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THE EFFECT OF A MANAGEMENT DEVELOPMENT PROGRAMME ON NEED FOR ACHIEVEMENT

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A Dissertation submitted to the Faculty of Arts,
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for the Degree of Master of Arts.

Johannesburg 1972

I hereby declare that this dissertation is my own work and that I have not submitted it for a Master's Degree to any other university.

B. Chalmers

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B.E. Chalmers

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ABSTRACT

Measures of achievement motivation were obtained from managers attending a Kepner-Tregoe 'Apex' programme before the start of the course and at the conclusion of the six-month 'follow-up' period. Indices of achievement motivation were also obtained at the same time from managers who were not attending Kepner-Tregoe programmes but who were employed in the same organizations at approximately the same level in the organizational hierarchy as the Kepner-Tregoe candidates. It was found that the achievement motivation of low achieving managers increased significantly on the second measurement of achievement motivation while the achievement motivation of high achieving managers remained the same on both measuring occasions.

In addition, a questionnaire measure of achievement motivation was developed in the present study, and internal consistency as well as test-retest reliability indices of this questionnaire were established.

PROBLEM SOLVING, DECISION MAKING AND POTENTIAL PROBLEM ANALYSIS, WITH PARTICULAR REFERENCE TO KEPNER AND TREGOE

Semantic confusion exists in the literature regarding the terms 'problem' and 'decision'. Many authors use the terms interchangeably, referring to the making of a decision as a problem (Dill, 1964; Lindblom, 1964; Newman, 1958; Thompson and Tuden, 1964) while others have attempted to distinguish between the two terms (Bennis, 1969; Hodge and Johnson, 1970; Kepner and Tregoe, 1965; Lawrence and Lorsch, 1969; Simon, 1960; Uris, 1962). Perhaps the clearest distinction between a 'problem' and a 'decision' is provided by the Kepner and Tregoe (1965) definitions of these terms. Kepner and Tregoe define a problem as:

> 'a deviation between what should be and what actually is happening' (p.18).

The definitions of a problem given by Bennis (1969), Lawrence and Lorsch (1969) and Simon (1960) are in agreement with that of Kepner and Tregoe (1965). Kepner and Tregoe (1965) have further described a problem as being caused by some change of one kind or another. The concept of 'change' as the cause of a problem has also been proposed by Simon (1960) and superficially mentioned by Hodge and Johnson (1970).

The Kepner and Tregoe (1965) definition of a decision, on the other hand, as:

> "a choice between various ways of getting a particular thing done or end accomplished" (p.50).

would be acceptable to most theorists (Bross, 1953; Cyert, Simon and Trow, 1956; Drucker, 1967; Koontz, 1964;

Lawrence and Lorsch, 1969; Odiorne, 1970; Schein, 1969; Simon, 1960; Ur s, 1962).

Having defined both a problem and a decision, it is possible to distinguish between the actual processes of problem solving and decision making. The process of problem solving described by Kepner and Tregoe (1965) is aimed at finding the cause of the deviation while the decision making process is the choice of which action to take to remove this cause. Many theories jump from a definition of a problem situation to a decision about how to solve it omitting the investigation of the cause of the problem (Newman, 1958; Pounds, 1969; Schein, 1969). It is this fusion of the processes of problem solving and decision making which has given rise to the semantic chaos regarding them.

PROBLEM SOLVING

Investigations into the process of problem solving date back as far as Ruger (1910) whose studies centered on the solving of mechanical puzzles. Duncker (1945) followed these investigations with the typical 'thinking aloud' experiments aimed at uncovering abstract reasoning processes. As a result of these and other examinations of cognitive processes (de Groot, 1946; Dewey, 1910; Maier, 1930) four methods of reasoning were brought to light (Zelko, 1957). The first of these, deductive thinking, defined as the drawing of conclusions from an already established generalization or conclusion, has its origins in the Sophist writings of the early Greeks (Bross, 1953). Inductive thinking, or the drawing of conclusions from observations, which was only

recognized after the Dark Ages, forms the basis of scientific research today (Bross, 1953). The third process, causal reasoning, a relatively modern concept, infers that some result or effect will occur from a particular cause, while reasoning by analogy, the final thinking process, is the drawing of conclusions based on association of events.

Modern theories of problem solving draw heavily on one or more of these reasoning processes. Theories of problem solving based on the use of experience and observation of others (Newman, 1958; Pounds, 1969) rely heavily on analogous thinking for their success. Unfortunately, these methods of problem solving depend on the similarity of the problem situation on hand with the problem situation used as a guide-line. As these situations are rarely truly analagous, the solutions put forward are not always valid. The scientific method of problem solving (Hodge and Johnson, 1970), on the other hand, involves inductive as well as causal reasoning. The major drawback of this method is that causal reasoning is not always objective and causes of problems are hypothesised without evidence to support them (Hodge and Johnson, 1970; Wilson-Organ, 1965; Zelko, 1957). Despite these findings it is logical to presume that any one of these reasoning processes is sufficient to solve problems successfully, provided that it is used accurately (Zelko, 1957). The question then arises as to what procedures do we follow to ensure that we are using these processes correctly? Few theorists have attempted to confine the

thought processes into a logical series of steps designed for solving problems (Cooper, 1961; Hymen and Anderson, 1971; Jones, 1957; Schein, 1969). According to Newell, Simon and Shaw (1958) no more than such a sequence need be added to the constitution of a successful problem solver.

The problem analysis procedure detailed by Kepner and Tregoe (1965) is one realization of this need. Some of the elements of their process may be found in other theories, but their logical, practically oriented, detailed sequence of steps is unique in problem solving literature.

STAGES IN PROBLEM SOLVING

Recognise the deviation

Managers are usually faced with a number of situations demanding attention (Bennis, 1969; Kepner and Tregoe, 1965; Lawrence and Lorsch, 1969; Pounds, 1969). These may be decisions to be made, plans to be formulated, or deviations that have occurred in the present ongoing plans of the organization. In order to recognise the latter situation - a deviation situation - the standards of performance required by the organization must be clearly specified. Provided that managers are aware of these performance specifications, deviations from them will be readily observed. In addition, regular feedback on actual performance levels would be of assistance in the recognition of deviations.

Set priorities

One complication that often arises at this stage is that managers may be faced with a number of deviation situations simultaneously. A few authors have pointed out

the difficulty of deciding which problem or deviation if allowed to continue, will have the most serious implications for the company (Kepner and Tregoe, 1965; Lindblom, 1964; Lindsay, 1958; Sibson, 1969). Both Kepner and Tregoe (1965) and Sibson (1969) have warned against chosing problems simply because they fall in areas with which the manager is familiar. Difficult problems, too, may be passed over in favour of simpler ones (Kepner and Tregoe, 1965). Sibson (1969) writes that:

> "Strangely enough almost no methodology has been developed to determine which of the problems that exist are the most important. Elaborate techniques have been developed for solving problems in almost every field - finance, communication, training, recruitment, but none for ranking the importance of problems to be solved. The lack of technology in this area constitutes a major problem in itself" (p.31).

Sibson (1969) himself, does not put forward a specific procedure for ranking the importance of problems. The procedure outlined by Kepner and Tregoe (1965) to enable managers to set their priorities accurately is simple to apply. Briefly, the procedure involves asking three questions about each of the deviation situations:

1. How urgent is the deviation?
   Or, how much time do I have to reach the solution?
2. How serious is the deviation? In other words, what are the effects of leaving the problem unchecked?

3. What is the trend of the deviation and its potential for growth?

The answers to these questions are weighted in such a way that the deviation requiring immediate attention will be the one that attains the highest score.

It is worthwhile to note that the priorities allocated to deviations in terms of Urgency, Seriousness and Growth, are influenced by the values of the problem solver. For example, the priorities set by the manager in terms of his own objectives may differ markedly from those set in terms of his superior's, or the department's, or the organization's objectives. It is, therefore, important to be aware of whose priorities must be considered when setting priorities (Kepner and Tregoe, 1965; Lindsay, 1958).

Define the problem

Having decided which deviation to resolve first, it is essential to have a clear conception of what specifically is wrong. Drucker (1967), Lawrence and Lorsch (1969), Newman (1958), Schein (1969), Simon (1960) and Thomson (1959) have all pointed out the need for a clear definition of the problem. As Drucker (1967) emphasises, most people spend too much time looking for the answer instead of for the problem. For Kepner and Tregoe (1965) defining, or specifying, the deviation is a key step in discovering its cause. The accuracy of the specification or definition is dependent on the accumulation of relevant information. Most problem solving theorists have recognised the necessity of gathering information (Drucker, 1967; Hymen and Anderson, 1971; Likert, 1961; Thomson, 1959), but few have outlined

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precisely what information is required, or how to obtain it. Kepner and Tregoe's (1965) specification procedure is simple and systematic, but requires firm discipline of thought processes. At no stage must the possible cause of the problem be considered - the problem must only be described. The information required concerns what the deviation is, where it is found, when it is observed, and how big it is. However, in order to make the description of the deviation even more precise, what the problem 'is' must be sharply separated from what it 'is not'. That is to say, the specification should indicate which areas have been affected by the deviation and which areas have not, e.g. what object is affected by the deviation and what object is not; or, where these objects are found and where they do not appear.

Establish the cause

Once the deviation is precisely specified, the process of finding the cause can begin. As has been mentioned earlier, both Kepner and Tregoe (1965) and Simon (1960) have hypothesised that some kind of change is the cause of most deviations. This change often has limited effects, producing results in some places but not in others (Kepner and Tregoe, 1965). These results will have been described in the specification of the problem, and consequently, this change, or cause of the problem can be discovered through an examination of the specification.

It is interesting to note that not all deviations from required standards have as their cause some kind of change in an ongoing plan. Some deviations are present from the

first instigation of an action (Pounds, 1969), e.g. a new machine not achieving its expected output. 'Day 1' problems, as this type of deviation may be termed, can with minor adjustments to the method of specification, also be analysed by the Kepner and Tregoe problem analysis procedure.

Test the cause

An analysis of a specification usually yields a number of changes that have taken place. These changes are all possible causes of the deviation, each of which has to be rigidly tested against the specification. Ideally, if one of the changes could have caused all the effects observed in the specification, without exception, then this change must be the cause that produced the problem in the first place.

Despite the recommendations to test causal reasoning which are found in the literature (Drucker, 1967; Kepner and Tregoe, 1965; Hodge and Johnson, 1970; Zelko, 1957) the major error commonly committed in problem solving is that of jumping, without valid reason, to conclusions (Maier, 1963; Wilson-Organ, 1965; Zelko, 1957).

Verify the cause

The formulation of a causal hypothesis, however, is not the final stage in a problem analysis. Having arrived at the most likely cause of a deviation, it is often necessary to verify the proposal by means of actual research or experimentation (Kepner and Tregoe, 1965). This step provides a final check on the proposed cause to ensure that major expenditure to rectify the deviation, if necessary, will not be in vain.

Many aspects of the Kepner-Tregoe problem analysis process may be observed in other theories. Authors have frequently pointed out the need to recognise a deviation (Bennis, 1969; Hodge and Johnson, 1970; Lawrence and Lorsch, 1969; Pounds, 1969), the need to set problem priorities (Hodge and Johnson, 1970; Lindblom, 1964; Lindsay, 1958; Sibson, 1969) and the necessity of defining the problem clearly (Drucker, 1967; Hodge and Johnson, 1970; Lawrence and Lorsch, 1969; Newman, 1958; Schein, 1969; Simon, 1960; Thomson, 1959). Elements of causal reasoning are also encountered in the literature (Drucker, 1967; Hodge and Johnson, 1970; Maier, 1963; Schein, 1969; Wilson-Organ, 1965; Zelko, 1957).

The Kepner-Tregoe problem solving approach can, with training, be applied by all members of an organization. In addition, it is not restricted to any particular type of problem. Although ideally suited to technical problems, it can with relatively minor adjustments be used in the analysis of problems involving people. Finally, it is not essential to use the process 'in toto'. Aspects of the sequence may be extracted and applied where relevant.

DECISION MAKING

A decision must not be considered merely as the moment of saying 'yes' or 'no' (Calkins, 1959; Simon, 1960; Thompson and Tuden, 1954). As Simon (1960) points out, the final moment of decision making is preceded by a lengthy process of investigation and assessment of relevant facts. This type of decision has been referred to by various names: Hodge and Johnson (1970) term it an 'objective' decision; Schlaifer (1964) calls it a 'normative' decision, and Simon

(1960) a 'nonprogrammed' decision. It is with this type of situation that the decision making procedure outlined by Kepner and Tregoe (1965) is primarily concerned.

STAGES IN DECISION MAKING

Establish objectives

It is generally accepted that the first step in decision making is the establishment of objectives to be achieved by the decision (Blake and Mouton, 1961; Drucker, 1967; Gardner, 1965; Morris, 1968; Schein, 1969; Simon, 1960). Following Lewinian (1951) thinking, the need to view the decision as a totality, before embarking on an analysis of its entities, is implicit at this point. In order to avoid a superficial outline of the objectives of the decision, questions such as: what must be done? how much must be done? when must it be done? where must it be done? can be asked (Kepner and Tregoe, 1965). In other words, the objectives should describe the goal precisely and locate it in time, place and number. In order to describe the goal accurately, information must be available either in the form of resources available for expenditure in carrying out the decision (Kepner and Tregoe, 1965; 1968; Likert, 1961) or in terms of results to be obtained from the decision (Eross, 1953; Kepner and Tregoe, 1965; 1968).

Once this information is detailed in the form of objectives, it is necessary to attach some scale of importance to it. That is, some form of priority setting of objectives is required (Drucker, 1967; Kepner and Tregoe, 1965; Lindblom, 1964). The method proposed by

Kepner and Tregoe (1965) involves the division of objectives into those which are essential for the success of the decision - called 'Musts' - and those which will merely enhance the value of the decision - called 'Wants'. As Kepner and Tregoe (1965) point out, some 'Want' objectives will always be more important than others. The relative importance of the 'Want' criteria must be judged by the decision maker, and numerical weightings of importance assigned to each. The manager's judgement as to the weight of each 'Want' objective is drawn from his own experience and from the experience of others. It is here, perhaps, that the bias of the decision maker, warned against by Uris (1962) and Morris (1968) can have most influence on the outcome of a decision.

Generate alternatives

Many authors have pointed out that once the objectives of the decision are formulated, it is necessary to generate alternative action plans (Bross, 1953; Kepner and Tregoe, 1965; Schein, 1969; Simon, 1960; Thompson and Tuden, 1964; Uris, 1962). Those theories based on creative rationality (Gardner, 1965) or brainstorming (Osborn, 1953) place maximum stress on this stage of decision making. For Drucker (1967) the most effective method of generating alternatives is through the encouragement of disagreement amongst decision makers. He even goes so far as to state that:

> "the first rule in decision making is that one does not make a decision unless there is disagreement" (p.124).

Drucker, furthermore, points to one alternative which is infrequently considered - that of doing nothing. According to Drucker (1967) the effective decision maker must always ask one final question:

"Is a decision really necessary?" (p.129).

While generating alternatives it is essential that no judgements are passed on them. Schein (1969) points out that this pitfall is inherent in the system proposed by him, where alternative courses of action are evaluated one at a time. Following this procedure, no perspective is gained on alternatives - in other words, alternatives are not compared with each other, with the result that the best alternatives may be rejected early on in the discussion and not referred to again. This often leads to the acceptance of inferior alternatives which are proposed towards the end of the discussion. A further pitfall that may be encountered when following this procedure, is that members whose ideas have been rejected early, may feel less inclined to propose alternatives at a later stage. Hence valuable contributions to decision making may often be withheld. The Kepner-Tregoe system, however, takes both these considerations into account - alternatives are generated without comment and are not evaluated simultaneously.

Evaluate alternatives

According to Kepner and Tregoe (1965), the manager must evaluate all the available alternatives against the objectives set for the decision. If the alternatives do not meet the 'Must' requirements they are rejected without further consideration. The result of this is that any one of the

remaining alternatives which may be selected will encompass those factors considered essential for the success of the decision. The remaining alternatives are rated in terms of how well they fulfil each 'Want' objective. It then remains to obtain some value combining both the importance of each objective and the suitability of each alternative. To do this, the rating of each alternative is multiplied by the weight which has been assigned to each objective. These scores are then totalled to reveal the best alternatives i.e. those with the highest scores.

It must be pointed out that the use of numbers does not make the decision for the manager. The numbers merely make it possible to deal simultaneously with a great many judgements without losing track of what is considered important. It is the difficulty of considering numerous factors simultaneously which has proved a stumbling block in the formulation of many decision making theories (Lindsay, 1958; Morris, 1968; Simon, 1957).

Adverse consequence thinking

Having obtained the best alternative actions, Kepner and Tregoe (1965) advocate that they are considered independently and visualised as though they were already in operation. The manager should question the effect that the alternative would have on other matters, and the effect that other events would have on it. The key question to be asked is, 'What could go wrong with this alternative?' The answers to this question are numerically evaluated in terms of Probability (How probable is it that such a consequence will occur?) and Seriousness (How serious will it

be if such a consequence does occur?). Evaluation of the consequences may often show that the alternative initially considered as the best prospect for success, also presents many risks. The manager, then, is forced to evaluate, on the basis of common sense and experience, the positive aspects of the alternative in terms of the objectives, as opposed to its adverse consequences.

As with the process of problem analysis, aspects of the Kepner-Tregoe decision making procedure can be observed in other theories of decision making. For example, objective setting can be seen in the writings of Blake and Mouton (1961), Bross (1953), Drucker (1967), Gardner (1965), Hodge and Johnson (1970), Likert (1961), Lindblom (1964), Lindsay (1958), Morris (1968), Newman (1958), Schein (1969) and Simon (1960), while generating alternatives has been discussed by Bross (1953), Calkins (1957), Drucker (1967), Gardner (1965), Hodge and Johnson (1970), Lindblom (1964), Lindsay (1958), Newman (1958), Schein (1969), Simon (1960), Thompson and Tuden (1964) and Uris (1962). Even the concepts of alternative evaluation and adverse consequence thinking, which form the criteria by which Kepner-Tregoe decisions are made, can be found in other theories. Consequence thinking can be seen in the writings of Blum and Naylor (1968), Bross (1953), Cyert et al. (1956), Drucker (1968), Gardner (1965), Hodge and Johnson (1970), Korman (1971), Morris (1968), Newman (1958), Schein (1969), Thompson and Tuden (1964) while the importance of risk in decision making - a major aspect of consequence thinking -

has been strongly emphasised by Atkinson (1957), Drucker (1967), Korman (1971), Morris (1968), Odiorne (1970), Shainin (1968) and Wrapp (1967). The need to develop some such criterion by which alternatives may be evaluated in terms of objectives has often been expressed (Bross, 1953; Newman, 1958; Schein, 1969; Thompson and Tuden, 1964).

TYPES OF DECISIONS AND METHODS OF DEALING WITH THEM

Simon (1960) has distinguished between two types of decisions made in organizations: programmed and non-programmed. Programmed decisions are routine, repetitive decisions for which definite procedures have been worked out. Traditionally, programmed decisions are dealt with by habit or standard operating procedures (Simon, 1960). These response procedures are developed by the organization and are formulated in accordance with its structure and goal systems. Modern methods of dealing with programmed decisions, however, take the form of mathematical analysis - for example, operations research and electronic data processing (Abendroth, 1956; Bursk and Chapman, 1963; Simon, 1960).

Nonprogrammed decisions, on the other hand, are novel and unstructured and there are no cut and dried methods for dealing with them. Traditionally, previous experience (Newman, 1958; Simon, 1960), insight and intuition (Gore, 1964; Simon, 1960) and other's examples (Newman, 1958) have provided the means whereby these decisions are made. In group decision making situations, the nonprogrammed decision may be dealt with by consensus or voting procedures

(Maier, 1963; Schein, 1969; Zelko, 1957). Schein (1969) talks too, of the decision by lack of response, the 'plop' decision, as well as of decision by authority or minority rule. The decision by unanimous consent, a further method of dealing with nonprogrammed decisions, is the ideal group decision which, however, is rarely obtained (Schein, 1969). Some generalised operating procedures have also been developed to cope with nonprogrammed decision situations, for example, the 'Military Commander's Estimate of the Situation' (Simon, 1960) and 'Decision tree' theory (Magee, 1964a; 1964b). The Kepner-Tregoe decision making process falls into this category.

The need to create specific organizational units to take care of nonprogrammed decision making is often felt (Beckhard, 1969; Bennis, 1966; Miles, 1964; Schein, 1969). Bennis (1966) refers to such groups, formed for the purpose of solving a particular problem or making a particular decision as 'organic adaptive structures'. Miles (1964) refers to such units as 'temporary systems' while Beckhard (1969) uses the term 'project teams'. Schein (1969) too, employs the concept of 'task forces' as the basis of his adaptive coping cycle. It is possible that the need to create such working groups arises as a result of the accumulation of nonprogrammed activity. This suggestion is supported by Gresham's Law of Planning which indicates that nonprogrammed activity is neglected in favour of programmed activity (Dill, 1964; March and Simon, 1958; Selznick, 1957; Kissinger, 1959 .

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