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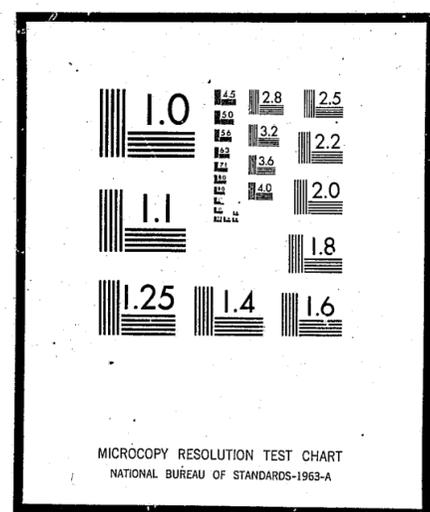
RECORDS UNIT

CALENDAR YEAR SUMMARY

| REPORTS PROCESSED | 1973 | 1972 | 1971 |
|-------------------|-----------|-----------|-----------|
| Total case load | 69,188 | 66,015 | 63,267 |
| Booked | 35,817 | 33,822 | 31,398 |
| | 16,810 | 17,571 | 17,100 |
| | 18,893 | 19,816 | 18,374 |
| | 44,974 | 36,082 | 40,285 |
| Indexed | 195,180 | 266,466 | 218,803 |
| SERVICES | | | |
| Arrests | 434 | 671 | 594 |
| Processed | 259 | 632 | 534 |
| Not processed | 35,920 | 50,159 | 49,549 |
| | 9,224 | 9,703 | 8,735 |
| Processed | 18,153 | 15,073 | 14,825 |
| Final reports | 10,620 | 8,460 | 8,657 |
| Arrests filed | 20,772 | 25,838 | 39,056 |
| Arrests made | 4,106 | 4,849 | 5,200 |
| | 146,817 | 153,088 | 132,367 |
| | 1,683,159 | 1,517,577 | 1,291,646 |
| Arrests filed | 100,774 | 130,864 | 149,019 |

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NATIONAL IMPACT PROGRAM EVALUATION

A REVIEW OF SIX RESEARCH STUDIES ON THE RELATIONSHIP BETWEEN POLICE PATROL ACTIVITY AND CRIME

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PREFACE

As part of the National Level Evaluation of the High Impact Anti-Crime Program, The MITRE Corporation and the National Institute of Law Enforcement and Criminal Justice have taken the opportunity provided by the large-scale implementation and evaluation of crime reduction projects in this program to examine a number of commonly held assumptions underlying crime reduction strategies.

One area being investigated concerns the relationship between police patrol activity and crime. It is generally believed that certain types of police patrol activity will have an impact on crime and that increases in police activity will effect a reduction in crime. This assumption is being investigated as part of the National Level Evaluation of the Impact Program.

As part of this research endeavor, MITRE has reviewed a range of studies which address the question of the impact of police activity on crime levels. This document reports the findings of that review in terms of both substantive knowledge about the relationship between police patrol and crime and the state-of-the-art in this area of research.

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SUMMARY

This document presents an analytical and synthetic review of selected research dealing with the impact on crime of police patrol activity. Six research studies have been reviewed in detail. Based on their examination, the following conclusions have been reached:

- . While an increasing amount of effort is being devoted to examining the impact of police activity on crime, fundamental issues remain unresolved.
- . The issues involved in the relationship between police activity and crime are complex. The current set of published studies cannot be expected to adequately address the numerous questions raised by these issues. While a trend toward more research in this area has been established, the number of research studies in the public domain is still quite limited.
- . In general, those research studies which have been published have produced findings which are of questionable validity. This results from the fact that research has rarely been conducted as an integral part of police operations. Programs designed by operating agencies to meet an immediate need in a particular jurisdiction have generally made up the field for the research; the research is then conducted in an ad hoc or post facto manner, constrained by the program context in which it is operating. As such, research design considerations have rarely been incorporated in planning for these endeavors. This has made these research results relevant only to a

retrospective assessment of the particular case study or open to question because of inadequate control over other possible explanations for results.

- The usefulness of the research results is also constrained by data limitations. Changes in actual crime levels have not been measurable in most cases because of various research constraints. Given that police reported crime figures reflect only a portion of true crime levels and are affected by factors other than the amount of actual crime resulting specifically from changes in police activity, studies which use only police reported crime data produce findings which are less than satisfactory in illuminating the relationship between police activity and crime.

In spite of the above problems, progress is being made toward resolving some of the issues involved in the police activity/crime relationship.

- Studies such as Some Effects of An Increase in Police Manpower in the 20th Precinct of New York City (1970) (Section 3.0) provide evidence that an increase in police activity can have an effect on crime. Other more recent studies, including the Kansas City Proactive-Reactive Deployment Experiment (1974) (Section 8.0) and the Chaiken, et al. The Impact of Police Activity on Crime: Robberies on the New York Subway System (1974) provide better specified research into the impact on crime of particular police activities, using sound research approaches.
- Methodologies derived from social science or operations research fields offer a range of alternative approaches to the assessment

of the relationship between police activity and crime reduction. As time goes on, one can expect to see more sophisticated applications of these approaches to the problem of evaluating the effects of police activity, as well as other targeted crime problems.

- The quality of the results of studies using sophisticated techniques is dependent on factors outside of the analytical techniques being employed. Well-developed methodologies carried out using unreliable data can only generate questionable results. Further, the production of valid generalizable findings depends not only upon sophisticated analytical techniques, but also upon the building-in of proper controls to the research design from the outset, as was done in the Kansas City Proactive-Reactive Deployment Experiment (1974) (Section 8.0).

The direction which research on patrol activity has taken is a good one. The six studies included in this review suggest that the following would improve the quality of future research.

- Additional cooperation between police practitioners and researchers to plan and conduct studies (like the Kansas City Proactive-Reactive Deployment Experiment (1974)) which are able to address questions of importance to both groups in a rigorous fashion.
- The development and use of data sources other than police reported crime figures (such as victimization surveys) for the examination of the impact on crime of police activity.

. A continuing commitment to inquiry in this area needs to be maintained at all governmental levels, in police departments, and among researchers in the field.

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1.0 INTRODUCTION

The bulk of police activity on the streets is involved in the labor intensive police patrol function. The roles of the police patrol, the basic unit of police activity, are many, ranging from public relations activities to direct intervention for citizen protection. While it is understood that police patrols provide many necessary services, it is also believed that in the course of their daily activities these patrols have a direct or indirect effect on crime. It is this assumed deterrent effect of police patrol which has been the traditional rationale for the many hours of police patrol time which is spent on non-specified activity and which is often termed "preventive" patrol. However, police administrators and researchers are now beginning to take a closer look at the police patrol function and the role it plays in crime reduction.

Because of their overriding mandate to provide public services, most police departments have in the past directed their efforts toward insuring adequate service delivery rather than evaluating longer-term effects of their services. In the short term, police patrols are allocated on the basis of crime levels and calls for service, and in a dynamic urban situation, extra overlay forces are shifted from area to area as the need for them arises. Until about a decade ago, the urban crime picture was such that while reported crime levels fluctuated within areas of the city, the overall crime levels in urban places appeared to be stable or increasing only moderately, making the short-term allocation of police resources an acceptable mode of operation.

However, in the 1960's, this situation appeared to be changing. While intra-urban fluctuations continued, the overall levels of reported crime in many American cities were steadily increasing. There has been public pressure on all agencies of the criminal justice system to curb this increase. Because of the extent of their daily interaction with the public, the police have felt this pressure as much, if not more, than other parts of the criminal justice system. Police departments now are not only facing the management problems of servicing complex urban populations, but they are also taking a closer look at the effects of their services in terms of the larger, longer-term urban crime picture.

Interest in these problems has produced a number of research studies, both by operating agencies and by affiliated research organizations, which address questions surrounding the effectiveness of police patrol in combating crime. This document reviews six of these studies.

2.0 REVIEW OF SELECTED RESEARCH

2.1 Approach

Police patrol research efforts currently available differ in their conceptualizations, purposes, and techniques. For example, theoretical research has been conducted to determine optimal patterns of patrol deployment based on the probability of interaction between the patrolling police officer and criminals on the streets. Similar theoretical research has been done in the design of dispatching systems to provide for the optimal allocation of limited patrol resources in answering calls for police service. The studies which were selected for this review are empirical rather than theoretical and focus on the relationship between patrol activity and crime. Most of the research efforts of this type have been undertaken to assess particular projects or programs, although several studies were conducted having broader issues in mind.

The projects discussed here have been selected on the basis of several criteria. All studies had been completed and their results were published and available for use by practitioners, researchers, and policy-makers. All studies have "face validity", which is to say that they involve accepted approaches in their research design and data analysis, and that their research and results warrant both discussion and dissemination.

The six studies discussed in subsequent sections illustrate both the range of problems in evaluating the effect of police patrol on crime and the various research strategies being utilized. Discussion

includes not only the results of the research which are of interest for obvious reasons, but also emphasizes the context in which each research study was conducted and the constraints which were present. The varied research approaches and designs used are discussed as well as the problems encountered. This review provides an opportunity to see the types of evaluative research being conducted in this area and what can realistically be expected from these research activities. In addition an overview of the current state of knowledge about the relationship between police activity and crime can be obtained.

2.2 Overview

One of the earliest attempts at examining the relationship between police activity and crime, was Operation 25, conducted in New York City in 1954. "The purpose of Operation 25 was simple," the report states; "It was to determine whether law-abiding citizens could be assured of peace and safety if the police force assigned to the area were sufficiently large and intelligently deployed." (Operation 25, 1954: p. 1) for a four-month period the manpower levels of foot and motor patrolmen were more than doubled. Deployment tactics were changed and foot patrol posts were laid out in a manner which allowed for constant visual surveillance of the entire area by the policeman on duty. Patrolmen could then be held responsible for criminal incidents occurring in their foot patrol post area.

One of the most important reports was based on the premise that if a patrol post is limited in length and under the constant observation of the assigned patrolman, the patrolman should properly have knowledge of everything that occurs on his post. He is thus responsible for failing to prevent certain types of crime or failing to arrest perpetrators. Whenever a serious crime was committed and the perpetrator not arrested, the captain assigned to supervise patrol for that tour personally investigated the circumstances of the case to determine why the patrolman had not prevented the crime or arrested the perpetrator. This investigation required interrogation of members of the force assigned to the area and a personal inspection of the physical conditions at the scene. A report of the investigation was then forwarded to the police commissioner. (Operation 25, 1954: p.6)

Other manpower changes were made. Several special squads were created and the number of investigators and detectives was increased. Only the radio motor patrol coverage remained as it had been before. Reported results in terms of crime were substantial. The total number of felonies decreased 55.6% from the same four-month period the previous year (488 reported incidents compared to 1,102). The total number of crime complaints (misdemeanors and felonies) declined 27.5% (1,273 compared to 1,757 the previous year).

While the findings of Operation 25 were dramatic, the validity of the research is questionable. Area crime trends, random fluctuation of crime, city-wide or nationwide crime trends, or even non-reporting by police, are equally valid explanations for the results. The study did, however, reinforce a number of commonly-held assumptions about the role the police can and do play in crime reduction. Operation 25 was eventually followed by a number of more rigorous examinations of this same question, six of which are discussed in succeeding chapters.

INVESTIGATIONS BUREAU

CRIME COMPLAINTS SUPPLEMENT - CALENDAR YEAR SUMMARY

| | YEAR 1973 | | YEAR 1972 | | YEAR 1971 | |
|--------------------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|
| | Offenses-Stolen Prop. | | Offenses-Stolen Prop. | | Offenses-Stolen Prop. | |
| Streets | 518 | \$ 36,525 | 393 | \$ 26,109 | 351 | \$ 21,862 |
| Home | 19 | 28,184 | 16 | 24,695 | 11 | 8,644 |
| Commercial | 54 | 18,762 | 45 | 9,606 | 46 | 10,105 |
| Automobile | 50 | 5,888 | 77 | 8,057 | 121 | 10,809 |
| Other | 511 | 132,755 | 485 | 241,552 | 431 | 148,206 |
| Public | 138 | 42,460 | 135 | 31,676 | 83 | 39,415 |
| Private | 132 | 5,879 | 70 | 4,340 | 63 | 2,355 |
| ROBBERY | 1,422 | \$ 270,451 | 1,221 | \$ 346,035 | 1,106 | \$ 241,396 |
| VEHICLES STOLEN | | | | | | |
| Public | 2,195 | \$ 656,901 | 2,072 | \$ 559,166 | 1,543 | \$ 360,656 |
| Private | 3,370 | 987,211 | 2,787 | 978,757 | 2,508 | 599,579 |
| Commercial | 1,804 | 636,900 | 1,627 | 496,944 | 1,303 | 346,293 |
| Other | 1,735 | 365,962 | 1,419 | 263,348 | 1,330 | 248,432 |
| Public | 488 | 89,665 | 367 | 114,462 | 283 | 47,732 |
| Private | 1,983 | 644,620 | 1,685 | 381,568 | 1,703 | 387,820 |
| Commercial | 126 | 13,839 | 111 | 43,803 | 79 | 13,187 |
| BURGLARY | 11,701 | \$3,395,098 | 10,068 | \$2,838,048 | 8,749 | \$2,003,699 |
| Public | 5,203 | \$ 279,958 | 6,252 | \$ 306,900 | 6,301 | \$ 282,216 |
| Private | 6,027 | 449,252 | 5,661 | 340,200 | 5,902 | 386,842 |
| Commercial | 4,137 | 512,026 | 3,833 | 420,916 | 3,114 | 319,695 |
| Other | 45 | 5,207 | 30 | 4,435 | 42 | 5,499 |
| Public | 148 | 4,660 | 152 | 7,464 | 120 | 7,818 |
| Private | 2,181 | 33,496 | 2,106 | 32,129 | 2,023 | 35,747 |
| Commercial | 5,842 | 1,241,141 | 5,717 | 1,195,364 | 5,861 | 973,274 |
| Other | 228 | 7,608 | 336 | 8,624 | 294 | 9,762 |
| Public | 5 | 82 | 17 | 490 | 7 | 338 |
| Private | 2,757 | 502,547 | 2,299 | 371,425 | 2,241 | 291,132 |
| LARCENY | 26,573 | \$3,035,977 | 26,403 | \$2,687,947 | 25,905 | \$2,312,323 |
| VEHICLES | 4,527 | \$4,877,272 | 4,040 | \$3,995,848 | 3,684 | \$3,486,699 |
| TOTAL | \$11,578,798 | | \$9,867,878 | | \$8,044,117 | |
| VEHICLES STOLEN LOCALLY | | | | | | |
| by San Diego PD | 3,700 | | 3,209 | | 3,097 | |
| by others | 500 | | 426 | | 563 | |
| | 4,222 | | 3,635 | | 3,660 | |
| by San Diego PD | 535 | | 450 | | 430 | |

3.0 SOME EFFECTS OF AN INCREASE IN POLICE MANPOWER IN THE 20TH PRECINCT OF NEW YORK CITY (1971)

3.1 Description

Some Effects of an Increase in Police Manpower in the 20th Precinct of New York City is the report of part of an eighteen-month study of the operations of the New York City Police Department conducted by S. James Press of the Rand Corporation of New York City. The report analyzes the effects of an increase in the police manpower in one precinct (20th) of New York City focusing on crime level changes which were observed during the fourteen-month increased manning period.

On October 18, 1966 the police manpower levels of the 20th Precinct were increased approximately forty percent in an attempt to study the deterrent effects of police activity. Ten crime categories were analyzed as to the changes observed using police reported crime data for a five-year period (1963 - 1967).

3.2 Context and Constraints

The research project was a quasi-experiment in that the implementation did not reflect the evaluative concerns of the study. This led to a number of drawbacks in the design of the test which placed constraints on the research. The report discussed these constraints:

Unfortunately, the design of the experiment was such that the quality of the additional patrolmen (relative to the others) could not be assessed, the way in which the additional patrolmen were deployed and utilized could not be determined, and it is even possible that the operational procedures in the 20th Precinct were substantially different during the experiment from the methods used elsewhere. It is also difficult to know whether or not there was a "Hawthorne effect" (a reduction or increase in reported crime simply because the patrolmen and residents knew a change was taking place). (Fisk, 1971: p. 2)

Other problems include the lack of replication built-in to the research design (that is, no other areas received similar treatment) which, since there was no randomization involved in the application of treatment, means that the research results may be applicable to only the 20th Precinct. The general problems of use of police reported crime data were felt here as well as changes in police reporting methods which limited the amount of data usable in the study analysis.

3.3 Research Design and Methodology

The approach used by Press in conducting this study involved a before/after comparison of crime levels in the precinct where manpower was added as compared to matched comparison precincts in the city. Because design was not considered in the decision to deploy manpower to the selected treatment area, a comparison area approach was used in an attempt to control for other possible explanations for any observed crime level changes in the treatment area.

Comparison (or "control") precincts were selected on a post facto basis. Three criteria were used to select these areas. First, no significant manning changes occurred in the comparison areas during the time period covered by analysis. Second, comparison areas had an equivalent amount of crime during the before treatment time period as did the treatment area (within ten percent limits). Finally, comparison areas were similar to the 20th Precinct in terms of physical and social characteristics. Comparison areas were selected for each of the ten crimes analyzed for the target precinct and the immediately surrounding precincts. These adjacent precincts were examined for possible localized geographical displacement effects of the manpower increase.

Using this research design, crime before treatment was measured in terms of average number of crimes per week. Crime for the time period during treatment was measured in a similar manner.

Seasonal variations were weighted out in the calculations. The changes in crime levels coterminous with the manpower changes in the 20th Precinct were then assessed using Bayesian statistical methods, factoring out changes occurring at the same time in comparison areas.

This research approach is a good one for a number of reasons. Expectations for crime level changes were based on an empirically projected result; i.e., significance of crime level changes in the target area was determined on the basis of what one observed in similar, but untreated areas. The use of Bayesian techniques in this type of analysis, a rarely used approach, provides the analyst with a methodologically sound handle on the assessment problem in this context.

The results of the analysis are shown inlow in Table I.

TABLE I

PER WEEK DECREASES IN CRIME

| | Crimes Visible From the Street | | Other Crimes | |
|--------------------|-----------------------------------|---------------------|-----------------|---------------------|
| | Net Decrease | Percent Decrease | Net Decrease | Percent Decrease |
| Robbery | 2.6 | 33 | 2.0 | 21 |
| Grand Larceny | 17.0 | 49 | 6.6 | 29 |
| Burglary | * | * | * | * |
| Auto Theft | 7.7 | 49 | ** | ** |
| Other Felonies | 23.7 | 36 | 4.4 | 5 |
| Other Misdemeanors | 8.0 | 15 | * | * |
| Total Misdemeanors | * | * | * | * |

(Source: Press, 1971: p. ii)

* Results not significant

** Category not applicable

These results indicate that there was a significant reduction in certain crime categories and that this was more often the case in the examination of crimes occurring on the streets. Before discussing the meaning of these results, certain features of the study design should be discussed in terms of their effect on these results.

The first of these involves the basis for the choice of comparison areas. Crime level is an important consideration in the selection of comparison areas for this type of study. Press uses a "comparative statics" approach in consideration of this factor; comparison areas were selected on the basis of a single crime level for one block of time. This type of approach allows for the possibility that these areas, which are similar during the observed time period, are in fact, using a larger time frame of reference, moving in different directions. If this were the case, predictions based on these areas would be unreliable.

Secondly, because of the lack of replication in the design and the similar lack of randomization, it is difficult to assess whether the changes observed in the 20th Precinct were due to the nature of the treatment or to peculiarities of the particular treatment area.

Finally, because there is little information on what was actually involved in the manpower increase, (see page 8 above), many questions regarding the explanation of observed results remain unanswered as do questions of future policy planning based on these results.

Keeping the above caveats in mind, it is reasonable to say of the study results that they indicate that police activity can have an impact on crime levels. How and why remain to be explored.

3.4 Crime Displacement

The 20th Precinct manpower study addresses the question of geographical displacement of crime in the same manner as the assessment of crime level changes in the targeted 20th Precinct. Control areas were selected for the areas immediately adjacent to the 20th Precinct and analysis, as described above, was done to determine any changes in crime levels which occurred in these areas during the time period covered by the treatment.

The report explains:

It might be anticipated that increased police manpower would deter crime in the region where the additional patrolmen are placed, while crime incidence might increase in neighboring precincts. Moreover, since general increases in crime (unrelated to policy changes) would tend to affect adjacent precincts in the same way, net increases found in the 18th, 22nd, and 24th Precincts, but not found in the 20th, are probably displacements. (Press, 1971: p. 14)

In general, large-scale displacement did not appear to have occurred. Discounting possible transfers of one crime per week or less, only two possible displacement effects were observed in the 18th and 24th Precincts:

- While inside grand larcenies went down in the 20th Precinct by 6.64 crimes per week, they went up in both the 18th and 24th Precincts by 12.45 crimes per week and 1.41 crimes per week, respectively.
- While inside other misdemeanors showed no significant change in the 20th Precinct, they increased in the 18th Precinct by 7.84 crimes per week; moreover, while inside total misdemeanors showed no significant change in the 20th Precinct, they increased by 6.20 crimes per week in the 18th Precinct. (Press, 1971: p. 15)

Looking at possible displacement into the 22nd Precinct (Central Park), stronger possible displacement effects were observed consistently across the five outside crime types, as shown in the results which follow.

| | <u>Robbery</u> | <u>Felonious Assault</u> | <u>Grand Larceny</u> | <u>Total Felonies</u> | <u>Total Misdemeanors</u> |
|---|----------------|--------------------------|----------------------|-----------------------|---------------------------|
| <u>20th Precinct</u> (Net decrease in crimes per week) | 2.59 | .89 | 17.14 | 23.68 | 4.50 |
| <u>Central Park</u> (Net increase in crimes per week) | 4.51 | .13 | 2.32 | 7.19 | 1.07 |

(Press, 1971: p. 15)

These results indicate that if displacement is in fact occurring, only a portion of the crime "removed" from the target area has been "moved" to the surrounding area including Central Park. However, these results should be viewed with caution. Credibility intervals could not be calculated for this analysis and it is possible that the results are not statistically significant. The report also points out that during the time period of the manning increase, the manpower levels in Central Park declined eleven percent, another possible explanation for the crime increase observed in this area.

3.5 Summary

In terms of understanding the effect that police activity can have on crime, the most important point made by this study is that there is evidence that increases in police manpower can have an effect on crime. While limitations of the study restrict large-scale generalization of the research results, this project establishes a first step in the definition of the problem of addressing the relationship between police activity and crime. It in fact describes "outer limits" of the problem by demonstrating that in one situation where an unspecified increase in

police activity was effected, an impact on crime was felt. Which types of police activity made a difference and how they make a difference remain to be "discovered". It has been exhibited that these are real questions to be addressed and that there is a relationship between police activity and crime to be explored. Further studies examine some better specified questions (i.e., some viable explanations) within the bounds established by this study and will be discussed in this light in further sections of this paper.

4.0 AN EXAMINATION OF THE EFFECTS OF AN INCREASE IN INTENSIVE POLICE PATROL (WASHINGTON, D. C.: 1970)

4.1 Description of the Research

Under the auspices of a pilot grant from NILECJ, Frank Budnick of the University of Rhode Island conducted a research project in 1970 to assess the impact on crime of increases in the levels of police patrol. This study differs from the 20th Precinct study in that (1) it specifies the type of police activity being increased and evaluated (i.e., police patrol activity), and in that (2) replication was built-in to the design. However, as the discussion below will show, the two research approaches are similar in a number of ways.

The field for Budnick's study was made up of three police precincts in Washington, D.C., where for a one-month period, visible police manpower was increased in each of these three areas. Index crime data for these target areas and their adjacent areas was analyzed to assess the resulting changes in crime levels during the increased patrol periods.

4.2 Context and Constraints

As mentioned above, the Budnick study has the advantage of involving a number of test areas receiving similar treatment, adding replication to this study which was absent from the 20th Precinct effort. The selection of these areas, however, was not random, so problems of generalizability still result. Like the 20th Precinct project, and most other research studies in this field, Budnick is restricted to the use of police reported crime figures and is faced with the recognized problems associated with this data source (see page 8 above). Finally, the treatment time period

for evaluation in the study is only one month in length. The short time span causes problems in sorting out effects of transition from true effects of treatment.

4.3 Research Design and Methodology

The Budnick study is based on a before/after design using comparison areas similar to the 20th Precinct project but with several differences. The most important of these is the basis used for selection of comparison areas. Unlike Press' "comparative statics" approach to matching target and comparison areas, Budnick focuses on the crime level process to make comparison area selection; the study presents a "crime-correlated areas model" which was developed, tested and utilized as part of the research.

The crime-correlated areas model is based on the underlying assumption that there are a wide range of factors (many of which are unidentified and most of which are not clearly understood) which function to determine crime levels in particular sections of urban places. In most studies, comparison area selections are made on the basis of matching target areas with other areas on the basis of an arbitrary set of these factors. Budnick does not attempt to isolate the appropriate factors; rather, he capitalizes on the covariant effect this set of factors has on different areas of the city. Budnick assumes, reasonably, that areas which are changing in a similar pattern are responding to changes in a similar set of factors and if areas have been co-varying for a sufficient length of time, one can be confident that this covariant pattern will continue to hold in the short-range future. The crime-correlated model is designed to identify matching areas which have exhibited a similar pattern of crime fluctuation for a ten-year

period of time, predicting that these areas will change in a similar manner in the subsequent year. Budnick makes no assumptions about the absolute level of crime; instead, he focuses on the pattern of flux in the various crime levels. Budnick tested the reliability of his model predictions on non-test data and found a high confidence in the results. This model is used to select comparison areas for the examination of the effects of increased patrol coverage.

Once comparison areas are selected, the crime level changes occurring in these areas during the treatment time period were used to calculate levels of crime in target areas which would have been expected without the treatment. The expected figures were then compared with actual figures to determine if any statistically significant differences exist between the two.

The results of the analysis are mixed: in two of the three cases, aggregate index offenses showed a significant decline. In one of these cases, burglaries* and aggravated assault decreased significantly, while in the other, robbery and auto theft declined a significant amount. In the third area, no significant decreases were observed.

There are a number of possible explanations for these mixed results:

- The time span examined was too short to show reliable results.
- The contextual situations in the three areas were substantially different, thus making the effects of the patrols different.
- Differences in the quality and attitudes of the patrols in each meant that the treatment applied in each case was not really similar.

*Burglaries were not affected in the 20th Precinct study (see page 10).

- The reporting of crimes may have increased in one area and not in others.

4.4 Crime Displacement

Budnick addresses the issues of both temporal and geographic displacement for the three test areas in his study. The crime-correlated areas approach, described above for crime level analysis in the target area, is also used in this analysis.

In terms of displacement of crime to areas peripheral to the treatment area, the analysis showed mixed results. Some peripheral reporting areas showed a decrease, while others showed an increase. Some of the observed increases were substantial but these were infrequent and appear to be isolated effects. Budnick noted an interesting pattern when looking at the geographical location of these peripheral areas which exhibited crime increases. In every case that substantial increases were observed, these increased crime areas were adjacent to peripheral areas with a substantial decrease in crime. This pattern adds support to the possibility of the occurrence of displacement of crime.

Analysis of crime in treatment versus non-treatment time slots was done to examine possible temporal displacement effects. The analysis results showed that there was no evidence to indicate a temporal shift in crime. For areas exhibiting crime decreases, no shift in the temporal distribution of crime events was observed, indicating that, if anything, the treatment effects were felt not only during patrol hours, but during non-patrol hours as well.

4.5 Summary

The information provided by the Budnick study, while not conclusive in one direction, does add to our understanding of the complexity of the problem. The 20th Precinct study showed that increases in police manpower in numerous functions can effect a reduction in certain types of crime. Looking at visible police patrol levels, Budnick's results indicate that increases in this police capacity result in different types of crime impacts in different types of areas. Thus, one might conclude that the impact of this type of strategy is to some extent determined by factors which are not under police control.

5.0 THE INDIANAPOLIS FLEET PLAN: AN EXAMPLE OF PROGRAM EVALUATION FOR LOCAL GOVERNMENT (1970)

5.1 Description of the Research

The Indianapolis Fleet Plan Study was conducted by Donald Fisk of the Urban Institute in 1970 for the City of Fort Worth, Texas to provide policy makers in that city with information as to the advisability of the implementation of a similar fleet plan program in Fort Worth, Texas.

The fleet plan program, initiated in August 1969 by the Indianapolis Police Department involved:

...assigning marked police cars to uniformed policemen for their off-duty use as well as on duty. Patrolmen began driving patrol cars to and from work. Many use the cars for personal errands while off duty. Three major restrictions are placed on the off-duty use of the cars: the cars are restricted to the county, the police radios must be turned on whenever the car is in use, and the officer is responsible for any major emergency in his immediate area while in the car. The city bears all the expenses of operation. (Fisk, 1970: p. 7)

In effect, the program involved an observable increase in police presence without any planned change in police activity.

The research study examines a range of possible impacts of the fleet plan program including its effect on crime, clearance rates, and traffic accidents, as well as operational aspects of the program, which are of interest to policy makers in making program adoption decisions. In this discussion, the focus is on the analysis of program impact on crime.

5.2 Context and Constraints

The Indianapolis Fleet Plan Study was conducted in a post facto fashion. No designs for evaluation were made when the Fleet Plan Program was established and research began after the program had been operating for a number of months.

The constraints facing the research in this study are not unlike those facing most local governments. These include:

- Severe limitations of resources and time.
- Data limited both by availability and time for collection.
- External changes that may have influenced the findings (for example, organizational changes in the police department and courts).
- Lack of a significant body of past research on the cause and effect relations in (sic.) the type of program being evaluated.

(Fisk, 1970: p. 6)

In addition, as is the case with other studies, data is restricted to reported crime figures, necessarily placing limitations on the interpretation of results.

5.3 Research Design and Methodology

The approach taken in this study was as follows. Crime level changes occurring during the time of the operation of the fleet plan were assessed on the basis of crime projections. Analysis was conducted on a city-wide basis since the effects of the program would not be expected to be geographically focused within the city.

Two types of analyses were conducted. In one, crime level changes occurring in Indianapolis during the time of program operation were compared with changes in other cities and other areas. The results are presented in Table II. The results of this analysis strategy are unclear, as is their interpretation. Above all, there is little reason to believe that all the areas would show a similar pattern and there are many equally valid explanations as to why they are incomparable cases.

TABLE II
PERCENT CHANGE IN REPORTED CRIME FOR SELECTED GEOGRAPHIC
AREAS BETWEEN FIRST QUARTER 1969 AND 1970

| <u>Area</u> | <u>Total</u> | <u>Robbery</u> | <u>Burglary</u> | <u>Larceny over \$50</u> | <u>Auto Theft</u> |
|---------------------------------------|--------------|----------------|-----------------|------------------------------|-------------------|
| Total U.S. | 13 | 15 | 12 | 17 | 11 |
| Cities between 500,000 - 1 million | 10 | 10 | 13 | 15 | 4 |
| North Central States | 17 | 25 | 12 | 22 | 17 |
| Fort Worth | 30 | 56 | 26 | 50 | 29 |
| Indianapolis | 12 | - 2 | 11 | 22 | - 8 |

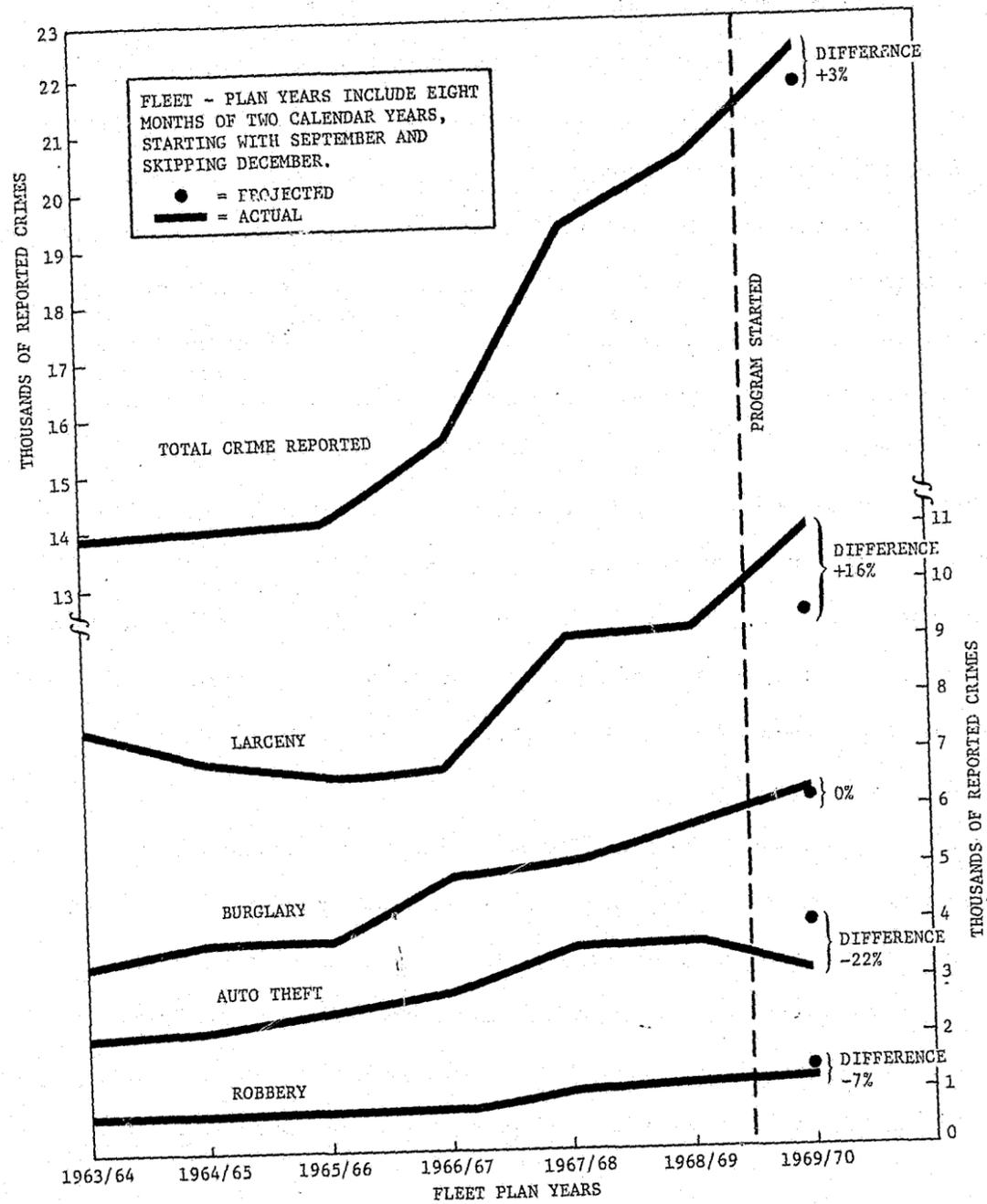
Source: Uniform Crime Reporting (12) (Fisk, 1970: 37)

In the second approach used in the study, projections based on previous crime experience were made for the amount of crime which one might expect to occur in the city if one had not introduced the program. These crime projections were made on the basis of average yearly* increases in crime prior to the implementation of the program. The assumption was made that without the introduction of the program, the crime picture would continue in a manner similar to past experience. These projection estimates of expected crime generated in the above fashion were then compared with the amount of crime which was actually reported during the time period of the program, to assess changes in the crime picture which occurred during program operation.

Analysis was done of both index crimes and of several outdoor crimes which one might expect to be affected by a program of this type. This analysis strategy yielded the results displayed on the two figures which follow on pages 24 and 25.

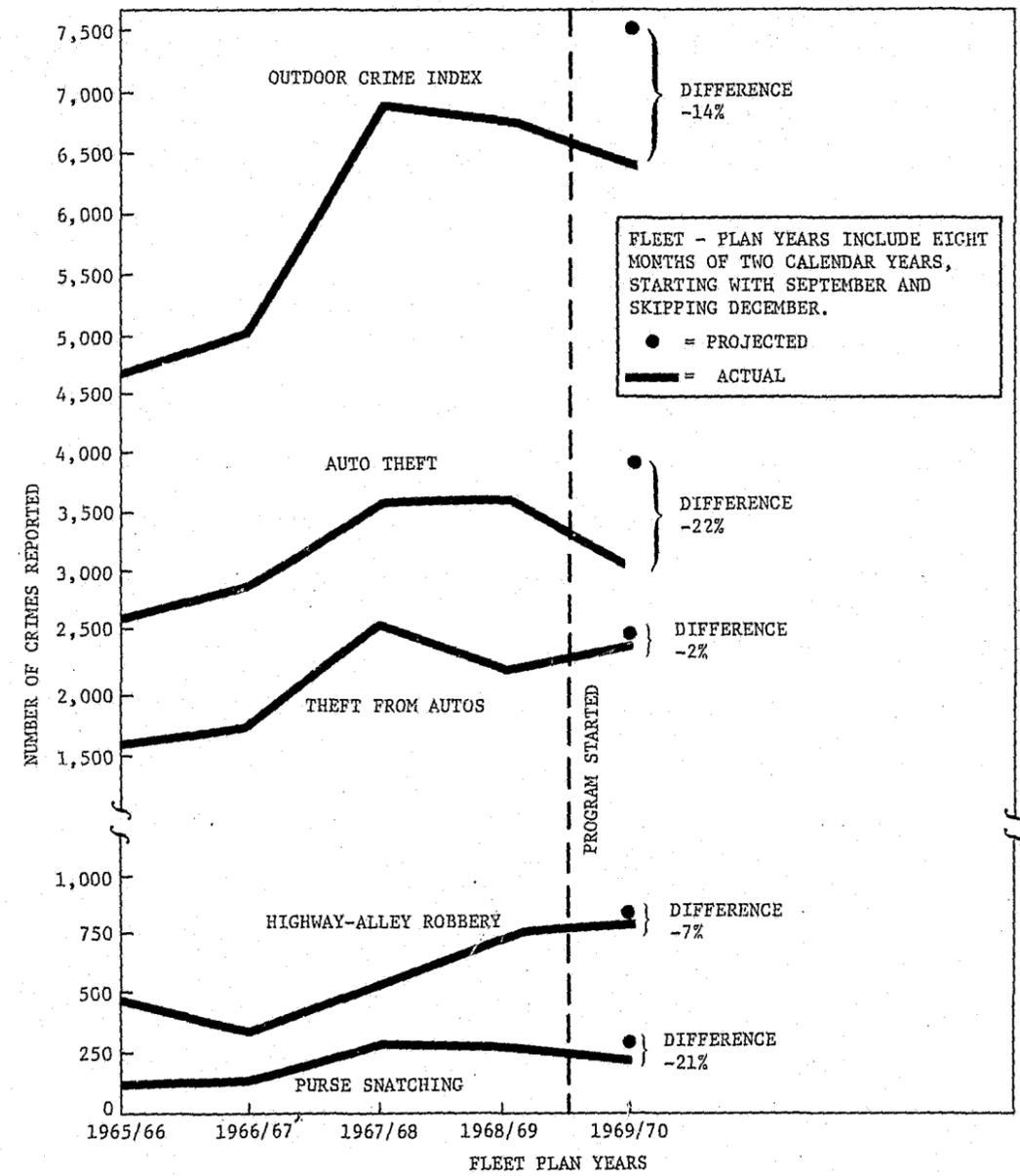
As the figures show, the total number of crimes increased during the first eight months of program operation and the trend in total crime growth was greater than that expected. However, in terms of certain crimes, substantial decreases from what might have been expected were observed. This is especially true for the outdoor crimes of auto theft, theft from autos, highway and alley robbery, and purse snatching.

*Crime data was actually adjusted at the time of evaluation to what the report terms "fleet plan years" because the program had not been operating a full calendar year. Previous crime data was aggregated on a basis similar to the time period covered by the program (i.e. into "fleet plan" years) and analysis was done on this unit of data.



SOURCE: TABLE 3
 (FISK, 1970: 10)

FIGURE 1
 SELECTED CRIME STATISTICS—INDIANAPOLIS
 1963/64—1969/70 (FLEET PLAN YEARS)



SOURCE: TABLE 4
 (FISK, 1970: 13)

FIGURE 2
 MAJOR OUTDOOR CRIMES—INDIANAPOLIS
 1965/66—1969/70 (FLEET PLAN YEARS)

To evaluate the significance of these results, one must consider certain features of the research study. Analysis was done on city-wide crime figures because the program was not limited to a specific section of the city. The use of marked vehicles was restricted to the county, but no other limitations of car usage were made within this area. Because of this, the research had no way to isolate where the cars were actually present and for what periods of time. Thus, it is difficult to differentiate between effects attributable to the program and those arising from other unrelated factors.

An attempt was made to get around this problem by evaluating crime level changes occurring in that section of Indianapolis which was the place of residence of a large portion of the policemen participating in the program, given that this area would be expected to receive somewhat greater program exposure than would other areas of the city. The analysis results showed that the crime level changes in this area were not significantly different than changes in the rest of the city.

5.4 Crime Displacement

The Indianapolis Fleet Plan Study does not address the question of crime displacement. Because the program covers the entire city and parts of the surrounding county for effectively a twenty-four hour/day period, displacement is a difficult issue to address in the evaluation of the program.

5.5 Summary

In effect, this study provides little information as to the effect of this type of police activity on crime. A complex urban place like

Indianapolis is subject to a wide range of influences which can affect crime levels and the lack of control in the study makes it impossible to attribute with any confidence the observed changes in the crime picture to the activities of the Fleet Plan Program.

6.0 THE IMPACT OF POLICE ACTIVITY ON CRIME: ROBBERIES IN THE NEW YORK CITY SUBWAY SYSTEM (1974)

6.1 Description of the Research

A study was completed in January 1974 by the New York City Rand Corporation (under contract to the New York City Bureau of the Budget) which examines the impact of police activity on crime in the New York City subway system. This study addresses a question which is of interest to transit operators and administrators as well as to passengers. Its findings are applicable to the more general questions being posed here about the relationship between police activity and crime. The study focuses on a particular case, a case in which one could expect general principles to hold. An understanding of the relationship in this particular case should assist in understanding the general relationship as well.

The specific purpose of the Rand study was to "examine and report the effects of police manpower on crime, documenting and analyzing as a case example effects on transit crime of changes...in the deployment of transit police, and interactions of these crime effects with crime in surface transportation..." (Chaiken, et al., 1974: p. iii). Using crime data from 1963 through 1970, the study examines crime level changes which accompanied a greater than 100% increase in uniformed transit police officers in 1965.

6.2 Context and Constraints

No design, per se, is built-in to this study. The treatment being examined, an increase in visible police, was applied some five years

before the study began and it was applied system-wide (i.e., the goal of the deployment increases and changes was to have one uniformed officer present on every train and in every station during the hours of subway operation). The effects being examined are those affecting the entire system in the time period following the manpower increase.

As such, no control is built into the study. (No other subway system's changes are examined for comparable effects without similar treatment, nor is treatment applied to one part of the system and evaluated in terms of changes resulting in the untreated portion of the system.) Such a design was out of the reach of the New York City Rand Corporation since their role as researchers began long after manpower changes were instituted. In fact, because the motivation for the 1965 deployment changes was primarily to strengthen what was perceived to be a weak transit security system and to increase citizen protection within the subway system, it is understandable that the design considerations indicated above were not incorporated into the changes from the start.

This lack of control means that the study is in fact, as it calls itself, a case example. Results are not intended to be directly generalizable, either to other subway systems or other arenas of police activity. They rather serve to demonstrate the effects which manpower increases have had in the New York City subway system and as such they provide researchers with additional information, rather than answers, to the questions of the relationship between police activity and crime.

Data used in the analysis consists of crime reported to the transit police. While this type of reported crime data is subject to the same

questions as other police reported crime figures, this data set may be more reliable for a number of reasons. As the report states:

Subway robberies may...be better reported than robberies in general. In the first place, the victims of some of these robberies are Transit Authority employees (i.e., primarily token booth operators), who are almost certain to report robberies because they must account for missing cash and tokens. When robbery victims are passengers, the subway itself delivers them to a station where it is convenient for them to report the robbery to a patrolman or change booth clerk. Victims of robberies outside the subway system often have to make a special effort to report the crime to the police. (Chaiken, et al., 1970: p. 3)

6.3 Research Design and Methodology

The research approach used in this study is one which involves monitoring changes in crime levels during the six years which followed the manpower increase in April 1965. Yearly figures reflecting transit crimes from 1963 through 1970 are graphically arrayed and conclusions are drawn from this display. Conclusions reached are as follows:

- Nighttime felonies, felonies occurring during the hours of the principal manning increase, showed a decline during the first year of increased manpower and maintained a fairly stable level through 1970. This indicates that the manpower increase has had the desired effect.
- Daytime felonies, felonies occurring during hours receiving only minor manpower increases, also showed a decline during the first year but resumed a growing trend after that point. This may indicate that the increases in nighttime manpower had a short-term effect on crime during non-treated time slots but this effect wore off after the first year.

- These two effects contributed to a "slowed-down" but continually rising trend in subway crime observed after the institution of the increased manpower deployments.

These findings are interesting in that they add support to the belief that police activity can act as a deterrent to crime. The study itself is not restricted to the analysis of crime level changes but goes further to explore reasons behind changes, or the lack of changes in certain areas such as minor violations. This analysis will not be discussed further here, except to say that this part of the study supports the general findings cited above.

Because the crime level analysis does not present extensive historical data and, because analysis rests on visual interpretation of available data, it is difficult to assess the significance of the observed crime level changes. Crime levels, like other phenomena, exhibit random fluctuations. How much of the observed changes in crime are attributable to randomness and how much can be tied to the manpower increase cannot be determined using Chaiken's approach. It does appear, however, that it is unlikely that the observed changes in nighttime felonies (the actual target crimes and the pivotal point in the conclusions) would have occurred without the intervention.

6.4 Crime Displacement

The New York City Subway Study addresses the question of crime displacement from a somewhat different perspective than the other studies reviewed here. Chaiken found that subway stations (and train runs) exhibiting high crime levels were either located in, or originated, or

terminated in stations which were located in crime problem areas of the city. Unfortunately, crime data for these areas, maintained by the New York City Police Department, was not available for analysis, so that examination of possible "above-ground" displacement was not possible. In any case, because the number of subway crimes is extremely small as compared to above-ground crime, it would be difficult to discern if, in fact, displacement was occurring.

Since twenty-four hour, system-wide subway police manpower was affected by the deployment increases, displacement within the system could not be examined. As discussed in the previous section, when one examines crime effects for the hours when the most substantial increases in deployment were made (i.e., nighttime hours) in comparison to other hours of fewer increases (i.e., daytime), one observes an effect contrary to displacement. The data indicates that the effect of the nighttime increases in effect "spilled over" into the daytime hours, and a short-term decline in crime was observed during this "non-treatment" period.

Another possible displacement effect is the shift of crime from targeted criminal activity to other similar types of crime. This study examines the interaction first, between subway robberies and bus robberies and second, between subway robberies and taxi robberies. The analysis involved a comparison between numbers of crimes and trends in crime for these alternative crime opportunities; it factored in anti-crime measures such as the effect of exact-change procedures in buses and a

taxi-truck surveillance program as well as the manpower increases in the subway system. The results of the analysis are as follows:

- There is an interaction between bus and subway robberies, but the relationship is not a direct one. Study findings suggest quite strongly that "some persons who would otherwise have been robbing in the subways found the buses a more attractive target while, in addition, there were some [potential] bus robbers who were not being diverted from the subways." (Chaiken, *et al.*, 1974: p. 28) Decreases in crime which were observed in the subway (accompanying increases in crime on buses) were only temporary; when exact-change anti-crime measures were taken in buses, subway crime returned to a level one would have expected, given the established trend.
- If displacement from taxis to buses had occurred, it was not very substantial. Because the number of taxi robberies is substantially larger than subway robberies, even partial displacement would be expected to have a significant impact on the subway robbery figures. The data did not show such an impact.

6.5 Summary

The Impact of Police Activity on Crime: Robberies on the New York City Subway System provides another piece of information to our growing picture of the relationship between police activity and crime. The study findings indicate that in a closed system, in this case the New York City subway system, a substantial increase in visible, uniformed

enforcement officers can act as a deterrent to serious crime both in the long run, in the time and place where the manpower is deployed, and over a shorter term, in surrounding, untreated time periods.

7.0 TECHNICAL EVALUATION OF ST. LOUIS FOOT PATROL (1973)

7.1 Description of the Research

As part of the High Impact Anti-Crime Program, a foot patrol project was planned, implemented, and evaluated in St. Louis, Missouri. The technical evaluation report prepared by the St. Louis Crime Analysis Team* presents analysis into the effectiveness of the Foot Patrol in reducing crime. This project evaluation study, required by the Impact Program, was intended to provide information to assist decision-makers at several governmental levels, specifically to inform the LEAA of the effectiveness of this patrol strategy, to assist local policy makers in making an informed decision on future funding of this particular project, and to assist the police department in future goal-oriented planning efforts.

The Foot Patrol Project was planned and implemented in the following manner. Analysis of crime data was conducted for police reporting areas in St. Louis and for police deployment shift time slots. Areas and time slots of high crime incidence were identified on the basis of this data analysis. Additional patrol forces were then deployed to these high crime areas during high incidence crime hours. These foot patrols were made up of regular St. Louis policemen, working on an over-time basis.

At the time the evaluation report was prepared, the foot patrol project was in its second phase of operations. In the first phase, six reporting areas were covered by the patrol. In the second phase,

*An agency created to plan and evaluate projects in the High Impact Anti-Crime Program.

the number of patrol areas was increased, as were the number of men, but to a lesser extent, making for a less intense patrol coverage in the second phase. Using police reported crime figures, the St. Louis evaluators assessed the impact this foot patrol strategy was having on crime in the target areas during both phases.

7.2 Context and Constraints

Since this study was conducted as one of a number of project evaluations in a relatively large national anti-crime program, it was necessary for the evaluators to work within the constraints of the project as much as possible. In terms of this project, this meant that first, like other studies, police reported crime figures were used; second, there was no control built into the study. High crime areas were selected and treated (making for a biased sample of areas being evaluated) with no control or comparison areas available for use in the analysis of patrol impact. This situation, which makes results suspect and of only very limited generalization, is a common one often faced by city-level evaluators. In addition, at the time of evaluation, the St. Louis evaluators had only a limited amount of historical data available to them, thus further restricting the type of analysis which was feasible.

7.3 Research Design and Methodology

The approach used by the St. Louis evaluators to assess the impact of the foot patrol on crime utilized crime data aggregated at a target area scale and at a city-wide scale. As is discussed above, no control or comparison areas are used; rather, changes in crime in the target area are "normalized" by city-wide crime changes. This was done based

on the assumption that since the target areas are part of the city, one can assume that if no treatment had been applied they would have acted like the rest of the city; since treatment has been applied, one can further assume that changes observed city-wide have occurred in the target area as well and that in order to best estimate the impact of the treatment, these city-wide effects should be factored out.

Specifically, the analysis strategy used in the study is as follows. Crime data for the targeted areas were aggregated and treated as a single target area. The number of crimes occurring in the target area during treatment was compared to the number occurring during a comparable time period one year preceding the treatment. This was expressed as a percentage, indicating the change in the absolute number of crimes occurring in target areas since the foot patrol was begun. To evaluate the significance of this change, two types of comparisons were made.

First, the percentage change in crime accompanying the foot patrol was compared to the percentage change in crime occurring two years preceding the patrol. (For example, if the patrol was operating for the calendar year 1971, the percentage change in crime from CY1970 to CY1971 would be compared with the percentage change from CY1969 to CY1970.) This was done in an attempt to assess the impact of the patrol in light of previously established crime trends in the target area.

A second comparison was made of the percent change in crime in the target area with the percent change in crime occurring for the same time period city-wide. This was done in an attempt to normalize the

target area changes, as discussed above, and thus account for the effect of factors other than the foot patrol.

This analysis strategy produced the following results:

- In patrolled areas, Impact crime (Part I-Person Crimes Plus Burglary), which was showing a decline relative to city-wide trends before the treatment began, continued to decrease relative to the rest of the city, at a more rapid rate than before the patrol was implemented.
- Similar crime reduction effects were observed for person crimes alone during the more concentrated treatment periods. However, when less intensive patrol was implemented, an increase in crime in the target area (again, relative to city-wide) was observed.
- Burglary, which was on the increase in the target area relative to the rest of the city immediately prior to the institution of the foot patrol, reversed this trend with the onset of treatment and continued to decrease through all phases of the patrol. The report further states that "since the number of burglaries generally exceeds the number of person crimes in the city by a factor of two to one or more, the burglary reductions during patrol operations appear more significant than the effects of person crimes..." (Richards, 1974: p. 21)
- Direct crime reduction effects (in target areas during hours of increased patrol) were observed for the more concentrated phase of the patrol. This was not the case for the periods of less intense patrol deployment.

These results seem to indicate that (1) burglary may be more affected than other types of crime by a foot patrol strategy and (2) that intensity of patrol should be considered in deployment decisions if reduction of certain crimes (i.e., crimes other than burglary) are sought. Although these results are interesting, the type of research strategy used necessitates some caution in evaluating their significance.

The St. Louis research approach leaves a number of questions unresolved:

- This type of short-range before/after evaluation leaves open the possibility that the observed changes in crime are a result of random fluctuation rather than being attributable to the treatment. Because the target areas were selected on the basis of the severity of their crime problems, this possibility is even more real because one might expect crime to decline due to regression to the mean, thus confounding interpretation of observed results.
- Since no control except for "normalizing" for city-wide crime trends is incorporated into the test, it is difficult to discern how much of the observed effect is due to the peculiarities of the target areas rather than the treatment. The intent of the "normalization" is a good one (i.e., factoring out whole system effects on the target area from treatment effects); however, it should be noted that the treatment, if it affects the target area, will also affect the system and by factoring out system effects with the method used by St. Louis, one may, in actuality, be factoring out the effects one is attempting to measure.

These problems all pose threats to internal validity and are endemic to before/after designs without the use of control or comparison areas.

In addition to these problems, the manner in which St. Louis aggregates target areas further confuses the interpretation of results. The evaluation report covers several phases of foot patrol operation. In each phase, Pauly blocks (reporting areas) are selected for treatment on the basis of crime problems. From one phase to the next, the areas covered change and increase and the intensity of the patrol decreases. Some areas received treatment during the first phase of operations while some did not, and new areas were added with each subsequent phase. What this means is that after the first phase, the aggregated target area incorporated a group of Pauly blocks mixed in terms of treatment. The group includes areas which are receiving an increase in patrol coverage as well as areas which, having had a higher intensity treatment during the previous phase, are essentially experiencing reduction in patrol coverage. The interpretation of results of analysis conducted on such a target area is difficult if not impossible.

7.4 Crime Displacement

The St. Louis Foot Patrol addresses the question of possible displacement effects. The analysis approach used here is similar to that utilized in the assessment of direct project effects (see Section 7.3). Hence, the results of the displacement analysis are subject to the same caveats discussed above.

Addressing the question of the displacement of crime into adjacent geographical areas, one runs into the problem of incomparable areas. The

report makes such a comparison and no significant shifts are observed. Analysis of the differential effect of the treatment during patrol hours and non-patrol hours shows that crime was more affected during patrol hours than non-patrol hours for the more concentrated patrol coverage. The analysis approach does not, however, lend itself to determination of whether any temporal shift of crime has occurred. In addition, the data do not indicate that the patrols have a greater affect on outdoor crime than on indoor crime.

7.5 Summary

Given the above methodological problems, this study is of little help in understanding the relationship between police activity and crime. However, the study does demonstrate a number of the problems facing evaluators at a city level in attempting to work within real world constraints to conduct this type of research. Unless greater emphasis is placed on the development of more rigorous research design as part of project level evaluation activities, it is likely that this type of problem will persist, making research conducted in this context less useful than it might be otherwise.

8.0 KANSAS CITY PROACTIVE-REACTIVE DEPLOYMENT EXPERIMENT (1974)

8.1 Description of the Research

The Kansas City Proactive-Reactive Deployment Experiment was conducted in 1972-73 by the Kansas City Police Department and the Police Foundation "to assist the Kansas City Police Department to provide a more efficient and effective police patrol practice to the citizens of Kansas City, Missouri." (Case IV, Draft)

The study involves the first controlled, experimental assessment of police patrol and its impact on crime. While the final report of this study is not yet publicly available, this project will be discussed here on the basis of summary reports produced by the researchers and recent presentations of research results.

8.2 Context and Constraints

The context in which this study was planned and operated is unique in this research field. The initial ideas for a controlled test of the effectiveness of police patrol were generated by a task force of the Kansas City Police Department. The South Patrol Division Task Force, comprised of members of the police department of all levels from the patrolmen on the streets to the division commander, identified the patrol function as an important portion of police activity about which little is known or understood. The Task Force was primarily interested in exploring new approaches to crime reduction. Its members recognized, however, that with current resource constraints such exploration would necessitate a cutback on routine patrol functions. It was their belief that more substantial information is needed about the impact of police

patrol on crime if the police department is to utilize its resources in an efficient and effective manner. It was this inquiry which set the stage for the project.

Since the study had its base with the policemen who would be participants, many considerations which are often ignored at the outset of police patrol projects were incorporated into Kansas City project planning. Careful controls were built into the design from the start. Specifically, patrols were deployed in a fashion which was directly amenable to clear crime level analysis. Victimization surveys were conducted before any changes in patrol deployment were made. In short, research factors played a focal role in project design.

This did not mean that the project was without problems. According to the researchers, the first attempt at operating the project had to be aborted because monitoring of the police activity on the streets indicated that in practice the necessary changes in police patrol were not being made. Once steps were taken to insure that this would not occur a second time, the project was reinstated. Without the cooperation of the police department (commanders and patrolmen) and their dedication to the research being conducted, these changes could not have been made.

In addition, the use of victimization surveys in this study provides the first information on the effect of police patrol on "true" crime.

8.3 Research Design and Methodology

The research design for the Kansas City Study involves random allocation of varying levels of routine preventive police patrol treatment

among matched target areas. Replication is incorporated through the inclusion of a number of target areas receiving each of the various treatments. Three groups of geographical areas (five patrol beats in each) were identified on the basis of crime figures, population characteristics and calls for police service. Three different patrol strategies were assigned to these areas and the areas were monitored for changes accompanying each strategy. The three strategies employed were:

- Reactive: In these areas total emphasis was placed on efficient response to calls; routine preventive patrol was eliminated.
- Proactive: Patrol forces were increased in these areas providing both response to calls and increased levels of routine preventive patrol coverage.
- Control: In these areas, patrol operations continued in a normal fashion.

In addition to the research design considerations, numerous efforts were made to insure that findings of the study would be supported by empirical evidence. Data was collected from as numerous and varied sources as possible. Victimization and citizen attitude surveys were conducted in all areas before and after the test period. The amount of publicity surrounding the test was limited to the degree possible.*

*In fact, the researchers indicated the project was titled the "Proactive-Reactive Deployment Experiment" in an attempt to obscure the nature of the test as much as possible.

Areas receiving different types of patrol treatment were not publicly identified during the study and the final report does not specifically identify the geographical boundaries of these areas.

Data analysis was conducted to address the following central hypothesis:

- (1) Crime, as reflected by victimization surveys and reported crime data, would not vary by type of patrol, whether it was reactive, proactive or control.
- (2) Citizen perception of police service would not vary by type of patrol.
- (3) Citizen fear and behavior as a result of fear would not vary by type of patrol.
- (4) Police response time and citizen satisfaction with response time would not vary by type of patrol.
- (5) Traffic incidents would increase in the reactive beats.

(Kelling, 1974: p. 3)

The three patrol strategies discussed above were maintained for approximately one year in their target areas. During that time, crime levels, arrest rates, and other police activity were monitored.

Data analysis showed the following test results:

- As revealed in the victimization surveys, the experimental conditions had no significant effect on residence and non-residence burglaries, auto thefts, larcenies involving auto accessories, robberies, or vandalism - crimes traditionally considered to be deterrable through preventive patrol.
- In terms of rates of reporting crime to the police, few differences and no consistent patterns of differences occurred across experimental conditions.
- In terms of departmental reported crime, only one set of differences across experimental conditions was found and this one was judged likely to have been a random occurrence.

- Few significant differences and no consistent pattern of differences occurred across experimental conditions in terms of citizen attitudes toward police services.
- Citizen fear of crime, overall, was not affected by experimental conditions.
- There were few differences and no consistent pattern of differences across experimental conditions in the number and types of anti-crime protective measures used by citizens; citizens in the reactive beats tended to take fewer precautions than did citizens in the proactive or control beats.
- In general, the attitudes of businessmen toward crime and police services were not affected by experimental conditions.
- Experimental conditions did not appear to significantly affect citizen satisfaction with the police as a result of their encounter with police officers.
- Experimental conditions had no significant effect on either police response time or citizen satisfaction with police response time.
- Although few measures were used to assess the impact of experimental conditions on traffic accidents and injuries, no significant differences were apparent.
- About sixty percent of a police officer's time is typically noncommitted (available for calls); of this time, police officers spent approximately as much time on non-police related activities as they did on police-related mobile patrol.
- In general, police officers are given neither a uniform definition of preventive patrol nor any objective methods for gauging its effectiveness; while officers tend to be ambivalent in their estimates of preventive patrol's effectiveness in deterring crime, many attach great importance to preventive patrol as a police function.

(Kelling, 1974: pp. 3-4)

Thus, it appears from the Kansas City test that one formerly "tried and true" strategy, routine preventive police patrol, is not having the effect on crime which has traditionally been imputed to it.

The research design used by this study is the most rigorous ever utilized in the field of police research. While such controlled random designs demand close cooperation between researchers and practitioners and necessitate that direct crime reduction efforts be deferred for the period of the test, the validity and diversity of information provided by research of this type is well worth the effort involved.

8.4 Crime Displacement

Data analysis was conducted to assess possible localized geographic displacement effects accompanying the changes in levels of preventive patrol. Except for auto theft, no possible spillover effects were observed.

8.5 Summary

The Kansas City Study provides the first reliable information on the effectiveness of preventive patrol. If these results are incorporated into future police planning, this will mean that much of the patrol time currently allocated to the routine preventive patrol function (which now appears to be less than preventive) can be devoted to other activities which may be more productive.

The accomplishments of the study illustrate the value of close cooperation between practitioners and researchers in conducting research in this field. The design features which it was possible to build into the study and to maintain, increased the reliability of research results immensely, insuring better information for researchers and practitioners alike.

Research of this type into the impact on crime of other kinds of police activity is needed to broaden our understanding of the relationships

between police activity and crime levels. The Kansas City Study has shown that design features necessary for rigorous examination of important questions can be accommodated in police research. As the summary report states, "...the experiment has demonstrated that the time and staff resources do exist within police departments to test solutions to...problems. The next step, therefore, will be to use that time and these findings in the development of new approaches to both patrol and policing." (Kelling, 1974: p. 49)

9.0 CONCLUSIONS

9.1 Police Activity and Crime

That a relationship exists between the actions of the police force and the levels of crime in their jurisdictions is clear. Most of the studies reviewed here provide evidence to the existence of this linkage, albeit some more reliably than others.

In terms of an understanding of the nature of this relationship, the situation is somewhat less clarified. The linkage between the police and their target, crime, is a complex one. "Police activity" can mean a range of things (preventive patrol, investigations, building checks, citizen interaction...). Any number of these factors may have an impact on crime; combinations of activities may prove to have an impact when individual activities seem to be ineffective. Different crimes may be affected by different activities; different types of criminals may be deterred by different police strategies. The number of possibilities is endless.

To understand the relationship between police and crime, it is necessary to break down this larger question into its numerous component parts, to examine the parts rigorously, and then to synthesize the results of the component part examinations. In short, this is to say that the question of the relationship between police activity and crime is not, in itself, a directly researchable question. However, questions pertaining to particular police activities and their relationships to specific types of crime, can, on the other hand, be meaningfully examined.

This document is an attempt to synthesize present knowledge in the police/crime area. Based on the review of the literature, it appears that there is not, at this time, a significant body of knowledge in this area; it does appear, however, that progress is being made in the direction of achieving an understanding of the police activity/crime relationship.

While we believe that police activity can have an impact on crime, as exhibited by the 20th Precinct study, it does not appear that "preventive patrol" is the pivotal factor in this relationship. As the Kansas City study has demonstrated, varying the level of "preventive patrol" while holding everything else constant, does not significantly affect crime. On the other hand, the Chaiken, et al. study indicates that locating uniformed law enforcement officials in a subway system in a manner such that they are available for any intervention in any crime incidents and for assistance to subway victims, crime appears to be deterred. Looking at a similar question in a non-closed system (i.e., urban neighborhoods), Budnick found the situation to be less clear-cut, at least on a short-term basis. In the urban setting, intensive police patrol appeared to be affecting different types of crime in different settings. It may be the case that in a complex urban environment police patrol officers do not appear to be as available for intervention and assistance as they do in a closed subway system, and thus do not have the same deterrent effect.

Crime displacement does not appear to be the normal reaction to police-initiated crime reduction, at least not on a local basis. Displacement to related alternative criminal activity (as demonstrated

in the Chaiken, et al. subway study) appears to be a more realistic possibility. When localized geographic crime displacement does occur, it does not appear to be a general phenomenon. Rather, criminals who perceive the costs of crime in a treated time space to be too high, shift to criminal activity within time spaces where costs are not only lower, but where alternative opportunities exist. (Budnick and the 20th Precinct results support this.) Further examination is needed of possible non-localized geographic displacement effects. None of the studies reviewed here have attempted to address this question.

Research has thus yielded results which allow for the fitting together of a number of pieces of the puzzle. At this point, the picture is fuzzy at best. A continuing commitment is needed to the examination of the various issues involved in the complex question of the linkage between police activities and crime to continue to focus our picture of the relationship. Police activities which are designed on the basis of current knowledge should be rigorously evaluated to determine the validity of our understanding and push the state-of-the-art further along. It is only when research into police activity and crime is viewed as an additive, iterative process which plays an integral role in police planning and operations, that knowledge will grow to a point where effectual planning can be done in this field.

9.2 Methodology and Research Design

The six studies reviewed here demonstrate a range of methodological approaches to addressing the various issues involved in the question of the relationship between police activity and crime.

The Kansas City study is the only example of a randomly controlled test of a hypothesis available in this field. By selecting a number of similar areas and randomly allocating different types of treatment among these areas, the study "controls" for a number of possible explanations for the test results, and thus assures both the researcher and the reader that the conclusions based on the test are valid ones.

This type of a test was possible in Kansas City for a number of reasons. The research was conducted to fulfill particular needs of the participants. These needs were of a sufficiently high priority that the requisite steps were taken to assure that they would be met to as great an extent as possible. Commitment among participants was high, thus a correspondingly high level of cooperation was maintained. Careful planning was done. Treatment was administered in a fashion which allows for the generation of data which was amenable to analysis with interpretable results. The goals of the Kansas City test were not of a short-term, "one-shot" nature. There was no crime reduction effort involved in the test, insitu. The test was rather an effort to gain information which would allow for more effective crime reduction efforts in the future.

The Kansas City situation is atypical. Most research in this field is conducted to evaluate the impact of particular projects or programs designed to reduce crime to determine if these planned interventions have had the desired effects. The interventions tend to be the focal point and the research plays a subsidiary role. Most often the research begins at the time of program implementation without any research considerations in the planning of the operations of the program, as was the case

with the St. Louis Foot Patrol evaluation. In other cases the program had been operating for a number of months before research began, such as in the Indianapolis case. In still others, research was done years after the intervention took place, as in the New York City Subway study. Even when research is one goal behind the police activity changes, research takes second place (as was the case with the 20th Precinct project) or police participation is minimal (resulting in circumstances such as the limited time span covered by the Budnick study).

What this says is that research has not been an integral part of police operations. This has meant that an important part of research - the research design - has been severely limited in this area of inquiry. Control over unrelated factors which can confound results has been absent in much of the research work. Control over factors which can bias results is important for two reasons. First, a lack of control can limit the generalizability of research results; second and more important, inadequate controls can hamper the validity of results for the specific case under examination.

When control is not built into the design of a research test, it must be exerted in the method of analysis to eliminate possible biases in the data set being analyzed. All of the research projects reviewed in this document, with the exception of Kansas City, use different approaches to statistical approximation to true experiments in an attempt to yield valid research results. Some studies, such as the St. Louis Foot Patrol, do little in this regard and consequently, their results must be viewed with caution. The New York City Subway study is a case

example which, since it deals with a closed, relatively controlled system, is a sound piece of research despite the fact that control is absent in the research design; the Indianapolis study is also without control, but since the system it is examining is so complex, the lack of control here makes research conclusions questionable.

The remaining studies, 20th Precinct and Budnick, use analytical techniques to overcome the lack of control in their research designs; their approaches are good ones, as is discussed in the preceding sections. The fields of social science methodology and operations research offer a range of techniques which can and are being used in this manner. Nonetheless, it is the case that controlled designs are preferable because they rely on fewer assumptions. For example, if in the 20th Precinct study the comparison areas are not as comparable as the assumptions used lead one to believe, the conclusions reached by the study would be misleading.

Emphasis must be placed on control, either statistical or randomized, so that there will be greater confidence in the validity of the research results. Control through randomization in this field demands that research be viewed as an integral part of police operations and that immediate crime reduction possibilities be deferred in some cases to future and higher crime reduction probabilities. Project or program evaluations offer an excellent field for inquiry. However, if such research endeavors are to be valuable contributors to the research picture, they must move out of an ad hoc or post facto mode of operation into a role involving project planning and operations from the outset of program development and evaluators must be viewed as participants in an integral system of planning, evaluation and service delivery.

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