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MANAGEMENT CONTROL OF PUBLIC AND NOT-FOR-PROFIT ACTIVITIES

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#### PREFACE

This working paper discusses and classifies the problems of management control in 'non-profit' activities. After further discussion an extended version will be prepared as a Research Report, which should provide a basic reference point for further developments. The work described is a natural extension of the author's past work, but the immediate stimulus was the study of strategic monitoring of health systems undertaken in the Management and Technology Area by Mark Cantley in 1978/79. Arising from this work a joint seminar was held with the European Institute for Advanced Studies in Management in Brussels on the topic of 'Control Systems and Processes in Public and Nonprofit Organizations' and this paper incorporates some of the discussion arising at that conference. The general question of controlling 'not-for-profit activities' remains of vital interest for systems analysts since so much of their work is devoted to such activities. This paper is, therefore, concerned with a topic that is central to IIASA's interests.

Professor Hofstede held a part time appointment at IIASA from January to December 1979. He is a social psychologist with particular interest in problems of management control and value systems and has recently written a book to be published by Sage publications concerned with value systems in forty countries.

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### INTRODUCTION

In the West-European and US literature, it is customary to speak of "management control" primarily in the context of the private (or at least independently functioning), profit-oriented organization. There are no universally accepted definitions of the words "management" and "control", but the connotation of "management control" is a pragmatic concern for results, obtained through people. One definition by an authoritative US author is: "management control is the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives" (Anthony, 1965:17). Management control in this sense is one of the main tasks of most managers, in which they are usually assisted by some formal control systems (such as budgeting and performance appraisal). In Eastern Europe, the equivalent concept is "applied cybernetics", and the applications are primarily sought in production organizations. It is much more rare to find the "management control" concept applied to public or voluntary not-forprofit organizations in the West, and to non-production activities in the East. Yet an increasing part of the national resources both in East and West are spent on these latter types of activities. Even within the production and/or private sector, there is a shift from directly productive activities (to which the management control concept is most readily applicable) to "indirect" activities: those that bear no immediate proportional relation to outputs.

This paper focuses on public, non-production, not-for-profit and indirect activities from a point of view of management control: the activities exercised by those in charge, and the tools available to them, to assure that resources are obtained and used

effectively and efficiently in the accomplishment of the organization's objectives. The paper is inspired by work done at two institutes: IIASA and the European Institute for Advanced Studies in Management (EIASM), Brussels, Belgium. "Strategic monitoring of public 'non-profit making' programs" is one of the themes identified in IIASA's 1979-83 Research Plan (Management and Technology Area, Task 3: Inter-Organizational Problems, p. 123). Cantley (1978, 1979) and Hervey (1978) have, within this theme, studied Health Care programs for the elderly in the United Kingdom. "Monitoring" is defined as "the process of information-gathering by which the organization checks both its performance relative to targets, and the behavior of the environment, assumptions about which formed part of the basis for the plan and the targets" (Cantley, 1978:18). Monitoring thus is one element in the process of management control of such organizations.

At EIASM, various faculty members and research students at various moments in time have been interested in the control of public, not-for-profit and indirect activities. The present author published an earlier essay on the subject (Hofstede, 1978). The related interests at both institutes led to a workshop being held in Brussels in April 1979, prepared and jointly chaired by Mark Cantley from IIASA, Anders Edström from EIASM, and the present author who was affiliated with both institutes. Twenty-eight participants from eight nationalities participated and a total of twelve papers were presented. The theme of the workshop was defined as "Control Systems and Processes in Public and Non-Profit Organizations".

This paper is an essay on the state of the art in the field covered by the workshop, inspired by its papers but not attempting to summarize them. I shall approach the subject interdisciplinarily, but with particular stress on relevant inputs from the various behavioral sciences, trying to fit in with one of IIASA's other research objectives as well: "To review modern concepts of organization and management from an interdisciplinary, systems viewpoint" (1979-83 Research Plan, p. 120).

### CLASSIFYING ACTIVITIES FROM A CONTROL VIEWPOINT

The title of this paper runs "Management control for public and not-for-profit<sup>1</sup> activities" rather than "organizations". From a management control viewpoint, none of the usual distinctions between public<sup>2</sup>, private and voluntary organizations, between for-profit and not-for-profit<sup>3</sup>, 4 organizations, or between production, sales and service organizations is very meaningful. We have to go down to the level of types of activities, of which there may be several within one organization.

From a management control viewpoint, four criteria of activities have to be considered<sup>5</sup>:

- 1. Are the objectives of the activity unambiguous or ambiguous?
- 2. Are its outputs measurable or non-measurable?

- 3. Are effects of management interventions in it known or unknown?
- 4. Is the activity repetitive or non-repetitive?

# 1. Are the Objectives Unambiguous or Ambiguous?

This is the most crucial criterion for management control. Control presupposes a target; what if there is no clear target? There are several reasons why objectives may be ambiguous:

- (a) Because of conflicts of perceived interests and/or values among those having a say in the activity. For example, in running a prison, the director may be guided primarily by a desire for maximum security in protecting society, the psychiatric staff by maximum opportunities for rehabilitation of inmates, and the higher authorities by minimal cost. Voluntary, charitable or professional organizations are frequently the scene of values conflicts over objectives. The special ideological commitment of the members to such organizations makes them assume the right and even the obligation to have their say in objectives; and one member's views are likely to differ from another's (Selby, 1978).
- (b) Because of lack of knowledge about means-ends relationships in which the activity considered represents the means. For example, there may be agreement on a higher level objective such as "reduce unemployment" but different beliefs about whether the proposed activity will, in fact, reduce unemployment, leave it unaffected, or increase it.
- (c) Because of fast changes in the environment ("environmental turbulence", see Emery and Trist, 1969) which enforce new objectives or make existing objectives obsolete, without immediately suggesting new ones. For example, new legislation that enforces a tax on pollution; new drugs that completely change the role of hospitals in treating certain diseases; these call for new objectives while at the same time many forces within the organizations and within their environments push for a continuation of the old objectives.

Objectives are unambiguous in the case of consensus of organization members, or when they can be imposed by a central authority or a dominant coalition.

## 2. Are the Outputs Measurable or Non-Measurable?

Management control presupposes that the output of an activity can be identified and compared to the targets that were set, and that this information can be used to redirect efforts within the activity where necessary. "Strategic Monitoring" as defined on page 2 means looking for measures of outputs (in this case,

relative to a moving target). "Measurable" really means "quantifiable", with as a marginal case of "quantification" the question whether a planned event did or did not take place (a l or 0 quantification). However, many activities both in private and in public organizations have outputs that can only be defined in qualitative and vague terms. How to quantify the output of an army in times of peace? Of a public relations department? Of many management and staff activities? Of a ministry of education? In such cases only the inputs (the resources allocated to the activity) can be measured but not the outputs.

## 3. Are Effects of Management Interventions Known or Unknown?

Effective management control presupposes that efforts allocated to an activity can be redirected if the outcome does not meet the set targets. However, this implies that the manager knows how to intervene in order to obtain the desired correction: the relationships between his intervention and the reaction of the organization, and between the reaction of the organization and the response of the environment, must be clear. The "technology" of the activity (in the widest sense) must be understood. However, this is often not the case. For example, one common intervention when outcomes are judged unsatisfactory is the replacement of key personnel--say of a project manager. Now it is not at all certain that this will indeed correct the deviation, and even if outcomes improve after the personnel change this may not be the effect of that change; it could be a delayed result of initiatives taken by the previous project manager, when the process has a natural time lag which higher management did not recognize. Most policy decisions are taken about activities for which the technology is at best only partly understood. Education is another field of ill-understood technology: relationships between interventions by educational authorities and their outcomes on what is learned by students are almost never clear.

# 4. Is the Activity Repetitive or Non-repetitive?

Repetitive activities—those that occur daily, weekly, a few times a year, once a year—allow a learning effect to take place which considerably facilitates control. Budgeting for current operations for example, is a repetitive process. Budget systems never function well the first year they are started, but after four or five cycles they may start to function well. Non-repetitive activities are one—shot programs, investments or campaigns. Because the activity in its present form will not come back, there is no learning effect: at the end of the program one may know how it should have been done, but this is of little help to anyone.

#### A TYPOLOGY FOR MANAGEMENT CONTROL

It will be immediately clear that management control is easiest if the four criteria mentioned on page 3 all satisfy the first alternative mentioned:

- 1. Objectives are unambiguous.
- 2. Outputs are measurable.
- 3. Effects of interventions are known.
- 4. The activity is repetitive.

When one or more of the criteria does not satisfy the first alternative mentioned on page 3, the situation becomes more complicated. In Figure 1, I have developed a typology in the form of a decision tree, which can be used to determine the type of management control likely to occur in this case; six types of management control have been distinguished:

### 1. Routine Control

This is the easiest case just mentioned: unambiguous objectives, measurable outputs, known effects of interventions, repetitive. It applies to most current operations in production and service organizations. This type of control can be prescribed in precise rules and regulations, can often be carried out by operative personnel themselves, and sometimes programmed into a computer.

### 2. Expert Control

If objectives are unambiguous, outputs measurable, effects of interventions known but the activity is not repetitive (such as, a one-shot building project, the introduction of new computer system), it makes sense to entrust control to someone for whom such activities are repetitive, that is, who has been able to learn about them on previous occasions: such a person is an expert. The obvious danger of expert control is that the expert does not use the knowledge of effects of interventions already present in the organization: successful expert control depends on our integration of expert knowledge with support from those responsible for current operations.

### Trial-and-Error Control

If objectives are unambiguous, outputs measurable, but effects of interventions not known; however, the activity is repetitive, the organization can learn to control through its own failures. Rigid rules and prescriptions are not possible but a thorough ex-post analysis of both successes and failures is called for. Examples are the introduction of new products, services or treatments; the budget cycle for current operations.

### 4. Intuitive Control

If, in the previous case, the activity is not repetitive, learning by trial and error cannot take place. In this case the organization has to rely on management control as an art rather than as a science, and find a person or persons who can be assumed to intuitively find the proper intervention to achieve the desired results.

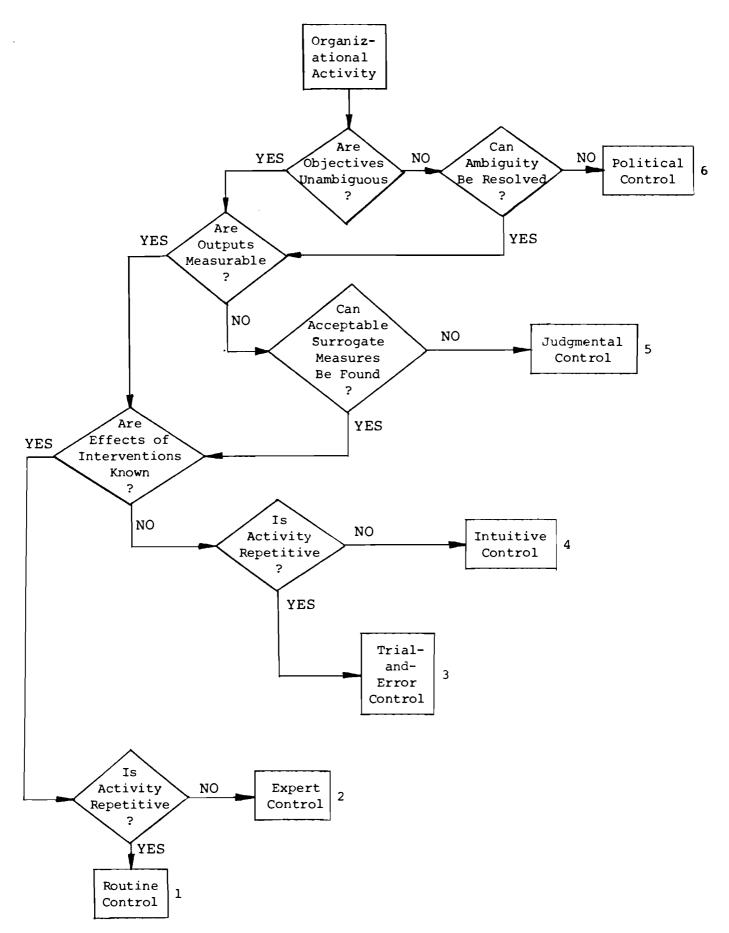


Figure 1. A typology for management control.

This will often be a type of charismatic leader. example is the process of leading a demoralized f club or enterprise back to success (in these case leader is usually given no time for trial-and-err cycles!). A special case of intuitive control is process by which resources are obtained for new a ties. In larger organizations, this is usually t proposals developed at lower levels which then wi approved or refused by higher levels. Each propos a non-repetitive activity; getting it accepted is cess in which effects of interventions are unprec Bower (1970), after an extensive study of the res allocation process in a large US business firm, r mends a system of reviews by higher management in cessive phases of the development of proposals. fact, he recommends to make the activity repetiti that (in my terminology) intuitive control by the try to get a proposal accepted is replaced by tri error control.

## 5. Judgmental Control

We now have the case that, although objectives ar ambiguous, outputs are not measurable. The first tion to be asked is, whether any indirect measures outputs can be found which can be considered acce "surrogates" or "proxies" for the missing direct sures (Anthony and Herzlinger, 1975:141)  $^6$ . For  $\epsilon$ at the EIASM-IIASA workshop, Hulshof (1979) repor control in a Dutch social welfare organization. non-measurable output is the contribution of the zation to the well-being of the entire target por tion. Feasible indirect measures are the number clients served and the average time spent per cli This is only meaningful, however, if clients can divided into categories according to the time nee reach a professionally acceptable level of help. surrogate measures can be found that make sense a acceptable to the parties involved, the control phas become similar to the case of measurable out; If no indirect measures are available, control of activity becomes a matter of subjective judgment; have called it judgmental control. It depends of power and influence structure of the organization whether there is one supreme judge (or coalition judges) whose judgment is the basis for intervent whether judgments have to be negotiated before in vention becomes possible, or whether no judgment possible so that control happens only by accident not at all.

#### 6. Political Control

From a control point of view, the most difficult can is when objectives are ambiguous. On page 3, I segested three reasons for such ambiguity: (1) conf of perceived interests and/or values; (2) lack of

knowledge about means-ends relationships, and (3) environmental turbulence. Organizations have ways, however, to resolve ambiguities so that external uncertainties become internal certainties and the control process can proceed in one of the ways described above. A first way to resolve ambiguities is the use of hierarchy: higher authorities or bureaucracies set the objectives which then for those lower in the hierarchy have become unambiguous. A second way is the use of rules and fixed policies; these represent basically arbitrary choices but they create a quasi-unambiguous setting. A third way, used in particular where conflicts of perceived interests and/or values are concerned, is negotiation; the negotiated settlement becomes the unambiguous objective. A fourth way is the use of experts, especially in cases of lack of knowledge about meansends relationships. The crucial factor in this case is the perception of the expert by the organization's managers: not whether he really knows, but whether he is credible to the organization as someone who can resolve ambiguity. A fifth way is control by crisis: letting a crisis situation develop in which the organization comes under exceptional stress. Stress tends to reduce the number of alternative solutions which people can perceive; this reduction of perceived alternatives may make an ambiguous situation look unambiguous. Thus, the 1973-74 oil crisis in the USA forced a decision about the Alaska oil project which had been delayed because of the conflict between environmental conservation and energy demand objectives (Slovic, 1978:109). ambiguities in objectives exist, control is always political control, dependent on power structures, negotiation processes, the need for the distribution of scarce resources, particular interests and conflicting values; however, political control at the top of an organization can go together with other forms of control inside the organization, because for the members, the political top may have resolved the ambiguities.

The model of Figure 1 applies to all types of organizational activities, whether the organization be private, public, forprofit or not-for-profit. It also applies to activities at all hierarchical levels, although there is a tendency for control Types 1 and 2 to occur at the lower and control Types 5 and 6 at the higher levels of organizations, with 3 and 4 in between. Anthony (1965) has defined a framework for the analysis of planning and control systems in general, in which "management control" is only the second of three types which are related to levels in the hierarchy:

1. Strategic planning: the process of deciding on objectives of the organization, on changes in those objectives, on the resources used to attain these objectives, and on the policies that are to govern the acquisition, use, and disposition of these resources.

- 2. Management control: see the definition on page 1.
- 3. Operational control: the process of assuring that specific tasks are carried out effectively and efficiently.

The typology of Figure 1 includes all three of Anthony's types. However, most of "strategic planning" belongs per definition to control Type 6: political control. Political control is rarely discussed in management control theory: it is significant that it is much more usual to speak of "strategic planning" than of "strategic control".7 Most of "operational control" belongs to control Type 1: routine control. Only Anthony's "management control" may belong to all six types in Figure 1.

The typology of Figure 1 need not be limited to activities taking place within one single organization; it can be applied to activities involving several organizations ("inter-organizational networks"). However, there will be a tendency in such activities for control to be mostly of Types 6 and 5: political and judgmental.8

#### CYBERNETIC MODELS OF MANAGEMENT CONTROL

The dominant model for a control process is the first-order negative feedback loop; the dominant analogy is a thermostat. Objective setting is analogous to the setting of the temperature, measuring output to measuring actual temperature, comparing output to objectives is analogous to comparing actual to set temperature, feeding back unwanted variances to management is analogous to the negative feedback signal in the thermostat cycle, corrective intervention in the process is analogous to intervention in the flow of heat to the system. Possible extensions of this model are: (1) the addition of a feed-forward loop using external information for a first anticipatory intervention in the process (Cantley, 1978:28). It should always be followed up by a feedback loop; (2) the addition of second- and higherorder feedback loops that control the objective setting of the lower-order feedback loops, and possibly may overrule the interventions of the first order loop (Hofstede, 1967:100). All these are cybernetic models (Hofstede, 1978).

Now the cybernetic model really only applies fully in the case of routine control: Type 1 in Figure 1. It applies marginally to Type 2 (expert control) and Type 3 (trial-and-error control): to Type 2 to the extent that the "expert" is supposed to have become expert through feedback from previous experience; to Type 3 if we accept that the model includes heuristic elements. It definitely does not apply when objectives are ambiguous (Type 6), outputs not measurable (Type 5) or effects of a one-shot intervention unknown (Type 4).

Pure Type 1, routine control can be highly formalized, sometimes even quantified and computerized. However, even routine control processes usually involve communication between and motivation of people which means they contain a psychological element (Hofstede, 1976; Flamholtz, 1979). We can say that as

soon as people are part of the process, effects of interventions are no longer completely known; in Figure 1, our routine control rather becomes trial-and-error control: learning about human behavior takes very much place through trial and error. netic model now becomes complicated by psychological shortcircuiting. In an earlier, empirical study of budgeting processes (Hofstede, 1967:96) I have shown four such psychological shortcircuiting possibilities: (1) people change the objectives rather than the process itself; (2) people change the measurements rather than the process itself; (3) people make the intended interventions but at the same time, they make some unintended interventions as well (such as, they adjust cost at the expense of quality); (4) people withdraw from the system by absenteeism (this means striking individually), striking collectively, or quitting. From these, 1, 2 and 3 are psychological short-circuits through which control changes into pseudo-control: this is a state in which the control system shows an equilibrium without the process actually being controlled.

The more formalized a control system, the greater the risk of obtaining pseudo-control rather than control; at least as long as there are people left in the process whose effect codetermines the outcomes. Solutions to the pseudo-control problem are psychological: avoiding processes and interventions that reward escapes into pseudo-control (Todd, 1977). One of the most promising ways for avoiding pseudo-control is moving control downward to the level of those who actually intervene in the process. contrary to F.W. Taylor's principle of the separation of control and execution. It replaces external control by self-control, in which the whole cybernetic cycle of measuring, comparing to standard, feeding information back, and intervening is in the hands of the same person or work group. This control cycle is linked to the surrounding organization only through the standards that We can call such a process "homeostatic" rather than are set. "cybernetic"; its analogy is not a thermostat but a biological element represented by a living cell. The cell is equipped with internal processes capable of maintaining an equilibrium in a changing environment, provided that environmental conditions do not become too unfavorable (Hofstede, 1978; den Hertog, 1978). Avoiding pseudo-control through self-control can be seen as an application of Ashby's Law of Requisite Variety (Ashby, 1956:Ch. 11). As a major source of variety in the outcomes is in the people who execute the process, only these people themselves possess the control variety that can regulate the process.

The cybernetic model of management control is a special case of the "Cycle of Organizational Choice" as pictured by March and Olsen (1976). This is reproduced in Figure 2.

If we apply the model of Figure 2 to the control situation, the objective or standard is represented by box A, people's preferences or "models of the world". In control situations, these preferences tend to be controlled by a higher-order circuit (the standard setting process). Arrow a represents the measurement process. In box A, measures are also checked against preferences. Arrow b represents the feedback signal. Box B is its reception

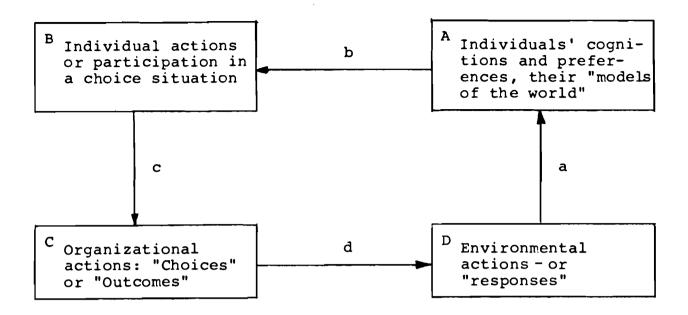


Figure 2. The complete cycle of organizational choice. (from: March and Olsen, 1976:13)

and translation by individual actors. Arrow c is the intervention in the organizational process; the latter is represented by box C. Arrow d represents the technology of the process, box D its translation into outputs.

## NON-CYBERNETIC "MODELS"

In the previous section I limited the applicability of the cybernetic model to the control Types 1, 2 and 3 in Figure 1. However, the cybernetic model is so attractive that it is frequently used beyond its zone of applicability, because the assumptions that have gone in it are not realized (Anthony, 1965:87; Hofstede, 1978).

Two types of alternative "models" are available for the control Types 4 and especially 5 and 6 in Figure 1: political control and "garbage-can" control. (The word "model" does not mean, however that these types of control can be easily represented by a diagram with boxes and arrows.) The pure cybernetic model assumes rationality of the entire system. For Anthony (1965:93), the source disciplines of routine control (which he calls "operational control") are economics and the physical sciences. If we admit psychological elements in the system (Type 3 control) the system is no longer fully rational; for Anthony, the source discipline of management control is social psychology.

The political control model assumes that there are several actors in the system who each act <u>subjectively rationally</u>: they act in their own perceived self-interest, but the consolidated result of their actions does not represent a rational total system. However, the behavior of the actors could possibly be predicted by such a thing as Game Theory. We find elements of such a political model, implicitly rather than explicitly, in for example Crozier's (1964:117) description of power games in the French tobacco monopoly, and Anthony and Herzlinger's (1975:249ff) description of twenty-eight "ploys" to be used in budget negotiations, and how to counter them.

The "garbage-can model" is put forward in March and Olsen (1976). They signal that the "cycle of organizational choice" (Figure 2), which we can also consider as a more general form of the cybernetic model, often does not function. Each of the arrows in the model can in practice be interrupted (op. cit.:56-59). If arrow a is interrupted (Figure 2), this corresponds to our case of immeasurable outputs (Figure 1). If arrow c and/or d are interrupted, this corresponds to a case of unknown effects of interventions. If arrow b is interrupted, individual action is not affected by knowledge coming through the system, individuals do not react to the feedback signals received, for example because they are completely caught in standard operating procedures. 10

March and Olsen suggest for such cases a "garbage-can model of organizational choice" (based upon earlier work with M.D. Cohen). This model applies to organizational situations in which no assumptions are made about the existence of hierarchical structures or generally accepted rules; the authors call them "organized anarchies". Objectives may be ambiguous, outputs nonmeasurable, effects of interventions not known, activities nonrepetitive. Even the participants in the choices may not be known in advance, and actually wander in and out. The authors illustrate their model with data from educational institutions (schools and universities) in the USA and Scandinavia. "garbage-can" process, all issues that confront the organization at a given time are put simultaneously in a "garbage can", which poses a limit to the amount of attention available. There are more or less independent flows of problems, solutions, participants and choice opportunities in and out of the garbage can, and choices are not only made by resolving problems but also by overlooking them or deliberately escaping from them. It is not rational at the systems level, cess is non-rational. nor is it rational at the individual level, because self-interest is ambiguous: people often do not know what they want. leading principle of action in ambiguous situations is that individuals look for cognitive consistency: they try to have models of the world that to them make some sense. In order to maintain these they are able to do non-rational things: to forget, to over-look, to play. 11

A key element in both the political and the garbage-can model are the <u>values</u> of the actors. Values are broad preferences for one state of affairs over others which are relatively stable

over time. In the political model, values determine how the actors perceive their self-interest: if we know their stable values, we can come closer to predicting their behavior. In the garbage can model, values are the elements of the actors' "models of the world" and they determine what state of affairs to them will be cognitively consistent.

This means that if we want to analyse or improve control of the Types 5 and 6 in Figure 1 (judgmental and political control), we should include the study of values in our program. 12 Judgmental and political control are the elements that go into policy decisions. Without the study of values, policy really corresponds to the definition which Stringer (1976:23) cites from the Oxford English dictionary "a form of gambling in which bets are made on numbers to be drawn in a lottery". If we want to make better bets, we have to study values. Values are non-rational: they preceed the use of rationality.

The garbage can model, as opposed to the political model, also has room for rituals. Rituals are activities performed because of the subjective meaning they carry for those performing them. They are symbolic activities, essential elements in the cognitive consistency which the garbage can model assumes people try to maintain. They are stress-relieving. We tend to accept defining activities as rituals in religious ceremonies, possibly even in social ceremonies, but the ritual element in work, business and government is rarely recognized. When the word "ritual" is applied to work activities, it tends to carry the connotation of "useless and ineffective". In fact, ritual activities, even at work, are neither useless nor ineffective; they are necessary and inescapable because we all have our need for cognitive consistency. But there are good rituals and bad rituals. Examples of ritual activities in work organizations are given in Hofstede (1977:42ff): meetings, memos and reports, parts of accounting systems, parts of planning and control systems, often the use of experts.13

Values and rituals are collective phenomena: they are part of the <u>culture</u> of human groups. My own short definition of "culture" is "the collective programming of the mind that distinguishes the members of one human group from another". Culture exists at various levels: at the national level (also called "national character"), at the regional, occupational, organizational, social class, male/female, age group, and family levels. I have chosen to reserve the word "culture" for <u>national</u> patterns of mental programming and "subculture" for all the other levels. As cultures and subcultures involve systems of commonly held values and commonly practised rituals, culture is an essential element in Type 5 and Type 6 control (Figure 1): judgmental and political control.

In an extensive study of national cultures in forty countries (e.g., Hofstede, 1979), I found four dimensions of national culture along which the forty country cultures differ. I labelled them Power Distance, Uncertainty Avoidance, Individualism-Collectivism, and Masculinity-Femininity. Now the one dimension most relevant to the functioning of judgmental and political

control processes in a country is <u>Uncertainty Avoidance</u> (Hofstede, 1977). Societies differ in their member's modal level of tolerance for uncertainty about the future. A lower level of tolerance for uncertainty leads to a higher modal level of anxiety (which can be demonstrated in medical symptoms). Higher anxiety levels lead to a greater need for anxiety-relieving, uncertainty avoiding rituals. In the fields of judgmental and political control, this leads to the acceptance of more strictly formalized procedures, a need for formal rules rather than unstructured negotiations. <sup>14</sup> That is, judgmental and political control take different forms in different countries and this should be so, for the deep-seated ritual needs to which these processes cater are not the same across countries. There are no universally optimal procedures for judgmental and political control, while there are very likely universally optimal procedures for routine control.

Next to national cultures, organizational subcultures play a role in shaping procedures for judgmental and political control. For example, Derlien (1978a) draws attention to the subculture of secretiveness in public administration in Germany. I guess that secretiveness is a fairly universal characteristic of the subculture of public administrators, which will influence the rituals and procedures they need for cognitive consistency in judgmental and political control processes.

Even with a profound knowledge of cultures and subcultures, value systems and ritual needs, political and especially garbage can models of management control systems will lead to considerably less precise predictions of how control will work, than cybernetic models do. This explains the continued attractiveness of cybernetic models, also for control situations where they do not apply. However, I believe a vague model that corresponds to reality is still preferable above a precise model that does not.

### AN APPLICATION TO THE AREA OF BUDGETING

Budgets are a major vehicle for management control. Most activities in organizations consume financial resources; some also produce such resources. Money is usually the only common denominator for all activities in the organization, which makes the budget system that tries to control the flow of money into a focal part of the management control system.

From an accounting point of view, budgets can be classified as master budget, departmental budgets, cash budgets, capital budgets, sales budgets, production budgets, etc. However, from a management control point of view, three types of budgets should be primarily distinguished (see Table 1):

- Investment budgets: any attribution of resources to assets to be used for more than one budget period (the budget period is almost always one year);
- 2&3. Operations budgets for "input" centers, and operations budgets for "input-output" centers. Operations budgets are any attribution of resources to one budget period

Types of budgets from a management control viewpoint. Table 1.

TYPE OF BUDGETS	TYPES OF MANAGEMENT CONTROL INVOLVED (Figure 1)	MAJOR MANAGEMENT PROBLEM	AVAILABLE TOOLS/TECHNIQUES	SOCIAL PROCESSES INVOLVED
Investment Budgets	2: Expert Control 4: Intuitive Control 5: Judgmental Control 6: Political Control	Resource Allocation	Economic Analysis D.C.F. P.E.R.T.	Discretionary Power Negotiation Salesmanship
Operations Budgets for Input Centers	5. Judgmental Control	Resource Allocation PLUS Performance Motivation	P.P.B.S. M.B.O. Z.B.B. Policy Analysis Program Evaluation	Discretionary Power Negotiation Salesmanship PLUS Leadership Subordinateship Motivation Gamesmanship
Operations Budgets for Input/Output Centers	<pre>1: Routine Control 3: Trial-and-Error Control</pre>	Performance Motivation	Semi-Participative Budget Setting and Feedback of Budget Variances M.B.O.	Leadership Subordinateship Motivation Gamesmanship

only. The distinction between "input" centers and "input-output" centers is more commonly known in Western literature as the distinction between "expense centers" and "profit centers", but in the context of public and not-for-profit activities the word "profit" would be ill-chosen. What the distinction refers to is that for some activity centers in organizations only the resources put into them can be expressed in money: the outputs are non-measurable (see page 4). Besides the examples cited earlier, we can think of public education systems, welfare organizations, headquarters office activities or large production organizations. For other activity centers, both inputs and outputs can be given a money value: production units, transport organizations, units providing services for a fee.

The distinction between the three types of budgets in Table 1 has consequences for the types of management control (according to the typology of Figure 1) that will be used. See the second column of Table 1. Investment budgets are mostly non-repetitive which excludes control Types 1 and 3 in Figure 1; all other types may occur depending on whether the objectives of the investment are unambiguous or ambiguous, its outputs measurable or nonmeasurable, and effects of interventions on the actual cost known Operations budgets for input centers are by definior unknown. tion a case of non-measurable outputs which defines the type of control to be used as No. 5: judgmental, unless acceptable surrogate measures can be found in which case our input center becomes an input-output center. Operations budgets for input-output centers, again by definition, represent a case of measurable outputs; also, they almost always deal with repetitive activities, so that the appropriate types of control are No. 1: routine or No. 3: trial-and-error.

The three types of budgets (1) present different problems to management (that is, to those trying to use them for control purposes); (2) they dispose of different tools and techniques and (3) they lead to different kinds of social processes among the people involved (see Table 1, last three columns).

#### Investment Budgets

For investment budgets, the major management problem is resource allocation: the choice between alternative applications of limited resources. The available management tools and techniques for investment budgeting almost invariably treat it as an economic problem for which an optimal solution can be found by appropriate economic analyses. Such techniques are described in the Western literature in the standard textbooks on "Capital Budgeting". A basic element of most techniques is Discounted Cash Flow (D.C.F.): accounting for the time value of money, the fact that the value of one Pound, Franc or Mark today exceeds its value a year from now by a percentage which becomes a variable or parameter in the calculations. The non-economic aspects of resource allocation for investment budgets often play a decisive role but they are not reflected in the available techniques. 15

Another technique used not only in the selection phase of investments but also at least potentially useful in the execution phase is PERT (program Evaluation Review Technique). An offspring of PERT is the Critical Path Method (CPM). PERT and CPM are supposed to help in planning and managing a complex task, such as an investment, by identifying the critical path (the "bottleneck" for the duration of the entire task) and planning everything else in function of this critical path. At one time, all US Defense Department contracts required the use of PERT as a control technique. PERT uses probabilistic estimates of the duration of various steps in the process. Where it usually fails is in achieving expert estimates which are sufficiently unbiased to inspire confidence in those supposed to draw conclusions from them (Anthony, 1972; Wildavsky, 1978:78).

The social processes involved in investment budgeting are (1) the wielding of discretionary power by those individuals or bodies whose hierarchical or statutory position makes them into decision-takers; this is political power; (2) processes of negotiation between members of decision-making bodies, their advisors, and all kinds of parties having stakes in the decision; this is political negotiation; and (3) salesmanship on the part of defendants of particular investments; this is political strategy, or guile. In spite of the extensive literature on economic analysis for investment budgeting purposes, investment budget decisions are rarely taken on the basis of economic analysis results only, or even mainly. Economic analysis is often only used for contributing strategic arguments, as part of salesmanship, and for justifying choices that were predetermined by non-economic criteria in the first place (e.g., Aharoni, 1971). It is not so important that the economic arguments supporting an investment decision are right in an absolute sense; it is important that they appeal to the decision-makers. The rightness of the economic assumptions that went into investment proposals is rarely checked afterwards; and even if it is checked, nobody is likely to learn from any errors discovered (as the process is non-repetitive).

### Operations Budgets for Input/Output Centers

This is the bottom line category in Table 1. Now, the major management problem is performance motivation: coordinating the efforts of the people involved towards obtaining the best possible ratio of outputs over inputs. This is because inputs usually cannot be controlled by discretionary decisions of management: if inputs would be stopped, outputs are disturbed and the net effect is the opposite of what was intended. A classical example (Hofstede, 1967:23) is the sales office where at month's end all salesmen used to be sitting at their desks, because their car expenses were not paid beyond the budget limit.

The tools/techniques for operations budgets for input/output centers are the classical budget control methods: the setting of goals expressed in money and the feeding back of the variances - the differences between goal and actual outcome - to those responsible for managing the operations. Many books again cover

the administrative side of these techniques (there are a number of versions available each claiming superiority over other versions). Studies of the organizational and human implications of these techniques are more rare (Hofstede, 1967; Dunbar, 1971). With appropriate leadership, the technique can be quite effective; however the leadership is a more essential condition for success than any particular version of the technique; provided that gross administrative errors are avoided. Macro-influences like technology (Hofstede, 1967:286ff), organizational structure (Burns and Waterhouse, 1975) and national culture (Aharoni, 1971:38; Hofstede, 1977) play a role in the effectiveness of the technique In Table 1, I have called the budget-setting process as well. needed in this case "semi-participative": it should combine participative inputs from those having to fulfil the budget, with central coordination to respect overall constraints (Hofstede, 1967:173ff).

In order to reinforce the motivation of those having to fulfil the budget, financial incentives are sometimes used. unavoidable arbitrariness of budgetary standards makes them poor bases for financial incentives, and in my earlier study I advise strongly against budget-variance based financial incentives (Hofstede, 1967:257). Budget accomplishment can, however, be a sensible criterion in another motivational "technique": Management By Objectives (MBO). In MBO, subordinates negotiate periodically (usually once a year) with their boss qualitative and/or quantitative objectives to be fulfilled; their fulfilment is discussed, also periodically, between the two of them, which should lead to corrective action. We shall meet MBO again below. shall argue that psychologically, it only functions properly where results are measurable, which is specifically true for input/output centers. MBO in such cases, if applied with sufficient leadership skill, can be a useful motivational tool: because it replaces the impersonal automatism of a financial incentive by a personalized but quantitatively supported evaluation. In fact, input/output centers may be the only places in which MBO really works.

The social processes involved in operations budgeting for input/output centers, according to the above, are primarily leadership with its unavoidable mirror image: subordinateship-because effective leadership consists of fulfilling the role demanded by the subordinateship that is part of the organizational and national culture (Hofstede, 1979). Leadership, subordinateship, the task at hand, the culturally determined needs of the organization members all contribute to a pattern of motivation -which may or may not help towards budget fulfilment. The most essential social process which forms the main theme of my earlier book (Hofstede, 1967) is gamesmanship. Budgeting is always a game of strategy—this applies to all three types of budgets in Table 1. In input-output centers, it should also be seen as a game of skill: the motivation is optimal if all actors involved consider budgetary targets as worthwhile challenges whose attainment is highly desirable but whose non-attainment is an accepted risk.

Operations Budgets for Input Centers

The middle type of budget in Table 1, the operations budget for input centers, is the most problematic case from a management viewpoint because it poses both kinds of problems: resource allocation plus performance motivation. Resource allocation, because the resources could, at least in theory, be attributed to alternative activities or not at all, without any immediate measurable effect on outputs. Performance motivation, because in order to fulfil the mission of the center, the efforts of the people involved have to be considered, even though the outputs are non-measurable: management control in this case consists of obtaining a performance of the center that is subjectively and qualitatively optimal, or at least satisfactory.

Operations budgets for input centers are the domain where techniques have most proliferated during the past two decades. Like the other techniques mentioned earlier in this report, all of these originated in the USA which has always been a captive market for new organizational tools--tools that are easily adopted but easily dropped as well. The best known technique in this area is Programming Planning Budgeting System (PPBS). It originated in the early 1960s when Robert McNamara moved from the top management of the Ford Corporation to the position of Secretary of Defense. PPBS transfers the idea of "product management" from private business to public and not-for-profit activities. Product management, however, assumes a situation of measurable outputs: an input/output center. In transferring its philosophy to the not-for-profit sector, the protagonists of the system have rather lightly walked over the fact that (Figure 1) many objectives here are ambiguous, and outputs non-measurable. They have assumed that by "trying harder", ambiguities could be resolved and acceptable surrogate measures for output could be found, thus replacing (Figure 1) political and judgmental control by one of the simpler types. PPBS implied: (1) focussing on programs rather than on departments in planning and budgeting, which meant focussing on outputs rather than inputs and (2) taking into account a time horizon beyond the single year for which operations budgets are traditionally made. In fact, in Table 1 this means that the middle type of budget is "dissolved" by making it at the same time more like the lower type (focus on outputs) and like the upper type (more-than-one-year time horizon).

The impact of PPBS has been extensively documented (Anthony, 1972; Lyden and Miller, 1972; Wildavsky, 1975, 1978a, 1978b; Jablonsky and Dirsmith, 1978, Hofstede, 1978). It has mostly been considered a failure, because it has buried the fundamental political and judgmental choices in not-for-profit activities in "techniques" and paperwork, making its own cost-benefit balance negative. PPBS has been exported to other organizations and other countries on the basis of the first enthusiastic reports of those having a stake in introducing it, and by a curious process of inertia in the communication of experience, it was and still is introduced as the road to salvation in some organizations after it has long been abolished as a failure in others. A sober evaluation of PPBS is a statement from Derlien (1978b) about the

results of PPBS-inspired reforms in the German Federal Bureaucracy: the reforms have represented a significant shift in the attitudes of bureaucrats. Measured by the expectations of the reformers, they have failed; measured by the much more modest expectations of the users, they have succeeded. 16

Another technique applied at input centers for creating management control where the budget fails to do so is Management By Objectives (MBO) which we already met for use in input/output centers. In the USA, MBO has been used on a massive scale as a control tool for such input centers as government offices and universities. Its achievements are very modest, however; it seems to work (and still only under certain leadership/subordinateship conditions) where results are unambiguously measurable, that is in input/output centers (Ivancevich, 1974; Hofstede, 1978). In input centers, MBO tends to fail for two reasons: (1) it is based on naive assumptions on the psychological processes between superiors and subordinates who will not agree on the evaluation of results, even if they agreed earlier on the formulation of objectives and (2) the separation of objectives from resources and constraints is a semantic exercise which has little to do with the reality of organizational life. Wildavsky (1978a:79) states: "...objectives by themselves are meaningless: they suggest that everything may be obtained and nothing need be given up. Objectives make sense only in the context of resources available to achieve them together with an understanding of alternatives foregone. Yet considering opportunity cost immediately suggests a full-scale analysis, which, presumably, MBO is designed to avoid".

A third technique developed specifically for input centers, is Zero Base Budgeting (ZBB). ZBB has also originated in US private industry (at Texas Instruments) and was transferred to the US public sector in the early 1960s. The idea is that the budget for input centers is split by activities, and that for each activity, various levels of expense with their expected consequences are considered, including a zero level. Subsequently, decision-makers rank the activities in order of desirability, and the actually available level of resources determines the cutoff point beyond which activities will not be funded. This may then lead to some activities being discontinued altogether, others reduced, while still others are expanded at the same time. documentation on ZBB is extensive (e.g., Anthony and Herzlinger, 1975:245; Wildavsky, 1975, 1978a, 1978b; Cheek, 1977; Bariff and Galbraith 1978; Sarant, 1978; Wholey, 1978; Draper and Pitsvada, 1979; Herzlinger, 1979). It was strongly promoted by Governor Jimmy Carter of the State of Georgia, and again (but somewhat less strongly) by him in the US Federal Government after his election to the Presidency. All in all, reports on its effects are not optimistic (Wildavsky, 1975:278: "Some butterflies were caught, no elephants stopped"). The reasons are (1) decision packages for which decision-makers have to set priorities soon become unwieldy in size so that informed decisions can no more be taken; the paperwork becomes extremely costly, its costs far exceeding the potential benefits and (2) like PPBS and MBO, ZBB is based on naive assumptions about human reactions to the system

and about people's political behavior and psychological impact on each other. It is extremely unlikely that managers will submit ZBB budget proposals that would, if accepted, put them out of their own job; they dispose of many political "ploys" to avoid such proposals, or to make absolutely sure that they will not be accepted. Beneficial aspects of a ZBB approach can only be expected given a number of restrictions: (1) a much simplified version, in which the request is not to consider reduction of activities to zero, but to consider the effect of marginal reductions or additions of budget (say, + or -15%) and (2) appropriate decentralization so that decisions would be taken on relatively small packages of alternatives by people sufficiently close to the activities to be familiar with their details. In this case, ZBB is mainly a technique for stimulating trade-offs between budget items, alleviating the rigidity of itemized budgets in which money can only be used for items specified; itemization is a common feature of public and private sector budgets which leads to over-spending and demotivation (Aharoni, 1971).

The alternatives to the pre-packaged techniques mentioned (PPBS, MBO, ZBB) in the case of input centers are forms of Policy Analysis and Program Evaluation (Wildavsky, 1972, 1978a; Abt, 1976): audits of activities by, usually, special teams including all their impacts: financial, political and psychological. This is no easy solution either. Having such audits represents in itself a political choice, and decision-makers will always be tempted to reject their results. Analysts and evaluators bring their own biases to their audits (Van de Vall and Bolas, 1977). Policy Analysis and Program Evaluation, however, at least do not suggest simplistic ways of dealing with complex problems, and they do not contain built-in naive assumptions nor built-in mountains of paperwork.

The social processes in operations budgeting for input centers are very complex, as they combine those described for investment budgets with those described for operations budgets for input/output centers. For people working under such a system, both salesmanship and gamesmanship are at a premium, but the games played tend to be games of strategy (political games) rather than games of skill (performance motivation). The role of leadership in this case is, taking account of the type of subordinateship prevailing, to turn the game as much as possible into a skill game.

#### THE CHOICE OF MODELS: TYPE I AND TYPE II ERRORS

The argument in the previous sections can be summed up as follows: there are two main categories of management control situations. The first are the relatively routine, mechanistic situations, corresponding to Type 1—and marginally 2 and 3—in Figure 1. For this category, a cybernetic model is appropriate. These situations are not too dependent on the actors' values—although human behavior does play a role in them and pseudo—control is a danger—and for managing them, the well known traditional management principles (technical, economical, psychological)

apply. The second category are the non-routine, ill-defined, ill-structured situations, corresponding to Type 4 and especially 5 and 6 in Figure 1. For this category, the cybernetic model emphatically does not apply and it may lead to a dangerous covering up of the real issues which are of a "political" nature, largely determined by values and rituals. For this category, only vague "models" exist: I mentioned a political one and a "garbage can" one.

The practical conclusion to be drawn from this dichotomy is that before we use a model (or we could call it a paradigm) to describe or analyse a management control situation, we should first carefully study the nature of that situation which determines which model or paradigm is appropriate. This is why in the beginning of this paper I stressed looking at activities rather than organizations: different models may apply to different activities within the same organizations.

There are, in fact, two types of errors we can make. These are analogous to the "Type I" and "Type II" errors in statistical hypothesis testing. A Type I error means rejecting a true hypothesis; a Type II error accepting a false hypothesis. In our case, a Type I error means not using a cybernetic approach where the situation meets the conditions for it. A Type II error means attempting to use a cybernetic approach where the situation does not meet the conditions for it (Landau and Stout, 197917).

Type I errors are quite frequent in non-production public and not-for-profit organizations (Anthony, 1972:23), because in their organizational subcultures the concern for cost and effectiveness has traditionally been missing. Hulshof's (1979) paper is an illustrative case (see page 7). The control problem is the allocation of resources to a Dutch Social Welfare organization, which so far has been entirely judgmental. The subculture of the organization is one of professionalism and a resistance to thinking in terms of "efficiency" when dealing with the clients. However, a growing disproportion between (1) the number of clients, (2) the amount of time the professionals think they should spend on each client and (3) the short and long-term availability of resources forces the organization to do some kind of conscious priority-setting which is a form of performance control within the constraints set by available resources. Hulshof shows that because the activities are highly repetitive, statistical data can be collected on time devoted to cases. For these to be meaningful, however, professionals have to design some classification of cases, which they tend to resist. The repetitiveness of the process makes it likely that a classification is possible which can be used as the basis for an acceptable surrogate output measure; with this, the type of control becomes no. 3 in Figure 1: trial-and-error control, to which a cybernetic philosophy does The main problem in this case is one of introduction: to overcome the traditional resistance of these professionals to efficiency thinking where such thinking can be beneficial to all. More in general, obvious situations in which Type I errors can be expected are all repetitive activities in non-production, public and not-for-profit organizations; the more routine the activity, the more applicable is the cybernetic paradigm.

Whereas Type I errors in non-production, public and not-forprofit organizations tend to be many but each of them relatively small, involving only a limited part of the organization, Type II errors tend to be few but large. Type II errors are made when large-scale, sweeping techniques are introduced to improve management control processes of the judgmental and political type, programs which at closer scrutiny use a cybernetic paradigm. and again, control systems, imposed in the name of error prevention, result only in the elimination of search procedures, the curtailment of the freedom to analyse, and a general inability to detect and correct error" (Landau and Stout, 1979:26) 18. As examples of such Type II error cases we saw the introduction of Planning-Programming-Budgeting (PPBS); Management By Objectives (MBO); and Zero-Base Budgeting (ZBB). Under certain conditions, MBO and a simplified form of ZBB may work; but a sweeping introduction without regard for those conditions is a Type II error.

#### CONTROL AND ORGANIZATIONAL ADAPTATION

Cybernetic control systems, paradoxically, are systems that do not learn. By keeping the activity on target, they prevent it from learning. The control processes that allow the organization to learn are the non-cybernetic ones, the judgmental and the political. In a changing world, a turbulent environment (Emery and Trist, 1969) the adaptation and therefore the long-term survival of the organization depends upon the effectiveness of these processes, not to keep the activity on target, but to choose the appropriate targets at the appropriate time. The larger and more complex an organization or organizational network, the greater its inertia. We saw (page 12) that standard operating procedures sometimes prevent individuals from reacting on feedback signals. This tendency is much stronger at the organizational or inter-organizational level and leads to "dynamic conservatism" (Schon, 1971:31ff): fighting like mad to stay the same19.

Ecologists have studied the properties of species to survive under dramatically changing circumstances. The key to such survival is not equilibrium, but a property which has been called resilience (Holling, 1973; Vayda and McCay, 1975): near-synonyms are ultrastability, homeostasis, coping, adaptivity, robustness. Resilient systems have been modelled as regular first-order cybernetic feedback cycles with a second-order loop superimposed on it, which periodically adjusts the standards of the first-loop cycle if the survival of the organism under the changed environmental conditions asks for it; however this second-order loop has standards that are judgmental or politically determined. This higher-order cybernetic "model" has for example been described by Ashby (1965:7/26) and applied to organizational situations by Cantley (1973) and Argyris (1977): the latter speaks of "double-loop learning".

The worrying question is: in view of the predominant tendency of individuals and organizations to move to "standard operating procedures" (which is single loop learning), who will teach organizations double-loop tricks? The traditions, dominant values, and political systems of countries and organizations constrain the options available to managers in this respect (Hofstede, 1979) and they are reflected in the recommendations found in the literature.

From the USA, Argyris (1977) assumes the possibility of a conversion to double-loop learning of the organizations' top decision-makers. March has developed his garbage-can model based on US experiences<sup>20</sup>, in combination with Scandinavian examples. The idea of "semi-confusing" information systems to destabilize standard operating procedures comes from Sweden (Hedberg and Jönsson, 1978: see note ll). In a case study of a large Dutch corporation (Hofstede, 1980) I suggest another institutional solution to double-loop learning: the appointment of a person in a "court jester" role, whose task it is to collect the weak and supressed signals from the environment and have direct access to the top decision-makers with unpopular news. In many countries we find forms of Policy Analysis, Program Evaluation and other kinds of organizational auditing by outside agents (see also page 21); their outcome is second-order feedback which, if used, leads to double-loop learning<sup>21</sup>. All double-loop learning approaches mentioned so far focus very much on the top of the organization. An innovative solution for a management control system with double-loop characteristics for use at all levels of the organization is Machin's (1975, 1977, 1978) Expectations Approach. It was developed in Great Britain and reflects a British tolerance for ambiguity which will not as easily be accepted in cultures with a stronger need for formal rules. In the expectations approach, each manager defines what he expects from every other manager with whom he interacts in his daily job, and what he believes every other manager expects of him. These expectations are listed and sorted by computer, and compared for every pair of managers. Disagreements are subsequently ironed out. Although this looks like a communications audit, it is a control system as well, because it should reveal ineffectiveness and inefficiency (reflected in non-matching expectations) and allow to eliminate it. It should be repeated periodically.

Karl Popper has warned us to beware of systems that promise maximum good to everybody, because these usually turn out to bring maximum evil. He suggests to go for minimum evil; this is essentially an incrementalist approach, fitting with Lindblom's (1959) "muddling through" and also defended by Wildavsky (1975) <sup>22</sup>. The garbage can model of organizational choice as described earlier, although not necessarily beautiful, may be the most realistic model of how organizations do in fact learn or not learn. Rather than from making new and costly Type II errors, organizations and polities may benefit from incremental improvements to their choice "garbage cans".

One participant at the EIASM-IIASA workshop, Luc Wilkin from Belgium, remarked that to the accountants in the group "control" tended to be viewed as a solution, to the sociologists as a problem. I believe that to the responsible manager, control is always both a solution and a problem, and he will be wise not to mistake the solutions for problems (a Type I error) or the problems for solutions (a Type II error).

NOTES

- 1. I prefer using the terms "for-profit" and "not-for-profit" organizations and activities rather than the usual "profit" and "non-profit" to stress the <u>intent</u> of making a profit or not; quite a few for-profit organizations, unfortunately, turn out to be non-profit.
- 2. At the EIASM-IIASA workshop, Perrin (1979) presented a "hierarchy" of organizations in the UK based on the similarity of their accounting practices: (1) private enterprise; (2) nationalized industries, such as the National Coal Board; (3) public utilities; (4) the National Health Service; (5) government offices. Thus, within the public sector, nationalized industries are most like private enterprise from an accounting point of view.
- 3. Anthony and Herzlinger (1975:9ff) divide (US) not-for-profit organizations into client-oriented, member-oriented, and public-oriented, and argue that the difficulty of management control in such organizations increases in this order.
- 4. In Eastern European countries, all enterprises are not-for-profit. In Poland, Beksiak and Czarniawska (1977) have used extensive participant observation to arrive at a typology of enterprises based on their response to their environment (higher authorities, other enterprises as contractors, and consumers). They find that some enterprises stress satisfying consumers ("consumer-oriented"), some stress satisfying authorities ("obedient"), some only stress satisfying their own interests ("comfort-seeking"), and others combine two or more of these orientations, possibly together with a fourth orientation towards contractors.

- 5. In an earlier publication (Hofstede, 1978) I discussed the criteria 1, 2 and 4. Thompson (1967:134) classifies control decision processes by the criteria 1 and 3 ("certainty vs. uncertainty about preferences regarding possible outcomes", and "beliefs about cause/effect relations certain vs. uncertain").
- 6. Sayles (1972:30) refers to the "tendency for easily quantified measures to drive out more subjective ones"--this is a Gresham's Law of output measurement.
- 7. At the EIASM-IIASA workshop, Hermant (1979) discussed "strategic controls in Business Schools", and argued these had to be (1) valid: based on measurable data; (2) coherent: making different aspects of the strategy fit together; and (3) adequate: disposing of proper methods and procedures.
- 8. At the EIASM-IIASA workshop, Fischer (1979) discussed the role of the "reticulist" or network facilitator who acts as an information and mediation link in the case of political control of inter-organizational networks.
- 9. Weick (1974) criticizes a number of assumptions that are made when organizations are pictured as (open) systems and warns explicitly against the cybernetic model: "be suspicious of thermostats".
- 10. Birnberg, et al. (1977) suggests the use of "attribution theory" to explain human behavior in control systems. Attribution theory deals with the question to which causes people attribute events; these attributions depend partly on the attributors, partly on the situation. Birnberg, et al., expand the cybernetic model to reflect attribution processes. Attribution theory among other things explains why different people react differently to the same feedback signal.
- 11. In this line, Hedberg and Jönsson (1978) defend the design of semi-confusing information systems for organizations in changing environments, which help to properly destabilize the organization to make it adaptive.
- 12. Hammond and Adelman (1978) propose a normative model of policy decision-making in which supposedly rational expert's judgments are weighed by politicians' value judgments.
- 13. Stringer (1976:35) points to the ritual elements in employment and unemployment.
- 14. The relationship between anxiety, a need for rules, and a "Quest for Control" has earlier been recognized by Van Gunsteren (1976).
- 15. One study dealing with the organizational, non-economic aspects of investment budgets is Bower (1970); see page 7.

- 16. A rather similar statement was made on the basis of research in PPBS-inspired reforms in the Belgian Ministry of French-language Education, in a paper presented at the EIASM-IIASA workshop by Luc Wilkin (as yet unpublished).
- 17. In my own management control teaching, I have used the Type I--Type II error distinction before I received the Landau and Stout paper; we have come independently to the same analogy.
- 18. Extensive analysis of Type II errors are found in Wildavsky (1975) and Van Gunsteren (1976).
- 19. Beer (1975:497) describes such a system: "The crisis usually arrives when the bosses of the total system perceive the organization as a veritable chaos they can barely influence, while at the same time the individuals running the parts perceive an autocratic regime that ties their hands. The bosses see themselves as uttering genuine policies—mere prescriptions; those at the lower level receive inhibiting rules—genuine proscriptions".
- 20. March now differs strongly with his co-author in their 1963 "Behavioral Theory of the Firm", R.M. Cyert, on the principles on which (US) universities should be managed. Cyert (who has become a University President) has come to defending a highly formalized, centralized objective-setting-planning and budgeting operation, in radical opposition to March (Dill, 1975).
- 21. At the EIASM-IIASA workshop, Müller discussed a paper by Müller and Vogelsang (1978) about the use of external committees to supervise the policy making of public enterprises in Germany, using a US example; the paper concludes that this approach is ineffective. Also at the workshop, Harris (1979) discussed the auditing role of central government on corporate planning for the UK nationalized industries; industries want more guidelines and fewer interventions from government. Viens (1979) dealt with cost control in hospitals and suggested a comparison between hospitals based on cost indices as a way of auditing cost. His examples were based on US experience.
- 22. Michael (1973) offers a grand design for "Long Range Social Planning" through "Future-Responsive Societal Learning".

  He takes issue with the "disgruntled incrementalism" of political scientists like Lindblom and Wildavsky. I am afraid his solution is psychologistic (focussing on individual personality change) and therefore institutionally naive, and that a procedure like he proposes would in fact increase rigidity rather than decrease it.

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