AD-762 085

A TAXONOMY OF INTERVENTION: THE SCIENCE OF ORGANIZATIONAL DEVELOPMENT

MICHIGAN UNIVERSITY

PREPARED FOR
OFFICE OF NAVAL RESEARCH

MAY 1973

Distributed By:

NTIS
National Technical Information Service
U. S. DEPARTMENT OF COMMERCE

AD 762085

Security Classification

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author)

Institute for Social Research
University of Michigan

2a. REPORT SECURITY CLASSIFICATION

unclassified

2b. GROUP

3. REPORT TITLE

A Taxonomy of Intervention: The Science of Organizational Development

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)

Technical Report October 1, 1972 to October 1, 1973

5. AUTHOR(S) (First name, middle initial, last name)

David G. Bowers, Jerome L. Franklin, Patricia A. Pecorella

6. REPORT DATE

May, 1973

7a. TOTAL NO. OF PAGES

69

7b. NO. OF REFS

52

8a. CONTRACT OR GRANT NO.

N00014-67-A-0181-0013, NR 170-719/7-29-68

b. PROJECT NO.

c.

d.

9a. ORIGINATOR'S REPORT NUMBER(S)

9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)

10. DISTRIBUTION STATEMENT

This document has been approved for public release and sale; its distribution is unlimited.

11. SUPPLEMENTARY NOTES

12. SPONSORING MILITARY ACTIVITY

Office of Naval Research, Organizational Effectiveness Research Programs

13. ABSTRACT

A theory of Organizational Development is proposed which takes into account the nature of problematic behaviors, precursors to problematic behaviors, and impingement modes. A taxonomy of interventions, classified by impingement mode, is included with descriptions of all the interventions classified.

Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
U S Department of Commerce
Springfield VA 22151

DD FORM 1 NOV 65 1473 (PAGE 1)

S/N 0101-807-6811

Security Classification

A-31408

14. KEY WORDS	LINK A ROLE	LINK A WT	LINK B ROLE	LINK B WT	LINK C ROLE	LINK C WT
Behavior therapy						
Client-centered counseling						
Commitment						
Communication flow						
Concepts training seminars						
Conflict resolution						
Congruence, principle of						
Cooperation/competition						
Decentralization						
Decision-making practices						
Determination, factors of						
Diagnosis						
Differentiation/integration						
Flow-of-work						
General systems theory						
Goal emphasis						
Group						
Group process						
Human resources						
Imitative learning						
Impingement mode						
Information						
Interaction facilitation						
Intervention						
Input						
Job enrichment						
Laboratory training						
Leadership						
Leadership-situation engineering						
Lower-level influence						
Management-by-objectives						
Management seminars						
Managerial grid Organizational Development						
Merger laboratory						
Motivational conditions						
Motivation training						
Peer leadership						
Planning						
Policy and goal clarity						
Precursors						
Predisposition, principle of						
Problematic behaviors						
Process consultation						
Programmed instruction						
One-dimensional model						
Operations research						
Organizational climate						
Organizational effectiveness						
Organization						
Output						
Realization, factors of						
Reward systems						
Role clarity						

14 KEY WORDS	LINK A ROLE	LINK A WT	LINK B ROLE	LINK B WT	LINK C ROLE	LINK C WT
Scanlon plan						
Scientific management						
Situation						
Skills						
Skill training						
Social systems						
Socio-technical systems fit						
Structural change						
Structure						
Succession, principle of						
Supervisory leadership						
Support						
Survey feedback						
Survey-guided development						
Team development						
Technological readiness						
Third-party consultation						
Three-dimensional model						
Throughput						
Treatments						
Trust						
Two-dimensional model						
Values						
Work facilitation						

DD FORM 1 NOV 65 1473 (BACK)

S/N 0101-807-6821

A-31409

Technical Report

May 1973

A TAXONOMY OF INTERVENTION:

The Science of Organizational Development

David G. Bowers
Jerome L. Franklin
Patricia A. Pecorella

Center for Research on Utilization of Scientific Knowledge
Institute for Social Research
University of Michigan

This research is funded by the Office of Naval Research, Organizational Effectiveness Research Programs, under Contract No. N00014-67-A-0181-0013, NR 170-719/7-29-68 (Code 452). Reproduction in whole or in part is permitted for any purpose of the United States Government. This document has been approved for public release and sale; its distribution is unlimited.

16

TABLE OF CONTENTS

Preface. i

The Problem: An Overview. 1

The Organization as a Social System. 5

The Nature of Change 18

Behavior Classification Scheme 22

Precursors to Organizational Functioning 26

Development Techniques and Impingement Modes 33

The Three Dimensional Model. 52

Hypotheses 60

PREFACE

This is the first of three reports focusing upon the development and testing of a taxonomy of intervention. This report concentrates upon organizations as complex social systems and the various strategies and techniques employed to improve organizational effectiveness. Included are theoretical statements regarding (a) organizations as social systems, (b) the origins of organizational problems, and (c) the nature of change processes. A categorization of known development activities is presented together with a description of each activity. The report concludes with several testable hypotheses generated from the theoretical materials.

The next report will evaluate these hypotheses based upon a review of the literature and analyses employing the Organizational Development Research Program's existing data bank. The third report will describe a field experiment aimed at further testing these hypotheses and will evaluate the relative effectiveness of two general approaches to organizational development.

THE PROBLEM: AN OVERVIEW

The issue to which this research addresses itself can be stated very simply:

> The nation has a great need for development of its organizational capacity to cope with problems, and that organizational capacity for purposeful development stands at present confused and inept for the task.

Events in recent years certainly must convince even the most complacent among us that our American society, affluent and successful though it is by nearly every traditional standard, must become more effective in solving its problems. Consider the following array of trying national questions:

- We must provide an effective national defense without its creating an unbearable economic burden and without our becoming, in the process, a garrison state;
- We must provide additional jobs and a rising standard of living without polluting the physical environment;
- Confronted with what some have called private affluence and public squalor, we must provide the funds and find the means to improve public services without increased regimentation and without absorbing so much of the nation's wealth in the process that we move to the opposite circumstance, public ostentation amid private threadbareness.
- We must find some solution to the problem of penal institutions, which are overcrowded, underfunded, and understaffed and which at present serve only two functions, both of questionable utility: custody and the dissemination of criminal skills and motivation.

- Drug usage including alcoholism is an increasing problem whose reduction requires resources on an immense scale and the coordinated efforts of many highly trained persons.
- We must find more constructive, more humane procedures for the care of the retarded and of the physically and mentally disabled, a search and a function at present both underfunded and too little understood.
- We must find some means by which to extricate ourselves from racial conflict, caused by centuries of discriminatory treatment and aggravated by the present social conditions, which compress large numbers of low income persons in high-maintenance-need housing in the older center-city areas. Lacking marketable skills in disproportionate numbers in an increasingly complex job market, their resource needs rather persistently outstrip their resource generating capacity. Other segments of the population are therefore called upon to subsidize through political institutions (albeit inadequately) services and income to persons in these areas. While it may prevent the ugliest manifestations of mass hardship, this subsidization is provided at a frightful price to those inner-city recipients: they must sacrifice a substantial amount of control over their own communities for a half-portion of subsidized service.

Neither the individual nor society as a whole solves problems of this size and scope. Society survives or fails, thrives or deteriorates, on the effectiveness of its organizations. These problems and many others make it patently clear that American society simply must find a ready, transferable way in which to make its component systems--its organizations--more effective.

Much more must be accomplished for comparatively less input. Less must be wasted, more must be wisely used, and more of high quality must be generated.

Unfortunately, the picture is less than promising. Many have stated that there is no general theory of organizational change and development, and they are quite correct. Despite this, activities go on in abundance under the general rubric of "O.D". Some such activities are generally effective and contribute to the upgraded functioning of some of the systems they set out to help. Others are well intentioned, but generally ineffective. The reasons for the effectiveness or ineffectiveness of the various activities are all too often lost to the advance of the fund of knowledge by a welter of self-serving rejection of any carefully conducted evaluations. Unfortunately, still other activities are patent frauds which seem to be guided principally by mystic idealism or money making motives on the part of their proponents rather than by demonstrated ability to facilitate organizational development.

The problems are manifold, yet the researched, planned organizational development programs which must be implemented to solve these problems are complicated by the myriad of other, less than contributive development techniques. This is an applications-minded age, yet theorists, researchers, and practioners alike cloud the understanding of development efforts by their competition for recognition and reward. The problems of a turbulent society have long since become sufficiently complicated that we can ill afford the luxury of scholarly debates concerning subtle differences among treatments of trivial problems. Even less, since the problems consume proportionately greater resources, can we afford to publicly display select OD successes while disregarding failures for the semi-conscious purpose of protecting our professional reputations.

The need is instead for sound research, whose solid findings permit a bridging of existing knowledge gaps into principles sufficient to serve as guides for competent practice.

THE ORGANIZATION AS A SOCIAL SYSTEM

One of the major advances in recent years in organizational thought has been the development of the theories and concepts which treat the organizatio as a social system. Other and earlier formulations have dealt with the organization from the classical viewpoint of formal structure of from the viewpoints of technology, sociology, individual psychology, or pure interpersonal relations. In contrast the systems approach has permitted those who employ it to account for and explain more of what is termed organizational behavior.

That the systems viewpoint has had considerable currency is demonstrated by the increasing frequency with which writers and practitioners in the field have referred to it in what they write and say. Unfortunately, not all who recognize its general value also accept its substance. The thoughtful implementer, no less than the casual observer, is faced with the problem of differentiating those who identify the truly systemic from those formulations which merely attempt to identify <u>with</u> it.

Many have written about general systems theory and have applied it to a considerable array of social processes. At least one volume has explicitly delineated the systemic properties of social organizations (Katz & Kahn, 1966). A recitation of all that has been said would be time-consuming and less than productive in the present report. It seems instead sufficient to settle for a few primitive notions concerning those aspects which distinguish most organization systems-thinkers from their non-systemic counterparts:

(1) Systemic theorists view the organization as a coherent assemblage of inter-related parts forming a complex whole.

(2) They recognize that an impact upon one of the interrelated parts produces effects, not necessarily similar, upon the other parts.

(3) They see it as having structure, but view that structure not in barebones framework terms, but rather as a structure of events over time. As such, structure acquires a determining character, in that, although the structure is made up of nothing more than the accumulated behaviors of its members, at any one time point and for any one member's act, it causes (i.e., influences or determines) his behavior more than the reverse.

(4) They see it as an energy input-throughput-output flow. That is, organizations draw renewed supplies of energy (inputs) from other systems which are transformed to create a product, process materials, train people, or provide a service (outputs). The process of reorganizing inputs to create outputs is referred to as the throughput.

At base, therefore, the social system consists of complex configurations of the behaviors of its individual members. Among phrases which might be selected perhaps none state this view better than the following:

> "All social systems, including organizations, consist of the patterned activities of a number of individuals... (Katz & Kahn, 17)."

> "A social system is a structuring of events or happenings rather than of physical parts and it therefore has no structure apart from its functioning...When a social system ceases to function, there is no longer an identifiable structure (Katz & Kahn, 31)."

Thus, although we, like others, will in the following pages discuss a number of constructs whose referents are other than member behavior, it is well to remember that these "processes" (e.g., organizational decision-making practices) are simply shorthand descriptions for perceived constellations of the behavior of many individuals at various points in organizational space.

Stating that a social system is made up of member behavior should not be taken as an argument for a simplistic approach to the problem of organizational development and change, however. Behavior occurs for a reason or reasons, and the behaviors which comprise the social system are, as has been said, configured in a complex fashion. The process of their change is both complicated and difficult, and, in terms of system change, the process is not a simple, additive one. Behavior changes in one area of the social system may precipitate changes in several other behaviors in the same or related areas of the system. Thus, the process of change is a complicated multiplicative one.

Since the present authors share the view that organizations are social systems, our view must also be that organizational change or development, if it is to be successful and helpful, must be similarly systemic in character. In the most general sense, organizational development concerns itself with providing additional or alternative inputs calculated to alter the throughput process in such a way as to generate additional outputs per unit of input.

This means that organizational development must begin with the greatest possible understanding of (a) how the throughput process works in organizations in general, and (b) how the throughput process of the organization to be developed is working specifically. Thus systemic organizational development becomes a procedure of attending, not only to the direct effects of an intervention (alternative inputs) upon the immediate segment of the system which it impinges, but also to its secondary, tertiary, etc. effects upon the more remote parts.

Strictly speaking, an intervention is appropriate only when the algebraic sum of its effects, both direct and derivative, upon immediate and remote segments, adds positively to the ultimate output/input ratio of the organization. Of course, fulfilling this ideal in practice exceeds the state of present knowledge and capability. Still, the organizational development scientist who espouses a systemic view attempts to come as close as humanly possible to meeting this criterion in the design of what he does.

It has been proposed in an earlier paper (Bowers & Franklin, 1972) that organizational development is essentially an adaptation problem, in which both the motivation to change and guidance of the change process originate in a perceived discrepancy between an ideal functional state and the actual, ongoing state. Although persons may, for reasons of background, information and the like, hold in fact as ideal any of an almost infinite variety of functional configurations, the one which they should hold, if their concern is for the well-being of the organization, is one which maximizes the output/input ratio.

A number of descriptions of that optimal throughput (functional) state are possible and do indeed exist in the literature. The formulation which we prefer is that presented by Rensis Likert, a preference explainable by the following considerations:

(1) It is a formulation with which we are thoroughly familiar, having enjoyed a number of years of close association with its author;

(2) Unlike many alternative formulations, this one is based upon a vast amount of empirical research evidence, which makes us more confident in using it;

(3) The theory delineates causal relationships over time; and

(4) The constructs which it proposes appear, at least to us, to be more readily operationalized--more readily translatable into action terms--than are those contained in alternative formulations.

In the pages which follow, we will outline the Likert formulation as we propose to use it, thus drawing upon both the writings of that theorist himself and upon our own interpretive summary of his ideas published elsewhere (Likert, 1961, 1967; Bowers, in press).

An organization is more than physical plant and equipment, more than an array of positions or a collection of persons who fill those positions, more than a sequence of work tasks or technical operations. It is all of these things, of course, but it is fundamentally something more. The basic building block of the organization is the face-to-face group, consisting of the supervisor and those subordinates immediately responsible to him. In each of these groups a supervisor or manager acts in ways which stimulate behaviors among his subordinates toward each other, toward him, and toward the tasks which they are supposed to perform. A sequence is set in motion by his behavior; his acts toward his subordinates set the tone for their behavior toward one another and for their performance on the job. An effective supervisor accomplishes through his behavior the building of a group oriented toward accomplishment of the task or mission. In contrast, an ineffective supervisor sets

in motion through his actions patterns of behavior which detract from, or depress, that performance. Within each group, functioning occurs as a Leadership-Intervening Variable-End Results sequence, with the End Results for most groups forming inputs (often intangible) for other groups. In this way, each group may be thought of as a module in a constellation of such modules.

Many categorizations of leadership behavior are possible. To provide some description of the constructs to be considered, we draw upon what has come to be called the "Four-Factor" theory, a conceptualization itself closely aligned to the principles outlined by Likert (Bowers & Seashore, 1966; Butterfield, 1969; Taylor, 1972; Taylor & Bowers, 1972). According to this scheme, leadership is a behavior form containing four components:

- Support - Behavior which enhances another person's feeling of his own personal worth and importance.
- Interaction Facilitation - Behavior which encourages members of the group to develop close, mutually satisfying relationships.
- Goal Emphasis - Behavior which stimulates an enthusiasm for meeting the group's objective or achieving excellent performance.
- Work Facilitation - Behavior which enables attainment of the objective by such activities as scheduling, coordinating, planning, and by providing resources such as tools, materials, and technical knowledge.

As the manager behaves in these ways, his behavior is picked up or reflected in the behavior of his subordinates toward one another. A good manager, therefore, "multiplies" his leadership qualities as his subordinates reinforce and add to what he provides. A poor manager similarly multiplies his inadequate leadership, for, as he is not supportive of them, does not display an enthusiasm for getting the work done, ignores obstacles, or

discourages teamwork, they will be inclined to reflect this in their behavior toward one another. This reflection of the manager's behavior in the behavior of subordinates toward one another is called "peer leadership."

The better the managerial and peer leadership in a group, the better is the functional process of that group as a group. That is, better leadership behaviors function to make the group one which plans together and coordinates well, solves its problems well, is adaptable, motivated, and mutually trustful. In the Likert formulation, this construct is often referred to as "peer group loyalty." In this present instance we shall refer to it simply as Group Process.

An adequate understanding of the organization's systemic nature requires that we fathom the flow of events, from causal conditions through intervening processes to end results, for any separate group and for all groups as they exist in this constellation making up the whole. If groups in an organization were not interconnected, we could simply "sum up" their separate properties and have an understanding of the whole. In fact, however, end results from some groups form causal inputs for other groups; thus the flow of events is from group to group, as well as within any one.

For the single group, two basic types of causal characteristics are given preeminent status in Likert's thinking: managerial behavior and those organizational conditions which reflect the basic structure of expectations, roles, policies and practices of the organization as they relate to a particular group. More recently the term Organizational Climate has been applied to this array of conditions which affect the basic life of a group and which flow to the milieu around that group from the output of other groups, particularly those above it in the hierarchy. This use of the term

differs somewhat from that of some other writers in the field, who use it to imply a general emotional or attitudinal "tone" which exists throughout the organization. The characteristics denoted in the present usage are not feelings but practices, and they are somewhat different from one group to another within the organization. Each group exists within a climate that is somewhat unique to its particular point in the space that is the organization. Groups within the same department will experience slight differences among themselves in organizational climate; much greater differences will exist among groups who come from different departments or who are at different levels within the organization; and very great differences will occur for groups drawn from different organizations.

A group which existed in a sort of "free space," subject to no external constraints, would be entirely free to do whatever it pleased. However, this seldom, if ever, occurs; the only occasion in which one might conceive its happening is during a period of general breakdown of society. Even if nothing else constrains, society, its laws, and its government place certain limits on what groups may and may not do. In formal organizations these constraints are considerable, and they increase in both number and intensity as one moves down the hierarchy. By the scope of their authority and responsibility, groups nearer the top of the pyramid have a greater effect upon the conditions within which groups nearer its base must work than the latter have upon the former. The productive output of top management groups, for example, consists of procedures, objectives, and policies which profoundly affect the lives and job functional capacity of groups at lower ranks. The board of directors has more latitude generally than do

the president and his vice-presidents. The latter group has greater freedom than does any single vice-president with his division heads. Division heads have less latitude in working with their subordinate department heads than their superiors have in working with them, and so forth down to the lowest rung of the organizational ladder. These decreases in latitude are caused by the fact that objectives become set, policies determined, and standard practices instituted at higher echelons, to be applied principally to the operations of lower echelons. Objectives, policies, decisions, and directives are the "end results" of upper echelon groups (in fact, of all groups above the bottom level), and it is these results, for good or ill, which comprise organizational climate. It is perhaps best visualized as an accumulating wave, which rolls down through the organization, gaining some constraining power as it moves, in most instances increasingly constricting the latitude of the more subordinate groups which it envelopes.

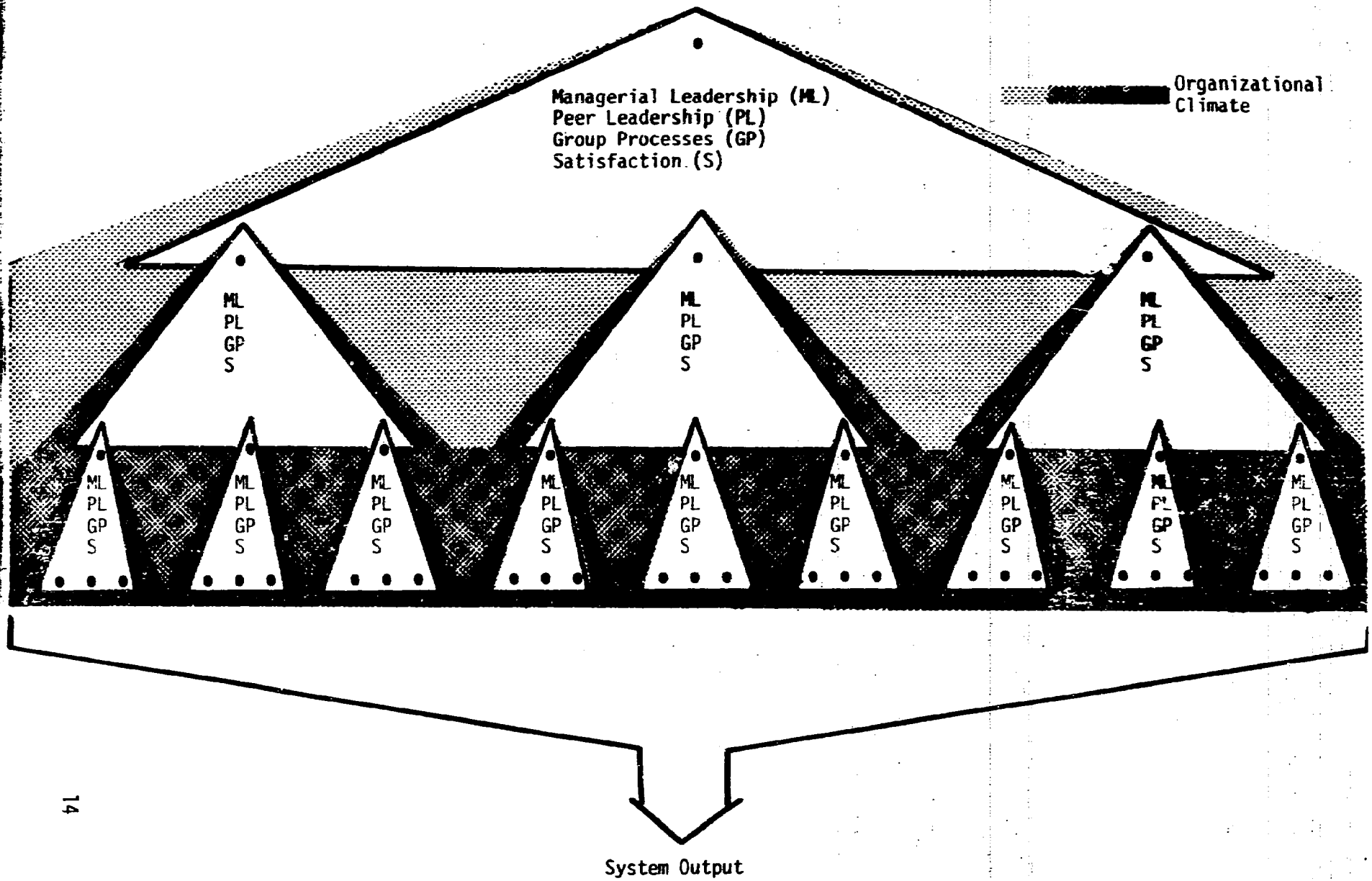
Although constraints increase as one moves from the top of the pyramid to the bottom, the whole may be more or less conducive to effective functioning. Climate provides, if you like, "soil" which helps to nurture the group or groups within it. As in agriculture, that soil may be a deep, rich, fertile loam in which the group may take root and develop, or it may be a harsh, barren, rocky hardpan which stunts and stultifies.

The process is depicted graphically in Figure 1.

A large number of specific variables could be conceived as belonging to this general domain called "organizational climate". Many of the conditions described by Likert in his two basic volumes fall into this category (Likert, 1961, 1967). They were, in fact, measured and used in that form in the 1966-1970 Michigan Intercompany Longitudinal Study. (Likert, Bowers,

Figure 1

ORGANIZATIONAL PROCESSES



& Norman, 1969; Bowers, 1971). This latter effort, involving thousands of persons in dozens of organizations, provided systematic, cross-organizationally comparable measurements on the whole array. Extensive analyses on the resulting data have shown that at least the following constructs are important components of organizational climate:

- Human Resources - the extent to which the most important resources of the organization are seen to be the members, their talents, knowledge, skills, and commitment. Equipment (hardware, plant, etc.) are viewed as tools, to be used, modified, replaced, or adapted as needed. This contrasts with the opposite view, that the organization's principal assets are physical, and that persons are "hands" to be hired, fired, moved, and replaced as hardware dictates.
- Communication Flow - the extent to which information flows quickly, freely, and accurately, upward, downward, and laterally in the organization.
- Decision-Making Practices - the extent to which decisions are made at those levels in the organization where the most adequate and accurate information exists, are based on all available know-how, and are made by participative processes.
- Motivational Conditions - the extent to which the climate is seen as encouraging, rather than discouraging, of effective functioning.
- Technological Readiness - the extent to which the organization is seen as providing the most up-to-date, efficient, and well-maintained methods and tools.
- Lower-Level Influence - the extent to which the lowest levels of the organization have some say or influence over matters affecting their organizations lives.

(Taylor & Bowers, 1972)

Although the framework presented above draws most heavily upon research conducted at the University of Michigan, the concepts discussed are widely accepted. Researchers and OD practitioners tend to focus upon a fairly limited number of such concepts when describing organizational processes and states which experience, theory, and research suggest as crucial to understanding organizational functioning.

Those processes and states already noted include leadership behaviors, communication flow, decision-making practices, motivational conditions, and lower-level influence.

In addition, there are a variety of others also focused upon when assessing the effectiveness of organizational functioning.

- Commitment - the extent to which organizational members feel associated with a particular organization. Commitment is determined to some extent by the degree to which involvement in task fulfills the needs of those responsible for completing the task.

- Conflict Resolution - the extent to which conflict situations are constructively resolved. If good mechanisms are in effect, conflict situations may result in clarified perceptions, integrative solutions and enthusiastic acceptance of the solutions. Less effective mechanisms can result in distortions, defensiveness and win-lose outcomes accepted by one party and rejected (sometimes passively) by the other.

- Cooperation/Competition - the extent to which interdependent units work together or at odds with one another to accomplish organizational goals. Increased competition and decreased cooperation generally result in wasted resources and decreased organizational effectiveness.

- Planning - the extent to which planning is of sufficient detail and encompasses appropriate time periods. Poor planning results in situations (e.g., too

much or too little work during certain periods) and behaviors (e.g., hurried work with errors) wasteful of the organization's material and human resources.

- Policy and Goal Clarity - the extent to which decisions regarding policies and goals are understood by all organizational members. Unclarity and organizational inefficiency often is the result of poor communication from upper levels responsible for establishing the policies and goals to lower levels responsible for acting upon them.

- Reward Systems - the extent to which reward systems are successful in motivating organizational members to behave in manners congruent with organizational goals.

- Role Clarity - the extent to which individuals understand the behaviors expected of themselves and other organizational members in their organizational roles.

- Trust - the extent to which trust forms the basis for interactions between individuals and groups within an organization. When high levels of trust exist mutual support and effective problem-solving processes are expected. When trust levels are low expected outcomes include the concealment of information (especially errors and negative feelings) and generally poor interpersonal relationships.

All the above concepts are useful for concisely summarizing processes and states within organizations. They are often employed as descriptive categories in diagnostic/evaluative efforts and used as criteria for judging the effectiveness of attempts aimed at improving organizational functioning. However, the concepts merely serve to summarize the results of patterned behaviors. Changes are ultimately dependent upon changes in the behaviors of individuals and groups.

THE NATURE OF CHANGE

Change is movement, and the very nature of this concept requires that one begin with its antithesis, the steady (or homeostatic) state. Change is, therefore, some form of interruption of a pre-existing steady state. Perhaps the clearest descriptions of what is involved in the change process come from the literature of pathology, where an interruption of a steady state (a change) is termed a "lesion". The occurence of a lesion requires the coincidence of two sets of factors:

Factors of Realization - usually extrinsic occurrences which bring about the event in time, as for example the occurrence of radiation or trauma, or surgery;

Factors of Determination - usually intrinsic conditions which are necessary for the event to occur at all, as for example the structure or properties of a cell.

Implicit in these notions is the proposition that both sets of factors are present and must in some way "match"; otherwise change will not occur. A simple medical example may illustrate this perhaps obvious point: an antibiotic drug, as a factor of realization, will produce a variety of different effects, depending upon whether the patient has (a) an infection, (b) a common cold, (c) no illness at all, or (d) an allergy to that drug. In the first instance it will likely help him; in the second and third cases it will have little or no effect, and in the final instance it may send him into anaphylactic shock.

Analogyzing to the problem of organizational change and development, this implies that the change process is in all likelihood multiplex, with outcomes determined by the interaction of treatment with the condition and its etiology.

From this brief discussion we may derive what would appear to be a fundamental principle of organizational change, which we may arbitrarily label the Principle of Congruence:

> For constructive change to occur, there must exist an appropriate correspondence of the treatment (action, intervention) with the internal structural and functional conditions of the entity for which change is intended. Since by definition these internal conditions pre-exist, this means that treatments must be selected, designed, and varied to fit the properties of the client entity.

Implicit in the notion of factors of determination is yet another proposition. Pathology literature states that change is most likely to occur at what is termed "sites of predilection", which ordinarily consist of points where two or more surfaces meet. The resemblance of this precept to a similar statement made by many writers in the area of organizational change is uncanny.

Leavitt (1965), and many others as well, talk about "entry points". Lippitt, Watson, & Westley (1958) discuss "leverage points", which may be either some strategically located unit or some functional aspect of the organization from which change may proceed to other areas. Katz & Kahn (1966), in their chapter on organizational change, similarly seem to see change as originating (a) where the system meets its inputters, (b) where system meets supersystem, (c) where echelon meets echelon. Thus general agreement is rather apparent with what we might term the Principle of Predisposition:

> There are certain points in organizational space where change will enjoy its greatest likelihood of success; these points are, at least in terms of the change strategy, boundary points, and change starts at that boundary and works "in".

Finally, a third proposition may be extracted by considering simultaneously the ideas of several writers and disciplines. Leavitt has distinguished between

primary targets of change (those characteristics immediately impinged upon) and ultimate targets (those characteristics which are sometimes changed indirectly, through change in primary targets). From pathology come the notions of cardinality -- that there are main or major processes on which other things depend, and order -- that things lead to other things. Lippitt, Watson & Westley discuss "linkage", the idea that there must be at least a possible line of change progress from the leverage point to the change objective. The Principle of Succession is an implication of all of these views:

> Change is accomplished indirectly, not directly, by a process in which the intervenor changes some things in order to change other things, only ultimately arriving at the true target.

Several points emerge from all of these various conceptual statements and primitive principles. First, responsible change practice requires that one must be able to say that a particular treatment produces the condition which it is intended to produce. Yet it seems obvious that change design is not a simple matter of treatment selection -- a choice of treatments whose impact is uniform whenever used. It is instead one of interaction between the treatment and multidimensional conditions within the organization. Stated more simply, a particular intervention behavior or action is one thing under one set of organizational conditions and a completely different thing under others. The point of all this is that the change agent or designer may delude himself into believing that, by using a single intervention or treatment, he has in some sense "controlled" for extraneous factors by conducting one specific set of activities, when, in fact, he has done precisely the opposite.

Second, one never changes "it" (the condition which one proposes ultimately to affect); instead, one changes things (makes inputs of a kind) presumed to lead to "it". Thus we provide information, conduct skill-building sessions, or

alter the situation because we believe that this is likely to change the behavior of the persons involved. In no instance do we -- nor can we -- "change their behavior" directly. Only the persons themselves are capable of that. At first blush this may appear to be elucidating the obvious, yet it seems that this point is often overlooked. We do what we do because of assumptions that we make about the connection between the changed conditions which we provide and the behavior of the organizational member experiencing them, and our assumptions often seem to be fuzzy, incomplete and unrecognized, if not downright unjustifiable.

The problem of change in organizations, therefore, involves simultaneous consideration, and then appropriate sequencing across many persons, roles, and settings of three important aspects and their potential interactions:

(1) the behavior(s) which are problematic;

(2) the conditions which create those behavior(s) and,

(3) the nature of possible treatments.

In more nearly operational terms, these three aspects assume the form of three relatively simple questions: What is the behavior which seems to be deficient? Why does that behavior exist at its present level or in its present form? Which of a large number of possible interventions would be most likely to correct the deficiency?

In the three sections of the report which immediately follow we propose to deal briefly with a behavior classification scheme, followed by a classification of precursor modes (those conditions which may be hypothesized as having produced any behavioral condition), and finally to present a categorization system for change treatments by impingement mode (that is, by those characteristics which they appear to be intended, first and foremost, to affect.)

BEHAVIOR CLASSIFICATION SCHEME

As noted previously, descriptions of processes and states of organizations are simply shorthand descriptions for perceived constellations of the behaviors of many individuals at various points in organizational space and time. The process of formulating these shorthand descriptions involves several steps. First, one must decide which behaviors to measure and how to measure them. This requires selecting some limited number of behaviors from the total universe and fitting these specific behaviors into more general categories. In a newly developing field, the decisions about which behaviors are selected and the categories in which they are placed are based to some extent on what is suggested by existing theory and data in related areas of study; and to some extent on a priori notions about which behaviors are most important to measure. As more data is collected and as theories are developed, the behavioral categories (number and type) which emerge as most consistently useful in predicting specified outcomes are the behavioral categories consistently utilized. Once the behaviors have been measured, individual scores on the measures are averaged across people. From these average scores, conceptual categories emerge which describe the processes and states of organizational functioning.

Two things are different, then, when one talks about organizational processes and states as opposed to when one talks about the original behavior configurations occurring in an organization. When talking about organizational processes and states: (1) a limited number of behaviors are included, and (2) a higher level of abstraction is present.

These shorthand descriptions of organizational processes and states are useful for diagnostic and evaluative purposes. One can assess how an

organization is functioning now (with reference to some ideal score on the measures), and whether major changes are taking place in an organization, by using the measures of the processes and states as benchmarks. The shorthand descriptions are also useful in providing a common language for talking about and studying organizations.

However, a major goal in the OD field is to improve organizational functioning -- to make interventions (alternative inputs) which add positively to the ultimate output/input ratio of the organization. Pragmatically speaking, one cannot impinge directly on a "process". Instead one must work with specific individuals and must be able to help these individuals change the original behaviors that created the ineffective processes. Since there are neither the resources nor the time to attempt to change any or all the original behaviors in some random order, it becomes paramount to identify some limited number of behaviors which, if changed, will cause changes in other behaviors. One should first change the behaviors which will eventually cause the greatest positive change in the processes and states of the organization and thereby lead to the greatest improvement in output variables. It is important, then to have an understanding of the causal flow of events in organizational functioning so that change efforts can concentrate on the problem areas, which if changed, are likely to produce the greatest improvement.

Previously in our discussion of Likert's formulation of organizational functioning as modified by Bowers and others we stated that leadership and organizational climate were the causal variables determining the groups' processes and the system's output. According to this formulation, leadership

is comprised of four categories of behavior: Support, Goal Emphasis, Work Facilitation, and Interaction Facilitation. The validity of this Four Factor theory of leadership depends on its comprehensiveness and its ability to predict the effectiveness of organizational functioning. A doctoral dissertation by Butterfield (1968) tested the adequacy of this theory and four other theories in these two respects, and the results will be briefly described here. The five theories studied were: Bowers & Seashore's Four Factor Theory; Mann's (1965) Skill Mix Theory; Katz & Kahn's (1960) three patterns of leadership; Likert's System IV Theory; and Fiedler's Contingency Model. Data were gathered from four hundred people in an administrative unit of a federal agency in Washington, D.C.

When the intercorrelations were examined among leadership variables for the theories (excluding Fiedler's), five meaningful clusters emerged: support and work facilitation were two large clusters, and systemic perspective, goal emphasis, and group methods (including interaction facilitation) were three smaller clusters. The similarity of four of the five clusters to Bowers & Seashore's four factors of leadership is obvious. It is noted that systemic perspective might be a useful addition to the theory. However, it is probably more salient at higher levels of organizations than at lower levels.

Correlations between leadership and effectiveness show success for all the theories, with the exception of Fiedler's Contingency Model. The highest correlations were found for the support and work facilitation clusters at the division level of the organization. The leadership variables were not as highly correlated with effectiveness at the lower levels of the organization.

These lower correlations may have been due to the inappropriateness of the criteria for effectiveness at the lower levels. However, it is also possible that variables other than leadership are more highly related to effectiveness at the lower levels. For instance, task characteristics may become more salient for lower-level employees. The nature of the job may be more important at this level because jobs tend to become more routine as one moves down the organization. Perhaps for this reason, job design/enrichment programs have concentrated on low-level jobs.

There is evidence, then, the Four Factor Theory of leadership is reasonably comprehensive, and is related to effectiveness. It cannot be said, however, that these four types of leadership behavior are the only behaviors influencing organizational functioning. Task characteristics and the corresponding behaviors are probably important -- especially at lower levels of organizations. Organizational climate is probably increasingly important as a causal variables as one moves down the organizational hierarchy. However, at all but the top levels of the organization, climate is at least in part created by leadership behavior. Systemic perspective may be important at high levels of the organization. Other behaviors not discussed here may also be important.

While the exact nature of the influence of behaviors other than leadership on organizational processes must be explored and studied, the causal nature of leadership behavior establishes a good starting point for classifying problem behaviors. That is, by changing ineffective leadership behaviors first, one can be quite certain that changes in organizational climate, and group process will follow -- and that as these organizational processes improve, the output variables will also improve.

PRECURSORS TO ORGANIZATIONAL FUNCTIONING

As stated, a critical skill in organizational development is that of obtaining a good picture of what an organization is like, including the problems of its component parts and how they are interrelated. We propose that there are four factors which largely determine the behaviors of individuals in organizational settings. The factors include (1) information, (2) skills, (3) values, and (4) the situation in which individuals and groups exist.

The first three of these factors can be evaluated in terms of each individual organizational member. The situation is a more general factor associated with groups and major sub-units of organizations. Each factor can be viewed as a precursor to organizational functioning. That is, the presence, absence and quality of each factor influences the functioning of the organization. These precursors determine the extent and type of problems which occur in the organization's processes and the variations occurring in organizational outputs.

Information

Individuals base their actions in part upon the information -- including perceptions and expectations -- they have acquired over time regarding what is effective or appropriate behavior. Information regarding both technological and social aspects of organizational functioning is crucial. Insufficient or erroneous information about the technical aspects of the work situation results in misused and damaged equipment as well as accidents and low levels of productive efficiency. Similarly, inadequate information regarding social aspects of work situations results in wasted human resources.

Erroneous models of organizational functioning based upon incomplete or mistaken notions about the number and nature of variables critical to understanding the social system of organizations, together with a lack of understanding of the complexities involved in the interactions between these variables can lead to widespread and severe negative consequences for the organization. A rather typical problem of this type stems from the short-range time frames used by many persons in evaluating the effectiveness of various behaviors. Many problems seem to result from notions regarding motivation based on short-term evaluations without regard for the long-range consequences. Thus, it is common to find managers who strongly believe that high production can be consistently attained through the constant applications of threats and pressure even though evaluations of such behaviors suggest that they become ineffective and quite costly to the organization after relatively short periods of organizational life (Likert & Seashore, 1963).

Skills

Individual skills related to behavior in organizational settings also exist in both technical and social (i.e., interpersonal) areas. Thus, one may speak of an individual's ability to operate a piece of machinery or design an accounting system as being technical skills. Important social skills include those that influence the way in which organizational members interact. These often are referred to as "leadership" and "group process" skills.

The facts that technical and social skills are distinct and that social skills are vital to organizational success seem to be frequently ignored. A common assumption made by many persons seems to be that technical skills are the most vital to accomplishing organizational goals while social skills are of lesser importance. This assumption leads to the relatively large emphasis

on technical training in organizations compared with training in the social aspects of work situations. A related assumption regarding these two skill areas is that while technical skills require special training, social skills can be generally "picked up" by most anyone who has technical competencies.

Perhaps the clearest indication of this assumption is the practice of promoting individuals to managerial positions on the basis of their demonstrated technical abilities. The fact that such changes are often made with little more than cursory training in management concepts -- often including only an exposure to the organization's official managerial policies -- in part reflects the notions that the social skills required of managers are not terribly important, and are adequately acquired through minimal training and by performing in a managerial position.

A contradictory but equally common assumption is that social skills are untrainable. Accordingly, one is either born with appropriate interpersonal competencies or acquires them very early in life after which they cannot be significantly altered.

The experiences, observations and research of the present authors and others suggest that the assumptions regarding the relative unimportance of social skills in organizations, the ease in attaining those skills, and assumptions that skills are untrainable are all ill founded. The importance of social skills to organizational performance has been widely observed and is described in various formal theories (Likert, 1961, 1967; Argyris, 1962; Katz & Kahn, 1966; Blake and Mouton, 1964). The importance of such factors has also been demonstrated through analyses of the relationship between social psychological aspects of organizational functioning and organizational output variables (Taylor & Bowers, 1972).

In addition to evidence supporting the importance of social factors, there are reasons to believe that social skills are becoming and will continue to become increasingly more important to the success of organizations as they become both more oriented toward service functions and more technologically advanced. With regard to the latter dimension, Taylor (1971b) presents data suggesting that to be effective, organizations becoming more technologically sophisticated also come to require the presence of members with more highly developed social skills.

Values

Every individual carries with him a set of values (i.e., estimations of desirability, importance, usefulness, etc.) which influence behavior. These values are related to many areas and are of varied intensities. In general, one might think of the range of intensity beginning with rather superficial opinions which are relatively unimportant to the individual, to beliefs which are more important, and finally to basic values central to the individual's self-concept and behavior. When an individual's basic values foster behavior incongruent with effective organizational functioning, the consequences for the organization are likely to be detrimental. An extreme example of such a situation would be a manager whose values hold that people are relatively unimportant expendable resources in organizations compared to the physical plant and equipment. The behavior of such an individual could prove to be extremely costly to the organization in terms of wasting valuable human resources through turnover, lack of motivation, accidents, and psychologically triggered physical illness.

Situation

We have noted previously that individuals and groups do not operate independently in organizations. Behavior depends in part upon other individuals and groups. Nor is behavior independent of the physical setting and technological requirements of the job. As was the case in our consideration of information and skills, we find that the situation can be evaluated in terms of both technical and social aspects.

Examples of how technology and structure influence behavior are easily identified. Machines and standardized procedures (i.e. accounting systems, etc.) generally call for behaviors which are fairly limited. Their design dictates which behaviors are to be exhibited and in what order. For example, a punch operator must follow approximately the following steps in order to accomplish his task: (1) obtain a piece of unpunched material; (2) place the material in the machinery; (3) clear his body from the machine -- sometimes with the aid of the machine which actually pulls parts of his body away from danger; (4) operate a control to punch the material; and (5) remove the material from the machine. The degree of standardization called for by such tasks often leads one to question whether the operator controls the machine or the machine controls the operator. In fact there is an interaction between man and machine that makes both sides of the question true to some degree.

Like technology, the structure of the organization has tremendous influence over individual and group behaviors within an organization. Structure greatly determines the patterns of work-related and purely social relationships found in organizations. Individuals of approximately the same states (i.e., those located on about the same level in the organizational hierarchy) and those whose work dictates that they be in close physical proximity are more likely to interact more and in more friendly manners than are those of

greatly disparate statuses or those experiencing great physical distance. Thus, we often encounter high degrees of comradery among members of the same group or department and some animosity and distrust between members of different groups or departments.

The social psychological aspects of the situation include the less well recognized factors such as Organizational Climate, Peer and Supervisory Leadership, and Group Processes described above. The following examples illustrate how the behavior of each organizational member is partially determined by the combined influences of these social psychological factors. A situation might exist in which a supervisor is greatly constrained in his leadership behaviors by the aspects of the organizational climate. If the organizations policies prohibit or strongly discourage the holding of group meetings this will have a profound and detrimental effect upon the supervisor's ability to facilitate interaction among his subordinates. Consequently, the subordinates will also be restricted in their ability to work together as a team. The result will be less effective functioning based on a lack of task-related interactions between members of the group.

Another example of the effects of the social psychological aspects of the situation on the behavior of organizational members can be imagined in terms of the standards of performance established by a supervisor. In a situation in which objectives are inherently unreasonable, unattainable, or unclear, a supervisor is greatly hindered in his ability to maintain high standards of performance. In such a situation he is often placed in a position of defending the objectives rather than one in which he would act as a facilitator to his subordinates in their attempts to attain the objectives.

Each of the four precursors influences the effectiveness of the individual's behavior. The most effective individuals are clearly those who have the information and skills necessary to complete the various tasks, values congruent with effective behavior, and a situation in which they are supported in their attempts to behave effectively. Although each of the precursors is important, the adequate presence and quality of different combinations of these four elements will have different consequences for the individual and the organization. For example, an individual who has information, skills and values congruent with effective functioning but who finds himself in a situation which severely restricts effective behavior and which he has no means of changing is likely to become quite frustrated. Such an individual is likely to withdraw (either psychologically or physically) from the organization. On the other hand, an individual who finds himself with information, values, and a situation adequate to the task, but who is lacking in needed skills which he has an opportunity to acquire, may seek the available training to acquire such skills.

The consequences for organizational effectiveness of the presence, absence and quality of the four precursors depends upon various factors including the number of precursors in which there are widespread inadequacies, the number of organizational members operating with these inadequacies, and the level in the organizational hierarchy at which various deficiencies are encountered. Organizational functioning suffers most when deficiencies (a) involve more rather than fewer precursors, (b) influence the behaviors of large numbers of organizational members, and (c) occur at high levels in the organizational hierarchy.

DEVELOPMENT TECHNIQUES AND IMPINGEMENT MODES

This section is intended to provide descriptions of a variety of techniques currently applied in various settings to improve organizational functioning. The number and variety of the available techniques is impressive. They range from techniques focused upon relatively limited aspects of organizational functioning to techniques encompassing total organizations. The list presented herein is not suggested as exhaustive of all existing techniques nor are the techniques presented below necessarily exclusive of one another. This list is meant to provide descriptions representing the variety of activities which have received relatively high degrees of attention and acceptance among managers, consultants, and researchers concerned with methods of improving organizations.

We are able to classify the various techniques according to a framework similar to that used in describing the precursors to organizational functioning. The classification presented below separates the techniques into three major areas -- information, skill, situation -- according to which of these areas is impinged upon <u>most directly</u> and <u>most immediately</u> by the technique. Thus, techniques such as seminars, laboratory training, and survey-feedback are classified as <u>information</u> techniques even though they may eventually lead to changes in skills or situations. Similarly, job enrichment, organizational engineering and the Scanlon Plan are classified as <u>situation</u> techniques even though they may also lead to changes in skills or information.

It will be noted that <u>values</u> has not been included as a category used for classification in this section. This results from the judgement that values are not changed directly. Changes in values come only as a result

of impingement upon one of the three other areas. Thus, some counseling and some forms of laboratory training that are often used to change values are classified under the information category since these techniques primarily impinge upon the individual's information. Acceptance of information may lead subsequently to changes in values.

Table 1 presents the various techniques classified in accordance with the primary impingement mode of each.

Table 1

DEVELOPMENT TECHNIQUES

Impingement Mode	Development Technique
Information	Client-Centered Counseling Concepts Training Laboratory Training Management by Objectives Management Seminars (e.g., Kepner-Tregoe, Menninger Foundation) Managerial Grid Organizational Development Merger Laboratory Motivation Training Process Consultation Scientific Management Survey-Feedback Survey-Guided Development Team Development Third-Party Consultation
Skill	Behavior Therapy Imitative Learning Skill Training (e.g., problem-solving training)
Situation	Decentralization Differentiation/Integration Flow of Work Job Enrichment Leadership-Situation Engineering Operations Research Scanlon Plan Socio-Technical Fit Structural Change

A description of each technique together with pertinent references are provided below.[1]

BEHAVIOR THERAPY -- Behavior therapy is "a mode of treatment based on methods of conditioning by which learning principles are adopted to change habits and to establish new response patterns; desensitization, extinction, and reinforcement are significant aspects (Vinacke, p. 788)." The process typically involves an individual whose behavior is to be changed and an individual, group, or special device (e.g., teaching machine), that provides the necessary feedback to the target individual. Behavior therapy may be initiated at any point after it is recognized that the behavior exhibited by the target individual differs from some desired behavior. The length of the process varies with a number of issues including the magnitude of the gap between current and desired behavior. The process may proceed intensively or on a periodic schedule for the period needed to change the behavior. Behavior therapy can occur in any setting that provides the required feedback information. Costs include those for assessing current and desired behavior, planning for the form and frequency of feedback, and providing feedback. [W. E. Vinacke, 1968]

CLIENT-CENTERED COUNSELING -- In client-centered counseling the counselor provides a method that facilitates the client in establishing the goals and directions for change. Proponents of this approach "value evolutionary, internally generated change (Leavitt, p. 1154)." The major emphasis is on human growth and fulfillment. This technique involves an individual seeking help and one trained in the client-centered counseling method. The process may be begun at any time after an individual makes contact with a counselor and typically continues for a relatively lengthy period of time (several months) involving a few hours of contact each week. The contact usually occurs in a setting isolated from other activities. Such a setting used specifically for such purposes is commonly provided by the counselor. Costs typically involve an hourly fee which varies according to several factors including the reputation and

---

[1]Those persons wishing to continue with the theoretical materials before pursuing the descriptions of these specific intervention techniques should move ahead to the next section beginning on page .

institutional affiliation of the counselor, and, in some cases, the ability of the client to pay. [H. J. Leavitt, 1965; C. Rogers, 1951]

CONCEPTS TRAINING SEMINARS -- The major focus of concepts training is on the human factors significant in the functioning of organizations. Those factors delineated as significant include a wide range of variables suggested by Likert (1961, 1967) in his descriptions of organizations. Included are such variables as (a) leadership, (b) communications, (c) decision-making practices, (d) influence, (e) power, (f) control, and (g) motivation. This activity is typically built into the early stages of a development effort. The usual procedure is to carry out concepts training over a one week period using five 8-hour work days. The seminars include several major activities including (a) lectures on the major concepts, (b) evidence for the importance of the concepts, (c) an exercise aimed at providing firsthand verification of the concept, and (d) discussions. The activities are designed to familiarize individuals with those concepts deemed relevant to organizational functioning. Participants are from managerial levels and typically are associated with an organization using the seminars as part of a planned organizational development effort. The leader of the seminars is a person with training in organizational theory and especially the relationship between elements of the theory and the processes of organizational development. The usual site for concepts training activities is a facility removed from the immediate work situation of the participants. Costs include those for facilities, time off the job for participants and the fee charged by the seminar leader. [R. Likert, 1961; R. Likert, 1967]

DECENTRALIZATION -- Decentralization is the process of dividing an organization into subunits that serve as profit centers. The goal is to minimize costs and increase control over subunits. These goals are accomplished as a result of increased (a) flexibility, (b) motivation, and (c) goal-oriented behavior; as well as the creation of smaller (d) decision centers, (e) power centers, and (f) information centers. The process involves a study of organizational structures (often executed by experts in this field who are not regular members of the organization)

as well as implementation of the suggested changes. The process is typically initiated by upper-level management at a time when the organizational structure is judged cumbersome and inefficient. The length of time necessary for a decentralization effort to be realized will vary greatly but typically involves a period of several months. The decentralization effort will usually have an effect upon most members of the organization. Costs include those for the study and the implementation of changes. [H. J. Leavitt, 1965; E. Dale, 1955]

DIFFERENTIATION/INTEGRATION -- The emphasis in the differentiation/integration approach is on "fitting the organization [and subparts thereof] to its immediate relevant environment and to the characteristics of individual contributors (Lawrence & Lorsch, 1969b, p. 84)." Differentiation and integration are the focal concepts. Differentiation is defined as "the difference in cognitive and emotional orientation among managers in different functional departments (Lawrence & Lorsch, 1969a, p. 11)." Integration is described as "the quality of the state of collaboration that exists among departments that are required to achieve unity of effort by the demands of the environment (Lawrence & Lorsch, 1969a, p. 11)." This approach seeks to establish mechanisms for successful conflict resolution which, in turn, leads to achievement of the proper levels of differentiation and integration. Examples of such mechanisms are (a) the managerial hierarchy, (b) integrating committees and teams, and (c) routine control and scheduling procedures. Included in such an effort is a rigorous diagnosis using questionnaire instruments and interviews and data-feedback sessions with upper-management. These sessions use comparative data to focus on how the organization is structured to meet the demands of the environment. The sessions lead to a reevaluation of the organization and activities to improve those structures judged inadequate. The feedback sessions are led by a resource person well versed in general organizational theory and especially familiar with those factors tapped in the diagnostic effort. Such an effort is rather major in scope and may influence interactions throughout an organization. The duration of the effort

varies but the complete process from the diagnostic effort through change and evaluation may take several months. Most of the activities will transpire close to or on the actual work site. Costs include those for the outside experts as well as the time of managerial personnel involved. [P. R. Lawrence & J. W. Lorsch, 1969; P. R. Lawrence & J. W. Lorsch, 1969; M. Beer & E. F. Huse, 1972]

FLOW-OF-WORK -- The flow-of-work approach emphasizes changes in the structural property of a task as a means of modifying human behavior for the purpose of improving task performance. Work flow is identified as a factor that directly influences morale, behavior and output. Different work flow structures are deemed most appropriate in different task situations. The process includes in-depth studies of the manners by which the various aspects of the task relate to one another. Specially trained experts called in by management evaluate the task structure and suggest and help implement changes aimed at improved performance. Although the concept may be applicable at all organizational levels, it is typically implemented with production rather than managerial tasks. This type of effort can be undertaken at any point that persons with sufficient organizational power feel that a change in task performance is called for. The flow-of-work approach will typically precede efforts more directly aimed at improving interpersonal processes. Costs include those for the experts involved in the study and those of implementing changes in the flow-of-work. [H. J. Leavitt, 1965; E. D. Chapple & L. R. Sayles, 1961]

IMITATIVE LEARNING -- Imitative learning refers to the process whereby an individual or group of individuals adopt the behavior of another individual or group after observing the behavior of the latter. Several conditions seem to hold for imitative learning: (a) the observations may be live or through some form of media; (b) either party may receive reinforcement; (c) non-reinforced behaviors may also lead to learning; (d) consistent behavior is more likely to lead to imitation than inconsistent behavior; and (e) the model and learner need not be conscious of the process. Imitative learning may be instituted either as a means of

preparing an individual or group for a new situation (e.g., new procedures or skills might be taught in this manner) or to modify inadequate behavior in current situations. Costs vary with the complexity of the behavior to be learned or modified, the media used to present the desired behavior and the form of the reinforcement. [J. P. Flanders, 1968; D. G. Bowers, 1970]

JOB ENRICHMENT -- The basic assumption behind job enrichment is that "motivational attempts should now be on the self-fulfilling, achievement-motivated, self-actualizing needs of employees (Rush, p. 24)." Job enrichment involves a restructuring of the job such that the challenging content is increased to facilitate employee growth in the areas of skill and feelings of accomplishment. Several major principles are involved: "(a) Removing some controls while retaining accountability; (b) increasing the accountability of individuals for own work; (c) giving a person a complete natural unit of work (module, division, area and so on); (d) granting additional authority to an employee in his activity; job freedom; (e) making periodic reports directly available to the worker himself rather than to the supervisor; (f) introducing new and more difficult tasks not previously handled; (g) assigning individuals specific or specialized tasks, enabling them to become experts (Herzberg, p. 59)." The application of this technique involves an assessment of the job by an expert in the area of individual motivation. The focus of an analysis is on those aspects of the job result in high and low levels of individual motivation to perform a task. The expert presents recommendations for changes in the job that will result in greater levels of individual motivation. The jobs assessed may be at organizational levels where it is presumed that the job can be expended to include responsibilities and activities of higher levels. Costs include those for the experts who study and recommend changes in the job and for costs related to expanding a person's job (i.e., training). [F. Herzberg, 1968; W. J. Paul, K. B. Robertson & F. Herzberg, 1969; H. M. F. Rush, 1969]

LABORATORY TRAINING -- Laboratory training "...is an educational strategy which is based primarily on the experiences generated in various social encounters by the learners themselves, and which aims to influence attitudes and develop competencies toward learning about human interactions" (Schein & Bennis, p. 4). "It is a basic assumption of laboratory training that experience must precede the introduction of a theoretical concept" (Schein & Bennis, p. 19). The metagoals of laboratory training include those inherent in democratic values (collaboration, conflict resolution through rational means) and those inherent in the values of science (a spirit of inquiry, expanded consciousness and choice, authenticity in interpersonal relations). The specific objectives of laboratory training include: "(1) self-insight, or some variation of learning related to increased self-knowledge, (2) understanding the conditions which inhibit or facilitate group functioning, (3) understanding interpersonal operations in groups, and (4) developing skills for diagnosing individual, group and organizational behavior" (Schein & Bennis, p. 35). In organizational development efforts participants are usually volunteers from upper levels of the organization who feel some need to receive this type of training. The laboratories vary in length depending largely upon the goal and commitment of participants to achieving the goal. Laboratories shorter than two days and longer than two weeks are somewhat unusual however. Laboratory training is almost always conducted away from the work situation and coordinated by one or more experts training in this area. Costs include those for the experts, room and board for participants, and time away from the job.

There are actually three somewhat distinct forms of this technique used in development efforts. Stranger laboratories are composed of individuals who are members of a variety of organizations. They have no functional or task-related connections. The goals of such groups are primarily (a) to learn emotional sensitivity and be able to tolerate anxiety, (b) to understand oneself and others, and (c) to learn how to learn. The major emphasis is on self-insight and sensitivity. Cousins laboratories are composed of members from the same organization. The

individuals making up such laboratories represent various organizational levels and functions. These individuals normally do not have frequent task-related contacts. The major goals of these groups include those of stranger laboratories with an emphasis on the organization as a point of reference. Family laboratories include individuals from a verticle slice of a sub-unit in an organization. They have frequent task-related contacts as part of their organizational duties. The primary goals of family laboratories include: "(1) Increased awareness and understanding of the types of processes that facilitate or inhibit group functioning..., (2) Heightened diagnostic skill in social (and) interpersonal... situations" (Campbell & Dunnette, p. 75), (3) "Learning to change interpersonal" behavior (Dunnette, p. 45), and (4) Resolving intragroup conflicts. [E. H. Schein & W. G. Bennis 1965; J. P. Campbell & M. D. Dunnette, 1968; M. D. Dunnette, 1970; D. Zand, F. Steele & S. Zalkind, 1969; M. I. Valiquet, 1968]

LEADERSHIP-SITUATION ENGINEERING -- This strategy focuses upon the matching of specific situations with appropriate leadership styles. The basic premise is that effective leadership behavior varies with situational constraints. The primary manner of matching leadership styles with situations is by formulating dimensions of the leadership position (e.g., task structure, position power, leader-member relations) such that the leader can function effectively within his particular style. Matching may also take place (1) through a process in which leaders are placed in situations where their styles are most effective, and (2) by training leaders to adapt their leadership behavior to specific situations. Costs and required time vary greatly with the approach taken. At a minimum however, costs include those for evaluating the situation and leadership styles of individuals. [F. E. Fiedler, 1967; F. E. Fiedler, 1971]

MANAGEMENT BY OBJECTIVES -- "Management by objectives provides for the maintenance and orderly growth of the organization by means of statements of what is expected for everyone involved, and measurement of what is actually achieved" (Odiorne, 1965). The system is envisioned as an aid toward overcoming the following problems: (a) measuring the true contribution of managerial and professional personnel, (b) defining common goals, and (c) defining areas of responsibility. In addition, Management

by Objectives is designed to (d) eliminate the need for people to change their personalities, and (e) provide a means of determining each manager's span of control. The system includes three major activities carried out jointly by supervisors and subordinates with guidance from experts in this field: (1) identification of organizational goals; (2) definition of areas of responsibility in terms of expected results; and, (3) assessment of the contribution of each organizational member with reference to the expected results. Costs include those for the experts and the time of organizational members needed to implement the system. [G. S. Odiorne, 1965]

MANAGEMENT SEMINARS -- Classroom like settings are often employed to present information about specific issues and concepts of management. The information is usually drawn from research and general writings eminating from academic settings. Time requirements and costs vary with the length of such sessions and fees of seminar leaders. Examples of such seminars are (1) Kepner-Tregoe problem-solving/decision-making training and (2) Menninger Foundation Seminars.

Kepner-Tregoe problem-solving/decision-making training consists of a five-day course for managers that has as its primary goal increased awareness of the processes used in solving problems. During the course participants receive cognitive inputs, practice in applying new concepts, and feedback from the practice sessions. Costs include those for the trainers, training facilities, and off-the-job time of participants.

The Menninger Foundation Seminar program consists of a week-long seminar containing lectures, open discussions between leaders and group members, and small group disucssions around real cases. The seminar focuses on five units of emphasis: (1) psychodynamics of motivation, (2) interpersonal communication, (3) psychological aspect of man-organization relationships, (4) psychological factors in leadership, and (5) emotional problems of executives. The activities are conducted with three primary goals: (1) increase effectiveness of executives to manage themselves and others, (2) further understanding

of human motivation, and (3) sharpen communications skills. Costs of this activity include charges for attendance at the seminar sessions and time away from the job. [C. H. Kepner, 1965; H. M. F. Rush, 1969]

MANAGERIAL GRID ORGANIZATIONAL DEVELOPMENT -- Managerial grid organizational development is a program aimed at teaching managers "the concepts, skills, techniques, strategies, and tactics required to effect planned change" (Blake & Mouton, p. 9). The program includes two major phases (management development and organizational development) and six sub-phases. The sub-phases include "(1) laboratory-seminar in a one week session designed to introduce the participant to behavioral science concepts and their applications; (2) team development training for a supervisor and his subordinates, during which the team examines intra-group work relationships in light of their knowledge acquired during phase one; (3) intergroup development, where the focus is on relationships between two interdependent work groups; (4) organizational goal setting by top managers; (5) planned actions directed toward goal attainment; and, (6) stabilization through review and evaluation (Frohman & Sashkin, p. 11)." The total program may take from six months to five years or more to complete. Expenditures include those for experts to train organizational members, other costs associated with training sessions (e.g., travel, room and board, materials, etc.) and the time required for managers to be away from their jobs and to implement various aspects of the program. [R. Blake & J. Mouton, 1969; M. A. Frohman & M. Sashkin, 1970]

MERGER LABORATORY -- The merger laboratory is a technique implemented in situations where conflict between two groups within the same organization is judged detrimental to organizational functioning. The primary goals of merger laboratories are (1) "Increased awareness and understanding of the types of processes that facilitate or inhibit... the interactions between different groups..." and (2) "Heightened diagnostic skill in...intergroup situations (Campbell & Dunnette, p. 75)." The ultimate goal is to increase organizational effectiveness through improved intergroup working relationships. An expert typically

facilitates a variety of activities including (a) mutual image formations and exchanges, (b) diagnosis of relationships, (c) identification of key areas of conflict, and (d) working through conflicts. Costs include those for the expert facilitator, facilities used for the activities and time spent by organizational members away from their jobs. [J. P. Campbell & M. D. Dunnette, 1968; R. Blake, J. Mouton & R. Sloma, 1965]

MOTIVATION TRAINING -- Motivation training has as its major goal an increase in the Need for Achievement motive in individuals. Several factors are included in such training when it is used in 10-day to 2-week sessions with managerial personnel of organizations. Among these factors are the following: (a) providing the participant with a number of reasons for his believing that he can, will, or should develop the motive, (b) helping him to clarify the motive conceptually, (c) helping him to perceive that the motive is consistent with the demands of reality and reason, (d) helping him to link the motive to related actions in his everyday life, (e) helping him to see the motive as an improvement over prevailing cultural values, (f) getting him to commit himself to achieving concrete goals in life related to the motive, (g) having him keep a record of his progress toward achieving those goals, (h) providing interpersonal support to him, and (i) having him behave in new reference group settings related to the motive. Costs include the fees of persons providing the training, expenses related to the physical setting, and lost job time for participants. [D. C. McClelland, 1965]

OPERATIONS RESEARCH -- Operations research is an approach to problem-solving and planning of technical processes to insure their efficient completion. The problem-solving and planning aspects of the tasks are clearly separated from their actual execution. As a rule, experts assess organizational needs and problems and develop methods (i.e., scheduling, layout) for solving work problems. The solutions are specific to the defined issues but the process may be carried out with respect to a large class of technical tasks. Once issues have been evaluated and plans have been formulated programs are

presented to those responsible for their implementation. A basic assumption of this approach is that the programs are adopted on the basis of their superiority over other methods. Costs include those for operations research experts who study problems and formulate programs, and expenditures required to implement the programs.

PROCESS CONSULTATION -- Process consultation "is a set of activities on the part of the consultant which help the client to perceive, understand, and act upon process events which occur in the client's environment" (Schein, p. 9). The focus is on human processes crucial to effective organizational functioning. These include "(1) communication; (2) member roles and functions in groups, (3) group problem-solving and decision-making; (4) group norms and group growth; (5) leadership and authority; and (6) intergroup cooperation and competition" (Schein, 13). The approach emphasizes self-awareness and self-help. The consultant holds as an ultimate goal a situation in which members of the organization are capable of doing for themselves what must be done to improve organizational effectiveness. The process consultant "...encourages group discussion, serves as a process observer, but also uses role playing, some substantive inputs at timely points, as well as nondirective counseling techniques, to guide the discussion toward commitment toward desired courses of action" (Bowers, p. 3).

Process consultation is often included as an addition to normal organizational events (e.g., meetings). The consultant typically is present at some small percentage of such events to help organizational members focus upon processes judged by the consultant to be vital to their functioning. The amount of time a consultant spends with a particular group of individuals may vary greatly. However, a typical arrangement would include intensive participation -- eight or more hours per week -- for a fairly brief period of two or three weeks, followed by brief contacts -- a few hours each month -- thereafter. Costs are largely those charged by the consultant for his services. [E. H. Schein, 1969; D. G. Bowers, 1973]

PROGRAMMED INSTRUCTION -- Programmed instruction is a technique based on the application of the principles of operant conditioning. The process involves interactions between an individual and either written materials or a machine designed to lead the user to acquire knowledge or skill. Emphasis is placed on the shaping of desired behaviors. Involved is (a) the reinforcement of successful approximations of the desired outcome, (b) a gradual raising of the criterion for reinforcement, and (c) an immediate presentation of reinforcement contingent upon bheavior. Time and cost requirements of this technique vary with the desired goal and materials used to attain the goal. For example, if the goal were for the subject to achieve some basic knowledge about some relatively small and easily understood aspect of management, and this was facilitated through the use of written materials, the time and cost would be slight. Many examples of such knowledge acquisition through programmed text books have appeared in school settings in the past few years. On the other hand, if the goal were for the subject to achieve a high degree of skill in several areas of management and this skill was to be developed through interaction with a sophisticated computer, both time and cost could be substantial. Probably the best example of this approach to skill acquisition are flight simulators used to train airplane pilots.

SCANLON PLAN -- The Scanlon Plan calls for cooperation between union -- or unrepresented employees -- and management for the purpose of improving organizational efficiency. The essentials of the plan "... are two: (a) money bonuses to all members of the firm, in proportion to their base rates, for all improvements in over-all company efficiency relative to some base period; and (b) a system of work-improvement committees that cross organizational levels (Leavitt, p. 1159)." When the Scanlon Plan is in effect those persons working on tasks try, as a normal part of their job, to make the task more efficient. Suggestions for improving the job come mainly from non-managerial personnel through a system of meetings held for the purpose of continuously reevaluating the work.

Ways through which efficiency may be improved include the redesign of (a) machinery, (b) tasks, and (c) the flow of work. Costs include those for teaching members of the organization how the system works and off-the-job costs of employees participating in meetings. [H. J. Leavitt, 1965]

SCIENTIFIC MANAGEMENT -- This approach to improving organizational functioning focuses on upgrading the manner by which eye-hand and muscle tasks are accomplished. Experts are used to evaluate tasks and to develop the "best way" -- in a technical sense -- to accomplish them. Once the new method has been developed it is presented to those responsible for doing the task and, according to proponents of this approach, the method is accepted and implemented on the basis of its obvious superiority. Several notions have become associated with this approach including (a) piece rates, (b) work standards, and (c) job-classification schemes. The experts working in this area are often referred to as "time-study men" and "methods engineers." Time and costs of using this method vary with the complexity of the task being evaluated. The major cost, however, is typically for the fees charged by the experts. [H. J. Leavitt, 1965]

SKILL TRAINING -- Skill training refers to the teaching of patterns of perceptual-motor performance. Skills involve "precision and timing of movements that are oriented around a task or goal (Kelley, p. 60)." The process of skill acquisition includes repeated practice with feedback. Time requirements and costs vary with the complexity of the skill to be acquired and the methods used for teaching including provisions for feedback.

Problem-solving skill training is an example of this approach. Training in this process involves briefly learning about an ordered series of stages and extensively practicing them with the aid of experts who provide feedback on the adequacy of behavior. The stages include (1) orientation and problem definition, (2) identification of possible solutions, (3) evaluation of possible solutions, (4) solution selection and decision, (5) building implementation action

steps, (6) evaluation of change and subsequent review process, and (7) overall evaluation of the problem solving period. Specific skills of central importance to this process include (a) "brainstorming" (i.e., rapidly suggesting alternatives without evaluating them), (b) "posting" (i.e., listing ideas publically in a concise form), and (c) "processing" (i.e., evaluating sessions to identify strengths and weaknesses). Such training may vary in length from an hour or two one-time exposure to several sessions of several hours each. Costs include those for the trainers, training facilities, and off-the-job time of participants. [C. R. Kelley, 1968; F. C. Mann & W. C. Morris, undated]

SOCIO-TECHNICAL SYSTEMS FIT -- This approach is based upon an assumption that organizations function most effectively when the social and technical systems are congruent with one another. The most common pattern for implementing a change in the socio-technical systems fit involves the acceptance of a new technology and a structuring of the social-psychological system to maximize the effective use of the technology. A major emphasis is on "...the sources of gratification in getting the job done..." (Katz & Kahn, p. 433). These include "...(1) closure or a sense of completion in finishing a meaningful unit of work, (2) some control over their won activities by those engaged in a task, and (3) satisfactory relationships with those performing related tasks" (Katz & Kahn, p. 433-434). "An ideal arrangement for a socio-technical system would be one in which the technical aspects of the work group would have a meaningful unit of activity, some degree of responsibility for its task, and a satisfactory set of interpersonal relationships" (Katz & Kahn, p. 435). Changes in socio-technical systems are typically initiated by experts who evaluate social and technical aspects of the job and suggest changes. Costs basically include the experts' fees and those associated with the implementation of suggested changes. [D. Katz & R. Kahn, 1966; E. L. Trist, 1969]

STRUCTURAL CHANGE -- The structural change approach to improving organizations emphasizes the optimization of performance through an optimization of structure. "One improves performance of tasks by clarifying and defining the jobs of people and setting up clearly defined relations among those jobs, with authority, responsibility, and coordination mechanisms spelled out. Operationally, one worries about modifying spans of control, defining nonoverlapping areas of responsibility and authority, and logically defining necessary functions (Leavitt, 1146)." Changes in those areas noted above are usually instigated by upper-level management personnel often with the help of experts in this area. Time and costs involves are largely dependent upon the scope of changes. [H. J. Leavitt, 1965]

SURVEY FEEDBACK -- "Survey feedback is a process in which outside staff... (and/or) members of the organization...gather, analyze and interpret data that deal with various aspects of the organization's functioning and its members' work lives, and using the data as a base, begin to correctively alter the organizational structure and the members' work relationships" (Miles, et. al., p. 356). "Survey feedback has three operationally verifiable components: First, data are presented; second, meetings of various family groups occur; third, in the course of these meetings, staff and eventually clients begin to analyze the process of their interaction. Some of these analyses refer to 'here and now' interactions occurring just as the data are discussed and analyzed; others are more historically-oriented, involving analysis of events and processes occurring during the immediate past in the organization" (Miles, et. al., p. 357). The complete process including the three components noted above typically involves several hours of planning and data preparation plus five to fifteen hours of meeting time for data feedback and meetings. Costs include those of data collection and analysis, facilities used for the various aspects of the process, fees charged by consultants, and off-the-job time of participants. [M. B. Miles, P. H. Calder, H. A. Hornstein, D. M. Callahan, & R. S. Schiavo, 1970]

SURVEY-GUIDED DEVELOPMENT -- Survey-guided development is an approach aimed at improving the functioning of large systems through a carefully planned and closely monitored effort. Surveys are used as a basic measurement tool for (a) diagnosing organizational functioning including system properties of organizations, (b) providing information that serves as a basis for the feedback process, and (c) assessing changes produced by attempts aimed at improving organizational functioning. This approach usually includes several major stages each consisting of a variety of activities. (1) Diagnoses are based upon the responses of all organizational members to a standardized survey instrument. Additional diagnostic materials are supplied through interviews, observations and organizational records. (2) Inputs are supplied to organizational managers to acquaint them with key factors related to effective organizational functioning (See Concepts Training). (3) The diagnostic information is fed back to key organizational members to clarify the state of the organization as a total system. Information about specific large units (e.g., departments) is fed back to key members of those parts of the organization. (4) Feedback meetings are held with individual work groups within the organization. (5) Activities (e.g., problem-solving, job enrichment, laboratory training, team development, counseling, etc.) are selectively instituted to adjust and correct discrepancies between actual and desired states of organizational functioning. (6) Intermediate assessments of change are made and fed back to organizational members. (7) A system-wide reassessment is conducted based on a second administration of the standardized survey instrument. At this point the process would end or continue depending upon the size and importance of discrepancies found between the newly assessed and desired states of organizational functioning. Time requirements for the total process vary from approximately six months to several years depending upon the size of the system and initial level of functioning. Costs include those for data collection and evaluation, off-the-job time for organizational members, facilities used for some of the activities noted above, and costs of experts who coordinate and facilitate the activities. [D. G. Bowers & J. L. Franklin, 1972]

TEAM DEVELOPMENT -- Team development has as its goal the improvement of interactions between individuals who form a work team. A team is usually defined as a supervisor and those individuals who work directly with him. On some occasions, however, a team may consist solely of peers (i.e., individuals on the same level in an organization). The focus of this technique may be on one or more of the following areas: (1) clarification of roles, (2) clarification of goals, (3) development of mutual support, (4) improvement in communications, (5) development of trust, (6) effective management of conflict, (7) effective utilization of member skills, (8) development of appropriate leadership behaviors. The usual model for team development activities is "action research". This includes (a) the collection of information, (b) feedback of information, and (c) action planning. This process is used to help team members become more aware of the interpersonal aspects of the job and to facilitate their efforts to improve the team's functioning. Task relevant interpersonal behaviors are emphasized throughout the team development effort. Time and costs vary with the type and intensity of issues focused upon. Expenditures typically include costs of an expert facilitator and off-the-job time of participants. [R. Beckhard, 1969; W. G. Bennis, 1969; D. G. Bowers, 1970; S. A. Davis, 1970]

THIRD-PARTY CONSULTATION -- The technique of third-party consultation involves two individuals in interpersonal conflict and a third-party who aids them in confronting -- directly engaging in order to focus -- the conflict. The third-party provides the means by which the conflict may be confronted in a constructive way. He may take either a passive or an active role in the process. In the latter role the third-party might do any one or more of the following: (1) interview the antagonists, (2) set the stage for the confrontation, (3) intervene during the actual confrontation, and (4) help with follow-up activities. The confrontations usually involve one or two sessions lasting a total of one to three hours. Costs involved are off-the-job time for the individuals in the conflict and the fee of the third-party consultant. [R. E. Walton, 1969]

THE THREE DIMENSIONAL MODEL

It has been stated above that three aspects must be considered in formulating an OD model: (1) behaviors which are problematic, (2) the conditions which create those behaviors, and (3) the nature of possible treatments. Yet most OD models take into account one or, at the most, two of these aspects. Change agents who consider one aspect utilize what is called here a one-dimensional model. A very primitive one-dimensional model might assume that all important difficulties in organizational functioning stem from one basic condition (e.g., lack of interpersonal trust) and thus that one development technique (e.g., laboratory training) is the most appropriate intervention. This approach does not recognize the necessity for differential diagnosis and oversimplifies the nature of organizational functioning.

More sophisticated one-dimensional models also exist. In some cases diagnoses are effected but a very limited number of factors are focused upon and the "different" development techniques employed are actually only slight variations on one basic technique. An example would be an effort in which the "diagnosis" focuses solely upon issues concerning the socio-technical system. The result would be a diagnosed need for job restructuring to alleviate problems of the fit between the social and technical aspects of the job. The suggested treatment might vary somewhat according to the location and cause of the problem but would never be of a completely different type (e.g., laboratory training, management seminars, etc.).

Another approach is to diagnose problem behaviors and subsequently intervene with the development technique deemed most appropriate for changing those

specific behaviors. This approach utilizes a two-dimensional model, one which matches a certain problem with a certain intervention technique. For example, if the problem is diagnosed as one of work group members not coordinating their efforts, team-building might be chosen as the appropriate technique; but, if the problem is identified as poor problem-solving procedures, seminars focusing upon problem-solving processes might be considered appropriate. Although such two-dimensional models represent improvements over the one-dimensional model, they still fail to consider conditions creating problem behaviors.

Appropriateness of either one- or two-dimensional models rests upon acceptance of one of two assumptions:

(1) Problem behaviors are always caused by the same conditions; or

(2) The conditions creating the problem behaviors are irrelevant with respect to the intervention technique most appropriate for improving those behaviors. Stated more generally, (1) As a factor of realization, the treatment is universally relevant to all or many factors of determination; or (2) factors of determination are universally present, or nearly so.

We think both of these assumptions are unwarranted. The technology and structure of an organization affects the way its members interact in their work by fostering an environment which is more or less conducive to effective functioning. Secondly, one does not change problem behaviors directly -- one only affects the conditions creating the behaviors. To do this, those conditions must be identified and altered. If, for example, a supervisor behaves in a manner that is not effective in helping his subordinates work together

because he doesn't know what he should do, a technique aimed at providing such information (e.g., leadership seminars) might be most appropriate. If on the other hand, he has the knowledge but not the skill to behave in a more effective manner, a technique aimed at improving skill levels (e.g., role playing) would be most beneficial.

We propose that a three-dimensional (3-D) model must be considered to facilitate effective organizational development. The proposed model considers three basic dimensions:

(1) Problematic behaviors - defined herein in terms of four categories of leadership behaviors: Support, interaction facilitation, goal emphasis, work facilitation.

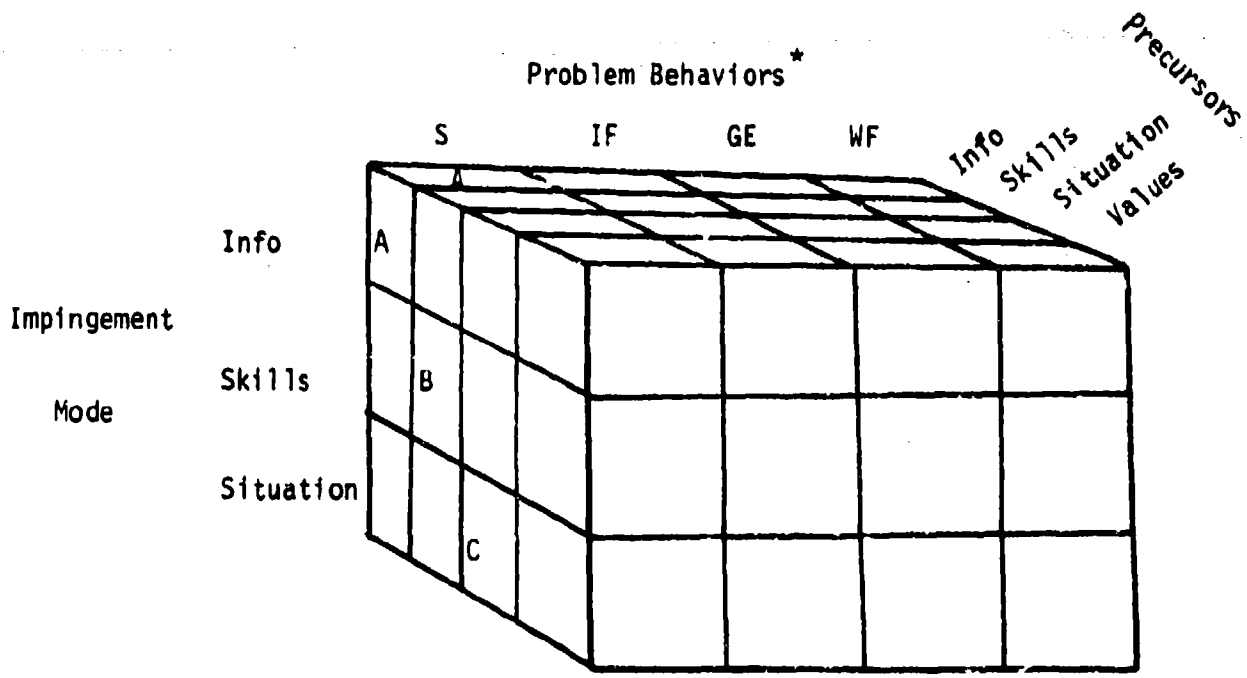
(2) Conditions causing these behaviors -- described as the precursors: information, skill, situation, values.

(3) The nature of possible treatments -- the three categories of development techniques termed impingement modes: information, skills, situation.

Figure 2 presents a schematic representation of the 3-D model.

Figure 2

Three-Dimensional Model



*Support, Interaction Facilitation, Goal Emphasis, Work Facilitation

This figure contains 48 cells (3x4x4) each of which represents a different combination of the three basic dimensions. For example, the cell labelled "A" describes a problem in supportive behaviors resulting from inadequate information and rectifiable through informational inputs.

From the Principle of Congruence discussed above, we know that problem behaviors, precursors, and impingement modes need to be matched in some systematic way. However there are at least three possible, competing interpretations of the way in which this match should occur:

Interpretation 1: The impingement mode should always be congruent with the precursor (with the exception of Values which would be changed indirectly by affecting one or more other precursors). This would suggest that:

when the Precursor is:	the Impingement Mode should be:
Information	Information
Skills	Skills
Situation	Situation
Values	

The match between precursor and impingement mode would not be affected by the specific nature of the problematic behaviors. For example, if members of the client system lack necessary information, the Impingement Mode should be Information, regardless of whether the problem centers around support, interaction facilitation, goal emphasis, or work facilitation. However, the specific content of the intervention technique would be determined by the nature of the problematic behaviors. If the problematic behavior is lack of support by supervisors, the information presented, by whatever specific technique, would be information about the meaning, importance, and implications of supervisory support. It would be nonsensical to provide information about supervisory interaction facilitation, goal emphasis, and work facilitation except when this information would clarify the issues relevant to supervisory support. The "Problematic Behavior" dimension is essential, then for determining the content of a specific technique, once the appropriate precursor has been identified.

Interpretation 2: The Impingement mode should be matched in some other way with the precursor. This would suggest that:

when the Precursor is:	the Impingement Mode should be:
Information	Skills or Situation
Skills	Information or Situation
Situation	Information or Skills
Values	Information, Skills, or Situation

Once again the match between precursor and impingement mode would not be affected by the nature of the problematic behaviors, but the content of the specific intervention would depend upon the nature of the problematic behaviors.

If either of the above interpretations is valid, whole rows in the Three-Dimensional Model (shown in Figure 2) would be useful or not useful for Organizational Development. If Interpretation 1 is valid, the rows labeled A, B, and C would be the only useful rows. If Interpretation 2 is valid, all rows except those labeled A, B, and C would be useful. Quite a different (and more complex) state of affairs would present us if the third interpretation, described below, is the case.

Interpretation 3: Precursor; Impingement Mode, and Problematic Behaviors must be matched in some specific way. If this interpretation is valid, Organization Development (OD) would be a cell-specific (as opposed to a row) problem, with respect to the three dimensional model in Figure 2. There would be at least 48 different states with which we might be faced. The appropriate Impingement Mode would have to be matched with certain combinations of Precursors and Problematic Behaviors.

If this interpretation is valid, certain of the 48 possible cells would be useful or not useful.

In addition to the problem of determining which interpretation is most valid, there are several other issues to be resolved. The appropriate impingement mode would depend upon whether more than one precursor and/or more than one category of problematic behaviors are present. That is, interactive effects are possible and the presence of interaction might change the appropriateness of one or more impingement mode. Certain problematic behaviors or precursors might be more easily affected than others. One impingement mode might always produce change more easily than the other two. Finally, one impingement mode might be applicable to one problematic behavior or precursor, or to several. These are all possible, and perhaps probable, given the complexity of organizational functioning.

The 3-D Model proposed here is equivalent to a "medical" model where the problem is described as the demonstrable symptom, the precursor is the cause of the disease, and the impingement mode is the nature of the treatment deemed appropriate. The model necessitates a differential diagnosis which describes the nature of the disease and its causes. The nature of the treatment must be based on the diagnosis and must be administered at the correct time and in the correct dosage.

A criticism made by opponents of the "medical" model is that it does not actively involve the client in diagnosing the organization's problems and in generating remedies, and that because of this lack of involvement the client may systematically distort information he is asked to provide or reject the diagnosis and treatment suggested by the consultatnt. The underlying theme

of this criticism are that the "medical" model is a patronizing one and does not create a trusting cooperative relationship between the client and the consultant. Carried to its absurd extreme -- where the consultant considers himself the know-all expert and the client system an organization in which the organization members lack the ability, knowledge, and common sense to help describe and solve their problems -- the criticism is valid. However, any OD model carried to an extreme raises problems. However, the point to be made here is that in order for OD to be maximally effective, and in order for it to be tested empirically, OD must move in the direction of more detailed and intensive diagnoses and more exact choices of appropriate interventions. It must move toward being a more exact science and away from being a chaotic art.

HYPOTHESES

The materials presented herein suggest several general testable hypotheses regarding organizational development. In a subsequent report we will evaluate these and a series of more specific hypotheses. The evidence for these evaluations will be drawn from examinations of the available literature and analyses employing information from the Organizational Development Research Program's data bank.

Hypotheses

1. Positive change is greater, or more likely, where the development design is systemic, i.e.:

    a. where treatments are selected because of their potential for altering specific throughput processes;

    b. where the activity begins from a rigorous awareness of system functioning, (i.e., diagnosis), based upon a meta-theory of the functioning of organizations in general.

    c. where advance account is taken of likely secondary and tertiary effects of an intervention or treatment and where these effects are positive and mutually reinforcing, or at least not in conflict.

    d. where the meta-theory model held by organizational members is one which relates to maximization of the output/input ratio.

2. From the Principle of Predisposition:

    a. Change will occur first and foremost where the system meets its inputters, culture, or society, e.g., in units where new personnel, younger, better-educated, minority-represented persons are present in atypical numbers, or in boundary units such as sales, purchasing, personnel, R & D.

    b. Change will occur first and foremost where the system meets its supersystem, e.g., in top management groups.

    c. Change will occur first and foremost where functionally different lines merge.

    d. Change will occur first and foremost where major echelons meet, e.g., where first-line supervision meets middle management, as opposed to within middle management.

3. Because of such systemic properties as organizational climate, proximity in organizational space will be related to similarity of organizational behavior problems and to responses to any single intervention.

4. Since organizational climate is (in theory) more constraining at lower than at upper organizational levels, change at lower levels will tend to occur more in the form of "class" actions, whereas change at upper levels will be more selective and diverse.

5. Organizational functioning suffers most when deficiencies (1) involve more rather than fewer precursors, (2) influence the behaviors of large numbers of organizational members, and (3) occur at high levels in the organizational hierarchy.

6. Precursor problems are non-randomly distributed among groups

7. Information, skill, and values as precursors will be related to demographic characteristics of members.

8. The natural responses to precursor constraint will differ with the nature of the precursor.

9. Situation as a precursor will gain in importance as one moves down through the organizational hierarchy.

10. Groups differ in behavior problem configurations in place at the outset of an organizational development effort.

11. The connections between precursors and behavior problems are non-randomly distributed.

12. Behavior changes in one segment of an organization may create precursor changes for other segments of that same organization.

13. Purposefully sequenced treatments are more productive of positive change than are non-purposefully sequenced or non-sequenced ones.

14. The impact of treatments is not uniform; an intervention is a qualitatively different entity under different conditions.

15. Both amount and direction of behavior change are non-randomly distributed among all possible combinations of precursors and impingement modes.

16. Success (change) in response to treatments is non-randomly distributed among precursor x behavior problem cells.

17. Treatments aimed at precursors will result in change more readily than treatments focusing upon problematic behaviors.

18. Interpersonal skills are at least as closely related to effective organizational outcomes as are technical skills.

19. Technical skills are more readily acquired than are interpersonal skills. This is due in part to the fact that consistency of reinforcement is related to speed of acquisition of skill and the probabilities attached to the response of a piece of equipment or material to technically skilled behavior is more predictable than that of another person to an interpersonally skilled behavior.

20. As in the case of technical skills, the prepotency of interpersonal skills will be positively related to the sophistication of the technological system.

21. Interpersonal skills will rise in importance with the extent to which organizations perform service functions.

22. Resistance of behavior to change is a function of the number, strength, and configuration of precursors.

23. Precursors will differ in resistance to change.

24. The shorter the range of the time frame of reference used by persons in evaluating the effectiveness of various behaviors the greater will be the resistance to change.

BIBLIOGRAPHY

Argyris, C. Interpersonal competence and organizational effectiveness. Homewood, Ill.: Irwin 1962.

Beckhard, R. Organizational development--Strategies and models. Reading, Mass.: Addison-Wesley, 1969.

Beer, M. and Huse, E. F. A systems approach to organization development. Journal of Applied Behavioral Science, 1972, 8 (1), 79-101.

Bennis, W. G. Organization development: Its nature, origins, and perspectives. Reading, Mass.: Addison-Wesley, 1969.

Blake, R. R. & Mouton, J. S. The Managerial Grid, Houston: Gulf Publishing Co., 1964.

Blake, R. and Mouton, J. Building a dynamic corporation through grid organizational development. Reading, Mass.: Addison-Wesley, 1969.

Blake, R., Mouton, J. and Sloma, R. The union-management inter-group laboratory: Strategy for resolving intergroup conflict, Journal of Applied Behavioral Science, 1965, 1, 25-27.

Bowers, D. G. Perspectives in organizational development. Technical Report to the Office of Naval Research, 1970.

Bowers, D. G. Michigan Intercompany Longitudinal Study (ICLS). Paper presented at American Psychological Association, Division 14 Symposium, 1971.

Bowers, D. G. OD Techniques and their results in 23 organizations, Journal of Applied Behavioral Science, 1973, 9 (1), 21-43.

Bowers, D. G. System 4: The ideas of Rensis Likert. Basic Books, Inc., in press.

Bowers, D. G. and Franklin, J. L. Survey-guided development: Using human resources measurement in organizational change. Journal of Contemporary Business, 1972, 1 (3), 43-55.

Bowers, D. G. and Seashore, S. Predicting organizational effectiveness with a four-factor theory of leadership, Administrative Science Quarterly, 1966, 11 (2), 238-263.

Butterfield, D. A. An integrative approach to the study of leadership effectiveness in organizations. Unpublished doctoral dissertation. Ann Arbor: University of Michigan, 1968.

Campbell, J. P. and Dunnette, M. D. Effectiveness of T-group experiences in managerial training and development. Psychological Bulletin, 1968, 70 (2), 73-104.

Chapple, E. D. and Sayles, L. R. The measurement of management. New York: MacMillan, 1961.

Davis, S. A. Building more effective teams, Innovation, 1970, 15, 32-41.

Dunnette, M. D. Should your people take sensitivity training? Innovation, 1970, 14, 42-55.

Fiedler, F. E. Leadership. N. Y.: General Learning Corp., 1971.

Fiedler, F. E. A theory of leadership effectiveness. N. Y.: McGraw-Hill, 1967.

Flanders, J. P. A review of research on imitative behavior. Psychological Bulletin, 1968, 69, 316-337.

Frohman, M. A. and Sashkin, M. The practice of organizational development: A selective review. Technical Report to the Office of Naval Research, 1970.

Herzberg, F. One more time: How do you motivate employees? Harvard Business Review, 1968, 46 (1), 53-62.

Katz, D. and Kahn, R. The social psychology of organizations. N. Y.: Wiley, 1966.

Katz, D. and Kahn, R. L. Leadership. In D. Katz and R. L. Kahn, The Social Psychology of Organizations. New York: Wiley, 1966. Chap. 11, pp. 300-335.

Kelley, C. R. Manual and automatic control. N. Y.: Wiley, 1968.

Kepner, C. H. and Tregoe, B. B. The rational manager. N. Y.: McGraw-Hill, 1965.

Lawrence, P. R. and Lorsch, J. W. Developing organizations: Diagnosis and action. Reading, Mass.: Addison-Wesley, 1969.

Lawrence, P. R. and Lorsch, J. W. Organization and environment. Homewood, Ill.: Irwin, 1969.

Leavitt, H. J. Applied organizational change in industry. In J. G. March (ed.), Handbook of Organizations. Chicago: Rand-McNally, 1965, 1144-1170.

Likert, R. New patterns of management. N. Y.: McGraw-Hill, 1961.

Likert, R. The Human Organization. N. Y.: McGraw-Hill, 1967.

Likert, R., Bowers, D. G., and Norman R. How to increase a firm's lead time in recognizing and dealing with problems of managing its human organization, Michigan Business Review, 1969, 21 (1), 12-17.

Likert, R. and Seashore, S.E. Making cast control work. Harvard Business Review, 1963, 41 (6), 96-108.

Lippitt, R., Watson, J. and Westley, B. The dynamics of planned change. New York: Harcourt, Brace and World, 1958.

Mann, F. C. Toward an understanding of the leadership role in formal organization. In R. Dubin, G. Homans, F. Mann, and D. Miller (Eds.) Leadership and Productivity. San Francisco: Chandler, 1965, pp. 68-103.

Mann, F. C. and Morris, W. C. Looking at a problem-solving discussion. Ann Arbor, Mich.: Institute for Social Research, undated.

McClelland, D. C. Achievement motivation can be developed, Harvard Business Review, 1965, 43 (6), 6-16, 20-24, 178.

Miles, M. B., Calder, P. H., Hornstein, H. A , Callahan, D. M., and Schiavo, R. S. Data feedback and organizational change in a school system. In R. T. Golembiewski and A. Blumberg (eds.), Sensitivity training and the laboratory approach. Itasca, Ill.: F. E. Peacock, 1970, 352-361.

Odiorne, G. S. Management by objectives. N. Y.: Pitman, 1965.

Paul, W. J., Robertson, K. B., and Herzberg, F. Job enrichment pays off. Harvard Business Review, 1969, 47, (2) 61-78.

Rogers, C. Client centered therapy. Boston: Houghton, Mifflin, 1951.

Rush, H. M. F. Behavioral science concepts and management application. National Industrial Conference Board, Studies in Personnel Policy, No. 216, 1969.

Schein, E. H. and Bennis, W. G. Personal and organizational change through group methods. N. Y.: Wiley, 1965.

Schein, E. H. Process consultation. Reading, Mass.: Addison-Wesley, 1969.

Taylor, J. C. An empirical examination of a four-factor theory of leadership using smallest space analysis. Organizational Behavior and Human Performance, 1971, 6, 249-266.

Taylor, J. C. Technology and planned organizational change. Ann Arbor, Mich.: Institute for Social Research, 1971b.

Taylor, J. C. and Bowers, D. G. Survey of Organizations. Ann Arbor, Mich.: Institute for Social Research, 1972.

Trist, E. L. On socio-technical systems. In W. F. Bennis, K. D. Benne, and R. Chin (eds.), The planning of change. N. Y.: Holt, Rinehart, and Winston, 1969, 269-282.

Valiquet, M. I. Individual change in a management development program. Journal of Applied Behavioral Science, 1968, 4 (3), 313-325.

Vinacke, W. E. Foundations of Psychology. New York: American Book Co., 1968.

Walton, R. E. Interpersonal peacemaking: Confrontations and third party interventions. Reading, Mass.: Addison-Wesley, 1969.

Zand, D., Steele, F. and Zalkind, S. The impact of an organization development program on perceptions of interpersonal, group, and organization functioning. Journal of Applied Behavioral Science, 1969, 5 (3), 393-410.