24.

[29]Where police commands reduce the discretion of the on-the-beat patrolman as to where to file a report on a citizen complaint, and where they require a patrolman to file reports on all criminal complaints, the crime rate is bound to rise. In Chicago for example, Police Chief O. W. Wilson instituted a full reporting system and the Chicago crime statistics for larceny rose from about 10,000 yearly reports to 30,000;

large part in exposing or hiding more of the 'dark figure' of crime within the jurisdiction. In short, the practices and procedures of the police crime recorder determine, to a great extent, the validity of the first UCR statistics.[30]

There are, however, despite these inherent inadequacies and criticisms of the UCR, reasons to believe that these problems are not likely to be significant sources of invalidity for this study. The first has to do with known changes in the reporting procedures. At the national level the last major change in the prescribed procedures for reporting crime statistics under the Uniform Crime Reporting System was in 1958. This predates the initiation of any special police unit project site by over twenty years, and is not likely to influence the statistics used in this study. At the state level, the last major changes in UCR procedures were instituted between 1970 and 1971, but the statistics available for this study all came from the period after the changes were instituted. At the local level, attempts were made to check on all project jurisdictions and to the best estimate possible none of them had made any formal changes in their reporting procedures since the initiation of the special police unit projects.

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reported auto thefts rose from 7,000 to 23,000 in one year. As one commentator said, "the actual number of thefts didn't increase, just the number of reports. The same volume of crime was there; it just wasn't being counted before." Morrissey, "Nixon Anti-Crime Plan Undermines Crime Seats". Justice, Vol. 1 (June-July, 1972), p. 10.

[30]Lawrence J. Center and Thomas G. Smith, "Crime Statistics - Can They be Trusted?", American Criminal Law Review, Vol. II, No. 4 (1973), p. 1054.

Second, it seems unlikely that self-initiated changes in record keeping procedures would have significantly influenced the UCR statistics used in this study. There is no question that self-initiated changes in record keeping can and do take place in order to achieve results that are consistent with such interventions as special police units. This type of development is particularly common when the data collection procedures are under the direct control of individuals who have a strong vested interest in the apparent success or failure of the project. The crime statistics used in this study, however, are department-wide figures and their collection and processing were never under direct control of individuals who were members of the special units. In addition, since the special police units were fairly small, and dealt with a relatively small number of crimes and criminals, and were generally viewed as temporary "add on" to the department, it seems doubtful that even administrators would have changed department-wide statistics just to make the special units look good. Since this particular evaluation design using UCR data in a time-series design was not developed until most projects had been in operation for numerous months, it is doubtful that anyone would have intentionally manipulated UCR statistics to give the appearance of successful projects.

Finally, despite inherent inadequacies and limitations, UCR statistics still remain the best generally available data sources on crimes and police activities throughout the United States. As the UCR states:

> It is believed desirable to point out that there is no way of determining the total number of crimes which are committed. Many criminal acts occur which are not reported to official sources. Estimates as to the level of unreported crime can be developed through costly victim surveys, but this, of course, does not remedy the reluctance of victims and/or other members of society to report all crimes to law enforcement agencies.
>
> In light of this situation, the best source of obtaining a count of crime is the next logical universe, namely, crimes which come to police attention.[31]

This is especially significant when considering the utilization of the UCR in this study to measure the effectiveness[32] of proactive specialized police units. No attempt is made to claim that the UCR is a measure of the nation's or its cities' criminality. The focus of the UCR for this study is the number of offenses processed and the relationship between crimes reported and offenses cleared by arrest. It is through these reported crimes that the UCR is being used so that references may be made as to the effectiveness (productivity) or changes in effectiveness (productivity) in the research jurisdictions.

Research Question and Hypotheses

As previously stated the establishment of the proactive specialized police unit was intended to achieve a reduction

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[31]U. S. Department of Justice, Crime in the United States: Uniform Crime Report, (1970), p. 5.

[32]Wesley G. Skogan, Efficiency and Effectiveness in Big-City Police Departments," Public Administration Review, (May/June, 1976), and Lawrence J. Center and Thomas G. Smith, "Crime Statistics - Can They be Trusted?", American Criminal Law Review, Vol. II, No. 4 (1973), p. 1063.

in crime and criminal activity by improving the investigative capability of the departments in which they are located. The logic of this is that:

Improved investigative capability will:

increase the costs (risks) associated with criminal activity by,

increasing the probability of apprehension or the probability of conviction once apprehended,

which will remove individuals from circulation (through arrest and detention) or deter individuals from committing crimes.

Depsite this ultimate focus on crime reduction, emphasis has also been given to performance criteria for these special units. Eight of the nine special unit evaluation factors, in the 1976 Michigan Comprehensive Law Enforcement and Criminal Justice Plan, were performance criteria:

1) Method used to determine current and expected crime targets.

2) Process used to determine tactical strategy and targets.

3) Method used to select supervisory and patrol personnel.

4) Specialized training programs.

5) Organizational and procedural manual for the operation of the unit.

6) Method used to determine the resource allocation of each investigation and the use of that information.

7) Method used to provide the community with information about the unit.

8) Method used to compile arrest and conviction record.

What these performance evaluation criteria are emphasizing is the need to determine, in a normative sense, how well these units have performed, which is then translated to the ultimate effects of crime reduction. However, when these criteria are examined in view of the impact model (Table 3.1) it is apparent that the intermediate effects (linkages) have been overlooked as criteria for performance evaluation. Recognizing the absence of the intermediate effect, this study is concerned with determining if there is any indication that these units (special police units) improved the investigative capabilities of departments to which they were attached.

From this logic, a general research question will be generated that will lead to a further examination of performance (productivity) by analyzing the effects proactive specialized police units have on the crimes of burglary, robbery and larceny.

Research Question

> Do special police units improve investigative capabilities of departments in which they are located?

From this research question, as well as information presented in previous discussions the following hypotheses are advanced:

Hypotheses

H_1: There will be significant differences in offense clearance rates, for the crimes of burglary, robbery and larceny, in the research jurisdictions between the pre/post intervention periods.

H_2: There will be significant differences in offense-founded conviction rates, for the crimes of burglary, robbery and larceny in the research jurisdictions between the pre/post intervention periods.

H_3: There will be significant differences in offense-charged conviction rates, for the crimes of burglary, robbery and larceny in the research jursidictions between the pre/post intervention periods.

Description of Study Variables

Dependent Variables - The dependent variables in this study have been selected to reflect the kinds of measures for which information is generally available and traditionally utilized in evaluating the performance of police departments. Specifically they are: offense clearance rates, offense-charged conviction rates, and offense-founded conviction rates.[33]

Independent Variables - The independent variable in this study was the introduction of the proactive specialized police unit (Metro Crime Unit and Surveillance Unit) into the police department of the research site.[34]

Research Site Selection

As was previously stated, this study is a subset of a broader evaluation project, which was designed to evaluate twenty-two specialized police unit projects. Six of these

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[33]See Appendix A, Definition of Terms.

[34]Ibid.

[35]The descriptions of the research sites were taken from the official records of the Michigan Office of Criminal Justice Programs, the funding agency. This information included project proposals, quarterly and annual reports, as well as official correspondence between project personnel and the funding source.

twenty-two specialized police units were selected for intensive evaluation, and it is from these six that two research sites were selected for this study.[36] The primary criteria for their selection was the completeness of the data available and the degree of cooperation received from the agencies in which the units were located.

The following descriptions of the two special police units used in the study are designed to describe the general characteristics of the units and the environments in which they operated. It should be pointed out that this is a methodological study of the effectiveness of the concept of proactive specialized police units. As such, specific sites only provide the vehicle for obtaining crime statistics and experimenting with the concept of proactive specialized police units. No attempt is made to compare sites (cities) with one another, for the focus of this study is the concept of the proactive specialized police unit.

Site A - County-Wide Metro Crime Unit - The County-Wide Metro Crime Unit operates on a county-wide basis in the southwestern part of the State of Michigan. It was created to address: 1) the lack of coordination in the investigation of crimes affecting more than one law enforcement jurisdiction, and 2) the lack of personnel to adequately cope with criminal activity on an inter-jurisdictional basis.

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[36]See Appendix E, for a discussion of site selection in the broader evaluation study.

Nine county-wide police agencies were selected to participate in this inter-jurisdictional unit, which was to have an investigative strength of 16 persons plus a unit commander. The unit members were selected by their respective jurisdictions and then approved by the unit commander.

To coordinate the unit with other county governmental agencies, a county police services council was formed, which was composed of chiefs of police of county police departments, a county sheriff and a representative of the Michigan State Police. In addition to coordinating the unit's operations, the council determined policy, priorities and operational objectives through the unit commander, who was directly responsible to the council. It was under this administrative structure, that the council determined that the unit's primary goal was to reduce violent personal and property crimes occurring within the county. Specifically the unit was to concentrate on robbery, larceny, burglary, and auto theft.

Operationally the unit was located in a "store front" location, totally independent from local area police agencies. It was divided into two groups, one concentrating on active crime prevention, employing such techniques as saturation patrol, and decoys, while the other concentrated on crime investigation, using overt and covert surveillance techniques.

Site B - Investigations Coordination Unit - The Investigations Coordination Unit operates with a large single city jurisdiction located in central Michigan. Utilizing

on-uniform proactive undercover surveillance techniques in its operation, the unit's goals included: increase the detection of crimes in progress, increase apprehensions, reduce criminal acts in high crime areas, increase public awareness and encourage cooperation and participation between the public, other law enforcement agencies, and the unit.

The unit was located in the local police department and administratively attached to the Field Services Bureau and was supervised by the commander of the Detective Bureau. Operationally the unit was composed of eight patrol officers and two detectives. These personnel were divided into two operational teams of four officers each and directed by a detective to carry the gathering of criminal intelligence data and suspect-oriented surveillance activities (primary crimes of burglary, robbery, larceny, murder, rape and auto theft). Given the nature of the unit's operation, arrests were only made by unit personnel and only when absolutely necessary. Otherwise the uniformed patrol-members were summoned by the unit personnel.

In addition to the tactical operations, the unit maintained a crime analysis function, collating information for department-wide investigations, determining high crime areas for personnel deployment, and developing detailed profiles of criminals, victims, and premises within the city.

Summary

This study examines the effectiveness of specialized police units on the investigative function in departments in

which they are located. To investigate this question, two research sites were selected. The quasi-experimental design, Time-Series, was employed to analyze the research sites on measures of effectiveness-crime rates.

This study is a subset of a broader evaluation project, which was designed to evaluate twenty-two specialized police unit projects. Six of these twenty-two specialized police units were selected for intensive evaluation, and it is from these six that two research sites were selected for this study. The primary criteria for their selection was the completeness of the data available and the degree of cooperation received from the agencies in which the units were located.

In Chapter IV, the results of the analysis will be presented, each operational hypothesis will be restated, and the significant findings will be discussed.

CHAPTER IV

ANALYSIS OF THE DATA

In this chapter, an analysis of special unit effects - do special police units improve investigative capabilities of departments in which they are located - is presented for each of the three hypotheses. All three of the hypotheses are examined using a multiple-group time-series design and annual level data. In addition, the hypothesis concerning clearance rates is examined using a more sophisticated statistical time-series model and monthly level Uniform Crime Report data. In using these two designs, the general analytical strategy employed is two-phased. In the first phase of the time-series analysis, a multiple-group design is employed through which an attempt is made to establish the existence of both pre- and post-intervention trends in investigative productivity. This analysis uses Uniform Crime Report data from each of the research jurisdictions as well as comparison statistics, based upon a sample of non-special police unit jurisdictions.[1] The advantage of the multi-group design is that it allows the comparison

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[1] In Chapter III, there was no discussion of the establishment of a non-spu group, however, it became apparent after the design was established that a comparison group was necessary in order to establish a state-wide crime trend. These

of a number of jurisdictions simultaneously, providing some control for the possibility that extraneous events, (i.e., historical invalidity), may have caused changes in the dependent variable.

In the second phase of the time-series design, monthly level crime statistics are used in a one-group time-series analysis. The objective of this statistical analysis is to extract the effects of other possible causal factors from the effects of the intervention in order to determine whether the introduction of special police units increased, decreased, or did not affect departmental productivity.

In phase one, the technique that is employed in the analysis of the annual level data, is to examine the data for each of the measures (hypotheses) in order to identify pre- and post-intervention changes in the effectiveness (productivity), and on-going post-intervention patterns (trends) in each of the research jurisdictions. By examining annual level data in this manner, one should be able to get a "feel" for the effectiveness, these special police units had on the investigative capabilities of the departments in regard to the crimes of burglary, robbery, and larceny.

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comparison statistics were developed from a sample of non-special police unit jurisdictions in the following manner. First, every sixth city was selected from the 1973 Federal Bureau of Investigation Uniform Crime Report listing of Michigan cities over and under 25,000 residents. This resulted in a total sample of 69 reporting jurisdictions. However, this sample was reduced when actual data collection efforts were attempted. It was discovered that data could only consistently be obtained for 21 jurisdictions, for the years 1971-1975. See Appendix F, for a list of the Non-Special Police Unit Jurisdictions.

Before looking at the annual level data, several additional points should be made. First, there needs to be a description of the specific variables used to measure productivity. For this study, three hypotheses (measures) were developed in an attempt to assess the effectiveness (productivity) of the flow or quality of cases through the criminal justice process in the research jurisdictions. Hypothesis One states: There will be significant differences in Offense-Clearance Rates, for the crimes of robbery, burglary, and larceny in the research jurisdictions between the pre/post intervention periods. This hypothesis was developed as a measure of how well the police are doing in making arrests on founded (actual) offenses in terms of the number of crimes committed. In other words, How well do they deal with input to the department? To establish the offense-clearance rate, the number of crimes cleared (arrests) in a given year were divided by the number of founded (actual) crimes in the same year.[2] This method of dividing crimes cleared (arrests) by founded (actual) crimes in the same year was used because this has been the traditional measure of assessing program performance. In addition, the best available information indicates that clearances tend to take place in the same year that the crimes are reported.[3]

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[2] See Appendix G for a listing of the Annual Level Uniform Crime Report statistics for each of the research jurisdictions.

[3] See Peter W. Greenwood, et. al., The Criminal Investigative Process, Volume III: Observations and Analysis, Santa Monica, California: Rand Corporation, 1975, p. ix.

The second hypothesis is concerned with Offense-Founded Conviction Rates. That is, "There will be significant differences in Offense-Founded Conviction Rates for the crimes of robbery, burglary, and larceny in the research jurisdictions between the pre/post intervention periods." For this hypothesis, the productivity measure is an offense-founded conviction rate. This hypothesis was developed as a measure of how well the police are doing in getting convictions for the cases they recognize as actual crimes. Such a measure is important because the police control the number of cases claimed as cleared. As a result it is possible for a department to develop an artificially high clearance rate. This offense-founded measure provides some control against this possibility by determining the relationship of founded crimes to convictions. It is also a measure of how well the police do with input, in terms of founded cases. This measure was developed by dividing the number of individuals found guilty of the specified offense in a given year by the total number of actual offenses in the previous year, thereby establishing a "lag". For example, in Table 4.1, are the actual numbers for each of the categories for the years 1972-1976. By dividing 8 (in year 1973) by 105 (in year 1972), equaling .08, the Robbery Offense-Founded Conviction Rate is created with the "lag" function. The rationale for developing this lag is that it is unrealistic to think that persons charged for a crime are also going to be adjudicated for that crime in the same year. Therefore, there is a spill-over of persons from the

previous year in which they were charged. As a result, the rationale for establishing a "lag" provides a more realistic approach to assessing research jurisdiction effectiveness in the flow of obtaining convictions for founded convictions.

TABLE 4.1. EXAMPLE OF 'LAG' FUNCTION FOR SITE A - ROBBERY-OFFENSE FOUNDED CONVICTION RATES

	1972	1973	1974	1975	1976
Total Persons Charged Guilty	--	8	4	10	8
Total Number of Actual Offenses	105	107	106	98	--
Robbery-Founded Conviction Rate	.08	.04	.09	.08	--

The third hypothesis or measure is concerned with Offense-Charged Conviction Rates. That is, "There will be significant differences in Offense-Charged Conviction Rates for each of the crimes of robbery, burglary, and larceny in each research jurisdiction between the pre/post intervention periods." This hypothesis was developed to determine how well the police are doing in getting convictions for charged cases.[4] To calculate the

[4] In the formulation of this hypothesis an attempt was made to develop a "quality of arrest" measure by dividing Total Persons Charged by Arrest Grant Total. However, when this was attempted, it became apparent that Arrest Grand Total and Total Persons Charged were either the same figure or were very close. (See Appendix G). Therefore this measure (Offense-Charged Conviction Rate) is the best that could be devised. The reader also has to recognize that this measure is vulnerable to the quality of the performance of the process.

Offense-Charged Conviction Rate for each of the crimes, the number of convictions (guilty) were divided by the number (total persons) charged not in the same year, but with a "lag", like the one discussed previously, only using the number of convictions (guilty) as the numerator. By using "guiltys" one can ascertain the highest level of success that can be associated with the disposition of a case, thereby further establishing the flow or quality of cases processed through the research jurisdictions.

The rationale for developing this "lag" is the same as that described above. It is unrealistic to think that persons charged for a crime are going to be adjudicated in the same year in which the crime occurred. At best, those persons arrested and charged for a crime, have six months, from the time of the arrest to be convicted in the same year, that is if the court dockets are operating smoothly. In reality it may be that there is even more than a six month lag, and as a result the necessity for approximating reality, with the "lag" convention.

Secondly the actual date of project funding as well as the selection of an intervention point presented some difficulties. As for the project funding date, there was difficulty in identifying complete years as to the pre/post intervention point. Given that most projects require some start-up time and usually go through a phasing out process, it is likely that projects funded in the middle of the year would have minimum

opportunity to affect annual level crime statistics in both their initial and closing years. Thus it appeared necessary to provide some period of time, in the analysis, to account for the period in which these projects were becoming operational.

Phase One - Annual Level Analysis

The data is presented in Tables 4.2, 4.3 and 4.4 for the hypothesis that there will be differences in Offense-Clearance Rates, between the pre/post intervention periods.

TABLE 4.2. ROBBERY-CLEARANCE RATES

	1972	1973	1974	1975	1976	% CHANGE PRE/POST[5]
Site A[6]	.31	.16	.31*	20*	.12*	.94
Site B	.33	.49*	.57*	48*	.75	.49
Non-SPU	.32	.29	.30	.34	.31	--

* Indicates the years the special police units were funded, in each of the research jurisdictions.

[5] To establish a percent change, pre/post, the post-intervention value (.31) was subtracted from the pre-intervention (.16) value and then divided by the post-intervention number (31), resulting in the percent change of .94.

[6] In the broader evaluation study, a questionnaire was administered, in which special police unit commanders and members of the authority structure at the six intensive sites were asked how long it took for the special unit to become operational. Twenty-one respondents answered three months, eleven said six months, and four said more than six months. In this study, Site A and Site B were funded April 1, 1974 and April 1, 1973 respectively. Given that the majority (twenty-one) in the broader study stated that it took three months to become operational after the grant had been formally awarded, the three month start-up period was accepted. As a result the funding years have been included as the first year in which one might expect to observe changes in the annual level statistics, due to the intervention of the special police unit in the research site.

As indicated in Table 4.2, the percentage change pre/post for Sites A and B were rather dramatic. In Site A, in 1973-1974, there was a 94% increase and for Site B, in 1972-1973, a 49% increase, in robbery clearance rates. These changes became even more impressive when the results for each of the research sites were compared to the Non-Special Police Unit (Non-SPU) sample. For the years 1972-1973 (the year Site B was initiated) there was a 10% decrease in the clearance rate for the Non-SPU sample. Thus, for Site B, the increase in effectiveness was counter to the decreased effectiveness of the Non-SPU sample. For the years 1973-1974 (the year Site A was initiated), there was a 03% increase in the clearance rate in the Non-SPU sample. This increase in effectiveness was in the direction of the change in effectiveness of Site A, but at a rate that was not nearly as great.

These results appear to indicate the possibility that special units were having a positive effect (increasing) on the productivity of the funded jurisdictions. However, when the post-intervention data series is viewed, only Site B seems to reveal a steady trend (pattern) toward increased robbery clearances. It should also be noted that this increase in effectiveness went beyond the actual funding period. For the Non-SPU sample, there seems to be little variation at all in the data series; for at no time point in the five-year period, does the clearance rate increase or decrease 05%, and certainly there is no indication of a consistent increase in productivity. Thus for Site B, there seems to be some evidence that the initiation

of the special police unit may have had an effect on robbery clearance rates. Site A, on the other hand, appears at best to have a decreasing pattern and thus there is no indication that the unit had an overall (positive) effect on cleared robberies.

TABLE 4.3. BURGLARY-CLEARANCE RATES

	1972	1973	1974	1975	1976	% CHANGE PRE/POST
Site A	.14	.11	.11*	.10*	.09*	0
Site B	.19	.24*	.24*	.26*	.29	.21
Non-SPU	.13	.15	.17	.15	.17	--

* Indicates the years the Special Police Units were funded in each of the research jurisdictions.

In Table 4.3 the clearance rate data for burglary is displayed. It indicates that for Site A there was no change at the pre/post intervention point (1973-1974), while at the same time point, the Non-SPU sample demonstrated a .2% increase. Thus, Site A had a smaller change in clearances than the Non-SPU sample. Site B on the other hand experienced a 21% pre/post intervention increase in burglary clearances at the 1972-1973 intervention point. For the same period the Non-SPU sample had a 13% increase in the productivity of burglary clearances.

These results provide no support for believing that the special units had a positive effect on the research jurisdiction's productivity. This conclusion is supported by an analysis of the entire post-intervention data series. At neither site was there a strong upward trend in the clearance rate during the

post-intervention period. This is based on the fact that the year to year change for the two sites is very small and that the Non-SPU sample demonstrates the same pattern year to year.

TABLE 4.4. LARCENY-CLEARANCE RATES

	1972	1973	1974	1975	1976	% CHANGE PRE/POST
Site A	.10	.14	.16*	.15*	.13*	.13
Site B	.21	18*	.20*	.22*	.15	-.17
Non-SPU	.16	.20	.20	.19	.17	--

* Indicates the years the Special Police Units were funded in each of the research jurisdictions.

The clearance rate data for larceny is presented in Table 4.4. It indicates that for Site A there was a 13% increase at the pre/post intervention point (1973-1974), while at the same time point, the Non-SPU sample had no change. Thus, Site A had a larger increase in clearances than the comparison group. Site B on the other hand, experienced a 17% pre/post intervention decrease in larceny clearances at the 1972-1973 intervention point. In the same period the Non-SPU sample had a 20% increase in the productivity of larceny clearances.

These results provide no support for believing that the special units had a positive effect on the research jurisdiction's productivity. This conclusion is supported by an analysis of the entire post-intervention data series. At neither site is there a strong upward trend in the clearance rate during the post-intervention period. And this is based

on the fact that the year to year change for the two sites is very small and that the Non-SPU sample demonstrates a very similar pattern year to year.

Summary - In Tables 4.2, 4.3, and 4.4 clearance rates were presented for the three target crimes - burglary, robbery and larceny. Of the three crimes examined, only the data for robbery indicated that the special unit had any positive effect (increasing rate) in the effectiveness of clearances in the research jurisdictions. For burglary and larceny the results provided no support for a positive effect on clearances, as examined in this hypothesis.

The data presented in Tables 4.5, 4.6 and 4.7 is concerned with the hypothesis that there will be differences in Offense-Founded Conviction Rates, between the pre/post intervention periods.

TABLE 4.5. ROBBERY-FOUNDED CONVICTION RATES

	1972	1973	1974	1975	1976[7]	% CHANGE PRE/POST
Site A	.08	.04	.09*	.08*	--*	.55
Site B	.02	.03*	.03*	.02*	--	.33
Non-SPU	.05	.03	.05	.05	--	--

* Indicates the years the Special Police Unit was funded in each of the research jurisdictions.

[7] In the remaining tables of this hypothesis and the next, 1976 data is not available because of the use of the "lag" function previously described. In order for the 1976 data to be included, 1977 Uniform Crime Report Statistics would have to be available and that is impossible at this time.

As Table 4.5 indicates, the percentage change, pre/post for Sites A and B, was rather substantial. In Site A in 1973-1974, there was a 55% increase and for Site B in 1972-1973, a 33% increase in Robbery-Founded Conviction Rates. These changes become rather impressive when the results of the research sites are compared to the Non-SPU sample. For the years 1972-1973 (the year Site B was initiated), there was a 66% decrease in the Robbery-Founded Conviction Rates for the Non-SPU sample. Thus, for Site B, the increase in effectiveness was counter to the decreased effectiveness of the Non-SPU sample. For the years 1973-1974 (the year Site A was initiated), there was a 40% increase in the Robbery-Founded Conviction Rates in the Non-SPU sample. Thus, Site A experienced a greater increase in productivitity (55% compared to 40%) than the Non-SPU sample.

These results appear to indicate that possibly special police units were having a positive effect (increasing) on the productivity of the funded jurisdictions. However, when the entire post data series is viewed, support for the effect the special unit had is more limited. If it was expected that the special police unit was to have a continuously increasing effect on the robbery conviction rate, a review of Table 4.5 would indicate that this is not the case. For at Sites A and B, the post-intervention conviction rate remained fairly stable.

TABLE 4.6. BURGLARY-FOUNDED CONVICTION RATES

	1972	1973	1974	1975	1976	% CHANGE PRE/POST
Site A	.016	.011	.015*	.037*	--*	.26
Site B	.010	.012*	.016*	.014*	--	.16
Non-SPU	.013	.011	.012	.013	--	--

* Indicates the years the Special Police Unit was funded in each of the research jurisdictions.

The Offense-Founded Conviction Rate data for burglary is presented in Table 4.6. It indicates that for Site A in 1973-1974 there was a 26% increase, and for Site B in 1972-1973 a 16% increase at their respective pre/post intervention points. These changes become more impressive when the results of each of the research sites are compared to the Non-SPU sample. For the years 1972-1973 (the year Site B was initiated) there was a 18% decrease in the Burglary-Founded Conviction Rate for the Non-SPU sample. Thus, for Site B, the increase in effectiveness was counter to the decreased effectiveness of the Non-SPU sample. For the years 1973-1974 (the year Site A was initiated) there was an 8.3% increase in the Burglary Offense-Founded Conviction Rate in the Non-SPU sample, indicating that the increase in effectiveness was in the same direction as the increase in effectiveness of Site A, but at a rate that was very slight.

These results appear to indicate the possibility that special police units were having a positive effect (increasing) on the productivity of the funded jurisdictions. This is particularly the case when the entire data series is viewed.

Site A demonstrated a consistent increase, while Site B maintained a higher level of convictions after the pre-intervention period. During the post-intervention years (1973, 1974, 1975) the conviction rate of the Non-SPU sample remained fairly stable.

TABLE 4.7. LARCENY-FOUNDED CONVICTION RATES

	1972	1973	1974	1975	1976	% CHANGE PRE/POST
Site A	.064	.056	.064*	.082*	--*	.13
Site B	.056	.042*	.052*	.046*	--	-.33
Non-SPU	.046	.042	.040	.035	--	--

* Indicates the years the Special Police Unit was funded in each of the research jurisdictions.

The Founded Conviction Rate data for larceny is shown in Table 4.7. It indicates that for Site A there was a .3% increase at the pre/post intervention point (1973-1974). But for Site B, in 1972-1973, there was a 33% decrease at the pre/post intervention point. For the years 1972-1973 (the year Site B was initiated) there was a 10% decrease in the Larceny-Founded Conviction Rate for the Non-SPU sample. Thus, for Site B, the decrease in effectiveness was greater than the comparable figures for the Non-SPU sample and obviously provides no support for believing that the special unit helped increase departmental productivity. For the years 1973-1974 (the year Site A was initiated), there was a 5% decrease in the Larceny-Founded Conviction Rate in the Non-SPU sample. Thus, the increase at Site A was counter to the trend for the Non-SPU sample.

These results seem to indicate that, at least in Site A, the special unit may have had a positive (increasing) effect on the effectiveness of the Larceny-Founded Conviction Rate. When the entire post data series is viewed, it is evident that Site A had a steady increase in founded convictions from the time the unit was initiated. As for Site B, the instability of the data series does not support the possibility that the special unit had a positive effect on departmental productivity.

Summary - In Tables 4.5, 4.6, and 4.7, the founded conviction rates were presented for the three target crimes - burglary, robbery and larceny. Of the three crimes examined, only robbery and burglary reflect that the special unit had any positive effect (increasing rate) on the effectiveness of founded convictions in the research jurisdictions. For larceny the results seemed to indicate that only in Site A was there a positive (increasing) effect on founded convictions. The results in Site B, on the other hand, provide no support when examined for this hypothesis.

The data is presented in Tables 4.8, 4.9, and 4.10, for the hypothesis that there will be differences in Offense-Charged Conviction Rates, between the pre/post intervention periods.

The charged conviction rate data for robbery is presented in Table 4.8. It indicates that for Site A there was a 44% increase at the pre/post intervention point (1973-1974). But for Site B, in 1972-1973 there was a 20% decrease at the

pre/post intervention point. Thus, if we only used the pre/post data it would be concluded that there was no effect, because of the inconsistency of the results.

TABLE 4.8. ROBBERY-CHARGED CONVICTION RATES

	1972	1973	1974	1975	1976	% CHANGE PRE/POST
Site A	.21	.10	.18*	.14*	--*	.44
Site B	.15	.13*	.13*	.07*	--	-.20
Non-SPU	19	12	18	18	--	--

* Indicates the years the Special Police Unit was funded in each of the research jurisdictions.

The conclusion is supported by the comparison of the changes in the Project-Charged Conviction Rate with the figures for the Non-SPU sample. For the years 1972-1973 (the year Site B was initiated) there was a 30% increase in the charged conviction rates for the Non-SPU sample. Thus, for Site B the decrease in effectiveness was inconsistent to the increase in productivity of the Non-SPU sample. Obviously a decrease at Site A compared to an increase for the Non-SPU sample does not provide evidence of a positive effect. For the years 1973-1974 (the year Site A was initiated), there was a 33% increase in the charged conviction rate of the Non-SPU sample. Thus for Site A the increase in productivity was somewhat greater than for the Non-SPU sample jurisdictions.

What these results appear to indicate is the possibility that, at least in Site A, the special police unit was having a positive effect (increasing) on the effectiveness of the

Robbery-Charged Conviction Rate for Site A. However, when the entire data series is viewed neither research jurisdiction has a pattern which supports the idea of increased productivity. In fact, if anything, there appears to be a downward trend in charged convictions while the Non-SPU sample seems to remain stable.

TABLE 4.9. BURGLARY-CHARGED CONVICTION RATES

	1972	1973	1974	1975	1976	% CHANGE PRE/POST
Site A	.09	.06	.09*	.21*	--*	.33
Site B	.13	.11*	.14*	.12*	--	-.18
Non-SPU	.14	.10	.10	.09	--	--

* Indicates the years the Special Police Unit was funded in each of the research jurisdictions.

The charged conviction rate data for burglary is shown in Table 4.9. It indicates that for Site A, there was a 33% increase at the pre/post intervention point (1973-1974). But for Site B, there was an 18% decrease at its pre/post intervention point (1972-1973). When these results are compared to the Non-SPU sample, an interesting pattern develops. For the years 1972-1973 (the year Site B was initiated) there was a 40% decrease in the Burglary-Charged Conviction Rate for the Non-SPU sample.

Thus, for Site B, the decrease in effectiveness was at a lower rate. As a result it is possible to consider the idea that the SPU inhibited what might have been an even greater decrease. For the years 1973-1974 (the year Site A was

initiated) there was no change in the Non-SPU sample, indicating that the increase in effectiveness was much greater for Site A.

These results appear to indicate that possibly the two special police units were having a positive (increasing) effect on the productivity of their jurisdictions for burglary charged convictions. It becomes very evident that when the entire data series is viewed, Site A reveals a steady trend (pattern) toward increased charged convictions, from the time the unit was initiated. As for Site B and the Non-SPU sample, there appears to be stability in the data series; therefore, the conclusion could be made that in Site A the special unit was having a positive effect.

TABLE 4.10. LARCENY-CHARGED CONVICTION RATES

	1972	1973	1974	1975	1976	% CHANGE PRE/POST
Site A	.48	.31	.40*	.40*	--*	.23
Site B	.57	.51*	.60*	.45*	--	-.12
Non-SPU	.37	.30	.26	.30	--	--

* Indicates the years the Special Police Unit was funded in each of the research jurisdictions.

The charged conviction rate data for larceny is presented in Table 4.10. It indicates that for Site A, there was a 23% increase at the pre/post intervention point (1973-1974). But for Site B, there was a 12% decrease at its pre/post intervention point (1972-1973). These changes become rather interesting when the results for each of the research

sites are compared to the Non-SPU sample. For the years 1972-1973 (the year Site B was initiated) there was a 23% decrease in the Larceny-Charged Conviction Rate for the Non-SPU sample. Thus, for Site B the decrease in effectiveness was at a lower rate. As a result it is possible that the operation of the SPU inhibited what might have been an even greater decrease. For the years 1973-1974 (the year Site A was initiated) there was a 15% decrease in the Non-SPU sample, indicating that the 23% increase in the productivity of Site A may have been a result of the establishment of the special unit.

These results appear to indicate that at least in the two jurisdictions the special units may have had an effect (increasing) on the effectiveness of the Larceny-Charged Conviction Rates. It becomes very evident that when the entire post-intervention data series is viewed there is a stable but increasing pattern toward charged convictions. But for Site B and the Non-SPU, there appears to be a rather unstable post-intervention data series. From this pattern, it would be very difficult to attribute any positive long-term effect with regard to productivity to the SPU in Site B.

Summary - In Tables 4.8, 4.9 and 4.10, the charged conviction rates were presented for the three target crimes - burglary, robbery and larceny. Of the three crimes examined, only burglary and larceny indicate some support for the hypothesis that the special unit had any positive effect (increasing rate) on the effectiveness of the charged conviction rate in the research jurisdictions. As for robbery, the results

indicate that there was no support in either research jurisdiction for the hypothesis.

Phase Two - Monthly Time-Series Analysis

While the multiple-group design used in Phase One allows for a number of sites to be included in an analysis at one time, it is limited by two factors. First, as is illustrated in the above tables, the use of annual level statistics as data oberrvation points in an analysis is severely limited. These limited data points become particularly critical in terms of being able to identify and adjust for the various forms of data fluctuation described earlier on the problem of data instability. Also, the small number of data points limit the user's ability to utilize statistical techniques to test the significance of any observed changes in pre/post intervention periods.

The second factor concerns assumptions about the relationships between separate data observations. Most statistical techniques utilize a series of measures (data observations) which are assumed to be independent. However, an assumption of independence using data such as crime statistics cannot be made. Instead, it is more reasonable to assume crime statistics to be dependent upon each other from one observation to the next. Thus, it is assumed that a city with a high burglary rate will continue to have a high burglary rate and that the rate may escalate. As a result we need to employ a statistical technique that takes

into account the dependency between observations and the general pattern of data.

The second phase of the analysis addresses both of these problems by using monthly level crime statistics in a one-group time-series design. The statistical model upon which the one-group time-series analysis is based was originally developed by Box and Tiao as a technique for making inferences about changes in the level of a time-series.[8] The objective of the statistical analysis is to extract the effects of an intervention in order to determine whether the introduction of an intervention, such as a special police unit either decreased, increased or did not affect the variables on which the data was collected.

Employing this statistical model we must make two fundamental assumptions concerning the time-series process. First, it must be assumed that some portion of the current observation is the result of a series of random shocks to the variable of interest (time-series), which may or may not be measureable. In dealing with crime statistics, such shocks may be factors such as economic conditions, population increases, changes in population makeup or increasing urbanization. The usual assumption is that it is the entire series of past random shocks that affects the current observation. Hence, the concern is not just with last year's

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[8] George E. D. Box and George C. Tiao, "A Change in the Level of Non-Stationary Time Series," Biometrics, (52, 1965), pp. 181-92.

urbanization pattern, but with the pattern over an extended period of time. However, it is assumed that last year's changes are more important than those of two years ago, and that both are more important than changes from a decade ago. The effect of previous random shocks is known as the Moving Averages Process.

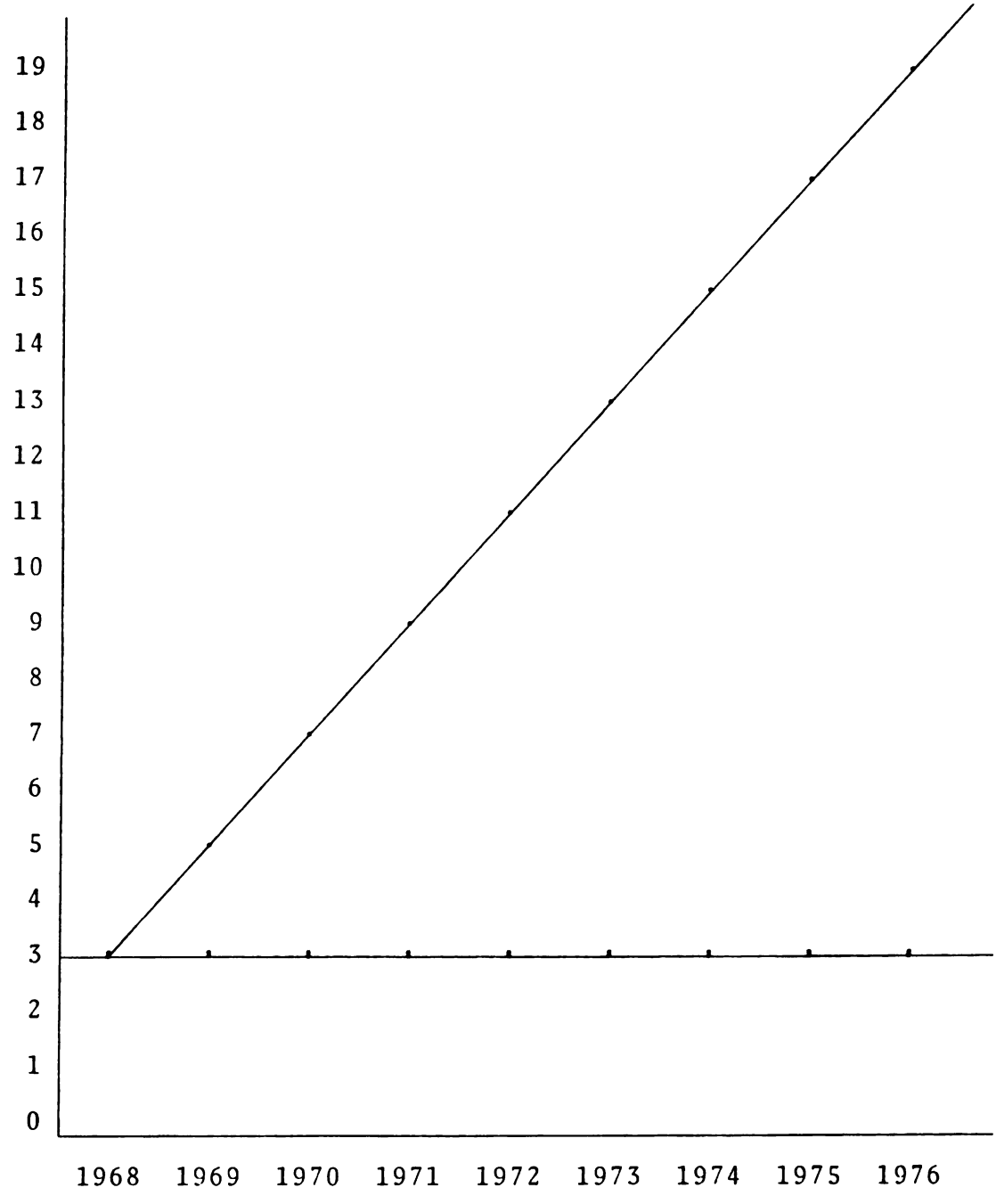
Second, it may also be assumed that the observations may affect each other - last year's burglary rate may affect this year's burglary rate. Procedures are available to establish the degree of correlation between the same variable at different points in time (auto-correlations). The results of such procedures are known as the autoregressive process.

One more assumption needs to be made of the statistical time-series model and that is through a simple transformation that levels of observation can be reduced to a constant. This process is called differencing. Differencing can best be explained in the following manner: If the following series of points (3, 5, 7, 9, 11, 13, 15, 17, 19) were graphed, there would be a straight line with a steady upward trend as depicted in Table 4.11. Then by subtracting the previous point from each, or (5-3), (7-5), etc., there would be a series,

2, 2, 2, 2, 2, 2, 2, 2, 2

which fit the assumption of a level and constant series. This example presents what is known as difference order one. Difference order one will eliminate a linear trend (a straight

TABLE 4.11. EXAMPLE FOR DIFFERENCING PROCESS



line that slopes up or down, or a linear trend that has a temporary change in level). Differencing order two eliminates a quadratic trend and also eliminates temporary changes in the slope of the graphed line of observations.

The computer program used in this evaluation allows for the use of all three processes simultaneously. This provides the possibility for the use of a variety of differencing orders and levels of the other processes. For example, the program allows for the determination as to whether the effect of the autoregressive process is zero and whether only the moving averages process is generally operating. The model being used is known as the Auto-Regressive Integrated Moving Averages model or ARIMA.

Although a variety of alternatives are possible with ARIMA, the analyses in this evaluation are based on a (0, 1, 1) model that is no autoregressive process, a differencing order of one and a moving averages process at level one. This model was selected for two reasons. First, a preliminary analysis of the data indicated that it seemed to be the model that most nearly "fit" the data. Second, the 0, 1, 1 model provided the procedures to make adjustments for seasonal cycles which are generally expected in crime data. Existing opinion supports the view that crime data is seasonal in nature, that is, a tendency for data observations to repeat basic patterns during corresponding months of successive years. Even the Michigan Department of State

Police includes the following statement in the annual statewide uniform crime report:

> As is well known to all law enforcement agencies, most crimes follow distinct time patterns, rising and falling in level throughout the day, week, month and year. While the Michigan Uniform Crime Report does not collect data on the variations in Crime during the day, week or month, it does provide monthly crime totals which can be used to show the variation in crime on a monthly basis, throughout the year.[9]

The general time series model is based on a process which statisticians call multiple regression. It is rarely, if ever, the case that a series of points on a graph which represents measured observations will fall on a perfectly straight line. The process used is a mathematical determination of that line for which the summed error (or distance from the line) of the collection of points is at a minimum. This is referred to as minimum error variance. The actual process uses the square of the distances from the line to eliminate negative numbers.

In multiple regression, the equation itself has five types of elements. The simplest equation is:

$$y = ax + b$$

(x) and (y) are measured variables. What is attempted is to use (x) to predict (y) or as in this evaluation, to establish the relationship between time (x) and crime (y). Thus, it

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[9] Michigan Uniform Crime Report. (East Lansing, Michigan: Department of State Police, 1973), p. 17.

may be said that (x) is the independent variable and (y) is the dependent variable or the effect.

As indicated earlier, the monthly time-series data for the broader evaluation study was obtained from the Michigan Department of State Police UCR computer tapes. However, for this study the data were obtained directly from the research jurisdictions. For Site A, forty-eight months of data - January 1972 through December 1975 were collected, and for Site B, seventy-two months of data were obtained - January 1971 through December 1976.

Tables 4.12, 4.13, and 4.14 present the results of the time-series analysis using the ARIMA (0, 1, 1) statistical model, with the monthly crime statistics for Hypothesis 1: there will be significant differences in Offense-Clearance Rates, for the crimes of robbery, burglary and larceny in the research jurisdictions between the pre/post intervention periods. However, the statistical time-series analysis is based on the number of offenses cleared rather than clearance rates. This was done because of computer programming problems associated with calculating clearance rates from the raw data. The use of absolute numbers rather than rates has increased the potential for finding post-intervention increases in clearances, because they would not have been adjusted for mere increases in the occurrence or reporting of target crimes. As a result, positive results - increases in clearances - must be more carefully examined than would be necessary if one were using rates.

TABLE 4.12. MONTHLY LEVEL TIME-SERIES RESULTS FOR ROBBERY - CLEARED BY ARREST

	Number of Data Observations			Time-Series Level				Time-Series Slope			
	Pre	Post	Df	Initial Level (time zero)	T-Value	Change In Level	T-Value	Slope	T-Value	Change In Slope	T-Value
Site A	30	18	44	2.7	2.83	- .17	- .15	.03	.43	- .11	-1.01
Site B	30	33	59	9.6	4.02	.49	.20	.08	.47	- .04	- .21

To facilitate the presentation of the findings on this hypothesis, Table 4.12 (Robbery) will be used as a detailed example of the procedures and issues involved in interpreting the data. In the first three columns of this table are presented the number of pre- and post-intervention data points and the number of degrees of freedom used in the analysis for each of the research jurisdictions. For Site A and Site B, the number of pre-and post-observation points is 18 and 30-33 respectively. The general procedure for determining intervention points to test the effects of special police units on the incidence of target offenses, is to select a point three months after the project was funded. Thus, for Site A, which was funded April 1, 1974, and Site B which was funded April 1, 1973, the intervention selected was the month of July, in 1974 and 1973 respectively. The selection of an intervention point three months into the life of these projects was an arbitrary decision, but one based upon important criteria related to the likelihood that the project would have been in operation long enough to have an effect. From prior experience, as well as interviews with Office of Criminal Justice Programs (OCJP) staff members, it was apparent that all projects require some period of time after the granting of funds to become operational (Interviews indicated three months to be a reasonable period in which to expect projects to be operational.).

The next four columns of the table provide information on the initial level (number of crimes cleared) and change in level between the pre- and post-intervention periods. The

figure for the initial level is an estimate of the number of clearances at the beginning of the pre-intervention period, and its only function is to provide some insight concerning the number of clearances at the beginning of the pre-intervention period. The figure for the initial level will always be somewhat different than the number appearing in the UCR monthly report, because this number is an estimate calculated from the basic time-series equation. For example, in Table 4.12, the initial level for the number of robberies cleared in Site A was 2.7. The number recorded in the UCR statistics for the month of January 1972 was 1.[10] The comparable figures for Site B are 9.6 for the initial level of the time-series analysis and zero clearances recorded in the UCR statistics for the month of January, 1971.

The T-value associated with the figure for the initial level is the result of a test to determine whether the estimate of initial level is significantly different from zero. In general, the T-values resulting from the analysis of crime data will be fairly large and often statistically significant. In Table 4.12, the T-value for both of the research jurisdictions are statistically significant at the .05 level for a one-tailed test (a T-value of 1.68 or greater). It should be emphasized though that this is not a particularly useful piece of

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[10] See Appendix H, for the unadjusted pre/post data observations for the crimes of burglary, robbery and larceny, cleared by arrest for Site A and B.

information since it is expected that the occurrence of clearances to be greater than zero in jurisdictions of this size.

The figure for change in level represents the estimated change in the level of the data series (number of crimes) at the time specified as the point of project intervention. Because of the mathametical adjustments that have been done to account for instability in the data series, this change between pre- and post-intervention periods may be interpreted as the effect due to the intervention project. The actual value presented in Table 4.12 for change in level is calculated as the difference between estimates of the last pre-intervention data observation and the first post-intervention data observation (post-intervention minus pre-intervention). As displayed in Table 4.12, a - .17 change in the level of the data series for Site A, and a + .49 change in the level of the data series for Site B. These figures are based on the difference between the estimated number of robbery clearances between June and July 1974 for Site A, and June and July, 1973 for Site B - the intervention point.

The results of the monthly time-series analysis for change in level does not provide any support for the hypothesis that special police units had a positive effect on the clearances of robberies. In Table 4.12 it can be seen that there is a decrease in Site A and an increase in Site B. Moreover the T-values indicate that the change in level was not statistically significant at the .05 level (t - 1.68).

The last four columns of Table 4.12 (Time-Series Slope)[11] provide information concerning the initial slope and changes in slope of the data observations between the pre- and post-intervention periods. The figures for slope represent the direction and rate of increase (or decrease) in the occurrence of clearances during the pre-intervention period. As is indicated in Table 4.12, there was a slight positive slope (tendency to increase over time) in both research jurisdictions during the pre-intervention period. But when the T-values for the slope are examined they indicate that the rates of increase in robbery clearances during the pre-intervention period would not be considered statistically significant from zero at the traditional .05 level (t - 1.68), for the two research sites.

The values for change in slope represent the change in the rate or direction of increase (or decrease) in the data series between the pre- and post-intervention periods. The value for change in slope is based on the difference between the actual slope of the post-intervention data series and the predicted slope of the pre-intervention series. In the case of Site B, the predicted slope would have been .08, which is the slope of the pre-intervention period. In Table 4.12, there

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[11] The technical term for this concept is deterministic drift. Slope is used because it is associated with simple linear regression models, and since the two concepts are somewhat similar, it is believed that more readers will be familiar with the term slope than the phrase deterministic drift.

is a - .11 change in slope for Site A and a - .04 change in slope for Site B. Though these decreases in slope are contrary to the expected increases, they are not statistically significant.

The T-values for the change in slope indicate that the rate of decrease in robbery clearances during the post-intervention period would not be considered statistically significant from zero at the .05 level (t - 1.68) for the two research jurisdictions.

The results of the monthly time-series analysis do not provide support for believing that the special units were having a positive effect on the productivity of the funded jurisdictions, because niether the fugure for change in level nor change in slope show statistically significant increases.

As indicated prior to the above discussion, the results for Table 4.12 (Robbery) were provided as a detailed example of the procedures and issues involved in interpreting the results of the monthly time-series analysis. Therefore, the findings for the crimes of burglary and larceny are not presented in the same amount of detail. If questions arise during the presentation of the crimes of burglary and larceny, for the hypothesis on clearance rate, the reader is encouraged to refer back to the explanation of robbery.

In Table 4.13, the data for the change in level of burglary and larceny in the research jurisdictions are displayed. For burglary, the change in level for Site A (- .62) Site B (.75) was not statistically significant in a positive

TABLE 4.13. MONTHLY LEVEL TIME-SERIES RESULTS FOR BURGLARY AND LARCENY CLEARANCES CHANGE IN LEVEL

	Number of Data Observations			Burglary		Larceny	
	Pre	Post	Df	Change in Level	T-Value*	Change in Level	T-Value*
Site A	30	18	44	- .62	-1.60	-1.45	-2.55
Site B	30	33	59	.75	.33	-5.13	-1.66

* T = 1.68 significant at or below the .05 level for one-tailed test with 60 degrees of freedom.

direction for either site. Site A had a T-value of -1.60 and Site B had a T-value of .33. On the basis of these figures, the hypothesis would be rejected. For larceny, the change in level for Site A (-1.45) and Site B (-5.13) was also not statistically significant in a positive direction for either jurisdiction. Site A had a T-value of -2.55 and Site B had a T-value of -1.66. Again, as above, on the basis of these figures, the hypothesis would be rejected.

In Table 4.14 the data for the change in slope of burglary and larceny in the research jurisdictions are presented. For burglary the change in slope for Site A (.02) and Site B (.53) was not statistically significant in a positive direction for either site. Site A had a T-value of .43 and Site B had a T-value of .30. On the basis of these figures the hypothesis would be rejected. For larceny the change in slope for Site A (-.13) and Site B (.64) was also not statistically significant in a positive direction for either jurisdiction. Site A had a T-value of -.52 and Site B had a T-value of .73. As above, on the basis of these figures the hypothesis would be rejected for larceny.

Summary - In Tables 4.12, 4.13 and 4.14, target crime (robbery, burglary and larceny) Offense-Convictions were presented using time-series analysis on monthly level UCR data. None of the three crimes examined provided any support for the hypothesis that special police units had a positive effect on clearances. In fact, there was no support for the research question that special police units improved the investigative capabilibies in departments in which they were established.

TABLE 4.14. MONTHLY LEVEL TIME-SERIES RESULTS FOR BURGLARY AND LARCENY CLEARANCES CHANGE IN SLOPE

	Number of Data Observations			Burglary		Larceny	
	Pre	Post	Df	Change in Level	T-Value*	Change in Level	T-Value*
Site A	30	18	44	.02	.43	- .03	- .52
Site B	30	33	59	.53	.30	.64	.73

* T = 1.68 significant at or below the .05 level for one-tailed test with 60 degrees of freedom.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

Due to the increased concern by the public about crime, police agencies have committed substantial resources in an effort to measure their efficiency. However, soaring crime rates and enforcement costs have produced widespread disillusionment and disenchantment with the criminal justice system, particularly police agencies. As a result of the deepening concern the public has about crime, its costs and accountability, public attention has been directed toward police agencies' response to the crime problem. This concern has forced police administrators to implement organizational changes to impact upon crime problems or to better utilize existing resources. One of the impact responses that police administrators have developed and implemented for prevention, control and investigation of suppressible crimes is the proactive specialized police unit, whose primary emphasis is to anticipate criminal activity and crime targets.

The purpose of this study was to explore ways of measuring police agency performance after the introduction of a new organizational technology - proactive specialized

police units. These units were created as a new technology to attempt to achieve a measurable reduction in crime and criminal activity by improving the investigative capability of the police organizations to which they were attached. Through the following impact model, this reduction was to be realized.

Improved investigative capability will:

increase the costs (risks) associated with criminal activity by,

increasing the probability of apprehension and/or the probability of conviction once apprehended,

which will remove individuals from circulation (through arrest and detention) or deter individuals from committing crimes.

The study was a subset of a broader evaluation project conducted by the Criminal Justice Systems Center at Michigan State University for the State of Michigan Office of Criminal Justice Programs. The broader evaluation project was designed to evaluate approximately twenty-three specialized police units, ranging from regionalized detective bureaus to crime specific task forces which sought to achieve a reduction in crime and criminal activity by improving the investigative capability of the parent organization (the logic of this was to be realized through the above impact model.).

Six of the twenty-three specialized police units were selected for intensive evaluation in the broader study: From these six research sites, two were selected for this study.

When conducting intensive evaluation research of a social intervention, such as the introduction of a proactive specialized police unit, procedures to maximize the opportunity to make causal inferences must be followed. These procedures are possible with the application of true experimental research designs, which allow for the direct manipulation of factors to be studied. However, when conducting evaluation research of a social intervention, serious contextual problems arise which make the use of the true experimental design difficult to achieve, if not unfeasible. Because of these conditions, as well as limitations concerning site selection, the research design selected to evaluate the projects was the time-series design. This design is not a true experimental design, but one termed a quasi-experimental design. Basically, it attempts to approximate the conditions of a true experiment for research situations, which do not provide the opportunity for experimental control or for random selection of the subject, while at the same time maximizing the internal validity of the findings.

In addition to the issue of validity three other advantages influenced the selection of the time-series design: (1) the data (UCR) existed for each of the SPU research jurisdictions making it possible to collect pre/post intervention information. Moreover, the collection procedures for the uniform crime reports were established, ongoing efforts for the research jurisdictions and did not require any special procedures for research jurisdiction personnel to make the

data available to the researcher/evaluator; (2) the two special police unit projects that were selected for the evaluation had been funded for more than a year, which meant that more than one post-intervention data point (observation) was available for study; and (3) the final advantage for the selection of the time-series design was the ability of the design to control for problems of data instability, that is, the tendency of data observations to fluctuate over time.

The data which was used in the analysis came from both monthly and annual level state uniform crime reports for the years 1971-1976. In Michigan, crime data is collected monthly from each law enforcement jurisdiction on standardized reporting forms by the Michigan Department of State Police. These reports are then tabulated and analyzed for crime trends, as well as other indicators, for presentation in quarterly preliminary and annual published reports. Though there are criticisms of the uniform crime report data, they remain the best generally available data sources on crime and police activities throughout the State.

From the logic of the impact model, a general research question was developed which led to examination of departmental performance by analyzing the effects proactive specialized police units have on departmental productivity for the crimes of burglary, robbery and larceny. From the general research question, three operational hypotheses were used to examine differences in offense-clearance rates, offense-charged

conviction rates and offense-founded conviction rates for each of the target crimes. Two hypotheses, offense-charged conviction rates and offense-founded conviction rates, were tested using a two-phased approach. The first phase used a multiple-group time-series design on the annual level data, just as conducted for the first two hypotheses. The second phase used monthly level crime statistics in a one-group time-series analysis. The objective of this statistical analysis was to extract the effects of other possible causal factors from the effects of the intervention, in order to determine whether the introduction of a special police unit increased, decreased, or did not affect departmental productivity.

Conclusions

In neither phase one nor phase two of the analysis of annual or monthly level data were there any statistically significant results to indicate that the establishment of the special police unit in either research jurisdiction had a positive effect on the investigative capabilities of the departments in which they were located. Though some of the data displayed in the tables for phase one did indicate a positive effect (increasing rate), there were also equal numbers of decreases, so that no consistent pattern supporting the hypotheses could be established. Moreover, from phase two of the analysis, which allowed for greater adjustments in the data due to the mathematical sophistication of

the model, no support was found for the hypothesis concerning clearance rates. There were no statistically significant results to indicate that SPU's improved the investigative capabilities of the departments in which they were located.

Discussion and Recommendations

Since this study is an examination of the effectiveness of specialized police units, a number of important issues arise about the concept of special units. The previous discussion of conclusions, demonstrated that as examined, the special police units did not have a positive effect on the departmental productivity in regard to the target crimes. Given the goals and objectives of an SPU, one would expect the activities of the SPU to help improve the productivity of the entire department. Specifically, one would expect the activities of the SPU, in areas such as the collection and transfer of information, surveillances and actual arrests, to increase the number or quality of cases processed by the department. But no indication was found to support the hypotheses that the SPU had an effect on the entire department's effectiveness. It may be, however, that special units have an effect on departmental subdivisions - particularly investigative divisions or detective bureaus. There are a number of reasons to believe that this could be the case, particularly the fact that most of the units were relatively small and the number of cases processed by them were also small. Thus, it might be unrealistic to expect

them to influence the productivity of an entire department, and further research on special units should be directed to this question.

However, though this may be true, there are reasons to believe that the entire project planning and implementation process associated with special units must be improved before programmatic effects can be realized and measured. That such improvements are necessary is indicated by the results of the broader study, which found evidence that the apparent lack of project effects was due to implementation failure rather than conceptual failure. In other words, there are more reasons to believe that special police unit projects were not implemented as intended, than there are to believe that the concepts upon which the projects were based were not sound. Such improvements would include:

1. There needs to be greater specification of project goals and objectives by both the Office of Criminal Justice Programs (OCJP) staff and the project personnel. OCJP needs to be more specific - in fact insistent - that prospective jurisdictions articulate a need through extensive "front-end work" that such a unit is necessary. No longer can OCJP merely state objectives as "deter criminal activity, increase the risk of apprehension, increase case closures," etc. without clearly articulating how these goals are to be achieved.
2. Once there is greater specification of project goals and greater articulation about unit activities, there

needs to be a determination as to what type of unit (saturation patrol, surveillance or a combination of them) can be made. This is important to the implementation of a planned social intervention, such as a special police unit, for the degree of its existence (or non-existence) will influence the development of support or opposition for the project. Also it is necessary for the appropriate operationalization of the basic concepts upon which the project is based. For example, if the unit was to be a saturation patrol, such a patrol is theoretically organized toward the primary goal of crime prevention. Therefore, the activities of unit personnel should be directed toward creating high levels of police visibility in high crime sections of the jurisdiction. It is assumed that by saturating an area with highly visible police personnel, the deterrent effect anticipated by the impact model will be activated and crime will be prevented. Surveillance units on the other hand are operationalized in an opposite manner from saturation patrol units. Surveillance units are primarily implemented to minimize police visibility, increasing the potential for apprehending offenders during the commission of a crime. If such units are to be evaluated, the evaluation should not be concerned primarily with crime reduction, but the identification of the characteristics of the individuals arrested and the quality of the arrests.

This means that it may take an extensive period of time to develop an adequate data base about suspects and locations for surveillance units to be effective in securing apprehensions. But at the same time, this means that the evaluation criteria must also take this data base delay period into account, before any definitive productivity outcomes could be measured.

3. The type of equipment (cars, radios, etc.) selected should be compatible with the goals and objectives of the unit and those of the parent organization. For example, if the unit is to be of the surveillance type, with minimum visibility, the standard police fleet vehicle should not be purchased, since they "look" like the typical police vehicle regardless of their color.

4. The selection and training of special police unit members and staff, continually should be consistent with the goals and objectives of the unit. For the issue of staff quality and competency as well as interaction between unit members and other departmental employees, as well as length of assignment play an intricate role in the effectiveness of the unit.

5. Leadership and administration of the unit influence its morale and the success. Though these issues were not specifically examined in this study, they

were identified by unit personnel as important issues that affected unit productivity.

In conclusion, if the lack of measurable productivity (effectiveness) is due more to implementation failure than the failure of the concept, then we have really failed to test the potential contributions to be made by special units. And, if this conclusion is correct, there are implications that go far beyond the operation and evaluation of special police units. Basic fundamental questions must be raised about the reasons projects get funded, and the goals and objectives programs and projects are designed to achieve, as well as the manner in which they are developed, implemented and evaluated both by state and local officials.

APPENDIX A: DEFINITION OF TERMS

DEFINITION OF TERMS

For the purpose of this study operational definitions have been developed for the following terms:

Burglary: Breaking and entering. Burglary, housebreaking, safecracking or any unlawful entry to commit a felony or a theft, even though no force was used to gain entrance, and includes attempted forcible entry.

Clearance: A crime is said to be cleared when the police have:

1) identified the offenders, and
2) have sufficient evidence to take the suspect into custody. Also in view of the fact that the statistics for this study were prepared to conform to the F.B.I.'s Uniform Crime Report format, the definition needs to be expanded to include some exceptional instances, when some element goes beyond the control of the police. Examples would be, victim's refusal to prosecute, or local prosecution is waived because of the victim's refusal to prosecute, or local prosecution is waived because the subject is being prosecuted elsewhere for a crime committed in another jurisdiction.

Clearance Rate: The number of crimes cleared, of the total actual crimes reported to the police.

Detective: A sworn member of a police department who is assigned to investigative tasks at the discretion of the chief or police commissioner, or one who has passed a civil service examination which entitles him to such assignment.

Detective Unit: A unit which provides follow-up investigative service and has the responsibility for solving crimes after the termination of an unsuccessful preliminary investigation by the uniformed patrol force.

Effectiveness: The measurement of the extent to which the "goal" has been achieved.

Larceny: Theft (except auto theft)

1) fifty dollars and over in value
2) under fifty dollars in value. Thefts of bicycles, automobile accessories, shoplifting, pocket picking or any stealing of property or articles of value which is not taken by force and violence or by fraud.

Offense-charged Conviction Rate: Number of convictions (guilty), of the total number of persons charged.

Offense-founded Conviction Rate: Number of convictions (guilty), of the total number of founded crimes.

Proactive: Pursuing matters through investigative activities and direct intervention, prior to an incident taking place.

Reactive: Responding to incidents through (written, radio, and telephonic) reports, after the incident has taken place.

Robbery: Stealing or taking anything of value from the person by force or violence or by putting a person in fear, such as strong arm robbery, stick ups, armed robbery, assault to rob and attempt to rob.

Special Police Units: Those units funded by the Michigan Office of Criminal Justice Programs as surveillance units or saturation patrols, whose primary emphasis is to anticipate criminal activity and crime targets, and take the necessary action. They are also known as proactive units.

APPENDIX B: STATES SURVEYED BY COMMITTEE ON UNIFORM RECORDS

STATES SURVEYED BY COMMITTEE ON UNIFORM RECORDS

States surveyed for statutory definitions of crime by the Committee on Uniform Records of the International Association of Chiefs of Police consist of the following:

Alabama
California
Colorado
Connecticut
District of Columbia
Georgia
Illinois
Indiana
Louisiana
Maine
Maryland
Massachusetts
Michigan
Mississippi
Montana
New Hampshire
New York
Nevada
North Carolina
Ohio
Oklahoma
Oregon
Pennsylvania
Rhode Island
South Carolina
Texas
Virginia
Washington
West Virginia
Wisconsin

APPENDIX C: EXTRANEOUS SOURCES OF INVALIDITY

EXTRANEOUS SOURCES OF INVALIDITY

Under the concept of internal validity, Campbell and Stanley have identified nine different types of extraneous variables which if not controlled for in an experimental design might produce effects (changes) that were not due to the experimental stimulus. These nine extraneous variables and their importance to the pre-experimental, true experimental and time-series design are presented in Chart 3.3. They may be defined briefly as:

1) Instability: unreliability of measures, fluctuations in sampling persons or components, autonomous instability of repeated or "equivalent" measures. (This is the only threat to which statistical tests of significance are relevant.)

2) History: events, other than the experimental treatment occurring between pretest and posttest and thus providing alternate explanations of effects.

3) Maturation: processes within the respondents or observed social units producing changes as a function of the passage of time, per se, such as growth, fatigue, secular trends, etc.

4) Testing: the effect of taking a test upon the scores of a second testing, the effect of publication of a social indicator upon subsequent readings of that indicator.

5) Instrumentation: in which changes in the calibration of a measuring instrument or changes in the observers or scores used may produce changes in the obtained measurements.

6) Regression-Artifacts: pseudo-shifts occurring when persons or treatment units have been selected upon the basis of their extreme scores.

7) Selection: biases resulting from differential recruitment of comparison groups, producing different mean levels on the measure of effects.

8) Experimental Mortality: the differential loss of respondents from comparison groups.

9) Selection-Maturation Interaction: selection biases resulting in differential rates of "maturation" or autonomous change.[1]

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[1] Campbell, Donald T., "Reforms as Experiments", Evaluating Action Programs. Carol H. Weiss, Ed. (Boston: Allyn and Bacon, Inc., 1972), pp. 190-191.

APPENDIX D: REASONS AND RATIONALE FOR THE SELECTION OF THE TARGET CRIMES - BURGLARY, ROBBERY AND LARCENY

REASONS AND RATIONALE FOR THE SELECTION OF THE TARGET CRIMES - BURGLARY, ROBBERY AND LARCENY

When the concept of proactive specialized police units was initiated by the Michigan Office of Criminal Justice Programs (OCJP), in the Comprehensive State Plan, these units were to have the operational objective of reducing serious street crime. Their primary emphasis was to be on the crimes of robbery, burglary, larceny and auto theft. The rationale which led to the selection of these crimes was that they induced high levels of fear among citizens and because they are crimes that violate one's personal possessions.

As a result, when the broader evaluation study was conducted, these four crimes were examined. However, since this study is a subset of that broader evaluation, only three of the four crimes were used in evaluation of the productivity of these units - burglary, robbery and larceny. Auto theft was not selected since it was not thought to be a particularly fear-inducing crime.

Additionally, it was felt that since these three crimes were serious street crimes, and that Uniform Crime Report statistics were used as the data base in the analysis of the productivity of these units, these crimes would be sensitive indicators as to the effectiveness of the investigative capabilities of the units. Since these were serious crimes, it would not be likely that the crimes would not be reported. Given this assurance, that most of these types of crimes would

be reported, one could obtain a rather accurate indicator as to what effect the creation of these units was having in their respective jurisdictions.

APPENDIX E: SITE SELECTION IN BROADER EVALUATION STUDY

SITE SELECTION IN BROADER EVALUATION STUDY

In the broader evaluation study, the selection of the evaluation sites was a complicated process, for there was a need to approximate an intensive evaluation, to place emphasis on programmatic rather than project level evaluation, and to focus on crime reduction as the primary or ultimate evaluation effect for special police units. The problem of selecting the number of sites to be studied was resolved by two criteria: 1) the amount of resources (both time and money) available to conduct the evaluation, and 2) the need to match the number of project sites to be studied with the general requirements of the various evaluation components involved.

The actual selection of the six intensive evaluation sites, from which the two sites for this study were selected, was done on a purpositive rather than a random selection process and utilized criteria believed to enhance the value of the broader study.

The first criteria used in site selection were the issue of accessibility and the potential for cooperation in evaluation efforts. Since the broader evaluation project was to be completed by June 1977 and the findings concerning the ultimate effects of special police units were desired, project sites that had been in existence for some time had to be selected. Because of this ex post facto design, the

opportunity for site selection became even more limited. For example, of the original twenty-two possible project sites, many were simply not accessible or willing to co-operate with an evaluation. In some cases this was because their grants had expired and contractual obligations to participate in project evaluations had expired. In other cases the projects had not only expired, but the units had been totally disbanded, thus hindering any serious evaluation efforts as potential respondents were either difficult if not impossible to identify and contact. In any case there were sites that either could not or would not meaningfully participate in an intensive evaluation effort.

The second criterion for inclusion among the intensive evaluation sites was the selection of the "most promising" sites. That is, sites in which it appeared that desired changes had occurred. Thus, all of the six intensive project sites were selected because OCJP staff members viewed them as successful, if not exemplary, projects. Among these some had encouraged their own selection because they indicated confidence in their own success and expressed an interest in being evaluated.

APPENDIX F: NON-SPECIAL POLICE UNIT JURISDICTIONS

NON-SPECIAL POLICE UNIT JURSIDICTIONS WITH POPULATION

Jurisdiction	1970 Population
Ann Arbor	99,797
Battle Creek	38,931
Bay City	49,449
Birmingham	26,170
Dearborn Heights	80,069
Ferndale	30,850
Grand Rapids	197,649
Holland	26,337
Kalamazoo	85,555
Lincoln Park	52,984
Madison Heights	38,599
Midland	35,176
Portage	33,590
Roseville	60,529
St. Clair Shores	88,093
Southfield	69,285
Taylor	70,020
Wyandotte	41,061
Ypsilanti	29,538

NOTE: The lack of data was particularly acute for jurisdictions having populations of less than 25,000. As a result, the final Non-SPU sample is composed of jurisdictions having populations greater than 25,000.

APPENDIX G: ANNUAL LEVEL UNIFORM CRIME REPORT STATISTICS FOR EACH OF THE RESEARCH SITES AND NON-SPU JURISDICTIONS

ANNUAL LEVEL UNIFORM CRIME REPORT STATISTICS
FOR RESEARCH SITE A

	1972	1973	1974	1975	1976
Arrest-Grand Total-Robbery	39	42	60	61	71
Arrest-Grand Total-Burglary	309	303	376	361	431
Arrest-Grand Total-Larceny	410	642	743	928	1337
Offenses Known/Reported-Robbery	114	113	108	105	190
Total Actual Offenses-Robbery	105	107	106	98	187
Total Offenses Cleared by Arrest-Robbery	33	17	33	20	23
Offenses Known/Reported-Burglary	2362	2294	2168	1989	3053
Total Actual Offenses-Burglary	1693	1710	2065	1876	2928
Total Offenses Cleared by Arrest-Burglary	237	179	222	175	271
Offenses Known/Reported-Larceny	2964	3376	3818	4166	7166
Total Actual Offenses-Larceny	2896	3315	3771	4090	7078
Total Offenses Cleared by Arrest-Larceny	295	471	594	591	910
Total Persons Charged-Robbery	38	42	55	59	70
Guilty of Offense Charged-Robbery	5	8	4	10	8
Guilty of Lesser Offense-Robbery	15	4	12	11	11
Acquitted Dismissed-Robbery	7	10	9	6	12
Referred to J.V. Court-Robbery	5	7	8	6	7
Total Persons Charged-Burglary	314	298	331	333	403
Guilty of Offense Charged-Burglary	32	27	18	31	70
Guilty of Lesser Offense-Burglary	59	39	65	49	64
Acquitted/Dismissed-Burglary	40	38	27	43	51
Referred to J. V. Court-Burglary	89	108	111	68	89
Total Persons Charged-Larceny	386	606	608	827	1240
Guilty of Offense Charged-Larceny	111	186	185	241	334
Guilty of Lesser Offense-Larceny	25	51	38	47	66
Acquitted/Dismissed-Larceny	57	44	50	94	112
Referred to J. V. Court-Larceny	84	206	199	163	200

ANNUAL LEVEL UNIFORM CRIME REPORT STATISTICS
FOR RESEARCH SITE B

	1972	1973	1974	1975	1976
Arrest-Grand Total-Robbery	68	56	64	74	68
Arrest-Grand Total-Burglary	256	265	337	300	303
Arrest-Grand Total-Larceny	562	437	514	627	527
Offenses Known/Reported-Robbery	420	256	247	303	198
Total Actual Offenses-Robbery	419	246	239	298	193
Total Offenses Cleared by Arrest-Robbery	137	120	135	142	145
Offenses Known/Reported-Burglary	3386	2598	2900	2539	2171
Total Actual Offenses-Burglary	3384	2594	2897	2538	2167
Total Offenses Cleared by Arrest-Burglary	651	622	698	661	629
Offenses Known/Reported-Larceny	5806	5303	5867	6128	6829
Total Actual Offenses-Larceny	5790	5268	5860	6125	6829
Total Offenses Cleared by Arrest-Larceny	1229	961	1151	1345	1030
Total Persons Charged-Robbery	68	56	64	74	68
Guilty of Offense Charged-Robbery	12	10	7	8	5
Guilty of Lesser Offense-Robbery	19	21	19	8	14
Acquitted/Dismissed-Robbery	1	8	6	12	15
Referred to J. V. Court-Robbery	21	15	12	5	6
Total Persons Charged-Burglary	241	265	337	300	303
Guilty of Offense Charged-Burglary	42	31	30	46	36
Guilty of Lesser Offense-Burglary	63	61	42	35	40
Acquitted/Dismissed-Burglary	19	31	15	45	37
Referred to J. V. Court-Burglary	130	133	157	93	137
Total Persons Charged-Larceny	562	437	514	627	527
Guilty of Offense Charged-Larceny	387	323	223	307	280
Guilty of Lesser Offense-Larceny	30	58	49	50	47
Acquitted/Dismissed-Larceny	49	70	56	99	67
Referred to J. V. Court-Larceny	116	100	139	148	108

ANNUAL LEVEL UNIFORM CRIME REPORT STATISTICS
FOR NON-SPU JURISDICTIONS

	1972	1973	1974	1975	1976
Arrest-Grand Total-Robbery	506	598	724	825	678
Arrest-Grand Total-Burglary	2104	2545	3136	2894	3110
Arrest-Grand Total-Larceny	7970	7722	9827	9046	8272
Offense Known/Reported-Robbery	1522	2024	2482	2465	1966
Total Actual Offenses-Robbery	1431	1951	2398	2384	1890
Total Offenses Cleared by Arrest-Robbery	452	574	713	801	595
Offense Known/Reported-Burglary	15623	19996	22583	22386	18887
Total Actual Offenses-Burglary	15038	19261	21973	21742	18243
Total Offenses Cleared by Arrest-Burglary	1940	2809	3675	3284	3138
Offenses Known/Reported-Larceny	37852	43615	50234	55730	51901
Total Actual Offenses-Larceny	37169	42677	49300	54735	51607
Total Offenses Cleared by Arrest-Larceny	6031	8391	9954	10547	8989
Total Persons Charged-Robbery	383	538	679	689	636
Guilty of Offense Charged-Robbery	54	73	64	122	122
Guilty of Lesser Offense-Robbery	80	110	91	97	83
Acquitted/Dismissed-Robbery	85	85	92	104	139
Referred to J. V. Court-Robbery	50	82	100	147	80
	18	17	19	17	--
Total Persons Charged-Burglary	1427	2072	2666	2997	2672
Guilty of Offense Charged-Burglary	199	194	203	269	282
Guilty of Lesser Offense-Burglary	216	265	200	193	228
Acquitted/Dismissed-Burglary	252	235	168	227	243
Referred to J. V. Court-Burglary	383	673	919	855	759
Total Persons Charged-Larceny	4617	5879	7593	6425	6700
Guilty of Offense Charged-Larceny	1706	1695	1774	1964	1912
Guilty of Lesser Offense-Larceny	268	431	490	597	807
Acquitted/Dismissed-Larceny	714	733	886	822	1132
Referred to J. V. Court-Larceny	858	1190	1447	1414	1253

APPENDIX H: MONTHLY CLEARED BY ARREST DATA FOR SITE A AND SITE B

SITE A - MONTHLY CLEARED BY ARREST OFFENSE DATA - 1972-1975

	Robbery				Burglary				Larceny			
	1972	1973	1974	1975	1972	1973	1974	1975	1972	1973	1974	1975
January	1	1	5	0	9	10	11	28	2	16	41	49
February	2	0	2	1	15	7	21	13	16	31	35	24
March	1	0	5	0	32	11	16	9	27	26	5	44
April	0	1	0	2	11	15	24	6	26	38	39	57
May	2	2	4	5	21	23	18	8	9	36	51	49
June	0	0	3	3	18	17	26	9	33	49	56	30
July	4	3	4	2	30	21	13	14	25	52	51	78
August	2	0	6	0	22	14	21	9	39	50	54	52
September	7	2	2	0	17	14	6	9	29	28	36	52
October	8	3	1	1	26	8	13	23	29	46	53	47
November	2	4	0	5	15	27	0	19	18	37	0	60
December	4	1	1	1	21	12	23	28	24	62	73	49

—— = Intervention Point

SITE B - MONTHLY CLEARED BY ARREST OFFENSE DATA - 1971-1976

	Robbery						Burglary						Larceny					
	1971	1972	1973	1974	1975	1976	1971	1972	1973	1974	1975	1976	1971	1972	1973	1974	1975	1976
January	0	10	6	11	7	15	37	60	66	46	341	8	81	48	116	65	107	47
February	4	11	9	10	12	14	47	36	114	80	96	62	94	90	69	77	98	84
March	11	13	12	7	27	3	62	150	37	42	74	22	70	99	78	89	108	78
April	4	14	7	11	8		26	58	51	62	54		92	90	83	101	96	
May	19	12	7	8	11		86	35	25	98	53		159	81	63	101	104	
June	7	11	13	16	8		83	32	47	36	16		208	126	97	76	94	
July	7	4	5	19	9		114	55	40	53	20		198	134	42	105	147	
August	11	8	7	14	8		74	27	29	86	79		248	129	79	72	66	
September	9	9	6	7	13		86	49	41	58	87		257	103	70	133	141	
October	8	20	16	6	15		61	74	58	70	42		238	110	81	118	144	
November	25	15	24	15	19		42	32	29	23	31		232	119	80	63	116	
December	13	10	8	11	5		61	43	85	44	75		246	100	103	146	126	

_____ = Intervention Point

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