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A RESEARCH PROGRAM
TO DETERMINE THE
INDIVIDUAL AND CUMMULATIVE
EFFECTS OF A COMPREHENSIVE
UPGRADING OF A SINGLE POLICE
DEPARTMENT'S OPERATIONAL
TECHNOLOGIES, ORGANIZATIONAL
STRUCTURE, AND MANAGEMENT
PRACTICES ALONG LINES
SUGGESTED BY PREVIOUS RESEARCH
IN THE FIELD

by James M. Edgar

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FOR:

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Introduction

The proposed research involves a case study in the Lincoln, Nebraska Police Department of two year's duration. The basic research question is whether a "contingent approach" to the utilization of advanced police operational technologies increases police effectiveness. The primary indication of effectiveness is the reduction of crime, although other outcomes will also be considered. Following contemporary contingency theories of organization and management (e.g. Luthans, 1977), the overall hypothesis is that innovations in policing known to be somewhat effective individually are highly effective when integrated in a single police department and combined with complementary management practices and a compatible organization framework.

Historically, most innovations in policing have been introduced individually in piecemeal fashion. A new approach to investigation or patrol or a new apprehension strategy is often just an addendum to an existing police agency which remains otherwise unchanged. Seldom are modifications carried through to supporting units, management approaches or organizational structures -- modifications which may be necessary to realize the full potential of the innovation. Recognizing the inherent limitations of partial innovations and following the lead of contemporary contingency theories of management and organization, the Lincoln Police have embarked on a course of comprehensive improvement in which a number of innovative operational technologies have been integrated with each other and combined with advanced management practices in a totally new organization structure to produce a unique vehicle by which the aims of the police department may be achieved more effectively and at less cost. The theoretical basis for this comprehensive approach is the belief that where advanced technologies, each of whose individual effectiveness has been shown, are thoroughly integrated, the impact of the combination will be greater than the impact of the sum of these innovations taken singly. This reinforcing effect of mutually

complementary technologies is not available when they are installed individually. Further, if this complex of operational technologies is placed in a compatible and supportive organizational structure in which advanced management practices are used, the final effects will be still greater. The anticipated total result is a general increase in police effectiveness and efficiency.

Consequently, unlike previous attempts at police improvement where individual innovations have been introduced singly, the Lincoln Police Department offers a unique setting for research in which the cumulative effects of a number of interrelated operational technologies can be tested and, at a more general level aspects of contingency theory, which calls for a matching of management practices and organizational structures to operational technologies, can be examined.

Integrating Advanced Police Operational Technologies

The traditional tools of police work are suppression and investigation. These have been little changed over the years despite abundant research which suggests them to be not nearly effective as one thought (e.g. Kelling, et al., 1974; Greenwood and Petersilia, 1975) and cautionary notices that future police work will require the development of new technologies to meet changing circumstances (Willomer, 1970). Attempts to increase the suppressive effects of police patrol have largely been unrewarded (Elliot, 1970). Even the addition of more police has not been found to more than marginally increase suppressive effectiveness, if at all (Kelling, et al, 1974). Improvements in investigative technologies, on the other hand, have met with more initial success (Greenberg et al, 1971; Bloch and Weideman, 1975; Bloch and Bell, 1976) and, moreover, no alternative strategy has yet been suggested.

Considering this and other related research the Lincoln Police have chosen to largely replace a strategy of police suppression with one of community cooperation and assistance while improving investigative effectiveness by adopting procedures and practices suggested by existing research findings. Among the major changes being implemented in the investigative function are the introduction of an investigative

priority screening system, the use of generalist police officers as investigators for most cases, the creation of a case coordination office, and intensive liaison with city and county prosecutors to improve case preparation and ensure an increased number of convictions. New roles of detectives have also been developed. Under the new approach they assume a supportive function in which they assist generalist police officers in their investigative duties by being available for consultation, providing expertise when needed, identifying training needs and providing training. Having been relieved of a major part of their former case loads, they are able to concentrate on crimes that merit extensive investigation including very serious offenses and widespread pattern crimes.

In the patrol function, changes have been still more extensive. The abandonment of crime suppression as a strategy in favor of community cooperation and assistance requires the adoption of a new philosophy of policing as well as an extensive collection of new technologies.

The belief that the enlistment of the community as an ally in the war on crime will result in improved crime control and prevention rests on a series of assumptions. First, it is assumed that the majority of inhabitants of any community are law-abiding and peaceable and will cooperate to improve their own safety and security if offered the opportunity. Secondly, two basic assumptions can be made about the nature of information in the community following the model proposed by Edgar (1977). It is assumed that for every criminal offense which occurs in the community, there is sufficient information available in the community to clear the offense, and in most instances there was sufficient information to have prevented the offense. The objective, from the police point of view, is to create a relational environment with the community which will encourage cooperation, and then to use this cooperation to prevent and control crime.

The implementation of this strategy requires some drastic changes in organization as well as management style and the role of generalist field officers.

The entire department has been reformed into a matrix organizational structure (see below) and within this structure field services are in the process of being reorganized geographically along lines suggested in Bloch, 1971. Five community areas have been identified based on analysis of crime and call for service data and a field services unit assigned to each area. Each area manager has been accorded considerable autonomy within a PBO management framework to provide basic police services to his area. Each area has been further divided into individual beats. Four or five generalist officers are assigned to each beat under a beat manager. These assignments are permanent. In addition to basic reactive duties of taking calls for service and investigating offenses, beat units are charged with the proactive duty of developing cooperation in their beats, of identifying its major law enforcement problems using crime analysis and citizen inputs, developing programs to deal with these problems and assessing the impact of these programs at periodic intervals.

The theoretical rationale for this approach rests on social psychological research regarding proximity and human interaction. When individuals are in close proximity there is an increased likelihood of better knowledge of each other's behaviors and attitudes and a greater propensity for increased interpersonal communication (Freedman, et al., 1970: 63-72). The division of field services into small, stable units is expected to result in the development of extensive but heretofore non-existent communications links between citizens of the area and field officers working in the area. Social-psychological theory predicts that citizens will more readily report actual crimes and suspicious behavior to familiar individuals than to anonymous officers. The anticipated result will be the production of a wealth of local intelligence concerning all forms of criminal and anti-social behaviors occurring in an area. To make use of this information, the Lincoln Police are developing a sophisticated information system to ensure the rapid collation, analysis, and disbursement of this information once it is collected.

A second major tactical approach within the basic strategy of community cooperation is physical crime prevention. Each of the five community police areas is being

provided with at least one trained crime prevention specialist to coordinate crime prevention programs. These programs will include not only extensions of present efforts to harden criminal targets, but expand on current processes of nurturing community anti-crime groups among residents and businessmen. Pilot efforts in these directions which were fielded primarily to develop the technologies necessary and new skills among police officers have met with remarkable initial success.

Organization and Management -- The Contingency Framework

The basic supposition of contingency management and organization theory is that there is no universally applicable "one best way" of managing or organizing. Rather, the contingency framework recognizes that the organization must be adapted to its tasks, technologies, and environment (Chandler, 1966; Burns and Stalker, 1961; Lawrence and Lorch, 1967; Woodward, 1965). Thus, major changes in policing technologies require concomitant modifications to the organizational structure and management practices. The aim of the contingency approach is to find the best way of organizing to meet a police department's aims within its particular circumstances.

Through its broad scale adoption of innovative operational approaches, the Lincoln Police Department is making a fundamental change in its basic policing technology. This study hypothesizes that, in order to be successful, specific types of organizational changes must be made to adapt to the new technology. Since the Lincoln Police Department is willing to make these necessary changes, it provides an excellent field setting in which to test our hypotheses.

Traditional police organizations are quasi-military in structure, adopting for the most part the essential bureaucratic principles suggested by classical organizational theorists (e.g. Weber, 1947; Fayol, 1949; Urwick, 1943). Emphasized in the traditional organization are: unity of command, specialization, and division of labor, centralized authority, and formalized rules and regulations.

This proposed research hypothesizes in part that traditional form of organization is inappropriate for advanced police technologies. A high degree of centralized

control retards rather than aids effective police operations. Required is a relatively decentralized authority system where decision-making is placed at the lower possible level (e.g. Lubans, et al., 1977). Beginning with the individual generalist officer, all lower levels of command become responsible for a greater range of activities than was previously thought possible or desirable in their efforts to provide particularistic law enforcement in the areas for which they are responsible in accordance with their assessment of the needs of those areas. In many respects, the units assigned to police the five major areas of Lincoln become small, semiautonomous police departments themselves, tied to the larger organization only through a shared supporting organization, universal policies and procedures, and the requirement that they produce results in accordance with the general aims of the larger police department as articulated by the police executive.

A decentralized organization naturally engenders new problems of coordination and control. Moreover, certain functions can be performed effectively and economically only by the department's central administration. Some method must be developed, therefore, of merging the decentralized and centralized units of the department. The organizational solution designed to solve these and other problems is a form of matrix organization (see Appendix A) in which geographically divided field units are treated as semiautonomous projects drawing upon specialized functional support as needed for their own operations and required to contribute work for the benefit of centralized, support units. The result is an organizational symbiosis which benefits both.

But while the matrix organizational structure clarifies some of the control and coordination dilemmas associated with managing highly decentralized organizations, contemporary organization theory suggests that a flexible system of performance appraisal and organizational-mission setting is also required to fully assure department-wide coordination of effort. Simply changing the organizational structure would not be sufficient to modify a traditional police department into a suitable environment for new police technologies. Changes must also encompass techniques of

managerial control and appraisal as well as in the design of the individual officer's job.

The approach to management control and appraisal being adopted is a modification of an approach developed by NILECJ termed Policing by Objectives (Lubans et al, 1977). The basic managerial strategy is to have each individual and organization unit set measurable objectives mutually agreed upon by superior and subordinate and to assess performance based on these objectives. Field units are given fairly broad authority to develop objectives so long as they are within the context of previously defined major departmental goals.

At the level of the individual officer, the adoption of new technologies should result in a massive alteration of the officer's job. That is, the individual officer will be allowed to assume increased responsibility in that he or she will be expected to perform both more tasks and tasks that are more complex. Much of this work was previously allocated to specialists. Following what has been called the "content" theories of motivation (Luthans, 1977; Hertzberg, 1974; Maslow, 1965), it is hypothesized that the increase in responsibility will result in, among other things, more motivated, satisfied and professional officers. Necessarily, officers will need additional training to be able to cope with more sophisticated responsibilities. This training has, however, been on-going for over two years, consisting of eight hours of in-service training every three weeks for all officers, for a total of 136 hours each year in both the usual (family crisis intervention, ambush attacks) and highly unusual (coping with stress, problems confronting the American Indian) subjects. At this point it is believed that Lincoln police officers have largely developed the skills and attitudes it is anticipated they will require.

Process Modeling and Selection of Hypotheses

Numerous general hypotheses have been alluded to above. The basic hypothesis of this study is that the integration of a number of advanced police operational

technologies combined with appropriate organization and management will result in improved effectiveness and efficiency measured along a number of continua including reduction in criminal activity, improved citizen sense of safety, increased citizen satisfaction with police services, stabilized cost of police services, and improved case clearances. Each major input variable, however, must also be tested separately to determine its relationship to one or more major predicted outcome. A number of important intervening variables must also be examined. Additionally, considerable interaction between same-category variables is to be expected. A large portion of the research effort must be devoted to isolating and examining interaction among major inputs, among outcomes, and among intervening variables. To aid the identification of interaction and of intervening variables, a number of process models will be created which can be tested. One such model is presented in Figure 1.

This preliminary model of the case clearance process illustrates four main inputs (case management, generalist investigators, case screening, intelligence system) related to one major outcome (case clearance). Intervening variables and anticipated interaction among them are shown. One model for each major outcome and major intervening variable is being constructed to eventually be integrated into a "master process model" showing all anticipated relationships between major variables. An example of the process model of a major intervening variable (citizen cooperation) is shown in Figure 2. From these models a large number of testable hypotheses can be derived.

Selected Hypotheses

Overall Organizational Performance and Efficiency

Complementary innovations in police operational technologies when integrated in a single police department and combined with appropriate organization and management...

1. ...reduces the per capita crime rate calculated: $\frac{\text{number of suppressible crimes in the time period } x \text{ (from victimization data)}}{\text{average Lincoln population during time period } x}$.

FIGURE 1: A PROCESS MODEL OF CASE CLEARANCE

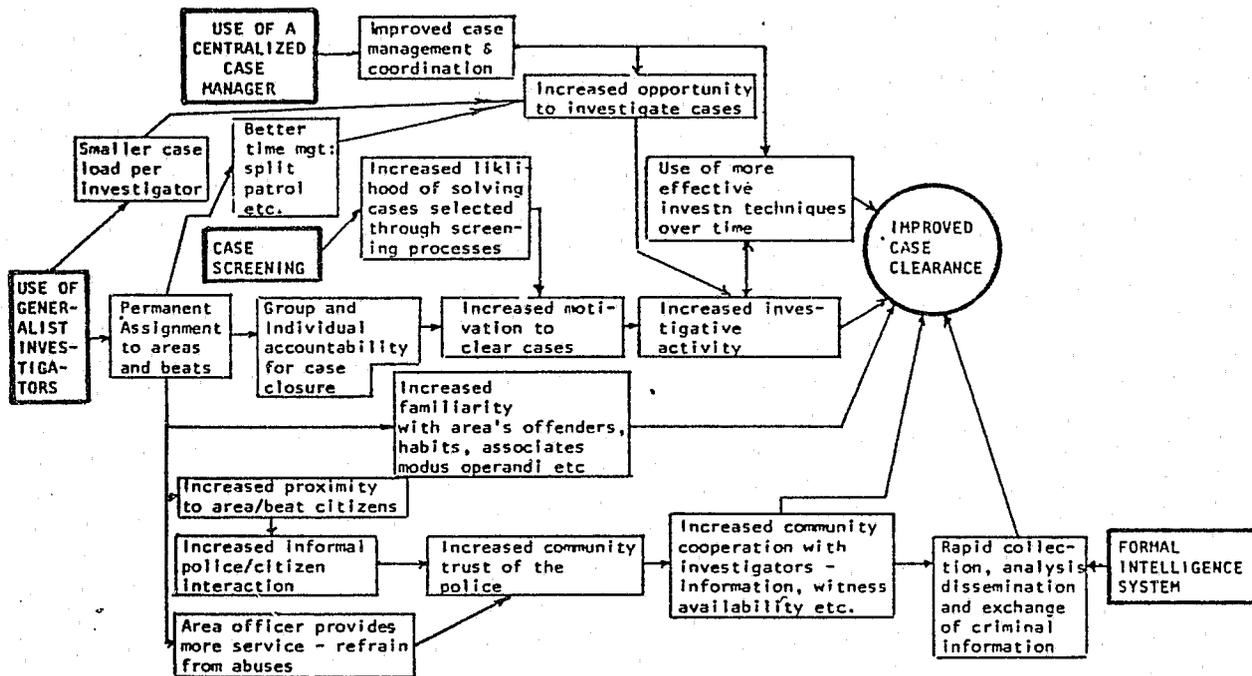
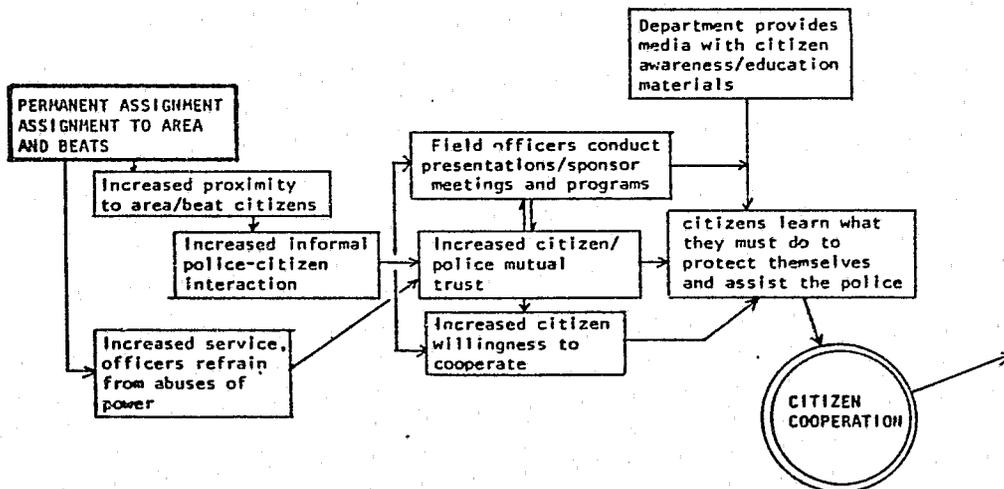


FIGURE 2: A PROCESS MODEL OF CITIZEN COOPERATION



2. ...increases the proportion of crime cleared to crimes reported calculated: number of crimes cleared in time period x/number of crimes reported in time period x.
3. ...stabilizes the per capita cost of police services calculated: total police operating budget during FY x/average Lincoln population during FY x.

Intervening Processes

Effects on officer behavior and attitudes

1. The use of police officers as generalists increases the variety and sophistication of tasks performed by these officers (job enrichment).
2. As their jobs are increasingly enriched, officer satisfaction with their jobs increases.
3. As their jobs are increasingly enriched, officer professionalism increases.
4. As officer job satisfaction increases, officer commitment to the department increases.
5. As officer job satisfaction increases, officer turnover decreases.
6. As officer job satisfaction increases, motivation to work increases.

Effects on citizen behavior and attitudes

1. As citizen trust in the police increases, the proportion of crime reported to the police will increase as calculated: number of crimes known to the Lincoln Police during period x/number of crimes committed during period x (from victimization data).
2. Stability of assignment to areas/beats increases informal contacts between citizens and the police (from activity accounting system).
3. As citizen trust of the police increases, the number of crimes solved through citizen information will increase.

Design and Method

The basic design of the research is a time-series analysis over two years beginning 1 September 1978, with measures on nearly all variables being taken at approximately six-month intervals. Baseline data for many variables has already been collected or is available from the department's management information system. Additional data will be collected during the two-year research period. A preliminary first year work plan is shown in Appendix B.

Data will be gathered using several techniques. First, most of the relevant operational data is and will continue to be available from the department's MIS.

Examples of such information include reported crimes and stability of officer assignment to a geographical area, significant officer activity on a daily basis, clearance rates and so forth. Second, various surveys will be conducted. A victimization survey will be used to assess not only the actual crime rate, but public attitudes toward the police, satisfaction with police services, public sense of safety. A service questionnaire will be administered to those who have received police services to obtain a second measure of citizen satisfaction and information on officer performance. Changes in individual officers throughout the change process will be monitored by instruments assessing job satisfaction, motivation, organization, commitment, and professionalism. Such instruments will also be designed to compare superior and subordinate behaviors and attitudes relative to the organizational changes taking place. Third, an activity accounting system to record significant daily activities of field officers has been developed as part of the overall MIS which will detail how officers' time is being used.

Baseline data has been collected for over two years. Final collection (a second victimization survey, and service questionnaire) will be completed before September, 1978).

Various statistical and analytical techniques will be employed. Where the unit of analysis is the whole police department, as is the case with overall organizational performance, statistics are not relevant. The Lincoln Police Department will either be a more effective organization after the implementation of the new set of technologies or it will not be. Where the unit of analysis is the individual as with citizen and officer behavior and attitudes, multiple regression and analysis of variance will be used in order to assess whether these individuals have been affected in the expected direction.

<u>Costs of the Project</u>	<u>First Year</u> 9/1/78-8/31/79	<u>Second Year</u> 9/1/79-8/31/80
<u>Salaries</u>		
Project Director George K. Hansen Chief of Police (1/10th time)	-0-	-0-
Principal Investigator Dr. Sang Lee (1/10th time)	10,000	10,000
Co-Principal Investigator Dr. John Cullin (1/3rd time)	10,000	10,000
Co-Principal Investigator (Not yet designated -- from police planning unit) (1/3rd time)	-0-	-0-
Research Assistants 2 @	12,000	2 @ 12,000
Clerical Assistance	10,000	10,000
<u>Surveys (Development Administration</u>	10,000	10,000
<u>Publication of Results</u>	2,000	7,000
<u>Computer Time</u>	5,000	6,000
<u>Computer-Related Assistance</u>	2,000	3,000
 TOTAL	 \$61,000	 \$68,000

Products and Dissemination

Three complementary methods of disseminating the results of this research to policy makers in the police field are planned. The first is a handbook detailing the process of change in the Lincoln Police Department to be used as a guide to the comprehensive improvement of other police agencies. To complement this handbook, technical papers detailing research methodology and findings in major areas of concern will be prepared for publication in recognized professional journals. Presentations of these materials at professional meetings and conferences is also contemplated. Third, the substance of the results of the project will be included in a general book on improving police departments to be published in 1982 or 1983 by a major publishing company.

Interim reports to NILECJ will be made as required. An interim report at the end of the first project year will present findings to that point as a basis for second-year funding. It will include analyses of base-line data and the effects of changes in the department during the first year.

Personnel

Project Director. To ensure maximum coordination between operations of the Lincoln Police Department and the research project, the project director's position will be filled by George K. Hansen, Chief of Police. One of the major hurdles to be overcome in conducting research in an operating agency is to ensure that the integrity of the research design is not compromised by operational requirements. In his dual role as executive head of the police department and project director, Mr. Hansen can control the factors which might interfere with the research plan. As the originator and principal architect of the comprehensive improvement project, Chief Hansen is ideally suited to administer the research effort which complements the execution of the major changes being made in the police department.

Principal Investigator. The main requisite for the principal investigator in a project of this nature is extensive familiarity with research into organizations and a broad background in management and organizational theory and practice. Dr. Sang Lee amply fulfills these requirements. Additionally, he has been a long-term consultant to the Lincoln Police Department, has earned the confidence of the department's managers and personnel, and is intimately familiar with the comprehensive improvement efforts currently being made. His major task will be to oversee the technical design and execution of the research project. As an expert on management and organizational development of international reputation with an extensive background of research, Dr. Lee is eminently qualified to fulfill this role.

Co-Principal Investigator. This staff member reports directly to the Principal Investigator. One co-principal investigator will be selected from the police department's planning staff to work one-third time on the research project. The second will be Dr. John Cullen. These staff members will be responsible for the development of data collection instruments, their administration, and the assessment of the data collected. A second set of tasks includes recording the changes made in the department, assisting in the development of methods for assessing performance, and assessing changes in other criminal justice agencies as these might impact this research. A third set concerns organization development. They will work with heads of operating units in the department, partly to ensure that changes contemplated in the comprehensive improvement plan are actually implemented and partly to suggest further changes in accord with the general improvement scheme. They will also be responsible for the design and implementation of sub-parts of the overall research design.

The skills required are: one, social science research skills sufficient to be able to receive a problem and recast it into a sound research design; two, managerial skills sufficient to direct the implementation of some parts of the total research inquiry; and three, the ability to work with people in a close-knit organization. One co-principal investigator should be very familiar with management and organizational development literature. Dr. Cullen abundantly fulfills this requirement. The other should be very familiar with police and law enforcement literature. Several of the personnel now in the police planning unit fulfill this requirement.

Research Assistant. The research assistant will perform a wide variety of tasks in direct assistance to the co-principal investigators. Illustrative tasks include: pretesting of survey instruments, preparation of census tract information, collection of data from government and private records and departmental files, preparing summaries of findings. Familiarity with research, ability to use statistics and operate an automated statistical package (SPSS), and an ability to work well with people are skills required for this position.

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