Policy as a field of management theory

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THE teaching of management has changed dramatically in the last decade. We rejected many of our traditional materials in favour of significant theory; we made strides, for the first time, toward educating management scientists; also for the first time, research in management attained significant status among the outputs of the management or business school[1]. However, one thing was somehow ignored. In our race to apply quantitative methods, understand interpersonal behaviour in organizations, and develop the disciplines of marketing, finance and production, we gave relatively little attention to the teaching and researching of the management process itself. Leonard Sayles stresses this point:

> "A strange paradox flourishes in the field of education for business. At the very time interest in business study and management training is at an unprecedented peak, attention to the heartland of business practice—the field of administration or management itself—is declining. Most management education has little management in it ..."[2, p. 25].

Management or Business Policy is the study of the work of senior management, with particular focus on the making of important decisions. It deals with the topics of managerial roles, organizational goals, structures and strategies. The most well-known of Policy groups, that of the Harvard Business School, defines the field in a recent memorandum (16 March, 1970) as follows:

> "Business Policy is concerned with the functions and responsibilities of general management and the problems which affect the character and success of the total enterprise. As a field of study, it is oriented to the problems of the practicing business manager".

Many business schools view Policy as the "capstone" or integrative course in the MBA curriculum.

In this paper, I shall discuss two common approaches to the teaching of Policy and then propose one which, in my view, is more in keeping with modern trends in management education. This will be followed by a statement of a body of theory, based primarily on the work of Herbert Simon and his colleagues at Carnegie-Mellon University, which can serve as the foundation for a new approach to Management Policy. I shall then link this underlying theory to the topics of managerial work, organizational goals, structure, decision-making, strategy-making and management science at the policy level. Finally, I shall illustrate this approach to Policy by describing our experiences in the McGill University MBA programme. The central themes I wish to develop in this paper are, first, that Policy should be taught as a body of theory, and second, that we now have the materials that enable us to do so.

THE TEACHING OF POLICY

At many business schools, the Policy course continues to be the stepchild. Unlike other courses, it is often taught by someone who has never studied the field formally (perhaps a successful businessman who has chosen to end his career in academia or an academic from another discipline who is intrigued by this important field). Many universities require a Policy course as the capstone of the MBA programme, and many of these grope for a teaching method that is compatible with those used in other courses. According to recent articles, some adopt a business game, others send the students out to develop long-range plans for local companies, some have the students pretend to start companies or have them consider social issues facing businessmen. However, two methods appear to have predominated—the teaching of principles and the discussion of cases.

The principles approach

Developed since the turn of the century by writers such as Fayol[3] and Urwick and Gulick[4], the principles approach builds its framework on the mangement "functions"—usually planning, organizing, coordinating and controlling. The management process is represented by a series of "principles" (or "proverbs" as one critic has referred to them[5]), such as the unity of command principle: "For any action whatsoever, an employee should receive orders from one superior only"[6, p. 390].

Although popular for a great many years, the principles approach has fallen into disfavour, and is less frequently found in Policy or "general management" courses than it once was. Its simplicity and dogmatism and the absence of attempts to verify its propositions by empirical research have put its proponents on the defensive. It appears anachronistic in the management school which looks increasingly to the underlying disciplines and to researched and researchable theory. While other management theorists have felt obligated to test their hypotheses, the proponents of the principles approach have allowed opinions and hypotheses to emerge stated as absolute truths. Much of their vocabulary is too imprecise to allow for testing, and what could be tested, seldom has been. The proponents "continually discussed whether management was an art or a science but failed to develop that portion that was scientific"[6, p. 404].

One critic explains the longevity of the principles approach in terms of its pro-management nature:

"It fits in with an authoritarian attitude which is still prevalent or at least which fits in with managers' predilections—they would like to be authoritarian because they could make decisions more speedily and so get the work performed more quickly . . .
"(It tells) the manager what to do and provide(s) him with "ten easy steps" . . . Prescriptive principles remove from him much of the need to think through the problem, they short-circuit the problem and let him move to the action stage more quickly"[7].

Further discussion of the criticisms of the principles approach may be found in Simon[5] and March and Simon[8]. Urwick has recently published a series of articles in which he attempts to answer the critics (see, for example,[9]).

The case study approach

The case study method dominates the teaching of Policy today. In its early form, cases were treated as ends in themselves. (We can call this the "pure case study" method.) I have reason to believe from the textbooks in the field and from personal discussion with a number of Policy instructors, that something akin to this remains in common, although not exclusive practice today. Learning takes place by debating the policy aspects of real-world situations described on paper. The pure case study method plays down or ignores conceptualizations and theories. A statement in a 1962 edition of a popular casebook illustrates this view:

"It would not, in our opinion, be an irreparable loss if we had no headings, no outline of topics. An apprentice working under and with experienced businessmen does not have any "topical outline" from which to learn. By watching, studying, asking, thinking, imagining, co-operating . . . he comes to know the many functions of a manager"[10].[1]

Such a method has, no doubt, been used to train all professionals in the early years of their professions. In the absence of systematic knowledge one is forced to teach by example. But the consequences must be recognized. There can be no systematic progress in the field, rather a continual reinforcement of current practice; because one cannot specify what is to be learned, one can never be sure whether the actual learning that takes place is valid, or indeed, if any real learning takes place at all. Applied to medicine, the above quote describes the training of early medical doctors and witch-doctors as well. The difference between the two became clear only when science was accepted as the basis for medical instruction. What would be the state of medicine, engineering, or microeconomics today if these fields had no theory on which to draw? We can only justify the pure case study method when we have no useful theory to teach. Once we do, cases belong simply as vehicles to illustrate and help us to teach the theory.

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[1] At a recent conference on the teaching of Business Policy, held at the Harvard Business School (24–28 May, 1971), there was considerable debate between those who emphasized cases and those who emphasized theory. While the latter stressed the need to teach concepts, the former justified the case study method in part by its power to develop student skills.

A contemporary approach

The 1960s were revolutionary years in the teaching of management. The underlying disciplines (mathematics, statistics, economics and behavioural sciences) took hold in the management curriculum and the applied fields become increasingly more theoretical. All the while, the Policy course changed little. It is indeed ironical that we now train our students well in all the underlying theories, functional disciplines and use of tools, but when they leave the business school, these managers-to-be know almost nothing about the management process itself. This, in my view, is the failure of the Policy course.

There have been signs recently that suggest a growing disenchantment with the traditional approaches to Management Policy. At the Harvard Business School, which made its reputation by the application of the case study method to business education, the Policy group pointed out in its recent memorandum that:

> "the conceptual output of research is considered as input for the Policy course for, in a major break with the past, a single set of concepts—simple, inelegant, but powerful—has become established as the organizing principle of the Policy course".

Other schools have designed Policy courses which show more dramatic breaks with the past. An approach which uses that of the Harvard Policy group as a point of departure has been discussed by Basil Denning[11] and the members of a Manchester Business School graduate seminar published a paper[12] describing an approach more deeply grounded in theory, one akin to ours in the McGill University MBA programme.

While cases continue to dominate the pages of most new Policy textbooks, there are signs of change. Summer and O'Connell[13] make an explicit attempt to link cases to theory, while Cannon[14] develops an entire textbook around the theme of strategy. The two periodicals *Journal of Business Policy* and *Policy Sciences*, the latter concerned with public policy-making, should have a significant impact on the development of theory in the field, and hence, on the courses taught[15].

Perhaps most significant was a series of articles in the 1966 volume of the *Academy of Management Journal* entitled "Forum: Exchanges on Cases and Policy courses", in which four academics criticized the study approach[16–20]. A comment by Gordon is most germane to this discussion:

> "If the general excuse for almost exclusive reliance on "cases" was lack of knowledge, the excuse for such lopsided reliance is out of date. Even as medicine once relied almost exclusively on cases until the discovery of underlying basic health sciences (anatomy, physiology, etc.), we can no longer begin begin with anecdotes on which to improve our practice without previous foundations in the appropriate segments of underlying disciplines"[18, p. 354].

Gordon and his colleagues point clearly to the problem, but while they suggest the need for a theoretical framework, they do not present one.

I wish to use Gordon's comment as a point of departure here. I shall specify below what I believe a contemporary Policy course must do, and then I shall present a theoretical framework which I believe could accomplish this.

The student of Business or Management requires a useful conceptual framework with which to view the world of Policy that he shall face during his career. He requires answers to the following questions:

1) What is the job of the Manager?
2) How do organizations determine goals?
3) How do different organizations develop their structures and which are appropriate for each?
4) By what processes are significant decisions made?
5) What are the organizational strategies, and how are they made?
6) What is the role of management science at the Policy level?

The Management Policy course should provide answers to these questions on the following bases:

a) The answers to questions of Policy must be based on empirical research. We must observe and study the management process in a systematic

31

way. Then, what we teach our students should be researched or at least researchable. (This point is stressed by Sayles [2].)

b) The answers should blend into an integrated theory of Management Policy. We must bring together the theories that we now have, integrate them based on some underlying theory, and use research to fill in the gaps that remain. We have much to do, but we have the basis for a beginning. Many theories are available that provide partial answers to our questions. These are often not recognized as Policy theories; but so long as they shed light on the questions asked in the Policy course, they must be used there.

c) Description must precede prescription. There has been too great a tendency to prescribe in the literature of Policy, to tell managers how to manage without first understanding why they do what they do.[2] In discussing how unproductive has been the study of the modern large corporation, John Kenneth Galbraith claims that "A vivid image of what *should* exist acts as a surrogate for reality. Pursuit of the image then prevents pursuit of the reality" [22]. We must avoid the temptation to arm our students with simplistic prescriptions (eg planning is good per se); rather we and they must come to understand the complex processes of management. Prescription is meaningful only when it is grounded in valid description.

d) The Policy course should integrate the lessons of management science. The Policy course is the integrative one of the MBA curriculum, linking the applied fields of marketing, finance and production. The modern curriculum places increasing emphasis on the scientific tools of these fields (eg marketing research, capital budgeting, mathematical programming). The Policy course can maintain its integrative role by serving to interpret the lessons of management science for the policy maker. The Policy student should learn to assess the relevance and weaknesses of each management science technique (especially strategic planning) in the light of his knowledge of the actual management process. The Policy course must walk a line between behavioural science and management science, drawing on one for descriptive theory, on the other for prescriptive theory.

e) The Policy course must link theory with practice. Theory alone is no better than practice alone. The reality of Policy is sufficiently complex to require that the student have the opportunity to assess the relevance of theory in practice. Ideally, the students armed with theory, will observe reality firsthand, via a field study or live case. Alternately, he can assess his theory in the context of a written case or business game [13].

AN UNDERLYING THEORY FOR POLICY

The applied fields of management have, for the most part, drawn on particular bodies of underlying theory—marketing on psychology, finance on economics, production on mathematics. There is no obvious underlying discipline to which Policy can relate, but there is one particular body of theory (presumably, among others) that can serve as a basis for an integrated theory of Policy. It has been developed over the years by Herbert Simon and his colleagues at Carnegie-Mellon University Graduate School of Industrial Administration.

Simon's administrative man

Criticizing the rational man of the economist, the mechanical man of the management philosophers, and the behavioural man of the social psychologist, Simon *et al.*, in a series of books, introduce "administrative man" [5, 8, 23, 24]. This man's environment is complex and dynamic, his cognitive powers and available time limited. Administrative man exhibits, in Simon's term, *bounded rationality*, that is, he simplifies his own work system and attempts to act rationally within it. He makes choices with regard to simplified models of the world, and he *satisfices*, that is, he seeks satisfactory rather than optimal solutions. Furthermore, his actions can be described in the terms of stimulus-response—he acts when he must.

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[2] This point is made most clearly by Wrapp [21].

His response is a *programme*, the cornerstone of this body of theory.

The programme as a basic work element

A programme is a generalized procedure, learned by humans or built into machines, that is, used in response to a particular type of stimulus. A secretary executes a typing programme in response to dictation, a fire department initiates a fire-fighting programme in response to an alarm, a manager carries out a problem-solving programme in response to a difficulty. Programmes comprise five basic elements —stimuli, factual inputs, value inputs or statements of preference, execution steps including heuristics (rules of thumb that lead to convenient, if not optimal, solutions), and outputs. Programmes are developed because they are economical—the response to each stimulus, rather than being new, can reflect the learning of past actions.

We can classify programmes according to the extent to which they can be prescribed or "programmed". At one extreme, we have those programmes that can be observed and easily described in flow chart form, for example, the typing or fire-fighting programme. These will be referred to as *operating programmes*. At the other extreme, we have complex, ill-defined programmes, where specification of content is difficult. Termed *management programmes*, these include the problem-solving and crisis handling programmes of managers.

There are a number of differences between these two types of programme. Operating programmes tend to have specific inputs and outputs, and the contents are often specified for the user. The stimuli and the outputs of management programmes often do not come as clear signals, and the contents are usually unspecified as well. Hence, the user is allowed considerable discretion. While operating programmes can usually be taught explicitly, management programmes fall into the realm of the intuitive or judge-

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[3] March and Simon [8] refer to operating programmes as "performance" programmes and to management programmes as "procedural" programmes. I use the words "operating" and "management" because I believe they more clearly convey the difference to the reader.

mental (ie not conscious or explicit), and they often require "creative" responses.

The thrust of programming

Can we "programme" the management programme? That is, can we specify the complex procedures used in management and other sophisticated jobs? I would like to suggest that the basic thrust of management theory and management science has been in this direction—the programming of more and more sophisticated forms of organizational work. Indeed, man's development through the ages can be described in these terms, as Desmond Morris points out:

"So, in all these spheres—in painting, sculpture, drawing, music, singing, dancing, gymnastics, games, sports, writing and speech—we can carry on to our heart's content, all through our long lives, complex and specialized forms of exploration and experiment . . .

"(Man's play rules) can be stated as follows: (1) you shall investigate the unfamiliar until it has become familiar; (2) you shall impose rhythmic repetition on the familiar; (3) you shall vary this repetition in as many ways as possible; (4) you shall select the most satisfying and develop these at the expense of others; (5) you shall combine and recombine these variations one with another; and (6) you shall do all this for its own sake, as an end in itself.

"These principles apply from one end of the scale to the other, whether you are considering an infant playing in the sand, or a composer working on a symphony" (25).

We can trace the programming of organizational work through four stages. A logical starting point is the Industrial Revolution and the early attempts to programme the division and flow of production work. Adam Smith provides us with an apt illustration in *The Wealth of Nations*, as he describes the manufacture of pins:

"in the way in which this business is carried on, not only the whole work is a particular trade, but it is

divided into a number of branches, of which the greater part are likewise particular trades. One man draws out the wire, another straights it, and a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on is a peculiar business, to whiten the pins is another; it is even a trade by itself to put them into the paper; and the important business of making pins is, in this manner, divided into eighteen distinct operations, which, in some manufactories, are all performed by distinct hands, though in others the same man will sometimes perform two or three of them" [26].

Frederick Taylor introduced the second stage at the turn of this century with his intensive efforts to programme the actual content of production work. Although he did not use the word, Taylor's efforts were clearly those of programming:

"First. Find, say 10 or 15 different men (preferably in as many separate establishments and different parts of the country) who are especially skillful in doing the particular work to be analyzed.
"Second. Study the exact series of elementary operations or motions which each of these men uses in doing the work which is being investigated, as well as the implements each man uses.
"Third. Study with a stop-watch the time required to make each of these elementary movements and then select the quickest way of doing each element of the work.
"Fourth. Eliminate all false movements, slow movements, and useless movements.
"Fifth. After doing away with all unnecessary movements, collect into one series the quickest and best movements as well as the best implements" [27].

Taylor and his followers, notably the great numbers of time and motion study men who appeared like the 17-year locust in the middle of this century, attempted to programme totally the work of their subjects. Freedom of action was almost entirely eliminated, but the increases in efficiency were often dramatic.

A third stage saw the thrust of programming carried into the centre of the organizational hierarchy. The industrial engineers initiated this process, bringing their time and motion study methods to the white-collar offices. But with the advent of the computer and the parallel development of the field of operations research, all the work of middle management suddenly became fair game for programming. Just as physical work could be automated by production machines, so now could mental work be automated by computers. The results have been and will continue to be dramatic. As sophisticated examples of this activity, we can cite two award-winning doctoral theses—Tonge's [28] programme to balance assembly lines and Clarkson's simulation of the work of the trust investor [29].

The fourth stage—the programming of the work of the manager himself—is heralded by Clarkson's work. Although his subject worked in middle management, his research provides clear indication that even very sophisticated, "judgemental" thought processes can be so well understood as to be simulated accurately on the computer.

So far, there has been little work in this area. In 1956, Cyert, Simon and Trow [30] reported a study in which one decision was analysed in depth (but not programmed). There are two unpublished Master's theses in which attempts were made to study the actual programmes executed by managers [31, 32]. The study by Liong Wong [31] shows in flow chart form the managers' information scanning and disseminating programmes, their bargaining and resource allocating programmes, and others. John Radomsky was concerned solely with the managers' time scheduling activities. His basic result—the programme used by the manager to choose a next task to work on—is shown in Figure 1 [32, p. 60].

Progress in this fourth stage has been slow because managerial work is enormously complex and parts are difficult to isolate for study. For this reason, a number of researchers interested in studying complex thought processes of this nature have turned to artificial situations, such as chess or checkers [33]. Nevertheless, the important work of Radomsky and Wong does suggest the direction of research.

Figure 1 : Radomsky's programme used by the manager to choose next task

Flowchart boxes:

- Choose planning horizon
- Suitable agenda available? — No
- Locate zero, negative, slack and imminently late jobs, arrange in value order
- Resolve time, resource conflicts
- Agenda fill horizon? — No
- Add incomplete jobs
- Agenda fill horizon? — No
- Arrange slack jobs in value order, add to agenda
- Yes

- Choose most valuable task in queue
- Worth a time investment — Yes / No
- Determine interruption allowable
- Start problem solving
  - If solution hang-up occurs, return task to queue, choose new task
  - If interruption comes, weigh it against task; if task is displaced, return it to queue
  - Complete task or interruption
  - Return to start

- Add to task inventory. Return to start
- Urgent? — Yes / No
- Short operation task? — Yes / No
- Self

- Scan
  - Form?
  - Sender?
  - Content?
  - Requires?
  - When?
- Determine normal assigner
- Evaluate risk, choose final assigner
- Other person
- Determine mode instructions and send. Return to start

- Do non-problem solving or non-productive work. When new information arrives, return to start
- Problems in inventory? — No / Yes
- New input
- Open input valve
- Start
- Input screens

This work is in its early stages but one finding is clear: it is possible to describe all organizational work in terms of programmes. To do so for the work of senior management is, in my view, the prime challenge facing the researcher in Management Policy.

A programmed view of organizations

March and Simon describe administrative man's organization as a set of *loosely-coupled programmes*. Each programme is executed independently, but is linked to the others in a variety of ways that determine organizational structure. First, organizations arrange programmes in pyramidal order, with the more general (management) programmes at the top and the specialized (operating) programmes lower down. Higher-level programmes construct and maintain control over the lower-level programmes. In addition, programmes are coupled horizontally by the flow of information and work objects (eg the output of one serving as the input of another) and by their need to share common resources.

To further our development of this theory, we must depart at this point from the material of the Carnegie School and turn to some theory of Katz and Kahn [34]. They view the organization as an open system, importing energy from the environment, transforming it, and sending back outputs in return for payments which buy new inputs to start the cycle again. Five types of work are needed to operate the organizational system:

"(1) production subsystems concerned with the work that gets done; (2) supportive subsystems of procurement, disposal, and institutional relations; (3) maintenance subsystems for tying people into their functional roles; (4) adaptive subsystems, concerned with organizational change; (5) managerial systems for the direction, adjudication, and control of the many subsystems and activities of the structure" [32, p. 39].

Taking a cue from this framework, I shall describe the organization in terms of four basic participants:

Operators

Operators carry out the basic, routine work of the organization, that is, they operate the production and supportive subsystems. In the typical manufacturing firm, this includes machine operators, assemblers, warehousemen, purchasing agents and salesmen. In general, the work of the operator is well-defined—often he is responsible for the execution of a single programme—and most often he uses operating programmes which allow for little discretion. There are, however, exceptions. Medical personnel in hospitals and academics in universities are operators, although much of their work is unprogrammed.

Technocrats

Technocrats are concerned with the design, control and improvement of the organization's work. They are of two types. One, responsible for the maintenance subsystem, specializes in designing programmes, establishing workflows and monitoring performance. Included here are industrial engineers, accounting and control people, and budget analysts. The second group deals with the adaptive subsystem. Typical of these are market researchers and long-range planners—those staff people who collect external information and use it to help the organization adapt to its changing environment. Katz and Kahn point out the similarities and differences between these two types of technocrats:

"The adaptive function, like the maintenance function, is directed toward the survival of the organization. Although the maintenance function faces inward and the adaptive function faces outward, they are similar with respect to another basic tendency. Both move in the direction of preserving constancy and predictability in the conditions of organizational life. The maintenance function moves toward a constant set of internal structures. The adaptive function tends to achieve environmental constancy by bringing the external world under control" [34, p. 91].

Technocrats use what we might call "analytical programmes". Like operating programmes, these usually have specific, learnable content, but, like management programmes, they handle general kinds of stimuli and are often used on an ad hoc basis. Examples would be capital budgeting, cost-benefit

analysis, and time study analysis. The development and application of these programmes has been so rapid in recent years as to prompt John Kenneth Galbraith to write a book suggesting that technocrats have gained control of large corporations [22].

Managers

Managers assume formal authority of organizations or their parts. Their prime responsibility is to ensure that the organization produces its goods and services efficiently. They must oversee the work of operators and technocrats; they must lead them and allocate resources to them; they must maintain stability in the event of disturbances, ensure an appropriate rate of change, and maintain certain relationships between the organization and its environment. For the most part, the manager's programmes are most general and are not, at this point, well understood.

Influencers

Influencers form the power system of the organization. These are the people who are, in one way or another, able to influence organizational preferences or goals. Owners often seek profits; unions may seek power over policy decisions; society seeks a greater recognition of the common good; managers often seek increased rates of growth. Influencers exist because organizations have discretionary powers and create surpluses as by-products of their operations. The influencers bargain among themselves for control over decisions and for these surpluses. Together they form coalitions of various kinds and these, through the process of bargaining, establish organizational goals.

This, then, is one view of the organizational system. It consists of four sets of participants with different responsibilities, who use operating, analytical, management and bargaining programmes coupled together in a complex structure. Although some of these programmes remain ill-defined, there are clear indications that one important thrust of management theory is in the direction of programming them.

THE THEORY OF MANAGEMENT POLICY

I have now outlined what I feel is needed in the development of the field of Management Policy and what I feel can serve as a body of underlying theory. I should like in this section to draw the material of the previous sections together, and to provide support for my contention that we can now approach Policy as a field of management theory because, in fact, sufficient theoretical material now exists.

Figure 2 illustrates the material presented below. Policy is viewed as comprising eight topics—three underlying elements, two dealing with the policy-making process itself, and three dealing with the application of management science at the Policy level. I shall present each together with sample readings to illustrate that in fact we now have enough theoretical material to begin to develop Policy as a field of management theory.

Managerial work

To understand managerial work, we must focus on the roles performed by managers (eg leadership, entrepreneurship) and on the programmes they use in carrying out these roles. We must study work characteristics (eg with whom they spend their time), and we must analyse variations in managerial jobs. Unfortunately, the vast amount of armchair wisdom in the literature on this topic has hidden from most scholars the useful studies and analyses that do exist. We have considerable empirical material on managerial work characteristics, notably from the British "diary" researchers, and a few interesting studies which capture the complexity of managerial roles (notably the work of Sayles [35]). Our chief concern is with the programming of managerial work, and here there is little (with the exception of the two Master's theses cited earlier). Some of the more interesting material can be found in [21, 35, 38–42].

Organizational goals

We can describe organizational goals by studying influencers, the coalitions they form, and the goal behaviours these exhibit. We have much literature on different views of goals—the classical economists
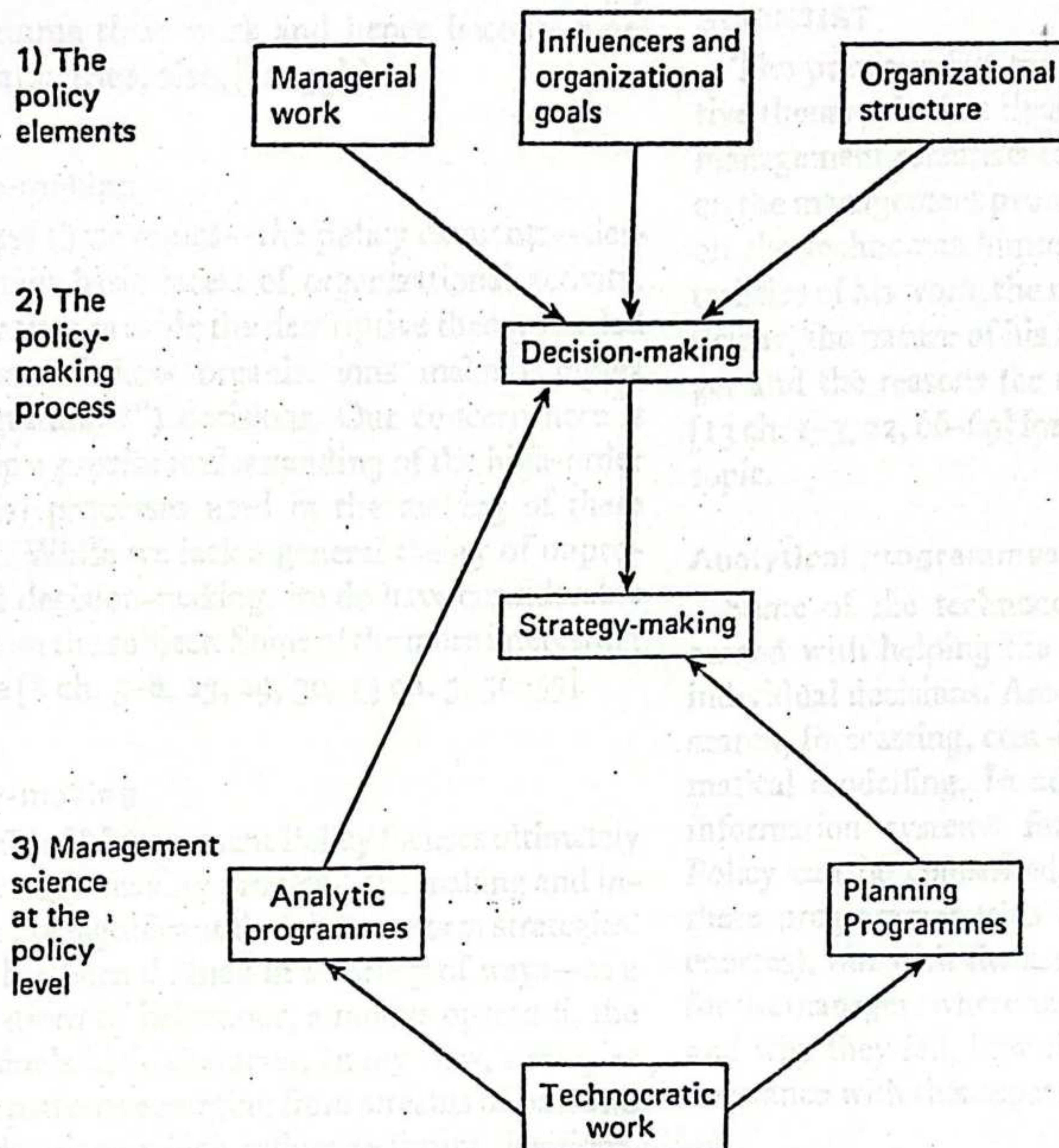
1) The policy elements

Managerial work → Decision-making

Influencers and organizational goals → Decision-making

Organizational structure → Decision-making

2) The policy-making process

Decision-making → Strategy-making

3) Management science at the policy level

Analytic programmes

Planning Programmes

Technocratic work

Figure 2 : The topics of management policy

on profit maximization, Baumol [43] on sales maximization, Papandreou [44] on the preference function, Simon on sets of constraints, Cyert and March [24] on coalitions. By analysing different coalition formations, we can identify particular goal behaviours with each. We can discuss coalitions as being either dominated or non-dominated. Where one individual dominates, we would expect the organizational goals to reflect his personal goals. If he has strong needs along one goal dimension (eg, profit), then one would expect the organization to exhibit something akin to maximizing behaviour. A coalition without a dominating member would likely exhibit the satisficing behaviour described by Cyert and March, as different influencers bargain among themselves for power and

rewards. Such an approach to the study of organizational goals is supported also by [45-49].

Organizational structure

Here we deal with the coupling of the programmes of managers, technocrats and operators, and the resulting flow of authority, information and objects. After Burns and Stalker [50], we find it convenient to distinguish two basic forms of structure—"bureaucratic" for programmed work and "organic" for unprogrammed work. Specific types of structure —process, output or product, and matrix—can be discussed in these terms. We can then relate a variety of factors to structural form, noting, for example, that with increased age and size and more stable environ-

mental conditions, organizations tend increasingly to programme their work and hence become more bureaucratic. (See, also, [50–55].)

Decision-making

The first three topics—the policy elements—describe certain basic facets of organizational activity. Together they provide the descriptive theory needed to understand how organizations make complex ("unprogrammed") decisions. Our concern here is to develop a precise understanding of the high-order managerial processes used in the making of these decisions. While we lack a general theory of unprogrammed decision-making, we do have considerable literature on the subject. Some of the more interesting works are [8 ch. 5–6, 23, 29, 30, 33 ch. 3, 56–59].

Strategy-making

The field of Management Policy focuses ultimately on the strategy-making process—the making and interrelating of significant decisions to form strategies. Strategy has been defined in a variety of ways—as a plan, a pattern of behaviour, a modus operandi, the organization's basic character. In my view, strategies are those patterns emerging from streams of past and present decisions which influence future decisions. Thus, while decision-making is concerned with analysing and programming the making of single decisions, strategy-making is the study of decision streams. In studying strategy-making, one can trace the stream of significant decisions in an organization, noting that the more current and the more important a decision, the greater its influence on strategy (a process that can be described as exponential smoothing). The literature, of which there is an increasing amount, may be depicted as presenting three views of strategy-making. The entrepreneurial view focuses on the dominant manager who seeks bold opportunities to attain clear goals; the adaptive view, more typical of the non-dominated coalition, treats strategy-making as a reactive, disjointed, incremental process; the planning view focuses on the analytical highly-integrated, one-point-in-time method of making strategy. (See [24 ch. 6, 52, 60–65].)

THE ROLE OF THE MANAGEMENT SCIENTIST

The previous five topics have dealt with descriptive theory; the last three deal with the attempts by management scientists to bring their science to bear on the management process. In this section, we focus on the technocrat himself—the nature and characteristics of his work, the methods he uses and, in particular, the nature of his relationship with the manager and the reasons for the conflicts that arise. See [13 ch. 1–3, 22, 66–69] for interesting readings on this topic.

Analytical programmes

Some of the technocrat's programmes are concerned with helping the manager in the making of individual decisions. Among these are marketing research, forecasting, cost-benefit analysis and mathematical modelling. In addition, technocrats design information systems for managers. Management Policy can be concerned, not with the teaching of these programmes (this is done in functional area courses), but with the assessment of their relevance for the manager: where and when they can used, when and why they fail, how they must be modified. For assistance with this aspect see [64 ch. 2–3, 70–73].

Planning programmes

Here we assess the relevance of those technocrat programmes that are used to bring analysis to bear on the making of streams or groups of decisions (ie on the strategy-making process). Two programmes in particular have been developed and applied to date. Capital budgeting is a programme for making choices among *independent* projects competing for the same financial resources. Strategic planning is a programme (or group of programmes) used to design *integrated* strategies for organizations. The literature is extensive and is growing quickly; unfortunately, little of it assesses the relevance or success of the techniques. Among the literature that does see [74–79].

THE McGILL EXPERIENCE

For four years, McGill University MBA students have studied Management Policy as it is presented

in this paper. These students form groups of five, each group studying an organization (a "live laboratory") in the Montreal area for a four month period. The students read the theory, and then carry out research projects in their field organizations. Here they get the opportunity to learn about reality in a systematic way, and to test the theory against the reality they observe first-hand (and, as a result, to further develop the theory).

Five studies are undertaken: one to describe the work of one manager; one to study the organization's influencers, its coalition and its goals; one to specify its structure; one to programme (ie describe in decision net form) one major decision; and one to determine its strategy and the process by which it developed. In addition, the students complete a major analytical assignment and discuss in detail the organization's strategies. Their findings provide the basis for seminar discussions.[4]

Forty-two organizations have been studied to date including a bank, a racetrack, four hospitals, three academic institutions, a cultural centre, a number of medium-sized manufacturing firms, a stock exchange, a medical research clinic, a city administration, and others. A wealth of empirical data has been collected on topics that have hitherto been subjected to little research. For example, we have collected detailed data on the making of forty-two "unprogrammed" decisions, and one student has completed an MBA thesis in which he used some of these data to develop a general description of unprogrammed decision-making.

Students have come up with a number of interesting findings. For example, in describing structures, they have found that while most organizations tend to be bureaucratic at the bottom, all are highly or-

ganic at the top. The goals of small firms have repeatedly been described by the students in terms, not of maximization, but of survival. In one interesting case, the goals of a racetrack were described in terms of a "non-dominated coalition" in which owners, horsemen, bettors, and the government have locked themselves into a very specific method of sharing financial benefits. In another case, strategy-making in the Montreal radio industry was viewed as a zero-sum game, with given players and a fixed audience size. Another group analysed the frustrating plight of a university trying to state operational goals in the face of a "non-dominated coalition".

Our attempt at McGill to teach Management Policy in this way appears to have met with success. The course blends in well with the MBA programme being the most theoretical and quantitative in Canada, much like those of MIT and Carnegie-Mellon). It has met with an enthusiastic response from students and the members of the organizations under study, both of whom get the opportunity to focus in a systematic way on the management process itself. The course also provides me with the valuable opportunity to assess the relevance of the theory that I try to teach. Most important, the course has demonstrated that we now know enough to approach Policy as a field of management theory.

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[4] The reader may be interested in further detail. The major assignment is worked out with the organization (with which, incidentally, the students make their own contact). The readings are summarized for the students in chapters of *The Theory of Management Policy* (a textbook in progress), but are encouraged to see primary sources of theory. Furthermore, this course is linked with the MBA Organizational Behavior course in that students focus in that course on their group process and on the nature of the relationship between the group and the organization. The same approach has been used successfully in the undergraduate Policy course in the senior year.

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