ABSTRACT

FACULTY OF SOCIAL SCIENCE
SOCIOLOGY

Master Of Philosophy

ADAPTIVE PROCESSES IN ORGANISATIONS
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The operational effectiveness of a social system is defined as the value placed upon its state and performance by those with interests in it. The overall effectiveness of a social system is its capacity to get and process resources, particularly information, from its environment.

The adaptive sub-system is defined as that part of a social system which processes information about contingencies for which the system is not programmed. It is a relatively high-level learning system within the organisation, whose responses to information inputs are mediated by appreciations, (combined judgements of value and fact) rather than being conditioned or autonomic. An increase in the capacity of this sub-system would tend to raise operational effectiveness of the parent system.

The capacity of a learning system is considered to be equivalent to its structural development. If such structures can be explicated, then there is the possibility of inducing them into existing systems.

A normative model of the adaptive sub-system is presented. It consists of an eight-phase cycle of activities, constituting overall an organisational learning process. The phases are 1. Feeling Needs to Change, 2. Describing the System Relevant to the Need, 3. Analysing Perspectives of the System, 3a. Feeding back these Data to Interest Groups, 4. Diagnosing, 5. Determining a Strategy, 6. Planning, 7. Implementing. 8, Reviewing. They are separated for conceptual clarity, but may overlap in practice. Each phase is elaborated, drawing on theory from diverse sources.

Five distinct roles are identified for third party helpers in the organisational learning process : process trainer, process adviser, content trainer, content adviser and 'expert' (leader, do-er). One third party may play any or all of these roles at different phases. The role played should match the existing capacity of the system.

Four case histories illustrate attempts to use the model to raise the capacity of hospital systems. The importance of phases 2 and 5 is emphasised. The model appears to be useful as a guide to action only when the principal actors have power to control the system relevant to a felt need.

Finally, some more adequate tests are suggested for the model and for the conditions in which it could be used to steer action.

ADAPTIVE PROCESSES IN ORGANISATIONS

A Thesis Submitted to the Department of Sociology, University of Southampton, in fulfillment of the requirements for the degree of Master of Philosophy.

by

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April 1971.

CONTENTS

INTRODUCTION

The dichotomy between theory and practice which is so characteristic of our society is nowhere more evident than in the debate about how to cope with, or stimulate, change. In social science itself, the debate rages fiercely between, on the one hand, the systems theorists and, on the other, those who favour the action approach. Systems theorists are rarely prepared to test their assertions or view of the world in the field, whereas those who favour an action approach are often guilty of raising empiricism, and even pragmatism, to the level of an exclusive ideology. The exceptions (e.g. Miller and Rice, 1967) are conspicuous because they are so few.

The dichotomy leads to some unfortunate and unnecessary confusions; for example, as between phenomena and processes. Such confusion has particularly bizarre results in the field where phenomena and processes most obviously interact; the study of how one thing becomes another. In this field it seems vital to establish some conceptual clarity between the WHAT and the HOW, the phenomena of change and the processes of changing; the one makes little sense without the other. But, as Havelock and his colleagues point out (1969), only a tiny percentage of such studies are concerned with both phenomenon and process. Of those that are, few combine an adequate theory of practice (the process aspects) with an adequate practice of theory (about the phenomena). Little wonder, then, that the study of how one social entity becomes another has so far provided mainly a mass of results at the level of contradictory folklore.

In this work, a few tentative moves are made towards closing the theory/practice phenomenon/process gaps in this field. In particular, an attempt is made to see how theory helps to understand the processes by which organisations adapt.

Part I contains a brief critical review of approaches to the theory and identification of effectiveness in social systems. Selections from the literature are used in an attempt to relate such approaches within a framework which could be used, operationally, to examine the state of a social system. Some types of adaptive processes are identified and related to ideas about effectiveness. Finally, there is a discussion of the phenomena of social change, distinguishing broadly between planned and unplanned varieties, and asking how change may be identified.

Part II examines some ways in which the working of adaptive processes in organisations might be facilitated. A normative model of organisational learning and adaptation is presented and some limitations on its use discussed. The model is elaborated and used as a vehicle for integrating the approaches of a number of writers on the processes of planned change and adaption. Particular attention is paid to the processes and theory of data collection, analysis, feedback, diagnosis and strategy-formation. The roles of third parties in facilitating organisational adaptation are examined. An attempt is made to see how power is used by third parties and to suggest guidelines for its appropriate use.

Part III contains accounts of four field studies conducted by the author. The organisational learning model is compared with the processes described in the four cases and its utility discussed.

Finally, in Part IV, some suggestions for tests of the model, and for the conditions in which it might be used to steer action, are discussed briefly.

CHAPTER 1. THE NATURE AND PURPOSE OF ORGANISATIONAL CHANGE.

Introduction.

In order to study the process of changing, it is first necessary to have some way of identifying the phenomenon of change when it occurs. Thus, in order to study how changes come about in an organisation, it is imperative that the organisation can be described in such a way that changes are made clear. To this end, organisations will be discussed in this chapter using ideas drawn both from the 'systems' and the 'social action' views of organisations; an attempt will be made to show how such ideas can be used to identify and analyse the phenomena of change.

Secondly, an intention to bring about change, or to influence the process of changing, implies a value judgement by the parties concerned that a different condition would somehow be 'better.' The question of what is meant by 'better' will be considered under three headings: WHAT is better (the content of the change), FOR WHOM it is better (and the value they place upon the change) and HOW it is better (the capacity of the organisation as an entity in the process of changing or adapting).

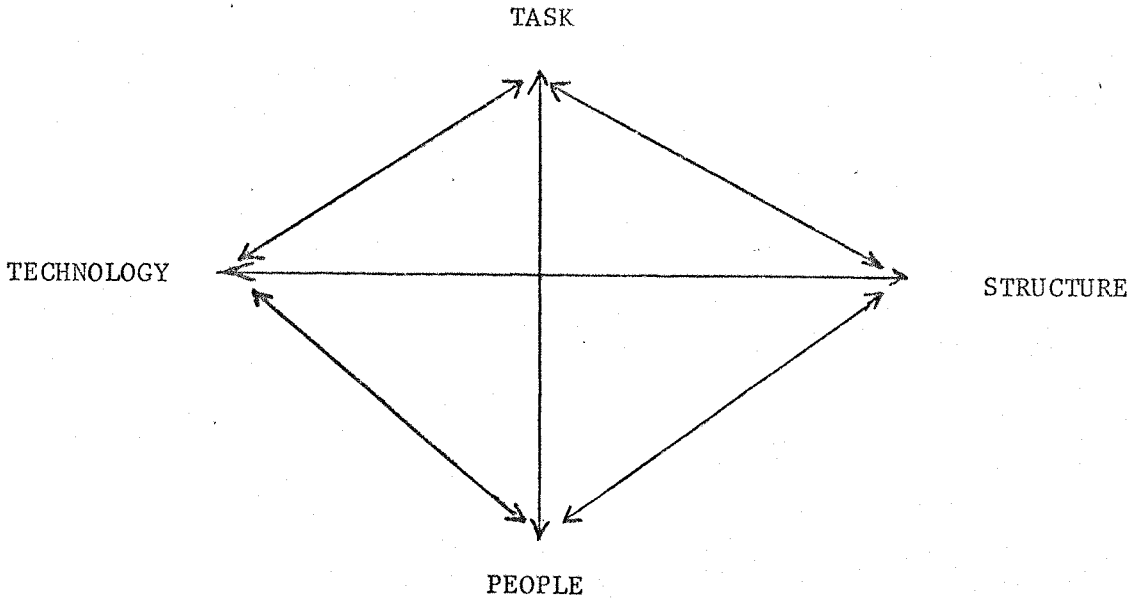
Social Systems.

A system is a way of looking at wholes and parts simultaneously, concentrating on the connections and interactions between the parts (elements) which give the whole a uniqueness different to

the sum of the parts. A knowledge of the parts is not sufficient to describe the whole, nor to predict how it will behave. For example, a knowledge of the individual members of a football team or a board of directors will not be sufficient to describe their behaviours as groups. Both sets of members work within particular structures, technologies and cultures, interacting among themselves and with their environment. It may even be possible to replace some of the members without altering the nature of the team or the board. Conversely, there may be key members, by virtue of their role, personality or whatever, whose replacement would radically transform the whole. A knowledge of both the parts and the whole is necessary to understand the workings of the system.

Leavitt (1965, p.1145) has pointed out graphically (Figure 1-1) how, at a gross level, any change in 'structure,' 'task,' 'technology' or 'people' elements in systems is likely to interact with all the other elements. If one is changed, all the others may be affected.

Figure 1-1. Interactions of Elements in a System.



The utility of this very simple (and simplified) schema is illustrated by several reported cases in which the starting point for a desired change has been far from the element it is hoped to influence. Chapple and Sayles (1961) advocate an approach designed to influence the morale and performance of employees. However, they do not start with the people directly concerned, but prefer to first manipulate work flows, which is done with both technical and social needs in mind. They argue that this is more likely to have the desired effects, and produce a good deal of evidence to support their position. Trist et al. (1963) present several examples of attempts to improve performance (measured by a wide variety of indicators) by adjusting the relationships of tasks, structures and people in coal mines. They experimented with such task variations as the completeness of a task cycle performed by a team, and structural variations such as the range and control of tasks performed by individuals. Significant effects on morale and productivity were achieved.

The omission of consideration of system interactions helps to explain the failure of many attempts at change. For example, the classic training paradigm concentrates almost entirely on the 'people' element, assuming that a change in attitude induced by training leads to a change in behaviour on the job. Hence, it is not surprising to find that many evaluation studies, for example that by Greiner et al. (1968), report little or no

change in people's attitudes but some improvements in performance. Conversely, others report a change in attitude but none in performance, or even totally unexpected outcomes such as increased labour turnover (Meigniez, 1964).

Leavitt's schema, while conceptually and practically useful, does not give an adequate account of systems theories of organisations, being somewhat mechanistic, static and 'closed' in the sense that interactions with the environment are not considered. Katz and Kahn, however, (1966, Chs. 2 and 3) give a succinct account of the characteristics of social systems. They say that all open social systems (systems which interact with their environments) have a structure of cycles of events or activities. That is, the structure is made up of regularised patterns of processes. These processes include the importation of energy (resources of all kinds), its transformation into new forms and its subsequent exportation. This general structure is controlled cybernetically by a feedback loop from the environment, in the form of information input. Open systems exist in a 'dynamic steady state,' that is, the structure remains the same but there is constant movement; a structure of events. To resist 'falling apart,' open systems have to take in an excess of inputs over outputs, since some input is 'wasted,' (that is, becomes unwanted outputs). Thus, in order to survive, they tend to grow. (Growth is not necessarily in physical size, but may be in informational 'know-how' or problem-solving capacity). Finally, organisations have several means to a given end-state and may be differentiated in structure in any number of ways.

Social organisations, as a class of open systems, are contrived and, therefore, require additional processes to achieve internal integration; values and norms to influence role behaviour in the operation of five sub-systems:

...the production or technical sub-system; (concerned with the 'throughput')

...the production-supportive system; (concerned with resource acquisition and disposal)

...the maintenance sub-system; (to attract and hold people in roles)

...the adaptive sub-system; (concerned with adaptation and change)

...the managerial sub-system; (to co-ordinate all the others).

Katz and Kahn's conception leads to a number of conclusions. The boundary of an organisation can no longer be considered as being its physical ones; the factory gates or the hospital walls. The system must include the sources and destinations of its inputs and outputs, since they are part of the flow of resources and events which make up its structure. Similarly, within the factory walls a small group (say) can no longer be considered as bounded by its location and apparent membership. Rather, it is bounded by the patterns of its interactions with (for examples) other groups in the workflow, referent groups of friends, the programmes and controls used by the management and the culture of the plant. Social systems can now be considered as being organised around the 'production system' or 'primary tasks' (Miller and Rice, 1967) which they perform; the members of such systems are those individuals or groups with an interest in that primary task; that is,

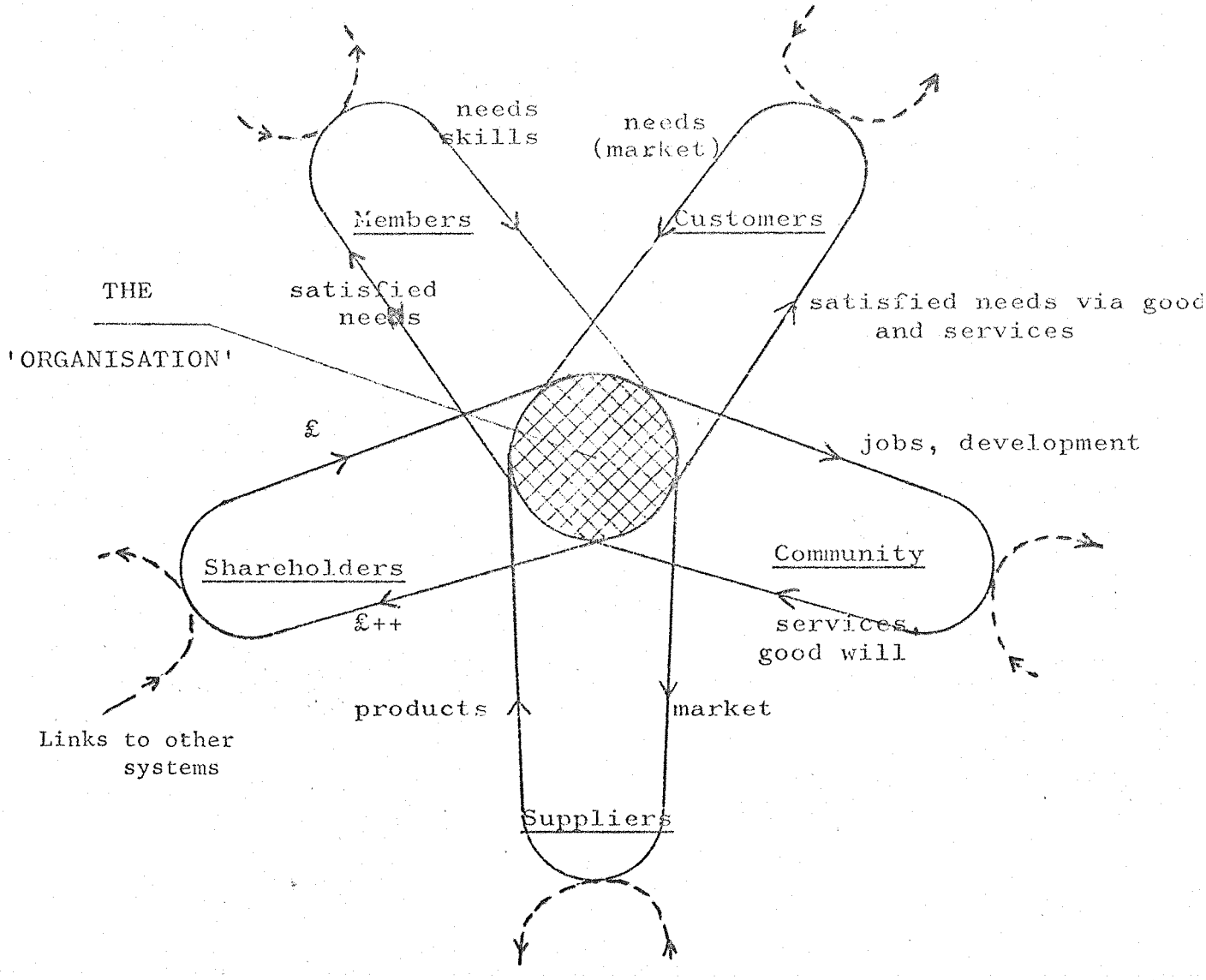
those who provide its inputs, carry out the tasks and take its outputs. Exchanges, competitions, collaborations and other kinds of transactions go on constantly between the various interested parties or groups. The definition of primary task thus becomes of crucial importance, since it determines, in effect, the boundaries of the system and its position in the environment. Primary tasks can be considered as analogous to the 'identity' of an individual (Bennis 1966, p.52). Their determination enables the colloquial question 'what business are we in' to be answered, and simultaneously constrains the make-up of the system. Thus, four conclusions follow from Katz and Kahn's conception:

1. the identities of systems are determined by the primary tasks which they perform;
2. primary tasks involve the transformation of resources of all kinds (material, financial, natural, human, ideational);
3. the boundaries of systems are not physical, but include all those elements involved in the procurement, transformation and disposal of resources;
4. in particular, systems include all those individuals or groups with an interest in the primary task.

In summary, the conclusions can be represented in a simple diagram (Figure 1-2). This shows a few examples of groups who may be interested in a particular primary task at the level

of what is commonly defined as an 'organisation,' in this case a business firm. For each group, the nature of their interests is indicated by examples of the inputs and outputs which each may provide or take.

Figure 1-2. Some Exchanges of Resources in a Social System.



An analysis of this kind can be used on any other scale; for example, in examining the primary tasks centred on one department within a business firm. Gross (1965) uses a similar approach in discussing what is meant by performance of a social system. He concludes that there are several possible criteria:

> ...input measures (the system's ability to get resources from various interest groups)
>
> ...output measures (its ability to dispose of them)
>
> ...input/output ratios (the efficiency with which it uses resources).

Such criteria may be expressed in the form of goals; that is, an input, output or input/output ratio to be achieved. Gross's criteria will be discussed below in more detail when considering the question of organisational effectiveness.

Identifying Change in Systems.

The theoretical ideas of Leavitt and of Katz and Kahn will now be used to suggest how organisational change can be identified; that is, to help answer the question WHAT has changed. Some rationale is required for monitoring the performance, structures, technologies, tasks (raisons d'etre) and problem-solving capacities of systems. Such a rationale is presented here in two parts: immediately following is a broad typology with

suggested methods for identifying major types of change, whereas in Chapter 5 it is developed as a detailed process for use in describing systems.

Identifying Structural Change. At a global level, Pugh et al. (1963) have argued for a cross-sectional, factorial approach to identify the underlying dimensions of organisations, and have succeeded in demonstrating that this can be done. They have shown it possible (1968) to produce profiles of organisations which describe and measure such dimensions as their

.....role specialisation,

.....standardisation,

.....formalisation,

.....centralisation and

.....configuration (subsuming the 'shape').

Following on from this, they have suggested (1969a) a taxonomy of organisation structures. Using their measures, it is possible quickly to establish a structural profile and to repeat such measures later to identify gross changes. (The measures seem unlikely to discriminate very well between large organisations because, as they themselves demonstrate (1969), size accounts for much of the variance in structures).

At a more qualitative, but still relatively gross level, the listing of sub-systems described by Katz and Kahn (1966, pp.39-47, quoted above) seems a promising approach. It should be possible

to check, by inspection, whether the activities required in each sub-system are indeed carried out, and whether the position changes over time. Such a procedure does not appear to have been operationalised, but seems feasible.

Johnsen (1968, p.60) has suggested, mathematically, how an organisation can be modelled, and thus change identified, by ascribing values to its goals, activities and models (knowledge used to relate goals and activities) and examining their interactions symbolically. Change then means:

> 'Change of A (Activity) values and G (Goal) values along existing relations is one type of change. In general we can say that the introduction of new elements and/or new relations is a significant change. In the same way we can say that cancelling existing elements and/or relations is also a significant change. Introduction of new elements/relations is usually a result of search and cancelling a result of learning. Of course, only the decision-makers can show satisfaction-dissatisfaction with the goal-states.'

Johnsen also reasons that, since any change in the body of decision-makers is automatically reflected in the sets of Activities, Goals and Knowledge Models of the organisation, the set of decision-makers need not be taken specifically into account. Such a model is theoretically elegant and extremely seductive but, as the author admits, becomes very complicated in practice because of the immense number of structures which can exist. However, it does have the merit of narrowing and directing the

field for empirical observation of change. (And also helps to deal with changes in performance, albeit narrowly defined). Other authors have provided theoretical (and in some cases, practical) perspectives which suggest how to set about the empirical work of identifying structural change. These can now be briefly examined.

Homans (1950) has suggested that the internal system can be described in terms of the Interactions between people (equivalent to structure), their Activities and their Sentiments. Like Leavitt (1965), he emphasises how a change in one affects the others. Katz and Kahn (1966) use a similar formulation, but with different terminology: Role Behaviour, Norms and Values. A number of authors, notably Stern (1970), Litwin and Stringer (1968) and Payne and Pheysey (1971), have noted that the interaction between these internal system elements results in a 'climate' or social environment as subjectively perceived by the actors in it. All have produced relatively simple operational measures which allow climates to be described and changes monitored. Strictly speaking, climate might be regarded as distinct from structure, but is included here for convenience.

The literature of sociometry is, of course, concerned with the Interaction aspect of Homans' model and there are several well-developed methods available for plotting interactions - ranging from attempts to map the gross social structure to those concerned to trace detailed patterns of communications. Hesselling (1966) and Weinshall (1969) are examples. Bales (1950) is probably

better known, but works mainly within small group settings. Argyle (1970) provides a basis for even more detailed description, down to very small bits of inter-personal communication.

Identifying 'People' Changes. Moving to the 'Activities' and 'Sentiments' aspects of Homans' schema (part of Leavitt's 'People' elements), there has been a vast effort devoted to the description and measurement of attitudes and other sentiments; it would be superfluous to review this work here. Activity/ behaviour measurement is much less developed theoretically, although Biddle and Thomas (1966) suggest a useful schema ranging from 'micro' levels of activity to 'macro' levels encompassing a role or function. Much empirical work has been done at a fairly gross level by Stewart (1967) and Hesselling (1966) but, as yet, no widely validated typologies or classifications are available. One aspect of behaviour which has been extensively studied is leadership and, here again, it is now relatively easy to plot changes. See, for example, Fiedler (1967). Finally, individual differences - personality, beliefs, self-images, values, intelligence and so on have been extensively studied and are monitored routinely. However, for the most part, there is little evidence that they change much in periods of organisational change, although some social scientists, e.g. Shepard (1965) set out explicitly to produce psychological growth within an organisational setting.

Identifying Task and Technology Changes. Task is seen here in terms of the function ('primary task' in Miller and Rice's (1967) terms) and identity of the organisation; the question 'what business are we in?' It seems possible to monitor changes in it by a simple process of inspection. A change in the primary task can be, however, one of the most dramatic forms of change possible, as when a prison changes from a custodial primary task to a rehabilitative one. The effects, both on the system and on its environment, can be traced in practically all system elements, (Sykes et al., 1960).

There has recently been much theoretical and practical work in identifying and measuring types of technology. Pugh et al. (1969), Perrow (1967) and Woodward (1965) have all produced methods by which changes in technology can be plotted. They describe technology in terms of such characteristics as the extent of automaticity (Pugh et al.), the extent to which operations are integrated and controllable (Woodward), and the extent to which the physical and informational materials used are standardised and capable of routine programming (Perrow).

Identifying Changes in Goals and Meaning. Silverman (1970) has pointed out that a purely systems conception of organisations is both limited and limiting. It is limited because it includes only the 'objective' description of the organisation, whereas the actors in it may perceive their world differently. It is limiting because

they may re-create their world; for example, by refusing to treat as constraints elements which a more 'objective' assessment might cause to be so regarded. He argues for a social action theory of organisations in which the materials for analysis are the meanings ascribed to events by the actors. Such an approach could be seen as a practical attempt to identify changes in goals and 'knowledge models,' as suggested by Johnsen (1968, quoted above). The point about such an approach is that it specifically acknowledges that an observer merely has one view of a system, which is no more objective than that of other actors in it. The nearest approach to objectivity is then to expose the meanings ascribed by all the actors. Such an exposure may result in consensus or leave different meanings still ascribed to the same events. Such meanings, shared or not, comprise an important aspect of the 'state' of the system.

Many researchers have used action frameworks of this kind. See, for example, Brown (1962). He evokes the different meanings ascribed to given roles and structures by various actors in his organisation, and then attempts to get them to agree on one of them. However, many practitioners concentrate only on the meanings ascribed to a limited number of aspects of the system, without attempting to relate them. There seems no reason why Silverman's method could not be applied to all the elements of social systems. Thus, in the preceding typology, as well as monitoring task, people, technology and structure changes 'objectively,' it is possible also to ascertain the meanings ascribed to the relevant situations by the actors in them. Such an approach will be developed in detail in Part II.

Identifying Changes in Effectiveness. The operational effectiveness of a social system can now be defined as

> the meanings and values placed upon a system state and its performance by the individuals and groups with interests in it.

The 'system state' includes the task, technology, structure, people and goal aspects. Any of these may be interpreted and valued differently by any of the actors. An observer may add his meanings and evaluations.

The 'performance' of the system is its ability to get resources, use them efficiently and to dispose of them (Gross, 1965, op.cit.). It can be monitored using various quantitative and qualitative indicators, of which Gross provides numerous examples. (He also notes that effectiveness includes 'structural' criteria, which are roughly the same as those listed above under 'system state'; that is, his 'structural' criteria include task, technology and people aspects in the sense used herein).

It must be emphasised that not only the assessment of performance against a criterion but the very choice of criterion is a value judgement which is likely to vary with the interests of the actors concerned. Thus, 'objective' criteria such as return on assets, may be acceptable to managers, shareholders and possibly even trades unions, but are irrelevant to customers. Delinquency rates among teenagers may be acceptable performance measures to social workers and public authorities, but seen by the

teenagers as representing unacceptable attempts at control, (Berger, 1966). Many social scientists implicitly accept the values of the dominant coalition when using or suggesting performance criteria for use in studying social systems. There are, however, increasing signs of rejection by some of the parties concerned. Some examples are:

1. To judge from private behaviour (rather than public statements) national economic performance criteria such as the balance of payments, growth in the gross national product, high level of savings, are less widely accepted than previously. (They could be seen as emphasising aspects of the system and its performance which are not valued, or which are even negatively valued).

2. The criteria of full employment and security of employment seem also to be not regarded as relevant by a growing sector of the population. (Employment in any form could be seen as reducing personal autonomy. Work as an activity may not be valued).

3. Integration of goals of management and workers is now often openly rejected as a criterion. It is often explicitly recognised by both parties that their goals are divergent. (Integration of goals, 'involvement' and similar criteria could be seen as sub-ordination).

4. The criterion of upward mobility in careers seems also less widely accepted than previously. Many craft, technical and professional workers consciously do not pursue careers up vertical hierarchies. (The acceptance of upward mobility as a criterion could be seen as accepting dependence upon those who are already 'up,' and of their values, constituting a denial of the self).

Thus, in order to assess performance, it is necessary to include those with interests in the primary tasks of the system in both the choice of criteria and the determination of goals or standards (attainment against criteria). Evan (1966) has taken a step towards this. He suggests that organisations can be seen as having 'organisation sets,' analogous to role sets for individuals, and that it is both appropriate and possible to conceive of performance measures which monitor the flow of resources from a system to and from other members of the set, (cf. Figure 1-2 above). An example of his method is reproduced as Figure 1-3.

The Northern Electric Company has taken a further step, in setting up 'directorates' which represent the organisation in its relationships with each member of its set. The directorates have, among other functions, the job of producing criteria and monitoring effectiveness (that is, both the system state and its performance as defined herein) from their point of view (Dale, 1969).

Thus, the task of identifying WHAT changes have occurred, FOR WHOM and whether they are 'better' for those concerned has now been considered. It remains to examine HOW a social system may be 'better.'

Overall Effectiveness, or Capacity.

In the terms used above, the concept of overall effectiveness is probably a snare and a delusion for, as Aiken and Hage (1968) point out, boundaries are constantly changing as systems

Figure 1 - 3 Resource Flows Among Members of An Organisation Set. Examples of Evan's Method.

NUMBER OF PRAISEWORTHY MENTIONS RECEIVED BY

NUMBER OF PRAISEWORTHY MENTIONS MADE BY	A.M.	FORD	CHRYSLER	G.M.	TOTAL
A.M.		10	5	15	30
FORD	2		5	15	22
CHRYSLER	3	8		13	24
G.M.	0	4	6		10
TOTAL	5	22	16	43	

Hypothetical Matrix of Flow of
Influence on Styling Decisions in the Automobile Industry
(as Indexed by Frequency of Praiseworthy Mentions
in the Minutes of Management Meetings)

FLOW OF ENGINEERING PERSONNEL TO

FLOW OF ENGINEERING PERSONNEL FROM	A.M.	FORD	CHRYSLER	G.M.	TOTAL
A.M.		15	5	40	60
FORD	5		5	25	35
CHRYSLER	7	8		35	50
G.M.	2	12	6		20
TOTAL	14	35	16	100	

- Hypothetical Flow of Engineering Personnel, 1955–1960

collaborate and join up with other systems. Many writers have concluded that the ultimate overall test of effectiveness is the survival of the organisation. (For example, March and Simon, 1958, p.84). However, survival is a 'black and white' criterion which does not adequately reflect the variations which are possible. Bennis (1966, pp.50-55) suggests that survival requires the system to be adaptive to changes in its environment, to have a positive identity (including an internal 'harmony' or goodness of fit between elements) and to be able to test reality ('to be able to perceive the world and itself correctly'). He calls these conditions 'organisational health'. Etzioni (1961) and Seashore and Yuchtman (1968) suggest that the relative ability to get resources from the environment is a more adequate test. This implies that overall effectiveness is a dimension, rather than simply a condition which either 'is' or 'is not'.

Schroder et al. (1967), working initially with individuals and small groups, but latterly with larger systems, are particularly concerned with a social system's ability to learn. They postulate (p.12) two kinds of learning:

...(a) the development of response patterns, attitudes, roles and rule application. (WHAT is learnt - the CONTENT);

...(b) the development of information-processing structures (the adaptive orientation, or CAPACITY to learn content).

A high-capacity system, (labelled 'cognitively complex' in the individual), is better able to cope with its environment, since

it can handle more complex information. Also, its responses are not necessarily automatic or conditioned, since it can use higher-order rules for dealing with a given input of information. It can choose an existing response from a repertoire or generate a new one. Finally, it can initiate as well as respond to change. The high-capacity individual or larger system is, therefore, more independent and autonomous (Harvey, Hunt and Schroder, 1961).

The position of Schroder et al., is in line with Bennis's description of organisational health, except that their 'system capacity' is a dimension. Bennis argues that operational effectiveness follows from organisational health and, indeed, Schroder et al. produce experimental evidence to show that high-capacity individuals or groups are more operationally effective. Using a different methodology, Gruenfeld (1970, 1970a) has demonstrated that individuals who are unable to separate information from its context ('field dependent' personalities) are ineffective leaders; those who can separate it and who can also choose a response to suit the situation ('field independent' and 'mobile' personalities) are more effective. This might indicate that the latter are likely to be individuals with a high information-processing capacity.

Thus, a social system which has a high capacity for processing information (is 'healthy' or whatever) is more likely to be operationally effective than one which has low capacity. Experimental support for this proposition at the level of large systems

comes from a study by Estaven et al. (1970). They monitored flows of information from industrial organisations to the members of their organisation 'sets' and found that operational effectiveness (measured by conventional financial economic criteria) was higher in those where information flow was most frequent and widespread.

Identifying Changes in Capacity. It has been argued above that a change in capacity can explain HOW a system gets 'better' or more effective. However, such changes are themselves substantive changes in the system, and can be seen as structural changes in the adaptive sub-system (Katz and Kahn, 1966, quoted on p.1-5). Few methods are available for monitoring changes in system capacity. Those which are in use are much more processual than the cross-sectional, factorial methods previously suggested for identifying other changes. Among the best known are various methods of checking on how a system deals with critical incidents. Other approaches are to deliberately put a new input, say, a rumour of financial difficulties, in to the system and watch how it responds. (There are obviously some ethical difficulties with the latter approach!) A related method is the tracer study, in which a researcher himself (Combey, 1971) follows an input right through a system. Reactions to crises impinging on the system from its environment may also offer clues as to its adaptability and reality-testing. However, an adequate methodology for identifying changes in system capacity has yet to be developed.

Metamorphosis.

A word of caution about planned change. Several writers in recent years have drawn attention to what seem to be inexorable processes whereby all the members of certain classes of organisation pass, in time, through the same structural changes. Tsouderos (1955), in studying ten voluntary associations, noted that if values of certain of their key variables were plotted in a time series, they all went through the same stages of growth.

Starbuck (1965), using mathematical analysis of structural data, has demonstrated similar phenomena and Stopford (1968) has, in an analysis of several hundred international firms, demonstrated that they all tend to pass through a series of metamorphoses from one configuration to another. Weinshall (1970) has pointed out that whole industries may go through similar stages due to the demands of their technology and Schon (1970, p.776) has noted a general shift to looser, network forms of structure as technologies (especially of information-handling) evolve.

Clearly, it would be naive to assume all of such massive change can be planned. Perhaps, instead, an attempt should be made to see what must come, attempt to analyse its consequences, and to smooth the transition. This itself may involve planning on a smaller scale, although facilitation would be a better term. In Part II an attempt will be made to show how such facilitation might work.

SUMMARY.

In this chapter, organisations are discussed initially as social systems. To adequately describe them it is necessary to understand the relationships and interactions of the parts which make up the whole. Major parts (elements) are tasks, technologies, structures and people. The basic activity of social systems is the procurement, transformation and disposal of energy and resources; human, material, financial, natural and informational. The conception of organisations as social systems leads to four conclusions:

1. their identities are determined by the primary tasks which they perform;
2. their primary tasks involve the transformation of resources of all kinds;
3. their boundaries are not simply physical, but include all those elements involved in the procurement, transformation and disposal of resources;
4. in particular, social systems include all those individuals or groups with an interest in their primary tasks.

The description of organisations as social systems is used to provide a typology for identifying changes in them. General methods are considered for identifying changes in tasks, technologies, structures, people and goals (the state of the system) and in inputs, outputs and efficiency (the performance of the system).

Operational effectiveness is defined as the meanings and values ascribed to system states and performances by those with interests in them. It is emphasised that such meanings and values are not objective, but vary with the perspective of the actor concerned. The choice of performance criterion is also a subjective judgement. Social scientists should not automatically accept either the performance criteria or assessments of attainment against such criteria made by dominant coalitions.

The overall effectiveness of a social system is considered to be its capacity to get and process resources, particularly information. This is labelled system capacity (or 'organisational health'). Systems with high capacity for information-processing are likely to be operationally effective. Not all changes in system states, performance and effectiveness result from changes in system capacity for information-processing. Systems tend to go through identifiable and major changes in form as they age and grow.

In Chapter 2, the adaptive sub-system, which is that part of a social system concerned with information-processing capacity, will be considered, with an examination of its general structure. Its detailed processes will be considered in Part II.

CHAPTER 2. ADAPTIVE SUB-SYSTEMS.

Functions of the Adaptive Sub-System.

In Chapter 1, an adaptive sub-system was considered to be that part of a social system which processes information relevant to change and adaptation. Its functions will now be further defined. In general, an adaptive sub-system detects actual or potential changes in a system as a whole, or in its environment. Such information is interpreted and conveyed to relevant parts of the system. New information which results is exported. It is hardly appropriate to think in terms of dealing with 'internal' and 'external' changes, because the system boundaries will vary with the content of the change and the parties who are interested in it; a change may introduce new interest groups or other system elements.

Programmed responses, which may be considered as analogous to autonomic or conditioned responses in an individual, are not functions of the adaptive sub-system. They are more appropriately considered as part of the managerial system which controls the primary task. However, the adaptive sub-system does play a part in the development of new programmes, since they may result from a given change which it detects. Its function is dealing with information for which no programmes exist. Important components of such information are the meanings attached to a given event by different actors in the situation. Such subjective perceptions

are just as real, and may represent in themselves just as significant changes, as the objective events to which they refer. For example, workers and management may agree with the objective fact that wages have been raised, but the two groups may have quite different beliefs about the motives for raising them.

Structure and Capacity of the Adaptive Sub-System.

In Chapter 1, it was argued that a system with a high capacity for information-processing is likely to be operationally effective. Therefore, a concern of practical importance is how is such capacity developed.

As has been seen, a social system has a structure made up of events and interactions; processes which have become regular and stable. The first step towards developing the capacity of an adaptive sub-system is to see whether such structures exist; that is, whether the sub-system is present. It can be hypothesised that, if the system as a whole has been in existence for any length of time, some such structures must exist or the system would not have survived. However, there are structures and structures. Schroder et al. (1967,Ch.2) suggest that a human system's capacity to process information depends on structural complexity (of its cognitive apparatus). The structures may be very simple, and capable only of autonomic or conditioned responses to known stimuli; or complex and capable of using, rejecting or even generating a range of higher-order rules to deal with a stimulus. The complex structure can deal better

with previously unknown stimuli or with other conditions of uncertainty. In other words, the capacity of a system to process information is equivalent to its structural complexity. If such structures can be made explicit, the possibility arises of consciously introducing them into a system. Schroder and his colleagues have made some progress towards such an aim with individuals, (1967:159/161).It is now appropriate to examine the work of others who have been more concerned to describe the processes which, when stabilised, make up the structure of the adaptive sub-system in large organisations.

Models of the Adaptive Sub-System.

Katz and Kahn, who give a clear account of the nature of social systems, and who list their essential sub-systems, have little to say about the dynamics of the latter. In a short section (1966 : 90-94), they concentrate on the functions (intelligence, research and development) and isolated mechanisms (making recommendations to management) of the adaptive sub-system. Its dynamics (functioning) are summed up in the phrase 'pressure for change.' They do not discuss how this pressure is generated and operates, although they note that

> 'Social Systems have structure, but it is a structure of events rather than physical parts, a structure therefore inseparable from the functioning of the system.' (Emphasis added).
>
> (1966: 69).

Indeed, few systems theorists appear to pursue the logical implication of this idea. If they did, there would have to be

many more studies in which events and their relationships are traced through time. Such longitudinal, processual methods are used, of course, but are rarely related to the more cross-sectional picture provided by systems theorists.

One of the earliest attempts to describe adaptive sub-systems, itself based on a review of the literature at that time, was made by Lippitt, Watson and Westley. They postulate (1958, p.130) five general phases of the adaptive process:

1. Development of a need for change ('unfreezing').
2. Establishment of a change relationship (between some agent and the system).
3. Working toward change (moving).
4. Generalisation and stabilisation of change ('freezing').
5. Achieving a terminal relationship (between agent and system).

Mann has made extensive use of this analysis in planning change in a variety of organisations, but points out that, in practice, the phases frequently overlap, get out of sequence, or occur simultaneously, (Mann and Williams, 1960). In another more recent study (1968), Mann combines this approach with an attempt to feed in substantive knowledge to an organisation which is relevant to the needs it perceives. In this case the substantive knowledge input was derived from previous basic research by colleagues in the same or comparable organisations.

Holloway (1967) describes an approach which combines much of the analysis of Lippitt et al., with a carefully planned sequence of activities, thus:

Principles.	Processes.
1. Establish climate and commitment for improvement.	Plan and administer a survey.
2. Create awareness and understanding of problems/needs.	Present findings to organisation leaders.
3. Build motivation and co-operation throughout the organisation.	Provide feedback to all organisation members.
4. Provide for problem analysis and action.	Follow through with problem-solving (group) sessions. Plan and take action.
5. Review and reinforce results.	Report to leaders.
6. Strengthen long-range plans and programmes.	Launch overall plan for improving structures, performance, communication and individual development.

(This schema is presented by the author as a continuing cycle of activities).

All of these analyses concentrate mainly on the 'internal' workings of the adaptive subsystem, with sometimes an implication that needs for adaptation might arise externally as well as from within. Schein (1965 : 99-103) presents a more complete analysis (his 'adaptive-coping' cycle) and goes on to describe typical problems and pitfalls which occur at each stage:

Stage.	Problems/Pitfalls.
1. Sensing a change in the external or internal environment.	Failure to sense changes in the environment, or to do so accurately.
2. Importing the relevant information about the change into those parts of the organisation which can act upon it.	Failure to get the relevant information to those parts of the organisation which can act upon or use it.
3. Changing production or conversion processes inside the organisation according to the information obtained.	Failure to influence the conversion or production system to make the necessary changes.
4. Stabilising internal changes while reducing or managing undesired by-products (undesired changes in related systems which have resulted from the desired changes).	Failure to consider the impact of changes on other parts of the system and failure to achieve stable change.
5. Exporting new products, services, and so on, which are more in line with the perceived changes in the environment.	Failure to export the new product, service or information,
6. Obtaining feedback on the success of the change.	Failure to obtain feedback on the success of the change.

It can be seen that this is an analysis which is both more comprehensive and more systemic than the preceding ones. The emphasis on the external environment is important, as witness such instances as industrial firms continuing to produce products (e.g., pencils) for which the market is much reduced because of the development of other means of performing the same function (e.g., ball-point pens): adequate means of sensing technological developments could have avoided such errors. Elsewhere (1969 : 47), Schein has produced an analysis of problem-solving and decision-making processes within small groups. This appears to be an elaboration of stages 2 and 3 of his 'adaptive-coping' cycle.

A Synthesis of Models of the Adaptive Sub-System.

By far the most thorough review of models of adaptation is that by Havelock et al. (1969). In a study of over four thousand sources, they identified three primary models which they called the

...Social Interaction (S-I) model, the

...Research, Development + Diffusion (R, D and D) model, and the

...Problem-Solver (P-S) model.

The first two of these models conceive of the system which is adapting as the 'target' system, while the third conceives of it as either a 'client' system or as one behaving autonomously. The last model is of more immediate relevance to the subject matter of this work, but it is necessary briefly to consider how some aspects of the first two may also be relevant.

The S-I model, developed mainly by rural sociologists, is concerned with the process by which a system becomes aware of new knowledge, and the personal influence processes which lead to its eventual adoption.

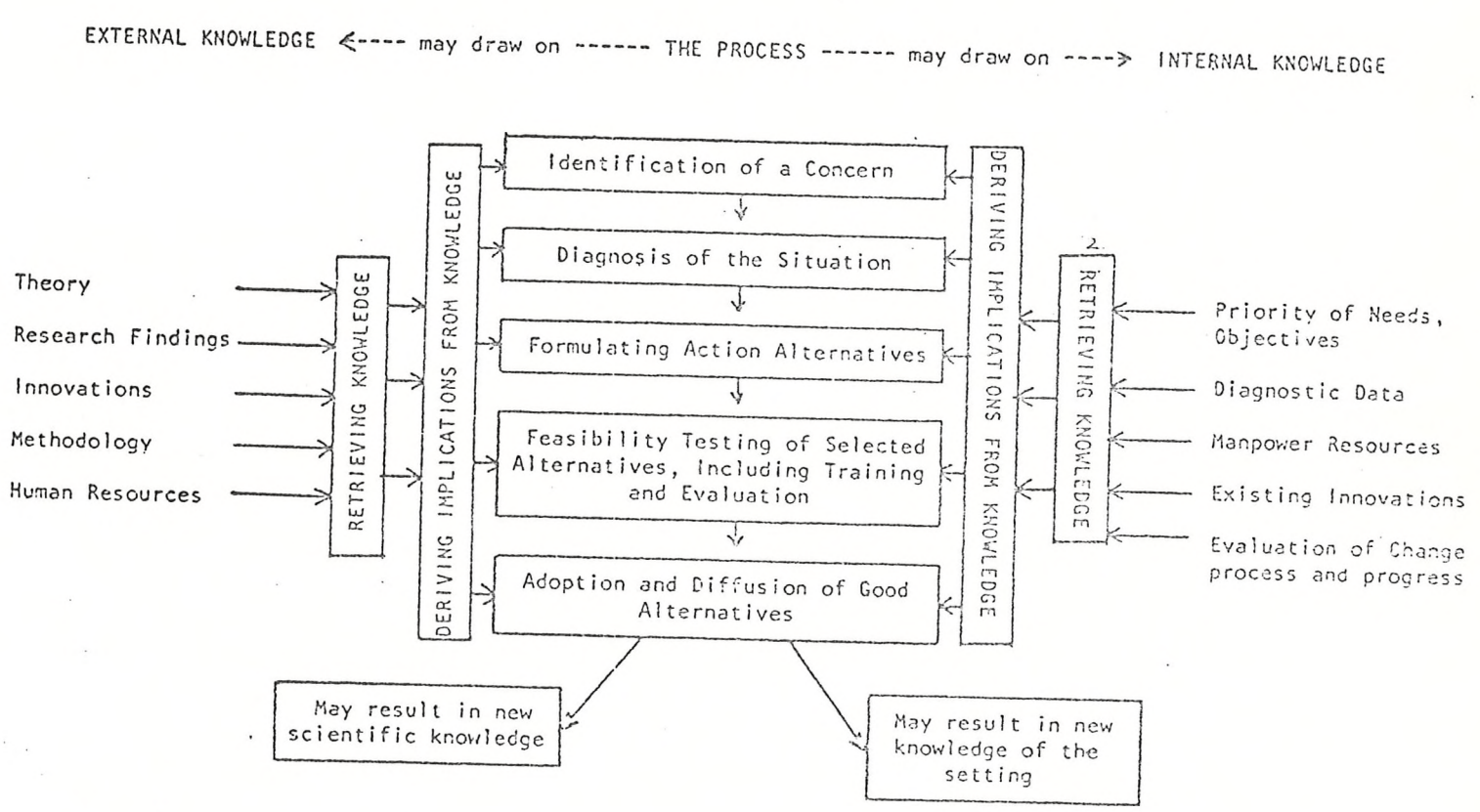
The R, D and D model starts with the discovery or invention of new knowledge (research). This is followed by a development phase and finally one of diffusion to target systems. The primary focus throughout is on the sender, whereas in the S-I model, the receiver is the primary focus.

The P-S model includes most of those already reviewed in this chapter. Lippitt (quoted in Havelock et al. 1969 : 10-63) suggests that it can be summarised as in Figure 2-1.

Havelock points out that the S-I model may be viewed as a detailed look at one phase (adoption) of the R, D and D model. Similarly, the P-S model may be seen as one kind of 'development' activity within the R, D and D model (cf. Glaser and Strauss, 1967; Schon, 1970). P-S theorists may also be concerned to spread their innovations, using the S-I model. Havelock goes on to suggest a 'Linkage Model' which integrates the three approaches somewhat. It is built around the idea of the user as problem-solver, drawing on and being influenced by knowledge in his environment (both internal and external). The Linkage Model is summarised in Figure 2-2.

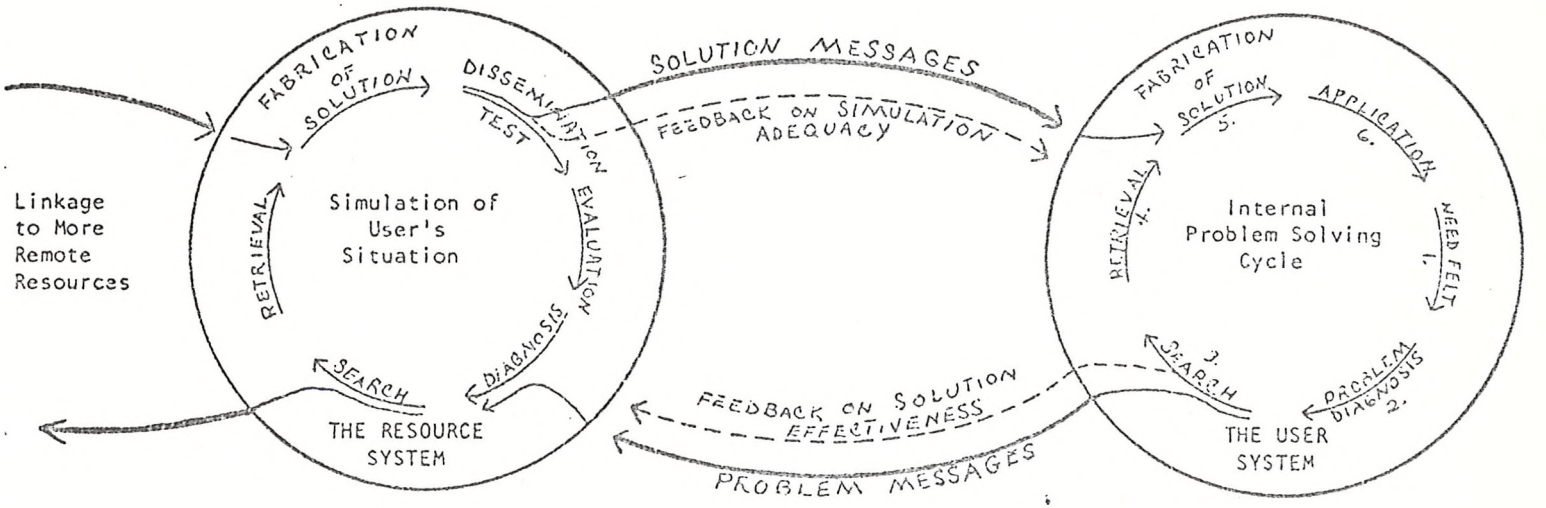
Combined with Lippitt's revision of the P-S model (op.cit.), which gives more adequate detail on the right-hand side

FIGURE 2-1 Research Utilization Problem-Solving Model*



*Adapted by Ronald Lippitt, March, 1969 from "The Study of Change as a Concept" by Charles Jung and Ronald Lippitt. Reprinted from THEORY INTO PRACTICE, Vol. V, No. 1, February, 1966.

FIGURE 2-2 The Linkage Process



From the Linkage Perspective:

1. Resource system must recapitulate or adequately simulate the user's problem-solving process.
2. The user must be able to understand (and simulate) the research, development, and evaluation processes employed by the resource system in the fabrication of solutions.
3. Resource and user must provide reciprocal feedback.
4. Successful linkage experiences build channels for efficient dissemination.

of the diagram, Havelock's model offers a helpful perspective and means for studying the adaptive sub-system of an organisation. Indeed, it is now possible to examine some typical strategies for facilitating the working of the adaptive sub-system.

Typical Strategies for Facilitating Adaptation.

(a) Starting with the User System. It is clear from Havelock's linkage process diagram that planned changes within a system are likely to involve the P-S process. They may or may not draw on knowledge and other resources from outside the system. By definition, the P-S approach is concerned with 'goodness of fit' between the elements of the system and, possibly, also with its environment. There are many studies of this type reported in the literature.

Brown (1962) describes how organisation structures and procedures evolved in an engineering factory; Wilson (1967) presents a schema outlining the system elements which have to be fitted together in most organisations; Katz and Kahn (1966,p.450) discuss the use of individual, group and organisational counselling and therapy as a means of improving 'goodness of fit'; Lawrence and Lorsch (1969) discuss their methods of diagnosing organisations, environments and technologies and fitting them together to achieve 'integration', and Hesselling (1966) describes attempts made to analyse structures, cultures and other aspects of organisations to bring about a better fit. Finally, the massive output of the Tavistock Institute centres around this theme. See, for example, Trist et al. (1963) and Miller and Rice (1967).

Some of the studies which purport to be solely concerned with goodness of fit actually have a strongly normative flavour. For example, the work by Shepard and others in the TRW systems company, reported by Davis (1967), clearly involves attempts to induce new cultural norms, although the emphasis in the published accounts is on solving problems. However, Davis' appendix makes it clear that new norms are central to their approach. Shepard himself (1965, 1970) has never made any secret of his purposes, which are to produce a culture based on collaboration and consensus, rather than conflict and competition. Similarly, Blake's organisational development approach (1964) and many of the strategies derived from it (see Reddin, 1970) - claim to 'diagnose' organisational functioning. To some extent they do, but in one important respect persist in completely ignoring it; whilst offering a normative prescription, most of these approaches involve developing hierarchical work 'teams,' irrespective of whether the pattern of task interactions in the organisation makes them truly a team or group. (It is questionable whether this approach can even be described as normative; the practitioners concerned are surely not so naive as to really believe that the teams on the organisation chart are necessarily the real ones and that 'groups' with no natural task relationships should be developed?) Some of the Tavistock Institute's work, particularly that which is concerned to introduce the idea of autonomous work groups, has in recent years taken on a more normative flavour, by examining the system to find out how such groups can be introduced.

A rather more extreme approach is used by some operational researchers. Nadler (1966) argues that, in examining a system, its present state and performance should be ignored. Instead, the functions of the system should be defined and a theoretical ideal system designed to perform such functions. Then, the body of relevant knowledge and available technology is examined to see whether such a design could be realised, possibly by creating new technology or equipment. The results of such on examination produce an ultimately realistic system design. Finally, the existing system is examined to see where it differs from the ideal and strategies and resources are mobilised to close the gap. It should be noted that this is a highly problem-centred approach (whereas the previous examples are solution-centred), since the solution is not offered until the system functions have been clarified and the design process matched to the existing system.

(b) Strategies Starting Outside the User System. Approaches which start in the 'resource system' (as distinct from those in which the resource system responds to requests for help from the 'user system') seem much more likely to be normative in character. Well-known examples are those reported by Likert (1967), in which (for example) comparisons of some aspects of an organisation's leadership styles are made with an ideal style (Likert's 'System 4'),

followed by attempts to induce the ideal style. Parts of Blake's work involve a similar attempt at induction (1964). Argyris (1964) is concerned in much of his work to induce more authentic, open ways of behaving in top management groups. Many group dynamics trainers, working mainly at the small group level, claim to be non-directive, non-evaluative and yet to be concerned to induce similar norms to those of Argyris. Pages(in Press) in a devastating critique, argues that such practitioners may be largely unaware of their own norms, or of the pervasiveness of them.

Many explicitly normative approaches have come to be labelled as 'developmental'. In the sense that many are concerned to train individuals and groups to become less dependent, more tolerant of ambiguity and otherwise more 'mature', this is the case. But there seems to be great confusion between ideas of psychological growth and systems growth. The latter still tends to be seen in terms of growth of resources of all kinds, whereas, as was seen in Chapter 1, it may be more appropriate to think in terms of growth in problem-solving capability, or 'potential energy'. Thus, the net effect for the organisation could be a shrinkage in physical size, or even a dismantling of parts of it. It is clear, too, that the pursuit of certain normative positions by the resource system may result in conflict of a dialectical kind with the user system. The outcomes of such conflict may, of course, be uncertain. In all cases where the resource system attempts to induce change irrespective of the user's perceived needs, then Havelock's linkage model must be called into question. It certainly does not

adequately describe the dialectic conflict situation. Conflict is allowed for via feedback, but there is no means of resolving a complete disagreement. The outcomes of the latter are uncertain, and may represent neither of the original positions of user and resource system.

Reasons for a Normative Approach.

Clearly there is a range of approaches possible, from a totally problem-centred one to one which is largely normative. To judge from the literature, many social scientists strive hard to minimise the normative character of their work, but it seems equally possible to suggest reasons why they might on occasions wish to maximise it. These include,

1. Because of a wish to change the values or culture of another system. (For example, to try to make an approved school organisation adopt rehabilitation rather than punishment and custody as values).

2. Because there may be relevant theory to indicate that a change is desirable (e.g. some psychologists argue that individuals should be actively helped to become more mature in order to cope better with an increasingly turbulent environment).

3. Because of 'Schon's Law' (1970, p.836), which postulates that 'with the loss of the stable state...no idea in good currency (with the user system) is appropriate to the circumstances of its time.' This may be so because,

as Emery and Trist have suggested (1965), in 'turbulent' conditions, the interactions of elements in a system's environment cause inputs to impinge constantly and in unpredictable ways upon the system itself.

4. Because the resource system may perceive that the user system is operationally ineffective for some interest group. For examples:

   (a) the resource system may not value the state and performance of the user system in meeting its own (the resource system's) needs;

   (b) it may see that, whereas a dominant coalition regards the system as effective, a minority does not even have an opportunity to make its evaluation known.

This fourth reason for taking a normative approach has great implications for the role of the external resource person, primarily that he comes to terms with his own power and its uses. This topic will be further pursued in Chapter 10, along with the wider question of the role of third parties in facilitating the working of the adaptive sub-system.

SUMMARY.

In this chapter the adaptive sub-system is defined as that part of a social system which processes information relevant to change and adaptation. Its functions are to detect actual or

potential changes in a system or its environment, interpret the information, convey it to the relevant part of the system and export new information which results. It is not concerned with system changes for which programmes already exist (a function of the management control system), but its sensing of new kinds of changes may result in new programmes to deal with them in the future. Both objective events and subjective perceptions of them are the province of the adaptive sub-system.

The capacity of an adaptive sub-system to process information is equivalent to its structural complexity. If such structures can be understood and articulated, it may be possible to introduce them into an existing system, thus raising its capacity. Longitudinal accounts of the processes which, when stabilised, make up the adaptive system, are reviewed. Most agree on a cyclical pattern of events with search activities at every stage and feedback from one stage to another. Three major variations are listed. The Social Interaction model is mainly concerned with the processes by which a system becomes aware of new knowledge and the personal influence processes which lead to its eventual adoption. The Research, Development and Diffusion model starts with the discovery or invention of new knowledge, followed by a development phase and diffusion to user systems. Both of these models lead to strategies for facilitating adaptations which are normative in character and start outside the user system. The Problem-Solving model is less likely to lead to normative strategies and starts with the perception of a problem by a user system; external resources may or may not be used to help deal with the problem.

CONCLUSION TO PART I.

Some existing ideas about the nature of organisations, about the process of adaptation and about the phenomenom of change have been reviewed. Such knowledge (particularly about the process) is very limited but seems to provide at least a base from which to develop a more adequate approach to the study of organisational adaptation. Surprisingly, there have been few attempts to do so, or even to study the processes and phenomena of change together. In Part II, therefore, an attempt will be made to start on such a development by suggesting a normative, testable model of adaptive sub-systems in social organisations.

CHAPTER 3. ORGANISATIONAL LEARNING.

Introduction to Part II.

In Part I, the operational effectiveness of a social system was defined as the meanings and values ascribed to its state and performance by those with interests in it. It was suggested that its operational effectiveness would tend to increase with the development of its capacity to process information about changes for which it was not programmed. The adaptive sub-system was defined as that part of the system which senses and processes information about such changes. The capacity of the adaptive sub-system was thought likely to increase as its structure developed. If such structures could be described, it was conceivable that they could be induced in an existing system, thus raising its capacity and, in the long term, its operational effectiveness.

The general structure of the adaptive sub-system, as elucidated by researches reported in the literature, was described. It consists of a 'problem-solving' cycle of events in which a change is detected, information about it is collected and conveyed to relevant parts of the system and new information subsequently exported.

In considering this structure, virtually all published researches concentrate upon the 'objective reality' of the events of which it consists. However, this is not an adequate approach. As has already been noted, the determination of operational effectiveness involves the exercise of judgements about the state and performance of a system. Such judgements involve both a particular conception of

reality and a particular set of values. Neither conception of reality nor values are fixed; a change in one may influence the other. Before going on to consider the detailed processes of the adaptive sub-system, it is necessary first to examine how these general processes of judgement work.

The Appreciative System.

It was seen in Chapter 2, and has been succinctly noted by Vickers (1971, 108-9) that 'it is unsatisfactory to posit processes, the working of which cannot be modelled; but science must often do so'. Vickers posits that social systems learn in ways which are analogous to the operations of automatic, mechanical control systems.

> 'The simplest control mechanism has three capacities - to receive information, to compare it with a standard and, in response to the comparison, to select a response, be this only to make or withhold the only response of which it is capable. In highly developed systems, all three capacities become extensible by learning'.

In the simplest, physical systems, change is mediated solely by exchanges and transformations of energy. More complex, biological systems are also concerned with energy exchanges but are characterised by the emergence of 'responsiveness'; the ability to use information (cues, stimuli, recognition of patterns, association and so on) to mediate a change. In psycho-social systems a further dimension is added:

> 'the conceptual system whereby humans represent, value, interpret and increasingly create the world in which they effectively live'. (Vickers, 1971, 102).

Vickers notes that change is now mediated by this process of Appreciation:

> 'a word, not yet appropriated by science, which in its ordinary use (as in 'appreciation of a situation') implies a combined judgement of value and fact'. (emphasis added)

and that:

> 'It would be absurd to suppose that the human mind which, whatever else it does, clearly functions as a regulator, would or could select facts without values to make them relevant. The illusion that science does just this has contributed much to obscuring the real problems associated with value'. (1971 : 108).

Thus, the appreciative system is made up of a 'reality system' and a 'value system'. It is not concerned with programmed responses to known changes (which were considered in Chapter 2 to be the province of the managerial control system). On the contrary, it can be seen as an essential part of the adaptive sub-system. The capacity of the latter, therefore, must be considered as having a value element as well as a reality element. The development of information-processing structures (Schroder et al, 1967) must be considered as the development both of its capacity to learn 'content' (rules, knowledge, facts, new programmes and so on) and its capacity to acquire or modify values. A development in values may result in (say) a new programme to cope with a given reality and, conversely, a new conception of reality may lead to a change in values. Thus, in this interactive process, standards both of value and fact are generated.

The study of such a system is obviously difficult but, as Vickers points out:

> 'despite the difficulty of using an instrument (the appreciative system) to study itself, the psycho-social sciences have already compiled an important body of knowledge about it'.

This is most apparent, he argues, in the fields of child development, cultural anthropology and individual pathology. In all three, the development of standards of both value and fact can actually be watched by an observer. For example:

> 'The law consists essentially in schemata by which aspects of transactions are distinguished and evaluated; but it is only in recent times, under the influence of sociology, that jurists have accepted the view that these schemata are generated and changed by the very process of applying them'. (1971 : 106).

In the rest of Part II, an attempt will be made to clarify the structures of the adaptive sub-system, examining how its capacity to process information about both facts and values is developed. The attempt is built upon a normative general model of the learning process in organisations.

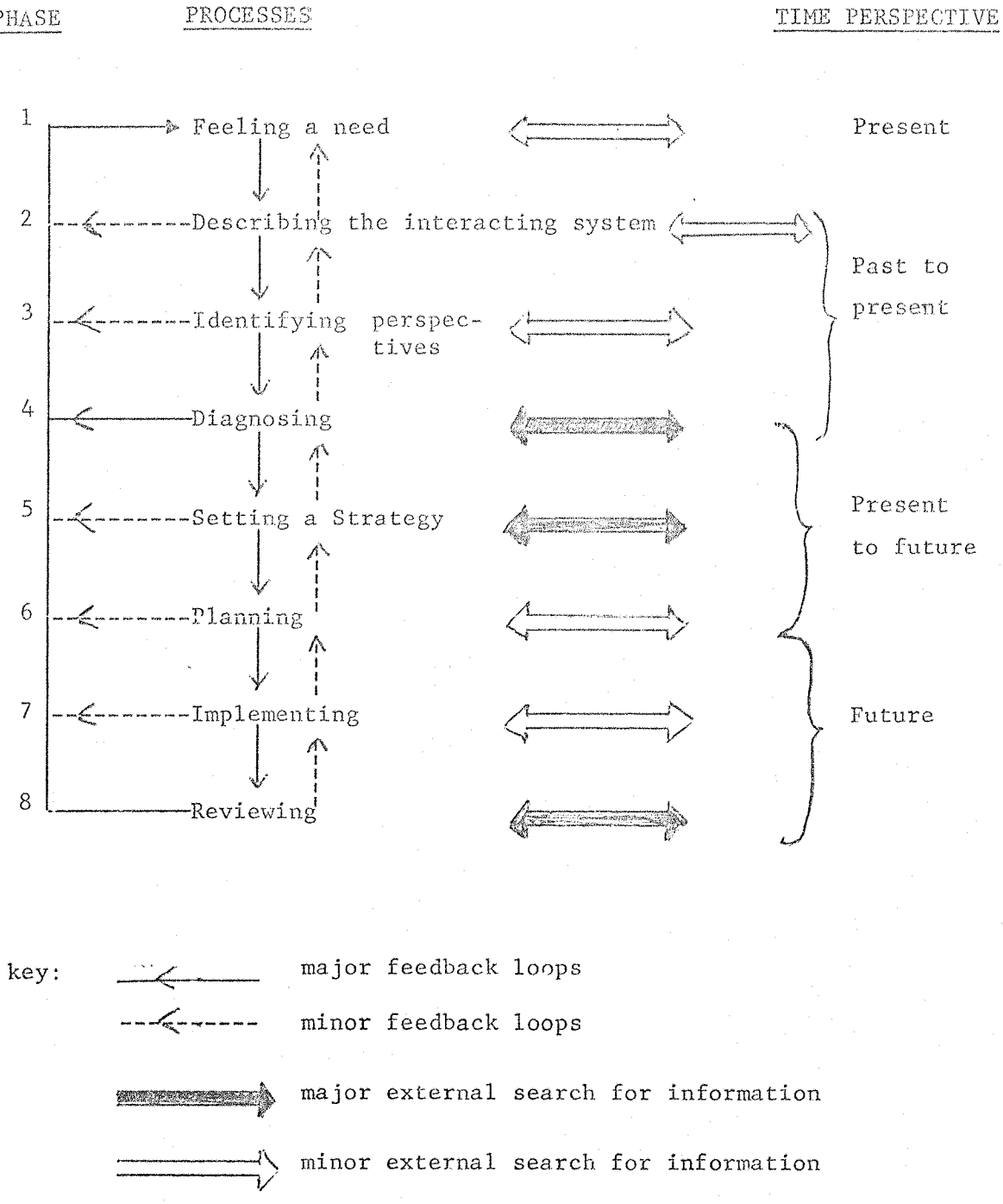
A Model for Organisational Learning.

The form of the model which follows is influenced primarily by those of Lippitt (reproduced in Figure 2-1), Schein (Page 2-6), and Vickers. Havelock's linkage model, whilst offering an elegant (and helpful) combination of the R, D and D, S-I and P-S models, gives a less than adequate account of the P-S aspects, on which much of the remainder of this work is focussed.

Whilst taking note of Schein's warning (1969 p.97) that the phases should be separated mainly for purposes of conceptual clarity, and that in practice their order may change, the author believes there are good theoretical reasons why they should appear in the number and order presented. Such reasons derive partly from the theory reviewed in Part 1, partly from the ideas of Vickers and partly from further theory yet to be presented. The relevance of such theories will be discussed as the model (Figure 3-1) is examined in subsequent chapters.

It must be emphasised that this is not so much a model of organisational learning as a model for organisational learning; one which, if followed in practice, it is believed should facilitate learning and adaptation. Since it includes hypothetical improvements over previous models, it is normative in character.

Figure 3-1 A Model for Organisational Learning.



Nevertheless, the model is a synthesis of natural models (those actually observed in field studies), as reported by Havelock.

Limitations on the Use of the Model.

It must first be emphasised that the focus of this study is the adaptive sub-system of the user system, not the more comprehensive linkage model. Thus, it is now pertinent to ask under what conditions the model could become reality in a user system.

Pugh et al. (1968), in their cross-sectional studies of organisation, produced two factors which account for most of the variance; labelled Centralisation of Authority and Structuring of Activities. Such factors seem intuitively to be much the same as variables identified in field studies as having a strong influence on the adaptiveness of organisations. For example, Crozier (1964 : 198) notes that a bureaucracy (presumably an organisation with high Centralisation and Structuring scores on Pugh et al's scales),

> 'is not only a system that does not correct its behaviour in view of its errors; it is also too rigid to adjust without crisis to transformations that the accelerated evolution of industrial society makes more and more imperative'.

Burns and Stalker (1961) note that their 'organismic' type (presumably with low 'Structuring' scores on the Pugh et al. scales) is more adaptive than its 'mechanistic' counterpart, particularly when the environment is turbulent. March and Simon (1958 : 36-47) have analysed the studies of Merton (1940), Selznick (1949) and Gouldner (1954). They note that all demonstrate inappropriate

('dysfunctional') organisational learning/adaptation associated with conditions which appear to be highly Centralised and Structured in Pugh et al.'s terms. Thurley (1970) in a series of studies in the public sector, notes that an additional condition necessary for a problem-solving approach to change is autonomy of the system under study. Havelock and his colleagues (1969 : 10-83) also emphasise this point. Thus, there is some evidence, admittedly suggestive rather than conclusive, that adaptive systems and hence, planned change efforts based on their operations, are more likely to function appropriately in a relatively 'non-bureaucratic' structure. Pugh et al., in a later paper (1969), have also demonstrated that most of the variance in structure is accounted for by size, and it may therefore be that small size would also make it more likely that the adaptive sub-system would operate appropriately.

An additional category of conditions is the technology of the system studied. The word 'category' is used advisedly, since different workers include a wide variety of dimensions. Traditionally, technology is concerned with the equipment used to do work. Other writers have included the nature of the materials used and informational aspects of doing and controlling the work process. Taylor (1969) has attempted to produce a measure combining all three aspects, in which 'high technology' is equivalent to a highly-integrated work process with programmable operations and predictable raw materials. In a study conducted in an insurance company and a petroleum refinery, he demonstrates that such sophisticated

technology facilitates the induction of planned change. Further, he produces a measure of 'system-connectedness', derived from technology measures, and demonstrates that it accounts for much of the variance in inducing planned change, (1969 Chap.4). Pym (in press), working at the level of the industrial state, has also argued that 'fragmented' technologies (with mass production the classic case) result in dysfunctional learning; integrated technologies (full automation, professional work, 'one-off' craft operations) result in functional learning. Rice's (1969) argument for a 'whole task' approach to job design, coupled with an analysis of the appropriate control systems, is along similar lines. Work on role involvement (Blauner, 1964), (Thurley, 1970a) and on professional organisations (Perrow 1965), seems also to indicate that high role involvement makes problem-solving more likely.

It is now a commonplace observation that the environment, especially when turbulent, is most likely to cause change. However, there is very little evidence whether environmental effects stimulate the adaptive sub-system to work appropriately, or whether they bring about change by a conflict of forces; the dialectic noted by Marx. Crozier suggests that bureaucracies only change in response to crises in their environment and that, far from adapting appropriately, often seek to absorb and nullify the change. As Schon (1970 : 724) has so eloquently put it, they are 'dynamically conservative;..... they fight like made to stay the same.' Nevertheless, Crozier also shows that, under threat from the environment, the group in power is

often able to induce change by once-and-for-all managerial actions, (e.g. changing the rules), or by short-term problem-solving. Terryberry (1968) suggests that appropriate adaptation does tend to result from turbulent conditions. Lawrence and Lorsch (1967) have given a clue to the resolution of the argument: they demonstrate that organisations adapt better in turbulent environments if there is some structural means of 'integrating' the activities of the organisation. This seems equivalent to saying that if the management set up an appropriate adaptive sub-system (including an 'integrator' role) then adaptation is more likely. On balance, it looks as though the turbulent environment is not an unfavourable condition for organisational learning; it is unclear whether it can be seen as necessarily favourable.

It is now possible to summarise some conditions where the organisational learning model may or may not become reality in a user system.

Favourable Conditions	Possibly Favourable Conditions	Unfavourable Conditions
Low Centralisation.		High Centralisation.
Low Structuring.		High Structuring.
Unit autonomy.		Unit dependent on authority of super-ordinate system.
'Connected' technology.		'Fragmented' technology.
	Small size.	
	Turbulent environment.	
High role involvement (professionalisation).		Low role involvement.

The interactions between these variables, few as they are, provide ample scope for complicating the issue. What are the chances of organisational learning in a situation with high role involvement and a fragmented technology (acute hospitals, civil engineering)?; or one with a connected technology and high centralisation (shipbuilding, automated insurance company)? Of course, some of the variables may also prove likely to cluster (connected technology with low structuring, high centralisation with fragmented technology?), so the size of the resultant typology may be reduced. In any case, there seems to be enough evidence to encourage comparative studies of planned change under the different conditions noted. It is indeed surprising that so few have yet been attempted, other than as post facto explanations of observed phenomena, (the study by Taylor, 1969, is an exception).

Griffiths (reported in Havelock et al.1969:10-81) has noted that the problem-solving organisational learning which starts within the system is likely to concentrate on 'goodness of fit' considerations; an examination of published cases provides virtually no evidence to the contrary. Conversely, it can be assumed that where the change attempt starts outside the system, it is more likely to be normative in character, since those outside are likely to have other knowledge, values or interests. External influences may not, as already noted, result in organisational learning, but be more concerned with power and other issues. (This theme will be taken up again in Chapter 11 when considering the parts played by agents of change). There is, however, an important exception: March and Simon (1958 : .184) have

noted that innovation itself can be institutionalised, resulting in a situation where aspiration levels are continually raised (for example, by criteria such as an increasing rate of new product introduction). In such a situation, far from being concerned to maintain a goodness of fit, the system may strive to disturb its own equilibrium. Since (p.185) programmed activity always tends to drive out the unprogrammed, such attempts may improve adaptiveness by, in effect, consciously structuring the adaptive sub-system.

SUMMARY

A social system has a capacity for processing both facts and values. An appreciation of a situation is a combined judgement of fact and value. The judgements of fact and value influence each other, so that it is not sufficient to study one in isolation. Any model of the adaptive sub-system must take account of how information about both facts and values is processed.

A normative model of the adaptive system ('a model for organisational learning') is presented in outline; its processing of information about facts and values to be examined in subsequent chapters. The model is developed from the problem-solving structures reviewed in Part I. The conditions wherein such problem-solving models may become reality are discussed. Systems with low centralisation, low structuring of activities, relative autonomy, a 'connected' technology and high role involvement offer favourable conditions. Systems of small size or with turbulent environments may possibly offer favourable conditions. Combinations of such characteristics make it difficult to see whether a system will have favourable conditions.

When organisational learning is initiated within a system it is likely to be concerned to bring about 'goodness of fit' between the parts of the system. When it is initiated outside the system, it is more likely to be normative in respect of the diagnosis or solution offered; thus the equilibrium may be more disturbed than stabilised. One exception is the case where innovation-seeking structures are built in, so that the system may constantly disturb its own equilibrium.

The organisational learning model suggested in this chapter has a number of phases (designated 1 - 8). Individual phases will be examined in detail in Chapters 4 - 10 inclusive, and in Chapter 11 the role of third parties in facilitating organisational learning will be considered.

CHAPTER 4. THE CONCEPT OF THE FELT NEED.

In this chapter, the first phase of the organisational learning model, the means by which the adaptive sub-system is activated, is examined.

March and Simon have noted (1958: 37, 48, 183) that the adaptive sub-system is triggered when a gap is sensed; a gap between desired/anticipated and actual outcomes, whether outputs or inputs, 'internal' or 'external' to the system. The trigger produces a search for a way to regain equilibrium. It seems axiomatic that, consciously or not, such changes in system states are the subject of an appreciation, to use Vickers' term. As Vickers says, (1971: 114):

> 'By a problem I understand the felt need to remove some disparity thrown up by the appreciative system.'

Such a disparity may be that between the values attached to alternative system states or that posed for the current conception of reality* by a new piece of information. Thus, the felt need may relate to a once-and-for-all malfunctioning of the social system, a set of notions for tackling the class of malfunctions which it represents, or even the structure of knowledge in a related basic subject area. In this sense, the formulation is similar to that of Glaser and Strauss (1967), who point out that in searching, through interactive field-work, for theories which are 'grounded in data' a researcher may produce theory relevant to an immediate problem, a class of problems or to the formal structure of his subject.

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* or theory of the system, as Schon (1970: 724) puts it.

It can also be observed that a felt need may relate to one specific value of the system, a class of values, or may even cause a modification of the values themselves. Finally, it should be noted that the need may well originate within the appreciative system itself as a change of values or conception of reality independent of any immediate stimulus.

Thus, 'a disparity thrown up by the appreciative system' may result from a change in the state of the social system in question, or (as far as can be seen) spontaneously.* For convenience, changes of system state will be described here in terms of changes in inputs or outputs (thinking of sub-systems interacting with other sub-systems; wheels within wheels). Thus, the inputs and outputs may be both 'internal' and 'external' to the system in question. Three classes of change in inputs or outputs can be imagined; a reduction in an existing input (or output); an increase in an existing input (or output) and a completely new kind of input (or output). Hypothetical examples of the six possible classes of change in system state are:

Reduced outputs:	Less Waste. Reduced sales. Less work satisfaction.
Increased outputs:	Quicker servicing of customers. More labour turnover.
New outputs:	A different 'image'. A reputation as a credit risk. A different product.

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* Kepner and Tregoe (1965 : 20) use a similar formulation, but do not consider the 'spontaneous' case. In other respects, however, their analysis is more detailed than that of Vickers.

Reduced inputs:	Fewer customer complaints. Cash shortage.
Increased inputs:	More high-quality staff. More defective materials. Business confidence increased.
New inputs:	Fresh ideas. Legislation affecting operations. Substitution of a raw material.

It can readily be seen that any such change may be appreciated as dissatisfying, a problem, a need to restore the previous equilibrium; or as an opportunity, a source of raised aspirations, a need to reinforce the change or even to encourage more. It should be emphasised, as Schein (1969 : 48/50) has pointed out, that the system may not always know why it is dissatisfied; it may just experience feelings of tension and frustration.

March and Simon (1958: 182/4) note that, although there is a general tendency for aspiration levels to remain the same as or slightly above the level of achievement, they do tend to rise slowly in many systems, usually because of 'awareness of a better programme,' particularly if that programme is in use by some relevant other system. Also, as noted in Chapter 3, a system may 'programme' innovative activity.

The change in appreciation which arises 'spontaneously' may perhaps have resulted from some earlier challenge to the values or reality system, or it may be impossible to detect its antecedents. In practice they matter little. The important point is, as Boulding (1963 : 10/11) points out, a desired system state does not have to have been experienced; man can experience it symbolically

through his images, his imagining of what it might be like. He notes that

> 'a peculiarity of social systems is that they are to a considerable extent determined by the images we have of them.'

This being the case, there seems to be a third type of 'felt need' after the 'problem' and the 'opportunity'. It may arise from either of them, from past experiences, or more spontaneously, as described above. In expression, it takes the form of an image of potential.* It seems likely that Havelock's 'linkages' with resource systems will be in operation when such an image is produced and that it will therefore tend to be normative in character rather than concerned solely with 'goodness of fit'. Consequently, it is likely also to be more general, less precise, often expressed via such phrases as 'we're sure we could do better but we're not sure how.' Broad-aim change programmes of the type described by Weiss and Rein (1970 : 97) have 'felt needs' of this kind, expressed as vague aims for improvement. In effect, the image of potential is as much a new input as a felt need, and this suggests that such images may be more significant in many situations than perceived problems or opportunities.

Katz and Kahn have noted (1966 :451) that a change in input appears to be the most powerful means of inducing change and Taylor (1969) emphasises that this is because of the 'connectedness' of social systems: a change in input can rarely be ignored because of

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* As far as the author is aware, this phrase is due to W.J. Reddin of the University of New Brunswick.

the 'row of dominoes' effect. However, Boulding (1963) has noted that there seem to be threshold levels, below which changes in inputs have no effect; over the threshold, such changes are immediately appreciated as disparities. The threshold is not absolute but may vary with other inputs.

Such a threshold effect was recently reported in the case of a television programme known as 'Police 5'. The programme gave details of crimes recently committed and solicited help from viewers in the form of evidence, witness or clues. It had been running with only minor success for several years before suddenly 'taking off' at the beginning of 1971. Its audience increased greatly and both the volume and quality of viewers' responses rose dramatically, resulting in a large number of arrests. The inputs to viewers from the programme had not apparently changed significantly, but presumably some other input to them (say, government emphasis on 'law and order') had lowered the threshold level, perhaps by inducing a different 'image of potential'. Such inputs from the environment will tend, by definition (Emery and Trist, 1965) to be most frequent when it is turbulent.

Examples of Felt Needs.

There are many cases reported in the literature which illustrate the three types of felt need discussed above.

'Problems'

1. Jasinski and Guest (1957) discuss a typical training problem where industrial foremen do not transfer new skills and knowledge to the shop floor. (The classic 'can't do or won't do' problem?). They show that the problem is typically due to four 'blocks'; no acceptance of the training by superiors, who themselves behave contrary to it; no acceptance by subordinates; excessive emphasis on foreman-worker relationship and lack of time to practise.

2. Sofer (1961) reports a case of a family-run company which wished to select a new director, and did not feel happy with the man who was 'in line' for promotion. The problem turned out to relate to the family's policies and practices for promotion, for improving the quality of managers and for assigning responsibilities. A 'goodness of fit' emphasis helped to improve the situation.

'Opportunities'

1. McFall (1967) reports his experiences as the new Chief Executive of Western Union, an American company providing telegraphic and related services. He describes how he found tangible and intangible assets including:

> 'A network of offices affording representation in every city of consequence across the country, giving Western Union a unique and very valuable interface with the public; a large number of employees who are experienced in meeting and dealing with the public, and others who are highly skilled technically; and

'an excellent national name and reputation....In short... a pretty good base upon which to build a future for the company.'

This appreciation resulted in strenuous and successful efforts at diversification to take advantage of the opportunities provided by such assets.

2. The author knows of a case (unpublished) of a domestic heating, ventilating and oil distribution company which discovered, subsequent to going public, an embarrassment of financial assets. It did not wish to use the cash to expand in its present markets since, in its judgement, they were too tough to provide adequate returns. A period of examination of their other resources showed a reserve of expertise in two fields; heating and ventilating engineering and distribution. The company first diversified as engineering consultants and then expanded their business to offer a warehousing and distribution service, delivering the goods of several clients simultaneously.

'Images of Potential'

1. The recent emphasis on industrial supervisory training in Britain is an example of this type of felt need. Meade and Grieg (1966) set out the sort of image they believe is attainable, and describe suggested methods. This is an external attempt to get employers in industry to examine their systems, identify training needs and meet them. The expected benefits are described only in general terms.

2. Imperial Chemical Industries in Britain (Jones, 1970) is embarked on a massive programme in which management and workers attempt to collaborate in setting improvement targets and achieving them. There is no precise statement of benefits which are expected to accrue, but rather a vision of a generally more productive and satisfying world for all the parties. It is claimed that results to date, although very patchy as between divisions of the company, have begun to make the image reality, with significant gains in productivity and payments to employees. (But no apparent effect on profitability).

Most so-called 'organisation development' programmes appear to be based primarily on images of potential.

SUMMARY.

The felt need to remove a disparity thrown up by the appreciative system is the first phase of the 'organisational learning' model of the adaptive sub-system. Such disparities may be of reality or of value. Felt needs are of three types: problems, opportunities and images of potential. They tend to arise most obviously from changed system inputs, which in turn are more numerous in turbulent environmental conditions. However, below a given threshold level, changes in inputs seem to have little effect. Needs may also be felt within a system in response to some disturbance, or even within the appreciative system as a change of values or conception of reality independent of any immediate stimulus.

CHAPTER 5. DESCRIBING THE SYSTEM STATE.

To read the literature on the processes which lead up to system diagnosis is a confusing experience. A proliferation of terms is in use; such as data collection, search, analysis, interpretation, feedback, diagnosis; and there seems to be almost total disagreement as to their meanings. 'Diagnosis,' in particular, is used to describe any one of or any combination of these terms. Even Havelock's linkage process (Figure 2-2)based on the most complete review of the literature, shows 'diagnosis' as a single phase following the felt need and succeeded by a 'search'. (How diagnosis is possible without a search is something of a mystery to this author). Lippitt's revised model (Figure 2-1), which is probably the most detailed of the problem-solving models, misses out what seem to be vital aspects. Whilst he shows 'search' as an activity at all stages of the learning cycle, it does not extend as far as describing the system which relates to the felt need, although he does at least note that the human resources of the system may be relevant to it. In an attempt to clarify the organisational learning process, four terms will be used in this work in distinct senses, thus:

...System Description is the process of describing the structure, state and dynamics of the system in all relevant dimensions which are connected to the felt need.

...System Perspectives are the appreciations of felt needs, (which may be very different from the felt need) by different people and/or from different points in the system. They usually subsume analysis of a classificatory kind.

...System Feedback is the process of reporting the system description and perspectives to those with interests in the felt need and in actions to meet it.

...System Diagnosis is the process of deciding what the description and perspectives mean, in terms of why the system is the way it is, what actions can be taken and what the likely outcomes of each action are. It usually includes some analysis of a more interpretative kind.

As with the complete organisational learning cycle, of which these four phases form a part, there may be considerable overlap and/or redundancy between the processes. (For examples: (a) perspectives and feedback can be omitted if the problem is solely within the resources of one person; (b) some diagnosis probably takes place when describing and compiling perspectives). However, the author believes it both conceptually and practically useful to separate them as far as possible, particularly if the purpose is to facilitate organisational, rather than individual, learning.

This chapter deals with System Description, Chapter 6 with System Perspectives and Chapter 7 with System Feedback and Diagnosis.

The literature on system description seems to consist largely of exhortations or statements of woolly-minded intent to 'describe the system' as it relates to a felt need, but little evidence that this is ever done in anything other than a random or very incomplete fashion. There are some important exceptions, which will be discussed below, but even they seem only to examine those aspects of the system which are of interest to them; that is, the pattern of search derives from the theoretical interests of the practitioners concerned, rather than from the needs as perceived by the system. As has been seen in Chapters 1 and 2, the range of system elements, their interactions and their associated criteria of effectiveness or health is truly enormous. Therefore, it is not surprising that one practitioner should choose to concentrate on a few system elements which he believes to be crucial (or which he knows how to study). Social scientists, like ordinary mortals, find what they look for. Thus, Argyris advocates a concentration on monitoring behaviours within the human system which he regards as criteria of effectiveness (1970 : 38/4) and, although he says that 'interactions, patterns as well as parts,' must be identified so that the information is valid, useful and complete enough for the system to use it to change itself (1970 : 17 and 280/1), little indication of what they might be nor of how to look for them is given. Woodward (1970) on the other hand, emphasises the importance of technologies and control systems and, although including some 'people' variables, largely ignores those which Argyris emphasises. Such

approaches, concerned with a limited number of system elements, are, provided there is a theory to justify their choice and the exclusion of others, fully justified if the purpose is discipline-centred research. They are not adequate for organisational learning or problem-centred research, since the real world does not conveniently arrange felt needs in boxes corresponding to the disciplinary interests of researchers.

Leavitt (1965) has pointed out the incompleteness of such approaches and Bennis (1966 : 87) has called for the use of operational research methods to supplement those of social science, particularly in describing technical aspects of systems. Such exhortations have, of course, long been taken most seriously by the Tavistock Institute workers. Rice, in particular, in his last reported work (1969), successfully combines description of primary tasks with those of control systems and transactions. This work seems to be a considerable step towards a more coherent rationale for system description and is, incidentally, a good deal simpler than many other approaches. Such a rationale can now be presented, drawing on other published material to put some flesh on its bones. Its purpose is to 'focus' on the parts of the system which are relevant to the need and which can be influenced.

A Rationale for System Description.

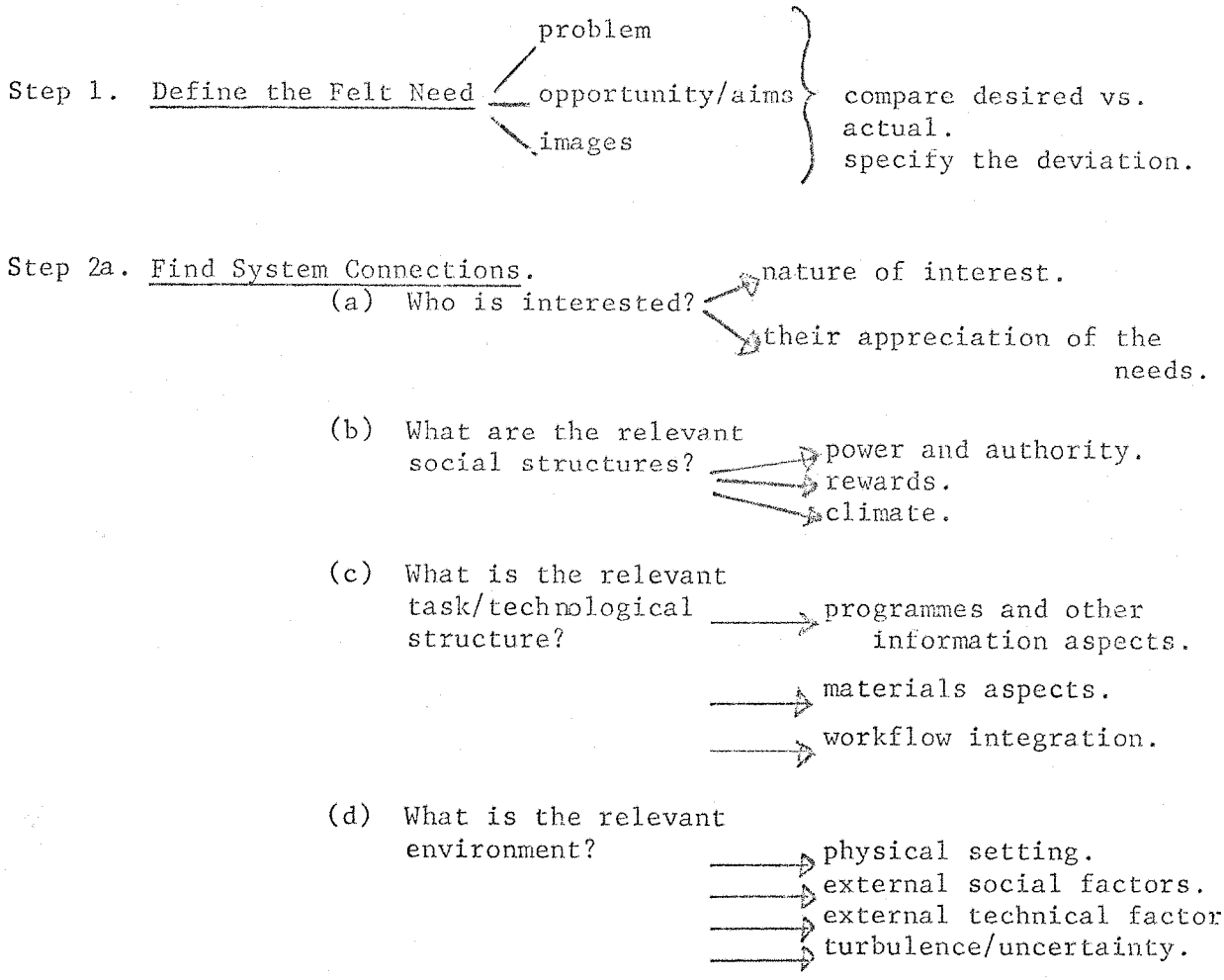
This rationale is an attempt to use the theories of system effectiveness and the nature of system change (Chapters 1 and 2) together with other theory on the nature of problem-solving and learning. In form (Figure5-1), it is no more than a check list with some of the characteristics of a logical tree, and it will be discussed as such. The methods appropriate to each step are not repeated where already mentioned in Part 1.

Step 1. Define the Felt Need. Kepner and Tregoe (1965 ; 50) have defined a problem as

> 'a deviation from some standard or norm of performance.'

Such a deviation may, as seen in Chapter 3, be expressed as a problem, opportunity or image of potential, the expressions becoming progressively more vague.
Any one of them may specify the 'gap' in terms of performance or structural criteria of effectiveness, behaviours, attitudes or any of the characteristics of a system discussed in Chapter 1. Whatever the case, it is worthwhile attempting to specify the deviation, since this helps to delimit the system which is relevant. Such specification is most

Figure 5-1. A Rationale for System Description.



Step 2b. Examine System Interactions.

(a) Which elements would have to be changed for the felt need to be met?

(b) Which can be changed?

(c) If they were, what would happen to the rest of the system?

(d) Past → present → future dynamics.

Step 2c. Determine Relevant Resources.

(a) What are required for alternative actions?
(b) What are available for alternative actions?

Step 2d. Determine System Boundary.

(a) Who is significant?

(b) What is significant?

easy with the 'problem' type of felt need and least easy if there is only an image of potential. In the latter case, it may only be possible to specify a 'base line'. Incidentally, such specification is a step towards a self-monitoring change process if done in terms which are operational. Kepner and Tregoe (1965: 47) have produced a rigorous method for specifying, which involves stating precisely WHAT, WHERE, WHEN and to what EXTENT the need ('problem' in their more general terms) is, distinguishing in each answer between IS and IS NOT. Such a method has great merit in narrowing down the field of search. For example, a high rate of absenteeism might be specified as follows:

	IS	IS NOT
WHAT	8% overall. Mainly one-day periods.	Certificated illness or other involuntary absence.
WHERE	Production and Despatch Departments.	Production Department X not affected.
WHEN	Mainly at end of 2nd week in monthly cycle.	Never at end of fourth week of cycle.
EXTENT	Male and female. All ages. Wage-earners and salaried.	Day workers with fixed hours.

Step 2a. Find System Connections. (a) Who is interested? Does anybody else feel the need and, if so, what is their appreciation of it? These apparently obvious questions seem to be those most often overlooked by organisation managers in their haste to find a 'solution' (which then has often to be re-defined in the light of reactions of interested parties when implementation is attempted). Asking 'who is interested?' immediately breaks the physical boundaries of a system, since it starts with transactions and follows them to sources. If anybody else is interested, in the sense of

having transactions in the situation in question, then it is worth going on to ask what is the nature of their interest and why should they wish to meet the need. How, in general terms, do they perceive the system? (Again, this question is frequently overlooked by those determined to play the 'expert' role, but at the price of missing potentially important insights from such other people, with their different viewpoint of the system).

(b) What is the relevant social structure? As Havelock notes in his review (1969), there is strong evidence that social structures, particularly the power, authority and rewards structures, have a marked bearing on organisational learning. A question which is frequently asked is 'should the top men be involved in planning change? '. Such a question is misconceived; it ignores the social system. The question should be 'who should be involved in planning a change? ', to which the answer would be 'those with an interest in it.' If the top man's interest, power and authority is required at some point (even if not until implementation) then, ideally, he should be involved in planning. If the road-sweeper's interest is involved and he has sanctions then he, too, must be involved. Usually, there are several parties with interests; an organisation set if the system is large and other departments, groups, functions and so on if the focus is within such boundaries .

The more pluralistic and loose the social structure, the more people are likely to have an interest in a given felt need. On the other hand, it is less likely in such a case that any one person's involvement would be so crucial as in a more highly structured and monolithic system. Climate is included here as an aspect of structure. The norms and values of the system are relevant because they play a large part in determining what role behaviour is legitimate and, therefore, how easily a felt need can be pursued.

(c) What is the relevant task/technological system?

Some writers, such as Argyris (1964), argue that considerations of this kind are only relevant below policy-making, managerial levels in organisations. However, this is to assume that the social system of such a group is limited to their own levels (which it clearly is not) and also that technology is only concerned with the equipment of the system. With Taylor (1969), it is assumed here that technology includes equipment, materials and informational aspects. Thus, 'programmes' (March and Simon, 1958) of work are part of the technology, depend partly on its equipment and materials components and will certainly influence 'top management' as well as other groups. The technology will also bear upon the social structure; for example, by determining to some extent, via the degree of workflow integration, how roles can be made up.

(d) What is the relevant environment? Here, the questioning is directed to two aspects: the external social and technical systems and the internal setting. The latter includes often-neglected variables such as the geography and layout of an organisation,

which may have a strong bearing on social and psychological health, as well as more obvious aspects like workflows. Important aspects of the external environment are its rate of change and whether it tends towards turbulence. Since all systems have an external environment (even if only regarded as the next larger system of which they are a part), these considerations are always relevant. As has been seen in earlier chapters, changes in and inputs from the environment probably constitute the most significant general source of change.

Step 2b. Examine System Interactions. If the person collecting data is also the one who is going to plan and implement changes, then diagnosis will have certainly begun when he asks what the system interactions are. If a third party is collecting the data, he too may be beginning to diagnose, but may resist closing on a diagnosis until all those with an interest in the data have agreed its meaning. Indeed, in terms defined above, diagnosis can never be completed by one person until he has complete control of the changes which result within the relevant system. However, in order to be able to predict the likely outcomes of a given action, a number of questions must now be asked. These are

(a) Which system elements would have to be changed for the felt need to be met? (b) Which of them can be changed (others can be excluded from further consideration) and, (c) if they were, what would happen to the rest of the system? Kepner and Tregoe (1965, Chapter 3) use similar questions to find causes of problems and they can be more generally used to help predict the effects of a new activity in a system,

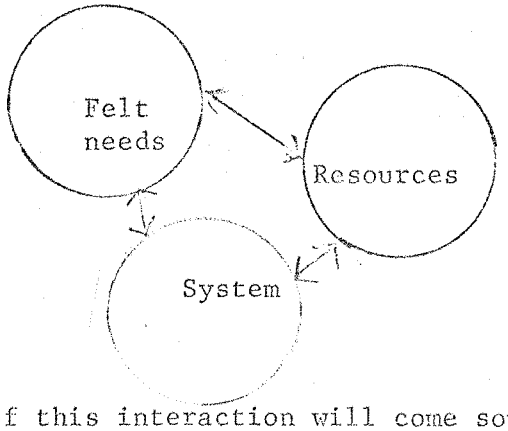
as well as simply restoring a former position. Argyris (1970 : 280/1) argues that some 'diagnostic theory' is also required to explain how the system got where it is and where it is going to: the past - present - future time perspective.

Step 2c. Determine Relevant Resources. There are two questions to answer here: what resources (human, informational, material, capital, natural) would be required for the actions which are open, and which are available or could be developed? Unless such questions are asked, there seems to be a risk of under--takings which are simply not realistic.

Step 2d. Determine System Boundary. This step also is part of diagnosis, but is immediately more significant as a guide to structuring feedback. The boundary is first determined by answers to the question, 'who is interested,' and then by value judgements of whether their interests are significant; could they either block a change or play a part in ensuring its success? As well as 'who', the boundary needs to be determined similarly in respect of 'what', (functions, activities and so on).

All of these steps may well be retraced and the answers to questions modified or supplemented after feedback, but they are still necessary and useful at this stage. In effect they are plotting a

map showing the interactions of felt needs and the relevant system and resources, thus:



Out of this interaction will come some re-statement of felt needs, expressed as, say, realistic aims or specific intents to deal with a problem.

Properties of data for Feedback.

As the data used to describe a system are to be used at a later stage (Phase 4 of the Organisational Learning Model) for feedback to the members of a system, it is important to consider at this stage whether such data should be in a particular format. Argyris (1970: 17/18) is one of the few theorists who has given much attention to this question. He argues that the aim must be to produce

'valid and useful information'

and goes on to define his terms. Valid information has three characteristics:

....it is publicly verifiable; independent observers would produce the same description in the same situation; to this end the categories should be observed, not inferred (1970: 110);

....it predicts validly; that is, a prediction based on it will be confirmed by the passage of time under specified conditions;

....it gives the system control over the phenomena in question; by the ability systematically to alter factors and predict the

results. (As already noted, Argyris' own data collection appears to be too restricted to allow this last condition to be met).

Argyris also argues that the predictions must not be such that participants can, at will, make them come true. This assertion is questionable in the light of Boulding's observation (1963) that images are one of the most powerful means by which change is induced in social systems. Whilst it may be necessary for a researcher to use such a criterion, to the members of a social system it is irrelevant. The image of potential provided by a prediction may actually be helpful to a system in striving to induce a change. The effect of such symbols is well documented by Margaret Mead, who describes her return to South Sea Islands first visited many years previously. The islands had been occupied by American forces during the Second World War and, since the community was very primitive, the troops observed considerate codes of behaviour. The American constitution had been widely disseminated. After the war, the islands were handed back and the people set up a community in the image of those they had been exposed to, one which was, as Mead notes, a great deal more like that envisaged by the founding fathers than had actually been achieved in America, (Mead, 1967).

Useful Information has the characteristics that it can be used by the system and is so complete that, if so used, change will follow. Such criteria seem very hard to meet in practice and it might be suggested that a modified criterion would be that that information is actionable or can lead to action; that is, if it does not

immediately show what can be done it is, at least, presented in such a form that shows what further information is required before actions can be considered.

Other requirements for data to be used for feedback have been suggested by several writers, including Argyris. A synthesis of their views would include that such data should, as far as possible, be non-attributable. This is really only a requirement if the data is collected by a third party, since people cannot be expected to give data if they fear it may have adverse consequences for them. Such anonymity is a help in reducing such fears. It is not always possible to observe, however, particularly when there is only one of a role of a given kind in a system. For example, it might be difficult to report that 'the chemists' have certain concerns and negative feelings towards others if there is only one 'chemist' in the system. In such a situation, it may only create a 'win-lose' dichotomy between the parties. It is here that the next criterion is useful.

Data for feedback must be cleared by the source. Respondents seem more willing to give data, even to a third party, if they have a veto on what may be released to others in the system. Again, this helps to reduce fears of adverse consequences. Even where the data cannot be attributed, this requirement is still worth observing since it appears to improve the flow of data in the first place.

Evaluation should be restricted to choice of data and not made part of the data themselves. Again, this criterion is primarily important where a third party collects the data. Rogers (1961)

argues that all such data should be descriptive and not evaluative. Otherwise, when received by others, it may appear threatening (even if positive, since there is always the possibility that the next evaluation will be negative).

Thus, Evaluation should usually be by the System, rather than a third party. (However, it will be argued in Chapter 10 that there are occasions when it is appropriate for a third party to evaluate). The value judgement is the stimulus for change; the appreciation that something needs to be done to remove a disparity. Such evaluations may be about 'goodness of fit' issues if that is the focus, or of a more normative kind (possibly via comparisons with other systems or with theoretical ideals).

SUMMARY.

Terms used to describe the data collection and interpretation phases of organisational learning are ill-defined and confusing. Four terms are suggested for such phases: system description (phase 2) analysis of system perspectives (phase 3) system feedback and system diagnosis (phase 4). This chapter is mainly devoted to the development of a rationale for system description.

An adequate system description must include all elements which are relevant to a given felt need. Such elements may not always fall within the disciplines of those who describe systems,

so that they often overlook them. A more problem-centred approach is necessary.

The approach suggested has five steps:

Defining felt needs (part of phase 1); Finding System Connections (2a: who is interested, relevant social structures, relevant task/technological elements, relevant environmental aspects); Examining System Interactions (2b: what can be changed, and its likely effects); Determining Relevant Resources (2c) and Determining the System Boundary (2d).

Such procedures may also be part of later phases (diagnosis, strategy-formation) in organisational learning, but data has to be collected at this phase in order for such phases to operate effectively.

Since data collected at this phase is used later for feedback, it must have properties which are appropriate for such a purpose. Such properties include that it is publicly verifiable, predicts validly and gives the system control over the phenomena in question; it is actionable or can lead to action; it is, as far as possible, non-attributable; and that it is cleared for use by its source. Evaluation should be restricted to the choice of data and not made part of them.

System descriptions which follow the suggested rationale and which meet the stated criteria of data to be used for feedback provide a foundation for later phases in organisational learning. Such a foundation appears to be more complete than is usually the case in studies reported in the literature.

CHAPTER 6. SYSTEM PERSPECTIVES.

A system perspective is defined here as any appreciation of a felt need or aspect of the system relating to it, from another point in the system; another person, role, function, location or whatever. It may even be that of the same person(s) who originally felt the need, but from a point different in some other dimension (including time). Such perspectives have been extensively used in attempts to 'unfreeze' a system in the sense used by Lewin (1951); that is, to disturb its 'quasi-stationary equilibrium'. A wide variety of terms is used and the system elements concerned are also diverse. For example, Brown (1962) reports how four perspectives were collected on the structure of his organisation:

the assumed organisation (as formally prescribed);

the manifest organisation (as it appeared to those in it);

the extant organisation (as it appeared to an observer);

the requisite organisation (resulting from the integration of the other perspectives).

Argyris (1970 : 21) gives an example of a social consultant who articulates certain values but is seen by others as behaving contrary to them himself. This 'do as I say, not as I do' sort of behaviour is typical of the sort described by psychologists as incongruent, and often used for feedback purposes. Evan (1966) describes a very different kind of perspective which he calls 'organisational lag'; a gap between technological developments introduced by the leaders of organisations and the administrative programmes developed to handle them. Other familiar perspectives are produced in the typical climate study report wherein the boss describes it in terms like 'free-and-easy, open, supportive', while his subordinate calls it something like 'punitive, carping, no scope for initiative'.

Perspectives of different sub-units in an organisation, or of different interest groups, are frequently of crucial importance. Dearborn and Simon (1958) present data to show that, when faced with the same situation (a detailed case history) 83% of salesmen saw the major problem as a sales one, whereas only 29% of other respondents saw the problem in that way. 80% of production managers thought the case contained production problems, whereas only 22% of other respondents mentioned them. Fox (1966) points out that managers' frames of reference have a great bearing on how they see and handle industrial relations:

> 'The importance of the frame of reference is plain. It determines judgement, which in turn determines subsequent behaviour'. (p.390)

If the organisation is seen as unitary, analogous to a team with a common purpose, then any disagreement by workers may be construed as disloyal, stupid or as 'the activities of agitators who create mischief out of nothing'. If seen as a pluralistic coalition of interests, then disagreement by the workers may be seen as a legitimate expression of a wish to exercise control in pursuit of their interests.

> 'Instead of appealing to individuals .... to behave better in future .... in the interests of some remote and abstract entity like the export drive .... we shall concentrate on analysing the causes and constraints that are shaping the group structure, group relations and policies'. (p.401)

Finally, a less familiar type of perspective is the unexpected coincidence of appreciations, where two people who had assumed that they had very different appreciations of a need prove to have the same one.

Whatever sort of perspective is used, it is in attempts to unfreeze the system. Lewin's theoretical justification for this is that a given phenomenon in a system is held at one level by opposing forces; changing one of the forces (labelled 'driving' and 'restraining'), disturbs the system so that it can move to another level and then 'refreeze'. A somewhat similar theoretical perspective is provided by Festinger's dissonance theory (1957), which holds that inputs which are contrary to an existing belief cause a person to experience dissonance; a challenge to the reality systems in Vickers' (1971) terms. People move to reduce such dissonance, which is stressful, by changing their views of reality or denying the input. March and Simon (1958 : 115/121), state that in uncertain situations, or where there are different perceptions of reality (such as exemplified by different system perspectives), an organisation moves to reduce the perceived conflict by searching for new behavioural alternatives. Yet another theoretical view is that of Katz and Kahn (1966), who say that new inputs, including those of information, are most likely to cause change. It can obviously be argued that new perspectives are equivalent to such inputs. The work of Schroder et al (1967, Ch. 3) provides a more complete theoretical foundation. Their U-curve hypothesis (for which they present a good deal of

evidence) states that learning requires a trigger in the form of an information input. There is a threshold below which little learning occurs, it then rises rapidly as environmental complexity (information inputs) increases, reaches an optimum and falls off again just as rapidly. Such a theory is exactly in line with March and Simon's Concept of Optimum Stress at the organisational level (1958 : 184). A field study by Menzies (1960) adds support. She describes reactions to 'information-overload' conditions in hospital wards, where the stress was dealt with by regressive behaviour; avoiding responsibility by forcing superiors to take the required decisions.

Schon (1970: 686) is not very hopeful about the prospects for major changes following new system perspectives. He argues that only minor changes are induced by such means, whereas the prospect of bigger changes raises the level of uncertainty. Since 'the feeling of uncertainty is anxiety', the organisation responds by being dynamically conservative; 'fighting like mad to stay the same'. Thus, when major changes are proposed, threshold levels for inputs are raised, and it is likely that insurgencies or invasions are

required to alter the status quo. W.J. Reddin has said* that, when working as a social consultant to organisations, he has come to expect that the organisations' covert aim is to expel him; elaborate games are used to avoid facing the implications of new perspectives which he uncovers.

What can be done to increase the chances of learning from a given exposure of new perspectives? The work of Schroder et al. offers a number of possibilities. Firstly, they show that information inputs can have three major dimensions; complexity, noxity and eucity. Complexity refers to the number of bits of information presented relevant to a particular need. Noxity is the severity of adverse consequences of behaviour in the specific situation. Eucity is the amount of reward given or promised by the environment for an action resulting from the input (1967 : 32). These distinctions suggest that, in the situations described by Schon and Reddin, the perceived noxity of the input may be too high or the eucity too low, assuming that the general level of complexity is about right. This underlines the importance of measures to reduce noxity, such as ensuring that data is minimally attributable and evaluative (see Chapter 5). Clearly there must also be some possibility of a reward for changing; some reason to upset the status quo. However, Schroder et al. warn against artificially making rewards too high, since that creates an

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* In conversation with the author.

environment which is over-simplified, and development of long-term capacity to learn can be reduced. This relates to another important aspect of their theory, which is that the efficiency of information processing (learning) varies with the structural development of personality, in particular with the number of second-order rules which a person is able to generate from a given input. Thus, their theory is highly interactive, with environmental complexity, structural development and efficiency of information processing all influencing each other. Schroder and his colleagues demonstrate that, not only is the person with a well-developed structure better able to handle environmental complexity, but that groups made up of such persons also do so and are generally more adaptive. This is a powerful argument indeed for the adoption of a normative, developmental position to planned change such as discussed in Chapter 2. Educational efforts to help individuals increase their structural development would seem to hold out hope of significant long-term improvement in adaptive capacity. As has been seen, at the organisational level such capacity is a part of 'organisational health' or overall effectiveness.

Some uses of data: principles and practices.

With these theoretical principles in mind, it is now possible to suggest a number of practical guidelines for use in exposing system perspectives. Data are commonly used in four ways:

Descriptively. Simply records a situation without comment. May include quantitative measures but does not say what 'should be'.

Evaluatively. Records and also makes a judgement about the relative values of the conditions reported.

Comparatively. Records and compares with other situation. Some sort of measure is implied, although the 'scale' may be only nominal.

Normatively. Records and compares against some sort of standard or ideal. That is, a judgement of 'what should be' is added.

These rather elementary definitions are given here to clarify the subsequent discussion, because there is considerable variation in their usage in the literature. The term normatively, in particular, is used in several different senses; for example to describe what usually goes on or to describe what should go on in a system.

Certain criteria for data collection have already been suggested in Chapter 5. In particular, the minimising (or, more accurately, the delaying) of evaluation of the data has been emphasised. Now, in order to highlight system perspectives, it can be seen that data are required to be used comparatively. Also, in order to meet the earlier criterion that they should be actionable, they have to be as descriptive as possible. The evaluative and normative uses of the data come later and, to maximise the chances of appropriate adaptation, must be so used by those with the interests in them. At this stage there may be normative information available from outside the system (a theory which is relevant, or an alternative value position) and thus an external search process may be required. Some attempt by

a third party to input information also seems most appropriate at this point. Such an input may be another perspective or appreciation or, as Schon implies, more in the nature of invasion, using the power of the third party to get over the threshold level of the system.

SUMMARY

System perspectives are appreciations of felt needs, or aspects of systems relating to them, from another point in the system. Such perspectives tend to vary with the role, function, interest group, sub-unit and other positions of an actor in a system. Perspectives of the same person may change as he shifts position, or over time.

Perspectives may be those of reality and/or of value or goals. Typical examples of perspectives about reality are several views of what an actor does in a given role, or of the lag between technical and administrative developments. Examples of perspectives of values are the views of managements and workers about how to handle a redundancy problem, or the views of a research department and a production department about the amounts of resources which should be devoted to their activities.

Perspectives are used to 'unfreeze' the equilibrium of a social system. To maximise the chances of learning, the perspectives used as information inputs must be matched to the existing capacity of the system to process information for which it has no programmed responses. If noxity (the severity of adverse consequences) and eucity (the likelihood of reward) are too low, then the system does not unfreeze. Similarly, if noxity and eucity are too high, the system is faced with a degree of unfreezing which is beyond its capacity, and regressive behaviour results.

Data may be used in four ways; descriptively, evaluatively, comparatively and normatively. In order to highlight system perspectives, data should be used comparatively and descriptively. Evaluative and normative uses of data are to be avoided at this stage. However, it should be noted that the reporting of different evaluations of an event by different actors is a descriptive use of data if done by a third party. A third party may also add his own perspectives of reality.

The data collection phases (phase 1, 2 and 3) of the organisational learning cycle have now been completed. In the next chapter, some initial uses of such data are considered.

CHAPTER 7. SYSTEM FEEDBACK AND DIAGNOSIS.

Havelock and his colleagues (1969 : 10-65/6), in reviewing the literature on diagnosis, conclude that some form of diagnosis usually forms part of the P-S (Problem-Solving) process, that it may considerably broaden the scope of the need as originally felt, that force field analysis is a useful method of analysis and that diagnosis is usually followed by a series of action steps which include: 1. search for possible solutions, 2. establishment of goals and priorities, 3. weighing solutions, 4. selection of the best alternative, 5. formulating some plans for implementation and 6. introducing the change. This very small return from a study of more than four thousand sources reflects the theoretical poverty of the work in this field. Incredibly, the term diagnosis is not even listed in the fifteen-volume International Encyclopaedia of Social Science(1968).

If a felt need is in the form of a problem as defined in Chapter 4, then there is some relevant theory available from psychology and operational research. March and Simon (1958 : 177/9) state that problem-solving involves three basic processes: recall from memory, search and screening. All three are done in a random, intuitive way, but there may also be programmes to mediate them. Problems are defined as deviations from standards, an approach developed independently by Kepner and Tregoe (1965, Ch.3). The latter, whose means of specifying deviations has already been outlined (1965, Ch.6), state a number of criteria and steps to be used in finding the cause of a deviation. They are:

....Something always distinguishes that which has deviated from that which has not;

....The cause is always a change in a related part of the system;

....The cause can be deduced from the precise nature of the deviations;

....The most likely cause is the deduction which exactly explains all the facts. In particular, it must explain what is not the deviation as well as what is.

....The deduction of effects of an hypothesised cause can be compared with the actual effects (deviations) in the system in order to test the hypothesis.

This is one programme which seems to have a wide utility for problem diagnosis. However, like all such programmes, it only works if valid and useful data are available and if there is substantive agreement on 'the facts'. It becomes less useful as the system perspectives become more diverse and thus is not so helpful for dealing with opportunities and images of potential. De Bono (1967) has pointed out the utility of programmes which are lateral rather than sequential in operation, or which 'stand the problem on its head.' More heuristic methods generally seem to become more useful as the need becomes more vague.

Both Havelock and Kepner and Tregoe suggest that subsequent steps in the diagnostic process should be to establish goals and priorities and to search for ways of meeting them. Such a view is essentially non-systemic; it ignores the interaction of felt needs with the system and its resources, referred to in Chapter 5. It is only possible to adopt their view if the situation is wholly within one person's control. When this is not so, the goal-setting process is inevitably delayed or, more precisely, the setting of realistic goals must be delayed. Goal-setting becomes an essentially interactive, iterative process. Thompson and McEwen (1958) have noted that this is also so at the inter-organisational level.

The whole process could perhaps be described as problem-solving and decision-making. But, for internal consistency, it seems better to call it diagnosis. (Strictly speaking, if the medical analogy is followed, it should be called diagnosis plus the identification of what treatment aims are realistic. But the analogy does not hold up that well, since the aims may be other than treatment. That is, they may also be to achieve opportunities, or to generally develop the system).

A Diagnostic Model.

A common model used by practitioners of planned change follows the sequence System Description ⟶ Analysis of Perspectives ⟶ Diagnosis. This is appropriate if one person is collecting and using the information to deal with a felt need wholly within his control. It is not appropriate for organisational learning when more than one person is involved, since the first person is then put in the 'expert' role of the person who has identified the need and

diagnosed. He then has to feed his information to another party who may not even have perceived the need in the first place, thus appearing as a potential threat, evaluator, salesman or other inappropriate stereotype. The model is one commonly used by management consultants and can be succintly summarised as: System Description $\xrightarrow{\text{(Phase 2)}}$ (Frequently omitted) Analysis of Perspectives $\xrightarrow{(3)}$ Diagnosis $\xrightarrow{(4)}$ Feedback. $\xrightarrow{(3a)}$ It violates the criterion (Chapters 5 and6) that evaluative and normative uses of data should be initiated by the sources of the data. A simple variation is: System Description $\xrightarrow{(2)}$ Analysis of Perspectives $\xrightarrow{(3)}$ Feedback $\xrightarrow{(3a)}$ Diagnosis. $\xrightarrow{(4)}$ The apparently minor change is of profound importance for, provided all those with interests in the data are enabled to work through it, the planning of change can be truly collaborative on the basis of mutually perceived needs. At this stage in the argument, the reader may ask himself 'but what if only one side originally perceived the need, or they cannot agree on the implications of the data for them, or on what actions should be taken: does this not generate conflict rather than collaboration?' The answer is that if those conditions obtain, then conflict may well result and/or the organisation will, overtly or not, 'fight like mad to stay the same.' But would this not happen in any case when a third party presents his diagnosis, or later when implementation is attempted by one of the interest groups? Is it not better to face the conflict at once rather than later, even if the result is to maintain the status quo? (Which may be the appropriate course anyway; there seems no intrinsic merit in agreeing to change an organisation just because one party feels a need; stabilising the system may produce the more effective outcome on occasion).

Heller (1970) has noted that feedback to the sources is in any case a valuable method of checking, clarifying and extending the understanding of a system. It produces new data through their responses and is also a learning process for those involved.

The suggested model for feedback and diagnosis can now be elaborated. Figure 7-1 lists its steps and suggests alongside that certain learning processes are going on at each step. Indeed, it will be argued that feedback and collaborative diagnosis are at the very heart of organisational learning.

Figure 7-1 Feedback and Diagnosis.

Phase in Organisational Learning		Step in Feedback and Diagnosis	Learning Process
2. System Description			
3. System Perspectives			
4. Diagnosis	3a	Feedback of system description and perspectives	Trigger, Stimulus. Attention aroused.
		Interested parties agree meanings of data=	
	4a	...causes of deviations,	Perception of needs to change. Arousal of motivation.
	4b	...possible actions	
	4c	...probable outcomes of each alternative (may include trial or simulation)	Testing understanding. Conceptual transfer to the system.
	4d	...priorities	
	4e/5a	...realistic objectives consistent with the system and its resources	Operational transfer to work situation.
5. Determining the strategy			

This model has a number of significant characteristics. It is devised to ensure as far as possible that the learning process is approached in what seems axiomatically to be the right order. The sequence starts with a stimulus but, because the purpose is not conditioning, does not continue with a schedule of reinforcements of responses; the appropriate response cannot be known initially. On the contrary, learning can best take place through participants discovering a meaning for themselves (internalisation), although accepting the meanings ascribed by somebody else is a possibility.

Another characteristic is that the time perspective shifts from the past to the present to the future. The stimulus is in the present but contains information about the dynamics which led up to that situation. The perception of a need to change is in the present but with a set towards the future. Testing understanding by speculating about probable outcomes is moving (conceptually) into the future and also helps with the 'transfer difficulties' typical of all off-the-job learning situations. If all feedback is on the job, then transfer is not a problem but, more commonly, it takes place at some point separate from that where the need is felt.

Conceptual transfer of learning, as Dienes and Jeeves have demonstrated (1965) is a quite separate activity from its operational transfer. For example, it is common for a learner to demonstrate his understanding of, say, network analysis in a

classroom, but be unable to see any uses for it when he returns to work, even though there are such uses there. He has failed to make the conceptual transfer from one setting to another. The operational transfer may be inhibited by such difficulties as shortage of resources, authority, or by adverse consequences. However, the series of steps in the model is designed to overcome these difficulties by monitoring and dealing with them in the setting where the learner is. In effect, the off-the-job and on-the-job situations become, as far as possible, one. In practice, this sequence is frequently not followed, but the author has found that efforts to stick to it are rewarded by significant adaptations by the organisations concerned. As a more general model, it is useful in a wide variety of training situations. In Part III, there are several examples of its use to design learning systems which are relatively self-monitoring.

SUMMARY.

Published accounts of the diagnosis of social systems offer little guide to structuring the activities involved. Work on problem-solving by psychologists and systems engineers does throw some light on the cognitive processes involved, but largely ignores the interaction of a need as felt by one party with other perspectives of the system. It is, therefore, mainly helpful when the situation is wholly within the control of one person.

A common diagnostic model, much used by management consultants, follows the sequence System Description ⟶ Analysis of Perspectives (frequently omitted) ⟶ Diagnosis ⟶ Feedback. This is not appropriate for organisational learning, since it violates the criterion that evaluation of data should be initiated by the users. A more appropriate sequence is System Description ⟶ Analysis of Perspectives ⟶ Feedback ⟶ (Joint) Diagnosis.

The processes of feedback and diagnosis are described in detail. There are six steps. 3a. Feedback of perspectives to those with an interest. 4a. Interested parties agree causes of deviations. 4b. Possible actions are considered. 4c. The probable outcomes of each are explored. 4d. Priorities are determined. 4e/5a. Realistic objectives, consistent with the description of the system and its resources, are set. Such a sequence is a natural learning process which is self-monitoring; it is not possible to proceed to a step in the sequence until the previous step is complete. The learning sequence is: Arousing Attention ⟶ Arousing Perception of Need to Change ⟶ Testing of Understanding ⟶ Conceptual Transfer of Understanding to the System ⟶ Operational Transfer to Work Situation.

The first four phases in organisational learning have now been considered. They have been concerned with answering the questions 'how did the system come to be the way it is?' and 'what could be done to change it?' That is, they have been mainly

concerned with the time perspective from the past to the present. However, the fourth phase, diagnosis, begins to shift from finding an explanation of how the system came to be the way it is, to asking what could be done to make it different; that is, the time perspective shifts from the present towards the future. This consideration of the future is a marked feature of the next phase, the development of a strategy for changing the system, to be discussed in Chapter 8.

CHAPTER 8. DETERMINING A STRATEGY FOR CHANGE.

A physician who was obsessed with methods of treatment without bothering to try to understand the state of health, anatomy, physiology, nervous system, life goals, personalities and environments of his patients would not remain registered for long. He might prescribe penicillin (or aspirin, or exercise) for everything, regardless of whether the patient needed it, might be likely to throw it away, may be allergic to it or was really suffering from a broken heart. But in exactly this way, practitioners of 'planned social change' may, according to their own theoretical biases, only collect data about the condition of the organisation, or even only a limited aspect, such as leadership processes. Some seem not to bother with an assessment at all, but to prescribe their particular pill, in the shape of the latest organisational or training method, by post. Some, particularly those with ill-defined normative standpoints, appear like Lilly the Pink in the popular song; a character with a medicinal compound 'efficacious in every case'. Lilly's remedy sometimes had some surprising effects. For instance:

> 'Mr. Pears had sticking out ears
> And they made him awful shy.
> So they gave him medicinal compound
> And now he's learning how to fly.'

In published reports of planned change, the word strategy appears to be either missing or used in ill-defined and widely-varying ways. For many, it appears to mean whatever approach

happens to be used for inducing a change, for others a set of ends to be achieved and for still others a set of means to such ends. Like Lilly the Pink, few practitioners appear to take any account of the nature of the system which they are trying to influence. As the International Encyclopaedia of Social Science (1968) observes,

> 'The student in quest of the written strategic thought of the past will be startled to discover how lean it is.'

Havelock is one of the very few authors who considers that the nature of the system might have something to do with a choice of strategy. He suggests, for example, that a system requires certain capacities (resources) in order to bring about change (1969). Some conditions for an organisational learning system to be effective have already been specified in Chapter 3 of this thesis. The author has found, however, no definition of strategy which takes adequate account of the systems mode of describing organisations. It is, therefore, necessary to suggest one. For the purposes of this work a more adequate definition is:

Strategy

> An intention to alter, in a time sequence, given elements of a system which, it is believed, will cause interactions resulting in the achievement of realistic aims for that system.

A strategy thus has a number of elements, which are:

4e/5a. The realistic aims and success criteria. (Expected outcomes in terms of effectiveness, health, problems solved, opportunities realised, images made reality). These result from the process of diagnosis; that is, they are based on a knowledge of the system and are believed to be attainable.

5b. The dependent variables. Those parts of the system; people, structures, tasks, its technologies, cultures, environments, which it is intended to change.

5c. The interacting variables. The parts of the system which are connected to the dependent variable. A change in such a variable results in a change in the dependent one, probably accompanied by further changes in other elements as the system re-stabilises. Leavitt's analysis of interactions (Figure 1-1) shows clearly how a change in say, authority structure may interact with say, tasks, people and climates in the system.

5d. The entry point(s). Those variables which are immediately accessible for change and which, it is believed, interact with the dependent variable in such a way as to result in the desired change in it.

5e. The system boundary. The limits of the system over which the parties to the change have control, or those parts of it they wish to influence. The boundaries are, therefore, determined partly by an assessment of the power of the actors and partly by their judgements about 'where to draw the line.' However, in determining the other elements of their strategy, they must take account of the interactions and transactions which might result from a particular change, or repercussions may pass outside their control or into areas which they did not intend.

5f. The Independent Variable(s) are the means which are to be used to disturb the system and, it is believed, bring about the change.

Note that strategy is not concerned to plan the details of how something is to be achieved; but, rather, a design process of what general interactions to initiate. The next step, planning, is concerned to decide who will actually do what, when, where and how. Strategy is more concerned with matching the general approach to the characteristics of the system concerned.

Realistic aims, dependent variables, interactions and boundaries have already been considered in this work, but it is worth stressing the utility of reconsidering them when setting a strategy. For

example, interacting interest groups may be particularly significant in highly professionalised organisations, since their reference groups, loyalties and values may lie as much 'outside' the system as within it. Thus, for example, strategies which focus on power distribution or which are themselves coercive may be difficult to work since so much power lies at points too remote to the felt needs. This aspect of controllability is often important when considering interacting variables. For example, many organisations have attempted to introduce programmes wherein all managers set objectives and performance criteria as bases from which to plan their work. Sometimes this is done in organisations, such as parts of the Civil Service, where the system of rewards operating is not only beyond the control of the instigators of change, but actually works against it, in this case by rewarding managers not for goal-attainment but for 'not rocking the boat.' The results of such misguided efforts are summed up in the famous observation, attributed to a soldier in the First World War, that 'having lost sight of our purpose, we redoubled our efforts.'

It is now appropriate to examine more closely the remaining two elements of a change strategy; the entry point and the independent variables.

Entry Points. The choice of an entry point is firstly restricted by those which are available. For example, a realistic aim might be to change the performance of a technical system by rearranging it. However, it might be impossible to do so immediately if, say, the payments system in use made it in the operative's interest to continue

the existing system. The payments system might, therefore, be a more appropriate entry point if it could be changed. However, it might even be that some process of re-education, discussion and negotiations with operatives would be required before this could happen. As Leavitt notes (1965 :1145),

> 'clearly, most efforts to effect change, whether they begin with people, technology, structure or task, soon must deal with the others.....the differentiation is in (a) points of entry (b) relative weightings and (c) underlying values, not in the exclusion of all other variables.'

If there is a choice of available entry point, then it may well be made because of 'underlying values,' or simply because suitable resources are available for one but not the other.

Some of the choices of entry point which are frequently available are:

1. Starting on or off the job. Actions to bring about change can sometimes only be taken in the work setting, but when the interested parties can leave the work location to take such actions as reorganising their role allocations, there may be advantages; for example, removing distractions, making better use of expert advice, having time to carry through necessary thinking or negotiation about role relationships.

2. Starting Inside or Outside the System. This is a choice which often exists with educational and training strategies. A typical example is the strategy used by Blake and Mouton (1968)

to 'seed' an organisation with people who have learnt new concepts and values. They are sent on training seminars run publicly outside their own organisation, and then return. In time, a nucleus of trained staff is available internally and they then set up similar training within the organisation.

3. Functional or Status Groups Involved. There is more likely to be a choice of entry points with respect to social groupings if the felt need is a normative image of potential rather than a specific problem to be solved. In the latter case, the problem itself largely dictates the choice of group.

Independent Variables. A great deal more choice is usually available here, but it must not be supposed that independent is the same condition as 'unconstrained'; there may well be considerable constraints on the use of such a variable. Typically, independent variables and their constraints include:

1. Time. At least two aspects must be considered; the first is the time scale and pace for a given strategy to work through to the achievement of aims. This, of course, can only be estimated, since systems are rarely sufficiently closely controlled to be very sure. However, working on the learning principle of seeking a rapid 'knowledge of results,' it seems best to go for the strategy which produces some quick results, in order to maintain activity in the learning cycle. Such an approach may mean that the aims

are set less ambitiously, or not all pursued initially. The second time aspect is the sequencing, starting and finishing time dictated by other considerations. Deadlines, in particular, may be a major constraint and mean that the pace has to be increased to meet them; for example, in farming, to coincide within seasonal activities.

2. Resources. Linked to the first set of variables are the resources which are available or which could be got to carry out a strategy. Obviously, if the pace of work has to be speeded up, more resources must be available. Since pace is difficult to control, especially in large planned change strategies of a normative character, a flexible set of resources should be available or the scale of operations reduced.

Time and resources are well used if they can produce an early success experience for the system, which then acts to reinforce the learning cycle, encouraging further unfreezing and adaptation. A low target with a short time scale seems preferable initially in order to build up the capacity of the organisation's adaptive system. Included in resources are the methods, techniques and other aspects of 'change technology.' They may include means of influencing any system element and will be considered more fully in the next chapter. Another important resource may be a third party in the shape of an adviser, consultant or other specialist brought in to help. Such people may have both 'expert' and 'line' power, to use the terms suggested by Schein and Bennis (1965), which they use to assist

the induction of change. Expert power derives from their knowledge, and line power from their role, via the power and authority system of the organisation itself. There are at least three choices to be made in respect of such helpers:

....should they be employed?

....if so, should they be used for expert advice, or for help with processes such as planning or conflict-handling, or as people to whom to delegate specific tasks?

....what should their position in the system be, that is, a full member or an occasional and peripheral one?

Such choices have important implications strategically, since they may result in very different outcomes, to be discussed in Chapter 10.

To summarise, the choice of independent variables and entry points is essentially a matching process in which the aims and characteristics of the system are fitted together with the most appropriate available means of influencing it at a suitable entry point. It is, therefore, not so much a question of what strategy is best, but what strategy is available and appropriate.

Types of Strategy.

Benne and Chin (1969) have summarised and analysed a large number of reported change strategies, concluding that there are three classes. They are considered here as possible strategies for use at the appropriate stage of the organisational learning cycle.

(However, the latter is itself also a strategy on a larger scale.) Benne and Chin call the three strategies Power - Coercive, Rational - Legal and Re-Educative - Normative. The first, in which power may be used legitimately or otherwise, is characterised by an attempt by one interest group to enforce actions on another; for example, an employer may enforce a change of work procedure by the manipulation of rewards and punishments, or equal treatment of black people be enforced by police supervision. Rational-Legal strategies assume that man is a rational animal open to persuasion by reasoned argument. This is perhaps the commonest approach as, for example, in the use of expert advisers to study a situation and recommend a solution, or a government advertising the perils of smoking cigarettes. Re-educative-Normative approaches are often more appropriate within a general organisational learning approach. They involve an assumption that man is capable of thinking out his own solutions to problems, developing and internalising new values and adjusting his behaviour accordingly. Typical examples are relatively non-directive training methods such as used in T-groups, or the social therapeutic approaches to organisations reported by such writers as Jacques (1951). Both involve providing feedback on behaviour in a mirroring fashion, leaving the system (individual or organisation) to work out what to do about it.

This classification, while conceptually useful, does minimise the possibility of using different approaches at different points of a strategy. For example, the organisational learning model is

essentially a re-educative one, but it may be quite appropriate for an organisation to seek expert advice at particular stages, thus slipping into the rational-legal mode. There are also occasions, for example, in resolving some kinds of conflict (see Chapter 10), when the use of power in a coercive fashion may be appropriate.

All of these strategies are concerned to make an organisation adapt itself, even if outside help is used. It should perhaps be noted in passing that there are other approaches which attempt to get it to adapt, even though it sees no need to. Such approaches start outside the system and are of a number of types.

a. The Alternative Culture. This may use all three of the influence processes considered above. Here, another organisation is set up by one of the interest groups in order to carry out the same functions (or possibly a modified set of functions) in what is believed to be a 'better' way. Such an approach has been used in setting up the American Peace Corps as an independent body, rather than as a wing of the State Department. Several welfare organisations have also been established to compete with existing government departments. It is hoped that such organisations will eventually be absorbed, along with their 'better' practices, into the older organisations; that they may absorb the older one in others; that they may influence it by example, or even that the new one may cause the older one to collapse entirely and

thus supplant it. A logical extension of this approach is completely to ignore the older organisation. This is sometimes done by large companies which, instead of trying to develop new products or stimulate research in subsidiaries, may set up a new subsidiary to perform such functions.

b. Destroy and Rebuild. This strategy takes very seriously Crozier's gloomy conclusions that mature bureaucracies cannot learn. There are two variants; to destroy in the belief that the organisation can be re-assembled in a known way which will make it more effective; or to destroy without a clear idea of how to 'put it together again,' but with certain values and effectiveness criteria in mind. The latter is the real revolution. The former has some superficial characteristics of revolution, but is more properly thought of as straightforward coercion, whether by a majority or a minority.

A final category of general strategies has been labelled the 'temporary system' approach. It can more conveniently be considered as a particular kind of independent variable (means of carrying out a strategy) and this will be done in Chapter 9.

SUMMARY.

A strategy is defined as an intention to alter, in a time sequence, given elements of a system which, it is believed, will cause interactions resulting in the achievement of realistic aims for that system. It is concerned with the general process of deciding what approach is appropriate, rather than with the detail of how such an approach is to be carried out. A strategy has a number of elements;

4e/5a. The realistic aims and success criteria (expected outcomes). 5b. The dependent variables (what is to be changed). 5c. The interacting variables (what is linked to the change). 5d. The entry point (where a change effort is to start). 5e. The system boundary (the limits within which the action is likely to take place). 5f. The independent variables (the means for disturbing the system).

Strategies which start within a system may be rational-legal, power-coercive or re-educational-normative. Other strategies, starting outside the system, but intended to influence it, are the 'alternative culture' amd 'destroy and re-build' approaches. (The latter also have some of the characteristics of the 'internal' strategies).

Strategy-formulation (phase 5 in the organisational learning model) is the last diagnostic phase and is largely concerned with the movement from the present to the future. It lays the groundwork for planning how to make an image of a future become reality.

CHAPTER 9. PLANNING, IMPLEMENTATION, REVIEW.

In a sense, a problem can be said to be solved when its causes have been diagnosed and a solution found. However, this only means that members of the system in question have understood the relevant dynamics within the limitations of their experience of the system. For the system as a whole it is only solved when the solution is implemented and the deviation from normal is corrected. Thus, the 'action' phases of organisational learning; planning, implementation and their subsequent review, are just as important as the data collection and diagnostic ones. Indeed, they provide additional data for steering and improving the strategy as it proceeds. As Coverdale has emphasised (1967), the cost of inaction may greatly exceed the costs (risks) of action. The latter is itself a way of finding out, but it is easy to avoid change by over-diagnosing, or by endless strategy planning. Nevertheless, it is unnecessary to devote a lot of space here to the action phases because, to some extent, they have already been accounted for in discussion of previous phases.

PLANNING.

Firstly, in identifying system states, a number of 'planning' questions have been answered: who is interested and likely to be

involved, what is the nature of their interests, what human and other resources are available, how various system elements seem to be interacting, and so on.

Secondly, the analysis of system perspectives highlights where differences are present, who has different perspectives and what they are.

Thirdly, in diagnosing the felt need, the meaning of this information has been worked out by those it concerns, and the effect of various alternative actions anticipated. Thus, there is some information about who and what might be involved in interactions resulting from a given change.

Fourthly, the determination of a strategy provides further answers to questions of who, how, what, when and where. For example, determining a boundary delimits who and what; determining an entry point and independent variables provides information about who may be doing what, about resource requirements and about sequencing of activities.

Thus, the planning questions 'Who, what, when, where and how?' have all been partly answered. It may well be that an external or internal search is also required to find other relevant knowledge (about, say, relevant methods available to achieve a particular goal) and, of course, action has still to be taken actually to mobilise resources. The detailed planning process will not be further examined here since it is dealt with exhaustively in the literature.

However, it can be observed that all such processes seem basically to be more or less elaborate methods of answering the questions 'who, what, where, when and how?' For example, network analysis and planning of projects is especially concerned with 'who, when and what' considerations. The various mathematical methods of resources allocation are concerned with 'what,' 'where,' 'when' and 'to whom'.

IMPLEMENTATION.

A second aspect of the 'action' phases which will have already been partly covered is implementation itself. The very process of collecting and examining data is itself an intervention in the dynamics of the system and may lead to changes in its state which are not formally planned. This is particularly true of the behaviour of members of the system. For example, their perceptions, attitudes and patterns of activities may all have been changed as a result of the diagnostic process.

The actual actions resulting from the formal planning process can be conveniently classified in a number of ways. Thus, Sofer and Spencer (1964) consider three general aspects of change: varying the extent of flexibility, varying the amount of centralisation and varying the horizontal distribution of power. All of these could be strategic aims or dependent variables in the sense used in Chapter 8. Sofer and Spencer list a number of methods reported in the literature for stimulating changes in their three aspects. Leavitt (1965 .) classifies methods according to the independent

variables or entry points used under his general analysis of people, structural, task and technological approaches. However, he is at pains to point out that, although an approach may start with only one such variable, it nearly always has to involve others later. These two examples illustrate the difficulty of producing a taxonomy which is anything other than a list of approaches which happen to have been tried. Even then, most reported strategies, whether normative or system-functioning in emphasis, include several methods, operating upon a number of variables.

A question of considerable theoretical and practical interest is whether any given combination of aims, system state and performance may rule out or suggest certain combinations of independent variables and entry points. Such questions do not appear to have been researched, other than by group dynamics trainers considering under what conditions their particular methods should be used. Schein and Bennis (1965) suggest some useful criteria for deciding such issues. In Chapter 3, it was suggested that the general organisational learning model was only appropriate in certain conditions, such as relatively low structuring and centralisation of authority. It seems important to try to find out whether similar constraints or imperatives exist <u>within</u> the organisational learning process. For example, Southgate (1968) has presented evidence to show that attempts to 'enrich' jobs by making tasks more complete, and by putting more control in the hands of the worker, may only have the desired effects of arousing motives in situations where power distribution is initially unbalanced in favour of a super-ordinate. Another intriguing question is whether attempts to introduce structural changes, such as formally moving decision-centres,

are likely to succeed in situations, such as hospitals and universities, where power is widely-spread but concentrated in the hands of professional groups whose referents are as much external as internal to the system. The system boundaries in such cases are so wide as to suggest that such formal re-structuring would have little effect other than to produce a 'mock bureaucratic' response (Gouldner, 1954). For example, Miles' work in school systems with these characteristics (Miles et al, 1969) produced a number of formal intentions to change structures but few observable changes. It is not clear whether his problem-solving approach (combined with some aspects of the Research, Development and Diffusion approach) was appropriate to the system and/or whether the chosen means to change, following diagnosis, was inappropriate. His system had a mixture of favourable and unfavourable conditions for organisational learning: high role involvement and a relatively 'connected' technology, but relatively low unit autonomy and high centralisation. If attempts at planned change are ever to be anything more than 'suck it and see', comparative research is necessary to try to see whether any theoretical framework for choice can be found.

Methods for Changing Systems.

This section is a brief classification of reported methods, using the beginning class of independent variables or entry points as the framework.

Structural Methods. These are concerned primarily with attempts to produce formal role relationships which are in accord with the

requirements of the system. They are much concerned with the configuration of role relationships, so that it is congruent with variables such as the technical system or the environment. For example, Lawrence and Lorsch (1967) suggest methods for analysing relevant characteristics of the environment and technology of a system as a basis for choosing appropriate role structures; in environments where the rate of change and uncertainty is high, they suggest that internal role specialisation is more necessary and that this produces a requirement for 'integrator' roles to co-ordinate the work of the specialists.

Others have argued that hierarchical forms are less appropriate in such conditions and that matrices and temporary project teams drawn from 'pools of competence' (Schon, 1970) may be a better solution. The Northern Electric Company (1968) have experimented with this type of structure. They have a number of professional groups in 'flat' hierarchies. People from such groups are combined in project teams, irrespective of their professional status, under the leadership of project administrators. The latter make up a top management committee with the heads of the professional groups, plus a top management whose concern is to relate to the environment. The organisational 'matrix' thus has professional groups on one axis and project groups on the other, the latter with a more limited life. Such forms have long been used in highly-professionalised industries such as civil engineering, and have been advocated for other specialised organisations by Goodman (1971).

Schon (1970) suggests that the logical extension to such forms is the loose network of skilled resource persons, tied together as and when required by information-processing 'nodes' in the network. Such networks already exist but, surprisingly, have received little attention from social scientists. The best known examples are groups of labour-only sub-contractors in the building industry. Such groups have been the subject of much adverse comment from those (including social scientists) who cannot see that they are a response to changing conditions in society; in particular, to the greater spread of power. Other such groups are more respectable; for example, there are several networks of academic consultants, and specialists such as hydraulics engineers and systems analysts have well-established networks. Probably the best-known are the secretarial agencies. Thus, there is already a real choice for large organisations to make use of, or set up such networks, rather than establish more permanent and less flexible structures internally.

Structural reorganisation of a more familiar kind frequently involves attempts to decentralise decision-making and responsibility to product centres, profit centres or other loci representing complete primary tasks. A typical example is reported by O'Connell (1968).

Other structural methods accept the existing configuration but attempt to improve its operation by clarifying and aligning role relationships and activities. For example, Baehr et al (1969) have invented

analytical tools to assist subordinate-superordinate pairs identify, sort and allocate priorities to their functions in order to minimise overlap and maximise autonomy. Many of the techniques of method study are also apposite here.

Finally, the most obvious way of structural change is replacement of key people. Many writers, notably Guest (1962), Gouldner (1954) and Burns and Stalker (1961) have documented the influence of the chief executive, and the often dramatic effects of his replacement. Obviously, this is more likely to be so where power is highly concentrated in the role and, therefore, progressively less important as organisations become more pluralistic.

Technological Methods. As was noted earlier, technology includes equipment, material and informational aspects. Any or all may be manipulated, although the former two aspects are likely to require much longer time periods. Attention will be concentrated here upon the informational aspects; particularly the various programmes which control the system.

Firstly, there are programmes which monitor what is going on within the system and/or in its relationships with its environment. As Reddin has pointed out, they be concerned primarily with inputs (for example, how a manager spends his time) or with outputs (the results he gets), (1970. The effects of such systems are to focus attention on the aspects concerned; 'programmed activity drives out the unprogrammed'; (March and Simon, 1958), and thus a change in such a programme can have a

considerable effect. One of the best known is the 'programming, planning and budgeting system' introduced into American government, which changes emphasis from inputs and activities to outputs and system links. Financial budgeting and accounting systems may similarly be used a variety of ways, as indeed can any information system. For example, a hospital system may provide doctors with output information (patients treated, recovery and re-admission rates), with activity information (percentage of beds utilised) or with input information (staff resources, waiting lists). Each produces a different emphasis tending, respectively, to raise outputs, use up 'spare' resources (not necessarily by doing more work - patients may simply be left longer in bed), or lead to demands for more resource inputs.

Other information systems may be more person-centred; methods for appraising performance, rewarding, punishing, promoting and so on. Of these, some, such as payment policies, may be formally expressed while others, such as promotion criteria, may only be apparent by inferring from observed practices. Attempts to clarify such systems, and to make them congruent with other elements, often form a major plank of planned change efforts. For example, it may be appropriate to reward the members of large groups equally if they need to collaborate rather than compete with each other. At a deeper level, it may be even more appropriate to attempt to stop using payments in a coercive manner, but rather to encourage more genuine collaboration followed by a sharing of outputs. The Scanlon Plan (1948)

is a well-known example of the latter approach, although it retains elements of coercion since the performance criteria are defined unilaterally by the management. A much more ambitious and thorough-going revision is being attempted by I.C.I. Limited (Jones, 1970), in which the interest groups within the firm jointly determine both performance criteria and the basis for sharing outputs, the latter being seen in human as well as financial and material dimensions.

Finally, rules and procedures are a neglected but important means of influencing change and there is evidence that this is particularly so in bureaucracies, as noted by Crozier (1964). The effects of such rules may not be what was intended, as has been succinctly noted by Merton (1940) and Gouldner (1954), both of whom observed dysfunctions resulting. Nevertheless, in highly centralised and structured bureaucracies, a change in the rules can bring about considerable change, and Crozier observes that rule changes initiated by the top management in response to outside pressures are one of the few ways in which such systems do adapt. An example is a change of rule such as was introduced a few years ago in the British Ministry of Social Security, which enabled more junior staff to deal directly with the public and take more decisions about individual cases themselves. Merton also points out (1940: 560) that, in some circumstances, 'formality facilitates the interaction of offices despite (possibly hostile) private attitudes toward one another.....both are constrained by a mutually recognised set of rules.' However, it should not be overlooked that, as environments become less stable,

power is more widely spread in society and other pressures militate against highly-centralised and structured bureaucracies, the likelihood of rules influencing activities significantly is diminishing. Even the armed forces now have to have a less programmed, rule-bound approach in regiments which use highly-sophisticated equipment, such as the modern artillery.

Task Approaches. There have been many attempts to modify tasks, with varying aims. Best known are probably those which set out to arouse motivations of members of a system by providing tasks which meet their needs more fully. Herzberg (1968) has conducted many field experiments involving the 'enrichment' of jobs by providing opportunities for employees to become more autonomous and self-controlling. Enrichment is achieved by allocating whole tasks, for example, the inspection as well as building of a radio set, to an individual, rather than separating off control activities. The autonomous work group concepts developed by such workers as Miller and Rice at the Tavistock Institute have a somewhat wider focus, involving the matching of task boundaries with 'sentient' (emotional) boundaries. The aim is to give a group or individual as complete control as the technology allows, often by modifying the latter, (Miller and Rice, 1967).

Job enlargement is a related but incomplete approach involving the combination of several sequential steps in a work process into one task. It does not include higher level activities such as programming and control, and is, therefore, merely 'more of the same;' a relatively minor tinkering with the system. Philips Industries

Limited report a long series of experiments which they call Work Structuring (1969), including all of the variations mentioned above.

Earlier task-centred approaches were very much the domain of the work study engineers. Their criteria were more narrowly focused on purely technical efficiency, and thus led to what Leavitt (1965 : 49) calls an ahuman approach, planning and organising work so that as little human contribution as possible was required. Such methods have been out of favour with academics for many years and are now beginning to pass from favour among managers of organisations. However, they are still the preferred means of change for very many people. In drawing attention to shortcomings of such approaches, some social scientists have managed to throw out the baby with the bath-water. Many of the analytical tools used, particularly those of methods study, are still of considerable utility and do not have to be used in an ahuman or inhuman way. They are usually used in the classic consulting model: felt need ⟶ system description ⟶ solution ⟶ feedback ⟶ implementation, in which an 'expert' tells the system what is good for it. However, if used within the model: felt need ⟶ system description ⟶ system perspectives ⟶ feedback ⟶ diagnosis ⟶ strategy, with as much as possible done by the system itself rather than a third party, then they may be much more effective.

As Miller and Rice point out (1967), task re-design has profound systemi effects if it includes control and programming activities. It implies that modifications to both structures and information systems will also be required.

People Approaches. Leavitt (1965) has noted that 'people' approaches have shifted from a primarily manipulative emphasis to one which is more concerned to equalise power between the parties concerned. Within the former category he cites attempts to influence the behaviour of others such as the attempt by Martin and Sims (1959) to describe behaviours leading to political power within organisations. Kelman (1969 :584) points out that all influence processes involve manipulation of others; the question is not whether manipulation is used, but how. His suggested criterion is that it should be used to widen the choice of others, rather than restricting it, an argument based on the explicit value that maximising choices for people is a good per se. Leavitt, too, points out that many so-called non-manipulative approaches implicitly ignore the power dimension. He cites Coch and French's attempts to influence acceptance of planned changes (1948), noting that, although they were concerned to provide conditions wherein members of a group could come to their own decisions, the decisions made were those desired by the management; what would have happened if the groups had come to the opposite conclusions?

One feels that many people-centred approaches are of this kind, dubbed by some as 'participate, or else!' People-centred approaches, whether manipulative or not, seem mainly concerned with three processes: leadership, education and training, coaching and counselling.

Coaching and Counselling.

To start with the latter category, coaching or counselling involves some third party intervening in the work of individuals, dyads or larger groups in order to help them understand their situation better. It is thus based essentially on an acceptance of the status quo, except in so far as that it is recognised that the existing system may have (relatively minor) malfunctions. The coaching aspects may involve a third party inducing some new piece of behaviour in the work situation, or helping a dyad work out their difficulties. Such methods are appropriate then, only if the system is believed to be basically right and merely needs some 'oiling.'

Education and Training.

Many training approaches are of this type, based on the assumption that, as long as people understand what is 'required' and have the necessary knowledge and skills, they will behave appropriately. Brethower and Rummler (1966) have warned that many such 'can't do' problems are in reality 'won't do' problems. A worker knows perfectly well how to produce say, high-quality goods, but does not do so because he is, for example, rewarded only for quantity of production. A more systemic approach would also ask how other elements in the situation tend to influence behaviour. Educational approaches can vary along several important continua, thus:

Purely Cognitive	→	Purely experiential
Unilateral*	→	Interdependent+
Concerned to maintain a system	→	Concerned to develop a system, or help a person grow.
Centred on awareness	→	Centred on skill development
Centred on the individual	→	Centred on inter-individual or inter-group phenomena.
Centred on tasks (what is done)	→	Centred on processes (how it is done).

Purely cognitive learning tends to produce merely 'knowledge about' things, rather than an 'understanding of' things. Some experience of or with the phenomenon in question is required before it can be fully understood. For example, to understand how to drive a car or to listen to somebody one has at some time to actually do it and reflect upon the results. It is doubtful whether purely experiential learning exists; some theory (albeit a very personal and possibly unconscious one) is always used in approaching a situation and in subsequently reviewing the experience. Nevertheless, the distinction is real enough to merit a great deal of attention in planning education.

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* One-way, with 'teacher' in control and knowing the required responses.

\+ Two-way, with teacher as a resource and facilitator, helping learning by discovery.

The learning method (cognitive or experiential) clearly relates to the aims (awareness ——> skill). The more the aims are to develop skills, the more some opportunity to practise is required. Awareness, on the other hand, can be developed by largely cognitive means, largely experiential means, or by both.

Skills fall into at least three categories; the familiar skills with things (task skills), skills with ideas (intellectual skills), and the less familiar skills with interpersonal processes (process or organic skills). All can be developed by appropriate learning experiences. Clearly, task and intellectual skills may be developed by a learner in relative isolation, but process skills (or even any real understanding of interpersonal processes) require some inter-active experience involving others.

The degree of interdependence in the learning situation (Schroder et al., 1967) is the extent to which the teacher provides opportunities for learning by discovery, rather than trying merely to get a conditioned response. Interdependent relationships may be very important in inducing awareness, for the discovery process may be the only acceptable or sufficiently real source of dis-confirmation for the learner.

Training, which is concerned to maintain a system (by, for example, 'fitting people to jobs") is likely to be relatively unilateral, and to encourage 'correct' responses. Contrary to popular myth, much secondary and even university education is of

this type. That which is designed to foster development, whether of an individual or a larger system, will be less deterministic, more interdependent and with the ultimate possibility of complete internalisation or rejection by the learner.

Finally, the phenomena under study may be centred on individuals, between individuals or in larger social systems. Any of them may be studied at a cognitive level in isolation, but require the appropriate grouping if attempts are being made to develop understanding or skills.

The author has found that the use of these simple dimensions does much to clarify the purpose and design of learning. For example, the various type of group dynamics or "laboratory' training can be categorised relatively easily; a few cases will illustrate the point:

'Personal Growth Laboratories' tend to be mainly experiential, with very small cognitive inputs, mainly concerned to develop awareness in the individual of himself and his own potential, mainly concerned with processes rather than tasks and with interdependent relationships with the trainers.

A common form of 'T-Group' centres upon inter-personal or inter-group phenomena rather than on intra-personal ones, is mainly experiential and interdependent in form, is concerned with development rather than maintenance, has some cognitive content and although mainly concerned with processes, gives some attention to how processes interact with tasks. However, it is clear that

a vast number of permutations are possible, and very careful design is needed to maximise the desired kind of learning. One gets the impression that many practitioners run 'happenings' without any clear idea of a design.

Coverdale Training, (1967) a specialised and very carefully-designed form of group dynamics training, concentrates mainly on interpersonal and inter-group phenomena, develops cognitive and process skills simultaneously, is mainly experiential and interdependent in form and tends to be oriented towards maintaining systems rather than with more radical developments.

Leadership.

This topic has received a great deal of attention from social scientists and understanding of it has passed through a number of stages. Early schools of thought saw leadership essentially as a manipulative process designed to get people to do what was required of them. Leaders were born and not made, so the only real problem was to find those with the charisma. Later, attention was given to personality traits of successful leaders, until it was observed that successful leaders frequently had completely contradictory traits. Thirdly, the 'functional' school developed the notion that all leaders had to perform certain functions, such as motivating, controlling, planning and so on. Most people could learn such functions, so the problem shifted from being a selection one to a training one. The more highly-developed

functional theories, such as those of Likert (1967) and Blake and Mouton (1964) advocate 'ideal' leadership styles claimed to maximise influence in all situations. Likert's 'System Four' lists goal emphasis, task facilitation, interaction facilitation and supportive behaviour as the vital functions. Blake and Mouton (1964) suggest that maximum emphasis on task and human aspects in all situation is the ideal to be aimed at. Such approaches, while they may prove to be appropriate in many situations, are essentially non-systemic, ignoring the other system variables. Reddin (1970) has pointed out that some situations, for example, may call for such despised behaviours as rigid inflexibility.

A fourth school is more 'situational' or systemic in its emphasis, and sees the leader's role as requiring system diagnosis before action is taken. This is a less unilateral approach to leadership, since relevant elements of the system are such variables as the needs and interests of the followers. Early examples of this school are Tannenbaum and Schmidt (1958), and Adair (1968). Both are somewhat limited in that they delimit the system variables in advance and take a line similar in some respects to the functionalists. Fiedler (1967) and Litwin and Stringer (1968) represent the most developed framework. The latter in particular allow of the interaction of many system variables and specifically set out to train leaders first to identify and then match together the needs of the followers, their own needs and interests, tasks, structures and other variables. Such an approach is, like others advocated throughout this work,

more easily open to monitoring because it explicitly identifies relevant aspects of the system state which can thus be checked later. Its criteria are, in other words, more operational.

Cultural Approaches. The insights of anthropology, although often used by applied social scientists to help understand change processes, have been little used to bring them about. Yet they would seem to offer powerful levers for changing systems, as has long been intuitively understood by organisations in the 'people-changing business'. For example, initiation ceremonies, codes of ethics and uniforms have all been used to powerful effect by public schools, monasteries, the armed forces, and by closed professions such as nursing and the law. Such devices serve to ease a new entrant's assimilation into the system whilst at the same time preserving its integrity. However, there are other ritualistic devices for disturbing such systems in order to cope with change. Abel-Smith (1960) has documented how nursing and other para-medical professions have managed to respond to changed technical requirements by a continual upward concentration of skills and statuses, reinforced with various symbols of office and accreditation. A common example, recently seen in the radiography profession, is the creation of unnecessarily difficult examinations and other entry requirements to the grades doing the new work. The passing of such examinations seems to be largely an accreditation ritual, since they appear to bear no relationship to the requirements of the work. Such devices do at least ensure that new technical requirements are taken care of, but have other effects, such as restricting entry to the profession, which may be dysfunctional for other interest groups.

The continued power of ritual may be seen in Western society in the continued preference of couples for a formal marriage ceremony conducted in a church; for many, the last time (and possibly the only time) they may set foot inside one. The public ritual, attended by a relatively neutral facilitator, cements the 'change of system state' for the couple. Perhaps an industrial equivalent would be a productivity agreement blessed by the Minister for Productivity in the presence of both parties during a television interview! An effort to apply the lessons of anthropology more widely seems to offer many other possibilities. For example, in many complex systems in which power is widely spread, one sees situations which are 'deadlocked'. Some change in the general culture might be the only way out, but how to induce it? By creating new images or new totems, perhaps, or by some public ritual initiated by an appropriate 'witch-doctor'?

REVIEW.

The organisational learning model suggested in Chapter 3 has feedback built-in at every stage. As these stages have been considered in previous chapters, an attempt has been made to show how the model is made as self-monitoring as possible. The means suggested include specifying deviations in terms which are operational as possible (Chapter 4), identifying system elements which it is believed will be affected by changes (Chapters 5, 6 and 7), testing understanding and conceptual transfer (Chapter 7), defining dependent,

interacting and independent variables (Chapter 8). However, it is futile to suppose that all changes can be anticipated and that there will not be some totally unexpected effects. These will become apparent as new felt needs. It may also be appropriate to set up some formal monitoring programme so that major attempts at change can be properly evaluated by the system. However, such efforts are a separate research issue and not part of the concern of this work. It remains to consider the roles of third parties in a related role, that of facilitating the working of the adaptive processes, before presenting some cases in Part 3 which illustrate the use of the model.

SUMMARY.

Planning (phase 6 of the organisational learning model) is seen as essentially a process of answering the questions who will do what when where and how. A good deal of the data collected in previous phases helps to provide the answers to such questions. Specialised planning methods are not considered in detail, since they are fully described in the literature.

Implementation (phase 7 of the organisational learning model) can be classified by reference to the intended outcomes of the actions taken, by dependent variables manipulated or by independent variables which provide the means of action. The latter is used as a framework for considering a range of possible actions, under the sub-headings of people, task, technological, structural and cultural approaches. (In practice, a particular strategy may include several approaches).

People approaches include various forms of education and training, coaching, counselling and modifications to leadership styles. Structure approaches include the changing of role configurations and decision centres, the clarification of roles and the replacement of key people. Technological methods include changes in equipment, materials and information technology. The latter is most easily modified and includes methods for monitoring inputs, activities and outputs of all kinds. Examples are budgeting and cost control systems, appraisal and rewards systems and formal rules and procedures. Task approaches include various methods of enlarging and enriching jobs. Finally, cultural approaches include the use of symbols, rituals, totems and ceremonies to facilitate or resist change.

Throughout the consideration of the organisational learning processes in preceding chapters, attempts have been made to make the system as self-monitoring as possible. The stage of review involves, therefore, a comparison of outcomes with intentions. However, it is impossible and undesirable to monitor only expected outcomes; there may have been unexpected changes either in the system or its environment. A new appreciation of felt needs is accordingly required.

Thus, consideration of the working of the organisational learning model of the adaptive sub-system is now complete. In the final chapter of Part 2, the parts played by third parties in facilitating its operations will be examined.

CHAPTER 10. THIRD PARTIES AND THEIR POWER.

Thus far, the organisational learning process has been considered with only passing reference to the roles which third parties might play in it. It was suggested in Chapter 8, however, that a third party could be an important independent variable in a strategy designed to change a system. This proposition will now be examined.

Throughout the discussion of phases in the organisational learning cycle, an effort has been made to describe the detailed processes involved. Glidewell (1960:52) has noted that a third party may be a consultant, who applies objects, skills, ideas or feelings which the 'client' need never possess or control; or a consultant-trainer, who is concerned also that the client acquires possession of the same. Schein (1969 :9) has drawn a distinction between a third party who helps out with the content of a felt need and those who help with only the process by which it is tackled; that is, he is more concerned with how rather than with what, (Havelock, 1969 : 7-6). There are many published works which describe the activities of third parties in more detail. Ferguson (1968) lists seventeen activities, most of which have been previously mentioned in describing the organisational learning cycle. They include:

...Capturing data;

...Transmitting it from one place to another ('serving as communications conveyor belt');

...Linking people or groups together;

...Analysing process;

...Assisting in diagnosis;

...Finding incongruence (perspectives);

...Identifying and releasing blocks; sensing and encouraging new developments (acting as 'plumber or obstetrician');

...Assisting in the management of conflict, and

...Promoting a spirit of enquiry.

All of these are concerned with process, rather than substantive content. Blake and Mouton (1968) list nine 'interventions' which a third party might use, including:

...Pointing out discrepancies;

...Feeding in relevant theory;

...Suggesting procedural improvements;

...Setting up comparisons/experiments before a decision is made;

...Identifying dilemmas;

...Identifying structural sources of problems.

These activities emphasise process but also include some concern with content ('experiments') and are generally more interpretative and normative in character. Seashore and Egmond (1960 : 41-2) list such activities as:

...'freeing' persons in the system (because of the third party's neutrality) to participate in learning;

...serving as a stimulus for re-defining the situation;

...providing initiative in exploring difficult or unknown problem areas;

...providing helpful information, procedures and resources.

Here is a continuing concern with process but also a willingness both to initiate activity and to provide appropriate resources. Schein (1969: 102-3) notes that process interventions may also include coaching or counselling and suggestions about appropriate structures. He makes it clear that third parties may also provide help with the content of the work.

Cherns (1969: 211), writing from the point of view of research, describes the third party role which is primarily concerned with the organisational learning process as that of an 'operational researcher.' 'Action research' (which often includes 'operational research') involves an active contribution to the content and direction of planned change. Holloway (1968) has produced a more thorough and detailed schema. He describes a role which incorporates aspects of all those previously quoted, plus the setting up of an overall organisational learning system (see Chap. 2, p.5). Activities within the role are described in considerable detail.

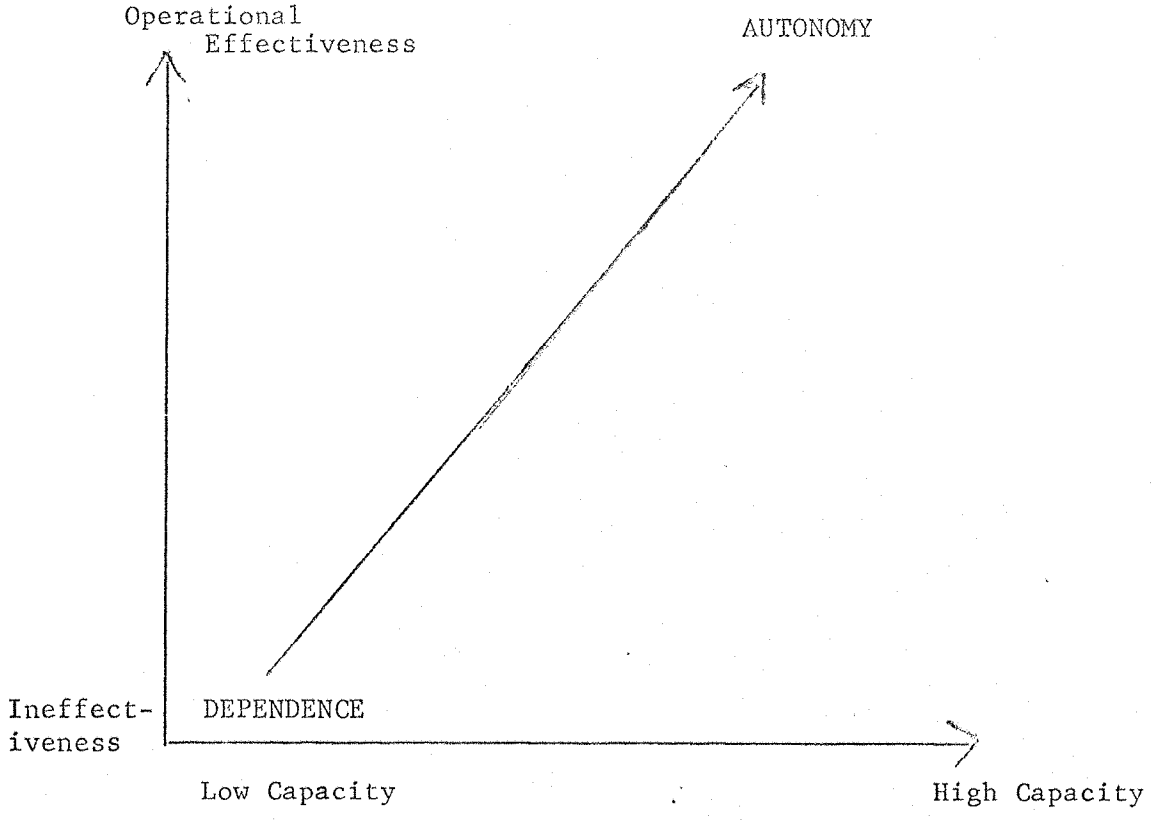
A Typology of Third Party Helping Roles.

There are certain activities which are common components of the third party helping roles described in the literature. Indeed, several authors have labelled particular combinations of activities as role types. Examples are 'Content Consultant' and 'Process Consultant' (Schein, 1969), Renewal Stimulator (Lippitt, 1969), Interventionist (Argyris, 1970), Social Consultant (Sofer, 1961), 'Operational Researcher' and Action Researcher (Cherns, 1969), 'Consultant' and 'Consultant-Trainer' (Glidewell, 1960), 'Change Agent' (Jones, 1969). There is, however, little agreement on the theoretical framework used to decide the labels, and some authors appear not to use one at all. A framework will now be developed which enables third party roles to be arranged in a typology according to purpose.

A system which develops its organisational learning processes (or adaptive sub-system, in Katz and Kahn's terms) can, as noted in Part I, be said to be moving from a state of relative incompetence to one of 'organisational health' as its capacity develops. A system which is developing its other sub-systems can be said to be moving from an ineffective to an operationally effective, goal-achieving state. The former is concerned with the processes by which the latter mediates the tasks of the system or, to put it another way, the former is concerned with the process (how) and the latter with the content (what). A system which is both operationally effective and of high capacity could be said to be

autonomous with respect to its environment. One which is operationally ineffective and of low capacity could be said to be dependent. In summary, the situation can be represented as in Figure 10-1.

Figure 10-1.



Operational effectiveness and capacity are represented, for the sake of clarity, as orthogonal variables. In practice, they may interact or possibly, as claimed by Bennis (1966), amount to the same thing. However, as far as a third party helper is concerned, they seem to be largely distinct.

As Glidewell (1960) has noted, third parties may operate by giving advice and/or by attempting to transfer their own skills to the system. This dichotomy could be extended to a range of behaviours which a third party might use in a client system;

Use abilities for client system, i.e., take part in or lead tasks or processes →	Recommend What To Do or How To Do It. →	Transfer abilities to client system.
(EXPERT)	(ADVISER)	(TRAINER)

One person might use all of these behaviours at different times in the same system, both for process and content variables. The Expert role is least ambiguous and presents fewest uncertainties for the system. The Trainer role presents the converse, although even then a third party may partly manage the process; for example, by structuring a feedback meeting as suggested in Chapter 7. In other respects he may merely 'mirror' events or otherwise provide feedback.

Thus, there are six types of role: Process Trainer, Process Adviser, Process Expert, Content Trainer, Content Adviser, Content Expert. In practice, the two 'expert' roles probably merge into one, since content and process can only be conceptually separated, not in action. In this work, the concern is primarily with process helpers (facilitators).

The Appropriate Use of Third Party Helping Roles.

Schroder et al. note (1967: 12) that,

> 'training can refer to the development of two independent aspects (a) response patterns, attitudes, roles and rule application,' (content training),

and

> '(b) information-processing structures. From the structural (capacity) point of view, the question is not what a child is taught - what habits, attitudes and so on - but what adaptive orientation he develops while he is learning these responses in a particular environment.' (process training).

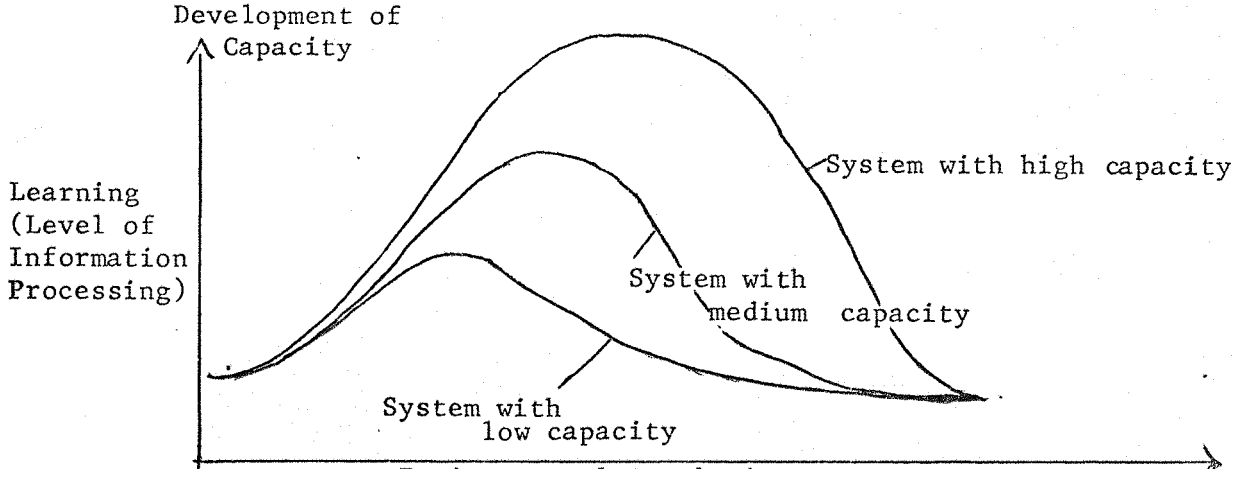
It should be reiterated here that, throughout this work, an attempt is being made to answer the question 'how can organisational learning be facilitated?' Thus, it must now be asked 'which third party role is most likely to facilitate organisational learning?' Argyris (1970 : 17-19) argues that 'interventionists' should see their role as generating valid and useful information which maximises free choice for the client system and helps it develop internal commitment to lines of action. The interventionist is urged (p.218) not to do things (diagnosis or taking action) for the system and to recommend only when a tested solution for a known problem is available: the emphasis is on generating data to maximise free choice. (It could be argued that generating such data by observation, interviews, questionnaires and feedback is doing things for the system. To be consistent, it would be necessary always to train system members to do such things.) Argyris represents one polar position; that the

appropriate role for facilitating health should be, in effect, process trainer. However, in practice, his own activities appear to include some of those of process advisers and experts. Other practitioners, as noted above, suggest that a range of activities is appropriate. Ferguson's list (Page 10-2) includes activities within the process expert, adviser and trainer roles. Blake and Mouton's are similar, with additional 'content adviser' or even 'expert' aspects involved in such activities as setting up experiments. Cherns' 'action researcher' represents the opposite pole to Argyris' position, since he puts the third party firmly in the expert role, albeit with additional process adviser and process trainer activities. (The research aspects are not considered here).

What then, is an appropriate role for facilitating organisational learning? The question is not one which can be answered in its present form, since it is posed as though the answer were independent of the state of a particular system. Havelock (1969:11-22) notes that this cannot be so. He lists several factors, such as openness, capacity and structure, in which variations make a difference to the kind of processes and roles which can operate. The problem-solving process may not be usable, for example, if system capacity to marshall resources is too low; it may be more appropriate for a third party then to assume, temporarily, a leadership or innovative role (1969 : 7-4). Harrison (1970 : 181/2) suggests that the 'depth of intervention' should be that which is required to produce enduring solutions to the problems at hand, and at which the energy and resources of the client can be committed to problem-solving and change. Athos (1970 : 54) suggests that teachers have a similar problem: teaching methods

have to be geared to the increasing capacity and autonomy of the student; the more developed the student, the less appropriate is the 'expert' role and the more appropriate is the role of the trainer who generates conditions for free choice. Finally, Schroder et al. (1967 :40/41)offer a clear theoretical statement that learning will be maximised when environmental complexity is optimised. Some Complexity (subsuming the number of 'bits' of information, its noxity and its eucity) is required as a stimulus to learning. Too much produces not learning but regression. The relationship is expressed as a U-curve. As the capacity of the system increases (becomes more 'healthy'), a more complex environment is required to optimise learning and thus further raise capacity. This is summarised in Figure 10-2. In the sense used in this work, the 'expert' role produces least environmental complexity for the system and the 'process trainer' role the most. Therefore, the choice of roles depends on the system's existing capacity. Schroder et al. also suggest that a system may be developed in respect of some things but not others. Therefore, a 'trainer' role may be appropriate at one time or in one situation, but an 'expert' role at another within the same system.

Figure 10-2. Relationship Between System Capacity, Learning and Environmental Complexity.



Examination of reported cases of third parties at work makes it clear that many of them do use a multiplicity of roles. Sofer (1961: 97) is quite explicit about this, emphasising a frequent switching, including a content as well as a process focus. Schein, too, (1969 : 102-3) also acknowledges that many roles must be played. Havelock notes a number of common 'linkage' roles and points out that

> 'As in any classification, the 'types' offered here are all somewhat fictional, something of the order of "ideal types." When we look at the linker in vivo, we find that he is a mixture, playing several linking roles in sequence and simultaneously.'
>
> (1969 : 7-2).

This theoretical approach can now be applied to activities previously described as part of the organisational learning cycle. Figure 10-3 gives a few examples of third party activities ranging from an expert role to a process trainer role at each phase of the cycle.

Figure 10-3. Third Party Activities in Organisational Learning.

Phase	Expert (or Leader) Activity	Adviser Activity	Trainer Activity
Need	Provide new norms, images. Identify needs.	Interpret felt needs.	Mirror needs.
System Description	Describe *for* the system.	Recommend how to describe. Describe *with* system.	Train system members to describe.
System Perspectives	Analyse *for* the system.	Analyse *with* system. Interpret perspectives.	Train members to analyse and interpret.
Feedback/ Diagnosis	Diagnose and feedback to system. Handle conflict.	Feedback to system, offer relevant knowledge. Diagnose *with* system.	Feedback to system. Train how to diagnose and handle conflict.
Strategy formation	Work out strategy for system.	Offer relevant knowledge. Work out strategy *with*.	Train how to form strategy.
Planning	Work out plan for system. Locate resources.	Work out plan *with*. Suggest appropriate resources.	Train how to plan.
Action	Provide resources of skill or leadership.	Provide relevant knowledge.	Mirror.
Review	Monitor and evaluate *for* system.	Monitor with system. Interpret outcomes.	Mirror. Train how to monitor.

Mirroring of activities may take place at all stages, as may analysis of interpersonal processes. In the same system, a third party might act as trainer at one phase, adviser at another, leader or expert at another. On a different problem within the same system, the roles could be reversed. However, in order for a system to develop towards healthy functioning, the roles should move in time towards the trainer end of the spectrum. Griffiths (1964) thinks third parties are more likely than the system itself to initiate such normative changes, or new goals, rules and procedures. The system itself is more likely to be concerned with improving its present functioning. Havelock (1969 : 11-15) notes also the tendency to 'package' methods of problem-solving and of handling other processes, for diffusion as the 'development' phase of his R, D and D model.

POWER AND THE THIRD PARTY.

The definition of power to be used here is 'the ability to influence the behaviour of others.' Commonly, power is said to be of a number of types. Bennis (1966: 168) lists

....Coercive power; (deriving from position) the ability to reward or punish;

....Referent power; in which a person is influenced through identification with another;

....Expert power; deriving from the possession of relevant knowledge;

....Legitimate or traditional power; deriving from norms or traditions of the institution;

....Value power; in which a person internalises values of the influencer.

More recently, Perrow (in Press) has suggested that power can be equated with absorption of uncertainty for the person influenced. Hickson et al.(in Press) consider that typologies such as used by Bennis are sources of power which provide the means for absorbing (or creating) uncertainty. They suggest that power depends on the extent to which a sub-unit of an organisation

....can cope with uncertainty for the main system;
....can be substituted by alternative units;
....is central (linked to) the activities of the main system.

These three strategic contingencies can be controlled

....to varying degrees (weight);
....in varying parts of the system (domain), and
....for varying behaviours (scope).

Now, if these frameworks are used to examine the roles of third parties in facilitating organisational learning, it becomes possible to analyse the sources and extent of their power. Bennis (1966 : 168) argues that such 'change agents,' as he calls them, have little coercive power

> 'for we can guess with some confidence that unless the change agent is himself a manager or an influential member of the organisation, he does not possess the means to exert coercive power.'

There are at least two reasons why change agents do possess such means. Firstly, their role is almost invariably initiated and

supported by an internal person with power, frequently a chief executive. The third party cannot avoid the power that results from this position, which he could use by such means as giving and supporting data about one party to another or threatening to invoke the support of his patron for a given line of action. Secondly, no matter how the third party actually behaves, he may be perceived as acting very differently. As Southgate points out (in Press: 25), an 'objective' description of a power structure 'says nothing about the subjective reality' and 'power is defined by those who obey rather than those who command.' (p.7). Thus, no matter how the third party seeks to avoid coercing, for example, by presenting a range of choices or by refusing even such a limited initiative, he may be perceived as coercing a choice by a receiver who is dependent and wishes a father-figure to choose for him. At the least, the third party is forcing him to grow up a bit. He coerces because of such perceived threats as potentially withholding approval or publicly mocking. In addition, he may actually be fairly central to the receiver (because, say, he is a boss or respected colleague) and/or of low substitutability (because, say, of his perceived expertness or uniqueness). (If actually in such a role as a real father, then such perceptions may be very close to 'objective reality.')

Bennis argues also that tradition or expertise are unlikely to be sources of a change agent's power, since his methods may not be widely legitimated and his expertise minimal. While this may be

objectively 'true,' it is again the case that the receiver may perceive it otherwise. Again, he may be perceived as one who can absorb uncertainty by say, using his expertise to find problem solutions. It seems less likely that he will be regarded as very central for reasons stemming from tradition or expertise, nor as one who is irreplaceable. In these senses, he may indeed be a 'marginal man.'

That leaves means of controlling the strategic contingencies which stem from a third party's values, or because he is one with whom the client system identifies. Bennis, whose views are echoed widely by other writers in this field, asserts that these are the major sources of influence, and certainly that the change agent should strive to make them so. Coercive means are to be avoided as being inconsistent with values and norms held by such third parties. All of the same provisos apply here as with other means of influence; the subjective reality may be very different from the objective one. Also, objectively, referent sources may make people dependent, and thus increase the change agent's centrality or reduce his substitutability. (A very common situation with clients who come to depend upon respected work study officers: the latter often end up becoming de facto managers of the situation). Nevertheless, it would be hard to quarrel with Bennis' basic value of striving to help the system become more healthy, better able to test and adapt to reality, and to develop an autonomous identity.

One further source of power for the third party is his very marginality. As Katz and Kahn point out (1966), new inputs are perhaps the most potent source of change in systems. Boulding (1963) has noted also that there are threshold levels below which inputs are absorbed and neutralised. Schon (1970), in making the same observation, argues that invasions may be ways of getting over the thresholds. The third party, because of his marginality, can become the invader who raises the input level above the threshold. He may, for example, add his weight to an existing body of opinion within a system, favouring a particular set of values or norms, thus significantly altering the climate. Or, more concretely, he may tip the scales in favour of say, enrichment of jobs.

How Should a Third Party Use his Power?

Levinson (1967: 232-3) has pointed out that, in this field, power issues are often avoided

> 'except to decry power as authoritarian and therefore to be diffused (but) there is no leadership unless the leader has power. There is no functioning task group without a leader.'

As has already been noted above, power cannot, in any case, be avoided. The attempt to avoid using power may also increase environmental complexity to the point where it causes regression rather than learning in the system. The question is, therefore, how best to use power? Three normative criteria can be derived from the strategic contingencies theory of Hickson et al., and the learning theories of Schroder et al.

1. To optimise uncertainty and thus maximise learning and development. The optimal level will vary with the existing capacity of the system. If capacity is low and the system dependent, then the third party may need to use the expert or adviser role rather than the trainer role; to use unilateral rather than interdependent learning situations. Thus, for example, it may be appropriate to use power to bring about a particular behaviour change in order to give the system experiences which lead to attitudinal changes and possible subsequent increases in capacity. (A father may push a young child off on a bicycle without physically supporting him. Given adequate confidence in, and appropriate emotional support from the father, the child will tend automatically to correct his balance as he falls to one side, and thus learn to ride quickly. His general confidence in such situations may then increase. On the other hand, constantly giving physical support prevents the child having the experience of recovering a lost balance and he may become more dependent and less confident. Trying to reason with and convince the child in advance of the act, that riding a bicycle is easy, may only create uncertainty and doubts. Again, the actual experience may be inhibited, in this case by the formation of unfavourable attitudes.)

2. To maximise his own substitutability and thus increase autonomy for the system. The more a third party acts in the 'expert' role, the more difficult it becomes for the system to substitute

somebody else for him, particularly if he becomes expert in the substantive content of its work, rather than just the processes involved. In this respect, the third party should seek to minimise his own power by moving from the 'expert' towards the 'trainer' role as soon as possible, thus increasing free choice for the system. Otherwise, he may cause it to become more dependent upon him and to create conditions where he can actually exploit it. (A tactic more appropriate for a take-over than for an attempt to improve organisational learning capacity.) Such behaviour amounts to the third party meeting his needs at the expense of another system. Glasser (1965), in the context of mental health, defines this as irresponsible behaviour. He argues that practitioners concerned to improve the mental health of clients cannot accept their irresponsible behaviour. Acceptance amounts to a denial of the reality of the world in which they live; they have to be helped to see the consequences of such behaviour for others and for themselves. If they attempt to behave irresponsibly towards the helper, he should refuse to be exploited. Similarly, if the 'helper' behaves irresponsibly he is no longer helping. Some normative standards are required. It is suggested that, for the third party, maximising his own substitutability may be one such. In effect, this tactic shares power via the transfer of capacities to the client system.

3. Maximising his Own Centrality. There are two reasons for this criterion. The first is that the third party cannot give help or influence in any way unless his activities are seen as linked with and relevant to the system. No link, and there is no opportunity to cope with uncertainty nor to vary substitutability. But why maximise centrality; is this not a contradiction of the previous criterion to maximise substitutability? No, maximising substitutability ensures autonomy for the system, but maximising centrality is distinct from that. The two criteria together would result in a situation where two autonomous parties are maximally open to be influenced but also maximally able to resist if appropriate. The relationship is one in which power is both maximised and equally shared; in which the parties transact as complementary equals. The client system's learning capacity would thus be improved by its becoming more open to appropriate influence and its autonomy developed by defining its 'identity' further.

The second reason for this criterion is both normative and empirical. Bennis et al. (1969) argue that the most durable changes involving a system with a third party are those in which the influence process is mutual. In the research context, Leeds and Smith (1963: 71) have argued that:

> 'a viable relationship not only is based on direct exchange (e.g., research sites for application and implementation) but is also based on a more subtle exchange - namely, involvement with each other's interests.'

Hall et al. (1966), in the context of prison regimes, argue that maximum change in prisoners results when there is a simultaneous effort by the staff both to get the prisoner to conform to society's norms (be 'responsible' in Glasser's terms) and to demonstrate commitment to developing the prisoner's autonomy and capacity to adapt. In such a situation, the prison staff represent the values and norms of society but recognise the futility of trying to impse them upon prisoners. This is an analogous situation to that outlined by Gouldner (1969) in deriding 'the myth of a value-free sociology. ' He points out that not only is it impossible for a social scientist to 'leave his values at home' but that he should not attempt to do so. On the contrary, he should seek to influence if he believes that his values and theories are more appropriate, whilst striving to remain open to influence himself.

There are many situations in practice where third parties may seek to take up such a normative position. Some examples are noted in Chapter 2 ; other important cases are those such as noted by Havelock (1969 : 11-15), involving attempts to spread knowledge developed elsewhere. The third party here may act in the role of one who tries to get the system to adopt

innovations or to assist in their development stages. Organisations which are ineffective in the sense of not performing the functions expected of them by the external groups with interests in them, may be those which most need the services of a third party. Typical examples are industrial conciliators who, by definition, are substitutable, but must be seen as central if they are to help. Conciliators do not usually take up a normative position with respect to say, the effects of an industrial dispute on the parties immediately concerned. However, they do implicitly assume a normative position with respect to the effects on the superordinate systems.

It must be emphasised that, whenever third parties assume a normative position, they should do so within the limitations suggested in earlier chapters, by such means as describing and comparing, followed by the use of normative judgements, and all within the context of helping the organisation to adapt. Otherwise, as has been seen, little real learning may result.

Summary.

In this chapter, it is proposed that third parties may help a system with either the content of its work or the processes involved. Their help may be that of the expert role occupant performancing a task for which the system lacks capacity; an adviser providing advice about particular tasks or processes; a trainer

developing the capacity of the system itself in carrying out those tasks and processes. In order to develop the autonomy and operational effectiveness of the system, the third party must seek to increase its capacity by moving from the expert to the trainer role as soon as appropriate. The role adopted at any time should depend upon the existing capacity of the system, in order to optimise its environmental complexity and thus maximise its learning and development of capacity.

Third parties have power, which they seek to avoid, derived from their position, expertness, values, identity, and ability to reward or punish. Their 'objective' power may be different from that subjectively perceived by the client system. The nature of their power lies in their ability to control the 'strategic contingencies' of the client system; that is, the extent to which they are central to its activity, can be substituted and can help the system cope with uncertainty. Three criteria are suggested for the use of power by third parties in ways leading to organisational health. They are optimising uncertainty in order to encourage learning in the client system; maximising their own substitutability, in order to develop autonomy and identity in the client system; and maximising their own centrality to the system, so as to maximise mutual influence and other transactions with the system. The adoption of a normative standpoint on occasion is considered as inevitable, legitimate and desirable.

CHAPTER 11. FOUR CASES OF ATTEMPTS TO FACILITATE PLANNED ORGANISATIONAL CHANGE.

Introduction.

In this chapter, four attempts to facilitate planned organisational change are described and analysed, using the organisational learning model. The attempts took place over a period of more than five years and are presented in the order in which they started, although there was considerable overlap. Case 1 covers the entire period, Case 2 the later three and a half years, Case 3 about six months in the middle, and Case 4 about two and a half years at the end of the period. The accounts were written after the events in question by the author, who was involved in all four cases. They are analysed, using the models developed in Part II, in the margin of the text. There are some considerable difficulties in this approach.

Firstly, in complex and changing situations it is not always possible to 'know' objectively what is going on. There are large numbers of variables, some of which the observer may not be aware of and few of which are amenable to control. New variables may also appear throughout the time in which the processes are monitored. As Schon notes (1970: 877), in monitoring processes (as distinct from taking 'snapshots')

> 'We can form useful perspectives on what's happening and what led to it by noting processes internal to what is going on.... we can, if we are present all the time, observe one thing

'growing out of another. These internal judgements are severely limited; we cannot assert that the observed changes would not have occurred under other conditions, but we can extract from the experience projective models which form useful perspectives on the next event, although they must always be tested in the here and now of that event. Similarly, we can form typologies, we can identify sets of situations, sets of actions, suggestions of relationships between projective models derived from experience.'

In this chapter, an attempt will be made to use such projective models and typologies, derived from the author's experiences and from the experiences of others as reported in the literature. Such experiences, projective models and typologies, summarised in Part II, are used to try to form 'useful perspectives' on the four cases and on likely future events. Throughout the period covered, the author was trying to evolve an approach which would facilitate organisational learning. Parts of the models presented in Part II were developed and used during some of the cases. Where this was so, the process is described in the text. Thus, all of the limitations noted by Schon apply.

Secondly, it is not one model which is being tested, but a range of models whose complexity can be infinitely developed. The basic eight-phase 'organisational learning' model can be considered as the bare bones, or it can be developed with further elaborations; for example, the feedback and diagnosis processes presented in Chapter 7. As Schroder et al. (1967) note, there is not one fixed human learning structure but only identifiable levels of

structural development. In human systems, the simplest adaptive structure is the autonomic response (mediated by energy), then a conditioned response (mediated by information) and then a conscious, deliberate one (mediated by an appreciation of the situation). Finally, a human system may initiate a new appreciation, rather than merely responding to situations (Vickers, 1971: 101). Schroder and Vickers come to very similar conclusions about such structural development, although starting from different points, using different methods and using (slightly) different terms.

It has already been argued in Part II that systems with more developed information-processing structures have a greater capacity to learn and adapt, leading to greater operational effectiveness. If the structures can be understood, it may be possible to induce them in existing systems. (Schroder and his colleagues have shown this to be possible with individuals and small groups). It is assumed that the basic organisational learning model is a relatively high-level structure (mediated by appreciation or other higher order processes) and that its refinements represent further development. However, behaviour changes in complex social systems may occur whether or not such higher-level structures are present. For example, one party in the system may bring about a change via the use of power or by stimulating a conditioned response to a rule or value. As Schon notes, 'internal judgements (of a particular case) are severely limited; we cannot assert that the observed changes would not have occurred under other conditions.'

Thirdly, the data presented are hardly valid by normal criteria, since they are the author's version of the reported events and not fully verifiable. Others could, no doubt, find other data about the events, or observe other events not noted by the author. This difficulty (unlike the first two) could be largely overcome by applying the model to other reported cases where valid data are available (in the unlikely event that they cover all relevant variables). Better still, field experiments could be set up specifically to collect the necessary data in a valid form. Whether such experiments are worth while, in view of the two remaining difficulties, is conjectural. However, it is clear that the accounts which follow must be regarded as illustrating the author's cognitive processes as well as the subject-matter. This may be no bad thing for

> 'These procedures do not differ in principle from those by which men have always developed their understanding of the world they live in. Long before 'science' existed, men formed expectations based on experience and revised them in the light of further experience...(but)... the area least modelled and least understood is the way in which hypotheses are generated.'
> (Vickers, 1971 : 113).

The Four Cases.

All four attempts to facilitate planned organisational change took place within one Region of the British Hospital Service. The Region consists of a headquarters (the Regional Hospital Board)

responsible for major planning and resources allocation, plus the provision of a number of central services, and twelve Hospital Management Committees. The latter are responsible for day-to-day adminstration of groups of hospitals (in some cases one large psychiatric hospital) and have a federal relationship with the Board. Having once received their capital and revenue allocations from the latter, the Hospital Management Committees are largely autonomous.

Within each group of hospitals, there are (except in the groups with just one psychiatric hospital) several hospital units. A unit varies from very small clinics to extremely large and complex District General Hospitals. The larger units have a separate administration under the leadership of a Hospital Secretary, responsible for the hospital's fabric, most of its non-human resources and all non-professional staff, (up to half of the total employees). In addition, he shares responsibility for some staff in Professions Supplementary to Medicine with the medical heads of the units concerned. Unit administrations are, however, far from autonomous. Much of the financial, logistical and personnel management is centralised within the staff of the Hospital Management Committee, who also provide engineering and building maintenance services. Nursing administration within a unit is largely in the hands of the Matron, although the Hospital Management Committee staff again carry out most of the supporting functions. The Matron and Hospital Secretary each report to the Group Secretary, who is the Chief Officer of the Committee, the latter consisting of

part-time (and mainly lay) members appointed by the Regional Board. The members usually have a supervisory role and play little part in day-to-day management. They normally include, however, up to 25% medical members, some of whom work at least part of their time within the hospitals of the Group. Organisation of nursing administration is currently being changed, but this did not begin to happen until near the end of the period covered in the study. The events leading up to it have, however, some relevance to the cases reported, and are referred to where appropriate.

The actors common to all four cases are the management training and development staff of the Regional Hospital Board. The author was initially a member and subsequently the head of the department concerned, which provided its services without charge to Hospital Management Committees and Units in the Region, using both its own staff and outside consultants, university staff and other helpers. In relating the cases to the models developed in Part I, the stages in the models are identified by numbers as used therein. In summary, they are as follows:

1. Feeling a Need
2. Describing the System
   - 2a. Connections
   - 2b. Interactions
   - 2c. Resources
   - 2d. Boundary
3. Identifying Perspectives
   - 3a. Feedback

4. Diagnosis
   - 4a. Possible causes
   - 4b. Possible actions
   - 4c. Probable outcomes
   - 4d. Priorities
   - 4e/5a. Realistic objectives

5. Setting a Strategy
   - 5a. Success criteria
   - 5b. Dependent variables
   - 5c. Interacting variables
   - 5d. Entry points
   - 5e. System boundary
   - 5f. Independent variables

6. Plan
   - 6a. Who
   - 6b. What
   - 6c. When
   - 6d. Where
   - 6e. How

7. Implementation

8. Review

CASE 1. Seatown Psychiatric Hospital.*

Seatown Hospital Management Committee is a single-hospital 'group' consisting of a psychiatric hospital which had about twelve hundred beds at the time this narrative starts. It was built at the end of the nineteenth century and functioned primarily as a custodial institution; many of its patients had been there for fifty years. Long-stay patients absorbed most of the available resources of the hospital, leaving relatively little room for more active rehabilitative regimes. The posts of Group Secretary and

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* All names are fictitious.

The system has unit autonomy, relatively high decentralisation and high role involvement. (Should be favourable conditions for organisational learning, see Chapter 3). However, there is also fairly high structuring of activities, a relatively fragmented technology and a placid environment (unfavourable conditions for organisational learning, Chapter 3).

System capacity is probably low, since there has been high stability for a long period, in spite of poor outputs.

COMPARISON WITH THE ORGANISATIONAL LEARNING MODEL

Group Secretary feels needs and takes action. Needs felt are primarily images of potential. Jumps from Phase 1 to Phase 7, i.e. no organisational learning.

Predictions
1. Capacity of system will not be affected.
2. Its behaviour will change only if Group Secretary has sufficient power to bring it about himself.

Hospital Secretary were combined and had been occupied by the same man for many years. He had played a passive role, responding primarily to the demands of the Medical Superintendent (a consultant psychiatrist in medical charge of the hospital), the Matron and the Chief Male Nurse. The latter two were responsible for virtually all the hospital staff, including most of the non-professional grades, such as cleaners and porters. There were also five other consultant psychiatrists who, like the Superintendent, were employed by the Regional Hospital Board, plus a smaller (and varying) number of junior doctors employed by the hospital. On his retirement, the Group Secretary had been replaced by a very active and enthusiastic man who previously held a fairly senior role at the Regional Hospital Board. The Committee Chairman was a local businessman who was much in favour of this more active approach and gave the Secretary a lot of support. The hospital had a poor reputation, both with the general public and among staff elsewhere in the hospital world, except that it was regarded as being fairly progressive in its nursing practices.

The new Group Secretary threw himself into his work and quickly established a much stronger power base than his predecessor. Firstly, he assumed responsibility for a number of managerial functions which de facto had been taken over by the Medical Superintendent. Secondly, he began to take over from the Matron and the Chief Male Nurse responsibility for domestic and other supporting staff. Thirdly, he tried to improve the hospital's contact with and image in its community. Fourthly, he made extensive use of the services

Initially much successful action taken through unilateral use of power. (Prediction 2 supported).

He has some coercive power, although little with key figures.
" " much referent power and some with key figures.
" " much expert power although little with key figures.
" " little legitimate power and almost none with key figures.
" " much value power and some with key figures.

Secretary's power over key figures is limited.

Prediction 3. Secretary can mainly effect change in areas wholly within his direct control.

Little evidence of the system becoming more 'healthy'. (Prediction 1 supported).

No review (Phase 8) after Phase 7.

Prediction 4. Errors may be repeated.

Group Secretary has images of improved management and supervisory practices. (Phase 1).

Also feels needs to solve certain problems. 'Diagnosis' that management practices are to blame. Seeks third party help to improve them. Has jumped Phase 4.

Prediction 5. May meet resistance at later phases from other interest groups. Also, system characteristics/resources not known, and may be insufficient.

Third party assumes process adviser role. Neither party is much concerned to describe the situation (2), analyse perspectives (3) or make a diagnosis (4). Other interest groups not involved. (Prediction 5 again).

of the Regional Hospital Board and was able to attract large sums of capital to quickly renovate the buildings and improve services. After some initial resistance, he came quickly to be regarded as highly competent and was both liked and respected. Relationships with the Medical Superintendent, the Matron and the Deputy Matron were, however, at times difficult. Whilst they shared the general high regard for his abilities, they were often suspicious of his motives and seemed to feel that he was sometimes unreasonably involving himself in their affairs. Such doubts were rarely voiced openly. There were strong norms of politeness and of conflict-avoidance, so that the casual observer saw only polite and apparently collaborative exchanges between them.

The Group Secretary began to feel that he must do something to improve management and supervision throughout the hospital. He had little idea of what improvement was possible or desirable, but a general feeling of considerable potential. He was, however, aware of certain widespread signs, such as 'poor communications,' which he attributed to inadequate management and supervision. The Regional Board had recently appointed a Training Officer and the Group Secretary sought his assistance. Together, they discussed what should be done.

The Training Officer advised that the limited research evidence available at that time indicated that supervisory training, to stand any chance of influencing behaviour on the job, should be

Third party recommends a strategy. It is assumed that an available entry point (individual managers) has sufficiently strong interactions in the system to result in the felt needs being met. Phase 4 proceeds to Phase 5. Still no data on earlier phases.

Strategy 'sold' to other key figures in the system. Ignores real power situation. Interest groups not involved in determining strategy. (Predictions 5 and 1 again).

Some attempt to describe aspects of the system, but assumptions used are not verified. The 'description' is more of an evaluation in the absence of description. (Phase 2). Earlier failure to complete Phases 2 and 3 means Phases 4 and 5 proceed 'in the dark.'

Third party now acts as expert resource to plan (6) the detail of the strategy which has been agreed, and also provides financial resources. Other interest groups (Matron, Doctors, etc.) again not involved.
Third parties act as content advisers, recommending the detailed content of the courses. The content is only related to the system in so far as the incomplete system description/diagnoses allow it.
(Predictions 5 and 1 again).

Prediction 6. Detailed plan may not reflect real needs - insufficient data available.

Action proceeds according to plan. (Phase 7).
Prediction 2 supported, but outcomes not apparent.

provided as a common experience for a majority of those in leadership positions, over as short a time scale as possible, and with active support from the most senior levels. The Group Secretary persuaded the Matron and the Chief Male Nurse that all their supervisory staff up to and including their own Deputies should be involved. He decided against asking the medical staff to participate, judging that their small numbers made their involvement less important and that it would be very much more difficult for them to find time to attend.

The Training Officer commissioned the Management Studies Department of the local technical college to run training courses within the hospital, in working hours, and designed with them a four-day course. It attempted to impart knowledge about the general organisation of the hospital and of the Hospital Service; knowledge about the subject of management in general; to develop an understanding of and skill in some interpersonal communications processes and to develop a little skill in using method study techniques to improve work performance. It was thus a conventional course for its day (1964), with typically vague and generalised aims.

The course was repeated in most working weeks and, within the space of about six months, had been attended by virtually all the target group. The Group Secretary attended every course as a member of a panel to answer questions at the end, and also sat in from time to time on sessions taken by the college lecturers, the Training Officer or other specialist staff provided by the

Although reactions of key figures in the system are noticed, and seen to be unfavourable, there is no feedback to earlier stages. These other interest groups are seen as people whose "resistance must be overcome."

(Predictions 3,4,5 supported. Prediction 1 supported for key staff)

Both Group Secretary and third parties adopt strongly normative positions, assuming that their norms and values are appropriate for the system.

New felt needs are induced amoung course members. (Phase 1).

Other system elements prevent course members acting to meet felt needs. Such elements probably include authority structures in the hospital and/or professions, dependent relationships with senior staff. There may also be others which are not apparent. Little conceptual or operational transfer of learning to work setting. (4c, 4e)
(Prediction 2 supported, but detailed outcomes unexpected - response may indicate net power input from third parties. Prediction 3 not supported - changes noticed outside his area of control, although not those specifically intended)

Phase 8 omitted.
Prediction 7 as 4.

Group Secretary and third parties now try to induce new values and norms and to induce awareness of felt needs through personal social interaction with key figures.
Have jumped to phase 4 of new cycle.
Prediction 8 as 5

In effect, this is also part of strategy for a larger system (the management of the hospital region).

Regional Board. The Matron or Chief Male Nurse, or their Deputies, also took part in most of the panels and sat in occasionally on other sessions. The Matron and her Deputy were, however, visibly less enthusiastic than the Group Secretary. They appeared to be anxious about making such appearances and tended to be defensive in their replies to questions.

Two features of the courses were unknown in the previous life of the hospital. Firstly, people from all departments attended in mixed groups. Secondly, the tutorial staff used very informal methods involving a lot of member participation, and openly tried to influence the acceptance of such values.

The effects of the courses were dramatic and immediate, characterised by one observer as 'blowing the roof off.' Members showed a greatly enhanced awareness of problems and opportunities, with a strong desire for action, but action was seen essentially as something which should be taken by 'them.' Values in favour of informality and participation were enthusiastically espoused verbally, but few behavioural changes were noticed in this respect.

At about this time, the Medical Superintendent, one or two other medical consultants, the Matron, Chief Male Nurse, the two deputy heads of nursing and the Group Secretary were beginning to attend similar courses with colleagues from other hospitals, held in hotels away from work situations. For the most part they were 'encouraged' to go, at the instigation of the Group Secretary and

Professional authority structure used to influence. Influence mode probably discreet coercion or identification.

Group Secretary taking up a more normative position. (Still jumping from Phase 1 to Phase 4).

Key figures trying to stabilise the system, or at least their position in it. The unintended effects (raising anxiety and resistance) probably result from inadequacies in earlier stages. Little feedback, although the effects are noticed.) Predictions 1-3, 5 and 7 and 8 supported. (Phase 8).

No adequate review possible (although a formal review was attempted), because no realistic aims had been set and there was little framework for describing the system and its state. The (new) needs are now interpreted as being the 'transfer and application of learning'; thus, a new strategy is produced, again with little reference to the system or to perspectives.
(N.B. There was an attempt to assess the perspectives of the course members. They also saw the problems as transfer and application of learning). Phase 8 is now leading back to a new Phase 1 and 3, but Phase 2 is still omitted. Doubtful whether all involved in Phase 3 have same perspectives on felt needs as Secretary.

Prediction 9. Although involvement of some interest groups at Phase 3 makes success more likely at later phases, the lack of system description means that adequate stages 4, 5, 6 not possible. New third party, but role remains the same.

Group Secretary increases his power base by importing reinforcements with a belief in similar norms and values, in attempt to overcome the threshold levels for changing the system.

Predictions 1, 6, 7 and 9 supported. 5 not supported.

the Training Officer, by their senior professional colleagues at the Regional Board. The Group Secretary also sent himself on a four-week general management course, run by a staff college. The Group Secretary became even more enthusiastic. The others expressed varying degrees of enthusiasm verbally, but there were few observable behavioural changes, unless they had become more anxious.

As soon as the hospital's own courses were over, the Group Secretary formed working groups drawn from various departments at supervisory levels. Their brief, arrived at in discussion with the Training Officer, was to look at problems which they had in common and to work them through to a satisfactory conclusion. The groups met regularly for short periods and individual members were supposed to do preparatory work between meetings.

During this period, the author began to take over the Training Officer's role as the latter withdrew to concentrate on other duties. The Group Secretary also increased his own staff significantly by appointing a Deputy from outside the hospital. He had previously been a Work Study Officer who had done studies for the hospital, had also attended the same training courses which the senior staff of the hospital had been to and selected with the aid of the new Training Officer.

It soon became apparent that the members of the working groups, while they were acutely aware of the signs and symptoms of organisational problems, had little skill in recognising,

More outcomes of the original strategy now becoming clear. Major outcome is induction of new felt needs. In the new strategy (training applications groups) the former course members are being asked, in effect, to describe and diagnose the systems relating to their felt needs, produce strategies and implement them. It is apparent that they lack the skills to do this. Also, some interest groups who are key elements in the systems relating to their felt needs are not involved, and some of them have involved themselves by blocking actions. Phase 2 seems to be crucial, and is still omitted. All earlier predictions now supported, although 5 and 8 only in respect of key figures.

Needs not met. Little review of outcomes. Secretary now aware (phase 8 - 1) that later phases based on inadequate data.

Group Secretary takes the departure of the Matron and her Deputy as chances to pursue further his original normative diagnosis that improvement in management is required. Strengthens his support by another importation of a person with similar values and norms. Secretary is doing nothing to raise capacity of system, but seeks to change by use of power.

Prediction 10 Secretary will now be able to induce more changes, but capacity will not increase.

The threshold for change now seems to have been exceeded. (Prediction 10 supported)

Third party again used in process adviser role.
Felt needs remain much as they were originally.
Predictions 5 and 8 not supported. Interest groups have been through two partial learning cycles with little success and now seem to feel some needs as Secretary. Perhaps success of political power approach is more than compensating.

defining and solving actual problems, in determining the aims which lay behind them, or in techniques which were needed to deal with some of them. More importantly, it was clear that some of the senior staff (those who had only been to courses held outside the hospital) were not giving them active support and, in some instances, were actually hindering progress. The groups continued for a few months and one or two achieved some worthwhile changes in practices and policies in the hospital. However, they were for the most part unsuccessful, and the momentum began to give way to frustration. At this point the Group Secretary wound them up.

Shortly afterwards, the Matron and her Deputy (who had been showing particularly apparent signs of anxiety about the project) resigned in quick succession to take jobs elsewhere. The Group Secretary took the opportunity to appoint a new head of nursing, The Principal Nursing Officer, who would be in charge of both male and female nurses. The 'two sides' (male and female) of the hospital would be integrated in accordance with modern therapeutic practice. The Chief Male Nurse, who was nearing retirement, did not want the extra responsibility, and welcomed the appointment of a younger man from another hospital. The latter had attended a similar four-week management course to the Group Secretary and was enthusiastically in favour of the Group Secretary's approach. He succeeded rapidly in integrating his commands and was quickly accepted by his staff.

The Group Secretary now discussed again with the Training Officer what could be done to harness the energy and enthusiasm which was still being displayed by many in leadership positions.

Overall strategy for the system remains the same, except the entry point is extended - now includes attention to 'task' as well as 'people' variables. Individuals (or groups) are still expected to produce their own improvement strategies within their part of the system. However, this time there is an attempt to help the managers and supervisors define their felt needs more precisely, and to describe and analyse the relevant systems before producing strategies and plans for change, (i.e. Phases 1, 2, 3 + 4 + 5 followed, although not their elaborations. However, no feedback after Phase 3).

Prediction 11. In the long term, capacity will increase.

Prediction 12. In the short term, the 'expert' solution, arrived at by the dominant coalition, may provoke resistance.

Additional third party acts as process expert (leader, conciliator, negotiator). (Phase 6).

Also acts as process trainer. (6) (7).

Also attempts to describe parts of system (2).

(1)

The 'specification of the deviations from standard' not feasible. Many of these in the professional interest groups do not perceive any 'deviation' because they have (3) no idea what goes on in the system as a whole. Earlier omission of Phase 2 now causing serious difficulties. Attempts to describe the system now are foundering - perhaps a more complex structure for Phase 2 is necessary.

Prediction 12 not supported) Secretary has the power
10 not supported) to get changes - even 'expert' solutions which fail do not provoke resistance.

System seems very dependent on him.

Prediction 13. A more structured approach would help to raise capacity, provided appropriate behaviours are known. (Not possible without better system description).

Third party acts as process adviser.

Phases 8, 1, 4, 5. (Phases 2 and 3 again omitted).

It was agreed to try 'management by objectives' as a means of helping them define aims and problems better (with the help of a management consultant). The Training Officer thought that specific behavioural change aims were certainly not clear, and it seemed that an attempt to define the 'performance gap' would help to identify them. The process would involve each supervisor or manager analysing his work, suggesting appropriate aims and standards, agreeing them with his superiors and acting on his own initiative to achieve agreed targets. The consultant was brought in to help supervisors deal with the constraints of their situation, particularly in getting support from others for change, and he worked in this respect as a team with the Deputy Group Secretary. A further role for him was as a coach to supervisors in analysing their work, defining aims and problems and identifying training needs.

The consultant started work with the leaders of a team of doctors, nurses and administrators. He realised almost at once that his brief was impossible because of the lack of systematic data in the organisation. He could not assist in defining the 'performance gap' because no usable measures were available and ideas in the organisation about performance were extremely nebulous.

The Training Officer suggested that two alternatives were now open. Firstly, an educational input could be devised to help supervisors develop and apply skills in handling data for purposes of aim-setting, problem-solving and performance measurement.

Judges system members not ready for a more thorough training approach and, indeed, would not perceive it as relevant to felt needs.

Recommends using third party as expert and content trainer to produce and transfer methods of measuring and defining effectiveness. Attention now fucussed on Phases 1 and 2

Prediction 14 Some organisational learning should now follow.

Little attention to social system at this point. Emphasis has now shifted to technological (informational) variables. This is what has been missing earlier - probably over-concentration on social variables.

Deviations from standard can now be better defined, and some elements of the system more adequately described. Earlier goodwill, probably induced by considerable power of Secretary, can now be used. Predictions 13 and 14 supported.

Phase 3a is at last included.

For the first time, all the major interest groups have an opportunity to perceive needs held in common, with some data to enable their specification. Also, they are able to exchange some perspectives, although information about some aspects of the system is lacking. Third party (Training Officer) acts as process trainer/ adviser. Phases 1-3a covered.

Probably, some tentative joint diagnosis takes place. (Phase 4, 4a, 4b).

This could be done relatively quickly and easily, using packaged material generally available. It would be financially expensive and the development of performance measures would take some time after the courses were run. The supervisors seemed somewhat unlikely to be keen on 'another dose' of training before they had achieved anything much on the job.

The alternative was to put all the available resources into gathering data about actual and desired job performance and organisational effectiveness, using the consultant as an expert resource to do the work with the aid of the Deputy Group Secretary. This would be no less expensive, but promised to produce some useful data relatively quickly since (by chance) the consultant had had a lot of experience of such work. Furthermore, the approach would overcome reluctance to take more training, although leaving supervisors in a position where they would still be doing nothing new.

The second alternative was chosen and produced results rapidly. Some fairly simple manipulation of existing data sources showed up some patterns which indicated ways in which the hospital could vary its performance by taking different kinds of decisions about the admission and discharge of patients. A conference of senior doctors, nurses and administrators, taking a day and a half off the job, was called to consider the data and decide what aims and decisions they helped to illuminate. The conference included a limited educational input from the Training Officer in the form of simple guidelines to aim-setting and performance measurement. Unexpectedly, some of the senior staff, who had previously done little about the project, subsequently changed their decision-making radically, and this had a

Individual doctors complete their system diagnoses after the meeting, and have sufficient autonomy to act. Effects on the system are noticed. (Phases 5 - 8 follow in sequence). Predictions 11, 13, 14 supported.

Needs now seen less in terms of generalised images of potential and more in terms of specific problems and opportunities. Much more effort is now devoted to defining needs, describing aspects of the system, and presenting data for joint diagnosis by the interest groups. (Phase 8 has led back to new phases 1, 2, 3, 3a, 4. Also phase 2 structures are becoming more complex (some indication that 2a, 2b, 2d used).

Prediction 15. Capacity should now go up.

Extra third party acts as process trainer to the groups.

This time, the earlier strategy works. Prediction 15 supported.

Also acts as process expert, describing and interpreting the social system. Acts as both process manager (expert) and trainer in helping groups to use his data to adjust the system. (More effort at Phases 1 and 2)

More elaborate Stage 5 model now in use - specifically includes 5a, b, c, e.

Overall, the organisational learning model now describes, to a large extent, what is done.

Third parties act as trainers of specific individual process skills.

(Note: By this time, more than five years after the case history starts, the hospital has vastly improved its performance. Its public image is excellent, it treats more patients with about 400 fewer beds, relations between interest groups are good and medical performance criteria are being developed).

sudden and marked effect on the performance of their departments. For example, several long-stay patients were rehabilitated into hostel accommodation and very much stricter control exercised over the admission of patients who were old but not really psychiatric cases. Efforts were made to prevent new patients becoming institutionalised.

Encouraged by this, the hospital then commissioned the consultant to develop a general information system. (This work is still in progress at the time of writing and has shown many ways of controlling and improving the performance of the hospital). More than two years after the attempt at management by objectives first aborted, the hospital felt ready to try again to define its performance standards, this time armed with much more data. An additional management consultant has been engaged to help with this work, and has made considerable progress working with 'trouble-shooting' groups constituted on superficially the same lines as before. However, he has also been analysing the organisational systems and controls in the hospital, which is proving valuable in defining roles and organisational structure, indicating information flows required, suggesting standards and throwing up numerous problems and needs for change. This work is reported elsewhere by King (1969). An additional feature is that many of the staff involved in the 'trouble-shooting' groups have been receiving related skill training and doing project work which has a bearing on the groups' activities. This training is described in Case 4.

CASE 2. Geriton General Hospital.

Geriton General is a large and very busy hospital, with several associated units arranged into a Sub-Group. There are also several other large hospitals elsewhere in the Group. Its

The unit has low autonomy, high structuring and a fragmented technology; all unfavourable conditions for organisational learning. There is also relatively high decentralisation and role involvement among the professionals (favourable conditions). The administration is decentralised as far as day-to-day supervision, but resources are controlled centrally (unfavourable conditions).

Needs are widely felt (as problems) but not openly considered by all the relevant interest groups. (Phase 1)

senior staff consist of the Hospital Secretary and the Matron, both of whom report to the Group Secretary, and upwards of forty medical consultants. Most of the latter work for part of their time in other hospitals and all are employed by the Regional Hospital Board. There are considerable numbers of junior doctors, employed by the Hospital Management Committee, who work full-time in the hospital. The Group Secretary, who was nearing retirement, left the running of the hospital's administration largely in the hands of the Hospital Secretary, a vigorous and enthusiastic man recently appointed, with a background of very varied experience in hospitals and on the staffs of hospital management committees. The Committee's Treasurer, however, exercised a close, centralised control over expenditure, so that the Secretary's autonomy was thus restricted. The Chairman of the Committee was a local businessman and City Alderman, who was also Chairman of the Regional Hospital Board. He played little active part in the affairs of the Group of hospitals. A number of Committee members, however, took a detailed, although often uncomprehending, interest in the day-to-day management of the Group. The Group as a whole had a history of strained relationships between the staff and the Committee members.

Within Geriton General, relations between nursing administration, the Secretary's department and the doctors were generally poor, although those between nursing administration and the Secretary had improved to the point where they achieved a slightly uneasy collaboration most of the time.

Environment is tending to turbulent.
(Emery and Trist, 1965).

More felt needs - problems. (Phase 1)

Some opportunities also apparent; at least to third parties. (phase 1)

Some successful induction of change through unilateral action of Hospital Secretary. Has similar power sources to Group Secretary at Seatown, although weaker position power. Probably more legitimate/traditional power, less expert, value power.

Hospital Secretary wants to induce new norms and values - assumes they are appropriate to the needs of his system. (Phase 1 - jumps to phase 4)

A related system has images of potential. Phase 1

Training Officer (third party) also tries to induce new norms/values. Needs not closely defined, system not described, perspectives not analysed, diagnosis very limited and not conducted with many of the other interest groups. Similar analysis to Case 1 up to this point.

The hospital was one of the busiest in the country and its physical and human resources under constant pressure. Its image in the community was not good, with frequent complaints, occasional law-suits and active ginger-groups operating. Staff recruitment and retention problems were said to be endemic and unavoidable because of the nature of the local labour market. However, specialist staff of the Regional Hospital Board had demonstrated that staff shortages in some categories at least were illusory and, in one case, had devised a successful scheme to improve recruitment and training and largely eliminate the difficulties.

The Hospital Secretary attended a hotel-based senior management course of the type described in Case 1 at about the same time as the staff from Seatown Psychiatric Hospital were doing so. He became interested in management problems and achieved some success in improving the hospital's public relations. After hearing about the supervisory training in progress at Seatown Psychiatric Hospital, he asked the Regional Hospital Board's Training Officer (the author) to provide something similar. A request of the same kind was received also from another large general hospital in the Group, and the Training Officer suggested that courses be provided for all supervisory staff in the Group. This was planned and organised in much the same way as at Seatown, using a different technical college. In fact, the whole project proceeded in much the same way as at Seatown, up to the point where the 'follow-up' groups had proved relatively unsuccessful, and for similar reasons.

Original needs still felt and original strategy (entry point with 'people;' assumed they could influence system to meet felt needs) still being pursued. (Phase 8 - 1 - 4 Very limited phase 2)

Doubtful if supervisors feel the same needs as the Hospital Secretary and the Training Officer. "Strategy" used here in limited sense; only refers to how to arouse motivation of supervisors. No involvement of other interest groups. Phases 3, 3a and joint phase 4 omitted.
Prediction 1 Capacity will not be increased.

Prediction 2 Interest groups will resist changes except where secretary has control over all relevant variables.

Felt needs now shift to normative aims, rather than immediate system functioning. But some cursory attempt at system description (2) and diagnosis (4) by Secretary and Training Officer.

Plan (6) is to return to phases 1 and 2

Secretary and Training Officer decide strategy and then try to involve other interest groups through membership of the steering group. But not all the members of the group have been through the same thinking process as the Secretary and Training Officer. (i.e. are not at phase 1)

Prediction 3 Other interest groups will not take part unless and until they share felt needs.

The aim is to induce organisational learning within the steering group, but this aim is not declared. Success of this strategy probably depends mainly on power of Secretary and third parties to induce felt needs.

The Hospital Secretary then conferred with the Training Officer again. They thought that most of the problems previously described were still pressing, that there was an apparent lack of managerial skills, especially in work-scheduling, and that morale was generally poor.

It was agreed that the key to a successful strategy would be to produce quick success in solving some small problems, so as to arouse the motivation to tackle bigger things. A second crucial point was thought to be the involvement of senior staff in all departments, so as to generate some widespread organisational commitment to performance planning, rather than 'survival' from day to day. This ruled out individual skill training for a few individuals because it was felt that, although this might produce quick results (for example, by improving recruitment methods), the causes of the problems lay much deeper and, without more widespread changes in outlook and policies, would produce no lasting results. Thus, it was decided to start by collecting data primarily about immediate problems rather than more fundamental issues like aims and standards. It was agreed to set up a steering group consisting of the Group Secretary, Hospital Secretary, Matron, Chairman and Secretary of the Medical Staff and the Training Officer. The aim was to pursue a policy of 'cycling' as rapidly as possible from data collection to feedback (the aim being for senior staff to perceive the 'performance gap'), action and further data collection. With each cycle, the learning needs, whether organisational or individual, would become more apparent and precisely defined.

New Group Secretary has similar values to Hospital Secretary and is prepared to play more active role. Power of Hospital Secretary now slightly increased. However, new Group Secretary probably does not feel needs (phase 1).

Third party provides other third parties to act as process experts (collecting data) and process trainers (working through it with groups.)

Data is collected about felt needs, but there is little system description and perspectives. (Phases 1 and 3 have a quite elaborate structure, but phase 2 omitted)

Feedback to arouse perception of need; but steering group not helped to make the conceptual or operational transfer back to the system. Diagnosis, therefore, mainly by third parties or Secretary. Phases 1, 3, 4 (latter unilateral) Feedback to groups intended to induce felt needs. Third parties manage the process, in an attempt to get groups to manage the problem contents.
Prediction 4 This process may conce 1 predictions 1 and 3

Prediction 5 Interest groups will resist action unless Secretary has power over relevant variables.

Third parties attempt to move from process manager to process trainer. (Note: They also acted as content advisers on particular problems.) Phases 6, 7 (Phase 5 is weak because little data collected at Phase 2).

Apparently, the third parties have some success in transferring process leadership to the groups, but Secretary also involved (see below). Prediction 4 supported.

At about this time, the Group Secretary retired and was replaced by a man who was to become much more actively involved than his predecessor. He had been on an 8-week management course provided by a staff college and was keen to make his mark as a progressive manager. He joined the steering group after its first meeting.

The Training Officer engaged the services of a consulting organisation specialising in training within organisations. To make a quick impact, four of their consultants interviewed (in the space of a few days) virtually all the staff in leadership positions in the hospital. They then summarised the content of the interviews into categories of problems identified and fed the data back to the steering group, asking them to determine the priorities for action. Four widespread and urgent problem areas were identified, and the steering group set up four working/learning groups. Each consisted of representative supervisors and managers from departments concerned with the problem area. The results were fed back to them and to all other interviewees in half-day seminars, which were also used to explain how the groups would work.

Each group had a consultant acting as coach. His role was to help the group learn how to collect data relevant to the problem area, analyse the data and devise appropriate solutions, both for the short and long term. Each consultant met with his group about one day each month (more at first) for about a year. Each such meeting was used to plan work to be done by the next meeting, to review progress and to deal with learning difficulties. In addition, each group met many times in between seeing its consultant.

Steering group members probably never felt same needs as Secretary and Training Officer. Prediction 1 and 3 supported for this group.

Secretary is playing large part in managing the process. (Phases 6 + 7). Predictions 2 and 5 supported.

Another significant addition of support for the values and norms being pursued. But also another (and competitive) interested party.
Prediction 6 Area of applicability for predictions 2 and 5 will be extended to territory of matron.
Likely effect of rival power centre not clear.

The organisational learning process for the four groups appears to work within the constraints which are implicitly accepted. There is still either little attempt to describe the system or else the boundary is unrealistically determined at a point where involvement of superiors is sought.
Process is now phases 1, 2 (a little), 3 (a little) 3a (actors collect own data, so feedback not required), 4, 6, 7, 8.
Phase 2 is weak, so Phase 5 almost impossible.

It seems as though the groups have been able to deal with some of the problems which are wholly within their control. However, it also seems unlikely that success can be achieved with needs involving other interest groups unless some way can be found of helping them to feel similar needs.

Predictions 3, 4, 5, 6, supported.

Power of principal actors seems to determine where organisational learning takes place.

The life of the groups became largely independent of the steering group, which never performed its intended function of planning and committing the organisation to the change programme. The Hospital Secretary became the focus for the four learning/working groups, but the other steering group members at first played little part. However, during this period the Matron, who had never been able to achieve good relationships with the medical staff, applied for and got a bigger job in another group. Her successor was much more enthusiastic about the project and immediately took up an active role paralleling that of the Hospital Secretary.

Each working/learning group went through continuous cycles of activity; collecting data, setting learning (or other types of) aims, taking action, reviewing the results and starting again. Two were demonstrably successful in identifying problems and solving them. The other two had some success, but this was limited by minimal support from their superiors. However, the groups did generally achieve their aims of producing some fairly quick success. At the time of writing they are working to define continuing aims and standards for their areas of concern. It is hoped that these should prove helpful in producing some more fundamental improvements now that some of the immediate problems have been alleviated. The work to date shows needs for detailed skill training for some individuals and for some team building activities at the interfaces between departments and levels.

Problems in decentralised autonomous units are perceived by those outside the units concerned. They have no direct responsibility, but feel that the problems are their legitimate concern. These conditions would presumably be favourable if the course member-to-be felt the needs, but could provide the basis for rejection if they did not. Also, the technologies in which they work probably have a fragmented technology and relatively high structuring; both unfavourable.
Role involvement of members is fairly high to high; the one favourable indication.
No system description or diagnosis. (Note: it was, however, known that those in the units concerned did not usually feel the needs).

Diagnosis by third parties; the appropriate strategy is assumed to be a training one. (Phase 1; jumps to phases 4 & 6)

Training Officer attempts limited system description and to specify the 'deviations from standard.' (Phase 2)

System interactions briefly examined. Thought to be within control of (relatively powerful) individuals. (Phase 2)

Third parties decide strategy; educational attempt to influence people, assumes that they have sufficient autonomy and capacity to apply training, and that training will solve the problems. (Phases 3,3a ommitted)

Prediction 1 Trainees will resist unless their perspectives turn out to be similar to those of the trainers.

Case 3. A Training Course for the Newfield Regional Hospital Board.

A number of senior staff in the Regional Hospital Board previously referred to were very conscious of some widespread problems in the hospitals of their region. Their discussions, and surveys of training needs, had revealed a widespread 'performance gap,' which was characterised by an evident lack of programming of work, resulting in a 'crisis management' climate, in which information was produced haphazardly and without regard to purpose. The same problems recurred constantly and most decisions were made on an ad hoc basis. They asked the Training Officer to provide training to correct the problems.

Thus, the Training Officer was presented with some fairly clear data about certain aspects of job performance and with some indications as to what sort of behaviour would be more appropriate. In discussion with the senior staff, it was agreed that the key situational variables were that the training needs were widespread, that they particularly concerned senior managers who were unable to leave their normal activities for long, and that relatively little environmental support was required for learners to change their behaviour in the work situation. It was, therefore, decided that a training course run centrally would be appropriate, even though this raised certain difficulties of conceptual transfer to the work situation. The Training Officer subsequently defined the training aims as follows:-

Training Officer defines felt needs (training aims) in terms which allow monitoring of success by inspection. (Phase 5 based on very limited Phase 2).

Prediction 2. The third aim will not be realised unless trainee has full control over the system relevant to his problem.

Felt needs are induced by providing disconfirming experiences. The outcomes of these are probably crucial; unless members do really feel the needs after the experiences, there seem to be enough other unfavourable conditions to guarantee failure of the strategy. (Phase 1 in a learning cycle within a new system, the trainee group).

(Phase 2,3. Phase 3a not required, since actors collect own data.

Input from third parties is normative; assumes such problem types exist in all relevant systems. Using their power to structure phases 2 and 3.

Diagnosis practised through the vicarious experience of exercises. (Phases 4,4a.)

Prediction 3. Trainees will tend to see needs for action and will continue to subsequent phases.

"after training, delegates will have:

....refined their skills in recognising and defining management problems and the information necessary to solve them;

....acquired knowledge of and skill in using appropriate techniques to solve their problems;

....demonstrated their ability to apply their learning both generally and in their own work situation, by selecting and solving appropriate management problems in their jobs."

Parts of the Organisational Learning Model were used in the following way to design the learning system:

Perception of Need to Learn.

The course started with a two-day session off-the-job. The first activity for participants was a number of exercises, some abstract and some using case material, designed to arouse perception of a need to learn.

The exercises were of different types; some required a definition of underlying aims, some required collection of data relevant to the problem, others a precise specification of problem and cause, still others needed just imagination! The participants experienced some 'unlearning' - a realisation that they were not effective at solving what appeared to be very simple problems. Each student's results were checked, and none had solved all the problems.

The model is used to plan the strategy. Third party acts as process leader and trainer.
Provides strategy and resources. (Phases 4,4b,4c.)

Third party as process trainer.

(Phases 4c,4d.)

Diagnosis by course member with colleagues and trainer.

Prediction 4. Capacity will be raised,(new structure induced).

Learning and Testing.

The tutor (an external consultant) then explained some simple procedures for handling such problems and showed participants how they could use them on the exercise material. Case material was then used to provide some exercises nearer to the student's practical experience. They practised using the procedures on the cases and the tutor checked that each student was able to solve them successfully.

Each student was then issued with a larger case exercise, analogous to a problem known to exist in his own work situation. He made plans, with the aid of the tutor, to tackle the problem in his own time, with a brief to return with a solution one week later.

Conceptual Transfer to the Work Situation.

Also, during that week, the student was asked to select a live problem from his own work situation and do a preliminary analysis of it, using the procedures suggested during the first two-day session.

When the students returned, they attended a further two-day session off-the-job. During this session, the group discussed each student's attempt at solving the case exercises, thus each demonstrating the extent of his understanding and retention of the procedures learnt. The tutor then examined each of the problems produced by the participants, and discussed them with the class, who evaluated the extent to which each had been successful in

Plan evolved by course member. Third party may act as process trainer or content adviser.

(Phase 5 largely ommitted. Phase 6 has elaborate structure.)

Predictions 2 and 4 again apply.

Third party acts as process trainer in the field, or may assume process expert (leader) role with respect to course member and colleagues. (Phase 4e.)

Third party is also significantly altering the power structure in phases 6 and 7. This may negate prediction 2

Review - takes little account of wider systems, although they seem to be relevant in some cases.

Predictions are generally supported, but data are insufficient to make adequate judgements. However, importance of thorough phase 2 is indicated.

recognising and defining a real problem. Thus, there was a built-in and immediate check of each student's success in transferring the first part of his learning to the work situation.

Each student then worked individually on his own problem, with the tutor moving from one to another, coaching them in the use of the procedures and suggesting appropriate techniques or further reading which would be relevant. At the end of the two-day session, each student had equipped himself with a detailed plan to tackle his problem in the field.

Dealing with the Constraints (Operational Transfer).

The students returned to their work situation for one month and worked on their plans. If they experienced difficulty with constraints, they were encouraged to contact their tutor, who would assist in removing them where possible. For example, he would visit a student at his work place and assist him to explain his project to colleagues and superiors to win their co-operation.

Finally, the students reported back to a final day's session off-the-job, recounting how they had tackled the problem and what progress they had made. If the problem had been solved, then the objectives (as demonstrated by behaviour in the job and their results) had been achieved. About half of the course members (N =19) were able to report some verifiable success, but it was clear also that situational constraints had been underestimated.

Assumptions that course members have sufficient control of their systems are not justified in all cases. Alternatively, it may be those who perceived little need and/or who had lower role involvement, were less successful. Such possibilities could be checked in replications of this approach.

Inadequate assessment of resources at phase 2.

Environment probably 'disturbed-reactive;' i.e. impinges upon the system by reacting to its outputs.

Felt needs expressed mainly as images of potential, although some specific problems also apparent. Senior staff leading an 'incursion'?
Situation is highly structured, with relatively fragmented technology (unfavourable conditions for planned change).
On the other hand, it is relatively decentralised, with relative autonomy and high role involvement. These would be favourable conditions for a system attempting to change itself.
However, if the Regional Board is seen as an external system to the hospital units, then the same conditions could facilitate change or enable units to resist it, depending upon their perception of needs. In this situation, the kind of roles played by third parties on the Board's staff may be important variables.

Third parties diagnose without knowledge of system or involvement of interest groups.

Many were not able to make much progress because of co-operation that was not forthcoming from colleagues and, in such cases, the tutor had not been able to devote sufficient time to make a real difference.

Case 4. The Newfield Hospital Region. A Large-scale Attempt at Organisational Learning.

For some time prior to this case there had been persistent public criticism of the management of the Hospital Service, epitomised in the report of a Committee on Nursing Management under Sir Brian Salmon (1966), appointed by the Minister of Health. Like other Regional Hospital Boards, the Newfield Board was anxious to 'improve the performance' of its junior and middle level managers, especially since its Senior Administrative Medical Officer had been a member of the 'Salmon' Committee, and its Nursing Officer had given much evidence to it. There was little conception of what 'better performance' meant, although the Salmon Committee had recommended formal management training, even going so far as to include an (extremely vague) syllabus. It also recommended widespread changes in the job content of some nurses holding administrative positions. Such changes were defined by recommended standard job descriptions.

The Training Officer was asked by his superiors to provide training for all junior and middle level staff in the region whose work included a supervisory or managerial content. There were

Training Officer has limited knowledge of system.
Resists accepting diagnosis and strategy.

Recognises forces for learning within the total system of the Region.

Acts as expert; studies system and its perspectives. (Phases 2, 3).

Third party has sufficient power to guide key system members to set up organisational learning structure. Sources of power are probably expertise and legitimation due to prevailing norms in favour of training.

Additional third party acts as expert.
(Phases 2 and 3.)

Third parties lead the process, involve interest groups in data collection and some analysis.

Phases 2 and 3 monitored.

Prediction 1. Interests groups will be likely to seek active involvement in action phases.

thought to be about two thousand staff in these categories, out of a total work force of about twenty thousand. The Training Officer felt unable to meet the requests, since he had little real knowledge of the learning needs, although he regarded the widespread expectation of training, and the willingness to commit resources to it, as a 'natural opportunity' for organisational development. He persuaded his superiors to commit resources initially to a widespread study of real training needs and decided to tackle the definition of the 'performance gap' at all three levels - individual behaviour, job performance and organisational effectiveness. To this end he commissioned a university-based social consultant to design the study and a subsequent strategy to use its results for organisational improvement.

A questionnaire was produced by the consultant and the Training Officer consisting of open-ended questions designed to get respondents own perceptions of the 'performance gap' at all three levels. It was administered to a sample of 350 managers and supervisors from all parts of the organisation. 6-12 managers at a time (all of the same status) were gathered together while one of the training staff explained the purpose of the questionnaire and how to complete it. After discussing any uncertainties with the respondents, he then asked them to complete the questionnaire individually and without reference to each other. Afterwards, he invited all the group to discuss how effective the questionnaire had been in assisting them to clarify the 'performance gap.' This discussion was tape-recorded.

Needs and perspectives analysed. Third parties act as experts.
(Phases 1,3.)

Third parties make tentative diagnoses but do not declare them.
(Phase 4.)

System perspectives described.
(Phase 3.)

(Phase 2.)

Prediction 2. Data collected at this phase should allow later phases(especially strategy determiniation and planning) to proceed smoothly.

Both the questionnaire and the tape-recordings were subsequently analysed by the training staff, with the aid of the consultant. It proved possible to classify answers into categories of needs. Inconsistencies between the categories themselves seemed to indicate some rather fundamental learning needs, particularly for role clarification. For example, in answer to questions about the crucial activities and results in their jobs (behaviour and job performance), managers at all levels nearly all emphasised the technical rather than the managerial content. (At the most senior level there appeared to the training staff to be practically no technical content). The same people, in response to direct questions about their functions, tended to say that they were managerial. In response to questions about the problems they faced (an indicator of organisational effectiveness), the same people gave answers indicating an inability to separate problems from causes. The causes, in fact, appeared to be lack of managerial skills.

In addition to the self-perceptions of the managers holding particular posts, the training staff also collected a number of prescriptions of the behaviour and job performance required from managers. These had been produced over a number of years by senior managers (for their juniors) and by work study staff. Finally, they also collected data through independent observations by technical college lecturers and management researchers.

Feedback to interest group at most senior level.
(Phase 3a.)
Prediction 2 applies again.

Joint diagnosis, using organisational learning model. Some conceptual transfer. (Phases 4,4a,4b,4d.)

Prediction 2 supported.

Realistic aims begin to emerge. (Phase 4e.)
Senior group have been through diagnostic phases of organisational learning process, plus some thinking about strategy. (Phases 5a,5b.)

Behaviour of senior staff is now modified; some learning apparent.

Predictions 1 and 2 supported.

Third parties also learn through work observation. Then act as experts and consultants, to recommend a strategy designed to achieve the realistic aims determined by the 'clients.' (Phase 5.)

Strategy takes account of the existing development of the system; its relative dependence and expectation of formal training. (Phases 5a - 5f and 6a - 6e). Third parties are initiating.

Prediction 3. Initation by third parties may reduce commitment of other interest groups.

These three different views of the same roles were then fed back by the consultant and training staff to meetings of senior managers. The data were presented without evaluative comment, but the staff drew attention to the inconsistencies in it. The managers were then asked to resolve the inconsistencies and to specify the priority needs for change. Some of these proved to be not training needs (e.g. some were concerned with role definition or selection), but many were, and a fairly detailed list of training aims was agreed without difficulty. Thus, the training aims had now been provisionally defined.

The Training Officer took the results of these meetings as a brief for further, more formal training and received a good deal of enthusiastic and (by now) insightful support from the senior managers. Working closely with the technical college staff who had conducted observational studies in the work situations, he and his staff designed a series of learning experiences to achieve certain specified individual behaviour (e.g. the ability to recognise and solve problems in the work situation), certain specified job performance (e.g. achievement of job objectives and standards) and certain criteria of organisational effectiveness (e.g. elimination of widespread problems, accurate communications, aroused motivation of managers).

The learning experiences were based on four weeks of formal courses off-the-job, one in each of four successive terms in a technical college. The content of each week was decided by further analysis of the data which had been collected.

Some normative prescriptions, although related to system descriptions and perspectives. (Phase 6. This is also phase 1 in a cycle for a smaller system, the trainnee group. However, the latter were involved in phases 1 - 4 in the larger system, so already have some felt needs.)

Learning system attempts to test understanding, aid conceptual and operational transfer. Strategy takes account of some system interactions from the entry point (individual managers). Third party as a process leader or trainer to help actors manage the interactions.
(Phases 1,2,3,4,5,6,7,8. Phase 3a is not required. All phases except 5 are elaborated.)

Power of third parties used to assist phase 7. (Based on Data from phase 2 of the larger learning system.)

Resource requirements underestimated.

Phase 2 data about resources was not adequate.

Prediction 2 supported.

Prediction 3 not supported - perhaps system is still relatively dependent and, therefore, a relatively unilateral approach by the trainers is appropriate.)

Aspects of organisational learning learning model consciously used to plan

In Week 1, students learnt some "common skills" which appeared to be required: the skills of problem-recognition and solving, aim-setting and information-handling, plus group maintenance and individual process skills such as listening, observing and recognising, and using attributes possessed by group members. Students applied these skills to practical tasks to test their learning. At the end of the week each student was individually briefed by a tutor for a project. The project consisted of a brief to analyse their own jobs, using the methods learnt on the course, and identify problems and targets for improvement with their bosses. Each boss was briefed about the project and the tutor later visited both the student and his boss in the work situation, helping the student to make the conceptual transfer to the work situation and to deal with organisational constraints. (The pattern of visits had to be modified later because of the large amount of time they demanded from the tutors, who were a mixture of internal training staff and college lecturers. Students now visit the lecturer, and the constraints of the work situation have to be dealt with by letter or telephone). The students had about three months to complete their first project, success in which provided a built-in check of the effectiveness of the learning system.

Thus, the design of Week 1 (and of subsequent stages) was similar to that described above for Case 3, with built-in monitoring of each learning stage. Its content is described more fully elsewhere by the author (Dale, 1968).

Focus shifts from normative to system functioning.

Complete cycle repeated. Structure is induced through practice.

Predictions 1 and 2 repeatedly supported

Third party again acts as process trainer/leader.

Capacity of individual, and of his immediate system, raised to point where further help not required, at least in some cases. In other cases, the approach is not always matched to the existing capacity of trainees. On the whole, the power of the third parties appears to have been used appropriately.

Increased capacity in one part of system now exploited via interactions with related parts. Threshold for change probably now exceeded. Change also in the state of the 'service' system of technical colleges. (N.B. Previous attempts to induce the colleges to collaborate, or to design training based on knowledge of client systems, had been unsuccessful).

Predictions 1 and 2 supported.

Prediction 3 not supported.

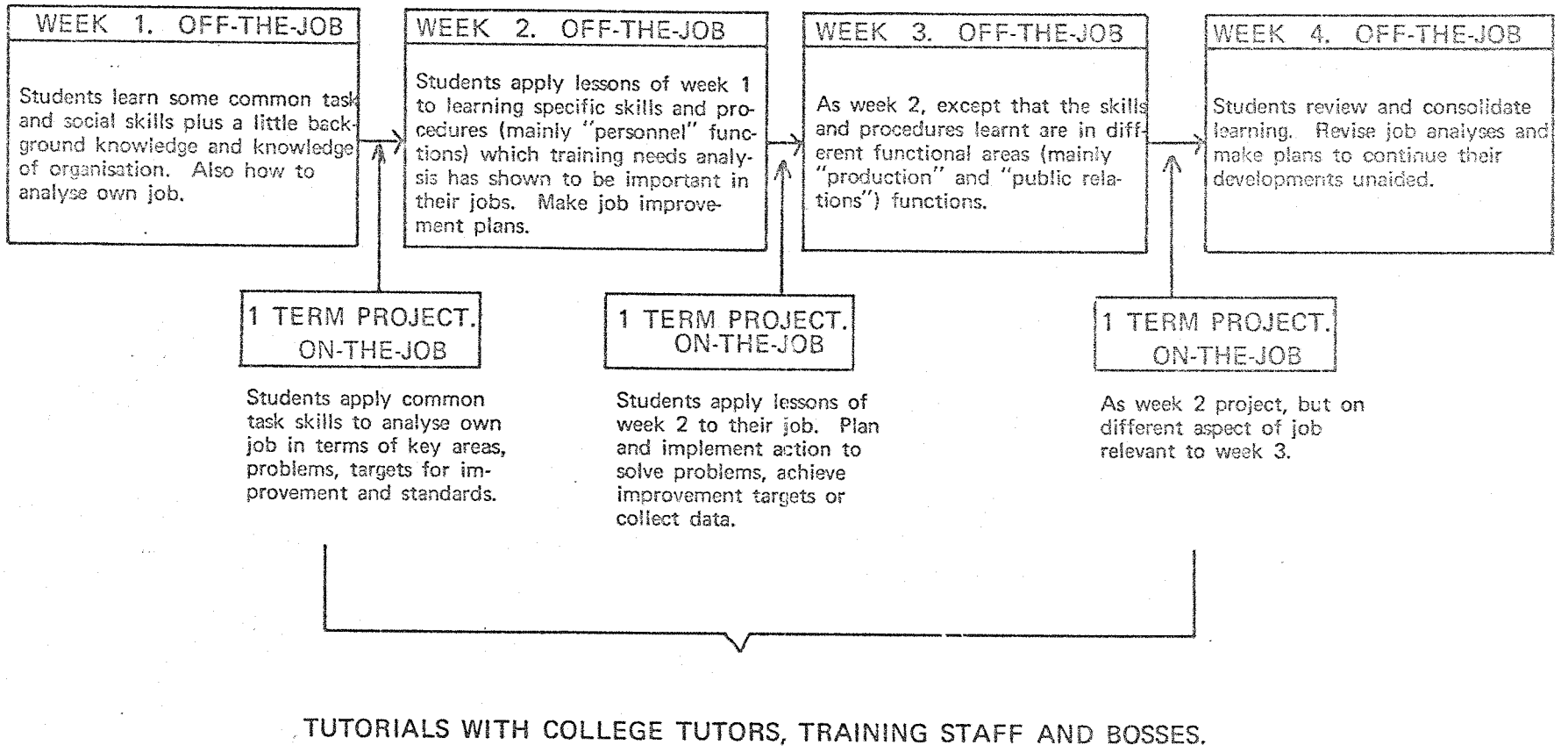
Weeks 2 and 3 each consisted of opportunities for students to learn skills and understanding shown by the earlier studies to be specific to their situations. They tested these on simple tasks and problems on the course and each then made a plan with the aid of the tutor, to apply his new skills to achieving job performance improvements identified on the first project. The tutor assisted with the projects in the same way as before.

Week 4 was similar, but was not followed by any tutorial assistance. Instead, each student made a plan to continue his self-development unaided.

The complete learning system is summarised in Figure 11-1. A recent evaluation of this course (Gould and Thornley, in Press) has shown that the outcomes have,to a considerable extent, been as hoped. although there are also a number of individual cases where little increase in capacity has been noted, or where constraints in work situations prevented action. About 250 people at middle levels (about one-third of those eligible in the main employment categories) have now taken it, and its basic design is being extended for use by those at more junior levels. In some cases, middle level staff who have taken the course are acting as tutors to junior staff on their own courses. A further two technical colleges (departments of management studies) are also now collaborating with the first in this extension. Aspects of the general approach have also been absorbed into the latter's work in training managers in industry and local government.

FIGURE 11-1

"THE SKILLS OF MANAGEMENT"
A COURSE DESIGNED TO INCLUDE BOTH COMMON AND SPECIFIC SKILLS APPLIED AS PART OF THE LEARNING PROCESS TO JOB SITUATIONS



Discussion

The four cases illustrate the progressively more widespread use of the organisational learning model to guide attempts to help organisations adapt.

In Case 1, the early stages illustrate the use of power by the key figure (the Group Secretary) to bring about very marked changes but without increasing the capacity of the system. By further increasing his power through selecting new staff who shared his values, he was able to change the system still further. However, it remained basically dependent until means were found to collect and use data about the system. In particular, the first attempt at a more thorough system description, followed by a feed-back and joint diagnosis process (page 11-15) marked the beginning of a sudden improvement in the organisation's learning capacity. Other phases in the model were followed only in outline but this seemed to be sufficient after the well-developed phase 2 activities. The roles of the third parties at this juncture seem (after several earlier failures) to have been more appropriately chosen as a mixture of content expert and process trainer or leader.

Case 2 illustrates a somewhat more pluralistic system than Case 1. The initial action and outcomes were similar but less effective overall, possibly because the key figure had less power and the unit had less autonomy. The activities of the training/working teams show that third parties were able to help in inducing felt needs and in developing the system's capacity to deal with them. However, this was only so where the relevant

needs and resources were within the control of the key figures (the Hospital Secretary and Matron). In spite of attempts by the third parties to set up an organisational learning process, phase 2 was repeatedly omitted and appears to have hindered subsequent planning and action. In particular, system links and interactions with the medical staff do not appear to have been understood, and it proved not possible to involve them.

Case 3, a much smaller-scale system, illustrates a more conscious use of parts of the model to guide the process. Capacity appears to have been raised in some instances, but the failure adequately to describe the system relating to the work problems of some of the trainees seems again to have hindered action.

Case 4 represents a very large-scale attempt to use most aspects of the model; an attempt which proceeded largely as intended. Phase 2 was not as highly developed as in the model, but perhaps should have been, since there were certain difficulties later due to the underestimation of resource requirements. The power of the third parties in this situation is shown to be much greater than at first supposed. By managing processes throughout a large pluralistic system, they were able to progressively raise its learning capacity. The initiating opportunities in such plural systems may perhaps be more real than apparent; as power is widely spread and boundaries (e.g. with the technical colleges) not sharply defined, the third party can move into vacuums or break deadlocks.

It was supposed, too, that the highly-structured system would be an unfavourable condition for organisational learning, but the relatively unilateral approach of the third parties seems to have coped with this disadvantage. Indeed, all four cases took place in highly-structured situations. Since all illustrate some degree of success in raising system capacity, the degree of structure of the system may matter less than the roles played by the third parties.

As has been noted, the four cases are not presented as an adequate test of the organisational learning model, but merely to develop some 'useful perspectives'. Some very tentative conclusions can be drawn from them.

TENTATIVE CONCLUSIONS ON THE UTILITY OF THE MODEL

1. The model is best used to guide action in situations where the principal actors have enough power to control the main variables which relate to felt needs. If others with significant power do not feel the same needs, it is difficult to induce them.
2. The model (given these provisos) is generally supported.
3. In dependent systems it is not essential (and perhaps not appropriate) to involve all the interest groups in consideration of each phase. However, their involvement in diagnosis appears to be a potent force for success in later phases.
4. Phase 2 (System Description) emerges as more important than first thought; at least in the complex, pluralistic systems concerned. Effort to induce a high-level structure at this phase seems to help greatly in devising strategies (phase 5) which have the desired outcomes.

5. The role of the third parties, at least in systems of this sort, seems to have had a considerable influence in raising system capacity, provided the condition that the principal actors have sufficient power is met.

CHAPTER 12 SUMMARY AND SUGGESTIONS FOR FURTHER RESEARCH

The nature of social systems has been briefly examined and their operational effectiveness defined. Overall effectiveness (or system capacity) has been seen as a dimension; the ability to get and process resources, especially information.

The adaptive sub-system has been considered as that which processes information about contingencies for which the parent system is not already programmed. Raising its capacity is equivalent to increasing its structural development. It has been argued that if the higher-level structures can be explicated, then they might be induced in a system, thus raising its capacity.

A normative model of the adaptive sub-system has been developed in Part II and its use illustrated in Part III. The case histories provided useful perspectives but did not allow an adequate test of the model. It now remains to consider how the model could be tested.

Tests for the Organisational Learning Model

Whatever research design is used, there must be valid and reliable data by which to assess how accurately the model describes the adaptive processes in organisations, and whether it does raise system capacity if used to guide such processes. That is, the data must be verifiable by a third party; the categories observed rather than inferred. They must be complete enough to describe the processes themselves plus the state and performance of the systems in which they occur. Ideally, some of the data should describe the level of adaptability of the system (Although, as was noted in Chapter 1, no adequate operational criteria for this appear to exist at present). A priority research aim might therefore be to develop more adequate descriptions and criteria.)

Three general designs might be used to test the model.

1. It could be used to steer attempts to raise the capacity of a variety of systems as in the cases reported in Chapter II, but combined with a systematic recording of valid and reliable data.

2. It could be used as a framework for observing systems in the process of adapting and predicting at intervals what would happen in them next. Such predictions would be recorded but not disclosed.

3. It could be compared with reported cases of systems in the process of adapting, provided that sufficient valid and reliable data were available. Two variations of this approach might be used:

(a) Examining published cases.

(b) Making an agreement with members of an appropriate system that they would record and make available the necessary data.

In any of these designs, a number of cases would obviously be required to provide acceptable evidence.

Tests for Conditions in which the Model Applies

Assuming that the model be validated, then a further question is whether it is appropriate in systems under any conditions. (it has already been suggested that some conditions are unfavourable and others favourable.) The same three general designs could be used, but it would not be necessary to collect data about the processes of the model itself, other than to check that it was actually used to steer action in the first design. The selection of cases would be more complex, since it would be necessary to specify the conditions, and combinations of conditions, which would be favourable or otherwise. One case of each type would then be sufficient to test the hypotheses.

Reservations

As has been noted in the introduction to Chapter II, such research has to be treated with caution, for it is not possible to know all aspects of the relevant systems, nor to predict all possible outcomes.

Also, as Schon (1970:877) notes, 'we cannot (always) assert that the observed changes would not have occured under other conditions'. The models and theories used have to be regarded as projective and open; the facts relative. They offer useful perspectives, but must be tested in each new situation. It is necessary to be ready to modify or invent theory in the context of the situation.

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