Systems Research Vol. 6, No. 2, pp. 117–132, 1989.
Printed in Great Britain.

0731-7239/89 $3.00 + 0.00
Pergamon Press plc

Seven Distinctive Paths of Decision and Action

WARREN KINSTON* and JIMMY ALGIE†

Institute of Organization and Social Studies, Brunel, The University of West London, Uxbridge, Middlesex, UB8 3PH, U.K.

(*Received* 2 *March* 1988; *in revised form* 22 *October* 1988)

Key words—Decision; action; rationalist; empiricist; pragmatist; dialectic; systemic; structuralist; intuitionist.

Abstract—A set of distinct approaches to decision and action is offered as developed from collaborative inquiry with practising managers. The approaches so elicited align frequently, but not invariably or precisely, with accounts in the literature. They are named: rationalist, empiricist, pragmatist, dialectic, systemic, structuralist and intuitionist. Each approach tends to be advocated over-enthusiastically by its proponents as a full and appropriate response for all contingencies. The characteristic advantages and difficulties of each are examined, and issues in the selection of a preferred approach are explored.

INTRODUCTION

DECISION-MAKING methods are not merely a means to an end: they can powerfully shape the decision outcome irrespective of intention, desire or circumstance [2, 40]. Despite this, many researchers and textbook authors elaborate and prescribe a single decision approach for their field or domain [14, 22, 31, 79]. A few contrast opposite or competing methods [6, 36, 39, 49, 113]. Management consultants often offer a pot pourri [9, 88]. Rarely a synoptic view is attempted leading to lengthy lists of methods [21, 58].

The academic literature on decision, choice and action is so vast and varied that a simple synthesis or review is no longer possible.‡ In any case, decision-making and action in the real world do not fall neatly into any particular discipline or domain: and society's political and organizational decision-makers are not wedded to disciplines or theories.

If people are to gain increased control over their own actions, they need a framework which encompasses the possible distinctive approaches to decisive action from their own *practical* standpoint. The main questions we have sought to clarify, therefore, are: (a) what distinct approaches exist in practice, and (b) when should each be used or avoided. Our research has resulted in a framework of distinct approaches which model the different ways that people can and do act. In any particular case, the issue, the individuals concerned and the circumstances determine what actually occurs.

As we clarified our models over the years, we immersed ourselves in the literature. Not surprisingly, most of what we have found can be linked without difficulty to some portion of the academic literature. Many writers claim to have clarified how decisions should be made, and some claim to have determined how they are made. However, to our knowledge, although typologies are many, there has been no precisely comparable research effort to that presented here. The most relevant research is that of investigators who have developed sophisticated and elaborated versions of one of the approaches which emerged in our fieldwork, or sometimes of one single phase of an approach.

Decisions and action were studied intensively and extensively in dedicated research workshops with managers in services and business, and in the course of organizational research and consultancy to industrial and commercial firms, public services and political bodies. The detailed method of our research and its rationale has been described elsewhere by ourselves and others [63, 95, 100]. It is analytic, collaborative and rooted in a 'new paradigm' which values and empowers the research participants [92], and is concerned to affect social action directly [75]. Research consultancy frequently involved us in exploring difficulties and dysfunction in actual decision and action processes

* Dr Kinston is Senior Research Fellow and Director of the SIGMA Centre at the Brunel Institute.

† Mr Algie is Head of Management Studies at Kings College, University of London, and a former Senior Research Fellow at Brunel University.

‡ Although a general review is out of place here, it is worth noting the wide variety of disciplines contributing to an understanding of decision, choice and action. They include psychology, sociology, economics, social policy and administration, management science, organization and management studies, political science, legal studies, systems science and philosophy. Related specialized subjects which have led to useful applications include decision analysis, cognitive science, artificial intelligence, games theory, and conflict management.

so as to assist those responsible to move forward constructively. Managers therefore were themselves committed to refining their own approaches effectively. Concepts developed were studied using repetory grid [108] and multi-attribute decision-analysis methods [5].

Our initial findings were published over a decade ago [2]. However, as a result of further fieldwork, appreciation of the work of other investigators, and analysis based on theoretical developments [65, 66], the original classification was reconceptualized and reformulated. The result is a proposition that *there are at least seven distinctive and formally coherent approaches to decision and action*. We have named these: rationalist, empiricist, pragmatist, dialectic, systemic, structuralist and intuitionist.

Although the various ways of deciding can be seen as conforming to a basic decision-making process [68, 103], they differ sharply in their focus. For purposes of exposition, however, the decision process can be *artificially* segmented as follows: a start or impetus to act, an exploration of the topic, a development of possible alternative courses, application of value leading to a resolution, frequently a repeat of this cycle at a lower level with greater detail, action to implement, review during action and afterwards, and a way of overcoming failure (see Table 1). Clearly this might be better termed an *action cycle* rather than a decision cycle, but we shall follow convention and use the latter phraseology.

Not only do the emphases and handling of the different phases in the cycle vary greatly according to the approach, the terms used to describe decision-related behaviours are also distinctive. Much of the discussion of decision-making has taken the position that there is (or could be) a uniform language as well as a uniform model. Our research indicates this is not so. Use of language in a loose way, obscures what needs to be clarified if action is to be precisely designed [111]. Even 'decision' is a contentious term. People prefer to be called managers or businessmen or civil servants or politicians, rather than decision-makers. In Table 1, where the typical language of each approach is used, the terms 'decision' and 'deciding' are omitted without loss [cf. 113].

From an early stage, we noted that our framework bore a superficial similarity to paperback accounts of the 'art of management'. This similarity is misleading: it arises partly from our research approach, and partly from our avoidance of scientific jargon. We also noted that researchers who did not stay with the person-in-action had developed complex theoretical notions which initially appeared to make our ideas appear simplistic. However, careful scrutiny typically revealed strong links to one or another, or sometimes a combination, of our defined approaches. We were inclined to accept that both popular books and academic writings contained knowledge relevant to the research task.

We also noted the devoted and passionate defence of their own approach made by many academics. Each frequently held their own to be sufficient and superior for all purposes. However, if the different modes of decision-making are to be more than an elegant description of individual preferences, they must be at times particularly suitable or inappropriate. Our direct observations during consultancy research suggests that there is no recipe or blue-print which can be mechanically applied. Rather the full set of approaches forms a framework which helpfully orients and clarifies possibilities. The differential usefulness of the approaches will be explored in this paper, and also the idea of mixing them.

The paper first identifies and describes the sharply differing decision-making approaches which have emerged from our own research. Then the core characteristics of each are exemplified by using the classification reflexively to decide on an appropriate approach. Finally the approaches are mapped using two dimensions taken from leadership research.

In describing each approach, we will begin with a list of characteristic key terms, and provide illustrative references from the literature. Each approach is described sufficiently to enable its recognition by the reader and to fit its theoretical basis (also see Table 1). These descriptions constitute our model of the approach. We emphasize that many more or less elaborate, and more or less systematized, variants or methods within each approach exist. So, adherents to any one of these approaches may find the formulations not precisely suiting their domain and preference. Comments on applying the approach and overcoming failure are provided. A brief description of associated work-roles and personality-types, which are well-recognized in the literature [2, 15, 93], is also included. Algie has elsewhere examined the association of each approach with the use of computer technology [3, 4].

THE SEVEN PATHS

Rationalist decision-making

Literature. The rationalist approach to decision-making is epitomized by the studies of Humble [59] in management studies, Ansoff [7] and Steiner [105] in business, and Dror [36, 37] in public administration. It is encouraged by Governments [34, 85], and has been adopted by UN development agencies [116]. The rational model is the approach assumed by optimization theory in operational research [45]. According to Weiss [113], it is the commonest

Table 1. The seven different paths of decision and action in schematic outline.

APPROACH	RATIONALIST	EMPIRICIST	PRAGMATIST	DIALECTIC	SYSTEMIC	STRUCTURALIST	INTUITIONIST
PHASE							
Phase 1 START	Start with the over-arching common aim(s) and values.	Note a problem and reduce it to a manageable size.	Screen opportunities for action eliminating anything impractical or uncongenial.	Acknowledge the conflicts, and get a basis for discussion.	Develop potential future scenario for the situation, based on interacting values.	Identify a structural failure and establish authoritatively that it should be dealt with.	Express a felt disquet; or realize that drive is missing.
Phase 2 EXPLORE	From this, specify objectives and criteria in terms of what is feasible and desirable.	Using available information define the real problem in terms of what is meaningful and resolvable.	Emphasize maximizing advantage and using and building on existing strengths.	Sort out the various protagonists, and their main opposing arguments.	Identify critical features and constraints, and model their inter-relations and dynamics.	Review organization and procedures—i.e. roles, personnel, task structures, conventions.	Attune and focus to explore perceptions, feelings and worries of all those involved. Open up the imagination.
Phase 3 DEVELOP POSSIBILITIES	From this, develop options, and analyse these in terms of pros and cons using the objectives and criteria.	Obtain facts relevant to the problem or surmised solutions and pull out implications.	Debate so as to clarify values, assumptions, and implications of the bids for action. Work out payoffs and negotiate.	Evolve an optimal-feasible strategy. Model progressive thresholds in interventions and outcomes.	Systematically elicit expertise to find and use triggers for development. Simulate effects of activating triggers in various ways.	[Explore for possible blockages and ways around these.]	Incubate and play with images and any ideas that come.
Phase 4 RESOLVE	Assign priorities.	Recognize the unique best solution and adopt it.	Seize the most attractive opportunities.	Settle on a consensus by synthesis or compromise.		Assign responsibilities	Crystallize inspiration.
Phase 5 REITERATE	Work out a more detailed action plan, sequencing tasks in a coherent process.	Test the solution in a pilot version with full collection of data.	Develop convenient tactics including back-up possibilities.	Agree the delimited resolution in detail and document agreement.		Specify and assign specific tasks and sub-tasks.	Articulate vision; and envisage growth-enhancement.
Phase 6 IMPLEMENT	Mobilize people and resources for action.	Promulgate the solution and expect action.	Persuade others to cooperate. Improvise and learn by doing.	Delimit and phase action.	Intervene by deploying flexible varied responses and ensuring meaningful control of the total situation.	Issue instructions and lead by coordinating task execution.	Enthuse and lead with charisma. Interact fully with mutual support.
Phase 7 REVIEW	Check progress against plan (priorities, tactical objectives); and compare results with values and higher level objectives.	Control process and record progressive results. Obtain evidence whether the problem is solved.	Watch for danger signs and new opportunities. Recognize gains and losses during action.	Check that agreement to the resolution is holding. Assess whether the conflicts have been sufficiently resolved.	Use intervention model to check developments; fine-tune model of situation against unfolding reality. Analyse fit between outcomes and scenario.	Monitor task execution Appraise personal performance and potential. Check that all functions smoothly.	Monitor self, and engage in mutual counselling. Look for fulfilment of the vision and deep satisfaction with action and its results.
Phase 8 OVERCOME FAILURE	Adjust plans; or re-define a new mission or new key objectives.	Revise protocol; or redefine the original problem.	Switch tactics; or fall back on other possibilities; or turn attention elsewhere.	Re-activate debate, and work towards a different compromise; use external arbitration.	Modify the intervention model; or rethink the ideal scenario; or re-model the situation.	Reassess tasks, roles and personnel needs; reassign responsibilities; restructure tasks or procedures.	Meditate afresh on the vision to refine it; or re-explore the worry area.

assumption in the popular and academic literature. Levels of purpose theory [1, 64] provides an underlying framework for the rationalist model by clarifying a natural way to use objectives to translate values into action logically, explicitly and progressively.

Method. The rationalist decision-maker makes decisions with his focus firmly on his objectives for the future, rather than on the present situation. The process starts by seeing through the immediate issue to the underlying aim and its inherent value. This embodies what is generally desired and so serves as an overarching rationale for all action. Objectives are explored and progressively refined and specified, and criteria or policies are used to evaluate options for action which are generated. The facts of the situation may become relevant in producing and evaluating options. The decision is resolved by using values explicitly (and preferably quantitatively) to determine priorities among both criteria and options. The consistency and coherence of priority assignation is an important measure of the clarity of the decision-maker's mind. At this point a more detailed action plan may be developed, which is a recycling of the above process, and such detailing may reach down to the sequencing of tactical objectives or tasks. Resources are then mobilized and the plans are implemented. Review is carried out by checking progress against plans, priorities and tactical objectives. After completion, an assessment of progress is made by comparing the results with the higher level objectives. If the results indicate failure, the plans are adjusted or the mission and the key objectives within it are re-defined; but the highest values are never abandoned.

Applications. The rationalist path to decision is widely applied as planning. The approach is best adapted to a system in which change is minimal or slow, but where some improvement is positively desired. The issue itself should be relatively well-structured and well-understood to allow for a coherent credible plan to be developed. In other words, the possible actions, the effect of context, the outcomes of any given action and the value placed on any outcome should all be either known with certainty or determined by confident estimation. Straightforward examples include action aiming to minimize queuing time in a city port, or to maintain optimum stock levels in a retail store. The approach suits a well-structured environment which is stable over time, because this enhances the likelihood that plans will be carried through as intended and will need only minor adjustments to continue to be appropriate. It also helps ensure that basic aims and values will not alter and so undermine the long-term plan.

The effect of using a rationalist approach is to encourage the development of logical tools like planned programming and budgeting [85], decision analysis [91, 112], and operational research modelling methods [29]. So, in large organizations, top decision-makers who need help to implement such methods, appoint support staff or establish an operations research or planning department. Useful software is available which enables decision-makers to produce more reliable rationalist decisions using views and values and available information, e.g. *Priorities* [114].

Work role. The role model typically associated with this approach is that of the *corporate planner*, oriented towards the future in a reflective, even idealistic way. He sees his task as integrating individual objectives within the broader organizational goals, drawing on his intellectual and analytic abilities. He is usually in a staff position and works best using participative and persuasive means. Consequently, he is not expected to produce the drive and results of a line manager; nor to handle the numerous practical side-issues that bedevil all achievement.

Criticisms. The presence of a general and therefore impersonal or non-personal agreement as to the desirable future is important in this approach. If agreement on values evaporates, or was never really present, then rational action breaks down and the planning cycle founders. Attacks on the rationalist position and grand planning therefore frequently attack the implicit utopianism in such techniques.

At the present state of knowledge, most major social issues tend to be ill-structured. Civil servants who claim to use a rationalist approach to support the policies of the politicians in power have therefore usually been found not to do so in practice [22, 53]. This is not surprising because Government Departments in democracies handle exceedingly complex issues, in an exposed social environment, without general agreement on many objectives, and with a need to shift priorities rapidly. Even in service organizations, attempts are frequently made to apply the approach for issues which are complicated, poorly structured and not understood. The rationalist method then tends to become over-extended or over-elaborate, and planning develops independently of implementation, leading to the production of elegant blue-prints that gather dust but no commitment.

Using objectives and the future to determine present action means to depend on abstractions and

potentials. This may seem far too uncertain a basis for decision-making. In contrast, it can be argued that it is far more satisfactory to stick closely to the concrete realities of the existing situation. This takes us to the next decision approach.

Empiricist decision-making

Literature. In this approach, agreements between people are not to be based on shared values or hopes of individuals, but on a shared perception as to the facts of the matter. Deciding is therefore seen as 'problem-solving' or 'information-processing'. Insistence on an articulated empirical base for decision has been promulgated by researchers from scientific backgrounds rooted in positivist assumptions. For example, this approach is often advocated in traditional psychology [50], empirical social science [46], and informatics [57]. In practice, full-scale empiricists abhor theory because they feel that if the facts are clear and available, they will point to a unique best solution over which there can be no sensible argument. However, they accept the need for statistical theory to organize their data.

Method. The empiricist decision-maker regards any issue as evidence of an existing problem. The 'real' problem is defined, using available information, in terms that are meaningful and resolvable. In doing this, the problem is reduced to a manageable size. Facts are then collected, their implications in respect of the problem teased out, and further facts collected if necessary, until the optimal solution emerges. It is expected that all will agree with the outcome and it is adopted forthwith. An inherent assumption of this mode is the belief that action should be determined primarily by what exists at present. So pilot testing, though not essential, is characteristic. Implementation is seen as a progressively enlarging pilot, carried out in a controlled way with recording of the progressive results. Evaluation is based on evidence as to whether the original problem is solved. If the problem has not been solved, then either the protocol must be revised, or the initial 'real' problem must be redefined.

Applications. The empiricist mode suits a well-structured problem, which is easily delimited or has relatively few factors. This allows collection of data to be carried out quickly and cheaply, and conclusions to be drawn rapidly and unambiguously. For the same reason, an organization that is relatively unchanging and an environment that is not turbulent is preferred. Medical epidemiology is solidly empiricist and disease control programmes which suit this approach, such as smallpox eradication, have been spectacularly successful.

The positive effect of using the empiricist approach is that it improves the information base of decisions, and encourages dispassionate experimental testing of any solution to a problem. If the situation is complex, research workers or external consultants may assist by collecting and analysing the necessary data. The emergence of cheaper computing power, statistical programs and databases has increased the effectiveness and feasibility of this approach.

Work role. The role model often associated here is the *expert investigator* who orients himself towards existing situations. He sees his task as obtaining statistically-valid evidence to enable him, or more often others, to make the final decision. He is expected to be able to explain rather than to achieve. He therefore tends to be impartial and impersonal. His conviction and motivation is aimed at producing ever greater certainty and accuracy, and not primarily at generating organizational development. As a result he is typically in a staff position, often within a planning section; or, to avoid any compromise, remains in academia or in consultancy organizations.

Criticisms. A thoroughgoing empiricist, especially in a consultancy setting, applies the method in complex or confusing situations, even where the cost of information collection is exorbitant, the lengthy time-delay renders results pointless, and piloting is impracticable. Empirical approaches have therefore bankrupted organizations. Empirically-based decision-making is also unsuitable if consensus on the problem or on the data is lacking. This is often the case if the issue to be decided is a subject of controversy, or demands changes in customs and practices.

The clearest controversy in relation to action which an empiricist recognizes is that between knowledge/rationality, represented by empirical researchers, and ignorance/irrationality, represented by politicians, managers and professionals [e.g. 45]. Even if valid information is obtained, using it to interpret the behaviour of whole systems is more of an art than a science, and the researcher slips rapidly into a dialectic debate. The negative effects of empiricism are to narrow the decision-maker's focus, and to weaken morale by excluding values and personal interests from detailed consideration.

Empiricists are rooted in the present and recent past. They tend to be hostile to change and innovation, because these alter the basic parameters within which facts can be agreed, collected, analysed, and used. But individuals, organizations and society must change if they are to thrive, and

the requirement for change is met directly in the next path of action.

Pragmatic decision-making

Literature. Rationalists and empiricists optimize and appeal to criteria outside the individual and beyond his immediate perceptions. By contrast, many who have studied how decisions are made in practice identify a non-systematic method as predominating. This is the pragmatic, opportunist, 'disjointed incrementalist', 'muddling through' or 'flight and oversight' approach to decision-making. It has been described in management studies by Braybrooke and Lindblom [22]; in business by Heller [54]; in the civil service by Heclo and Wildavsky [53]; in welfare bureaucracies by Donnison and Chapman [35]; and in universities by Cohen *et al.* [30]. Best-selling popular manuals on 'how to succeed in business' often advocate this approach [20, 78, 109]. Their spirit is captured by memorable acronyms such as 'KISS: keep it simple stupid', catchy slogans such as 'let a thousand flowers bloom', and quotable quotes such as 'apart from common sense, the most important business asset is a sense of humour'.

Pragmatists claim that their approach provides an accurate description of what actually happens, and is also a common-sense prescription for the art of the possible and the route to success. The notions of globally identifying, evaluating and integrating values and objectives (rationalist) and of obtaining all needed information and testing all possible solutions (empiricist) are rejected, to be replaced by determined initiatives and trial-and-error adjustments at the margins. Clear communication and persuasion amongst those involved is crucial. This is why the approach is sometimes labelled 'adaptive' or 'instrumentalist', and claimed to be democratic [70]; and why 'satisficing' is said to replace optimizing as the decision-maker's goal [41, 103]. Lindblom and Cohen [71] noted that social scientists often fail to recognize that sensible immediate action, rather than formal inquiry, resolves many issues.

Method. The decision-maker's focus here is on opportunities for immediate action. The logical organization of decision making is radically compressed and the 'start', 'explore', 'develop possibilities' phases are continuously pursued. The urge is to eliminate anything that is uncongenial or difficult: in particular anything that is too complex, fundamental, controversial, innovative, unpredictable, unpleasant, idealistic, deviant, obscure, long term, or uncertain. Instead, the emphasis is typically on the obvious, the inevitable, the unavoidable, the immediately practicable, the marginal and the consensual. The decision-maker sifts through possible opportunities for action with an eye to maximizing his own advantage and building on his existing strengths, using available or easily acquired resources. The most attractive opportunities rapidly become clear, and these are seized upon. Rapid decision is necessary because opportunities rarely remain available for long. A variety of subsidiary opportunities are usually held as fallback possibilities. Most time is spent on explaining to others, and persuading them to commit themselves or at least to accept the action decided upon. Tactics therefore include political manoeuvring to develop allies and neutralize opponents, and the use of public relations and selling techniques. The pragmatist learns on a trial-and-error basis. Multiple initiatives and experiments are therefore preferred, and adapting and improvising whilst on the move is characteristic. Review is a matter of checking on the gains and losses which follow any course of action, but some incremental development is expected. If a particular course of action fails, a new action is chosen or renewed efforts may go into persuading others to participate, whichever seems more expedient.

Applications. The pragmatic mode is particularly suitable if action is of the essence, e.g. in crisis situations. It is suitable for uncontentious issues where the result is more important than the process; or for situations in which there are many simple and immediate actions which will lead to progress. It applies when participants in the decision vary or spontaneously alter the time and effort they will contribute, and where their preferences are ill-defined and inconsistent. If action is required on an issue which is complex and poorly structured, the pragmatist seizes on well-structured areas within it which can be easily focussed and where at least something can be made to happen, or opts for a solution which is already to hand. In such issues, there are typically numerous possibilities for action. Governing society is an example, and it is not surprising that successful politicians and top civil servants are frequently described as supreme opportunists: relying on custom, improvising, adapting, horse-trading, turning a blind eye, and using solutions to identify problems [113]. If the pragmatic mode appears to be failing, the decision-maker just tries something else; alternatively he may ignore the issue altogether, perhaps still going through the motions, and turn his attention to a more promising opportunity.

Work role. The role characteristically associated with the pragmatic approach is that of the *independent achiever* who orients himself towards

action, change and rapid benefits for himself. He sees his task as initiating activity and improvising. He leads from in front, thrives on the unanticipated, and uses available support and any other immediate strengths of his position. He avoids his weaknesses and ignores anything that demands effort and detracts from his own immediate drive and personal advantage. To be successful, he must be determined, dedicated and assertive. He works by persuading and influencing others, and uses rewards and punishments where possible. He is unimpressed by academics and their formal management methods, but enjoys and benefits from reading 'how-to-do-it-in-one-easy-lesson' books by successful fellow managers.

Criticisms. The pragmatic decision approach is, by definition, not well-suited to handling ill-structured systems holistically. Since the keynote of the pragmatic approach is 'what profits me/us', it is not welcomed in organizations where self-interest or self-gain is frowned upon, such as religious organizations, professional societies and voluntary welfare associations. In such contexts, decision-making in general and the personal gain motive in particular commonly activate intense conflicts and opposition. Such conflict can be so intense that it would lead to system breakdown without a specific decision-making approach custom-designed to handle it.

Dialectic decision-making

Literature. A dialectic approach is required when social conflict is prominent and requires resolution. Dialectic methods have been described in management and planning [30, 33, 74, 81], in the socio-political context [101, 107], and in bargaining procedures [82]. Aspects of the approach have been well articulated in industrial relations manuals [43] and the negotiation literature [90].

Method. For a dialectic decision-maker, the issue is seen as a dispute based on the conflicting interests of those parties who would benefit differentially from its resolution. The process starts by acknowledging the conflicts and getting a basis for discussion between the main protagonists. The opposing parties or factions put up their bids and counter bids, and debate the issue and the implications for action that flow from them. The values and assumptions of the protagonists must be worked out so as to settle on a consensus in which each gets a payoff. The consensus forms either by synthesizing the opposing arguments or negotiating a compromise. Characteristically the compromise is delimited and documented to ensure that it will be adhered to, and implementation is phased. Review aims primarily to confirm that agreement to the resolution is holding. Eventual evaluation is based on whether the dispute has been resolved. If it has not, then new compromises must be worked out.

Applications. The method is suitable if the nature of the issue is in doubt to those involved and experts disagree markedly about the best way forward. Any issue where those involved have directly opposing interests may demand dialectic handling, because a consensus on goals (rationalist) and on facts (empiricist) will be unavailable, and the way is not clear for a simple piecemeal approach (pragmatist).

Dialecticians are at home with complexity. However, the approach is best suited to a relatively stable context and for issues which lead to important but relatively small-scale changes in the system. The likelihood of change activates the necessary sense of doubt about what the issue is all about. The small scale generates disputes based on the likely gain or loss accruing to different parties to the decision without leading to the group as a whole cohering. The issue typically generates opportunities for different protagonists, none of whom individually can resolve the issue or implement the decision and who therefore band together. Governing bodies, in which decisions are corporate and inherently controversial, therefore foster the use of this approach and need factional groups to coalesce and create organized debate.

If disputes persist, the usual tactic is to keep talking and present the arguments with greater emotion and more factual back-up. If the disputes become too complex or unmanageable and an impasse is reached, external mediators or arbitrators may be called upon to help.

Work role. Two complementary roles are associated with this approach: the *political debater* and the *arbitrator*.

The *political debater* emerges from a group with which he is highly identified, being typically elected on the basis of his oratory and adroit use of facts. His orientation is towards his own group, and so he skilfully uses facts and statistics to promote it and to discredit proposals and facts provided by the opposition. To do this he needs to be able to sense the mood of his own group and persuade them to mandate him appropriately. As eventual resolution is desirable, an appreciation of the situation and skills in negotiating and compromising with representatives of other factions are required.

The *arbitrator* needs to be able to recognize the interests of both parties and not be unduly swayed by either sets of offered facts. His task is to elucidate the underlying concerns and assumptions of the protagonists and assist in developing a resolution to end the dispute or conflict. If the arbitrator is

internal to the system, usually a line-manager in an organization, he is inevitably also a protagonist.

Criticisms. The dangers in this approach are that unnecessary conflict may be generated, that proper concern with specifics and practical issues may be lost, and that the common purpose of all those involved may be forgotten. The dialectical method can be excessively time-consuming and would generate unnecessary conflict and delay if used in place of previous approaches for well-structured problems in simple slowly changing situations, or in situations where there is general agreement on goals and tactics.

The effect of using a dialectical approach is to enhance awareness of opposing views, and to allow articulation of group feelings while minimizing involvement or risk for individuals. The value of decision-making is again personal but now beyond the interests of just one person. It involves groups whose members identify strongly with each other. Action is determined by an evolutionary process that depends on the balancing of opposing forces. However, the nature of this balance is not explored. The next method attempts to redress this and include much else beside.

Systemic decision-making

Literature. Systemic decision-making emerged in the 1960s from a 'hard' closed systems engineering-oriented domain by way of open systems management science [14, 28]. Subsequently a 'soft-systems' science with greater links to action developed in the 1970s [27]. The systemic approach has been used in many fields as distinct as the NASA space program [97], ecological management [76], school interventions [8], and family therapy [18].

Method. The systemic decision-maker aims to synthesize a diversity of activities and factors within a situation into a coherent interrelated system/environment. An issue arises if the system is off course or its development is blocked. The systemic method shows features recognizable from the previous methods but modified and integrated comprehensively. A potential future scenario is defined, and the aim is then to develop an intervention strategy which will lead from the present situation to that future ideal. The critical features or factors within the present situation and inherent or environmental constraints on the situation are identified. These are mapped or modelled to formulate their interrelationships and dynamics; that is to say, an understanding of the interplay of forces in the situation is developed. Of particular significance are the recognition of structural arrangements according to kind and level, of multiple feedback loops which maintain homeostasis, and of inherent potentials for growth and development (autopoiesis). Knowledge of which features act as triggers for development is required, as well as how to use them in the situation, and their likely effects of the state of the situation. Characteristically, this knowledge is systematically elicited from experts from more than one discipline and also from the participants. The situation has now been brought into focus and represented as a system or situation-response model.

The situation-response model is used to simulate effects of activating triggers in various ways and combinations, and then an optimal-feasible strategy to produce balanced development of the various critical factors is evolved. This is specified in more detail via an intervention model that indicates progressive thresholds in both interventions and situation outcomes and is used to guide the system's evolution. Intervention is handled using a variety of flexible interrelated responses that match the complexity of the situation. Contingency tactics based on the situation-response model are developed to handle the unexpected coherently and flexibly, while adhering to the strategy. Developments are monitored by reference to the intervention model; and the situation-response model is fine-tuned against unfolding reality. Evaluation overall is handled by analysing the fit between the outcome and the scenario. If unsuccessful, the intervention model must be modified, the scenario reconsidered, or the situation re-modelled, checking for critical factors, constraints, interrelations or forces previously insufficiently appreciated.

Applications. The systemic approach is suitable for complex and poorly structured issues which will benefit from having a structure imposed upon them. For example, resource allocation and organizational evaluation invite structuring in this way. Our research suggests that some decision-makers operate with an implicit systemic approach, in that they are actually guided by a non-explicated 'understanding' which is a mental model of the situation as a whole. The systemic approach is concerned with ultimate ends and their relationship to means. Its prime effect, therefore, ought to be to render decision-makers more responsive and sensitive, with a greater awareness of the ethical and practical implications of their actions.

The fully developed systems approach has become more practicable in various areas with the use of computer technology, which enables simulation models like *Simkit*, expert systems like *Leonardo*, and resource allocation systems like *Resources* [115].

Despite the pleas of its advocates, the systemic

approach is not widely adopted, even in those areas where it might be judged essential. External consultants are typically required, and even then the deliberate use of modelling approaches which take human factors fully into account is rare.

Work style. The systemic decision-maker is a *systems scientist*, frequently working as a senior action researcher or holistic co-ordinator of a major development. His major efforts go into developing future scenarios which balance a network of goals, modelling the present and future situation and developing intervention models. In this work, the main processes are encompassing complexity, appreciating which factors are key, handling the interdependence and interactions of roles and activities in organizations, recognizing psychosocial factors, and eliciting expert knowledge. His orientation is towards maximum impact and future development. To realize this he needs an independent personality and must be capable of reflective inquiry and an integrative vision.

Criticisms. The difficulty with models in large organizations is that they are not understood by the people who are expected to use them. Frequently they are too computer-dependent. More commonly, they omit crucial factors of personal meaning and experience. The danger in this approach is the generation of unnecessary complexity and individual awareness to violation of values. Other criticisms focus on the relative lack of concern for issues of certainty, information, expedience, and group power.

The systemic approach imposes structure or discovers an implicit structure within the system relevant to the issue. However, issues themselves exist within recognizable social structures and the next decision-approach takes these as its point of reference.

Structuralist decision-making

Literature. The structuralist approach is a formalized mechanism to ensure that *all* necessary decisions will be taken. It clarifies *who* will make decisions and *what* decisions will or will not be taken, as well as *how* decisions will be taken or carried out. The autonomy and power released by well-defined suitable procedures, regulations and laws has long been recognized in organizations and in society [24, 86]. The structuralist approach is frequently expressed within organizations in terms of 'appointing the right person to the right position, giving them the resources and authority and letting them get on with it' [23, 80, 83]. From this perspective, the 'right person' has considerable discretion and may freely use other decision approaches. Alternatively, 'who, what and how' may be progressively defined in more and more detail, until at the limit, the structuralist approach is better termed *proceduralist*. Levels-of-work theory provides an underlying framework for structuralist decision-making and for the design of organization. It clarifies progressive levels of complexity in tasks and the corresponding work capability required of individuals [61, 67, 96].

Method. The decision-making approach starts with the emerging issue regarded as a disruption or dysfunction or structural failure or gap which interferes with the even performance of work. The first requirement, therefore, is to establish authoritatively that something must be done. In other words, to sanction the task. The terms of reference, and the posts or bodies responsible for the task must be determined, and then the organization and its procedures reviewed. The task is broken down into successively smaller units—if necessary down to step-by-step procedures. The issue is effectively resolved with the assignation of responsibilities for the specified tasks and sub-tasks to bodies in the appropriate levels and sections of the organization; and the provision of instructions. Execution is co-ordinated using reporting relations and meetings. Evaluation following implementation is primarily an appraisal of personal performance and potential, and a review of roles, authority relations and needs for more personnel or for some new structure (such as a committee, role or rule). Smooth running of the organization is the ultimate criterion. If the matter is not resolved, then work-flow, organization and procedures must be re-assessed.

Applications. A structuralist approach is suitable in any situation where a clear organization and defined procedures are required. Procedural approaches, such as disciplinary appeals in organizations, work best when the change involved is minimal and environmental demands are insignificant. If a major reorganization of structures and functions is necessary, then the right person needs to be appointed at the top. External assistance from management consultants is frequently desired for such change, and sometimes for introduction of new procedures. The structuralist approach to change requires an acceptance of elitism because its effectiveness is dependent on the capability of the people appointed [16, 61].

Work role. There are two roles associated with the two forms of this approach: the *dutiful bureaucrat* and the *organizational chief*.

The *dutiful bureaucrat* thrives in an environment dominated by precedent and adherence to set rules,

procedures and schedules. He sees his tasks as maintaining the existing system and seeing there are no loose ends. He operates in a cautious, correct, impersonal and dependable way. He is often concerned to be efficient and equitable. A treasurer or committee secretary might properly operate in this way.

The *organizational chief* is a line-executive who is oriented towards achievement. The line manager sees his job as setting appropriate tasks for his subordinates within a policy framework, and then not interfering with the exercise of discretion used by subordinates in completing these tasks. That discretion would include deciding how any decision is to be made. The operation of the executive is impersonal in general, but personal in relation to a concern with the individual's capability to handle assigned work.

Criticisms. When the structuralist approach is mishandled, it degenerates into bureaucratic rigidity, oppressive elitism, delay, pettiness, strictures and a stifling of innovation.

No decision method to this point has given any deep explicit attention to the anxieties and passions, irrational as well as rational, which are the prime motivators of human beings and which must be looked to for powerful leadership. The next approach starts from the inner life of human beings.

Intuitionist decision-making

Literature. The intuitionist method can be discerned in the writings of psychologists [13, 60], psychotherapists [47], and group relations specialists [25, 104]. Emphasis here is on the primacy of insight and the experience of the individual, and also on a person's basic needs: for security, for self-realization, for autonomy and for belonging. Writers on creativity emphasize activation of intuition and imagination for successful action [10, 84]. Imaginative processes are associated with the production of ideas for action which are counter-intuitive but felt with certainty, and can only be backed up after the event [65]. Some recent management manuals are intuitionist, aiming to foster vision, insight and creativity, rather than adhering to standard approaches commonly promulgated in business schools [56].

Method. The decision process is stimulated by a felt inner disquiet, or by a realization that drive or vision is lacking. This feeling is expressed and shared with relevant others. Knowledge about the situated is based in introspective and empathic appreciation and exploration of perceptions, feelings and worries. Everyone involved with the issue is encouraged to participate voluntarily in mental exercises (such as meditation, focussing, directed imagination, creative visualization) which deepen emotional awareness and open doors to the unconscious and the symbolic. The eventual result of such preparation and incubation is a crystallization of inspiration, and a development of a vision of what is required. The requirement of personal growth and mutuality is retained in awareness throughout this process.

The quality of the decision process depends on the articulation of experiences. These formulations need to be more than clear and succinct, they need to appear self-evident and powerful because they play a major role in energizing implementation. This vision is communicated with intense enthusiasm so that others can identify strongly with it and make it their own. During implementation, the key decision-maker(s) remain at the centre of things, continuing to use all opportunities for clarifying and fostering the vision. Social, emotional and cultural support for change is provided. Results are reviewed to check that they embody the vision and produce deeply felt satisfaction. The organization is therefore seen as no more than an instrument of human endeavour: of value insofar as it permits people to express themselves fully and to interact in a personally supportive and socially constructive fashion.

The creative process activated by intuitionist methods is not mere fantasizing. It demands an attunement of the decision-maker with himself, with his task, with his environment, and with the issue under consideration, so that as time passes and events unfold, the decision-maker can adapt in thought, feeling and action.

Application. Intuitionist modes of decision-making are most appealing when objectives are unclear, and the issue itself is confused or its existence is uncertain. For this reason, most of the important decisions in our personal life—choosing a spouse, embarking on a career, having children or not—are handled intuitively. In organizations, intuition can provide a counterbalance to the other approaches, particularly if the issue touches immediately on the deep feelings and needs of those involved. Intuition handles the unknown directly and can enhance personal development. Because inner mental life is the well-spring of ideas and the source of deep commitment, the intuitionist method has been promoted as a tool for leaders [17, 56, 99].

Work role. Again there are two roles associated with this approach. The *supportive catalyst* where there is no clear leader; and the *charismatic leader*.

The *supportive catalyst* is oriented towards people in a sympathetic, attentive and candid way. He sees

his task as obtaining informal co-operation by appreciating the values and needs of others as individuals. To do this he must above all, create a secure atmosphere where people can relate to each other voluntarily, and with confidence that their vulnerability will not be exploited. He must listen attentively to others, and encourage and counsel them so as to foster their personal development. Line-managers are frequently exhorted to operate in this fashion, but in today's organizations such an executive is more often to be found in a staff position. Alternatively he may remain outside the system, for example as an organization development consultant.

The *charismatic leader* orients himself towards his own creativity. His task is to provide the inspiration and guidance on which his and his group's success depends. He uses every opportunity to articulate his vision and philosophy, exciting people and being excited by them when they respond. He expects his group to identify with his vision and develop an intense personal attachment to him and to his ideas. If they do not do so, they are rejected.

Criticisms. Intuitionist decision-making breaks down utterly if the group dynamics go awry and if relations of trust and voluntary participation are insufficiently developed. Then intuition, experience and maturity become perverted into dogmatic, arbitrary assertions, expressing defensiveness and habit rather than flexibility and imagination. Many individuals fear their own emotions, perceiving danger from loss of control. Methods such as role play, T-groups, and sensitivity training have been developed to handle dysfunctional intrapersonal and group dynamics. The intuitionist method is generally unsatisfactory by itself when there is a need to explain or document decision processes in detail, or where factions are ineradicable. Charismatic leadership, if present, makes what is self-evident to the one self-evident to the many, and may overcome these criticisms, but distrust of such leaders is common.

SELECTING A DECISION APPROACH

We have now completed our brief review of the internally coherent and consistent paths of action that emerged from our collaborative research. In reviewing the literature, we found that other approaches proved to be re-articulations or variants of the defined approaches, or attempts to synthesize some of them regardless of inherent contradictions. For example, Chapados [26], looking to produce an optimal solution, combined rationalist and empiricist approaches. Etzioni [38], seeing the need to accept the value of rationalist empiricist and pragmatic approaches, advocated 'mixed scanning'. Commercial management consultants [88] and academics [44], trying to grip the realities and complexities of implementation, tend to mix together several of the approaches informally and unsystematically.

Selection of one approach rather than another is not haphazard. On the surface, the approaches address different questions: why? (rationalist), what? (empiricist), when? what's possible? (pragmatic), for whom? (dialectic), wherefore? (systemic), who? where? how? which? (structuralist), and what does it mean? (intuitionist). We have already noted that each approach has aspects and requirements which affect its easy and successful application.

However, before proceeding, two points require emphasis. First, each approach is a framework for action and can be no better than the skilled and knowledgeable application of methods derived from it. A skilful application of a well-devised method within a less appropriate approach may be more successful than an inept application of a clumsy method within a more appropriate approach. Second, firm advocates of each approach claim universal application and oppose specific correlations or constraints of the sort we have offered. In our workshops, managers and practitioners typically proclaim 'horses for courses' as the sensible way, but reveal in exercises an unhelpful over-identification with just one or two approaches.

To offer some practical illustration and further explore differential applicability, we first turn the analysis on itself and explore some 'horses for courses' suggestions. We then offer some indications of the main sources of dysfunction found amongst practising managers.

'Choose the approach that best suits the problem which you confront' argues the empiricist. Empiricists typically observe that in practice particular issues tend to give rise to the use of a particular approach. Some of the correspondences between issues and approaches observed in our fieldwork are as follows. Directional and design issues and other planning-led activities or decisions, where many competing alternative courses of action are evident, lead to rationalist methods being used. Search, investigation and technical adaptation problems and other data-dependent or statistics-dependent matters, are frequently handled by empiricist methods. Crises, or opportunities for small improvements with quick pay-offs, invite a pragmatist approach. Issues involving conflict, such as altering pay or conditions of work or the distribution of benefits or altering group status, tend to be handled dialectically. Complex situations

demanding control, such as comprehensive organizational evaluation or resource allocation, lead to the use of a systemic approach. Issues which are overtly a matter of role or responsibility or which involve maintaining activities reliably within the organization, are dealt with by a structuralist (or proceduralist) approach. Human relations issues, which demand emotional, behavioural or personal changes, give rise to use of the intuitionist approach.

'Choose the approach that fits your role' argues the structuralist. Structuralists typically observe that different post-holders tend to institutionalize different decision approaches. Marketing and service planning staff tend to be rationalist, research staff—empiricist, sales staff—pragmatist, industrial relations staff—dialectical, corporate development staff—systemic, administration and finance staff—structuralist, training and development staff—intuitionist. Structuralists also emphasize the need to decide as prespecified within the organization. For example, in some organizations people insist on full evidence and documentation (empiricist-style), in others judgements by those in post are taken as authoritative (structuralist-style).

'Choose the approach that best meets the kind of objective set' argues the rationalist. Rationalists typically vary their approach depending on the goal. For example, redistributive objectives which involve planning for the future imply rationalist methods. Responsive objectives which involve meeting some immediate given need or tackling some active problem imply empiricist methods. Action objectives which involve demonstrating that something has happened imply pragmatic methods. Political objectives which involve ensuring that all interest groups are satisfied imply dialectic methods. Reconstitutive objectives which revamp whole systems imply the systemic approach. Regulative objectives which involve replicating outputs and enforcing standards imply structuralist methods. Socio-emotional objectives which involve altering attitudes, feelings or perceptions imply the use of the intuitionist approach.

'Choose the approach that enhances the overall strategy' argues the systemicist. Systems practitioners are concerned with handling the whole range of significant factors, and operating with maximum flexibility within their model of the situation. All approaches are therefore seen as tactics to be employed as and when necessary for the achievement of the desired future scenario, with the systemic approach setting the context.

'Choose the approach that enhances your personal growth' says the intuitionist. Intuitionists note that each approach is associated with distinctive work-styles that link to personal orientation, qualities of character, and psychological preferences for particular tasks and work processes. The approaches are therefore not just techniques or tools but the means for self-expression. Intuitionists believe that individuals should realize themselves. At one level this means doing what feels right to the person and avoiding artificial or mechanical responses. At a deeper level, it means personal growth, that is to say, moving from full-scale unconscious identification with one approach to exploration of new approaches as new ways of being. Such identity change is not to be taken lightly: it requires mentoring and sustained personal determination.

'Choose the approach that is most expedient' argues the pragmatist. Pragmatists ask what can actually be achieved with confidence and ease. The most expedient approach is one which fits with people's personal interests and brings them immediate benefit, or at least ensures something happens and protects their position. Alternatively it is the one which fits with their organization's interests or those of their section. People fall back on the approach that they find most comfortable and convenient, particularly when under stress. Because a person's orientation to the world unselfconsciously reshapes and redefines issues to match it, the pragmatist expects to encounter a variety of approaches in practice irrespective of their logic.

'Choose the approach that safeguards/enhances your group's power' argues the dialectician. Dialectical operators are aware that each approach, suitably rationalized, serves as an excellent weapon in the battle for group supremacy. They therefore note how each participant in the issue uses one or other of the approaches to further their own interests or those of the group or organization which they represent. In the event of no one participant or approach predominating in the decision process, the dialectician will prefer compromise, or may attempt to resolve matters by synthesizing two or more approaches.

We now turn to note how choice of an approach goes wrong in organizations. In practice, we found that the most prominent form of dysfunction centred not on the primary selection of an approach but on difficulties in changing approaches. Some people or organizations adhered to a single approach, irrespective of its demonstrable ineffectiveness for many of the issues to be handled. Sometimes an approach in use had been clearly relevant to the issue in the past, but, as circumstances and needs changed, it had become ineffective. Per-

sistence with an inappropriate approach was not uncommonly due to the tenacity of management consultants or academics.

Persistence was particularly noticeable in members of groups which epitomized an approach. For example organizations of politicians tend to treat every issue as inherently conflictual, and hence requiring a dialectical approach. As a result they have difficulty in getting together to pursue self-evident common aims via the rationalist approach. This has led London (U.K.) to have two associations of opposing ideological commitment, rather than one, speaking on behalf of London councils. (The reader is encouraged to identify similar examples for each of the other approaches).

Dysfunction also resulted from managers moving from approach to approach without thorough use of any. A related and common problem was the inability of a group or committee to agree on which approach to adopt. An inordinate amount of time could be spent arguing about how to proceed, with little focus on the issue itself. Where the issue being considered by the group was unclear or conflicted, appeal to 'better' decision methods (e.g. more analysis, more data, more consultation, more action, more reflection) was sometimes used to block or slow down action. The conclusion of our research is that these types of difficulty and others can be practically resolved by a model of the kind here proposed.

MAPPING THE APPROACHES

We have identified two useful perspectives on decision approaches. The first has an extensive documentation in studies of leadership. The second, less often noted in the literature, is how systematic or how spontaneous the approach is. Our analyses suggest that these two perspectives can be combined.

Two dimensions have been repeatedly identified as significant in the literature on work in groups [11] and on leadership [12, 19, 42, 55, 69, 93, 98, 106]. These dimensions are an outward-looking task orientation and an inward-looking group or person orientation. Task-orientation is concerned with output, and person-orientation with relationships and socio-emotional states. The various decision approaches can be placed on these dimensions. Intuitionists have a relatively weak task orientation, as do academic empiricists; systemicists and pragmatists are strongly task-oriented, though in different ways; and the remainder fall in between. Empiricists and pragmatists have a relatively weak orientation to intra- and inter-personal processes; whereas intuitionists and systemicists have a strong orientation to these; and the remainder fall in between. The systemic approach therefore combines a strong orientation to both the person and the task.

Some clue to the second perspective will have been evident from the previous section. The empiricist, structuralist, rationalist and systemic paths are methodical or systematic approaches in order of increasing comprehensiveness. The spontaneous (and hence relatively non-systematic) approaches are the pragmatic, dialectic and intuitionist in order of increasing sensitivity to inner personal experience. Methodical approaches are useful when what is desired is *inner control over outer complexity*. Spontaneous approaches are useful where what is required is *sensitive and rapid responsiveness*. Spontaneous approaches are frequently relevant as the initial approach to a complicated and poorly structured or poorly understood issue which must (for various reasons) be handled systematically.

Placing the different approaches on a graph using the two dimensions of person- and task-orientation suggests that the approaches fall into four quadrants and lie along two diagonals (Fig. 1). Managers appear to treat the more extreme methods within each quadrant as more complex versions of the more central methods: the intuitionist approach is a more sophisticated version of the dialectic (both working with personal values and interests), the systemic of the rationalist (both working with the organization's future), the empiricist of the structuralist (both working with precise specifications). As indicated above, the methodical or systematic group shows an increase in comprehensiveness as one moves from bottom left to top right. The spontaneous group, on the reverse sloping diagonal, shows a trade-off between orientation to the person and the task.

CONCLUSION

The aim of the research was to produce a precise account of ways of deciding and acting which can be explicitly and coherently adopted and applied in practice. The framework that emerged has been deliberately presented in ordinary language because the action processes being modelled are part of everyday life. However, it is not offered as another readable account of the 'art' of management or another 'armchair' typology, but as an empirical model that has been validated by managers themselves.

The typology which has been presented is therefore claimed to be significant first because it has been produced using a *distinctive systemic research method* in which managers participated fully; and second, because it was created with the aim of *providing complete coverage* of distinct coherent

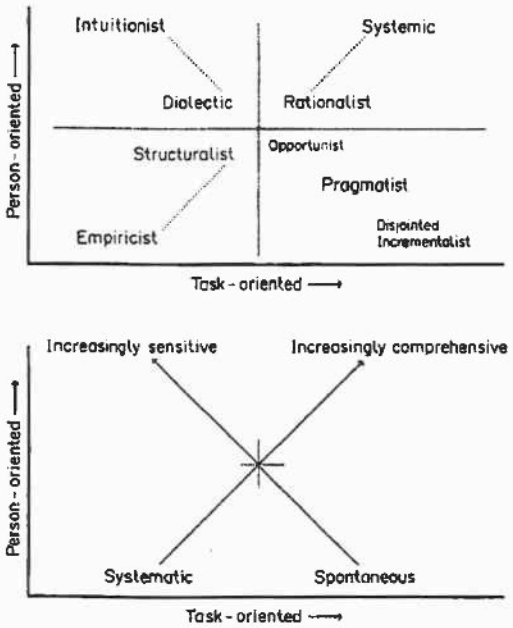

Fig. 1. Mapping the seven decision approaches on the dimensions of person-orientation and task orientation.

approaches to action. Although no claim to completeness can ever be verified, our extensive literature search suggests that no existing typology is as comprehensive, tightly delineated, and immediately practically applicable.

However, a great deal is still not clear. Our classification needs criticism or modification based on the adequacy of representation, criteria of consistency and coherence, and whether crucial factors in decision and action or even a whole distinctive approach have been omitted. As described, the approaches overlap in various ways and show commonalities, so a more fundamental (theoretical) understanding ought to be possible. Indeed, any claim to completeness would depend on such theoretical underpinning. The framework therefore poses an intellectual challenge which we are currently addressing [66].

The effects of our research method deserve comment. In comparing our findings with the classical theories of decision-making, we find that there is no neat one-to-one correspondence. Reviews of the organization field [e.g. 52, 72] reveal awareness, to a greater or lesser extent, of the various perspectives which have emerged as distinct systems in our analyses. Leading workers have handled the multiplicity in different ways. Simon's pioneering work, for example, may be interpreted as a version of the empiricist approach modified pragmatically by concepts like 'bounded rationality' and 'satisficing', and enlarged by the recognition of values and the means-end hierarchy (rationalist), the need for bargaining (dialectic) and the use of authority and standardization of procedures (structuralist) [73, 102]. However, in his major review of decision-making [103], Simon's strong preference for classical systematic approaches shows through unambiguously.

Although in much of this article, we have taken the perspective of managers within organizations, the set of approaches appears to apply far beyond this *to permeate action wherever it may occur*. As a result, each major topic or domain of human action typically gives rise to various alternative forms of conceptualization and practice, each of which is strongly linked to, or even congruent with, one of the seven principal decision approaches. For example, competing schools of social work practice can be aligned to the various approaches: the behaviourist school [62] is predominantly pragmatic; the problem-solving school [87] empiricist; the task-centred school [94] rationalist; the psychotherapeutic school [51] intuitionist; the activist community work school [32] dialectic; the functional school [77] structuralist; and the holistic school [89] systemic.

The available range of distinct approaches to issues demanding action, as described here, is rarely appreciated in practice. Irrespective of the formal completeness or justification of our framework or its conformance to established ideas, fieldwork strongly suggests that our typology is readily grasped by managers, experienced as enlightening, and easily applied. The typology apparently enables the decision-maker to gain distance from the issue,

to restrain the tendency to use a habitual approach, and to obtain a broader perspective on realistic possibilities for action. Extension of the person's own repertoire by self-development is a frequent, though not inevitable, result. Group decision-making may also improve, since each approach permits or demands varying types and degrees of participation [110].

Over-zealous adherents of each approach proclaim its completeness and effectiveness and encourage a natural desire of people to identify with just one approach. By contrast, the implication of our framework is that the effective running of any human system must transcend identification and harness all approaches, even if some are used in a rudimentary form. Sterile battles and artificially narrow views need to be abandoned, and existing studies on the properties and applications of each approach need to be complemented by further understanding of the relationships between them.

REFERENCES

1. J. Algie, *Social Values, Objectives and Action*. Kogan Page, London (1975).
2. J. Algie, *Six Ways of Deciding*. BASW, London (1976).
3. J. Algie, *Management Technology*. Manpower Services Commission, London (1986).
4. J. Algie, Managers and designers: How to bridge the gap. In K. Knight (ed.), *Participation in Systems Design*. Unicom, London (1987).
5. J. Algie and W. Foster, *The Priority Decision System*. Work Sciences, London (1985).
6. G. Allison, *Essence of Decision*. Little Brown, Boston (1971).
7. H. I. Ansoff, *Corporate Strategy*. McGraw–Hill, New York (1965).
8. S. J. Apter, *Troubled Children: Troubled Systems*. Pergamon Press, Oxford (1982).
9. J. Argenti, *Management Techniques*. Allen and Unwin, London (1969).
10. S. Arieti, *Creativity: The Magic Synthesis*. Basic Books Inc., New York (1976).
11. R. F. Bales, *Interaction Process Analysis*. University of Chicago Press, Chicago (1950).
12. B. M. Bass, *Stogdill's Handbook of Leadership* (rev. edn). Free Press, New York (1981).
13. T. Bastick, *Intuition: How We Think and Act*. John Wiley, New York (1982).
14. S. Beer, *Decision and Control*. Wiley, New York (1966).
15. R. Belbin, *Management Teams: Why They Succeed or Fail*. Heinemann, London (1981).
16. W. G. Bennis, *Changing Organizations*. McGraw–Hill, New York (1966).
17. W. G. Bennis, The artform of leadership. In S. Srivastva and associates, *The Executive Mind: New Insights on Managerial Thought and Action*. Jossey Bass, San Francisco (1983).
18. A. Bentovim and W. Kinston, Focal family therapy: a psychodynamic-systems approach. In A. Gurman and D. Kniskern (eds), *Handbook of Family Therapy*, 2nd edn. Bruner Mazel, New York (1989), in press.
19. R. R. Blake and J. S. Mouton, *The Managerial Grid*. Gulf, Houston (1964).
20. K. Blanchard and S. Johnson, *The One Minute Manager*. Collins, New York (1983).
21. H. L. Blum, *Planning for Health: Development and Application of Social Change Theory*. Human Sciences Press, New York (1974).
22. D. Braybrooke and C. Lindblom, *A Strategy of Decision*. Free Press, Glencoe (1963).
23. E. Brech, *The Principles and Practice of Management*. Longmans, New York (1963).
24. W. Brown, *Organization*. Heinemann, London (1971).
25. D. Cartwright and A. Zander, *Group Dynamics: Research and Theory*. Tavistock, London (1953).
26. J. Chapados, *Twelve Steps in Problem Solving*. United States Army Publication, Fort Bragg, NC (1972).
27. P. B. Checkland, *Systems Thinking, Systems Practice*. John Wiley, New York (1981).
28. C. W. Churchman, *The Systems Approach*. Delta, New York (1968).
29. C. W. Churchman and R. Ackoff, *Introduction to Operational Research*. Wiley, New York (1957).
30. M. D. Cohen, J. G. March and J. P. Olsen, A garbage can model of organisational choice. *Adm. Sc. Q.* **17** (1972), 1–25.
31. S. Cooke and N. Slack, *Making Management Decisions*. Prentice-Hall, Englewood Cliffs, NJ (1984).
32. P. Corrigan and P. Leonard, *Social Work Practice Under Capitalism: A Marxist Approach*. Macmillan, London (1978).
33. M. Crozier and E. Friedberg, *Actors and Systems*. University of Chicago Press, Chicago (1980).
34. Department of Health and Social Security, *The National Health Service Planning System*. HMSO, London (1976).
35. D. Donnison and V. Chapman, *Social Policy and Administration*. Allen and Unwin, London (1965).
36. Y. Dror, *Public Policy Making Re-examined*. Chandler, San Francisco (1968).
37. Y. Dror, *Design for Policy Sciences*. Elsevier, Amsterdam (1975).
38. A. Etzioni, Mixed scanning: A 'third' approach to decision-making. *Public Adm. Rev.* **27** (1967), 385–392.
39. A. Etzioni, *The Active Society*. Free Press, Glencoe (1968).
40. R. Farquarson, Application of game theory to committee procedure. In J. R. Lawrence (ed.), *Operational Research and the Social Sciences*. Tavistock, London (1966).
41. J. Feldman and H. Kanter, Organizational decision-making. In J. G. March (ed.), *Handbook of Organizations*, pp. 614–649. Rand McNally, Chicago (1965).
42. F. E. Fiedler, *A Theory of Leadership Effectiveness*. McGraw–Hill, New York (1967).
43. R. Fisher and W. Ury, *Getting to Yes*. Business Books, London (1986).
44. J. D. Frame, *Managing Projects in Organizations*. Jossey Bass, San Francisco (1987).
45. M. J. Fryer and J. V. Greenman, *Optimisation Theory: Applications in Operational Research and Economics*. Edward Arnold, London (1987).
46. J. Galtung, *Theory and Methods of Social Research*. Columbia University Press, New York (1969).
47. E. Gendlin, *Focussing*. Bantam, New York (1982).
48. H. Giller and A. Morris, *Understanding Juvenile Justice*. Croom Helm, London (1987).
49. H. Glennerster, *Social Service Budgets and Social Policy*. Allen and Unwin, London (1975).
50. J. Guildford, *Psychometric Methods*. McGraw Hill, New York (1936).
51. P. Halmos, *The Faith of the Counsellors*. Constable, London (1965).
52. C. Handy, *Understanding Organizations*. Penguin, Harmondsworth, U.K. (1976).
53. H. Heclo and A. Wildavsky, *The Private Government of Public Money*. Macmillan, London (1974).
54. R. Heller, *The Naked Manager*. Barrie and Jenkins, London (1972).
55. J. K. Hemphill, *Leader Behaviour Description*. Bureau of Business Research, Ohio State Univ., Columbus (1950).
56. C. R. Hickman and M. A. Silva, *Creating Excellence*. Unwin, New York (1984).
57. J. Howard and N. Morgenroth, Information processing

model of executive decisions. *Management Sci.* 14 (1968), 416–428.
58. A. Huczynski, *Encyclopedia of Management Development Methods*. Gower Publishing, London (1983).
59. J. Humble, *Management by Objectives in Action*. McGraw–Hill, London (1970).
60. G. Humphrey, *Thinking*. Wiley, New York (1951).
61. E. Jaques, *A General Theory of Bureaucracy*. Heinemann, London (1976).
62. D. Jehu, *Behaviour Modification in Social Work*. Wiley, New York (1972).
63. W. Kinston, Improving health care institutions. An action research approach to organisation of complex systems. In R. Trappl (ed.), *Proceedings of the 6th European Meeting on Cybernetics and Systems Research*. North–Holland Publishing Co., Amsterdam (1982).
64. W. Kinston, Purposes and the translation of values into action. *Syst. Res.* 3 (1986), 147–160.
65. W. Kinston, A total framework for inquiry. *Syst. Res.* 5 (1988), 9–25.
66. W. Kinston, *Integrating Purpose, Inquiry and Action*. Discussion Document, Sigma Centre, Brunel University, London, U.K. (1988).
67. W. Kinston and R. Rowbottom, Levels of work: New applications to the management of large organizations. *J appl. Syst. Anal.* 16 (1989), (in press).
68. H. Lasswell, *The Decision Process: Seven Categories of Functional Analysis*. University of Maryland, College Park (1956).
69. R. Likert, *The Human Organization*. McGraw–Hill, New York (1967).
70. C. Lindblom, *The Intelligence of Democracy: Decision-making Through Mutual Adjustment*. Free Press, New York (1965).
71. C. E. Lindblom and D. K. Cohen, *Usable Knowledge: Social Science and Social Problem Solving*. Yale University Press, New Haven (1979).
72. B. Lussato, *A Critical Introduction to Organisation Theory*. (Transl. from French.) Macmillan, New York (1976).
73. J. G. March and H. Simon, *Organizations*. Wiley, New York (1958).
74. R. O. Mason, A dialectical approach to strategic planning. *Management Sci.* 15 (1969), B403–B414.
75. N. Maxwell, *From Knowledge to Wisdom*. Basil Blackwell, Oxford (1984).
76. R. M. May, *Theoretical Ecology: Principles and Applications*, 2nd edn. Blackwell, Boston (1981).
77. R. Mayer, *Social Planning and Social Change*. Prentice–Hall, Englewood Cliffs (1972).
78. M. McCormack, *What They Don't Teach You at Harvard Business School*. Collins, London (1984).
79. I. McLean, *Public Choice*. Basil Blackwell, London (1987).
80. G. Millward (ed.), *Organization and Method*. Macmillan, London (1967).
81. I. I. Mitroff and F. Betz, Dialectical decision theory: A meta-theory of decision-making. *Management Sci.* 19 (1972), 11–24.
82. I. E. Morley and G. M. Stephenson, *The Social Psychology of Bargaining*. Allen and Unwin, London (1979).
83. A. Newman and R. W. Rowbottom, *Organizational Analysis*. Heinemann, London (1968).
84. G. Nierenberg, *The Art of Creative Thinking*. Simon and Schuster, New York (1982).
85. D. Novick (ed.), *Program Budgeting: Program Analysis and the Federal Budget*. Harvard University Press, Cambridge, MA (1967).
86. T. Parsons, *The Social System*. Free Press, Glencoe, IL (1951).
87. H. Perlman, *Social Casework: A Problem-solving Process*. Chicago University Press, Chicago (1957).
88. T. J. Peters and R. H. Waterman Jr, *In Search of Excellence*. Harper and Row, New York (1982).
89. A. Pincus and A. Minahan, *Social Work Practice: Model and Method*. Peacock, Itasca, IL (1973).
90. D. G. Pruitt, *Negotiation Behaviour*. Academic Press, New York (1981).
91. H. Raiffa, *Decision Analysis*. Addison Wesley, Reading, MA (1968).
92. P. Reason and J. Rowan, *Human Inquiry: A Source Book of New Paradigm Research*. John Wiley, London (1981).
93. W. J. Reddin, *Managerial Effectiveness*. McGraw–Hill, New York (1970).
94. J. Reid and L. Epstein, *Task-Centred Casework*. Columbia University Press, New York (1972).
95. R. W. Rowbottom, *Social Analysis: A Collaborative Method of Gaining Usable Scientific Knowledge of Social Institutions*. Heinemann, London (1977).
96. R. W. Rowbottom and D. Billis, *Organizational Design: The Work Levels Approach*. Gower, London (1987).
97. L. Sayles and M. Chandler, *Managing Large Systems*. Harper Row, London (1971).
98. E. H. Schein, *Career Dynamics: Matching Individual and Organizational Needs*. Addison Wesley, Reading, MA (1978).
99. E. H. Schein, *Organizational Culture and Leadership*. Jossey Bass, San Francisco (1985).
100. E. H. Schein, *The Clinical Perspective in Fieldwork*. Sage, London (1987).
101. A. Schutz, *The Phenomenology of the Social World*. Heinemann, London (1972).
102. H. A. Simon, *Administrative Behaviour*. Free Press, New York (1957).
103. H. A. Simon, *The New Science of Management Decision*. (*rev. edn.*) Harper and Row, New York (1977).
104. K. K. Smith and D. N. Berg, *Paradoxes of Group Life*. Jossey Bass, San Francisco (1987).
105. G. A. Steiner, *Top Management Planning*. Macmillan, New York (1969).
106. R. M. Stogdill and A. E. Coons (eds), *Leader Behaviour: Its Description and Measurement*. Bureau of Business Research, Ohio State University, Columbus (1957).
107. P. Swingle (ed.), *The Structure of Conflict*. Academic Press, New York (1970).
108. L. Thomas, *Focus*. Heinemann, London (1987).
109. R. Townsend, *Up the Organization: How to Stop the Company Stifling People and Strangling Profits*. Hodder and Stoughton, New York (1970).
110. V. H. Vroom and P. W. Yetton, *Leadership and Decision-making*. University of Pittsburgh Press, Pittsburgh (1973).
111. J. Warfield, Editorial: Thinking about systems. *Syst. Res.* 4 (1987), 227–234.
112. M. C. Weinstein, H. V. Fineberg and A. Elstein, *Clinical Decision Analysis*. WB Saunders, New York (1980).
113. C. H. Weiss, Research and policy making: A limited partnership. In F. Heller (ed), *The Use and Abuse of Social Science*. Sage Publications, London (1986).
114. Work Sciences, *Priorities*. Work Sciences, London (1982, 1988).
115. Work Sciences, *Resources*. Work Sciences, London (1988).
116. World Health Organization, *Guiding Principles for the Managerial Process for National Health Development*. WHO, Geneva (1980).