

~~V~~A PROGRAM OF RESEARCH  
INTO POLICE DECISION-MAKING

BY: James M. Edgar

February 1978

FOR:  
George K. Hansen  
Chief of Police  
Lincoln Police  
550 S. 9th St.  
Lincoln, Neb. 68508

11505

## ABSTRACT

This paper outlines the concept of a program of research into decision-making processes in local police departments for the purpose of improving the understanding of these processes and developing ways of optimizing police decisions. This research program will produce the following:

1. Descriptions in narrative, modeling and simulation form of how police decisions at all levels of the organization are made, what inputs are used, the relationships among decisions and among different decision levels in the organization, and the outcomes of decisions.

2. A description in narrative, modeling and simulation form of how various organization structures and management styles affect decision-making in police organizations.

3. Programs applicable to different categorical types of decisions at all levels of the police department which will permit police decision makers to optimize their decisions within the constraints imposed by the decision-making environment.

To develop these products, the plan proposes in-depth research in three different types of police organizations; one very traditional/military, one very non-traditional/democratic and the third somewhere in-between. These departments will be selected using predetermined criteria.

Data collection will vary depending on the type of decision process under study, its location in the organization, and the stage of the research. Initial collection will rely heavily on existing records and make extensive use of observation and interview. Where possible existing collection instruments developed for decision research will be used for data collection will be adopted, but if original instruments are require, the research staff is highly qualified to develop these.

As a framework for the research three types of decisions (strategic, managerial, and operational) which have been previously treated in the literature will be analysed at four different levels in the police organization, executive or top management; middle operational managers, especially heads of major divisions with area responsibility; line managers and supervisors in operational divisions, and line officers. Of particular interest will be the interfaces and inter-relationships among classes of decision and among levels of decision-making; and the impact of these decisions of internal and external inputs, especially special interest groups and political processes.

Major differences which exist between police departments and most other business and government organizations will be taken into account in the research. Of particular importance are the importance of line-level decision-making in police departments, the possible problems in identifying actual departmental goals, the unusual degree to which police decisions may be influenced by politics and special interests at all level of decision-making, and the tension which exists between professional discretion and management authority at the line level as this affects line officer's decision processes.

So far as possible, data collected during the initial, investigative stages of the research will be analysed using the techniques and methodologies developed for decision analysis. These techniques have been used with repeated success in all types of organizations to assist decision makers at all levels in determining the best course of action under given circumstances. Especially useful in examining police decisions are the methodologies of goal programming as developed by Dr. Sang M. Lee, the principal investigator proposed for this project. Goal programming permits the decision-maker to optimize his choices among satisfying multiple conflicting goals -- the type of decision situation which most frequently confronts police decision-makers -- within the bounds imposed by limited resources.

Five persons will comprise the principal staff of the project, each selected for expertise he will bring to his particular role in the research. These are the project director, principal investigator, a decision analyst, a research methodologist, and a criminal justice management specialist.

The City of Lincoln will be grantee for the project, and proposes to accomplish the research outlined herein for a total budget of \$316,050 which includes a five percent overhead charge by the city of \$15,050.

## INTRODUCTION

The effectiveness and efficiency of any organization is determined in large part by the quality of decisions made by its personnel.

For most organizations it is the decisions by management which are of primary importance. (1) Management authorities have found decision-making to be the single critical process common to all management functions -- planning, direction, controlling etc. -- regardless of how a manager's job is defined or the level at which he works. The study of management decisions using decision analysis techniques developed and refined within the past thirty years has proven to be an effective means of evaluating management and of improving an organization's ability to achieve its goals. (2)

But whether the analysis of management decisions alone will suffice without regard to decision-making at line level in the organization depends on the type of organization and the work it performs. In the typical business and government organization, the decisions made by line personnel have such a minimal effect on the organization's ability to achieve its goals that they are seldom worth studying. The work of line personnel typically consists of routine tasks performed in a stable environment -- a situation in which few decisions are necessary, and in which it is possible to control those few that must be made through close supervision.

### The Critical Nature of Line Decisions in Police Organizations

In contrast, the work of police officers is seldom routine, takes place in highly unstable environments and is not amenable to close supervision. One writer has observed...(3)

Routine patrol is often just that. The patrol area may regularly be found to be in good order, and actions taken by the officer whether self-initiated or assigned, are frequently dull and repetitive. But despite this common and substantial sameness in the job, police work is not truly characterized by routineness and stability... The sheer range of his duties precludes the possibility that all could become routine.... He frequently encounters people who are angry, mad, drunk, insecure, and belligerent; and he must often require that they do things contrary to their desires. He meets these people and performs these duties in every conceivable milieu, from the gutter to the most exclusive country club. It must be concluded, then, that police work cannot be described as "routine tasks occurring in stable environments."

Decisions that police officers routinely make may have consequence of great magnitude for his organization. Yet the impact of these decisions and the wide discretion police officers' typically have to make them has seldom been taken into account in management studies, and is rarely

treated in police administration texts. (4) Yet it may be fairly stated that, in contrast to most other types of organizations, whether a police organization achieves its goals is in large part determined by the many thousand 'routine' decisions made by police officers in the course of their work.

Reactive decisions: Most of the available studies of police officer discretion concern themselves with the officer's decision to invoke the law enforcement powers he has by making an arrest. (5) Usually the study stems from a concern that discretion in this important decision can be abused, and is abused to the detriment of certain groups in the community. (6) Studies of this nature have led to considerable interest in improving management control of police officer discretionary decision making powers, but also an admission that the amount of control management can exercise is severely limited if line officers are to remain effective. (7) For example, Cordner notes that... (8)

Because police officers make crucial decisions "based on their own discretion" in the absence of direct supervision, management seeks to direct and control behavior primarily through training, policy and procedure, and inspections. Training seeks to instill proper attitudes and behaviors; policies and procedures prescribe the proper ways to handle situations and perform tasks; and inspections ascertain the degree of adherence to the training, policies and procedures...

This approach falters, however, precisely because police work consists of non-routine tasks performed in unstable conditions. The training almost always ends up being simplistic and unrealistic, and the first thing that the rookie learns, once on the street, is to discard what he was taught at the academy. The policies and procedures cannot possibly describe all possible situations that police officers encounter; and so, to some extent, they invariably leave the officer with only his common sense to guide him.

These reactive decisions are seldom made in an environment that permits calm reflection. The officer is usually faced with balancing many, often conflicting interests in a complex and sometimes hostile situation. The information on which he must base his decision is commonly inadequate and seldom complete. And he seldom has access to superiors for guidance. (9)

Proactive Decisions: While reactive decisions routinely made by line officers seem to have received most of the attention in the literature, many of the decisions made by an officer are not made in reactive situations, but are merely concerned with what he will do during his tour of duty. In making these proactive decisions, the police officer is not essentially different from sales personnel, trades people and many other occupations where the jobholder has considerable latitude as to what activities he will undertake to achieve some objective he has set or which has been set for him by his superiors. These type of

decisions are much more amenable to properly instituted management controls, and may, in the final analysis, be more important to the organization's goals than the relatively few reactive decisions officers must make.

The importance of line officer decision-making cannot be ignored in any research into police decision processes. Decisions by managers and first line supervisors are important, but at least in one perspective they can be looked upon as basically attempts to channel, limit and control line officer decisions. Certainly one focus of the proposed study ought to be a determination of how successful these management efforts actually are. In any event, it does not appear to be viable to limit the examination of police decision-making to what are normally considered management decisions. A truncation of the research at the level of line supervisors would not be likely to produce conclusions calculated to improve organizational performance since so much of that performance seems to depend on decisions made at the line level.

#### Other Unusual Characteristics of Police Decision-Making

In addition to the importance of line officer decision, police organizations possess other features which make the analysis of their decision processes somewhat atypical. While these may not totally alter the nature of decision analysis in police agencies, a properly conceived study must take them into account in the research design.

Amorphous, Conflicting and Unspecified Goals: The isolation of the organizational goals of police agencies may require more than the usual amount of effort. Unlike the goals of typical organizations which are usually fairly precise, well-articulated and relatively simple to measure, those of police departments are inevitably complex, often conflicting, and difficult to measure with any precision. (10) Goals may not be explicitly stated, or if stated may be little more than "high ideals" which provide little real guidance to managers and line personnel. (11) But because the effectiveness of decision-making must be judged in relationship to the department's goals, the identification of actual organizational goals must be a major step in the study.

Political Influences on Police Departments: All organizations feel the impact of political changes and must account for them somehow in decision-making processes. At very least the organization will be influenced by changes in government regulation, new laws or the decisions of political agencies which determine access to resources, restrict or expand competition or determine conditions of work which the organization must meet. (12) But, in common with many other government agencies, police departments are particularly sensitive to political pressures. (13) These pressures may be channeled through the existing government structure, or through interest groups which may operate at many different levels in the community. The police are not wholly governed by these interests, but neither can they be ignored in the decision-making processes of the department. As Wilson notes...(14)

The community is a source of cues and signals -- some tacit, some explicit -- about how various police situations should be handled, what level of public order is deemed appropriate, and what distinctions among persons ought to be made. Finally, the police are keenly aware of the extent to which the city government does or does not intervene in the department on behalf of particular interests.

The police are often involved in what may be termed a "zero sum game", a concept borrowed from games theory. (15) Two or more interests are in conflict, and the police, both at policy level and street level, must often decide which interest will prevail at the expense of the others. While many of these conflicts may be resolved by recourse to law or policy decisions which to a great extent predetermine which interest will prevail in which situation, neither the law nor police policy can possibly cover every exigency. The distinguishable feature between the operations of police department and other government agencies is that so many of these interest conflict decisions are made by line personnel with but minimal guidance from higher management.

One of the more important tasks of the proposed research will be to examine the process by which the interests of special groups influence police decision-making. This examination cannot be restricted merely to policy-making levels in the department, as would be a typical approach in other types of organizations, but must extend through each intervening management level to the decision-making processes of line officers.

Professionalism vs. Administrative Authority: The nature of police work requires that line officers be granted considerable latitude in decision-making. The decisions officers make may be based not so much on policy dictates as on their own sense of what ought to be done -- of what properly constitutes police work and what does not. (16) Sudnow notes that when individuals are faced with handling complex problems on a daily basis they frequently develop a 'theory of the office' which aids in the routinization of these problems and permits the application of standard, predetermined 'solutions'. Thousands of individual situations are distilled into a limited set of 'standard' situations with 'known' characteristics for which 'standard' solutions have already been developed. A police officer may deviate from this standard solution only to the extent it is necessary to accommodate some peculiar characteristic of the actual problem he has encountered. This fairly large set of standard solutions to typical problems becomes the core of an officer's professional knowledge, (18) and provides a moral basis for much of his decision-making. In this, the police officer is no different from other professionals who reclassify their working world into limited sets of problems. The psychiatric classification of mental illness into syndromes with standardized treatments is a similar effort to routinize complex problems. Perhaps the core of an officer's professional autonomy is his freedom to fit problems into standard 'syndromes' and apply what he judges to be the proper (standard) treatment. Efforts to reduce this freedom may be strongly resisted.

The bureaucratic organization of police departments is a constant threat to the line officer's freedom to perform his work in the way he judges to be best. (19) The command organization expects officers to follow orders regardless of their judgment, while the professional ideal holds that such orders are the antithesis of the exercise of discretion. (20) As Reiss has observed... (21)

All bureaucracies pose problems for the exercise of professional discretion. These problems are exacerbated for the police, who, in a command bureaucracy, are expected to obey the rules and follow the orders of superiors and, at the same time, to exercise their professional discretion. In other words, a typical line policeman is expected both to adhere to commands and be held responsible for all discretion exercised in the line of duty.

This tension between the dictates of professionalism and the demands of the administrative bureaucracy offer a valuable focus for the study of decision-making at the line officer's level which occurs but rarely in organizations. Certainly no study of police decision-making can ignore this conflict if a true understanding of police decision processes and a consequent optimization of these processes is to result.

#### A CONCEPTUAL FRAMEWORK FOR THE ANALYSIS OF POLICE DECISION-MAKING

An atypical organization requires an atypical approach to the study of its decision-making processes. The critical differences which exist between decision processes in police departments and those of other, more typical organizations require some adaptation in the strategies used in analyzing these decisions. In other ways, however, the study of decision processes in police departments parallels that of other organizations. Familiar techniques and methodologies of decision research and analysis can be readily applied to identify, describe, model and ultimately improve police decision-making processes.

The framework proposed here is that police decisions be analyzed at four different levels in the organization: executive or top management; middle operational managers, especially heads of major divisions with area responsibility; line managers and supervisors in operational divisions who have the most immediate contact with patrol officers and investigators, and line officers. And further, that the major focus of the study be on three general classes of decisions; strategic, management and operational. Of particular interest will be the interfaces and inter-relationships among classes of decision and among levels of decision-making.

#### Four Levels of Organizational Decision-Making

The four levels of decision-makers in police agencies are fairly discrete and identifiable, although there is some overlap especially in smaller agencies. These are:

1. Executive: The occupant of a position charged with policy formation and adaptation including the setting of mission-related goals and coordination of multiple organizational functions. (22) Executive level management includes the top managers in the police organization. A small or medium-sized department is likely to have only one executive manager, the chief or director. Large departments may have a number of managers who fit into this category, including various directors, chiefs and deputy chiefs. Traditionally the roles of executive management in the organization are to establish policy, determine broad organizational goals and supervise the operations of the whole department.

The executive is generally considered to be more concerned with what the department will do than with how the department will do it. (23)

2. Middle Managers: Middle managers are responsible for interpreting top level philosophy, policy and goals to lower levels of the organization. They act as a crucial link between the decision processes of executive and line managers/supervisors. It is often their decisions which operationalize broad departmental goals into sub-goals and sets of activities by which these aims are to be achieved. (24)

Traditionally middle management is about equally concerned with determining what the organization (or at least his part of it) will do and how it will do it.

In a department of any size there are likely to be several levels of middle managers. This study will direct its primary focus to those in the operational arms of the department, particularly patrol and general investigations. Of particular interest will be those who command a specified geographic area such as a district or precinct. These area managers whose units service an identifiable population are the middle managers most likely to be subject to the external influences on decision-making from local and neighborhood groups, interests, and political bodies.

3. Line Manager/Supervisor: This individual is usually responsible for the technical direction of work, target setting, problem solving, assignments and day-to-day motivation. (25) The line manager/supervisor exercises direct control over line officers to the extent that this control can be achieved in the police work environment. Generally line managers and supervisors are less concerned with what the department will do and more involved in determining how it will be done.

4. Line Officers: These are non-supervisory, non-managerial personnel charged with the responsibility of performing the policing duties of the department. The quality of work accomplished at this level is the reason for the existence of higher-level supervisors, managers and executives as well as for the processes and systems of operation employed by the department. As stated earlier, the quality of work performed by line officers may be determined by the quality of their decisions as much as any other factor.

The effectiveness of the police organization is largely determined by whether these levels work together as a cohesive unit. The interfacing and integration of decision-processes at the various levels provides a reinforcing or synergistic effect which makes the whole more than the sum of its individual parts. For this reason the linkages between decision-levels is critical to the study of police decision-making processes.

### Three Classes of Decision

Another framework for decision-analysis has been suggested by Anthony (26) which is useful in conceptualizing types of decisions, and which is compatible with the decision-levels identified above. Anthony's decision classes may be summarized as follows:

1. Strategic Decisions: These decisions are broad in scope, future oriented, critical to long-term effectiveness. In police departments strategic decisions would typically be made by the executive. But there are occasions in which middle managers would also become involved in making strategic decisions for their own units, especially where there is little or no goal and policy direction from above. Moreover, in some departments strategic decision processes are a joint effort between the executive and higher-level middle managers. (27)

2. Management Decisions: These decisions are made within the framework established by strategic decisions. They are generally concerned with planning activities and moving resources around to assure that the means are available to accomplish activities. In some departments management decisions have totally displaced strategic decisions in importance. These may be said to be activity-oriented rather than goal-oriented organizations. (28)

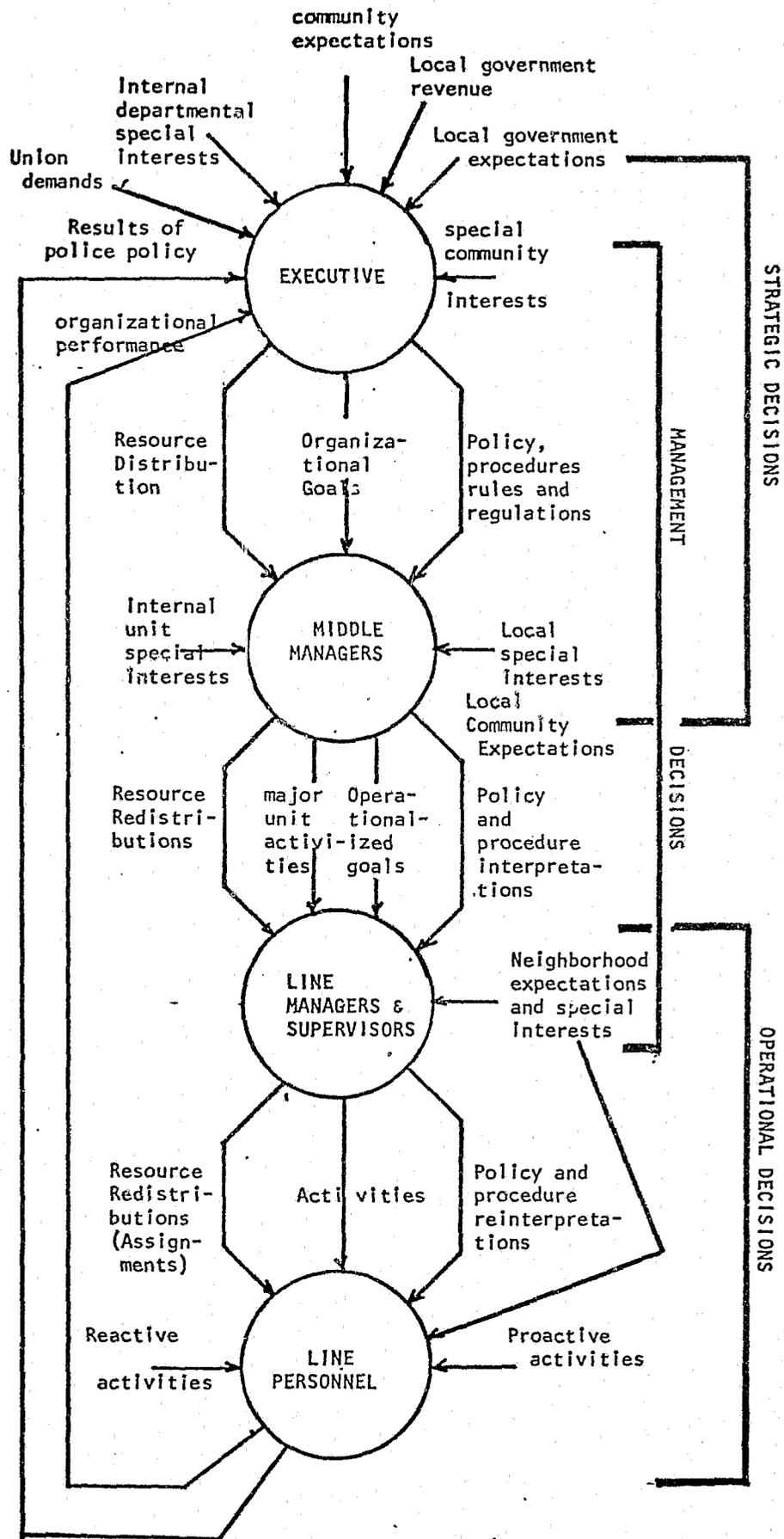
The majority of management decisions are made by middle managers, but there is some spillover in both directions to both executive level decision makers and line managers/supervisors.

3. Operational Decisions: Operational decisions are made on a day-to-day basis in carrying out the work of the department. They are made by all levels in the organization, but are generally considered to be fairly concentrated at line manager/supervisor and line officer levels. It is in this area of operational decision-making that police departments part company with most other types of organizations because of the wide latitude granted to police officers and to some extent first line supervisors in operational decision-making, and the importance of these decisions to departmental goals.

### A Conceptually Unified Analysis Structure

A systematic approach to the examination of decision processes in police departments requires a unified framework for analysis. Figure 1 illustrates such a framework in which the four decision levels and three decision classes have been integrated into a unified conceptual scheme.

FIGURE 1: POLICE DECISION-MAKING ANALYSIS STRUCTURE



Executive management is shown as making both strategic and broad scope management decisions. These are generally classifiable into three categories of decision outputs: organizational goals, resource distribution, and policy and procedures.

Organizational goals may be highly formalized and carefully articulated, or informal and not articulated, or at any degree of formalization and articulation between these two extremes. Generally where executive management is not goal-oriented, not much attention is paid to formulating, reviewing and reformulating organizational goals, and most executive decision-making falls into the class of management decisions. Where goals and broad policy occupy the attention of the executive, management decisions tend to be pushed down to middle management. (29)

Through policy and procedures the executive communicates not only his philosophy of policing, but seeks to limit and channel the types of activities which may be used to achieve organizational goals.

Executive decisions about resource distribution determine the allocation of the means necessary to achieve goals. Considerable effort has been spent in an effort to model resource allocation decisions, particularly in the area of patrol manpower deployment. (30)

These three categories of decision output become inputs at the next decision level -- middle management. Middle managers are most often concerned with the management class of decisions. In most departments their major efforts are directed to using allocated resources to generate activities with which to advance departmental goals, and in directing and controlling these activities. This usually involves redistributing resources within their units, and may require some reinterpretation and operationalization of departmental goals. In some departments the development of sub-goals or objectives by unit commanders is standard management practice. (31)

Outputs from decision processes at middle-management levels in turn become inputs for decisions at line levels. Line managers/supervisors make some management decisions, particularly in reallocating resources. They may also reinterpret policy and procedures to some extent. Some writers have noted that at least in some types of police organizations, it may be policy and procedural interpretations at this level which have the most effect on line officers. (32) Most of the decisions at this level, however, are operational decisions. The probable impact of these decisions on the organization has been extensively noted above.

Information about the effectiveness of police activities at line levels is fed back to decision-makers at all levels to become inputs for subsequent decisions. These feedback processes may be highly formalized (33) or very informal, and the information provided may be more or less accurate. Nevertheless, information is inevitably generated in some fashion and used in succeeding decision processes.

#### Other Inputs Into Police Decision Processes

The study of police decisions would be vastly simplified if decision processes could be treated as a simple linear flow of decisions down and up the organizational hierarchy. In reality, however, actual decision making is not nearly so straightforward. Many other inputs both from outside and inside the organization must be taken into account by decision makers at all levels.

Many decisions may be characterized as a process of balancing many divergent interests who demand a share of limited resources. There are likely to be many interest groups, both inside and outside the police department who have a keen interest in what specific goals are formulated, what policies are adopted, and how resources are distributed. Frequently the demands of the various groups are in conflict, which means that it is rarely possible to fully meet all demands simultaneously. Instead, decision-makers may attempt to 'satisfy' the demands of each interest group. (34) Seldom is this satisfaction permanent, however. As new interests emerge, or old ones step up their demands, the balance of interests must change to constantly keep pace.

Internal interests certainly play a large part in a great many police decisions, especially strategic and management decisions. In many agencies there is a fairly constant, if usually low key, competition between functional areas and major units for resources, power and position in the organization. This may influence not only how resources are distributed, but also what types of activities are given precedence in the department's philosophy of policing. In a department where detectives have considerable power, there may be a great deal of resistance to the introduction of patrol investigators. Where patrol is predominant, the concept may be accepted quite readily.

External interests are also particularly important to police decision processes. Because the police operate in what is essentially a political arena, (35) community expectations, the desires of local government, and demands of special interests must be met or at least accommodated. Many police decisions at all levels of the organization involve the balancing of the interests of groups who want law enforcement tailored a certain way. Organizations representing the interests of women want the police to be more concerned with sexual offenses and the treatment of sexual assault victims. Downtown businessmen want more foot patrol. Minority organizations are concerned that their members are not being treated equally or fairly by the police. The elderly want more programs to guarantee their security from predation. Parents want more school crossing guards and stricter traffic enforcement near schools. Neighborhood A wants stricter enforcement of parking regulations; Neighborhood B doesn't want the regulations enforced at all. Adult book store owners are crying harassment while various church groups are insisting they be closed down.

The balancing of these often conflicting demands is an integral part of police decision-making. Concessions to these interests may be expressed in policy at the executive level, in interpretations of policy at middle management level and in the enforcement activities generated

at that level, and in the actions taken by individual officers when forced to choose among interests in street situations.

There is often no uniformity in the balancing of interests at all levels of the department. Policy made at the executive level placing one interest above others may be explicitly ignored by middle managers and street officers faced with problems which require a different balancing of interests at their levels.

One of the initial steps in any examination into police decision processes must be to identify as far as possible the major internal and external interests which affect the decision environment. Some of the more obvious interests are identified as a part of the analysis structure presented in Figure 1. But this picture must become considerably more detailed before a complete decision analysis can be made at any one level and the links between decisions at different levels of the department determined.

#### DECISION ANALYSIS

One of the most useful approaches available to the researcher in examining police organizational decision-making is the collection of proven techniques and methodologies which make up the science of decision analysis. Decision analysis has been used with repeated success in all types of organizations to assist decision makers at all levels in determining the best course of action under given circumstances. The types of scientific techniques to be used in decision analysis is based not only on the nature of the problem at hand but also upon the decision environment. Basically there are four different states of decision environment; certainty, risk, uncertainty; and conflict.

The certainty state exists when all the information required to make a decision is known and available. For example, when a fleet manager must make a determination between replacing the existing fleet with large, high performance vehicles or with economy sedans with a slightly lower performance but a much lower gasoline consumption, he is in a certainty situation. The costs of both vehicles, the number of fleet miles driven in one year, the performance ratings of both vehicles, the costs of fuel -- all of the factors which enter into this decision are known and available.

The risk condition refers to situations where the probabilities of certain outcomes are known. Decision analysis under the risk condition have been extensively used in police organizations to improve resource allocation decisions in deploying police patrol manpower, (36) and to enhance the case discrimination ability of investigative managers. (37) In analyzing risk situations the theory of probability is used extensively. Various stochastic models such as probabilistic linear programming, chance-constrained programming, stochastic model of goal programming, queueing theory, Markov analysis, simulation models, and probabilistic inventory models have been developed for decision analysis under risk.

Decision analysis under conditions of uncertainty exists when the probabilities of certain outcomes occurring are not known. Certain probabilities are predicted to occur, however, using one or more of several established criteria for prediction.

Decision analysis under conditions of uncertainty also permits subjective estimations of the probabilities of certain outcomes based on the decision makers' assessments of the situation. (38)

A condition of conflict exists when the interest of two or more decision-makers are mutually dependent. In this situation decision maker A may benefit from a decision he makes only if B makes a certain decision. Both A and B, therefore, are interested not only in the decision they themselves make, but also in the decision the other makes. The conflict condition is the usual subject of game theory.

Few certainty conditions exist in the real world. In police departments in particular the vast majority of decision situations are of the risk and uncertainty types in which the decision maker does not have all of the information he would like to have and none but the more capable can effectively weigh and consider the sparse data commonly available. It is precisely in this situation that the improved understanding of the decision situation which results from decision analysis will be of most value to the decision maker. Only through decision analysis can the various factors which influence a decision, or a series of multiple decisions be placed in some reasonable perspective and given their proper value to the decision situation.

#### Stages in the Decision Analysis Process

The soundness of any decision is measured by the degree to which organizational goals are advanced by that decision. Organizational goals provide the foundation for all decision-making. But decisions are also influenced by many environmental factors which in police departments may be such diverse factors as pressure from special interest groups, the likelihood of union opposition, changes in substantive or procedure law, the availability of resources, community expectations, relationships with other agencies, and so on. Organizational goals are themselves largely the result of decisions which are made within these environmental constraints.

To derive the optimum solution to each decision problem, the relationships between the variables relevant to the decision must be explicitly analyzed. Such analysis enables the verification of the superiority of the optimum decision to its alternatives.

The basic stages of decision analysis can be generally formulated as follows:

1. The explicit recognition of conditions needing a decision. It is the responsibility of the decision-maker to recognize the environmental and organizational conditions that call for a decision. For the

The most promising technique for multiple objective decision optimization is goal programming. Goal programming is a powerful tool which draws upon the highly developed and tested technique of linear programming, but provides a simultaneous solution to a complex array of competing objectives. Goal programming can also handle decision problems having a single major goal and multiple sub-goals. (41) The technique was originally introduced by Charnes and Cooper (42) and further developed by Ijiri (43) and Lee. (44)

Often goals set by higher management compete for scarce resources. Furthermore, these goals may be incommensurable. Thus there is a need to establish a hierarchy of importance among conflicting goals so that low order goals can be satisfied with a minimum commitment of resources. If the decision-maker can provide an ordinal ranking of goals in terms of their contributions or importance to the police department, the problem can be solved through goal programming.

Goal programming can be applied to virtually any decision process in which one or more goals can be identified. One common application is in the area of policy analysis. For police departments, like many other government and non-profit organizations, a basic decision problem involves the assignment of priorities to various goals and the development of programs to achieve these goals. Such a decision process constitutes the policy analysis of the organization. With the application of goal programming, the department is able to ascertain the soundness of its policies, input requirements for the achievement of set goals, and degrees of goal attainment likely with given resources. This review and revision process is an integral part of policy analysis.

Another common application is in the analysis of resource allocation problems. The usual problem is to determine the optimum combination of input resources to achieve a certain set of goals so that total goal attainment can be maximized for the department. These types of decisions can be optimized through goal programming.

Other decision problems in police departments involve some degree of planning and/or scheduling. In order to achieve certain goals in the future, decision must be made concerning present and future actions to be taken. To accomplish desired outputs, the optimum combination of inputs in a certain time period must be identified. These inputs may include manpower, equipment and material, time, level of technology and the like. Many problems such as manpower scheduling, deployment, budget planning, and personnel planning can be analyzed effectively using goal programming.

#### DESIGN OF THE RESEARCH

A major feature of the research will be determining the manner in which various organizational structure and management philosophies influence police decision-making at all levels of the department. In attempting to describe the impact of various structural arrangements and styles of management on decision-making, it is necessary to investigate different 'types' of police departments and the manner in which decisions

are made therein. A comparison can then be made of the decision-making process and its effectiveness across organizations. Organizational structure and management style are viewed as major independent variables in that it is hypothesized they determine to a great extent the types of decisions, decision-making processes, the location of decisions, and the decision-making effectiveness of a police organization. The typology to be used is an integration of a model proposed by Burns and Stalker (45) with a more recent perspective offered by Cordner. (46) Results of this integration is shown in Figure 2. Two paradigmatic organizations are pictured having certain structural and management features. While recognizing that these are ideal-types and that no single organization will fit the paradigm exactly, this dichotomization still provides a basis for choosing disparate types of police departments for analysis.

The eleven organizational characteristics identified in Figure 2 will be used to classify differing organizational styles. While each 'factor' is described here in elementary terms, a more sophisticated analysis will be used during actual classification.

Once a number of departments have been classified, a panel of police management experts will be used to select the police organizations to be studied. Because of the depth and intensity of the examination of each department necessary in this research, it is proposed that no more than three be chosen, one very non-traditional, one very traditional, and one somewhere in the middle. As far as possible, the organizations selected will be matched in regard to variables such as organization size, size of jurisdiction, socio-economic composition of the jurisdiction and other demographic characteristics.

Once the study organizations are selected, data collection will begin. Data collection will vary depending on the type of decision process under study, its location in the organization, and the stage of the research. Initial collection will rely heavily on existing records and make extensive use of observation and interview. Where possible, instruments already developed for decision analysis data collection will be adapted for use as necessary. Where required, original instruments will be developed. This may be particularly important in analyzing decisions at line levels since most existing instruments will not be suitable for the collection of the type of information necessary. The transformation of observations and interviews at this level into data suitable for analysis can be accomplished using a number of approaches. (47)

The general trend of the research will be to focus on strategic decisions in order to determine how these are made, modified, disseminated and implemented by actors from the four levels of the police organization to be studied. The examination of actors the lower three levels will center on identifying the determinants of new decisions made in response to strategic decisions, the flow of decisions among the organizational levels, and the planned and unplanned modification of intended decisional outcomes, particularly in response to external pressures on decision-makers. The assessment of the impact of decision-

Figure 2: Organizational Paradigm to be Used in Selecting Police Departments for Intensive Study

FACTORS IN ORGANIZATIONAL STRUCTURE AND MANAGEMENT STYLE	TYPE OF ORGANIZATION	
	Traditional/Military	Non-Traditional/Democratic
Emphasis on goal achievement	low	high
Span of control	narrow	wide
Number of levels of authority	many	few
Number of formal rules	many	few
Emphasis on superordination/subordination of relationships	high	low
Style of interactional communications	instructions & orders	advice & information
Planning processes	centralized/fixed (standing plans)	decentralized/flexible (single-use plans)
Job descriptions/specialization	narrowly defined/high degree	broadly defined/low degree
Managers perceive most knowledge and expertise to be located...	at the top of the organization	diffused throughout the organization
Conflict is adjudicated	from the top	through peer interaction
Emphasis on using proper means	high	low

making will rely on a determination of outcomes and will involve comparing actual outcomes with intended outcomes. Both formal and informal organizations in the police department are viewed as falling within purview of the decision networks to be examined.

The products of the research will be 1) descriptions in narrative, modeling and simulation form of how decisions are made, what inputs are used in decision-making, the relationships among decisions and among different decision levels, and the outcomes of decisions; 2) A description in narrative, modeling and simulation form of how various organizational structures and management styles affect decision-making in the organization; and 3) Programs applicable to different categorical types of decisions at all levels of the police agency which will permit police decision makers to optimize their decisions within the constraints imposed by the decision-making environment.

#### STAFFING AND BUDGET

For the project the City of Lincoln, Nebraska will be the grantee and will assume full responsibility for the satisfactory completion of the research outlined herein. The City of Lincoln charges a fee of 5% of the total cost of the project as administrative overhead. All other moneys are devoted to forwarding the program of research. There are no hidden overhead charges in any of the budget estimates quoted below.

#### Staffing

Five persons comprise the principal staff of the project. These are the project director, a principal investigator, a research methodologist, a decision analyst, and a criminal justice management specialist. In addition, numerous research assistants and clerical personnel will be utilized at various stages of the research. The number needed and their particular talents cannot, however, be identified with any precision at this time.

#### Project Director

George K. Hansen  
Chief of Police  
Lincoln, Nebraska

Mr. Hansen has achieved national prominence as one of the most progressive of police executives. He has worked in management in one capacity or another for over 35 years. His extensive experience makes him ideally suited to manage a project of this complexity. Resume attached.

#### Principal Investigator

Dr. Sang M. Lee  
Chairman, Department  
of Management  
College of Business  
Administration  
University of Nebraska

Dr. Lee is one of the foremost authorities in Decision Science in the United States. One of the pioneers of goal programming, he has achieved international recognition for his work in this area. As principal investigator he will develop, direct and oversee the research component of the project.

Methodologist

Dr. Vincent J. Webb  
Chairman, Department  
of Criminal Justice  
University of Nebraska

Dr. Webb has been extensively involved in criminal justice research during the past ten years. He has just completed a \$628,000 grant at the University of Nebraska, Omaha. His professional specialization is research methodology. His role in the present project will be to formulate methodology, develop data collection instruments, and oversee data collection. Vita attached.

Criminal Justice  
Management Specialist

Dr. Roy R. Roberg  
Associate Professor  
Department of Criminal  
Justice  
University of Nebraska

Dr. Roberg's professional specialization is management in criminal justice agencies. He is the author of several works on criminal justice management and is just completing a text applying the new theories of contingent management to criminal justice. His primary roles in the present research will be to assist the development of the research methodology, the collection instruments, and oversee data collection. Vita attached.

Decision Analyst

Dr. Lester A. Digman  
Associate Professor

Dr. Digman's training is in management and operations research with a special emphasis on organizational decision analysis. During this project he will be primarily employed to analyze collected data. Vita attached.

Project Coordinator

To be selected

The individual selected for this position should have a background in research, and an extensive familiarity with police organizations. His role will be primarily the day-to-day administrative coordination of the project. He will, however, participate in certain aspects of the substantive research.

<u>Item</u>	<u>Budget</u>	<u>Cost Over the Life of the Project</u>
<u>Salaries</u>		
Project Director (20%)		\$10,000
Principal Investigator (20%)		\$19,000
Methodologist (25%)		\$20,000
Criminal Justice Management Specialist (25%)		\$20,000
Decision Analyst (25%)		\$20,000
Project Coordinator (100%)		\$30,000
Research Assistants and Clerical Staff		\$75,000
<u>Other Costs</u>		
Computer time/programming assistance		\$15,000
Document preparation and printing		\$ 5,000
Office space and equipment rental		\$12,000
Travel, lodging, per diem		<u>\$75,000</u>
<u>Total Program Costs</u>		\$301,000
Administrative Overhead @ 5%		<u>15,050</u>
TOTAL COST		\$316,050

## REFERENCES

1. Sang M. Lee and Laurence J. Moore, Introduction to Decision Science (New York: Petrocelli/Charter, 1975) pp.4-6.
2. Sang M. Lee, Goal Programming for Decision Analysis (Phila.: Auerbach, 1972)
3. Gary W. Cordner, "Open and Closed Models of Police Organizations" Journal of Police Science and Administration, Vol. 6 (1978) pp. 22-34
4. See e.g. O.W. Wilson and Roy C. McLaren, Police Administration (New York: McCraw-Hill, 1972) which manages to avoid the subject altogether.
5. Wayne R. LaFave, Arrest: The Decision to take as suspect into Custody (Chicago: American Bar Foundation, 1965); Kenneth C. Davis, Police Discretion (St. Paul, Minn.: West Publishing Company, 1975; Albert J. Reiss, Jr. The Police and the Public (New Haven: Yale University Press, 1971; James Q. Wilson, Varieties of Police Behavior: The management of Law and Order in Eight Communities (Cambridge: Harvard University Press, 1968).
6. Ibid.
7. Police: A Report of the National Advisory Commission on Criminal Justice Standards and Goals (Washington, D.C.: U.S. Government Printing Office, 1973), pp. 21-26; Davis op cit; Herman Goldstein "Administrative Problems in Controlling the Exercise of Police Authority," Journal of Police Science and Administration, Vol 58 (1967), p. 160; LaFave, op cit.
8. Cordner, op. cit.
9. John H. McNamara, "Uncertainties in Police Work: in David J. Bordua (Ed), The Police, Six Sociological Essays (New York: John Wiles & Sons, 1967), p. 178.
10. Val Lubans, James M. Edgar and Richard Dart, Policing by Objectives (Washington, D.C.: Law Enforcement Assistance Administration, 1977)
11. Ibid.
12. Sang M. Lee, Goal Programming for Decision Analysis, op. cit.
13. James Q. Wilson, op. cit., pp. 227-277.
14. Ibid.
15. Lee, Introduction to Decision Science, op. cit.
16. Peter B. Bloch and D. R. Weidman, Managing Criminal Investigations (Washington D.C.: U.S. Government Printing Office, 1975) p.8.

17. David Sudnow, "Normal Crimes: Sociological Features of the Penal Code," Social Problems, Vol, 12 (Winter 1965) pp. 255-64, 269-70.
18. Ibid.
19. Reiss, op. cit. pp 121-125.
20. Amitai Etzioni, Modern Organizations (Englewood Cliffs: Prentice Hall, 1964), pp. 76-77.
21. Reiss, op. cit. p. 124.
22. L.A. Digman, Study of Management and Executive Development in Industry, Universities and the Federal Government (Rock Island, Ill.: U.S. Army Management Engineering Training Agency, 1974)
23. Lubans, et al, op. cit.
24. Digman, op. cit.
25. Ibid.
26. Robert A. Anthony, "Framework for Analysis:", The Journal of Systems Management
27. Lubans, et al, op. cit.
28. Bloch and Weiderman, op. cit., p. 8.
29. Lubans, et al, op. cit.
30. T. McEwen, Allocation of Patrol Manpower Resources in the St. Louis Police Department (Springfield, Va.: National Technical Information Service, 1968)
31. Lubans, et al, op. cit.
32. Jonathan Rubeinstein, City Police (New York: Farrar, Straus and Giroux, 1973)
33. Lubans, et al, op. cit.
34. Richard M. Cyert and James G. March, A Behavioral Theory of the Firm, (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1973)
35. Reis, op. cit.
36. McEwen, op. cit. and Nelson B. Heller, Computerized Scheduling of Police Manpower: Methods and Conclusions (Springfield, Va.: National Technical Information Service, 1973)

37. Bernard Greenberg and O. S. Yu, Enhancement of the Investigative Function (Springfield, Va.: National Technical Information Service, 1973)
38. Lee, Introduction to Decision Science, op. cit.
39. Lubans et al, op. cit.
40. Ibid.
41. Lee, Goal Programming for Decision Analysis, op. cit.
42. A. Charnes and W. W. Cooper, Management Models and Industrial Applications of Linear Programming (New York: Wiley, 1961)
43. Y. Ijiri, Management Goals and Accounting for Control (Chicago: Rand-McNally Publishing Co. 1956)
44. Sang M. Lee, Interactive and Integer Goal Programming, paper presented at the joint ORSA/TIMS Meeting, Las Vegas, 1975
45. Tom Burns and G. M. Stalker, The Management of Innovation (London Travistock, 1961)
46. Crowder, op. cit.
47. Several possibilities are suggested in R. M. Brandt, Studying Behavior in Natural Settings (New York: Holt, Rinehart and Winston, 1972); R. F. Bales, Personality and Interpersonal Behavior (New York: Holt, Rinehart and Winston, 1970) and Medley and Mitzel, "Measuring Classroom Behavior by Systematic Observations" in N. Goye (ed) Handbook of Research in Teaching (Chicago: Rand-McNally, 1963).



**END**