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13. ABSTRACT

The behavior of leaders as a dependent variable is examined in a review of the literature.

A major section of the paper is devoted to ~~each~~ of three topics: main effects of attributes of leaders, main effects of the attributes of the situation, and interaction effects of the attributes of the leader and the attributes of the situation.

It is concluded that:

(1) leader behavior is a product of the interaction of personal and situational variation

(2) leader behavior is directly related to personal variation in some situation and inversely related in others

(3) in order to appreciably add to our knowledge, future studies must measure or control the variation in both the individual and situational domains.

A number of the relevant dimensions of personal and situational variation are identified in the review.

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leadership attitudes						
"situational" theory of leadership						
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interpersonal relations						
task-structure						
position power						
group composition						
contingency model						
leader orientation						

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Leader Behavior as a Dependent Variable: A Review of the Literature

by Larry K. Michaelsen

September 1972

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INTRODUCTION

The behavior of leaders has justifiably occupied a central role in most conceptualizations of organizational functioning. The need for leadership in organizations is well summarized by Katz and Kahn when they state

> One may question the need for leadership...and ask why an organization properly designed for its purpose will not function adequately without acts of leadership. The answer lies in four inescapable facts of organizational life: necessary incompleteness of organizational design, changing environmental conditions, internal dynamics of organization and the nature of human membership in organizations (1966, p. 334).

As a result, the social science literature contains literally dozens of volumes on the subject. As Butterfield puts it, "The number of studies is so large that even the number of reviews is considerable" (1968, p. 1).

Most empirical and theoretical analyses have treated the behavior of leaders as an independent variable and attempted to relate it to various measures of organizational effectiveness. This discussion will be somewhat unique, however, in that leader behavior will be viewed primarily as a dependent variable. The basic question underlying this analysis is, "Why do leaders behave in the way they do in an organizational setting?" Stated more generally, it has to do with the question of human motivation--why people choose and persist in some patterns of activities in preference to others.

In spite of the infrequent treatment of leadership as a dependent variable, a review of the literature reveals a number of potential explanations of the behavior of leaders in organizations. Some theorists emphasize the importance of independent variables having to do with the leader himself such as his values, attitudes, and perceptions. For example, McGregor (1961) as part of the introduction to his now famous Theory X and Theory Y formulation, states

> ...every managerial act rests on assumptions, generalizations, and hypotheses--that is to say, on theory. Our assumptions are frequently implicit, sometimes quite unconscious, often conflicting; nevertheless, they determine our predictions that if we do a, b will occur. Theory and practice are inseparable (1961, p. 6).

Other theorists, however, stress the overriding importance of independent variables associated with the organization. Gouldner, for example, with reference to studies carried out in the bureaucratic tradition, states

> Indeed the social scene described has sometimes been so completely stripped of people that the impression is unintentionally rendered that there are disembodied social forces afoot, able to realize their ambitions apart from human action (1954, p. 16).

Some have even gone so far as to suggest that when incompatibilities occur between the personality of an office holder and his job, the inevitable result is the restructuring of the individual's personality: "It would seem, therefore, that officials not initially suited to the demands of a bureaucratic position, progressively undergo modifications of personality" (Merton, Bray, Hocky, and Selvin, 1952, p. 352).

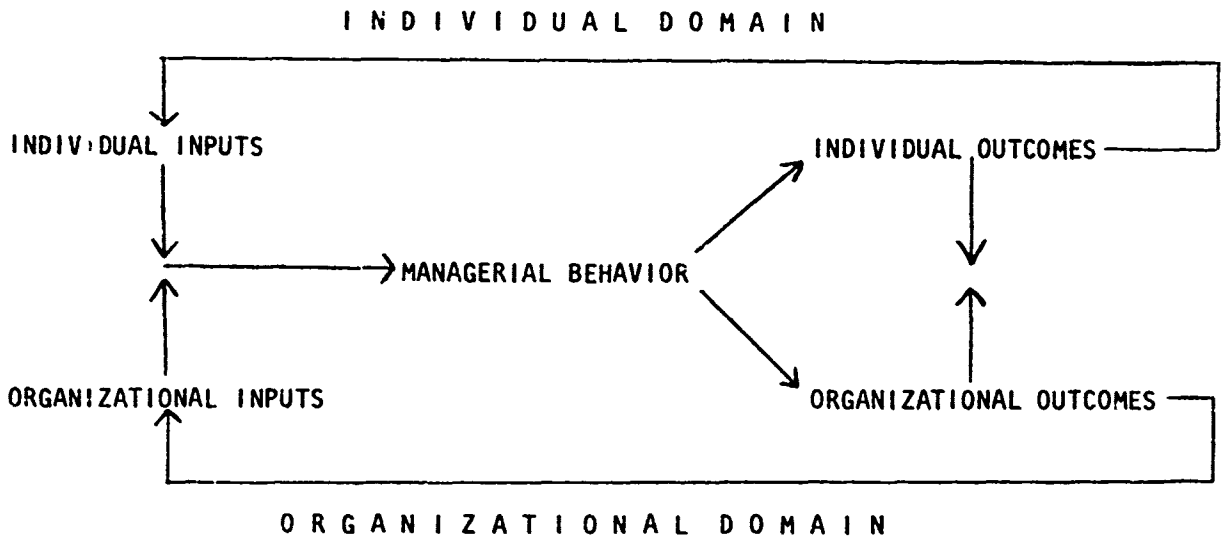
A more reasonable theoretical framework for the explanation of the behavior of leaders in organizations, it would seem, should include variables representing both attributes of the individual and the situation. This view is shared by many including Hollander, who states, "But the effects of these [the leader's] characteristics, especially with regard to style, must be gauged in light of the attributes and perceptions of the led and of the structure and setting within which the leader and followers interact" (1971, p. 1).

Apparent agreement on the importance of situational variables has not resulted in a significant number of methodologically appropriate studies. The current scarcity of research using a conceptual scheme including both individual and situational variables is, in fact, so severe that Campbell, Dunnette, Lawler, and Weick, in their recent book, were forced to begin a chapter entitled "Environmental Variation and Managerial Effectiveness" with the following paragraph:

> Unfortunately, this chapter will be relatively data-free. We shall discuss a class of variables for which everyone suggests the need for research is great--but actual empirical activity is sparse. Consequently, most of the following material will be oriented around taxonomic problems and suggestions for what should be known" (1970, p. 385).

This paper represents an attempt to sort through the literature in hopes of identifying a number of potentially researchable questions regarding the relationship of situational and individual variables and the behavior of leaders in organizations. The general framework for this analysis is presented in Figure 1.

Figure 1



INDIVIDUAL INPUTS

At least two distinct approaches stressing the importance of leader behavior in the effective functioning of organizations may be identified in the literature. These have often been referred to as the "great man" theory and the "behavior" theory.

The "great man" concept, dating as far back as Plato's Republic, has stimulated a tremendous amount of research concerned with the identification of traits that distinguish leaders from followers. As early as 1948, Stodgill listed more than 120 such studies, and Campbell, Dunnette, Lawler, and Weick (1970) list more than 20 done since that time. The objective of these studies, from a practical standpoint, has been the identification of traits that could be used in the selection of leaders. Traits suggested as being important for leaders have included those associated with an individual's behavioral characteristics (sociability, aggressiveness, self-confidence, etc.), aptitude (intelligence, originality, judgment, etc.), and biographical profile (employment history, family and educational background, etc.).

In recent years, most of the sophisticated and thoughtful work done in the trait area has focused on the use of batteries of interest, aptitude, and personality tests and biographical profiles in the prediction of managerial success. For example, a number of recent correlational studies have investigated the relationship between these predictor variables and levels of managerial effectiveness. These include studies done in Standard Oil of New Jersey (Laurent, 1961, 1962, 1966; Sparks, 1966), Sears Roebuck and Company (Bentz, 1963, 1967), American Telephone and Telegraph (Bray, 1962), and the Prudential Insurance Company (Selover, 1962), as well as by the American Chamber of Commerce (Kirkpatrick, 1960, 1961, 1966) and by the Industrial Relations Center of the

University of Minnesota (Mahoney, Jerdee, and Nash, 1960; Mahoney, Jerdee and Caroll, 1963; Mahoney, Sorenson, Jerdee and Nash, 1963; Nash, 1966). Practically all of these studies have identified significant relationships between individual difference measures and levels of managerial success. In fact, as part of a review of these and a number of similar studies, Campbell et al. conclude, "Although results vary considerably from study to study, it does appear that from 30 to 50 percent of the variance in estimates of overall general managerial effectiveness can be expressed in terms of personal qualities claimed by managers taking part in the investigations" (1970, p. 197).

While correlations of this magnitude may indeed seem impressive, a number of unanswered questions remain. These have principally to do with the "managerial success" criteria, which in most of these studies was a combination of rapidity of advancement, salary level, and ratings by higher level supervisors of overall effectiveness. Thus, "effectiveness" as it was defined in these studies was largely a measure of individual rather than organizational outcomes (See figure 1) and we have been heavily influenced by an individual's ability to gain favor with his superiors. This latter point is particularly crucial in light of the fact that the same individuals who granted promotions, gave raises, and rated subordinates frequently had access to information similar to, if not identical with some of the "independent" variables.

Another problem with the studies, as pointed out by Campbell et al. (1970) is that the lack of longitudinal designs and information both obscures the developmental process and increases the difficulty of interpretation of the results. One final and somewhat more subtle criticism is that the very nature of the independent variables both gives an unrealistically static view of the leader, and, from a practical standpoint, yields very little information that night be useful in trying to help individuals improve themselves. In short,

these studies are based on the "great man" philosophy that "leaders are born, not made," and the usefulness of research findings is generally limited to more adequately matching people and jobs.

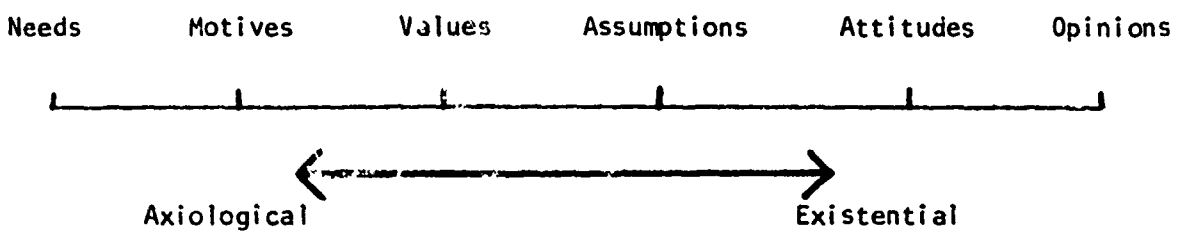
The "Behavior" Approach

The studies by Lewin, Lippitt, and White (1939) and Lippitt (1940) on the effects of "democratic," "authoritarian," and "laissez-faire" leadership styles represented a clear departure from the "great man" tradition, and formed the foundation for what might be called the "behavior" approach. This approach is based on the assumption that the behavior of leaders, not the particular set of traits they possess, is the important variable in organizational functioning. Consequently, the aim of the research generated by the "behavior" approach has been the identification and measurement of the behavior of leaders and its causes and consequences.

The independent variables most often used in studies of leadership done in the "behavior" tradition are generally much more dynamic than those of the "great man" approach. Instead of measuring traits, the proponents of the "behavior" view have concerned themselves with the conceptualization and measurement of independent variables such as needs, values, attitudes, information, and skills.

These variables are generally conceived to be located on a continuum representing the degree to which they are axiological (i.e., statements proclaiming the intrinsic worth of some entity) or existential (i.e., simple summary statements of existence or probable existence) (Bem, 1970; Bowers, 1971; Rokeach, 1968). The relationships between the variables are shown in Figure 2.

Figure 2



The term "assumptions," while it is not generally used in the attitude literature, has been included because of its frequent use in the writings of organizational and leadership theorists (e.g., McGregor, 1961, 1967; Haire, Ghisseli, and Porter, 1966; Knowles and Saxburg, 1971). The placement of assumptions between values and attitudes reflects the degree to which these authors view assumptions (e.g., "the average worker is lazy," "man is good," "subordinates can be trusted") as potent pre-behavioral independent variables.

Rokeach further clarifies the relationships between these variables with the following statement:

> An attitude...is an organization of several beliefs focused on a specific object (physical or social, concrete or abstract) or situation, predisposing one to respond in some preferential manner. Some of these beliefs about an object or situation concern matters of fact and others concern matters of evaluation. An attitude is thus a package of beliefs consisting of inter-connected assertions to the effect that certain things about a specific object or situation are true or false, and other things about it are desirable or undesirable.
>
> Values, on the other hand, have to do with modes of conduct and end-states of existence. To say that a person "has a value" is to say that he has an enduring belief that a specific mode of conduct or end-state of existence is personally and socially preferable to alternative modes of conduct or end-states of existence. Once a value is internalized, it becomes, consciously or unconsciously, a standard or criterion for guiding action, for developing and maintaining attitudes toward relevant objects and

> situations, for justifying one's own and others' actions and attitudes, for moraliy judging self and others, and for comparing self with others. (1968, pp. 159-160).

Thus, Rokeach argues that values function as "anchor points" upon which assumptions and attitudes are based, the rightness and wrongness of behaviors are judged, and the values and associated attitudes guide the individual in his choices among the available behavioral alternatives.

This assumed value-attitude-behavior relationship has been largely responsible for the emphasis on the importance of values and attitudes by the student of the "behavior" approach. Other individual input variables, especially information and skills, are seen to be important only in their absence; that is, a lack of information or skill places limits on the behavioral alternatives available to the individual.

The use of values and attitudes as independent variables has both advantages and disadvantages. The primary reason for the disadvantages is that they are, after all, abstractions. Consequently, the difficulty of developing measures is greatly magnified due to the absence of validation criteria and the ambiguity resulting from not knowing exactly what is being measured.

There are, however, a number of advantages to using independent variables at this level. One is the close temporal and rational ties between specific behaviors and variables such as values and attitudes. Consequently, it would be much more reasonable to say a supervisor yells at his subordinates because he values obedience, than it would be to say that he yells at them because he came from a lower socio-economic background, even though it is possible that "yelling" behavior might correlate as highly with socio-economic measures as with value measures.

In spite of the temporal and rational contiguity between values and attitudes and specific behaviors, there is however, little convincing empirical evidence irrespective of content area that any type of a direct link exists between them (Festinger, 1964; Rokeach, 1968). Campbell et al. (1970) conclude a review of the attitude change literature with the rather gloomy statement that "Whether attitude change implies behavioral change is still a moot point, even when the total spectrum of the attitude literature is considered" (p. 265).

There are many factors that contribute to the ambiguity with regard to the relationship between these pre-behavioral variables and their alledged associated behaviors. One of the most important of these is the lack of agreement among the theorists and researchers as to the nature of the hypothesized causal relationships. A long list including McClelland (1961), Atkinson (1964), McGregor (1961, 1967), and Maslow (1943, 1954, 1965) maintain that values and attitudes cause behavior, while other including Bem (1968), Festinger (1957), and Breer and Locke (1965) argue that values and attitudes are determined <u>by</u> behavior. Still another group including Litwin and Stringer (1966), Taguiri and Litwin (1968), Lieberman (1950), Kelman (1958), and LaPiere (1934) are convinced that values, attitudes, and behavior are largely products of the situation.

A recent theoretical contribution by Rokeach (1968) may provide a means for resolving some of the confusion in the area. He reasons that neither behaviors nor attitudes can occur without reference to a specific social situation in which an actor finds himself. He states

> A preferential response toward an attitude object cannot occur in a vacuum. It must necessarily be elicited within the context of some social situation about which we also have attitudes. It is perhaps helpful to conceive of any particular attitude object as the <u>figure</u> and the situation in which it is encountered as the <u>ground</u>. How a person will behave with respect to an object-within-a-situation will therefore depend, on the one hand, on

> the particular beliefs or predispositions activated by the attitude object and, on the other hand, by the beliefs or predispositions activated by the situation. We thus postulate that a person's social behavior must always be mediated by at least two types of attitudes--one activated by the object, the other activated by the situation (p. 126).

In other words, if we take Rokeach's arguments seriously, in order to understand the relationship between the attitudes and the behavior of leaders in organizations, we must simultaneously measure their attitudes toward supervision (the object) and toward the organizational setting within which they reside (the situation). For example, a supervisor might yell at his subordinates either because he thinks he should (based on his values, and assumptions and information about the resulting consequences) or because he thinks the situation requires him to (based on his valuing favor with the boss who expects him to be "tough"), but we are unable to tell which unless we have data about both and take into account the possible interaction between them.

Rokeach further states with regard to attitude and behavior changes:

> I propose that expressed opinion or behavioral change is always a function of at least two attitudes. This proposition only complicates our attempts to determine whether or not a particular change in expressed opinion or behavior represents a change in attitude. Because we have to contend with two types of underlying attitudes, we now have four possible determinants of a change in expressed opinion or behavior: (1) interaction between attitude-toward-object and attitude-toward-situation, neither of which has changed; (2) a change in only the attitude-toward-object; (3) a change in only the attitude-toward-situation; or (4) a change in both attitude-toward-object and attitude-toward-situation (1968, p. 141).

Thus a supervisor could quit yelling at his subordinates because of (1) change in the interaction between attitude-toward-object and attitude-toward-situation, neither of which has changed (e.g., his boss attends a "human relations workshop" and now expects him to be more considerate); (2) a change in only the attitude-toward-object (he attends a "human

relations workshop" and no longer feels that he should yell at his subordinates); (3) a change in only the attitude-toward-situation (e.g., he no longer feels that his boss's favor is very important); or (4) a change in both attitude-toward-object and attitude-toward-situation (e.g., he attends a "human relations workshop" and now feels that he should be more considerate of his subordinates and that if his boss will not allow him to do so, he should find a new job).

This discussion only serves to reemphasize the importance of situational variables in studies of the relationship between leaders' attitudes (values) and their behavior. The individual's perception of situational variables (organizational inputs) is directly involved in no less than three of the four determinants of attitude and behavior change.

Summary of Theoretical and Empirical Literature

Table 1 contains a summary of the theorists and researchers who have attempted to describe the contents of the "individual inputs" component of the model presented earlier (see Figure 1) and/or its links to other components within the model. This summary specifically excludes the investigations of leadership traits, however, due to the sheer volume of the literature, coupled with the collective inability of these studies to link traits with specific behaviors of leaders.

In attempting to summarize the studies listed in Table 1, at least two major difficulties are encountered. One is that a considerable amount of abstraction is often required due to the fact that while individual inputs to behavior are frequently measured, they are generally not the primary focus of the original study. The other major difficulty is that in some cases the original authors do not clearly differentiate between attitude and behavior

measures. For example, while there is little evidence of any direct link between leaders' scores on the Leadership Opinion Questionnaire (LOQ) and their behavior (Korman, 1968), LOQ scores have often been used as behavior measures.

One additional source of difficulty involved in the construction of Table 1 is the judgment with regard to the author's objectives in relation to the individual inputs component of the model (see Figure 1). Unlike the E's in Table 1, which merely represent the use of any measure of individual inputs, the T's reflect this author's opinion about whether or not the original author attempted to develop a theoretical rationale for each of the categories listed under the "Objectives in Relation to Individual Inputs" heading.

Adequacy of Studies Summarized in Table 1

The proposition that the characteristics of the individual and the organization must be considered simultaneously in order to understand the relationship between attitudes, values and the behavior of leaders, also implies several criteria for evaluating empirical studies of leader behavior. At a minimum, such investigations must (1) include measures of (a) individual inputs, and (b) organizational inputs, and (2) be designed so as to allow for the possible interaction between them. When these conditions are not met, the generalization of any statistically significant findings is limited to either a specific population, a specific setting, or both. Statistically significant findings in such cases do, however, provide a means of defining a set of dimensions whose variability must be accounted for.

One further criteria upon which the value of any study depends is the degree to which a theoretical as well as an empirical rationale is established for the various aspects of the design, measures, and results. The presence or absence of a "T" in the columns under the Objectives in Relation to Individual Inputs heading in Table 1, as mentioned above, is intended to reflect

Table 1

Objective in Relation to Individual Inputs						Summaries of Studies Investigating Individual Inputs to Leader Behavior		
STUDY	Describe	Rel. with Org. Inputs	Rel. With Behavior	Re Indiv. Outcomes	Re Organ. Outcomes	INDIV. INPUTS MEASURE	FINDINGS	CONCLUSIONS
Auclair and Read (1966)	TE*		T		T	Auclair-Read	Nine separate clusters of attitude variables were identified	Present theory about managers' Value-Attitude systems not adequate-- most are much too simple
Bass (1956 and 1958)	E				E	LOQ	"Consideration" significantly correlates with rated success	Relationship not sufficiently strong to be used for selection purposes
Bass (1968)	E				T	OSQ	After training graduate students, more like managers	Students and managers think both social and political approaches needed for success.
Berlfein (1969)	TE		TE			Berlfein LOQ	Low but statistically significant correlations between value measures and behaviors	Relationship between values and behavior not strong enough to be of practical significance for selection purposes.
Bernthal (1962)	T				T			Hypothesizes hierarchy of values and that values critical to success
Blake and Mouton (1964)	T		T	T	T			Every managerial style based on personality - specifies 5 "pure" management types and corresponding personalities
Boynton (1967)	TE				E	Yoder	Attainers (adjusted salary levels of managers) differ from non-attainers in value orientations	Successful managers think certain aspects of jobs more important than unsuccessful managers.

Table 1 continued

STUDY	Objective in Relation to Individual Inputs: Describe	Rela. with Org. Inputs	Rela. with Behavior	Re. Indiv. Outcomes	Re. Org. Outcomes	INDIV. INPUTS MEASURE	FINDINGS	CONCLUSIONS
England (1967)	TE	E				England	Goals related to personal variable (age, education, etc,) and Org. variables, (size company, type, etc.)	Personal variables account for more goal differences than org. variables
England (1970)	TE		T			England	Japanese managers values similar to US managers' values	Values affect behavior
Fiedler (1967) Fiedler, et.al. (1969 Hunt (1967) Shaw (1966) Hill (1969)	TE	TE	T		TE	LPC	High LPC leaders more effective in intermediately favorable situations. Low LPC leaders more effective in situations of high or low favorability.	Relationship between leader values and effectiveness depends on situation
Fiedler (1970,1971)	TE	TE	TE		TE	LPC	Same as Fiedler (67) plus LPC correlates negatively with task centered supervision in low favorability situations and positively in high favorability situations.	Relation between leader values and behavior and effectiveness depends on situation.
Fishbein et.al. (1969)	TE	TE				LPC	Aspects of Group-task situation account for most variance on how leaders should behave measure	Measurement of situational favorability in contingency model is inadequate
Fleishman (1957)	T	TE				LOQ	LOQ scores correlate with work climate scores	Situation must be taken into account in measuring training effectiveness

Table 1 continued

STUDY	Objectives in Relation to Individual Inputs: Describe	Rel. with Org. Input	Rel. with Behavior	Re Indiv. Outcomes	Re Org. Outcomes	INDIV. INPUTS MEASURE	FINDINGS	CONCLUSIONS
Fleishman and Peters (1962)	E				E	LOQ	LOQ scores relate to personality measures but not effectiveness ratings	Personality measures better predictors of supervisory effectiveness than LOQ scores.
Frederiksen (1966-1968) Frederiksen et.al. (in press)	TE	TE	TE		TE	Frederiksen	Relationship between personality measures and behavior and predictability of behavior from personality measures both moderated by situational variation	Behavior dependent on organizational and individual inputs.
Graen, et.al. (1970)	TE	TE			TE	LPC	Antecedent results of Contingency model are much more significant than evidential results	Findings on which contingency model are based may be artifactual.
Haire, et.al. (1966)	TE		T		T	Haire	Inter culture difference in managers attitudes also frequent inconsistencies between attitudes and assumptions.	Many similarities exist across cultures. Individual's attitude-assumption framework frequently contain logical inconsistencies.
Harrison (1960)	TE					Harrison	Identifies eight clusters of attitudes the strongest of which is opportunity to advance and accomplish also prediction based on Hertzberg formulation not verified.	Supervisors' attitude-value domain is multidimensional and not adequately described by Hertzberg formulation.
Knowles and Saxburg (1971)	T		T		T			"Man is bad philosophy": self fulfilling prophecy "Man is good philosophy" leads to successful problem solving.

Table 1 continued

STUDY	Objective in Relation to Individual Inputs: Describe	Rel. with Org. Input	Rel. with Behavior	Re Indiv. Outcomes	Re Org. Outcomes	INDIV. INPUTS MEASURE	FINDINGS	CONCLUSIONS
Korman (1966)	T				T		review of LOQ experiments	Very little evidence that "consideration" and "Structure" from LOQ have any concurrent or predictive validity.
Lawler and Porter (67a and 67b)	E				E	Lawler	Effort and behavior ratings correlate with value and expectancy of reward especially when skill is treated as moderator.	When managers value and expect rewards they will be rated higher on effort and effectiveness especially when skill is treated as moderator.
Levinson (1959)	T	T	T					Job behavior is function of both individual and organizational inputs
Lesage (1972)	T		T		T	Auclair Read		Reviews literature on managerial attitudes concludes that researchers have failed to identify an adequate framework for representation of supervisory attitude structures.
Litzinger (1965)	TE					LOQ	"Consideration" and "Structure" are not significantly correlated with personality measures	Results may be due to restriction of range by selection and socialization.
McClelland (1953)	TE		TE			McClelland	TAT used to identify several sets of individual motivational patterns	N-Achievement, N-Power, and N-Affiliation are specific measurable motivational dimensions that influence behavior.
Michaelsen (in press)	TE	TE	TE		TE	SMB	Same as Fiedler 1970-1971	Same as Fiedler 1971

Table 1 continued

STUDY	Objective in Relation to Individual Inputs: Describe	Rel. with Org. Input	Rel. with Behavior	Re Indiv. Outcomes	Re Org. Outcomes	INDIV. INPUTS MEASURE	FINDINGS	CONCLUSIONS
Miles (1964)	TE	E	T			Miles	Relationship between agreement with participative styles and perceived capability of subordinate	Managers willingness to use participative methods depends on perceptions of employees abilities.
Mitchell (1970)	TE				T	LPC	LPC correlates with measures of cognitive complexity	Fiedler finding may be related to cognitive complexity
Muller (1970)	TE	E				LPC LOQ	LPC correlated with time span of discretion an environmental variable while LOQ does not.	Validity of LPC as Value-Attitude measure is questionable.
Oaklander and Fleishman (1964)	TE				TE	LOQ	"Structure" relates to ratings of interunit and intraunit stress	Too much emphasis on structure by supervisor reduces ability of group to work out conflict.
Parker (1963)	E	E	E		E	LOQ	"Consideration" and "Structure" relate to supervisory behavior performance measures, and warehouse size.	Behavior and performance dependent on both individual and organizational inputs.
Porter (1963) Porter and Henry (1964)	TE	E		E		Porter	Differential importance of needs expressed by managers at different hierarchical levels	Both greater opportunity and greater expressed need with higher levels in hierarchy.
Rim (1965)	E				TE	LOQ	Correlates with ability to influence subordinates.	Knowledge of values of leaders may help in predicting effectiveness.

Table 1 continued

STUDY	Objective in Relation to Individual Inputs: Describe	Rel. with Org. Input	Rel. with Behavior	Re Indiv. Outcomes	Re Org. Outcomes	INDIV. INPUTS MEASURE	FINDINGS	CONCLUSIONS
Ritchie (1968)	TE		E		TE	Miles	Subordinate satisfaction correlates with supervisors' confidence in them irrespective of supervisors' behavior but correlates higher when supervisor uses participative methods	Attitude of supervisor directly affects subordinate satisfaction but even more so if behavior is also consistent.
Rokeach (1968)	T	T	T					Hypothesizes that behavior function of attitude-toward-object and attitude-toward-situation.
Skinner (1969)	E	E	E		E	LOQ	No significant correlations between LOQ scores and either behavior measures or organizational structure measures	LOQ scores unrelated to behavior or situational variation.
Spitzer and McNamara (1964)	E			T	T	LOQ	No significant relationship between LOQ and current salary or rated effectiveness of managers.	LOQ scores unrelated to effectiveness
Vroom and Mann (1960)	TE	TE	TE		TE	F-scale scores	F-scale correlates positively with pressure for production ratings by subordinates in one setting negatively. Supervisors' F-scale scores correlate positively with subordinate ratings of pressure for production in one situation, negatively in another. Exactly opposite relationship between F-scale scores and ratings of participativeness.	Validity of subordinate behavior ratings is questionable.

Table 1 continued

STUDY	Objective in Relation to Individual Inputs: Describe	Rel. with Org. Inputs	Rel. with Behavior	Re Indiv. Outcomes	Re Org. Outcomes	INDIV. INPUTS MEASURE	FINDINGS	CONCLUSIONS
Yoder (1962)	TE	E				Yoder	Identifies a set of value dimensions reports that a relationship exists between supervisor values and types of employees managed	Managers aren't aware of values and are not consistent no explanation of correlation between employee types and values.
Yukl. B. (1970)	TE		E			LPC	No significant correlations between LPC and behavior. Task and social items of LPC are correlated with behavior	LPC score is not independent of adjectives used; attitude-value domain is too complex to allow measurement with LPC.

* T = Theoretical statement about relationship to individual inputs
E = Measurement of individual inputs

the adequacy of the studies with regard to this criteria.

Table 2 presents the total number of studies that included any measure of individual inputs, and the subset of those that also (a) included organizational input and behavior measures and (b) allowed for the interaction of individual input and organizational input variables.

Table 2

Summary of Design Features and Measurement Focus of Studies (See Table 1)

Measurement Focus	Design Features	
	Empirical Measurement	Empirical measurement + design allows for interaction between Individual and Organizational Inputs
Individual Inputs	40	17
Individual Inputs and Organizational Inputs	18	10
Individual Inputs and Organizational Inputs and Behavior	6	4

Of the 40 studies in which individual inputs were measured, 18 included measures of organizational inputs, and only 6 of these also included measures of leader behavior. Of the 18 studies that included measures of both organizational and individual inputs, 10 were designed to allow for the possibility of interactions between them, but only 4 also included measures of behavior. Thus, only 4 studies (Frederiksen, 1966, 1968, Frederiksen et al. in press; Fiedler, 1970, 1971; Michaelsen, in press; Vroom and Mann, 1960) meet even

the minimum criteria for dealing with the issues involved in studying the relationship between attitudes, values and behavior of leaders in organizations. These studies will be discussed in greater detail below, in conjunction w a discussion of interaction effects of organizational and individual inputs. We will now examine more closely some of the theory and research related to the Organizational Inputs Component of the model (see Figure 1).

ORGANIZATIONAL INPUTS

The idea that the environment influences the behavior of individuals is not new to the field of psychology. As early as the 1920's Lewin (1935) proposed the view that behavior (B) is a function of interaction between a pers n (P) and his environment (E), $B=\underline{f}(P,E)$. Students of organizational behavior, particularly those concerned with the behavior of leaders, have been slow to incorporate more than very simplistic notions of environmental influences into their theoretical formulations. This may be due in part to a rather naive conception consistent with the "great man" philosophy that behavior is always a direct manifestation of some innate properties of the individual. The gradual demise of the "great man" philosophy and the popularization of the more dynamic "behavior" approach to the study of leadership have also stimulated a fresh look at the influence of the environment on leader behavior. An even greater stimulus for the increasing attention to environmental variables, however, has been the repeated failures to establish any direct links between attributes of leaders and their behavior. As Taguiri puts it, "Having tried to account for variations in performance by means of such intrapersonal variables as attitudes and personality, students of behavior are turning to the environment for part of the explanation." (Taguiri, 1968, p.11)

The students who have responded to the need to examine the relationship between environmental variation and individual behavior have faced a number of very difficult questions in their inquiry. Stated colloquially the most basic of these are: What to measure? How to measure it? and How does the process work? In the next few pages some of the most fruitful attempts to answer these questions will be examined in the hope that they will establish a framework within which the studies that have specifically investigated the relationship between organizational inputs and leader behavior may be better understood and evaluated.

Specification of Environmental Dimensions

One of the greatest problems faced in attempting to empirically investigate the relationship between individual behavior and the properties of the organizational environment is the enormous complexity of the environment itself (Selis, 19-3). This is the "what" question from above and suggests that one of the keys in the study of leader behavior may be development of a conceptual framework capable of reducing the infinite number of potentially relevant environmental dimensions to a theoretically manageable and empirically measurable few. Fortunately a number of attempts to establish such a taxonomy of organizational variables have already been made. Although a thorough review of these taxonomic studies is beyond the scope of this paper, a brief discussion of some of the most significant examples may be useful in illustrating the complexity of the problem.

As will be seen from the examples discussed below, the studies aimed at solving the taxonomic problem have themselves varied on a number of crucial dimensions Among the most important of these are (1) the degree to which they are based on empirical data as opposed to being largely conceptual, (2) the degree to which they have focused on organizational structure as opposed to more dynamic behavioral processes as a focal point for data collection, and (3) the extent to which they are descriptive of total organizations as opposed to small groups. In spite of these differences, however, a number of threads of similarity seem to have emerged in their results.

Among the taxonomic systems based on structural properties of the organization, probably the most widely referenced is that of Porter and Lawler (1965). They suggest that the particular environments experienced by organization members can be largely determined by measurement on a set of seven such structural dimensions. These are summarized by Campbell et al. (1970) as follows:

Intraorganizational

1. Hierarchical level within the organizations
2. Line versus staff
3. Span of control
4. Size of the organizational subunit to which the individual belongs

Interorganizational

5. Total size of organization
6. Organizational shape (tall versus flat)
7. Centralized versus decentralized organization (Campbell et sl., 1970, p. 396)

While this model was not empirically derived, Porter and Lawler summarize a number of studies in which statistically significant correlations were found between these dimensions and satisfaction of organization members. Admittedly satisfaction cannot be equated with differences in behavior, but at least these findings give a degree of empirical support for the validity of the model.

Pugh and a group of his associates (Pugh, Hickson, Hinnings, and Turner, 1968; Pugh, Hickson, and Hinnings, 1969) have also developed a classification system for organizational variation based on structural characteristics. These researchers collected data from field interviews with management personnel from 46 firms representing a wide spectrum of British industries. In the earlier study, Pugh et al. (1968), data from 62 items representing various aspects of organizational structure were subjected to a principal components factor analysis. Four factors accounting for more than 70% of the variance were extracted. In the more recent study, Pugh et al. (1969) describe an organizational taxonomy based on the first three of these factors: (a) the degree to which the activities of the job are structured through the standardization of procedures and roles; (b) the degree to which decision-making power is concentrated at the top of the organizational hierarchy; and (c) the degree to which the work flow is exercised by people versus impersonal procedures.

While the model is used by the authors to classify <u>organizations</u>, the assumption is nonetheless clear that the factors are descriptive of organizational

variation experience by individuals, especially those in leadership positions. It is also interesting that while their analysis began with data related to organizational structures, their factors are more descriptive of organizational processes. The significance of this distinction will be discussed further below.

A number of other studies have approached the taxonomic problem using descriptions of the behavior of organization members as a data base for the empirical identification of the dimensions of environmental variation. For example, Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964), Litwin and Stringer (1966), Schneider and Bartlett (1968), and Taguiri (1966) each specify a number of such dimensions. Campbell et al. (1970) in a comparative review of these studies points out that four factors seem to be common to each of them. Campbell et al.'s (1970) composite view of these recurring factors is as follows:

> 1. Individual autonomy. This is perhaps the clearest composite and includes the individual responsibility, agent independence, and rules orientation factors found by Litwin and Stringer, Schneider and Bartlett, and Kahn et al., respectively, and Taguiri's factor dealing with opportunities for exercising individual initiative. The keystone of this dimension is the freedom of the individual to be his own boss and reserve considerable decision-making power for himself. He does not have to be constantly accountable to higher management.
> 2. The degree of structure imposed upon the position. Litwin and Stringer's structure; Schneider and Bartlett's managerial structure; Taguiri's first factor dealing with direction, objectives, etc.; and Kahn et al.'s closeness of supervision seem similar enough to be lumped under this label. The principle element is the degree to which the objectives of, and methods for, the job are established and communicated to the individual by superiors.
> 3. Reward orientation. Another meaningful grouping includes Litwin and Stringer's reward factor; Schneider and Bartlett's general satisfaction factor, which seems to convey reward overtones; Kahn et al.'s promotion-achievement orientation;and Taguiri's being with a profit-minded and sales-oriented company. These factors do not hang together quite as well as the previous two groups and seem to vary a great deal in breadth. However, the reward element appears to be present in all.
> 4. Consideration, warmth, and support. This dimension lacks the clarity of the previous three. Managerial support from the Schneider and Bartlett study of nurturance of subordinates from Kahn et al. seem quite similar. Litwin and Stringer's warmth and support also seems to belong here since apparently this is a characteristic attributable to supervisory practice. Taguiri's mention of working with a superior who is highly competitive and competent does not fit quite so easily, but nevertheless seems to refer to the support and stimulation received from one's superior. However, the human relations referent is not as clear as in the factors derived from the other studies (1970, p. 3).

Campbell et al. (1970) also point out the striking resemblance between their first two dimensions and the structure and autonomy dimensions of the Pugh et al. (1968 and 1969) formulation. Specifically they equate the structuring of activities through standardization of procedures from Pugh et al. (1969) to their individual autonomy dimensions and the Pugh et al. (1969) concentration of decision making power at the top of the organization to their degree of structure imposed upon the position dimension. This kind of apparent convergence is most encouraging.

Probably the most thoroughly investigated taxonomic system was developed by Fiedler (1967). His formulation involves three components: (1) task structure, (2) leader position power, and (3) leader-member relations. Interestingly enough, these factors are quite closely analogous to three of the four factors proposed by Campbell et al. (1970) (individual autonomy, degree of structure, and consideration warmth and support). This is particularly significant in light of the fact that Fiedler is primarily concerned with small group research while the Campbell et al. (1970) formulation is more descriptive of the total organization.

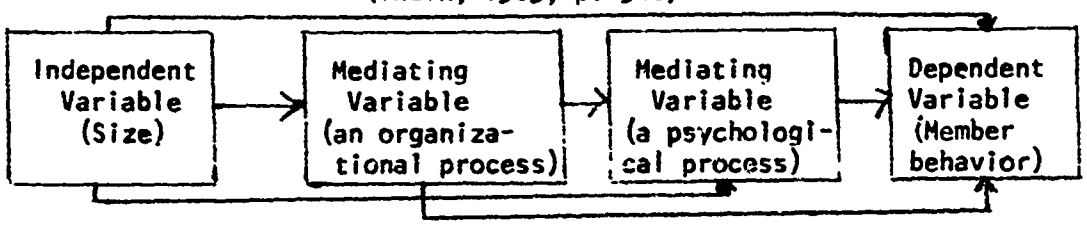
In spite of the high level of agreement between these taxonomic formulations, a word of caution is in order concerning the latter dimension. When the degree of warmth and support refers to conditions internal to a work group, there is a very real question as to whether it is a potential "cause" or an effect of leader behavior (Taylor and Bowers, in press). This potential circularity may be of little concern in those instances, such as laboratory studies, where only short run effects are of interest. For most purposes, however, the degree of interpersonal supportiveness of a situation is more appropriate when it refers to conditions external to a work group.

Level of Analysis

A comparison of the taxonomic dimensions of Porter and Lawler (1965) and the others discussed above points out rather dramatically one of the facets of the "how" question in relation to the measurement of organizational variation. It is clearly a different matter to speak of the relationship between behavior and a variable such as "span of control" as opposed to the "closeness of supervision" although it is very likely that they are measuring the same aspect of the environment. To add to the confusion still further, this same dimension could presumably be measured at still another level by asking individual supervisors about their "perceived feelings of autonomy".

An important contribution by Indik (1965) points out some of the important implications associated with these three levels of environmental measures. He proposes that organizational structure variables (e.g. size) lead to organizational process variables (e.g. attraction to other members of the organization, which in turn lead to specific behaviors (e.g. tendency to participate) [see Fig. 3].

Figure 3
(Indik, 1965, p. 340)



In order to empirically test the model, Indik (1965) partialled out the variance accounted for by organizational and psychological processes from the correlations between structural variables and behavior measures. In doing so, he found that most of the apparently significant correlations between structures and behavior measures were reduced to near zero.

These results suggest several important conclusions as well as providing

evidence for the validity of the model. One is that while structural variables may be more objective and in some cases more easily measured, they also have serious deficiencies. Principal among these is that their linkage with behavior is so indirect that the possibility of establishing firm empirical relationships is indeed remote.

Another conclusion is that of the three levels of variables, the psychological process measures of the organizational environment, or attitude-toward-the-situation in the Rokeach (1968) formulation described earlier, are the most directly related to behavior. Consequently we should expect to be able to identify relationships between behavior measures and variables more easily at this level than at either the organizational process level or at the structure level.

The usefulness of psychological process variables as measures of environmental variation is however, subject to a major methodological restriction. They can appropriately be used only in situations where potential interactions with the attributes of the individual is of no concern. The reason for this limitation, as pointed out by Forehand and Gilmer (1964) and Sells (1963), is that analysis of interaction between person and situation requires the <u>independent</u> identification of the variation in each. Thus it is <u>not</u> appropriate to use self reports as measures for both attitudes and descriptions of the situation because the interdependence between the measures would preclude the analysis of the interaction between them. Consequently, when the objective of an inquiry is to investigate the relationship of organizational <u>and</u> individual inputs as predictors of behavior, as is the case with the present analysis, the optimal solution seems to be the assessment of environmental variation at the level of organizational processes using measures independent from the individuals whose attitudes

and behavior are under study.

The Influence Process

Of the three questions posed earlier concerning the relationship between organizational variation and behavior, the one that remains is how does the influence process work? Part of the answer to this question can be found in the formulation of Indik (1965). In examining the relationship between the various levels of environmental measures, he also describes some of the key elements of this process through which the environment effects behavior. One, so basic that it may seem trivial, is that behavior is affected only through psychological processes. In the words of Forehand (1968): "the characteristics of an organization are perceived, selected and interpreted by the participant; its demands are accepted in light of the participant's motives and satisfied to the extent permitted by his abilities" (Forehand, 1968, p. 67). Thus describing the process through which the environment influences an individual's behavior involves the specification of the mechanisms through which environmental variation affects his psychological processes.

Forehand and Gilmer (1964) propose three such mechanisms through which the process may occur. These mechanisms and some examples of how they might apply to the individuals in supervisory roles in an organization are as follows:

1. Definition of stimuli. Environmental characteristics such as the structure of an organization, the implicit theories held by its management, and the nature of the task have considerable influence on the relevant stimuli which impinge on an individual in his work role. These stimuli (or lack thereof) place boundaries on the behavioral possibilities of organizational members. For example, a supervisor can not involve his subordinates in a decision about the modification of work procedures if those above him in the management hierarchy do not inform him that a change is being considered.

2. Constraints upon freedom. Some of the attributes of any situation such as the technology of the work, the rules and procedures of the organization, and the characteristics of subordinates serve to limit the autonomy of organizational leaders. For example, even though

a supervisor might be informed of a potential modification of work procedures affecting his subordinates, he might not be able to talk with them about it because of either organizational norms or specific management directives preventing him from doing so.

3. Reward and punishment. Besides influencing what sorts of stimuli will be perceived and what types of responses are permitted, the environment also specifies the reinforcement contingencies for various behaviors. For example, in an organization where innovativeness is not encouraged and mistakes are severely punished, a supervisor who would like to involve his subordinates in decision making might not do it because of the lack of incentive, in fact risks, involved in doing so.

In addition to these three mechanisms, which implicitly accept the attributes of the individual as a given, a fourth channel is suggested by a study by Litwin and Stringer (1966) and Litwin (1968). Their results indicate that organizational variation may influence an individual's behavior through the modification of the kinds of stimuli he is likely to attend to and the way he will respond to potential constraints on his freedom as well as potential rewards and punishments. This conclusion flows directly from their finding that situational differences produce striking differences in both the relative and absolute levels of basic motivational needs (n-achievement, n-power, and n-affiliation--see Atkinson, 1968) of the individual subjects in their study.

Thus situational variation is a major determinant of the variety of stimuli an individual has to respond to, the kinds of response options he has at his disposal, the consequences of various choices, and even the level of arousal of a wide range of his motivational needs.

Summary of Theoretical and Empirical Literature

A summary of studies in the literature specifically dealing with the impact of organizational inputs on leader behavior is presented in Table 3. Again, as in Table 1, the appearance of the "T" in the columns under the

heading of "Objective in Relation to Organizational Inputs" represents a major theoretical statement about the relationship in question and an "E" represents empirical measurement within that component.

In the column labeled "Situational Focus," each of the studies has been classified according to the measures of the environment that were used. The classification system draws heavily on the summary of taxonomic studies by Campbell et al. (1970) Pugh et al. (1968, 1969) and Fiedler (1967) and contains categories that closely resemble three dimensions identified in these formulations. These are labeled (1) Task-Structure (the degree to which the task allows the leader to make decisions affecting the behavior of group members), (2) Position Power (the degree to which organizational practices allow authority to make decisions affecting the behavior of group members), and (3) Interpersonal Relations (the degree to which confidence, trust, and interpersonal support are experienced by the group leader). A fourth factor, Group Composition (the characteristics of the individuals who make up the group) was added due to the fact that this dimension was used in several of the investigations repeated in Table 3.

An examination of Table 3 shows that, as in Table 1, only four studies meet the previously established criteria for analysis of the interaction of organizational and individual inputs as predictors of leader behavior (Fiedler, 1970, 1971; Frederiksen, 1966, 1968, and Frederiksen et al. in press; Michaelsen, in press; and Vroom and Mann, 1960). In addition, however, any statistically significant findings from the other studies will be of value on at least two accounts. One is that they should forcefully call to our attention the need for the inclusion of measures of environmental variation in studies of leader behavior. The other is that they should be instrumental in the development of a specific set of situational variables to be measured.

Table 3

Summaries of Studies Investigating Organizational Inputs to Leader Behavior

STUDY	Objective in Relation to Organizational Inputs: Rel. with Ind. Input	Describe	Rel. with Behavior	Re Indiv. Outcomes	Re Org. Outcomes	Situational Focus	FINDINGS	CONCLUSIONS
Doyle (1971)		TE*	TE		TE	Interpersonal **Relations	High achieved status of leaders related to more "management" remarks by leader, greater acceptance of leaders' views and high-group productivity, but lower production of ideas, less supportive behavior and more non-supportive behavior by subordinates	Assignment of high achieved status to leader is associated with both positive and negative outcomes.
Fiedler (1967) Fiedler, Obrian and Ilgen (1969) Hill (1969) Hunt (1967) Shaw (1966)	TE	TE			TE	Position Power Interpersonal Relations	In low and high favorability situations LPC correlates positively with group effectiveness. In moderate favorability situations LPC correlates negatively with group effectiveness.	Situational variables moderate the relationship between leader values and their effectiveness.
Fiedler (1970-1971)	TE	TE	TE		TE	Task Structure Position Power Interpersonal Relations	Same as Fiedler (67) plus in low favorability situations LPC correlates positively with measures of task oriented leader behavior and negatively with interpersonal oriented leader behavior. The directions of the correlations are reversed in a high favorability situation.	Situational variables moderate the relationship between leader values and their behavior effectiveness.

Table 3 continued

STUDY	Objective in Relation to Organizational Inputs: Rel. with Ind. input	Describe	Rel. with Behavior	Re Indiv. Outcomes	Re Org. Outcomes	Situational Focus	FINDINGS	CONCLUSIONS
Forehand (1968)	E	TE			TE	Position Power	Personality measures significantly related with peer ratings of creativity in Group centered but not rules centered climate	Rules centered climate restrains the manifestation of personality characteristics.
Frederiksen (1966,1968) Frederiksen et.al.(in press)	TE	TE	TE		TE	Position Power	Behavior more closely related to personality measures in consistent environment (as compared to inconsistent). Also direction of correlations between some personality measures and behaviors reversed in different climates.	Climate moderates the relationship between personality and behavior.
Harvey (1960)		TE	TE		TE	Interpersonal Relation	Amount supervisor influenced by his work group (in ambiguous-stimulus situation) varies by degree of acceptance by group.	Leaders who know they are not liked by group, hesitate to express deviant opinion fearing greater dislike.
Haythorne et.al.(1956)	E	TE	TE		TE	Group Composition	High F-scale groups less effective and behavior of emergent leaders more directive than low F-scale groups	Different kinds of leader behavior result from high or low F-scale leaders and group members.

Table 3 continued

STUDY	Objective in Relation to Organizational Inputs: Rel. with Ind. Input	Describe	Rel. with Behavior	Re Indiv. Outcomes	Re Org. Outcomes	Situational Focus	FINDINGS	CONCLUSIONS
House et.al (1971)		TE	E		TE	Task Structure	Correlation level and directions between leader "structure" and "consideration" scores, subordinate performance ratings and satisfaction are moderated by subordinate job scope, autonomy and role ambiguity.	Aspects of subordinate task moderate the relationship between leader behavior and subordinate satisfaction.
Litwin (1968) Litwin and Stringer (1966)		TE	E		TE	Position Power	Over 3 week experimental period, N-achievement significantly increased in achievement oriented climate. Productivity and satisfaction high in achievement oriented climate satisfaction high in people oriented climate	Behavior of leaders affects climate which in turn modified the need structure of organizational members.
Mechanic (1967)		T	T		T			Supervisors will be more participative when subs are high in expert power and/or are hard to replace.

Table 3 continued

STUDY	Objective in Relation to Organizational Inputs: Rel. with Ind. Inputs	Describe	Rel. with Behavior	Re indiv. Outcomes	Re Org. Outcomes	Situational Focus	FINDINGS	CONCLUSIONS
Meyer (1968)		TE	T		TE		Six dimensions of organizational climate identified from factor analysis consistent differences between a high producing and low producing departments in two General Electric Plants	Organizations "climates" measures based on questionnaire data appear to have concurrent validity.
Michaelsen (in press)	TE	TE	TE		TE	Interpersonal Relations	Same as Fiedler 70,71	Same as Fiedler 70,71
Misumi and Seki (1971)		TE	TE		TE	Group Composition	Differences identified in most effective patterns of supervision for high and low n-achievement subordinate groups in experimental study	Characteristics of subordinates interacts with leadership style in prediction of productivity.
Morse and Reimer (1956)		TE	TE		TE	Position Power	Productivity increases occurred in both high and low autonomy groups while satisfaction increased for the high autonomy groups and decreased for the low autonomy groups.	Short term productivity increase in low autonomy climate are achieved at large cost to human organization.
Peirce (1970)		TE	TE			Task Structure Group Composition	Structure (LBDQ) correlates positively and consideration (LBDQ) correlates negatively with low tenure, high cohesiveness, and high task interdependence	Properties of the group elicit specific behaviors from leaders.

Table 3 continued

STUDY	Objective in Relation to Organizational Inputs: Rel. with Ind. input	Describe	Rel. with Behavior	Re Indiv. Outcomes	Re Org. Outcomes	Situational Focus	FINDINGS	CONCLUSIONS
Scheff (1961)		T	TE		TE	Task Structure	Observed different types of interactions between doctors and attendants in mental hospital over time.	When supervisors are dependent on subordinates results in sharing of decisions and responsibilities by supervisor.
Tagiuri (1968)		TE					Factor-analysically identified five dimensions of executive (top management only) climate.	Effects of executive climates should be studied
Vroom and Mann (1960)	TE	TE	TE		TE	Task Structure	Correlations between supervisor F-scale scores and subordinate ratings of participativeness negative in one situation but positive in another. Exactly opposite relationship found between F-scale scores and degree to which supervisors pressured subordinates for production	Questions validity of subordinates perceptions of supervisor behavior

* T = Theoretical statement about relationship to organizational inputs
E = Measurement of organizational inputs

** See page 31 for definitions of these classifications

A comparison of the contents of Table 3 and Table 1 at a very general level reveals several differences. The most obvious difference is in the number of studies in each. In its present form Table 1 contains about four or five times as many study summaries as Table 3. In addition, if the research on leadership traits had been included as well, the difference would have been more than twice as great. Unfortunately this comparison reflects, in the opinion of the present writer, rather accurately the relative over-emphasis on the part of leadership researchers on individual inputs and a lack of attention to situational variation. The other difference has to do with the "success rate" of the studies in the two tables. The relationships between individual inputs and leader behavior and/or organizational outcomes reported in Table 1 seldom achieved statistical significance and even less frequently achieved practical significance. An examination of the results of the studies reviewed in Table 3 suggests an entirely different picture. In virtually every study either significant relationships were found between organizational inputs and leader behavior and/or organizational outcomes, or organizational variation was found to significantly moderate the relationship between leader behavior and some other component of the model (see Figure 1). While these differences may be due to many factors such as differences in the level of phenomenon under consideration and selection bias by the present author, they should at least point out the potential danger involved in failing to take the situation into account in studies of leader behavior.

With this background in the "what", "how", and "why" of effects of situational variation, we will now examine more closely the interactions between individual and situational inputs as determinants of leader behavior.

INDIVIDUAL AND ORGANIZATIONAL INPUTS -- INTERACTION EFFECTS

In the preceding pages it has been pointed out that students of both attitudinal effects on behavior and of situational effects on behavior agree on the importance of simultaneous measurement of personal and situational variables in studies of leader behavior. Unfortunately, however, neither group seems to have taken themselves very seriously. As was pointed out earlier, only four of the studies reviewed thus far have (1) included measures of both individual and organizational variation and (2) specifically investigated the possibility of person-situation interactions. In the next few pages, these four studies will be reviewed in some detail and their findings compared using the framework provided by Fiedler (1970, 1971).

Fiedler

The work of Fiedler and his associates at the University of Illinois and later at the University of Washington is the only sustained research program in which situational variables, along with attributes of leaders, have been seriously considered in the determination of leader behavior. Their "contingency model," described in detail elsewhere (Fiedler, 1967, 1971) postulates an interactive relationship between an environmental dimension called "situational favorableness" and a motivational-personality attribute of leaders measured by "least preferred coworker" (LPC) scores.

Situational favorableness, as pointed out earlier, is determined by measures of three dimensions of the work group environment. The most important of these is thought to be leader-member relations. This aspect of the environment is generally assessed by means of the leader's or group members' responses to ten to twenty semantic differential scales used to rate the concept of "group atmosphere". The degree of group task-structure, the next most important component of the model, is measured by ratings on a set of four scales developed by Shaw (1963). The remaining dimension, the degree to which the leader is

endowed with position power by virtue of the rewards and sanctions which he has at his disposal is measured by ratings on an 18-item check list filled out by an independent judge. The overall situational favorableness level for a given group is determined by combining the scores on each of the three component dimensions.

Least preferred coworker (LPC) scores are determined by asking leaders to think of everyone with whom they have worked on a common task and to describe the one individual they have found it most difficult to work with. These descriptions are obtained with the same ten to twenty item semantic differential scales used to assess "group atmosphere". High LPC leaders--those who describe their least preferred coworker in very favorable terms--are thought to place greater value on "relatedness" with people, while low LPC leaders, who describe their least preferred coworker in very unfavorable terms, are seen as being more motivated by task achievement. Fiedler further maintains that LPC is tapping a basic personality dimension "...expressed in various goal-seeking behaviors that the individual sees as rewarding or necessary for his emotional well-being" (1971, p. 10).

The contingency model was originally from data gathered from over 800 groups in a wide variety of institutional settings and has generally been supported in a number of validation studies (e.g., Fiedler, 1966; Shaw, 1968; Michaelsen, in press). Initially the model dealt only with the relationship between LPC and group productivity and numerous attempts to link leaders' LPC scores with their behavior generally failed to isolate significant relationships. More recently, however, the model has been modified to include propositions about leader behavior as well.

In his latest publications Fiedler (1970 and 1971) presents a conceptual framework in which, as in earlier writings, an individual's LPC scores repre-

sents the relative priority of his needs for "relatedness" or "task-achievement." In unfavorable situations, according to the updated model, leaders will be motivated by the more basic of these two needs, whereas in more favorable situations where the primary need will presumably have been met, they will be motivated by the other, more secondary need. In other words, this interpretation suggests that a leader's LPC score is a measure of one of his "lower order needs," if, indeed, an analogy to Maslow's classical model is appropriate, that "once satisfied is no longer a motivator" (1943).

Consequently, according to this model, we should expect the following: (a) leaders who express a greater concern for interpersonal relationships to behave very differently than those who express more concern for task achievement; (b) a direct translation of these task and relatedness needs into behavior in an unfavorable situation; and (c) an inverse relationship between need orientation and behavior in a favorable situation. Data supporting these assertions have been presented by Fiedler (1970, 1971), and by Michaelsen (in press) in an independent study will be discussed in more detail below.

While the contingency model has been generally well received by the social science community, a number of serious questions have been raised with regard to the adequacy of some specific aspect of its measurement methodology. For example several authors (e.g., Lesage 1971, Michaelsen, in press, and Yukl 1970) have directly questioned the use of LPC scores on the grounds that a domain as multidimensional and complex as an individual's value and attitude structure can not be efficatiously measured using a bipolar, unidimensional scale such as LPC. Furthermore, these critics are firmly supported in their censure of LPC by a large number of studies in which multiple dimensions of leader behavior and attitudes have been identified (Blake and Mouton 1964 and 1969, Kahn 1958, and Korman 1968).

Another criticism of LPC scores is that they are to some degree dependent on environmental variation. This seems to be a particularly serious problem in light of the fact that scores on "group atmosphere" component of situational favorability as well as LPC scores are frequently based on responses of the same individuals. Consequently an anlysis of the degree of interaction between them in not appropriate (Sells 1963). In at least one empirical study (Muller 1970) LPC has also been found to be at least partially determined by an objectively measured environmental variable while other attitude and value measures including Leadership Opinion Questionnaires, (LOQ) scores were not.

Another group of critics of the Fiedler methodology have focused their attacks on the procedures used to determine the levels of situational favorability. The point of greatest concern, as stressed by Campbell et al. (1970), Graen et al. (1970) and Mitchell (1970), is the practice of post hoc weighting of its three components. Graen et al. (1970) are particularly outspoken on this issue. They state "...the model prescribes that we should continue to search for additional homogenizing variables until our results converge upon those specified by the model. Once we have discovered the additional variable or variables that produce the "meaningful" partitions (our results converge upon those predicted by the model), we should discontinue our search, and proclaim empirical support for the model" (1970, p. 295).

In spite of the fact that the mechanics of the contingency model have received a great deal of criticism, the model itself has without question made several significant contributions to the study of leadership. One of the most important has been the establishment of the importance of situational variation in studies of leader behavior. In addition, the "need hierarchy" formulation of the model is the only existing conceptual framework which explicitly

prescribes an expected relationship between individual and organizational variables as predictors of leader behavior. Probably the greatest tribute to the model, however, is the number of studies that have been specifically addressed to the concepts that it identifies.

Michaelsen

One of the investigations validating the "need hierarchy" formulation of the contingency model, as mentioned above, is that of Michaelsen (in press). The data used in his study were collected from 119 work groups from the production and maintenance departments of a metal fabricating plant. In accordance with the contingency model, the groups were divided into high, medium, and low situational favorability conditions. These divisions were based solely on the "leader-member relations" component of the model and were trusted by their supervisor and the degree to which they, in turn, trusted and were satisfied with him. It was assumed that the other two components of situational favorability, task structure and leader position power were relatively constant across groups.

Leader-orientation scores were obtained through the use of a self-report questionnaire which was filled out by the supervisors of each of the groups. The items in the questionnaire were designed to measure the extent to which the supervisors agreed or disagreed with a number of statements about the way in which supervisors should behave. A hierarchical cluster analysis (Kulik, Revelle and Kulik, 1970) of the supervisor self-report data yielded several statistically independent scales, two of which were used in the study. One of these scales contained a series of items having to do with the supervisors interpersonal relations orientations (e.g., "The good manager must pay as much direct attention to keeping people working together as he does to seeing that the task gets done.") This scale

was labeled Human Relations. The other scale was made up of items more directly concerned with the task and the formal organizational structure (e.g., "The most effective way to get people motivated and committed to a job is to instruct, direct, and use appropriate rewards and penalties."). The name attached to this scale was Theory X. In order to approximate LPC, a difference score was obtained by subtracting each supervisor's Theory X score from his Human Relations score. This procedure resulted in a single set of scores on a unidimensional scale called FP-Human Relations (forced preference-human relations). The FP-Human Relations scores were then correlated with subordinate descriptions of the degree to which supervisors engaged in interpersonally supportive behavior and behavior seen as unreasonable pressure for production, as a test of the contingency model.

When the results from the three situational favorability conditions were analyzed, it was found that (a) interpersonal supportive behavior ratings were correlated positively with FP-Human Relations scores in low favorability groups and negatively correlated with FP-Human Relations scores in high favorability groups, while (b) supervisors' pressure for production behavior ratings were correlated negatively with FP-Human Relations scores in low favorability groups and positively with FP-Human Relations scores in high favorability groups. In other words, supervisors' expressed value preferences were found to be <u>directly</u> related to their behavior in unfavorable situations and <u>inversely</u> related to their behavior in favorable situations. Thus the findings of this study are clearly consistent with predictions based on the "need hierarchy" formulation of the contingency model.

In addition, the significance of this study as validation for the model is underscored by the fact that the predictions based on the model were confirmed despite the use of an entirely unique set of independent, dependent, and control variables.

Vroom and Mann

Vroom and Mann (1960) also investigated the relationship between authoritarian values of supervisors and their behavior on the job. The data used in their study were collected from 28 geographically separated operating stations of a national parcel delivery firm. The employees at each station were divided into two distinct types of work units: (a) drivers and (b) positioners. They describe these work units as follows:

> (1) Drivers
> Drivers report to work at 8:30 A.M. and are assigned their trucks and routes and given any special instructions for the day. By 9:00 all drivers have left with their day's load. Each drives a relatively fixed route to deliver his parcels. When he returns to the station in the afternoon, he turns in his C.O.D. money, returns parcels, tells his supervisor about any special problems and then leaves for the day.
> There are 30-50 drivers assigned to each station, each of whom reports directly to the station manager. One driver is assigned to each truck and he is paid on an individual piece rate basis. The nature of the work restricts interaction among drivers and between drivers and their station manager to a few minutes at the beginning and end of the day.
>
> (2) Positioners
> Positioners are responsible for raking the parcels from a continuous conveyor belt and positioning them on shelves corresponding to an appropriate truck route. There are 8-10 men in a crew. They work on both sides of the conveyor belt to position packages for about 30-50 routes. The positioning of packages takes about 3 to 4 hours after which the positioners make up a list of all the packages for each driver and then lead the packages on the trucks. When everyone is through leading his trucks, the positioners are done. The team arrives to work about 11:30 P.M. and leaves around 8:30 A.M. to 9:00 A.M. Unlike the drivers, positioners are paid on a group incentive plan based on a standard rate for the number of pieces per hour. There is a great deal of interaction among positioners and between positioners and their night supervisor who works along side of them throughout the entire operation (1960, p. 127).

The behavior measures used in the study were subordinate ratings of the degree to which their supervisors (a) allowed them to participate in decision-making and (b) pressured them for higher production. Supervisors' value orientations were measured through the use of a version of the F-scale (Adorno, Frenkel-Brunswik, Levinson, and Sanford, 1950).

When supervisors' F-scale scores were correlated with the behavior measures, it was found that in the positioners groups, supervisor authoritarianism was negatively correlated with participative behavior and positively correlated with pressure for production. In the drivers groups, however, supervisor authoritarianism was positively correlated with participative behavior and negatively correlated with pressure for production.

In their interpretation of these results, the authors state, "If the perceptions of drivers and positioners are assumed to be veridical, it follows that authoritarian leaders behave in very different ways in the two situations. However, this is not a necessary conclusion" (1960, p. 132). They then suggest that this apparent discrepancy between supervisors' authoritarian values and their behavior resulted from measurement error in the behavior ratings either due to the assignment by subordinates of socially desirable characteristics to well-liked supervisors, or to differential personality needs of members of the driver and positioner groups.

A re-examination of these data using the contingency model as a point of reference, however, suggests that the principle findings from this inquiry very nearly parallel those of Fiedler (1970, 1971) and Michaelsen (in press). Specifically, all three investigators found that leaders' value orientation scores were directly related to measures of their behavior in one setting, but inversely related in another setting. Further comparison of these studies requires a closer examination of the similarities and differences in the way the settings were defined. In the two inquiries based on the contingency model, the settings were empirically defined in terms of the degree of situational favorability using the criteria of (a) leader-member relations, (b) task structure, and (c) leader position power. In the Vroom and Mann study, the settings for the two groups were defined by the nature of the tasks in which the two

groups were engaged. Unfortunately it is not possible to make a post hoc situational favorability classification of the driver and positioner groups of the Vroom and Mann (1960) study, since leader-member relations, if measured at all, was not reported.

One major difference between the two groups is nonetheless apparent using the definitions provided by the contingency model. This difference is in the leader position power dimension, which according to the model, is the degree to which the leader controls rewards and sanctions available to group members. In the Vroom and Mann study, the greater amount of position power appears to have been held by the supervisors of the drivers groups for several reasons.

The drivers groups were (a) supervised by the station manager; (b) paid on an individual piece rate basis while, at the same time, dependent on the station managers for assignments of routes and equipment; (c) handicapped in their ability to exert group pressure on the station managers as a group because the groups were so large (30-50 drivers per group), contact with other group members was minimal (less than one-half hour per day), and group members were in competition with each other because of the incentive system. The night supervisors' position power, on the other hand, appears to have been limited in that (a) they were subordinate to station managers; (b) they worked side by side with the positioners and consequently were "one of the boys;" and (c) the positioners could presumably exert a great deal more group pressure on them because of their close contact, plus the fact that a number of important characteristics of the work setting were conducive to the formation of cohesive groups (e.g., small size, high level of interaction, group incentive payment,etc.)

To the extent that these differences in position power were associated with a more favorable situation for the supervisors of the driver groups, the results of the Vroom and Mann (1960) investigation can also be interpreted as

direct empirical support for the general thesis of the contingency model. If, on the other hand, the interpretation offered by Vroom and Mann of their results is correct, future studies should include measures of leader behavior other than, or at least in addition to, subordinate descriptions.

Frederiksen

The remaining study in which both individual and organizational inputs were measured was conducted in a laboratory setting by Frederiksen and several colleagues (Frederiksen, 1966, 1968; Frederiksen et al., in press). The subjects in this study were 260 middle managers employed by the state of California who worked through an In-basket Test designed to stimulate the job of the head of an imaginary department within the state government. The individual inputs measures in the study were 21 scales identified from a factor analysis of subjects' responses on a series of psychological tests and biographical questionnaire items. These scales were treated as predictors of the subjects' behavior in the In-basket Test.

The impact of organizational inputs on the subjects in the study was controlled through their assignment of one of four climate conditions arranged in a 2 x 2 design. One of the dichotomized dimensions in this design was the general prevalence of "rules and regulations." In this dimension, subjects were either told that rules existed but that they could be broken if they got in the way, or that a body of rules had been built up over the years, had proven valuable, and should not be broken except in extreme circumstances. The other treatment dichotomy was concerned with the closeness of supervision. The subjects in this condition were told either that the organization preferred subordinate work to be closely monitored, or that subordinates should be

allowed to work out details of their work for themselves. In addition to the row and column effects of these two dichotomies, the interaction effects were investigated by combining the groups in the diagonals of the 2 x 2 design. This resulted in a consistent climate condition (innovation + general supervision and rules orientation + close supervision) and an inconsistent climate condition (innovation + close supervision and rules orientation + general supervision).

Behavior scores for the supervisors participating in the In-basket Test were obtained on a large number of factor analytically defined behavioral categories such as "makes plans only," "takes leading action," and "requires further information." When these behavior measures were correlated with the 21 individual input predictor measures in each of the climate conditions, a number of significant relationships were found. The general conclusion from this phase of the analysis was that performance was more predictable for subjects who worked in a consistent climate than for those who had to operate in an inconsistent environment.

The data were also analyzed in a three-mode factor analysis to directly investigate the nature of the interactions between the organizational input, individual input, and behavioral variables. This analysis produced a number of interpretable item factors (sets of In-basket items), performance factors (sets of behaviors), and person factors. In this phase of the analysis the principal finding was that the person factor (cluster of individuals who are alike in demonstrating similar relationships between item factors and performance factors) structure was markedly influenced by organizational climate in that the correlations between person-factor scores and individual input predictor scores differed from one climate condition to another. In a summary statement of the findings form the three-mode factor analysis, Frederiksen et al. point out that

> Inspection of individual coefficients reveals, for example, that in the rules climate a high score on Inductive Reasoning [an individual input measure] is associated with a tendency to adopt the program-centered administrative style, but in the innovation climate the direction of the relationship is reversed, [and that] successful staff officers [based on responses on biographical items] tend to adopt a superior-oriented managerial style in the innovative climate, but ineffective junior managers [again, based on responses to biographical questions] are the ones most likely to adopt a superior-centered style in a rules climate" (in press).

Although any direct comparison of the findings of this study and those of Fiedler (1970, 1971), Michaelsen (in press), and Vroom and Mann (1960) is severely limited by the differences in the level of individual input measures used by Frederiksen et al., the findings of this study seem to be consistent with those discused earlier. Specifically, one similarity is the finding from the three-mode factor analysis that different types of people exhibit the same behavior patterns under different circumstances. In addition the conclusion that the behavior of leaders is more predictable from individual input measures in consistent climate conditions than in inconsistent climate conditions, also parallels the expectation that situational variation moderates the relationship between individual inputs and behavior. Consequently, these findings also provide additional, although very tentative, support for the general thesis of the "need hierarchy" formulation of the contingency model.

How adequate is the model?

Up to this point it has been argued that the findings of the Michaelsen (in press), Vroom and Mann (1960), and Frederiksen (1966, 1968; Frederiksen et al. in press) studies are consistent with the "need hierarchy" formulation of the contingency model. This is true, however, at only a very approximate level. The data from these studies indicate, as predicted by the model, that the relationship between characteristics of individuals and their behavior is reversed in differing situations.

It can easily be argued, on the other hand, that the only reason for the "success" of the model in predicting the outcomes of these studies is that its measurement prescriptions were not applied to either personal or environmental variation. For example, while the Fiedler formulation specifies that situational favorability is to be determined by variation on three component dimensions, the environmental differences observed in each of these studies occurred in only one dimension. In addition, the specific component on which variance occurs is apparently of very little importance, as differences in leader-member relations (Michaelsen), position power (Vroom and Mann, Frederiksen), and task structure (Fiedler, 1970) all seem to have equally potent effects.

The problems are very nearly as great with regard to variation in the personal domain. The same general effects are reported when individual variation is measured using scores on LPC (Fiedler), FP-Human Relations (Michaelsen), F-scales (Vroom and Mann) and a set of factor analytically defined scales based on aptitude, interest and personality tests and biographical data (Frederiksen). Consequently we are forced to accept the highly unlikely assumption that all of these measures tap the same underlying dimensions of personality or conclude that the model inadequately describes the individual domain as well.

SUMMARY AND IMPLICATIONS

At the risk of being facetious, presumptuous, or both let us try to summarize what we know about leader behavior as a dependent variable in four brief statements:

(1) Leader behavior is a product of the interaction of personal and situational variation.

(2) Leader behavior is directly related to some personal variables in some situations and inversely related in some other situations.

(3) Some of the personal variables and some of the situations have been identified.

(4) In order to add to our knowledge about these relationships, future studies must measure or control the variation in both the individual and organizational domains.

Unfortunately, these conclusions tell us more about the task that lies before us than they do about the questions that have already been answered. Thus, the most important question is what do the studies tell us about how to look for answers?

One of the ways to approach the problem of describing the interaction between individual and organizational variation offered by Forehand (1968), is through the use of computer simulations. In addition, there are a number of more basic methodological practices that would undoubtedly increase the value of the results of future studies. One of the most important of these is simply to seriously consider the findings and the methodology of related studies before beginning a new one. For example, one way to capitalize on previous work is to use standardized instruments across studies. In fact the establishment of empirical relationships between the measures already in existence would be of great value.

Our greatest methodological failure to date, however, is evidenced by

the existence of only four studies of leader behavior that have included simultaneously measured individual variation in spite of the fact that literally dozens of writers have pointed out the potentially great returns in doing so. The use of tried and tested measures in either the individual or the situational domain alone will continue to be relatively fruitless. It is simply not possible to study person-situation interactions without obtaining measures of both.

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BIBLIOGRAPHY

Adorno, T., Frenkel, Brunswik, E. Levinson, D., and Sanford, R.N. The Authoritarian Personality. New York: Harper & Brothers, 1950.

Anderson, L.R. Leader behavior, member attitudes, and task performance of intercultural discussion groups. Journal of Social Psychology, 1966, 69, 305-319.

Atkinson, J.W. Motives in Fantasy, Action, and Society. Princeton, N.J.: D. Van Nostrand Co. Inc., 1958.

Atkinson, J.W. An Introduction to Motivation. Princeton, N.J.: D. Van Nostrand Co., Inc., 1964.

Auclair, G.A., Read, W.H. Unpublished study. Attitudes of French and English Canadians toward industrial leadership: A cross-cultural comparison of management personnel in large industrial organizations and small business firms and students in schools in business, 1966.

Bass, B.M. Leadership opinions as forecasters of supervisory success. Journal of Applied Psychology, 1956, 40, 345-346.

Bass, B.M. Leadership opinions as forecasters of supervisory success: A replication. Personnel Psychology, 1958, 11, 515-518.

Bass, B.M. How to succeed in business according to business students and managers. Journal of Applied Psychology, 1968, 52, 254-262.

Bem, D.J. Beliefs, Attitudes and Human Affairs. Belmont, California: Brooks, 1970.

Bentz, V.J. The Sears experience in the investigation, description, and prediction of executive behavior. In F.R. Wikert and D.E. McFarland (Ed.), Measuring Executive Effectiveness, New York: Appleton-Century-Crafts, 1967.

Bentz, V.J. Research toward the development of a multiple assessment program for executive personnel. Paper presented at the annual meeting of the American Psychological Association, Los Angeles, September 1963.

Berlfein, M.P. Effects of Personal Values on Managerial Behavior and Attitudes. Unpublished dissertation, Colorado State University, 1968.

Bernthal, W.F. Value perspectives in management. The Journal of the Academy of Management, 1962, 5, 190-196.

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

Blake, R.R. and Mouton, J.S. Building a Dynamic Corporation Through Grid Organization Development. Reading, Mass.: Addison-Wesley Publishing Company, 1969.

Bowers, D.G. Perspectives in organizational development working paper. Ann Arbor, Michigan: Center for Research on Utilization of Scientific Knowledge, 1971.

Boynton, R. Management Theory and Effectiveness. Unpublished dissertation Stanford University, 1967.

Bray, D.W. Approaches to Management Development research. Paper presented at the annual meeting of the American Psychological Association, New York, September 1962.

Breer, P.E., and Locke, E.A. Task Experience as a Source of Attitudes. Homewood, Ill.: Dorsey, 1965.

Butterfield, D.A. An Integrative Approach to the Study of Leadership Effectiveness in Organizations. Unpublished dissertation, University of Michigan, 1968.

Campbell, J.P., Dunnette, M.D., Lawler, E.E., and Weick, K.E. Managerial Behavior, Performance and Effectiveness. New York: McGraw Hill, 1970.

Doyle, W.J. Effects of achieved status of leader on productivity of groups. Administrative Science Quarterly, 1971, 16, 40-50.

England, G.W. Organizational goals and expected behavior of American Managers. Academy of Management Journal, 1967, 10, 33-68.

England, G.W. and Koike, R. Personal Value systems of Japanese managers. Journal of Cross-Cultural Psychology, 1970, 1, 21-40.

Festinger, L. A theory of Cognitive Dissonance. Stanford, California: Stanford University Press, 1957.

Festinger, L. Behavioral support for opinion change. Public Opinion Quarterly, 1964, 28, 404-405.

Fiedler, F.E. A Theory of Leadership Effectiveness. New York: McGraw Hill, 1967.

Fiedler, F.E. Personality motivational systems and behavior of high and low LPC persons. Technical report, Office of Naval Research, 1970.

Fiedler, F.E. Leadership, New York: General Learning Corp., 1971

Fiedler, F.E., Obrien, B.E. and Illgen, D.R. The effect of leadership style upon the performance and adjustment of volunteer teams operating in a successful foreign environment. Human Relations, 1969, 22, 503-514.

Fishbein, M., Landy, E., and Hatch, G. A consideration of two assumptions underlying Fiedler's contingency model for prediction of leadership effectiveness. American Journal of Psychology, 1969, 82, 457-473.

Fleishman, E. A leader behavior description for industry, in R. Stagdille and A. Coons, (Eds.) Leader Behavior: Its Description and Measurement. Columbus, Ohio State University: Bureau of Business Research Monograph No. 88, 1957, 103-119.

Fleishman, E.A., and Peters, D.R. Interpersonal values, leadership attitudes, and 'managerial success'. Personnel Psychology, 1962, 15, 127-144.

Fleishman, E. Leadership climate, human relations training and supervisory behavior. Personnel Psychology, 1953, 6, 205-222.

Forehand, G.A. On the interaction of persons and organizations. In R. Taguiri and G.W. Litwin, (Eds.), Organizational Climate: Explorations of a Concept, Boston: Harvard University Press, 1968.

Forehand, G.A. and Gilmer, B.U.H. Environmental variation in studies of organizational behavior. Psychological Bulletin, 1964, 62, 361-382.

Frederiksen, N. Some effects of organizational climates on administration performance. Research Memorandum RM-66-21, Educational Testing Service, 1966.

Frederiksen, N. Administrative performance in relation to organizational climate. Paper presented at a symposium on "Measuring managerial Effectiveness," American Psychological Association, San Francisco, 1968.

Frederiksen, N., Jensen, O., and Beaton, A. (with a contribution by B. Bloxom). Prediction of Organizational Behavior. Pergamon, in press.

Georgopoulos, B.S., Mahoney, G.M., and Jones, M.W., Jr. A path-goal approach to productivity. Journal of Applied Psychology, 1957, 41, 345-353.

Gouldner, A.W. Patterns of Industrial Bureaucracy. Glencoe, Ill: Free Press, 1954.

Graen, Alvares, K., Orris, J.B., and Martella, J.A. Contingency Model of leadership effectiveness: Antecedent and evidential results. Psychological Bulletin. 74, 285-296.

Haire, M., Ghiselli, Porter, L.W. Managerial Thinking. New York: Wiley, 1966.

Harrison, R. Sources of variation in managers job attitudes. Personnel Psychology. 1960, 13, 425-434.

Harvey, C.J. Reciprocal influence of the group and three types of leaders in an unstructured situation. Sociometry, 1960, 23, 57-68.

Haythorne, W., Couch, A.S., Haefner, D., Laughem, P. and Carter, L.F. The behavior of authoritarian and equalitarian personalities in groups. Human Relations, 1956, 9, 57-74.

Hill, W. The validation and extention of Fiedlers' theory of leadership effectiveness. Academy of Management Journal, 1969, 33-47.

Hollander, E.P. Style, structure and setting in organizational leadership. Administrative Science Quarterly, 1971, 16, 1-9.

House, R.J. A path-goal theory of leader effectiveness. Administrative Science Quarterly, 1971, 16, 321-338.

Hunt, J.G. A test of the leadership contingency model in three organizations. Organizational Behavior and Human Performance, 1967, 2, 290-308.

Indik, B.P. Organizational size and member participation: some tests of alternative explanations. Human Relations, 1965, 18, 339-350.

Kahn, R.L. The prediction of productivity. Journal of Social Issues. 1956, 12, 41-49.

Kahn, R.L., Wolfe, D.M., Snoek, J.D. and Rosenthal, R.A. Organizational Stress: Studies in Role Conflict and Ambiguity. New York: Wiley, 1964.

Katz, D. and Kahn, R.L. The Social Psychology of Organizations. New York: John Wiley and Sons, 1966.

Kelman H.C. Compliance, identification, and internalization: Three processes of attitude change. Journal of Conflict Resolution, 1958, 2, 51-60.

Kirkpatrick, D.L. Techniques for evaluating training programs, III. Journal of the American Society of Training Directors, 1960, 14, 13-18.

Kirkpatrick, D.L. Techniques for evaluating training programs IV. Journal of the American Society of Training Directors, 1960, 14, 28-32.

Kirkpatrick, J.J. How to select a Chamber of Commerce executive. Journal of American Chamber of Commerce Executives, 1961, 10, 2-6.

Kirkpatrick, J.J. Five-year follow-up study of the American Chamber of Commerce standard application for employment form. Prepared for American Chamber of Commerce executives, Washington, April, 1966.

Knowles, H.P. and Saxberg, B.O. Personality and leadership Behavior. Reading, Mass.: Addison-Wesley Publishing Company, 1971.

Korman, A.K. "Consideration", "Initiating structure," and organizational criteria - a review. Personnel Psychology, 1966, 19, 349-361.

Kulik, J.A., Revelle, W.R. and Kulik, C.L.C. Scale construction by hierarchical cluster analysis. Unpublished manuscript, University of Michigan, 1970.

LaPiere, R.T. Attitudes vs. Actions. Social Forces, 1934, 13, 230-237.

Laurent, H. Summary report of the early identification of Management potential research project in Standard Oil Company (New Jersey) and affiliated companies, SONJ, Social Science Research Division, 1961.

Laurent, H. The validation of aids for the identification of management potential. SONJ, 1962.

Laurent, H. EIMP applied to the International Petroleum Co., Technical Report, 1966.

Lawler, E.E., and Porter, L.W. Antecedent attitudes of effective managerial performance. Organizational Behavior and Human Performance, 1967, 2, 122-142.

Lawler, E.E., and Porter, L.W. Performance as a determinant of job satisfaction. Industrial Relations, 1967.

Lawler, E.E. Ability as a moderator of the relationship between job attitudes and job performance. Personnel Psychology, 1966, 19, 153-164.

Levinson, D.J. Role, personality , and social structure in the organizational setting. Journal of Abnormal and Social Psychology, 1959, 58, 170-180.

Lesage, P. Dimensions of managerial attitudes toward superior-subordinate relationship: A review of the literature. Unpublished manuscript, University of Michigan, 1972.

Lewin, K. A Dynamic Theory of Personality. New York: McGraw Hill, 1935.

Lewin, K., Lippitt, R., and White, R.K. Patterns of Agressive behavior in experimentally created "social climates" Journal of Social Psychology, 1939, 10, 271-311.

Lieberman, S. The effects of changes in roles on the attitudes of role occupants. Human Relations, 1950, 9, 385-403.

Likert, R. The Human Organization: Its Management and Value. New York: McGraw Hill, 1967.

Likert, R. New Patterns of Management, New York: McGraw Hill, 1961.

Lippitt, R. An Experimental study of the effect of democratic and authoritarian group atmospheres. University of Iowa Studies in Child Welfare. 1940, 16, 43-195.

Litwin, G.W. Climate and motivation: an experimental study. In R. Tagiuri and G.W. Litwin (Eds.), Organizational Climate: Explorations of a Concept, Boston: Harvard University Press, 1968.

Litwin, G.H. and Stringer, R. The influence of organizational climate on human motivation. Paper presented at a conference on organizational climate, Foundation for Research on Human Behavior, Ann Arbor, Michigan, March 1966.

Litzinger, W.D. Interpersonal values and leadership attitudes of branch bank managers. Personnel Psychology, 1965, 18, 193-198.

McClelland, D.C. The Achieving Society. Princeton, N.J.: Von Norstrand, 1961.

McGregor, D. The Professional Manager. New York: McGraw Hill, 1967.

McGregor, D. The Human Side of Enterprise. New York: McGraw Hill, 1960.

Maslow, A.H. A theory of human motivation. Psychological Review, 1943, 50, 370-396.

Mahoney, T.A., Jerdee, T.H., and Carroll, S.J. Development of Managerial Performance: A Research Approach. Cincinnati: South-Western, 1963.

Mahoney, T.A., Jerdee, T.H., and Nach, A.N. Predicting Managerial effectiveness. Personnel Psychology, 1960, 13, 147-163.

Mahoney, T.A., Sorensen, W.W., Jerdee, T.H., and Nash, A.N. Identification and prediction of managerial effectiveness. Personnel Administration, 1963, 26, 12-22.

Maslow, A.H. Motivation and Personality. New York: Harper and Row, 1954.

Maslow, A.H. Eupsychian Management. Homewood, Ill: Dorsey, 1965.

Mechanic, D. Sources of power of lower participants in complex organizations. Administrative Science Quarterly, 1962, 7, 349-364.

Merton, R.K., Bray, A.P., Hocky, B., and Selvin, H.C. Reader in Bureaucracy. Glencoe, Ill.: Free Press, 1957.

Meyer, H.H. Achievement motivation in industrial climates. In R. Tagiuri and G.W. Litwin, (Eds.), Organizational Climate: Explorations of a Concept. Boston: Harvard University Press, 1968.

Michaelsen, L.K. Leader orientation, leader behavior, group effectiveness, and situational favorability: An empirical extension of the contingency model. Organizational Behavior and Human Performance, in press.

Miles, R. Conflicting Elements in Managerial ideologies. Industrial Relations, 1964, 4, 77-91.

Misumi, J. and Seki, F. Effects of achievement motivation on the effectiveness of leadership patterns. Administrative Science Quarterly, 1971, 16, 51-60.

Mitchell, T.R. The construct validity of three dimensions of leadership research. Journal of Social Psychology, 1970, 80, 89-94.

Mitchell, T.R. Leader complexity and leadership style. Journal of Personality and Social Psychology, 1970, 16, 166-174.

Morse, N. and Reimer, E. The experimental change of a major organizational variable. Journal of Abnormal and Social Psychology, 1956, 52, 120-129.

Muller, H.P. Relationship between time-span of discretion, leadership behavior, and Fiedler's LPC socres. Journal of Applied Psychology, 1970, 54, 140-144.

Nash, A.N. Development of an SVIB key for selecting managers. Journal of Applied Psychology, 1966, 50, 250-254.

Oaklander, H. and Fleishman, E.A. Patterns of leadership related to organizational stress in hospital settings. Administrative Science Quarterly, 1964, 8, 520-532.

Parker, T.C. Relationships among measures of supervisory behavior, group behavior, and situational characteristics. Personnel Psychology, 1963, 16, 319-333.

Pierce, J.R. Effects of Selected Organizational Variables on the Behavioral Style of the Industrial Supervisor. Unpublished dissertation, University of Michigan, 1970.

Porter, L.W. Job attitudes in management: II. Perceived importance of needs as a function of job level. Journal of Applied Psychology, 1963, 47, 141-148.

Porter, L.W., and Henry, M.M. Job attitudes in management: V. Perceptions of the importance of certain personality traits as a function of job level. Journal of Applied Psychology, 1964, 48, 31-36.

Porter, L.W. and Lawler, E.E. Properties of organization structure, in relation to job attitudes and job behavior. Psychological Bulletin, 1965, 64, 23-51.

Pugh, D.S., Hickson, D.J., Hinnings, C.R., and Turner, C. Dimensions of organizational structure. Administrative Science Quarterly, 1968, 13, 65-105.

Pugh, D.S., Hickson, D.J., and Hinnings, C.R. An empirical taxonomy of structures of work organizations. Administrative Science Quarterly, 1969, 14, 115-127.

Rim, Y. Leadership attitudes and decisions involving risk. Personnel Psychology, 1965, 18, 423-430.

Ritchie, J.B. Managerial Attitudes and Leadership Behavior. Unpublished dissertation, University of California, Berkley, 1968.

Rokeach, M. Beliefs, Attitudes and Values. San Francisco: Jossey Bass Inc., 1968.

Scheff, T.J. Control over policy by attendants in a mental hospital. Journal of Health and Human Behavior. 1961, 2, 93-105.

Schneider, B. and Bartlett, C.J. Individual differences and organizational climate. The research plan and questionnaire development. Personnel Psychology, 1968, 21, 323-334.

Sells, S.B. Dimensions of stimulus situations which account for behavior variance. In S.B. Sells (Ed.), Stimulus Determinants of Behavior. New York: Ronald Press, 1963.

Selover, R.B. Identifying college graduates with high potential for advancement. Unpublished mimeographed report, Prudential Insurance Co. of America. 1962.

Shaw, M.E. Scaling group tasks: A method for dimensional analysis. Mimeographed report, University of Florida, Department of Psychology. 1963.

Shaw, M.E. and Blum, J.M. Effects of leadership style upon group performance as a function of task structure. Journal of Personality and Social Psychology, 1966, 3, 238-242.

Skinner, E.W. Relationships between leadership behavior patterns and organizational-situational variables. Personnel Psychology, 1969, 22, 489-494.

Sparks, C.P. Personnel development series: Humble Oil and Refining Co. Unpublished mimeographed report, Humble Co. 1966.

Spitzer, M.E. and McNamara, W.J.A. Managerial selection study. Personnel Psychology, 1963, 16, 319-334.

Stogdill, R.M. Personal Factors Associated with Leadership: A Survey of the Literature. Journal of Psychology, 1948, 25, 35-71.

Tagiuri, R. Comments on organizational Climate. Paper presented at a conference on organizational climate, Foundation for Research on Human Behavior, Ann Arbor, Michigan, March 1966.

Tagiuri, R. Executive climate. In R. Tagiuri and G.H. Litwin (Eds.), Organizational Climate: Explorations of a Concept. Boston: Harvard University Press, 1968.

Tagiuri, R. and Litwin, G.J. (Eds.) Organizational Climate: Explorations of a Concept. Boston, Harvard University Press, 1968.

Vroom, V.J. and Mann, F.C. Leader authoritarianism and employee attitudes. Personnel Psychology, 1960, 13, 125-140.

Yoder, D. Management theories as managers see them. Personnel Psychology, 1962, 39, 25-30.

Yukl, G. Leader LPC scores: attitude dimensions and behavioral correlations, Journal of Social Psychology, 1970, 80, 207-212.