THE MANAGERIAL SURFACE

a three-dimensional model for infinite behavioral styles in variable environments

CHRIS A. COMMON
General Motors Institute, Flint, Michigan. and student, Center for the Study of Higher Education, University of Michigan, Ann Arbor, Michigan.

Many models have been presented to describe a manager's style of operation. The models usually attempt to classify the manager's behavior in a manner that is easily understood. The very act of classification tends to imply that a manager will usually behave in a particular manner described by the model. In reality, we know this is not the case since the manager's behavior is a function of many variables, most of which are unpredictable. It has been pointed out that today's manager must be flexible in order to perform effectively in our fluid environment.

> "But given our current rate of technological and social change, organizations also require another and, in some respects, quite different behavior pattern, a pattern typified by such terms as flexibility and adaptability. The good member by these criteria adjusts readily to changing requirements, fits into new groups and takes on new assignments rapidly, keeps abreast of the newest and casts off outmoded techniques, takes a fresh look at problems as they arise, and searches for better ways of solving problems. Stagnation and decay, rather than continued growth and development, are apt to befall the organization whose members lack adaptability."[1]

An acceptable managerial model must therefore include provisions for change.

BLAKE AND MOUTON

The Managerial Grid as developed by Blake and Mouton[2] classifies managerial styles on a two-dimensional model (Figure 1). Note that their term "production" has been replaced by "output" in this discussion. Although there are 91 possible combinations on the managerial grid, five primary styles are considered in depth. These five styles are:

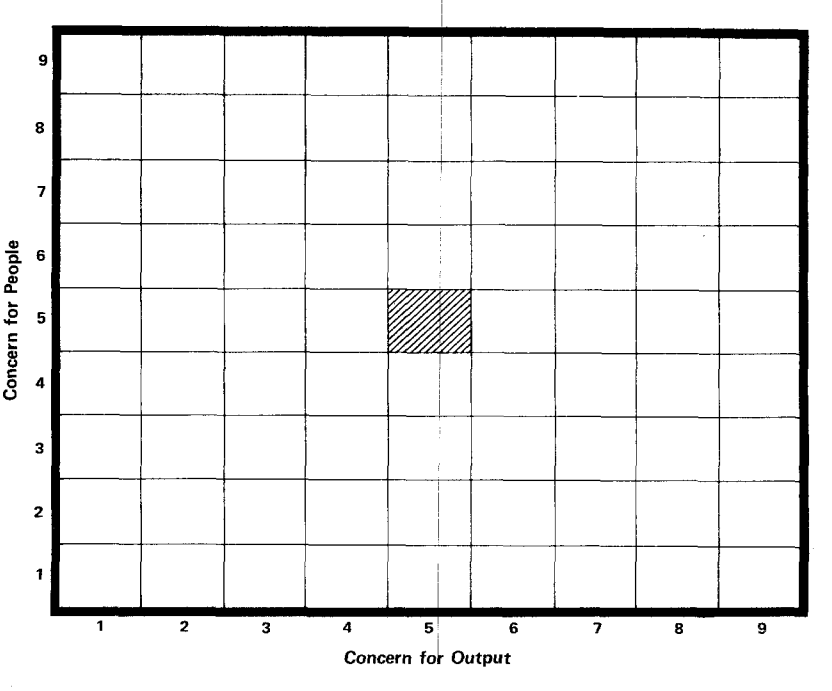
1,1 Management
Exertion of minimum effort to get required work done is appropriate to sustain organization membership.

1,9 Management
Thoughtful attention to needs of people for satisfying relationships leads to a comfortable friendly organization atmosphere and work tempo.

5,5 Management
Adequate organization performance is possible through balancing of the necessity to get out work with maintaining morale of people at a satisfactory level.

9,1 Management
Efficiency in operations results from

Figure 1 (The shaded area represents a 5,5 style of operation.)



arranging conditions of work in such a way that human elements interfere to a minimum degree.

9,9 Management
Work accomplishment is from committed people; interdependence through a "common stake" in organization purpose leads to relationships of trust and respect.

Blake and Mouton point out that the grid is designed to illustrate the various types of management practices and is not an inflexible classification device for managers. However, the grid model does lead the uninitiated to the feeling that individual managers can be classified by using the grid as a reference framework.

REDDIN

Reddin[3] expands the bi-dimensional model to a tri-dimensional model using effectiveness as the third dimension. Eight principle classifications are defined in terms of the planes of effectiveness and ineffectiveness (Figure 2). He labels the eight combinations as follows:

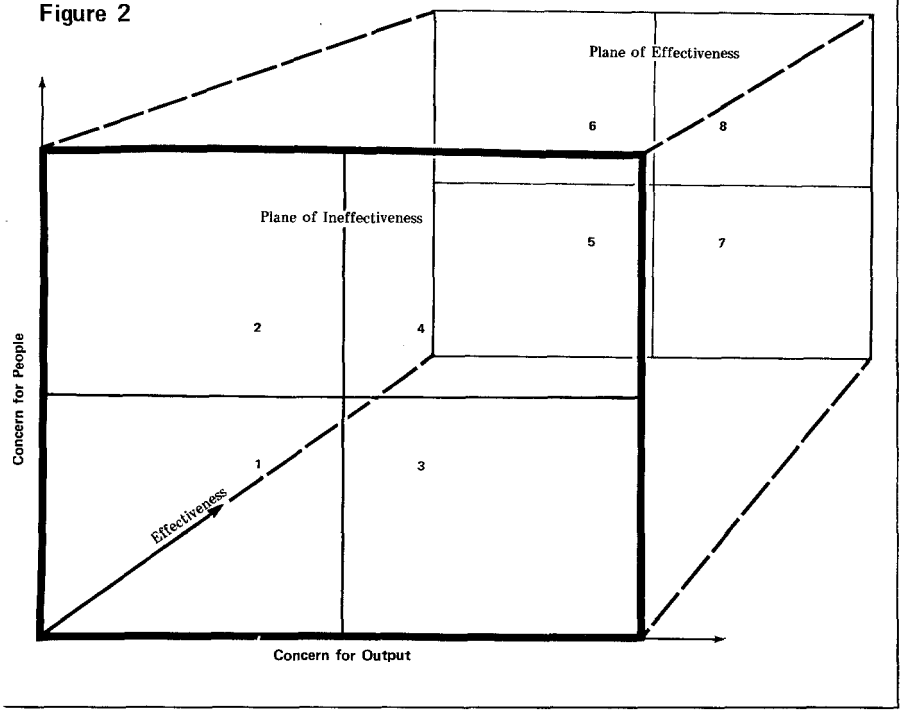
1. Active Deserter (Ineffective)
2. Missionary (Ineffective)
3. Autocrat (Ineffective)
4. Compromiser (Ineffective)
5. Passive Deserter (Effective)
6. Developer (Effective)
7. Benevolent Autocrat (Effective)
8. Executive (Effective)

Reddin's model again serves a useful classification function but still leaves the user with a feeling that a manager will tend toward a stereotyped behavior.

3-D GRID

Blake and Mouton[4] have expanded the Managerial Grid into a third dimension called thickness (Figure 3). Thickness is defined as the resistance to change from a particular managerial style. Thick theories resist change under pressure while thin theories are changed easily. Adding the third dimension to the Managerial Grid suggests that a manager's style can be described by a volume or volumes in space. Figure 4 depicts a manager with a primary style of 9,5,9 and a secondary style of 3,5,5. The two

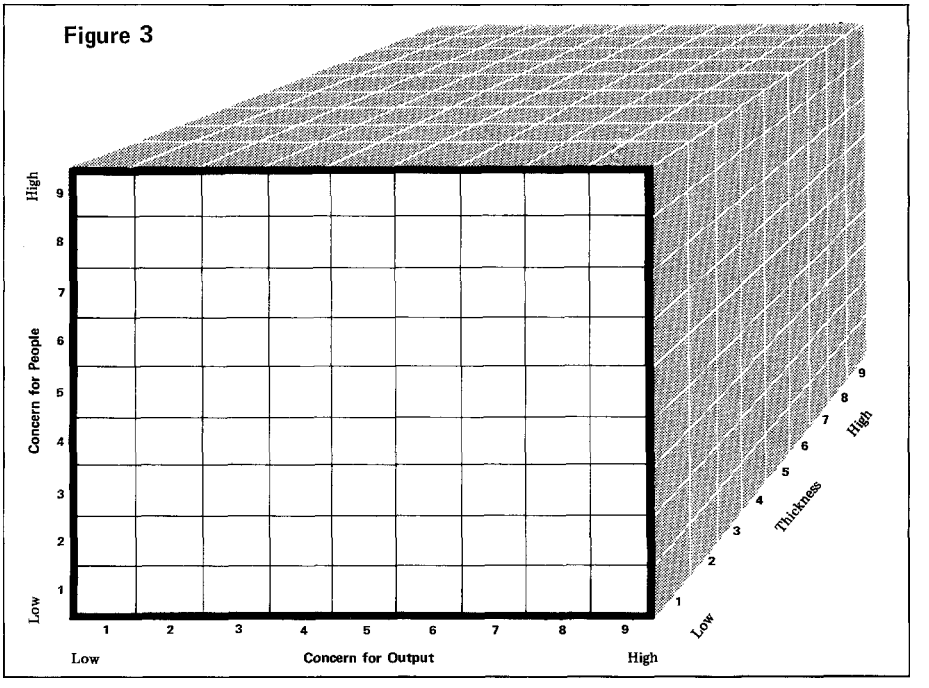
Figure 2



cubes represent the latitude allowed the manager when operating in either style. The two cubes illustrate, in a somewhat rigid manner, the operating style of the manager but afford little insight into how the manager would move from one cube (style) to another.

A three-dimensional model obviously does not include all the variables which determine a given manager's behavior, but the simplicity of using three arbitrary variables does lead to a visual model which can be instructive and stimulating. The surface model pro-

Figure 3



posed here is an attempt to conceptualize the manager's behavioral characteristics and provide a dynamic model amenable to change. The model views the manager as a whole and allows for those variations in behavior that are present in any manager's behavioral pattern.

MANAGERIAL SURFACE COORDINATES

The coordinate system for the Managerial Surface is shown in Figure 5. The three variables chosen for the model are: concern for output (o), concern for people (p), and commitment (c). The term commitment has been chosen to represent the third dimension and is considered to be a measure of the probability that a manager will operate in a given manner. Provision has been made for positive and negative values of the variables along with no restriction on magnitudes. Negative values of the three variables do occur in practice and should be considered in order to amplify the complexity of the managerial function. It is not uncommon to discover situations where a negative concern for output appears nor is it a rarity to find managers who occasionally exhibit a negative concern for people. An aversion to a given style of behavior can certainly be regarded as a negative commitment to that style.

It will be convenient to limit the working values (scales) to those used by Blake and Mouton in order to provide continuity for those familiar with their work. In order to satisfy the requirements of a physical model for the Managerial Surface, the concern for output and the concern for people axis are assumed to form a horizontal plane. Positive commitment is taken in the downward direction.

UNCOMMITTED STYLE

Figure 6 represents the Managerial Surface for a manager uncommitted to any one style of operation. For the present, it will be assumed that the surface, once determined, remains fixed. If the surface defines the manager's total opera-

Figure 4

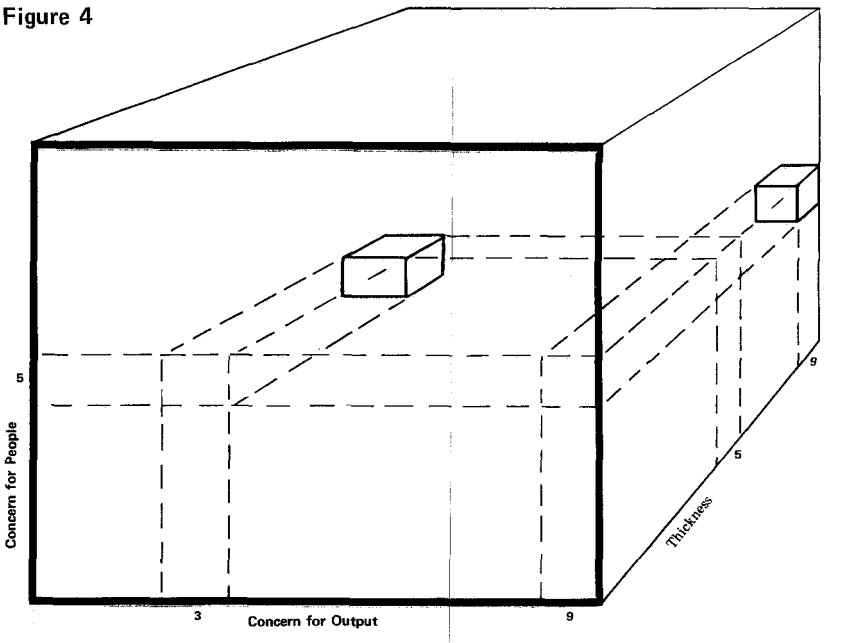


Figure 5

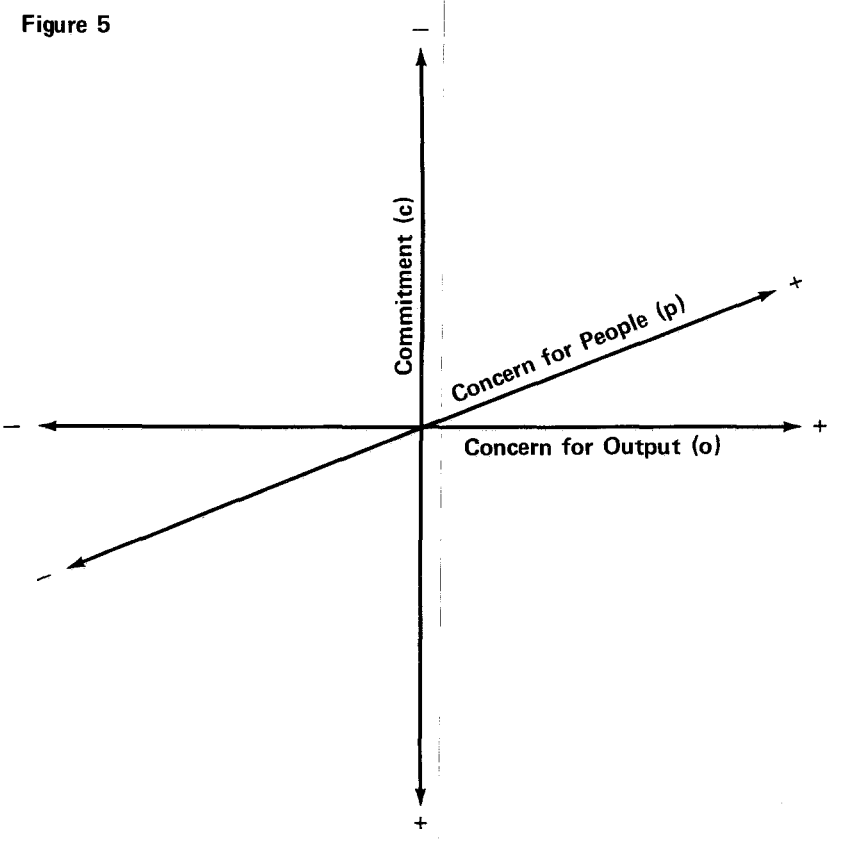


Figure 6

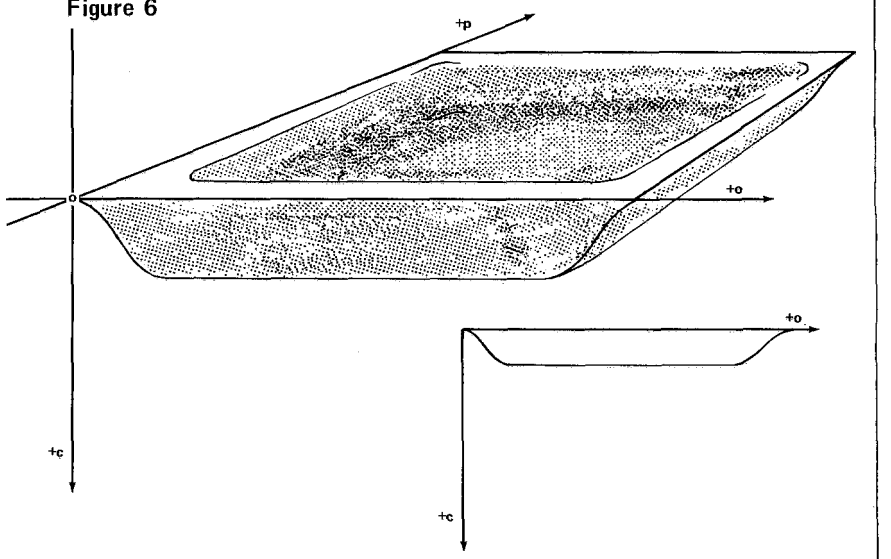
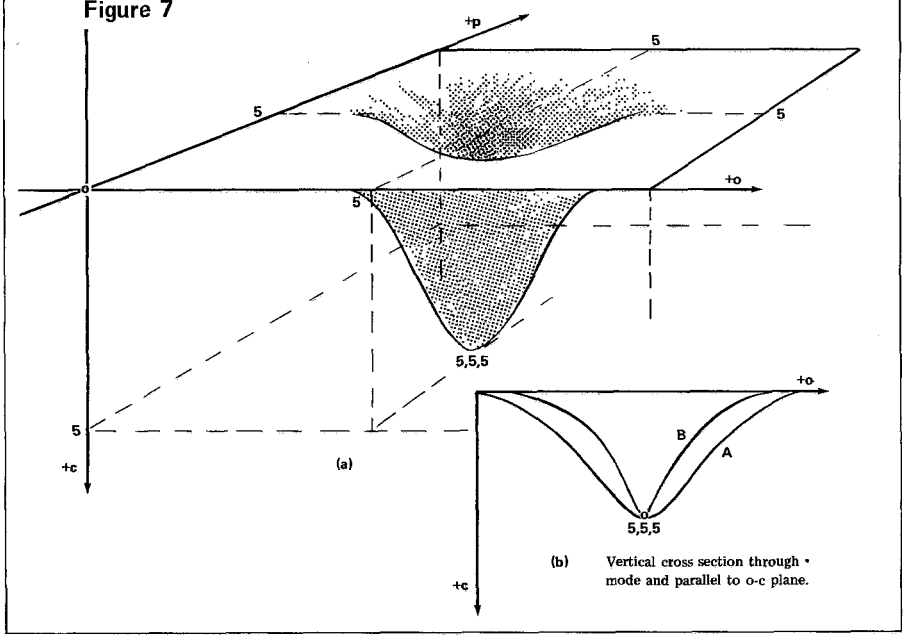


Figure 7



tional behavior, it is necessary to restrict any point which represents his style at a given time to that surface. Constraints which require tracking a curve or surface are defined as holonomic and increase the complexity of analysis. The implication is that there are forces present in the system that cannot be specified directly since they are only known in relation to their effect on the system.[5]

A physical model of Figure 6 can be constructed from a relatively thin sheet of plastic. Orient the model so that the o and p axis form a horizontal plane. A spherical object such as a marble is used to represent the point indicative of the manager's current behavioral style. If the marble is dropped onto the plastic surface, it will assume some equilibrium position due to the force of gravity which is considered a "natural" force. The final resting place of the marble (point) on this surface is obviously unpredictable.

THE MANAGERIAL SURFACE

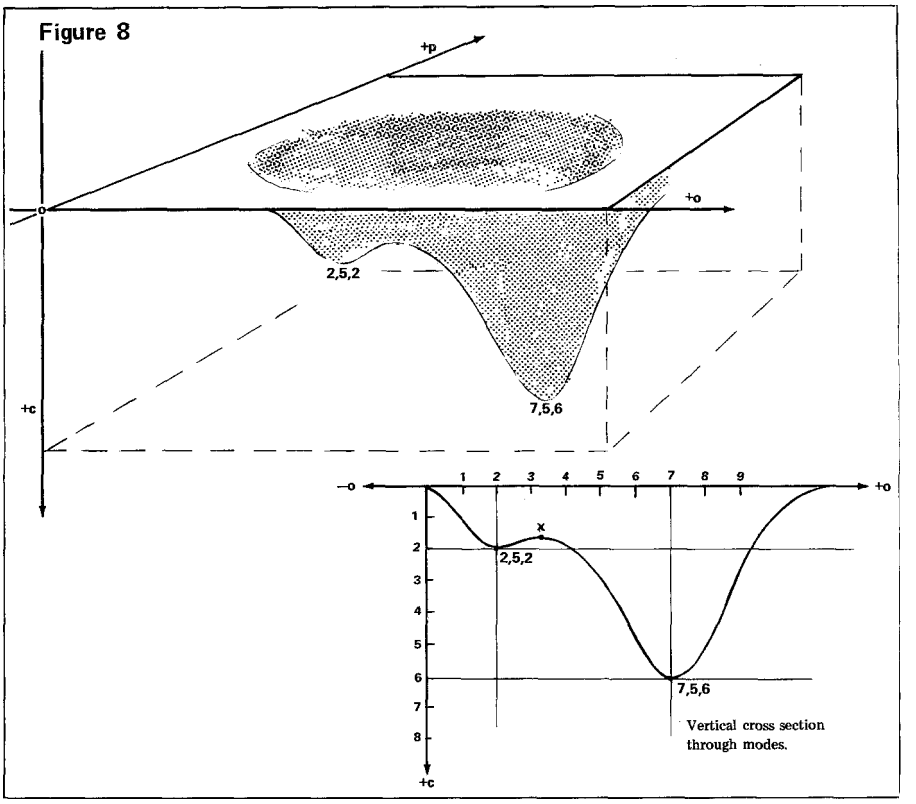
If the established model is now subjected to the environmental forces present in a given managerial situation, these forces will act on the marble and cause it to move about the surface. Since the surface is flat over a relatively large area, very small forces can cause the manager to change his style. Tannenbaum and Schmidt[6] have discussed many of the environmental forces acting upon the manager although some of the forces *in* the manager have been effectively replaced by the Managerial Surface. Note that these forces can be simulated by gently shaking the plastic model. If the marble is made of a lightweight material such as cork, an air stream directed at the marble can also simulate these forces.

It is evident that the manager represented by the model shown in Figure 6 will shift his style of operation with the slightest unbalance of the environmental forces. His resistance to change is very low due to the flat horizontal character of his Managerial Surface. The manager's resistance to change is directly related to the slope of the Managerial Surface at the current point of operation.

The Managerial Surface can be regarded as the manager's behavioral pattern as established by previous events. The environmental force field that has been suggested would be analogous to the psychological field expressed by Kurt Lewin. The total model (Managerial Surface and environmental force field) simulates Lewin's statement and includes the effect of prior events.

> "Any behavior or any other change in a psychological field depends only upon the psychological field at that time."[7]

Figure 7 represents another Managerial Surface with a primary mode of operation at 5,5 with a commitment

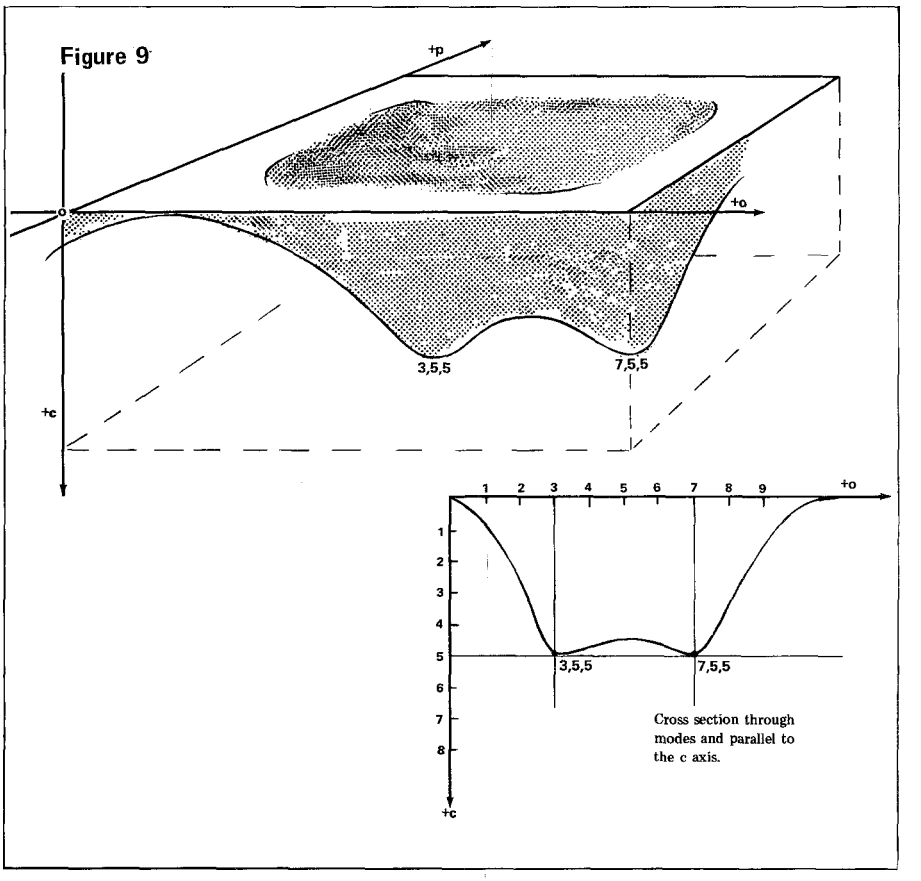


level of 5 (5,5,5). Drop the marble onto the plastic model of surface A and the marble will assume an equilibrium position at 5,5,5 if only the "natural" force is present. When the environmental force field is superimposed on the model, the marble will move about the 5,5,5 point in a manner determined by the applied forces and the slope of the Managerial Surface. The cross section of the model shown in Figure 7-b shows another possible surface, B. It is evident from the previous discussion that the manager represented by surface B is less flexible in style than the manager represented by surface A.

Figure 8 represents a Managerial Surface for a manager with a primary mode of 7,5 with a commitment level of 6 and a secondary mode of 2,5 with a commitment level of 2. Note in Figure 8-b that when the manager has been forced to point X, a very small force in either the plus or minus o direction will cause him to drop back into either the primary or secondary mode of operation due to the "natural" force. Notice the difference in slope encountered when moving from the point 7,5,6 in either the plus or minus o direction. The slope is less steep when moving to the left than when moving to the right. The model shows why a manager would tend to move to his secondary mode of operation rather than to some arbitrary style.

Figure 9 represents a manager equally committed (level of 5) to two styles of operation (3,5 and 7,5). The slope of the surface again shows why the manager would tend to operate in either dominant mode rather than some other random style.

Figure 10 represents a manager with a negative commitment (—3) to the 2,2 mode of operation and a positive commitment (8) to the 8,8 mode. The marble analogy shows that it would be relatively inconceivable that the manager would ever operate in the general area of the 2,2 style.



MODULATION OF MANAGERIAL SURFACE

The Managerial Surface is subject to changes based on the total operating environment. A manager's surface will be altered as he modifies his behavioral pattern in response to the forces controlling the immediate situation or his past experiences. A competent manager transferred to a new position will undoubtedly be required to modify his previous overall style. Although the forces tending to reshape the surface are extremely complex, it would seem desirable to establish some parameters to stimulate discussion.

The Managerial Surface has already been defined as a function of the three variables: concern for output (o), concern for people (p), and commitment (c).

$$s = f(o,p,c)$$

The change (ds) in the surface will tend to be equal to the sum of three discreet changes.

$$ds = \underset{1}{\frac{\partial s}{\partial o}}\,do + \underset{2}{\frac{\partial s}{\partial p}}\,dp + \underset{3}{\frac{\partial s}{\partial c}}\,dc$$

The new surface (s') would then be the sum of the old surface (s) and the change in surface (ds).

$$s' = s + ds$$

The phenomenon described is analogous to the change in surface encountered when a soft rubber ball is deformed by the pressure of a finger.

Figure 10

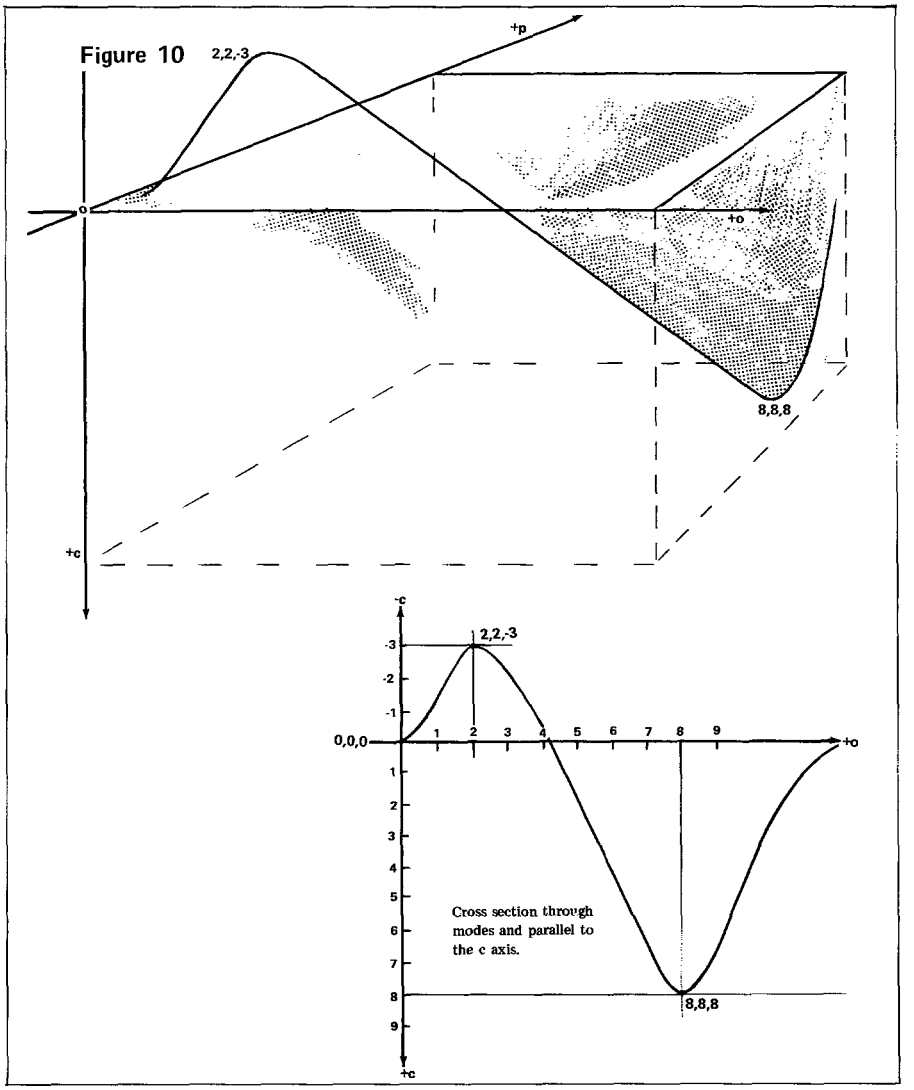
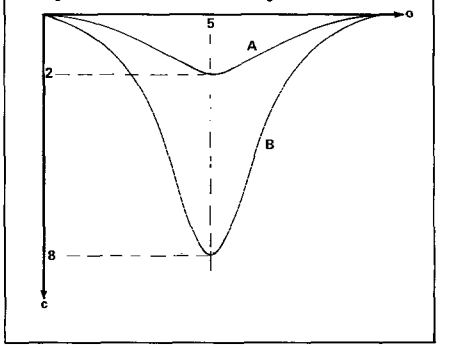


Figure 11 Modulation of the Managerial Surface



WEIGHTING FACTORS

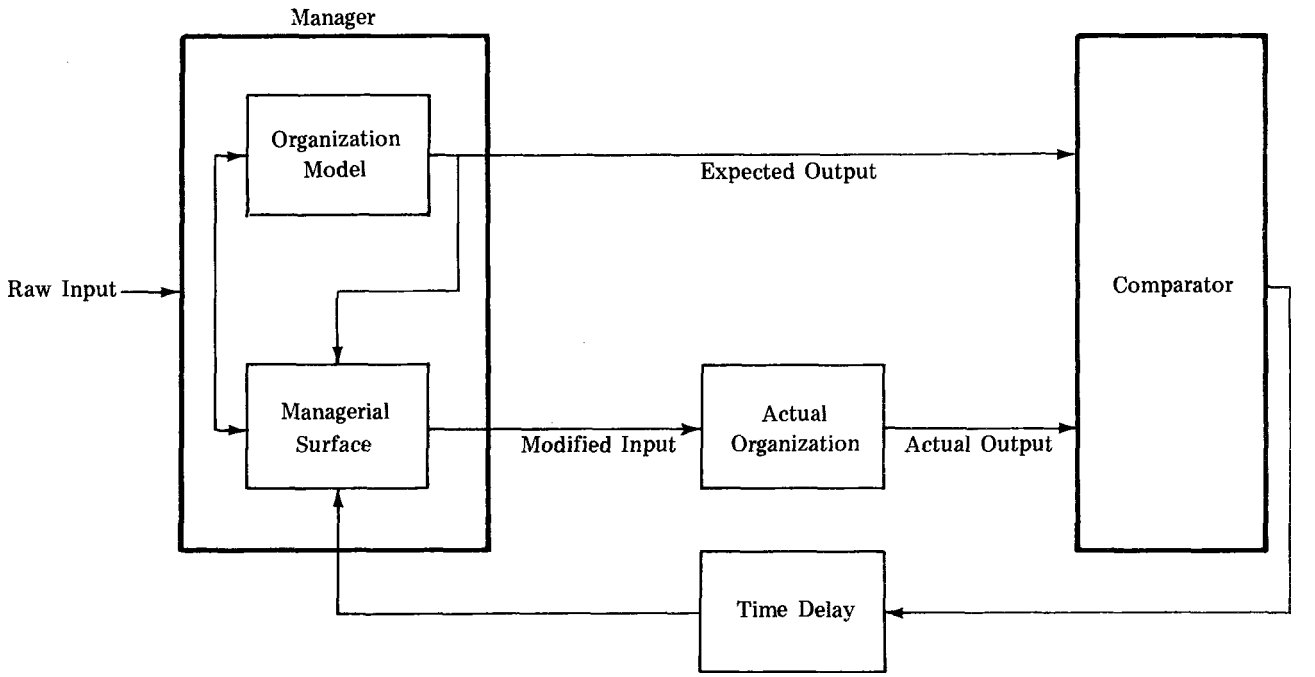
The three parameters $\frac{\partial s}{\partial o}, \frac{\partial s}{\partial p}, \frac{\partial s}{\partial c}$ are defined as the output weighting factor, people weighting factor, and commitment weighting factor, respectively. The existing surface may be modulated as changes in the three variables occur (do, dp, dc). The amount of change due to each factor is the product of the particular weighting factor and the related change in variable.

The weighting factors delimit the sensitivity of the Managerial Surface to alterations in a particular direction due to changes in the three variables. Figure 11 shows a cross section of a Managerial Surface before and after a change in commitment (dc) for a 5,5 style of operation. The commitment change is from a level of 2 (surface A) to 8 (surface B).

The Managerial Surface can then be visualized as being similar to the shifting contours of the sand dunes in a desert. A physical model to simulate this modulation can be constructed by using a flexible rubber sheet in place of the plastic used in the previously described models.[8]

What causes the Managerial Surface to be modulated? Figure 12 places the Managerial Surface into a managerial system model. An input to the manager, such as a request for an increase in output, causes the manager to apply the input to his conceptualization or model of the organization. With this particular input, he is able to establish the characteristics of the output from the

Figure 12 The Managerial Surface



model. This expected output from the model may cause him to change the raw input into a modified input that is compatible with the actual organization based on his Managerial Surface.

The modified input is then channeled into the actual organization. At some later time a comparison is made between the expected output and the actual output. This comparison provides delayed information to the manager which may cause additional modulation of the Managerial Surface.

SUMMARY

A model is proposed which is capable of illustrating the complex behavioral patterns of an individual subjected to his past and present environment. The individual's personal behavioral pattern is simulated by a three-dimensional surface model. The surface model represents the infinite number of behavioral styles possible for an individual, while recognizing the more likely modes of operation. The surface model is subjected to an environmental force field which may: (1) cause the individual to operate at various positions on the surface model (2) modulate the surface and effectively change the behavioral pattern. The total model is then visualized as a constantly changing surface in an ever-changing force field.

REFERENCES

1. Kahn, Robert L., et al., *Organizational Stress: Studies in Role Conflict and Ambiguity*, John Wiley & Sons, 1964, p. 278.
2. Blake, Robert R., and Mouton, Jane S., *The Managerial Grid*, Gulf Publishing Co., 1964.
3. Reddin, W. J., "The Tri-Dimensional Grid," *Training Directors Journal*, July, 1964, pp. 9-18.
4. Blake, Robert R. and Mouton, Jane S., "The Managerial Grid in Three Dimensions," *Training and Development Journal*, Jan. 1967. pp. 2-5.
5. Goldstein, Herbert, *Classical Mechanics*, Addison-Wesley Publishing Co., 1950, pp. 10-14.
6. Tannenbaum, Robert and Schmidt, Warren H., "How to Choose a Leadership Pattern," *Harvard Business Review*, Mar.-Apr. 1958, pp. 95-101.
7. Lewin, Kurt, *Field Theory in Social Science*, Harper and Brothers, 1951, p. 45.
8. Spangenberg, K. R., *Vacuum Tubes*, McGraw-Hill, 1948, pp. 75-76.