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# Attitude toward work-related change and organizational climate.

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# ATTITUDE TOWARD WORK-RELATED CHANGE AND ORGANIZATIONAL CLIMATE

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A Dissertation

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Following undergraduate school, he worked as a professional employee of the General Electric Company for four years. In 1970 he graduated from the Manufacturing Management Program of General Electric and went on to specialize in Management Information System Design. In 1971 he took a leave of absence from the company and began graduate work at the University of Massachusetts which eventually lead to the Ph.D.

From 1972 to 1975, he worked as a teaching assistant and associate in the areas of elementary decision theory, administrative statistics, and organizational behavior in the School of Business Administration at the University of Massachusetts. During this time his primary interest changed from computer-related problems to human-related problems in organizations. He also worked as a research assistant on the design of a course which combined management science and

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# ABSTRACT

ATTITUDE TOWARD WORK-RELATED CHANGE
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Most studies which have considered responses to work-related change have assumed resistance to change. The present study examines the employee's attitude toward work-related change in general, instead assumed to vary along a continuum from strongly positive to strongly negative. Empirical studies have generated a considerable body of evidence pertaining to the relationship between attitude toward change and other variables. However, organizational variables to which it has been correlated have used the work group as the unit of analysis rather than the whole organization. The variable of organizational climate, based on employees' perceptions of the organization along several independent dimensions, currently plays an important role in organization theory as a possible

conceptual linkage between analysis at the individual and organizational levels. From both an organizational perspective and a change perspective, it is worthwhile to investigate the relationship between attitude toward change and organizational climate.

Data were collected from employees of organizations via individual questionnaires, using Trumbo's "Change Scale" (1958) to assess attitude toward change and the OCDQ as revised by Margulies (1965) to assess organizational climate. The total sample size consisted of 220 employees from four organizations, three which provide health-care services and one which manufactures industrial components.

Hypotheses pertaining to the relationship between attitude toward change and each dimension of organizational climate were individually tested using Pearson correlations and linear regression models. Considered in their entirely, the hypotheses were not supported. Controlling for eight other variables, including measures of satisfaction, managerial level, length of service, sex, age, and education, did not affect the relationships to a significant extent. The departmental location of the employee did affect the relationships, but the nature of its effect could not be determined from the data available. Substitution of both a more reliable Change Scale for the original Change Scale and more reliable and independent organizational climate factors for the dimensions of the revised OCDQ did not yield relationships of greater significance.

The following conclusions were reached:

1. Notwithstanding the lack of significant relationships with dimensions of organizational climate, the evidence supporting the attitude toward change concept has increased. For the first time significant differences were seen in employees' attitude toward change scores for different organizations.
2. Climate is determined at least to some extent by the department within the organization.
3. The revised OCDQ is inappropriate for the measurement of organizational climate, particularly in health-care organizations.
4. Attitude toward change is not significantly related to dimensions of organizational climate. However, the lack of significant relationships may have been due to:
   a. Organizational climate not existing, and departmental climate existing instead; and/or
   b. Organizational climate not being measured, and departmental climate being measured instead.

Future investigation of the role of employees' attitudes toward change in determining the effectiveness of various organizational designs and change strategies is recommended. An organically designed organization may be best suited for individuals with positive attitudes and a mechanistically designed organization best suited for

individuals with negative attitudes toward change. Attitude toward change may also be a critical factor in determining the best strategy for implementing organizational change. Further research in the climate area should seek to determine whether (1) organizational climate is simply the result of aggregating departmental climates, (2) organizational climate exists independently from departmental climate, or (3) climate exists primarily at the organizational and not departmental level as has been assumed in most climate research to date.

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# C H A P T E R  I

## INTRODUCTION

According to *Future Shock*, a recently popular essay, change is sweeping through industrialized Western society "with waves of ever accelerating speed and unprecedented impact" (Toffler, 1970, p. 9). Academicians (Burns and Stalker, 1961; Bennis, 1963, 1966; Lawrence and Lorsch, 1967; Shepard, 1969; Hage and Aiken, 1970) have noted that organizations have an increasing need to institute change themselves to keep pace with change in their environment. The phenomenon of organizational change is certainly deserving of close attention.

Organizational change may be considered from two points of view, that of the person behind the change, *i.e.*, the change agent, and that of the person "in front of" or affected by the change. Most literature in the area of organizational change has been written from the former point of view and has placed emphasis on methods for implementing change in organizations. The present study takes the latter point of view and places emphasis on responses of those affected by organizational change.

When responses toward work-related change[1] have been considered, the emphasis has usually been on methods for dealing with negative responses, or "resistance" to change. Comparatively little regard has been given to the capability of employees to have positive responses, indicating a "readiness" for change. The bias reflected is that of the change agent, who only encounters problems when opposition exists to proposed change (Kahn, *et al.*, 1964; Klein, 1969).

Actually, employees respond to work-related change in a variety of ways. They respond to particular changes, and they respond to change in general. For particular changes, they respond to the content, or specific characteristics of the change, and to the process, or way in which the change is proposed and implemented. For change in general, their response may be a passive reaction to change or it may be an active propensity to innovate or initiate change themselves. Responses may be both attitudinal and behavioral in nature. As noted above, responses may also be positive or negative.

The particular focus of this study is on the employee's attitude toward change in general, defined as a passive response to change. Contribution to the understanding of

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[1]"Organizational change" and "work-related change" may be distinguished in that the former represents an organizational level phenomenon and the latter the effect of the phenomenon on individual jobs. However, "organizational change," "work-related change," and "change" will all be used interchangeably in the present study except where the need exists to make a distinction.

any type of response toward work-related change would increase knowledge of the total phenomenon of organizational change. The above focus has been selected for the following reasons:

1. The stylistic objective of the study is to perform an empirically-based analysis. The attitude toward change in general has been examined in several research studies with such an orientation (*e.g.*, Trumbo, 1961; Patchen, 1965; Kirton and Mulligan, 1973), and there is a considerable base of "hard" evidence pertaining to its relationship with other variables to build upon. In contrast, the examination of responses to particular change or of behavioral responses to change has mostly taken place in studies with an emphasis on resistance to change. Such studies have been largely disconnected with other studies, descriptive,[2] and have not made explicit distinctions between types of responses (*e.g.*, Selekman, 1945; Lawrence, 1954; Watson, 1969).
2. The measurements of attitude toward change in general, including Trumbo's "Change Scale" (1958) used in the present study, do not carry a bias toward negative responses to change as has been seen elsewhere. The attitude is assumed to vary along a single continuum from strongly positive to strongly negative.

---

[2]The studies of Coch and French (1948) and French, Israel, and As (1960) avoid this specific criticism by having operationalized their terms.

3. Significant relationships have been found between attitude toward change in general and attitude toward a particular change (Trumbo, 1961; Hardin, 1967; Kirton and Mulligan, 1973) and between attitude toward change in general and a behavioral response toward particular change (Patchen, 1965). These findings suggest that attitude toward change in general may be indicative of other responses to organizational change.
4. It is essential to the advancement of knowledge concerning employees' responses to change that differences in responses *between* organizations be examined. Of the various types of responses, organizational differences between employees' attitudes toward change in general are most easily determined; Trumbo's Change Scale (1958) has been successfully administered in several organizations. In contrast, problems are encountered in comparing either behavioral responses to change or responses to particular change in different organizations. Behavioral responses to change in general are difficult to specify and have not been examined in the literature. Comparison of either behavioral or attitudinal responses to particular change is suspect because the *particular* change must be

kept *general* enough to apply to the different organizations.[3]

A review of research on attitude toward change in general (hereafter called "attitude toward change") reveals that the organizational variables to which it has been correlated—*e.g.*, group cohesiveness, supervisor's leadership style—have used the work group as the unit of analysis rather than the whole organization. From an organizational perspective, it would seem that a fruitful means of extending knowledge of the attitude toward change is by investigating its relationship with organizational climate. Several considerations enter into the selection of organizational climate as the organizational property of focus:

1. Most measurements of organizational climate (*e.g.*, Halpin and Croft, 1962; Litwin and Stringer, 1968; Schneider, 1972) consist of a number of independent scales which capture different organizational properties or "dimensions of organizational climate." Thus, the variable of organizational climate is actually a set of several organizational variables.

---

[3]The question raised is where to draw the line between particular change and change in general. Kirton and Mulligan (1973), for example, determined the attitudinal responses of managers in eight organizations to the general features of a hypothetical appraisal scheme, which they considered a particular change. If they had assessed reactions to appraisal schemes which were in operation and specified in greater detail, however, differences in the systems between organizations would have made comparison of responses to them more awkward and possibly less valid.

2. According to present use of the term, organizational climate is based on employees' perceptions of the organization, which are influenced by individual differences (Campbell, *et al.*, 1970; Hellriegel and Slocum, 1974). However, organizational climate has been significantly related to objectively-measured organizational properties in several studies (*e.g.*, Payne and Pheysey, 1971; George and Bishop, 1971; Payne and Mansfield, 1973; Lawler, Hall, and Oldham, 1974). Such evidence demonstrates that organizational climate is in fact an organizational property.
3. The examination of employees' perceptions of the organization rather than objectively-measured properties expands the available data base. Via a sophisticated research design, data from a relatively small number of organizations enables full testing of hypotheses.
4. The organizational climate construct currently plays an important role in organization theory as a possible conceptual linkage between analysis at the individual level and analysis at the organizational level (Payne and Mansfield, 1973). Writers on organization behavior have long recognized the need to develop a theoretical framework that allows systematic movement from one level of analysis to the other (*e.g.*, Pugh, *et al.*, 1963; Kahn, *et al.*,

1964; Udy, 1965). Thus further investigation into the relationships between organizational climate and other variables is valuable in and of itself.

Organizational climate is measured in the study by the Organizational Climate Description Questionnaire (OCDQ) originally designed by Halpin and Croft (1962) and revised by Margulies (1965). The revised OCDQ assesses an employee's perception of his or her organization along eight dimensions which describe either behavior of the leader or other organizational members. The dimensions which capture members' behavior are called disengagement, hindrance, esprit, and intimacy. The dimensions which portray the leader's behavior are entitled aloofness, production emphasis, thrust, and consideration. Definitions of the eight dimensions of organizational climate are provided in Table 1.

Upon a review of the relevant literature, hypotheses will be formed for the direction of the relationship between individuals' scores on attitude toward change and their scores of their organization on each dimension of organizational climate. These hypotheses are summarized in Table 2.

If its hypotheses are substantiated, the study will have several implications. Managers will be given reason to consider the manipulation of organizational climate as a means of fostering positive attitudes toward change in their subordinates. If managers don't believe that resistance to change will automatically arise whenever change is proposed, they will be less inclined to promote resistance

TABLE 1

DIMENSIONS OF ORGANIZATIONAL CLIMATE

AS MEASURED BY THE REVISED OCDQ

Members' Behavior

1. *Disengagement* describes a group which is "going through the motions," a group that is not "in gear" with respect to the task at hand.

2. *Hindrance* refers to members' feeling that management burdens them with routine duties and other requirements which members deem busy-work. Management is not facilitating their work.

3. *Esprit* is a morale dimension. Members feel that their social needs are being satisfied and, at the same time, they are enjoying a sense of task accomplishment.

4. *Intimacy* refers to members' enjoyment of friendly social relationships. This is a dimension of social need satisfaction not necessarily associated with task accomplishment.

Leaders' Behavior

5. *Aloofness* refers to management behavior which is characterized as aloof and impersonal. It describes an "emotional" distance between manager and his subordinates.

6. *Production Emphasis* refers to management behavior which is characterized by close supervision. Management is highly directive and insensitive to communication feedback.

7. *Thrust* refers to management behavior which is characterized by efforts to "get the organization moving." This behavior is marked by attempts to motivate through example. Behavior is task-oriented and viewed favorably by members.

8. *Consideration* refers to management behavior characterized by an inclination to trust members as human beings and do something extra for them in human terms.

---

Source: N. Margulies, "A Study of Organizational Culture and the Self-Actualizing Person" (Unpublished Doctoral Dissertation, University of California, 1965).

TABLE 2

HYPOTHESIZED RELATIONSHIPS BETWEEN ATTITUDE TOWARD CHANGE AND DIMENSIONS OF ORGANIZATIONAL CLIMATE

| Organizational Climate Dimension | Hypothesized Relationship with Attitude Toward Change |
|---|---|
| Members' Behavior: | |
| Disengagement | - |
| Hindrance | - |
| Esprit | + |
| Intimacy | - |
| Leaders' Behavior: | |
| Aloofness | - |
| Production Emphasis | - |
| Thrust | + |
| Consideration | + |

by their own actions. Change agents will be encouraged to assess both attitude toward change and organizational climate in their diagnoses of systems. A shift of emphasis in research away from an exclusive focus on techniques for implementing change and toward giving greater attention to workers' responses to change will also be supported.

Also measured in the study are variables which have been previously examined (or deserve examination) in relation to either attitude toward change or organizational climate. The variables are satisfaction with job, satisfaction with the organization, sex, age, education, department, level of present position (managerial level), years in present position, and length of service (years in organization). They will be considered as possible intervening variables affecting the relationships between attitude toward change and organizational climate.

In summary, the specific objectives of the study are to:

1. Investigate empirically the relationship between attitude toward change and various dimensions of organizational climate. Hypotheses pertaining to the direction of such relationships will be individually tested.
2. Determine whether the above relationships are spurious due to the effects of intervening variables.

Verification of the hypotheses of the study will have implications for everyday managerial practice, the conduct of planned change interventions, and research in the organizational change area.

## Plan of the Study

The full details of the study will be presented and discussed in depth in the following four chapters.

Chapter II will present a synopsis of the findings of related studies which have been reported in the literature and will state the basis for the formulation of hypotheses. Chapter III will present the methodology of the study; it will describe the organizations in which data were collected, the procedures used to select pro-

spective subjects within the organizations, and the questionnaire used to collect data. Chapter IV will report the results of data analysis performed to test the hypotheses and to determine the effects of intervening variables. Chapter V will state and justify the conclusions which may be reached from the study and discuss implications for future research and practice.

# C H A P T E R  I I

## LITERATURE REVIEW

This chapter reviews and summarizes the findings of the literature which has addressed issues related to the study and formulates hypotheses for the study.

The chapter has five sections. The first section will distinguish between attitude toward change and organizational climate in the context of a discussion of the differences between basic types of variables commonly considered in organization research. The second section will review research on organizational change which has either drawn conclusions or made assumptions about workers' responses to change. The third section will review research which has empirically investigated the employee's attitude toward change. The fourth section will review research which has been conducted on organizational climate. The fifth section will formulate specific hypotheses pertaining to the relationship between attitude toward change and organizational climate.

## Types of Variables Examined

Before subsequent sections of the chapter review the literature relevant to the study in detail, this section will consider what types of variables are examined in the literature in general. The benefit will be added insight into the relationship between attitude toward change and organizational climate prior to the analysis of data.

The types of variables which appear in organization research are:

1. *Personal data of individuals* (demographics), *e.g.*, age, social class background.
2. *Personality characteristics of individuals*, *e.g.*, trust, propensity to take risks.
3. *Job-related data of individuals*, *e.g.*, managerial level, length of service.
4. *Job-related attitudes of individuals*, *e.g.*, job satisfaction, identification with the organization.
5. *Perceptual measures of organizations*, *e.g.*, group cohesiveness, leadership style as experienced by organizational members.
6. *Objective measures of organizations*, *e.g.*, number of levels in hierarchy, degree of specialization of activities.

The types of variables are arranged along a continuum in Figure 1 according to the extent to which they are

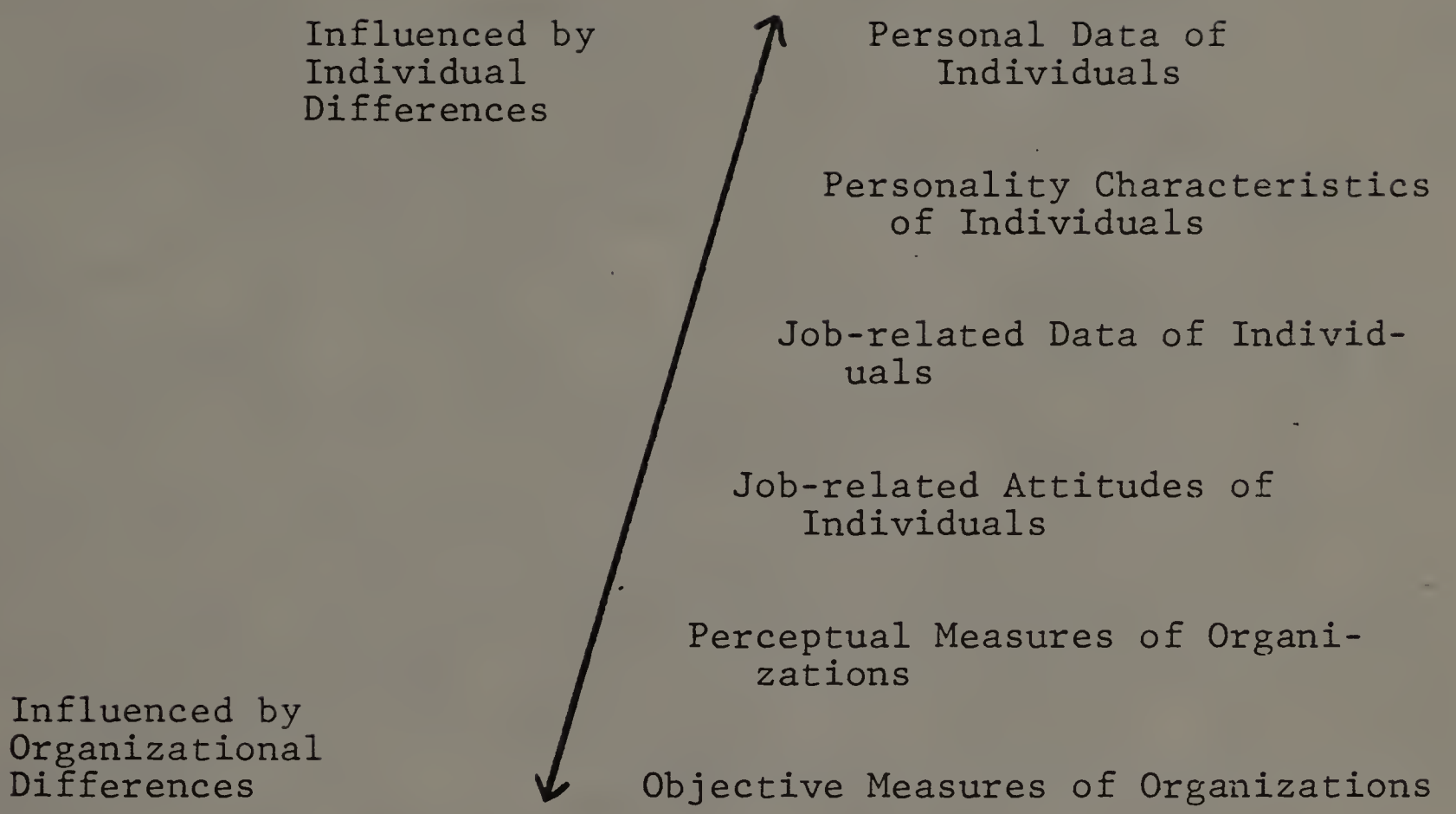


Figure 1

Types of Variables as Influenced by Individual vs. Organizational Differences

influenced by individual differences rather than organizational differences. At the individual end of the continuum, personal data are influenced only slightly by organizations if at all.[1] Personality characteristics may be influenced by organizations to a larger extent (*e.g.*, Merton, 1940) but are primarily a reflection of individual differences.[2] At the organizational end, objective measures are solely organizational properties, although of course subject to change by individuals. Perceptual measures of organizations are influenced also by characteristics of the perceivers. In the center, job-related attitudes (to be defined) and job-related data are influenced to an approximately equal extent by individuals and by organizations.[3]

---

[1]To state an example of how a variable in this category can be influenced by organizations, the location of organizations in urban areas may draw workers from rural areas who otherwise would not move. Thus future generations of workers who move will have urban rather than rural backgrounds.

[2]Maddi (1968) reviewed the work on personality and concluded:

> Personality is a stable set of characteristics and tendencies that determine the commonalities and differences in the psychological behavior (thoughts, feelings and actions) of people that have continuity in time and that may or may not be easily understood in terms of the social and biological pressures of the immediate situation alone (1968, p. 10).

The emphasis in the statement is primarily on the person, secondarily on the situation (substitute "organizations"), and overall on the stability of personality characteristics over time.

[3]In a review of literature on job-related attitudes and performance, Athanasiou (1969) concluded that both organizational structure variables and individual personality factors significantly affect attitudes. No such review

The remainder of this section of the chapter will examine the differences between perceptual measures of organizations and, in turn, objective measures of organizations and job-related attitudes of individuals. This will enable appropriate classification of attitude toward change and organizational climate.

## Objective and Perceptual Measures of Organizations

Empirical research is conducted on organizations using one of two types of measures. Objective measures assess organizational properties directly without transformation through a human intermediary. For example, the variable of formalization has been operationalized as the proportion of types of documents designated by researchers as indicative of formalization actually in use in the organization. Perceptual measures assess the organization indirectly through aggregation of the individual perceptions of organizational members. The same property may be measured both objectively and perceptually; for example, formalization may also be operationally defined as the extent to which employees perceive their organization as formal.

The primary advantage of objective measures is that they are more accurate as measures of the formal organization, whereas perceptual measures are more susecptible to

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has been made of job-related data in general, but there position close to the center of the continuum seems appropriate.

the influence of individual characteristics and the informal organization. Their primary disadvantage was described by Forehand and Gilmer (1964):

> . . .the variables that may be examined are too numerous and too specific to be readily interpreted. Studies that examine in isolation specific objective properties of an organization leave unanswered the questions of how the properties are related to one another and how they are related to useful constructs of organizational functioning (1964, p. 365).

Porter and Lawler (1965) also emphasized the need for improved measurements of organizations and improved linkage between measurements.

The primary advantages of perceptual measures are:

1. They allow assessment of organizational properties such as group cohesiveness and leadership style which can be difficult to measure objectively.
2. They draw upon experience with the organization which the outside observer does not have.
3. They are conveniently obtained by questionnaire.
4. They enable understanding of the relationship between causal and end result variables (Likert, 1961).

The major disadvantage of perceptual measures is that they include variability due to individual influences. Sells (1963) observed:

> If behavior is truly an interaction of the myriad of inner and outer forces operating on the individual, then it appears that the (perceptual) approach both obscures the nature of the external forces and confounds the interaction. . . It is quite possible that a greater understanding of (perceptual) data might result if they were investigated in relation to objectively measured situational stimulus variables (1963, p. 8).

According to Sells (1963) and others, perceptual measures clearly cannot be considered to be assessing organizational properties unless they are shown to be related to objective measures.[4]

The advantages of perceptual measures apply as stated to the variable of organizational climate. The one disadvantage stated cannot be discounted; however, organizational climate meets the requirement of being significantly related to objective measures of organizations on the basis of previous research (see Table 5). It may be concluded that organizational climate qualifies as a perceptual measure of organizations.

## Job-related Attitudes of Individuals and Perceptual Measures of Organizations

The difference between attitudes and perceptions is particularly important to the study. James and Jones (1974) compared attitudes and perceptions as follows:

> . . .current attitudinal theory seems to agree upon a three-component model (Fishbein, 1967; Katz, 1960; Rosenberg and Abelson, 1960) including: (a) a cognitive component or a person's beliefs or disbeliefs about the properties of an object; (b) an affective component which concerns like/dislike, good/bad, *etc.*, and that is capable of arousing affect; and (c) a behavioral component because the attitude represents a predisposition to respond in a particular way toward a specified set of objects. It is possible for a belief, or perception, to exist without the remaining two components of attitudes (Rokeach, 1968);

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[4]Except where otherwise noted, the above discussion of objective and perceptual measures of organizations is based on Forehand and Gilmer (1964), Inkson, *et al.*, (1967), Guion (1973), and Johannesson (1973).

> however, it is more commonly assumed that beliefs are related to at least affect (Johannesson, 1973; Robinson, Athanasiou, and Head, 1969). Thus, a dynamic model involving feedback from experiences, rewards, *etc.*, points out that perceptions are affected by individual differences including, but not limited to, the affective components of attitudes (1974, p. 1103).

Hellriegel and Slocum (1974) made a more simple distinction between attitude and perception which reflects earlier attitude theory (*e.g.*, Fishbein and Raven, 1962). In reviewing research on the relationship between job satisfaction and organizational climate, they concluded:

> The intent of organizational climate scales is to '. . .clearly evoke perceptual, rather than attitudinal or other types of responses; that is, they stimulate, or intend to stimulate, the responding participant to orient himself with specific facts and express his opinion as to how he perceives those facts, not whether he 'likes' them or not' (Stimson and LaBelle, 1971; Taylor and Bowers, 1972). Thus, climate instruments allege to describe work environments whereas satisfaction instruments serve to evaluate them (1974, pp. 256-7).

Attitude according to this definition is restricted to the affective component of attitude as defined before. Hellriegel and Slocum (1974) also noted that description of one's environment is directly affected by satisfaction with the environment; attitudes were seen to play an important role in the perceptual process.

"Job-related attitudes of individuals" and "perceptual measures of organizations" may be said to reflect either Hellriegel and Slocum's (1974) attitudes and perceptions or the affective and cognitive components of attitude as defined by modern attitude theory (James and Jones, 1974).

Applying the distinction, attitude toward change is a job-related attitude of individuals rather than a perceptual measure of organizations because it represents an affective response by an individual to the occurrence of change on the job. Organizational climate is a perceptual measure of organizations rather than a job-related attitude of individuals because it expresses how the respondent sees the factspertaining to his or her organization.

By comparison both with job-related attitudes of individuals and objective measures of organizations, organizational climate is shown to be characterized best as a perceptual measure of organizations.

## Summary

This section has identified categories of variables typically appearing in organization research. It has provided strong reasoning for considering organizational climate a property of an organization and attitude toward change a property of an individual. Thus, the study is confirmed to be an examination of the relationships between a particular type of response to work-related change by an organizational member (attitude toward change) and properties of his or her organization (organizational climate).

## Research on Organizational Change

This section will review the types of responses toward work-related change which have been considered in the organizational change literature. In particular, it will evaluate the literature which has stressed the

resistance to change concept and conclude that the concept has been of little value and should be pursued no further.

## Approaches to Organizational Change

Leavitt (1965) proposed a classification scheme for methods of organizational change which has been widely adopted by writers in the field. He identified four types of variables whose interactions comprise much of the activity in industrial organizations (Figure 2). *Task* variables refer to the actual production of goods and services. *Structural* variables refer to systems of communication, authority and work flow in the organization. *Technological* variables refer to problem-solving inventions such as work-measurement techniques, computer programs, or numerically-controlled machinery. *Human* variables refer to the attitudes and behavior of people in the organization.

Most efforts to change organizations aim to control the task variable to improve performance in some way. Change in any one of the variables usually results in change in the others; thus task variables can be changed either by direct means or indirectly through change in structure, technology, or people. Leavitt (1965) classified the latter three as the major approaches to planned organizational change.

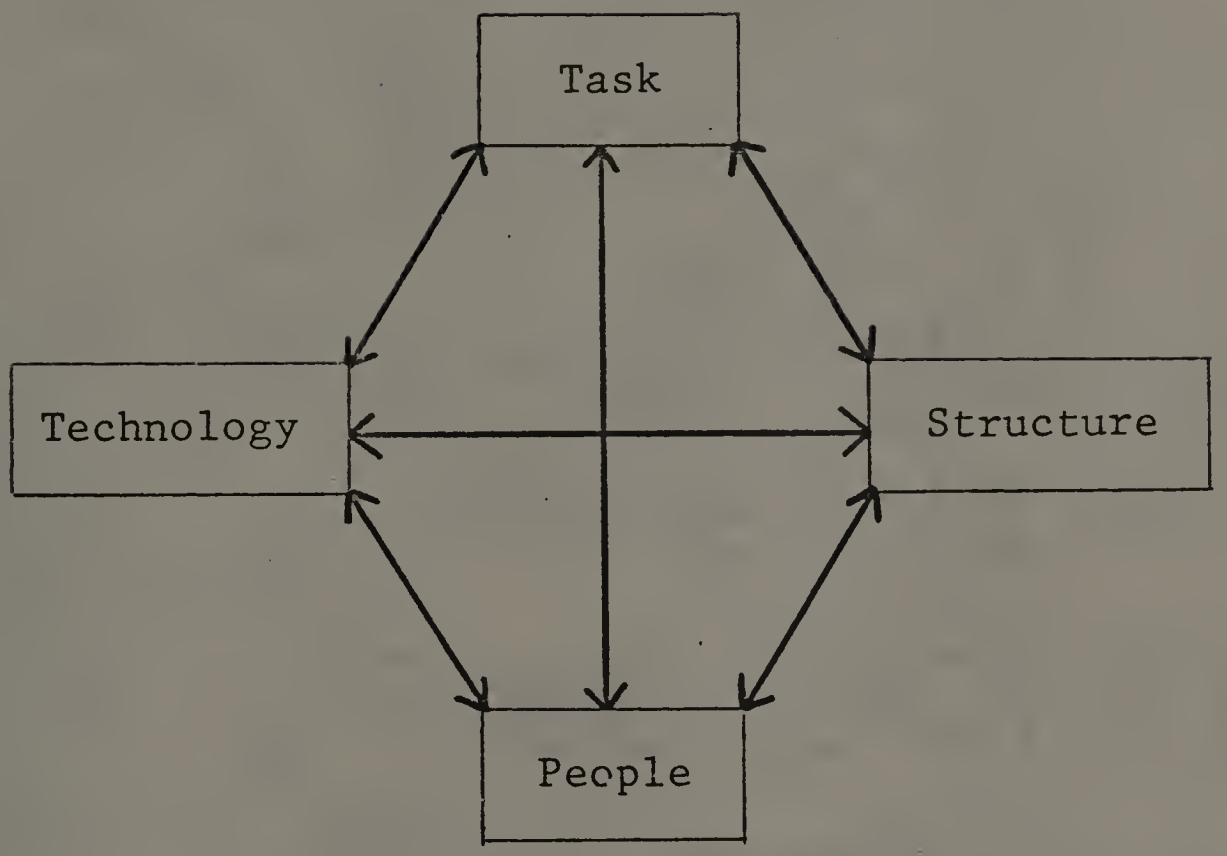


Figure 2

Major Variables Interacting in Organizations

Source: H. J. Leavitt, "Applied Organizational Change in Industry: Structural, Technological, and Humanistic Approaches," in James G. March (ed.), *Handbook of Organizations* (Chicago: Rand McNally, 1965).

## Structural Approaches

The structural approach to organizational change has its origins in the branch of "classical" organization theory represented by Weber, Fayol, Mooney and Reiley, Urwick, and Follett.[5] Weber addressed the structure of the administrative component of organizations and described its essential properties. The others expressed their ideas as fundamental principles of organization, thus offering prescriptions for how to best organize. For example, Fayol defined five elements or functions of management—planning, organization, command, coordination, and control—and specified fourteen principles of how they should be applied. Such principles include division of labor, unity of command, equity, discipline, and esprits de corps.

More recently, sociologists such as Blau (1955), Hage and Aiken (1970), and Perrow (1970) have taken a structural approach in emphasizing the roles people occupy in organizations over characteristics of people in the roles. Chapple and Sayles (1961) recommended change through "changing the interactional system. . .meaning the structure, the work flow and control system" (1961, pp. 201-2), with people placed in the altered structure according to the suitability of their basic behavioral patterns for the new jobs. Steele (1973) characterized the functions that

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[5]See, respectively, Gerth and Mills (1946), Fayol (1949), Mooney and Reiley (1939), Urwick (1943), and Metcalf and Urwick (1942). For a fuller exposition of classical organization theory, see Massie (1965) and Tausky (1970).

structure in the sense of immediate physical setting plays for people. He urged that design of jobs be expanded to consider more carefully the use of space.

Structural approaches to organizational change maintain that performance of tasks is best facilitated by clearly defining the jobs of people and the relationships among those jobs in accordance with fundamental principles of organization. In fact, one must only follow the rules of organizing and the issue of organizational change need never arise. Although these approaches vary in the extent to which they take human variables into account, such variables are always deemphasized. As a result, workers' responses to the phenomenon of change have received little attention.

## Technological Approaches

The technological approach to organizational change took shape in the scientific management of F. Taylor (1911), using the technique of empirical work measurement. Scientific management rested on four principles: (1) For each task, use a time and motion study to determine the one best way of task performance which maximizes production. (2) Provide the worker with a financial incentive to perform in the best way at a good pace. (3) Use specialized experts to instruct and supervise the workers on the different aspects of their work. (4) Never arbitrarily change the standard production rate.

Thus management and labor were prescribed clearly differentiated functions—management the thinking or administration aspects of the organizational effort, including scientific determination of the best way to perform tasks, and labor the doing or production aspects. This simple and straight-forward approach held great appeal for management and revolutionized manufacturing organizations in the early part of the century. Scientific management proposed that productivity could be increased by manipulation of the division of labor based on detailed planning. Workers were assumed to be basically rational, *i.e.*, motivated by wages, and little regard was given to responses to effects of work-related change other than change in pay.

The application of operations research (OR) techniques to organizations has represented a technological approach to problem-solving similar in many ways to scientific management. Detailed planning in OR consists of the construction of mathematical models reflecting the system being examined, with the ultimate goal most often of optimizing the behavior of the system by manipulation of system components. The emphasis on rationality in OR has led to a focus on engineering or economic variables amenable to mathematical treatment and disregard of human variables which are more difficult to operationalize (Bennis, 1966; Powell, 1976), primarily for those who have misused the tools.

A considerable body of literature has accumulated in the last twenty years around the topic of individual and organizational response to increased automation. Evidence suggests that the state of automation in an organization can affect organizational structure and productivity and the attitudes and behavior of blue-collar and white-collar employees. Looking at attitudes, Walker (1957), Mann and Hoffman (1960), and Woodward (1965) have found job satisfaction among blue-collar workers significantly increased by automation. Hoos (1961) and Mann and Williams (1962) found more complex effects among white-collar workers: The advent of office automation increased satisfaction with new jobs but also increased concern for job security. Blauner (1964) and J. Shepard (1971) found consistent curvilinear relationships between worker alienation and the form of production technology—craftwork, mechanization, or automation—for both white-collar and blue-collar employees.

Some of the behavioral effects of increased automation were increased skill requirements for maintenance but not for production jobs as a whole (Faunce, 1958; Bright, 1958) and increased job responsibility (Friedman, 1961; Bright, 1958) for blue-collar workers. When unplanned social change followed technological change, intergroup status differences were reduced and work roles became more interdependent (Walker, 1957; Mann and Hoffman, 1960). For white-collar workers, increased automation has led to jobs which

are more important, require more responsibility, and are more demanding (Mueller, 1969).

Several studies (Walker, 1957; Lawrence, 1958; Mann and Hoffman, 1960) have suggested that prerequisite for successful technological change are the human variables pertaining to employee satisfaction with the company, labor relations, and mutual trust and good will above some minimally acceptable level. Thus change in technology both affects and is affected by the human variables in the organization, demonstrating the interrelationships between the two variables predicted by Leavitt's (1965) model.[6]

As can be seen, technological approaches to organizational change have differed in their consideration of the responses of workers to change. The more recent studies which have regarded the form of production technology as a variable have placed heavy emphasis on responses to the particular form. However, attitudinal responses to change in technology in these studies have been inferred from the direction of change in job satisfaction rather than examined directly. If employees were more satisfied after the change than before, obviously they responded to the change positively; if they were less satisfied, they were seen to resist the change. The effects of change in technology have been seen mostly in the jobs themselves rather than responses of workers to the jobs. Overall, some

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[6]The discussion on the effects of increased automation is based on J. Taylor (1971).

implicit but no explicit consideration has been given to the responses of workers to technological change.

## People Approaches

Leavitt (1965) noted ten years ago that "the recent literature dealing directly with organizational change is heavily people-oriented" (p. 1151). His statement remains true today.[7]

The origins of the people approaches can be traced back to the Hawthorne studies (Roethlisberger and Dickson, 1939), which firmly established the organization as a social system, and the research of Lewin, Lippitt, and White (1939) on the effects of various leadership styles. Leavitt (1965) identified two historical phases of the people approaches: manipulative people approaches and power-equalization approaches. A third phase of organization development approaches has emerged since. Of the various approaches to organizational change, the people approaches have given the most attention to workers' responses to change.

### Manipulative People Approaches

The manipulative people approaches sought to effect pre-determined changes in behavior. They generally

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[7]Witness the considerable number of books on organization development which have appeared only since 1969: the Addison-Wesley series (*e.g.*, Bennis, 1969; Beckhard, 1969); Bennis, Benne, and Chin (1969); Margulies and Raia (1972); French and Bell (1973); and Huse (1975) to cite a few. In contrast, the technological and structural approaches have received attention only in scattered research studies (*e.g.*, Woodward, 1965; Hage and Aiken, 1970).

addressed the question of "how to overcome resistance to change." In the 1940's, Lewin (1952) sought to change the food-buying habits of household shoppers, in line with war needs, to include beef hearts, sweetbreads, and kidneys; he concluded that group discussions were more effective than lectures in reducing resistance to change. Selekman (1945) proposed prior consultation with workers, a slow rate of change, and grievance machinery as ways of mitigating resistance. Coch and French (1948) proposed use of group participation methods of administering change, involving group meetings in which the need for change was communicated and group participation in planning the changes. Zander (1950) claimed that resistance could be prevented by change agents helping those affected to develop their own understanding of the need for change, how they feel about it, and what they can do about their feelings. Lawrence (1954) concluded that people resist the social aspect of change more than the technical aspect and urged that staff people consider the ideas of production people more in the planning of change.

Accompanying the manipulative people approaches were discussions of why people resist change. Individual, group, and organizational forces of resistance were identified (Table 3). Lewin (1947) recognized the need to consider forces promoting change as well:

> Only by relating the actual degree of constancy to the strength of forces toward or away from the present state of affairs can one speak of degrees

TABLE 3

FORCES OF RESISTANCE TO CHANGE

| Individual Forces | Reference |
|---|---|
| Fear of the unknown | Selekman (1945) |
| Feelings of failure and frustration, low levels of aspiration | Coch and French (1948) |
| Threat of change to social relations | Selekman (1945), Lawrence (1954), Stewart (1957) |
| Threat of change to status | McMurry (1947, Coch and French (1948), Stewart (1957) |
| Threat of change to pride in proficiency at existing job | Stewart (1957) |
| Homeostasis, habit, primacy of early coping experiences, selective perception and retention, parents' value systems, superego | Watson (1969) |
| **Group and Organizational Forces** | |
| Group-enforced production ceilings | Coch and French (1948) |
| Change process: nature of change not made clear, different people seeing different meanings, pressure to make change, change made on personal rather than impersonal grounds, institutions in group ignored, strong forces for and against | Zander (1950) |
| Opposition to particular change objectives, actual inability to change, desire to preserve existing satisfactions, problems in the client—change agent relationship, too much time spent in diagnosing need for change | Lippitt, Watson, and Westley (1958) |
| Alienation of expert planners from "planned for" | Klein (1969) |
| System norms, need for systemic and cultural coherence, vested interests, sacrosanct activities, rejection of outsiders | Watson (1969) |

> of resistance or "stability" of group life in a given respect.
>
> This practical task of social management, as well as the scientific task of understanding the dynamics of group life, require insight into the desire for and resistance to specific change (1947, p. 14).

Lippitt, Watson, and Westley (1958) summarized the change forces which might be present in a situation as dissatisfaction and pain stemming from the present state of affairs, perceived discrepancy between what is and might be, and an internal or external demand for change to keep up with varying sets of requirements.

Overall, resistance forces received far greater attention than change forces from the manipulative people approaches, and "overcoming resistance to change" remains a favorite topic of management textbooks.

Power-Equalization Approaches

The power-equalization or "sensitivity training" approaches to organizational change seek to change people in a less manipulative fashion. Rather than shaping behavior in accordance with predetermined change goals, they are intended to give people the power to set their own goals and initiate change themselves. The core tool of the approaches is the T-group, originated in the late 1940's (Bradford, Gibb, and Benne, 1964). In philosophy, they are very close to the client-centered therapy of Carl Rogers (1951). A Rogerian counselor does not set the goal or direction of change for the client but instead provides a

helping relationship through which the client can set these for him/herself. By assuming a permissive, non-authoritarian role, the T-group leader or trainer similarly encourages group members to define and solve their own problems. Evolutionary, internally generated change is valued over externally planned or implemented change. High value is also placed on affective issues such as morale and psychological security and on human growth and fulfillment as well as task accomplishment in organizations (Leavitt, 1965).

The T-group has usually been an off-site experience for persons with no prior contact for the purpose of enabling them to change their behavior upon return to their own organizational environments. Experience has shown, however, that change in behavior which may be substantial in the unique T-group environment is much more difficult to sustain at home. Considerable frustration has been experienced in the transfer of skills and insights of individuals stemming from the T-group to the solution of problems in organizations. Early research on T-groups seemed to ignore this frustration. Close attention was given to the effects of group composition, the role of the trainer, group processes and phases, the necessary conditions for change in the group, and the group experience as perceived by members (Thelen and Dickerman, 1949; Bennis and Shepard, 1956; Stock, 1964); however, long-lasting effects of groups on members received little

attention.[8] The inability of the power-equalization approaches to recognize and effectively deal with the transfer of learning problem, as well as the frontal assault on the problem by the organization development approaches via onsite applications, has led to their demise as an accepted form of organizational change (French and Bell, 1973).

In the literature on T-groups, responses to self-directed change by individuals have not been characterized as were forces of resistance to change (Table 3). This is consistent with a primary value operating in the groups themselves, which is the legitimacy of all types of individual responses to other individuals, groups, and organizational settings as a whole. Rather than trying to catalog such responses, the emphasis is on acceptance of whatever responses are present.

Responses to work-related change as a result of the power-equalization approaches, other than frustration at lack of change, are hard to find. Overall, the approaches have not examined responses to change and instead focused on internal T-group processes and the conditions proper for self-directed change in groups.

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[8]In one exception, Miles (1965) examined the transfer of learning from the T-group to the home organizational setting by elementary school principals. He discovered that organizational factors such as security, autonomy, and power were highly correlated with individual change on the job as measured three and eight months later.

Organization Development Approaches

The organization development approaches to organizational change (OD) were developed to satisfy the need for on-site work on the human variables in organizations. As previously stated, they grew out of the failure of off-site sensitivity training to deal with the same need. They also derived from the use of attitude surveys and data feedback originated by the Institute for Social Research at the University of Michigan in the late 1940's (French and Bell, 1973).

Bennis (1969) described OD as an educational strategy emphasizing experienced behavior; adopted to bring about planned organizational change; intended to improve the values, attitudes, relations, and climate of the organization rather than the goals, structure, or technology; coupled directly with the exigency or demand the organization is trying to cope with; and carried out via a collaborative relationship between the client system and a change agent or agents, trained in the behavioral sciences and usually external to the client system. Change agents share a common social philosophy, leaning towards humanistic and democratic values and "psychologically safe" organizational environments. They also share a set of normative goals for organizations, including increased legitimization of human factors and feelings, increased understanding and reduced tensions, and the development of better, *i.e.*, nonauthoritarian methods of conflict resolution.

OD and the power-equalization approaches have very similar values and a shared goal of awareness and insight into one's own behavior and roles played in organizations. Their basic differences are in location (on-site vs. off-site), participants (individuals with shared work experiences vs. strangers), and techniques used (Lake, 1973). Inderlied (1975) divided the training component of OD into four basic types according to the kind of knowledge intended to be gained:

1. *Theoretical knowledge*, obtained by lecture, readings, and/or discussion with the OD consultant;
2. *Group knowledge*, obtained by interviews, observation, and/or questionnaires and fed back as data to an entire group;
3. *Self knowledge*, obtained similarly to group knowledge and fed back to individuals; and
4. *Self-discovered knowledge* or "knowledge through doing," obtained in structured experiences, *e.g.*, communications exercises, "cousin" (from same organization but different work groups) or "family" (same work group) T-groups.

Other types of OD interventions include intergroup, technostructural, third party peacemaking, and planning and goal setting activities (French and Bell, 1973). As can be seen, OD techniques extend far beyond the basic power-equalization technique of the "stranger" T-group.

The literature on OD has generally focused on the basic steps in the OD process, *e.g.*, diagnosis, data gathering, feedback to the entire group, discussion and work by the client group, action planning, and action (French, 1969); different techniques for data gathering to achieve different ends of OD programs; case studies of OD interventions; and unresolved issues for OD consultants. Organizational conditions which promote success (Greiner, 1967) or failure (Beckhard, 1969) of OD efforts have also been described. As a whole, the literature has been OD-as-change-process oriented and has given less regard to the responses of individuals to OD-initiated change. This is not surprising; when all individual responses to organizational members or situations are considered legitimate and highly valued as in OD or sensitivity training, the proper focus is on how to facilitate the airing of feelings in the organization rather than on what the feelings are. Thus the organization development approaches have also not given particular attention to responses to work-related change.

## Conclusions

Responses toward work-related change have been considered unevenly in the organizational change literature. The structural approaches have not given them any real consideration. The technological approaches have considered responses to change not explicitly but as differences in job satisfaction before and after change.

The manipulative people approaches, which gave the most attention to responses to change, overwhelmingly dwelled on resistance to change and ignored the prospect of receptiveness to change. The power-equalization and organization development approaches have both deemphasized responses to change in their tacit acceptance of all human responses in organizations. The argument once in favor that people resist change more than they desire it has not been strongly supported in recent years but also has not been strongly refuted. Thus it still stands.

Several weaknesses are present in the organizational change literature which has stressed the resistance to change concept:

1. It is obviously written from a biased point of view, that of people who want to make particular changes in organizations and who can only fail if resistance is encountered.
2. Most of the assertions made have not been subjected to empirical examination. Only Coch and French (1948) and French, Israel, and Ās (1960) operationalized resistance to change, and then indirectly; they determined resistance by comparing the learning curves of new employees at jobs with the relearning curves of experienced employees transferred to the same jobs.
3. It has not made explicit distinction between the various types of responses to change, *e.g.*,

responses to particular change vs. responses to change in general or attitudinal vs. behavioral responses. One can only gather that the resistance was at least behavioral for so many articles to appear on it in managerial journals.[9]

Beyond the shortcomings of the literature expounding it, resistance to change itself has not developed into a useful theoretical construct. J. Harvey (1975) stated what would be required for the construct to have validity:

> . . . first it would have to explain why some of us resist change, while at the same time explaining why others seek change; because of resistance to occur, others have to want change to take place. In addition, the concept would have to explain why some of us want to change on some days and resist it on others (1975, pp. 2-3).

The preoccupation of the manipulative people approaches with forces of resistance to change, without corresponding attention given to forces promoting change, weakens the case for resistance to change as a meaningful concept. J. Harvey also claims that, rather than resisting change, people resist being punished. He proposes that researchers and practitioners forget about the concept of resistance to change and investigate instead the conditions in an organization which make change rewarding or punishing.

In summary, overriding resistance to change has been assumed in the organizational change literature more

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[9]Demonstrating that such weaknesses are not necessary, studies of responses to change have appeared in the psychological literature which are unbiased toward positive or negative responses, are empirically-based, and do make explicit distinctions between the types of responses

often than it has been demonstrated to exist. The sources of the argument that people tend to resist change more than they favor it have been examined and found suspect on theoretical and empirical grounds. It is time for the argument to be dropped.

## Research on Attitude Toward Change

This section will review the empirical research outside of the organizational change literature which has examined the attitude toward work-related change in general (attitude toward change).

Several research studies have dismissed the notion of opposing forces for and against change. Instead, these studies have investigated correlates of attitude toward change without considering positive and negative attitudes separately. Table 4 summarizes the relationships and non-relationships discovered between attitude toward change and different variables. The following comments pertain to the research reported in Table 4:

1. The greatest number of variables found related to attitude toward change of the different types have been job-related attitudes. Attitude toward change is also a job-related attitude, and it is important that it be distinguished from other variables of the same type. Evidence supports

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indicated (*e.g.*, Trumbo, 1961; Kirton and Mulligan, 1973). These studies will be discussed in greater depth in the next section of the chapter.

TABLE 4

CORRELATES OF ATTITUDE TOWARD CHANGE

| Type of Variable/Variable | Sign. of Rel.* | Reference |
|---|---|---|
| Personal Data of Individuals: | | |
| Social class background | + | Faunce (1960) |
| Social class identification | + | Faunce (1960) |
| Urban (vs. regional) background | + | Faunce (1960) |
| Age | 0 | Trumbo (1961) |
| Age | - | Kirton & Mulligan (1973) |
| Male (vs. female)sex | + | Trumbo (1961) |
| Years of Education | + | Trumbo (1961), Kirton and Mulligan (1973) |
| Personality Characteristics of Individuals: | | |
| Trust | + | Vertinsky (1972) |
| Propensity to take risks | + | Vertinsky (1972) |
| Curiosity and search drive | + | Vertinsky (1972) |
| Discontentedness | 0 | Kirton & Mulligan (1973) |
| Confidence | + | Kirton & Mulligan (1973) |
| Extroversion—neuroticism | Int | Kirton & Mulligan (1973) |
| Job-related Data of Individuals: | | |
| Managerial level | + | Faunce (1960) |
| Managerial level | 0 | Kirton & Mulligan (1973) |
| Personal test score | + | Trumbo (1961) |
| Length of service | 0 | Trumbo (1961) |
| Job-related Attitudes of Individuals: | | |
| Job anxiety | - | Trumbo (1961) |
| Identification with the organization | 0 | Trumbo (1961) |
| Identification with the organization | + | Patchen (1965) |
| Economic necessity of job | 0 | Trumbo (1961) |
| Attitude Toward Particular Change: | | |
| New computer | + | Trumbo (1958) |
| Eight of fourteen job aspects | + | Hardin (1967) |
| Appraisal schemes | + | Kirton & Mulligan (1973) |
| Employee trust in management communication | + | Nangle (1961) |
| Employee participation in "cooperative program" | + | Patchen (1965) |

*Legend for Significance of Relationship:
+ Significantly positive relationship
- Significantly negative relationship
0 No significant relationship
Int Significant interaction effect of two variables

TABLE 4—Continued

| Type of Variable/Variable | Sign. of Rel.* | References |
|---|---|---|
| Job-related Attitudes of Individuals (cont.) | | |
| Perceived employee control over goals | + | Patchen (1965) |
| Perceived employee control over means of doing the job | + | Patchen (1965) |
| Job satisfaction: | | |
| With pay | 0 | Patchen (1965) |
| With promotion | 0 | Patchen (1965) |
| Overall | 0 | Hardin (1967) |
| Immediate supervisor's attitudes: | | |
| Autocratic (vs. democratic) supervisor | + | Faunce (1960) |
| Dogmatism of supervisor | - | Trumbo (1961) |
| Human relations attitude of supervisor | 0 | Trumbo (1961) |
| Attitude toward change of supervisor | + | Trumbo (1961) |
| Perceptual Measures of Organizations: | | |
| Group cohesiveness (work group measure) | - | Trumbo (1961) |
| Objective Measures of Organizations: | | |
| (none) | | |

such a distinction between attitude toward change and job satisfaction, the most frequently measured job-related attitude. In two studies (Patchen, 1965; Hardin, 1967), correlations between attitude toward change and job satisfaction were essentially zero. This indicates that attitude toward change does not reflect simply a general mood of satisfaction or dissatisfaction but instead represents something completely different.

2. Significantly positive relationships have been found between attitude toward particular change and attitude toward change (in general) in virtually all cases tested. Trumbo (1958) found that attitude toward change was predictive of attitude toward specific change related to the introduction of office EDP equipment, particularly when the employee perceived or anticipated relatively extensive changes in his own job. Hardin (1967) discovered positive relationships between attitude toward change and desire for change in all of fourteen job aspects, with eight relationships significant. Kirton and Mulligan (1973) found attitudes toward change among managers significantly and positively related to attitudes toward a likely change in managerial practice, the adoption of thorough appraisal schemes by companies which at that time did not have them.

Also, attitude toward change has been significantly related to the degree of individual employee participation in a labor-management cooperative program at TVA (Patchen, 1965). The program was an organizational change itself and also a vehicle for future organizational change.

These findings suggest that attitude toward change in general may be an underlying determinant of other types of responses to change and may influence the success of externally-initiated change efforts in organizations.

3. No organizational-level variables have been investigated in relation to attitude toward change. The work group variable of group cohesiveness and the leadership style and change attitude of the immediate superior (Faunce, 1960; Trumbo, 1961) represent characteristics of the situation rather than the individual worker, but their intended scope is narrower than the whole organization. Although three of the studies cited have been performed in more than one organization (Vertinsky, 1972; Kirton and Mulligan, 1973) or major division of the same organization (Patchen, 1965), none have examined differences in responses between organizations.

There are strong reasons to believe that attitude toward change is related to organizational variables of greater scope than the work group.

One is the discovery of significant relationships between attitude toward change and other situational variables (see above). Another is the existence of relationships between organizational properties and other job-related attitudes (Porter and Lawler, 1965; Lawler, Hall, and Oldham, 1974). A third is the likelihood of some relationship existing between a job-related attitude and perceptual measures of organizations, as noted in the first section of the chapter.

In summary, attitude toward change has been shown to be indicative of other types of responses to change but independent of job satisfaction. To date it has not been related to variables at the organizational level. However, there does exist rationale for suspecting some relationship between attitude toward change and perceptual measures of organizations, one of which is organizational climate.

## Research on Organizational Climate

This section will present various definitions and uses of the term organizational climate, a summary of previous research, and criticisms of the construct. It will then reach conclusions on the present state of organizational climate research and the proper directions of future research.

## Definitions and Usage

Organizational climate has become a favorite topic of organization research in the past ten years. Its popularity occurs simultaneously with the advent of the open system approach to organizations (Katz and Kahn, 1966; Seiler, 1967), which stresses the interdependence of system components and the importance of the environment. It also embodies an increased concern for ecological principles in psychology (Barker, 1965; Kelly, 1968) and society as a whole (Commoner, 1971).

Because organizational climate is an attractive term, its use has been abused by many researchers. Forehand and Gilmer (1964) defined organizational climate as:

> . . .the set of characteristics that describe an organization and that (a) distinguish it from other organizations, (b) are relatively enduring over time, and (c) influence the behavior of people in the organization (1964, p. 362).

James and Jones (1974) observed that, according to this definition, almost any study focusing on organizational or group characteristics could fall within the scope of organizational climate. For example, Frederiksen (1968) claimed to be manipulating climate by varying "rules and regulations" and "closeness of supervision"; in contrast, Litwin and Stringer (1968) reported that confederates in three simulated business firms established different climates by employing different leadership styles. James and Jones (1974) concluded, "In this respect, organizational climate seems anonymous with organizational situation and

seems to offer little more than a semantically appealing but 'catch-all' term" (1974, p. 1099).

Tagiuri (1968) specified that organizational climate also refers to the quality of the organization's internal environment as experienced by the insider, thus stipulating that it be measured perceptually. Climate so defined represents the organization subjectively, as people see it in a holistic sense, rather than objectively, in a more impersonal and differentiated sense. Tagiuri's definition with minor modifications is the most commonly accepted definition of organizational climate in current research.

## Previous Research

The research which will be discussed includes virtually all of the studies which have been cited more than once or appeared in a leading journal in the past five years.[10] It does not include most of the earlier studies which used the term organizational climate in a haphazard way as stated above. Table 5 summarizes the variables which have been found to have significant relationships with organizational climate. The following observations are based on the research reported in Table 5:

1. The variable organizational climate has performed several functions in organization research studies.

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[10] *Academy of Management Journal, Administrative Science Quarterly, Human Relations, Journal of Applied Psychology, Journal of Business Research, Organizational Behavior and Human Performance, Personnel Psychology, Psychological Bulletin.*

TABLE 5

SIGNIFICANT CORRELATES OF ORGANIZATIONAL CLIMATE

| Type of Variable/Variable | Role of Org. Climate | Reference | Notes |
|---|---|---|---|
| PERSONAL DATA OF INDIVIDUALS | | | |
| 38 biographical items (*e.g.*, involvement in social activities, health problems) | Dependent | Gavin (1975) | No interaction found between biographical items and objective measures of organizations |
| PERSONALITY CHARACTERISTICS OF INDIVIDUALS | | | |
| Needs for achievement, power, and affiliation | Intervening | Litwin and Stringer (1968) | Independent variable: leadership style |
| Cattell's 16 personality factors (*e.g.*, reserved/outgoing, conservative/experimenting) | Dependent | George and Bishop (1971) | Interaction found with structural variables |
| JOB-RELATED DATA OF INDIVIDUALS | | | |
| Managerial level | Dependent | Schneider and Bartlett (1970) | Differences between managers and assistant managers |
| " " | Dependent | Friedlander and Greenberg (1971) | Differences between hard-core unemployed and supervisors |
| " " | Dependent | Schneider and Hall (1972) | Moderator of interaction between amount of activities performed and climate |
| " " | Dependent | Payne and Mansfield (1973) | |
| " " | Dependent | Bartol and Chesser (1975) | Differences between army officers, none between civilian managers |

TABLE 5—Continued

| Type of Variable/Variable | Role of Org. Climate | Reference | Notes |
|---|---|---|---|
| Managerial level | Dependent | Gavin (1975) | |
| Job performance | Independent | Friedlander and Greenberg (1971) | |
| " " | Independent | McCarrey and Edwards (1973) | Sample of scientists |
| " " | Independent, Interacting | Pritchard and Karasick (1973) | Interaction with needs for achievement, affiliation, autonomy, order and dominance |
| " " | Independent, Interacting | Downey, Hellriegel, and Slocum (1975) | Interaction with self-confidence and sociability |
| " " | Independent | LaFollette and Sims (1975) | |
| Job performance (leaders) | Independent, Interacting | Csoka (1975) | Interaction with leadership style |
| Amount of activities performed | Dependent | Schneider and Hall (1972) | |
| JOB-RELATED ATTITUDES OF INDIVIDUALS | | | |
| Job satisfaction | Independent | Litwin and Stringer (1968) | |
| " " | Independent | Friedlander and Margulies (1969) | |
| " " | Independent, Interacting | Pritchard and Karasick (1973) | See previous note |
| " " | Not declared | Downey, Hellriegel, Phelps, and Slocum (1974) | Managerial level and job performance controlled |

TABLE 5—Continued

| Type of Variable/Variable | Role of Org. Climate | Reference | Notes |
|---|---|---|---|
| Job satisfaction | Independent | Lawler, Hall, and Oldham (1974) | |
| " " | Independent | Lyon and Ivancevich (1974) | Sample of nurses and administrators in hospital |
| " " | Independent | Waters, Roach, and Batlis (1974) | |
| " " | Independent, Interacting | Downey, Hellriegel, and Slocum (1975) | See previous note |
| " " | Not declared | LaFollette and Sims (1975) | |
| Attitudes toward organization: openness to others' ideas, independence | Independent | Litwin and Stringer (1968) | |
| Attitude toward superior | Independent | Friedlander and Greenberg (1971) | |
| Expectations of climate | Independent | Schneider (1972) | |
| Preferences for climate | Independent | Schneider (1972) | |
| Importance of activities performed | Dependent | Schneider and Hall (1972) | |
| Involvement, perceived effort, perceived performance, intrinsic motivation | Independent | Waters, Roach, and Batlis (1974) | |
| PERCEPTUAL MEASURES OF ORGANIZATIONS | | | |
| Organizational practices (*e.g.*, timely decision making, teamwork, upward information requirements) | Not declared | LaFollette and Sims (1975) | |
| Situational favorableness for leader: leader-member regulations, task structure, position power | Independent, Interacting | Csoka (1975) | |

TABLE 5—Continued

| Type of Variable/Variable | Role of Org. Climate | Reference | Notes |
|---|---|---|---|
| OBJECTIVE MEASURES OF ORGANIZATIONS | | | |
| Organization performance | Independent | Likert (1967) | System 4 best |
| " " | Independent | Litwin and Stringer (1968) | |
| " " | Independent | Lawler, Hall, and Oldham (1974) | |
| Formalization, centralization, complexity, and professional latitude | Dependent | George and Bishop (1971) | Interaction found with personality characteristics |
| Complexity, size | Dependent | Payne and Pheysey (1971); Pheysey, Payne, and Pugh (1971) | Exploratory study of three organizations |
| Size, dependence | Dependent | Payne and Mansfield (1973) | |
| Structural variables: span of control, no. of levels, tall/flat, no. of levels from top of parent organization | Dependent | Lawler, Hall and Oldham (1974) | R&D organization |
| Process variables: performance reviews, professional autonomy, assignment generality, collaboration support, informal budget account | Dependent | Lawler, Hall, and Oldham (1974) | |
| Personnel composition, organization, task content, physical environment | Dependent | Gavin (1975) | |
| Technology: small batch/ mass/process | Not declared | Peterson (1975) | Sample of Norwegian firms |

It has been considered as an independent variable alone or interacting with another variable, an intervening variable, a dependent variable to a single or two interacting variables, and simply as a correlate of other variables. Given its central role as a possible linking pin between analysis at the individual and organizational levels (Payne and Mansfield, 1973), its flexibility as to usage is not surprising.

2. Organizational climate has most often been considered as a determinant of job satisfaction and performance, individual and organizational.
3. Relationships between organizational climate and basic personal data items such as age, education, and sex have seldom been examined if at all.
4. One classic study (Litwin and Stringer, 1968) demonstrated the effect of manipulating organizational climate on individual motivation. No follow-up work appears to have been done in this area of research.
5. Although the concepts of leadership style and organizational climate have similar origins (Halpin, 1966), research on them has proceeded independently. Csoka (1975), in an exception, has found a relationship between organizational climate and the situational favorableness dimension of Fiedler's contingency model of leadership (Fiedler, 1967).

6. Organizational climate has been found significantly related to a considerable number of objectively-measured properties of organizations. Following the reasoning expressed in the first section of the chapter, there can be little doubt that organizational climate is also an organizational property.
7. Despite considerable research on the relationships between technology and organizational structure (Hage and Aiken, 1969; E. Harvey, 1968; Hickson, *et al.*, 1969; Mohr, 1971) and between organizational structure and climate (See Table 5), only one study has investigated the relationship between technology and organizational climate (Peterson, 1975).
8. Other than one of the personality factors, conservative/experimenting, which was combined with other factors in canonical analysis (George and Bishop, 1971), organizational climate has not been examined in relation to any variable analogous to attitude toward change.

## Criticisms of the Construct

The proper role of the organizational climate construct in organization theory is currently a subject of much debate. Most researchers agree that such a construct *can* play a valuable role, but some question whether the construct as presently defined and measured *does* play such

a role. Severe criticism of the state of the art of organizational climate research has been expressed by Guion (1973), Johannesson (1973), and James and Jones (1974). The major criticisms and responses to them follow.

1. *Because organizational climate is measured perceptually, it is an individual and not an organizational property.* As discussed in the first section of the chapter, the conclusion is not necessarily true. Perceptual measures of organizations which are related to objective measures may be said to assess organizational properties. Research cited above demonstrates that this is indeed the case for organizational climate.

2. *Organizational climate and job satisfaction are redundant constructs.* Johannesson (1973) performed a cluster analysis between responses to questionnaires intended to measure job satisfaction, organizational climate, and job descriptions. He found that similarly-oriented scales from the three questionnaires (*e.g.*, pay, work content) clustered together and concluded that they were measuring basically the same property. Hellriegel and Slocum (1974) disputed the finding, citing the conceptual distinction between attitude and perception stated in the first section of the chapter and pointing out the evaluative nature of the questionnaire items which supposedly measured job description.

Recent research studies have reached the opposite conclusion of Johannesson (1973). Downey, *et al.* (1974), found that managerial level and job performance have substantial intervening effects on the relationship between satisfaction and climate. LaFollette and Sims (1975) measured the same constructs as Johannesson (1973) and found that their relationship with job performance differed dramatically. If satisfaction and climate were the same, neither of the above results would have been obtained. Schneider and Snyder (1975) found that (1) responses to two measures of satisfaction were more related to each other than to a measure of climate; (2) respondents in different positions agreed more on climate than satisfaction; (3) climate and satisfaction were more correlated for some positions than others; and (4) people who described climate in what appeared to be a more positive sense were not necessarily the most satisfied.

Overall, the research evidence suggests that organizational climate is a separate construct from job satisfaction.

3. *There is little agreement on how to measure organizational climate.* Hellriegel and Slocum (1974) reviewed 31 research studies which used a total of 16 different questionnaires to assess organizational climate. Each questionnaire was based on a different

conception of organizational climate and used different dimensions. These conceptions can be divided into two categories:

a. *Unidimensional*, in which climate is represented by ideal types or varies along a single continuum, *e.g.*,

   -Mechanistic—organic (Burns and Stalker, 1961);

   -Closed—open (Halpin and Croft, 1962);

   -Power-related, affiliative, or achieving (Litwin and Stringer, 1968); and

   -System 1, 2, 3, or 4 (Likert, 1967).

b. *Multidimensional*, in which climate is represented by particular combinations of quality along several dimensions, *e.g.*,

   -Disengagement, hindrance, esprit, intimacy, aloofness, production emphasis, thrust, and consideration (Halpin and Croft, 1962, for schools; adapted by Margulies, 1965, for any work-related organization);

   -Structure, risk, reward, responsibility, support, warmth, standards, conflict, and identity (Litwin and Stringer, 1968):

   -Individual autonomy, structure imposed on position, general reward level and orientation, and warmth and support (Campbell, *et al.*, 1970); and

   -Superior effectiveness, work challenge and meaning, personal acceptance, and supportive autonomy (Schneider and Hall, 1972).

Litwin and Stringer (1968) and Halpin and Croft (1962) fit both categories by describing ideal types in terms of rankings on several dimensions of organizational climate.

Wallace, Ivancevich, and Lyon (1975) proposed that research on organizational climate be halted until the reliability of instruments which claim to measure it is verified. This would be a drastic step to take. In reviewing the development of climate instruments, Hellriegel and Slocum (1974) concluded that activity and progress since 1968 have been substantial. They do recommend a consolidation rather than further proliferation of response schemes on instruments while climate research goes on, so that it will be less difficult to make cross-study comparisons and to ascertain the state of the art.

4. *Organizational climate scales are too heavily people-oriented.* Leavitt (1965) considered organizations in terms of task, structure, technology, and people variables. One might expect an organizational climate instrument to tap a balance of variables from all of these types. Instead, most instruments place strong emphasis on people, moderate emphasis on structure, moderate to slight emphasis on task, and slight to no emphasis on technology variables (Hellriegel and Slocum, 1974).

The overemphasis on people variables corresponds to the nearly exclusive emphasis given to people approaches in the organizational change literature (see the second section of this chapter). The same

imbalance is reflected in the variables to which organizational climate has been related: people variables (*e.g.*, job satisfaction, need for power) are most predominant; task (*e.g.*, individual and organizational performance) and structural (*e.g.*, complexity, span of control) variables follow; and technology variables are least included. Research should not be halted for this reason. However, if organizational climate is to be truly indicative of a range of variables in organizations, future instruments should strike a better balance between different types of variables.

## Conclusions

Organizational climate in its short life has become an established concept in empirically-oriented organization research. Substantial progress has been made toward a common definition which distinguishes organizational climate from other variables. Significant correlations have been found in many settings with a large number and variety of variables. Perceptions of the organization are pervasive and have been seen in research on climate to affect or be affected by many phenomena, from personal data items to personality characteristics to job satisfaction and performance to managerial level to organization structure and process. Organizational climate or something like it will always play a central role in organization theory.

Research on organizational climate is still in the exploratory stages. The uneven reliability and diversity of instruments has held back progress by making it difficult for researchers to build upon the conclusions of others. Certainly more agreement on instruments is a prerequisite for any other than tentative findings of research to emerge.

As instruments come to be shared between studies, many kinds of research will contribute to knowledge concerning organizational climate. There is a need for more research on individual and organizational determinants of climate and their interaction. The relationships between organizational climate and both leadership style and technology deserve further exploration. Also the relationship between organizational climate and job satisfaction needs to be made more clear; despite the number of studies investigating the two variables, no two studies have allowed comparison of results by using the same instrument for each. The latter comment holds true for organizational climate and job performance as well.

Organizational climate has evolved considerably in usage over the last ten years, and further evolution is yet to come. Progress in the area of organizational climate research, including examination of its relationship with attitude toward change, promises to yield significant contributions for all of organization research.

## Formulation of Hypotheses

The preceding two sections of the chapter have shown how research on both attitude toward change and organizational climate will be enhanced by examination of their relationship with each other. This section will draw upon research which may be interpreted to provide a conceptual linkage between the two variables. The end result will be specific hypotheses pertaining to the relationship between attitude toward change and organizational climate.

### Supporting Research

Burns and Stalker (1961) distinguished between two systems of management practice, mechanistic and organic. Mechanistic systems were characterized by differentiation of functional tasks; supervisors seeing that tasks were done as spelled out; a hierarchic structure of control, authority, and communication; knowledge and final reconciliation at the top of the hierarchy; and insistence on loyalty to the firm and obedience to supervisors. Organic systems, on the other hand, were characterized by an orientation toward the common task; adjustment and continual re-definition of individual or group tasks through interaction with others; a network structure of control, authority, and communication; knowledge located throughout the firm and reconciliation where appropriate; and commitment to the firm's tasks, progress, and expansion more valued than loyalty and obedience.

The most important distinguishing characteristic between the two systems for purposes of the present study was in their responses to change:

> In firms which operated consciously on organic lines, changes from any direction were regarded as what they manifestly were—circumstances which affected every part of the firm and everybody's job, in some way. Organizational changes, additional tasks, and growth in any particular direction tended to be seen as the concerted response of the firm to a new situation; although debate and conflict were present, they were manifestly present and could be treated as part of the new situation to be reckoned with. In firms which operated according to mechanistic principles, the response to change was usually to create a new group, or to reconstitute the existing structure, or to expand an existing group which would be largely responsible for meeting the new situation, and so 'not disrupt the existing organization' (Burns and Stalker, 1961, p. 8).

As can be seen, organic systems had more positive responses to change and were less threatened by change than mechanistic systems.

Halpin and Croft (1962) distinguished between open and closed organizational climates in school systems using similar terms. Teachers in the open climate enjoyed high esprit and worked together well without bickering or griping. They possessed the incentive to work things out and to keep the organization "moving," and were naturally proud to be associated with their school. In the closed climate, teachers were disengaged and did not work together well. To secure some sense of achievement, the major outlet for the teachers was to complete a variety of reports and to attend to "housekeeping" duties. The principal was highly

aloof and impersonal in controlling and directing the activities of teachers and set up considerable rules and regulations about how things should be done. In short, the open climate was far more responsive to change than the closed climate.

Halpin and Croft (1962) developed standard profiles of scores for open and closed climates based on factor analysis of the responses of over 1000 teachers in 71 schools to the Organizational Climate Description Questionnaire (OCDQ). The dimensions of organizational climate measured by the OCDQ prior to its revision by Margulies (1965) are specified in Appendix II.[11] Table 6 reports the standard profiles of scores on each of the eight dimensions for open and closed climates. Since the revised OCDQ using the same dimensions was selected to measure organizational climate in the present study, the profiles obtained by Halpin and Croft (1962) are quite relevant to this study.[12]

If attitudes toward change are more positive in open climates than in closed climates and if the profiles in Table 6 accurately depict the climates, we can expect that:

1. Scores on esprit, thrust, and consideration will be positively related to attitude toward change; and

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[11]See Table 1 for the comparable dimensions of organizational climate measured by the revised OCDQ.

[12]The basis for selection of the revised OCDQ will be discussed in the next chapter.

TABLE 6

STANDARD PROFILES OF SCORES FOR OPEN AND CLOSED ORGANIZATIONAL CLIMATES

| | Scores[1] | |
|---|---|---|
| | Open Climate | Closed Climate |
| Members' Behavior: | | |
| Disengagement | 43 | 62 |
| Hindrance | 43 | 53 |
| Esprit | 63 | 38 |
| Intimacy | 50 | 54 |
| Leader's Behavior | | |
| Aloofness | 42 | 55 |
| Production Emphasis | 43 | 54 |
| Thrust | 61 | 41 |
| Consideration | 55 | 44 |

[1]Scores are shown with a mean of 50 and a standard deviation of 10.

SOURCE: A. W. Halpin and D. B. Croft, *The Organizational Behavior of Schools* (Washington, D.C.: U. S. Office of Education, Department of Health, Education, and Welfare, 1962).

2. Scores on disengagement, hindrance, intimacy, aloofness, and production emphasis will be negatively related to attitude toward change.

Other findings support a conclusion that there is a negative relationship between attitude toward change and intimacy. The threat of change to social relations was considered a primary force of resistance to change (See Table 3). Intimacy is the dimension of organizational climate which refers to members' social relationships with each other, so the two views are consistent. Trumbo (1961) reasoned that change may present a threat to the satisfaction and security obtained in cohesive work groups and in fact found a negative relationship between attitude toward change and group cohesiveness. No other findings in the literature which reflect on the relationships between attitude toward change and the other seven dimensions of organizational climate have been discovered.

## Statement of Hypotheses

In conclusion, previous research suggests hypotheses for relationships between individuals' attitudes toward change and their perceptions of their organizational climate. Attitude toward change is hypothesized to be:

1. Negatively related to disengagement;
2. Negatively related to hindrance;
3. Positively related to esprit;
4. Negatively related to intimacy;

5. Negatively related to aloofness;
6. Negatively related to production emphasis;
7. Positively related to thrust; and
8. Positively related to consideration.

These hypotheses follow directly from (1) the profiles of open and closed organizational climates in Table 6 and (2) the equating of open/closed organizational climate with positive/negative attitude toward change based on Burns and Stalker's research (1961). The dimensions of organizational climate were not given separate treatment in this section because they were formulated originally as the result of the same analysis (Halpin and Croft, 1962) and have always been studied together in subsequent studies. Also, they bear little relation to other perceptually-measured properties of organizations which have been examined independently or the dimensions of other climate instruments. For the same reasons, the hypotheses will be considered to be supported or not supported as a whole, rather than separately, in the discussion of the results of the study.

The methodology for testing these hypotheses will be described in the next chapter.

# C H A P T E R  I I I

## METHODOLOGY

The purpose of this chapter is to present the methodology of the study. In particular, it will describe:

1. The nature of the organizations in which data were collected;
2. The selection of subjects within organizations, including selection procedures of prospective subjects and return rates;
3. The questionnaire used to collect data from subjects, including the validity and reliability of the attitude toward change and organizational climate instruments and a new factor analysis of the organizational climate instrument.

Overall, the study is best described as a sample survey. Permission was obtained from three organizations of a similar type and one dissimilar organization to distribute a questionnaire assembled especially for the study to each of a selected portion of their employees. The questionnaires which were filled out and returned by the employees became the data base for the study. The data base was then subjected to analysis. Procedures and results of the analysis will be discussed in the next chapter.

## Nature of Organizations Sampled

Three organizations whose primary function is to provide health care for residents or patients provided the main data base for the study. A satellite plant of a large industrial organization provided additional data used for selected comparisons in the study. The purpose of this section is to provide brief descriptions of the four organizations sampled.

### Organization 1

Organization 1 is a hospital in a medium-sized city in New England. It provides general health-care services to patients and, in addition, specializes in cancer treatment. At the time of the study, the hospital had approximately 1200 employees and 360 beds available for patients.

Because the study addresses the subject of organizational change, it is appropriate to note recent major changes which have occurred in the organizations sampled. Organization 1 doubled its available floor space in 1971, four years before the study, when the construction of additional floors was completed. Support services such as diagnostic laboratories and X-ray facilities were greatly expanded at that time, and the number of employees thereafter went from 700 to 1200. This was undoubtedly the biggest change affecting the hospital in recent years.

A major "non-change" was that unions which had sought to represent employees had been denied that right in all attempts, the most recent coming in January, 1975.

## Organization 2

Organization 2 is a medical center in a medium-sized city in New England. It provides general health-care services plus most major specialties, *e.g.*, open heart surgery. It has an on-site school of nursing associated with it and is used by the school as a teaching hospital. At the time of the study, the medical center had approximately 1700 full-time and 800 part-time employees and 750 beds available for patients.

A major change was the acquisition in February, 1975, of a maternity hospital which was previously controlled and managed by another hospital. The 800 employees of the maternity hospital instantly became new members of Organization 2. The maternity hospital was different from the original core of Organization 2 in two major ways. First of all, its 400 Registered Nurses were represented by a union, where only the 40-person Engineering Department of the original Organization 2 was represented. Second, its employees were not used to the business-like procedures prevalent in Organization 2 and were required to adapt to them.

All employees were affected by substantially improved benefits in February, 1975. At that time, medical insurance became fully paid for by the medical center and full maternity benefits were provided.

## Organization 3

Organization 3 is a state-run live-in school for the mentally retarded. It is located in a small New England town. At the time of the study, the school had approximately 1100 full-time employees, not counting the large number of student interns and volunteers, and 850 residents. Non-management employees are represented by a state employees union.

The school has gone through gradual changes in recent years which have affected nearly all employees. In the country as a whole and the state in particular, care for the mentally-retarded has been evolving from a custodial to a community orientation. More care is now taking place outside the school than before. The impact on the school has been an increase in concern for job security and fear of loss of jobs among employees. An offsetting factor has been that standards for the amount of care which the mentally-retarded receive have increased. Federal funds have also become available to cover additional services provided. As a result, 100 employees had been added in the last two years although the number of residents had declined by 150 in the same period.

The managerial philosophy of the school has changed from the custodial orientation to a more programmatic orientation. Rather than "ward heads," the school now has "program directors." Thus the entire organizational structure and division of responsibilities have

been realigned, changing the job content of many employees. These are very sweeping changes.

### Organization 4

Organization 4 is a satellite manufacturing plant of a major industrial corporation. It manufactures standard stainless steel components for products assembled elsewhere in the corporation. It is located in a small New England town. At the time of the study, the plant had been in existence for ten years and had approximately 400 employees.

The plant has led a very stable existence; very few changes have occurred in recent years. When regular work dropped off two years prior to the study, management was able to bring in new work to keep the same number of employees. The management of the plant seeks to maintain two-way communication with employees via meetings with a different group of employees each week. None of the employees are represented by a union.

### Selection of Subjects

Prospective subjects were chosen by pre-arranged sampling plans except in Organization 1. Management of Organization 1 insisted that the questionnaire be distributed only to those departments seen as least likely to object to the study. Organization 2 chose employees at random from personnel files. Organization 3 gave the questionnaire to every tenth employee picking up his or

her paycheck on a particular pay day. Organization 4 selected every fourth employee from an alphabetized list. In all organizations, employees filled out questionnaires on their own and returned them at their convenience to a drop box.

Data on the return rate of questionnaires by prospective subjects appear in Table 7. Although there is no way of knowing why the return rates in the organizations varied other than by going back to prospective subjects, some speculation may be made. The below average return rate in Organization 3 may have been due to factors unrelated to the questionnaire itself. Previous studies had asked employees in Organization 3 to fill out attitude questionnaires, whereas no such studies had been previously conducted in the other organizations. Also, the cover letter attached to the questionnaires distributed in Organization 3 inadvertently set a deadline for return which gave many employees little time to fill it out and return it.

Return rates may also have been affected by the announcement that a summary of responses on the questionnaires for each organization would be returned to its management (with responses grouped so that individuals could not be identified). Conceivably they could have been affected by employees' attitudes toward change or perceptions of organizational climate.

TABLE 7

RETURN RATE OF QUESTIONNAIRES

BY PROSPECTIVE SUBJECTS

| Organization | Questionnaires Distributed | Questionnaires Returned[1] | Questionnaires Returned and Usable[2] |
|---|---|---|---|
| 1 | 74 | 40 (54%) | 38 (51%) |
| 2 | 140 | 80 (57%) | 77 (55%) |
| 3 | 150 | 37 (25%) | 35 (23%) |
| 4 | 99 | 75 (76%) | 70 (71%) |
| Total | 463 | 232 (50%) | 220 (47%) |

[1]Questionnaires returned blankwere not counted in the total returned.

[2]Questionnaires with excessive missing data were excluded from the analysis.

The reason for or effect of the differing return rates was not examined further in the study. Also, no attempt was made to determine the extent to which the questionnaires returned were representative of the entire employee populations of the organizations. Potential problems for the study existed in both areas, especially if the samples from each organization were combined for analysis. However, such problems were minimized by limiting the bulk of the analysis of data to the comparison of results for the separate organizations (see Chapter IV).

## The Questionnaire

All subjects included in the study completed a standard questionnaire for each organization. The questionnaire included previously-developed measures of attitude toward change (Trumbo, 1958) and organizational climate (Margulies, 1965); four questions used to check the validity of the attitude toward change scale; and single-item measures of satisfaction with job, satisfaction with the organization, sex, age, education, department, level of present position (managerial level), years in present position, and length of service (years in organization). It varied between organizations in its use of the term hospital/school/company and its description of departments and position levels. The questionnaire used appears in Appendix I.

The purpose of the remainder of this section is to describe the basis of selection, content, reliability, and validity of the instruments used to measure attitude toward change and organizational climate. In the case of organizational climate, results of a new factor analysis will be reported. No further description is required for the single-item measures; the items themselves are included in Appendix I.

## The Attitude Toward Change Instrument

The two instruments considered as possible measures of attitude toward change in the study were those developed by Patchen (1965) and Trumbo (1958). Trumbo's "Change Scale" was selected on the basis that it was used in other studies and was included in Shaw and Wright's volume of scales for the measurement of attitudes (1967). Usage of Patchen's instrument has not been reported other than in the original study.

The change scale consists of nine Likert-type items. It includes items relevant to attitudes toward changes in ways of doing the job and in transfers to new jobs. The nine items as they appear in the questionnaire (with their original numbering) read as follows:

5. If I could do as I please, I would change the kind of work I do every few months.

6. One can never feel at ease on a job where the ways of doing things are always being changed.

7. The trouble with most jobs is that you just get used to doing things one way and then they want you to do them differently.

8. I would prefer to stay with a job I know I can handle rather than change to one where most things would be new to me.

9. The trouble with many people is that when they find a job they can do well, they don't stick with it.

10. I like a job where I know I will be doing my work about the same way from one week to the next.

11. When I get used to doing things one way, it is disturbing to have to change to a new method.

12. It would take a sizable raise in pay to get me to voluntarily transfer to another job.

13. The job that you would consider ideal for you would be one where the way you do your work: _____.

Items 5-12 have response categories of "strongly agree," "agree a little," "neither agree or disagree," "disagree a little," and "strongly disagree." Item 13 has response categories of "is always the same," "is usually the same," "undecided," "changes to some extent," and "changes a great deal." The instrument is scored by summing the responses to the nine items, with Question 5 scored negatively, and dividing by nine to obtain an average score per item. When the response to one item is missing, it is replaced by the average score for the other eight items. The higher the score, the more positive the attitude toward change.

Change Scale Reliability

In the only previous examination of the reliability of the change scale, Trumbo (1958) reported a split-half reliability coefficient, corrected by the Spearman-Brown formula, or r = .79. His calculation was based on the two

subscales consisting of the odd and even change scale items respectively. Cronbach (1951) criticized the split-half approach to reliability testing because of its lack of uniqueness. Instead of giving a single coefficient for the test, the procedure gives different coefficients depending on which items are grouped when the test is split into two parts. Cronbach proposed use of "Coefficient Alpha," which he derived as the mean of all split-half reliability coefficients resulting from different splitting of a test. Following a procedure used by Guttman (1953), Novick and Lewis (1967) rederived Coefficient Alpha as a lower bound on the reliability of a test. Cronbach's (1951) assertion that Coefficient Alpha is the mean of all the split-half reliability coefficients was seen to apply only under special conditions.

In the present study, a split-half reliability coefficient, corrected by the Spearman-Brown formula, of r = .80 was calculated for the sample of all subjects combined. The value is virtually identical to that calculated by Trumbo. Based on Trumbo's calculation, Shaw and Wright (1967) evaluated the change scale as "average" in reliability.

A Coefficient Alpha of .75 was calculated for the same sample in the present study. Although opinion varies on standards of reliability, Nunnally (1967) advises that, in very early stages of research on a construct, reliabilities as low as .50 or .60 are acceptable, although reliabilities approaching .80 are preferable. Since research

on the attitude toward change is in its early stages, the reliabilities reported are acceptable by Nunnally's criteria.

Although the change scale was acceptable in reliability as it stood, experiments were performed to see if its reliability could be improved by the elimination of one or more of its nine items. It was found that responses to Question 5 had a very low correlation with the sums of responses to the other eight items, both for the subjects within each organization and for all subjects combined. The instrument was then rescored by summing the responses to all items except Question 5 and dividing by eight. The revised change scale yielded an improved split-half reliability coefficient, corrected by the Spearman-Brown formula, of $r = .83$ and an increased Coefficient Alpha of .78. Subsequent testing of hypotheses was performed on data using both the original and revised change scale to determine whether the scale itself affected results; this analysis is reported in the next chapter.

Change Scale Validity

To examine the validity of the change scale, Trumbo (1958) asked employees of an insurance company involved in recent "office automation" about the amount of change in their jobs: (a) directly due to the changeover to the computer; (b) in general from time to time; (c) expected in the next year or two; and also (d) the change in their *kind*

of job due to the computer in the past two years. In each of the four cases he asked employees how they felt about the amount of change which had occurred or was expected to occur. In all cases employees who had experienced change or expected it and were in favor of it had change scale scores significantly higher than those of employees indifferent to or not in favor of the change.

In other studies, change scale scores were found significantly related in a positive direction to their attitude toward particular change in eight of fourteen general job characteristics (Hardin, 1967) and in managerial appraisal schemes (Kirton and Mulligan, 1973). Evidence of a relationship between attitude toward change and the attitude toward a particular change supports the validity of the scale used to measure attitude toward change.

In the present study, employees were asked about the amount of change in general in their jobs during the past year and expected in the next year as follows:

1. Within the past year, have there been any *changes* in the way your job is done—like the equipment you work with, the work procedures, the job standards and requirements, the kind of records you have to keep, *etc.*? (Answer for changes affecting you in your *present* job classification.)
   There have been: CHECK ONE.
   ____(1) No changes; my work is done exactly the way it was a year ago.
   ____(2) One or two changes; but it is not too different.
   ____(3) A few changes: it's a little different now.
   ____(4) Quite a few changes; things are fairly different.
   ____(5) Many changes; my work is almost completely different now from the way it was a year ago.

2. In general, how do you now feel about changes during the past year that affected the way your job is done? CHECK ONE.

____(1) They made things somewhat worse.
____(2) They didn't improve things at all.
____(3) They didn't improve things very much.
____(4) They improved things somewhat.
____(5) They have been a big improvement.
____There have been no changes to my job in the past year.

3. In the next year, how many changes do you expect in the way your job will be done, compared to how it is done now? CHECK ONE.

____(1) No changes; one year from now, my work will be done exactly the way it is now.
____(2) One or two changes; but it will not be too different.
____(3) A few changes; it will be a little different.
____(4) Quite a few chnages; things will be fairly different.
____(5) Many changes; one year from now, my work will be almost completely different from the way it is now.

4. How do you feel about the changes you expect in the way your job is done in the next year? CHECK ONE.

____(1) They will make things somewhat worse.
____(2) They won't improve things at all.
____(3) They won't improve things very much.
____(4) They will improve things somewhat.
____(5) They will be a big improvement.
____There will be no changes in my job in the next year.

It was predicted that employees who had experienced changes in their jobs and felt the changes improved things at least somewhat would have higher change scale scores than those who felt the changes at best did not improve things at all. Confirmation of the prediction would support the validity of the attitude toward change measure. Table 8 indicates that the prediction was confirmed.

Similarly, it was predicted that employees who expected change in their jobs and felt the changes would improve things at least somewhat would have higher change

TABLE 8

ANALYSIS OF CHANGE SCALE VALIDITY

| Feeling About Change | Number of Subjects | Mean Attitude Toward Change | F Ratio | p |
|---|---|---|---|---|
| Feeling about Past[1] Change: | | | | |
| Made things somewhat worse/Didn't improve things at all | 23 | 2.86 | 9.02 | .003 |
| Improved things somewhat/Have been a big improvement | 94 | 3.38 | | |
| Feeling about Future[2] Change: | | | | |
| Will make things somewhat worse/Won't improve things at all | 8 | 2.74 | 4.69 | .033 |
| Will improve things somewhat/Will be a big improvement | 94 | 3.33 | | |

[1]Only subjects having experienced change in the past year as indicated by responses to Question 1 are included.

[2]Only subjects expecting change in the next year as indicated by responses to Question 3 are included.

scale scores than those who felt the changes would at best not improve things at all. Table 8 indicates that this prediction was also confirmed. The data in Table 8 suggest that the change scale is a reasonably valid measure of attitude toward change.

In summary, Trumbo's change scale (1958), the instrument best suited to assess attitude toward change in the study, was sufficiently acceptable in reliability and validity to justify proceeding with use of the attitude toward change construct. A revised change scale, obtained by dropping one item from the original scale, had increased reliability.

## The Organizational Climate Instrument

This subsection will describe:

1. The selection of the revised OCDQ as the instrument to measure organizational climate in the study;
2. The development and content of the original and revised OCDQ, including previous assessment of their validity and reliability;
3. Evaluation of the interdependence of the revised OCDQ dimensions using data collected in the study; and
4. Factor analysis of responses to the 64 items of the revised OCDQ collected in the study.

Selection of Instrument

The instruments developed by Likert (1967), Litwin and Stringer (1968), and Halpin and Croft (1962) were considered as possible measures of organizational climate in the study. They were used most in the studies reviewed by Hellriegel and Slocum (1974).

The Likert Organizational Profile (1967) was immediately seen to have limited value for the study. Its classification of organizational climate along one dimension, from System 1 to System 4, represents a higher level of abstraction than the compilation of scores along several dimensions which the other instruments provide; consolidation has its advantages, but the price paid is the loss of meaningful data. Although the Profile has items segregated by major organizational processes (leadership, motivation, communication, decision making, goal setting, and control), factor analysis of item scores has not yielded these as consistent factors (Butterfield and Farris, 1974). Also, Likert's preference for a System 4 climate appears to have entered into the instrument itself and affected its usefulness. Golembiewski and Munzenrider (1973) found that organizational members who rank high on social desirability tend to perceive organizational climate as closer to the "ideal" System 4.

The remaining two instruments were evaluated on the basis of extent of usage other than in the original study as well as examination of content. Litwin and

Stringer's Form B was used in several studies included in the original book (1968). However, it has received only slight use since. Halpin and Croft's Organizational Climate Description Questionnaire (OCDQ) received considerable use in assessing the organizational climate of school systems (*e.g.*, Andrews, 1965; George and Bishop, 1971; Stimson and LaBelle, 1971). It was revised to apply to any work organization by Margulies (1965) and has since been used in industrial (Friedlander and Margulies, 1969) and hospital (Lyon and Ivancevich, 1974) settings. Counting both original and revised forms, the OCDQ has received greater usage than Form B.

Examination of content shows that Form B includes fairly nonspecific, impressionistic statements as items, *e.g.*, "Decision making in this Organization is too cautious for maximum effectiveness"; "The attitude of our management is that conflict between competing units and individuals can be very healthy" (Litwin and Stringer, 1968). In contrast, the OCDQ includes specific, behaviorally-oriented statements as items, *e.g.*, "The department manager corrects the mistakes of employees"; "Group meetings are organized with a strict agenda" (Margulies, 1965).

The OCDQ also attempts to explicitly assess group and leader behavior dimensions of organizational climate, whereas Form B makes no such distinction. Judging on the basis of content and usage, the OCDQ as revised by Margulies (1965) was selected for usage in the present study.

Development of OCDQ
and Revised OCDQ

Halpin and Croft (1962) developed the OCDQ by unusually thorough procedures. A pool of about 1000 items was developed from analysis of critical incidents, interviews, the Leader Behavior Description Questionnaire (Stogdill and Coons, 1957), and The Group Description Questionnaire (Hemphill and Westie, 1950). These items were first screened to 600, then to 160 by administration of four 150-item forms to 284 teachers in 17 schools. Eight dimensions emerged from factor analysis of responses to the 160-item forms by 91 teachers. Further cluster and content analysis reduced the number of items to 80, then to a final 64.

The final dimensions appeared to be moderately independent, with a median dimension intercorrelation of .17. Each dimension was scored by taking the average of the responses to its items, allowing for the negative scoring of certain items. Appendices II and III present the description of the various dimensions and the items composing the dimensions for Form IV, the final version of the original OCDQ.

Halpin and Croft (1962) further proposed that scores for the dimensions be plotted as a profile. They identified six standard profiles of scores pertaining to six types of organizational climates. The climates were labeled open, autonomous, controlled, familiar, paternal and closed.

The OCDQ was validated in later studies summarized in Lake, *et al.* (1973). Andrews (1965) supported the construct validity of the dimensions. Brown (1965) disagreed with the notion of standard profiles but found evidence supporting a climate continuum. McFadden (1966) found no relationship between the OCDQ scores of schools as rated by outside observers and teachers within. However, Ford (1966) found that principals in schools with open climates were characterized by greater self-acceptance and capacity for intimate contact than principals in schools with closed climates. Thomas (1970) found that a human relations training program for principals appeared to cause shifts in their teachers' OCDQ responses toward more open climates. Steinhoff (1965) concluded that the factor structure of the OCDQ was similar to that of Stein's College Characteristics Index and that the OCDQ "was able to make fine distinctions between levels of the organization and between individual schools, thereby attesting to the validity of the instrument."

Halpin and Croft (1962) reported dimension split-half reliability coefficients ranging from .25 to .84, with the median at .64. No further reliability data have been reported.

Considering the validity and reliability data available, Lake, *et al.* (1973) concluded that the OCDQ "represents a good blend of underlying conceptualization

and empirical winnowing of items" and seems "quite workable" for examining the organizational climate of schools.

Margulies (1965) revised the OCDQ for use in industrial settings by modifying the individual items while leaving the item groupings by dimension the same. The revised definitions of the eight dimensions were presented in Table 1. Table 9 identifies the revised items composing the dimensions. Most items were converted by changing "principal" to "department manager," "teachers" to "employees," and "school" to "company." Where necessary, broader changes were made in wording of the items to retain the same concept; for example, "Student progress reports require too much time" was changed to "Procedures in this company are bothersome." Margulies justified the conversion process as follows:

> It was desirable and essential to maintain the eight dimensions of the OCDQ since they were derived from what is currently known about organizations and the nature of people in organizations. It was the items and not the dimensions which required adaptation (1965, p. 75).

The revised OCDQ used a seven-point scale for responses to items. In the present study, five response categories were used: "strongly agree," "agree a little," "neither agree or disagree," "disagree a little," and "strongly disagree." As for the original OCDQ, dimensions were scored by taking the average of the responses to their items, allowing for the items which were scored negatively. The lower the score on a dimension, the more the described property was perceived to apply to the organization.

TABLE 9

ITEMS COMPOSING EIGHT DIMENSIONS OF THE

REVISED OCDQ

Members' Behavior

I-DISENGAGEMENT

17. Employees interrupt each other in group meetings.
20. Employees in this department keep to themselves.
23. There is a minority group of employees who always oppose the majority.
29. Employees seek special favors from the department manager.
33. Employees socialize together in small select groups.
41. Employees exert group pressure on non-conforming workers.
48. Employees ask senseless questions in group meetings.
49. The mannerisms of employees in this department are annoying.
68. Employees in this department talk about leaving the company.
73. Employees ramble when they talk in group meetings.

II-HINDRANCE

46. Routine duties interfere with our primary jobs.
-59. Sufficient instruction is available for the operation of equipment.
60. Too much time is spent in committee meetings.
63. Administrative paper work is burdensome in this company.
-65. Sufficient time is given to prepare administrative reports.
66. Procedures in this company are bothersome.

III-ESPRIT

25. Employees go about their work with great vim, vigor, and pleasure.
30. Employees spend time after work with other employees who have problems.
34. The morale of employees in this department is high.
51. Employees in this department have a good deal of loyalty.
54. Assistance from other departments is readily available when needed.
56. Extra materials are available for job use.
58. There is considerable laughter when employees gather informally.
67. Supplies are quickly available.
70. In group meetings there is the feelings of "let's get things done."
74. Most employees accept the faults of their co-workers.

IV-INTIMACY

22. Employees talk about their personal life to other employees.
38. Employees know the family background of other employees.
42. Employees work together when doing routine duties.
43. Employees have fun socializing together during working hours.
-55. Employees prefer to work by themselves.
72. Employees invite other employees to visit them at home.
76. Employees' closest friends are other employees of this department.

TABLE 9—Continued

Leader's Behavior

V-ALOOFNESS

18. The department manager contacts employees every day.
19. Employees leave the company grounds whenever possible.
21. The supervisor runs the group meeting in a formal way.
26. Group meetings are mainly management report meetings.
37. Group meetings are organized with a strict agenda.
47. Employees usually eat lunch by themselves.
-50. The department manager exchanges ideas with employees.
-52. Employees are informed of the reasons for a department manager's visit.
64. The rules set by management are never questioned.

VI-PRODUCTION EMPHASIS

31. The department manager talks a great deal.
32. The department manager makes all work-related decisions.
35. The department manager corrects the mistakes of employees.
40. The department manager insures that employees work to their fullest capacity.
44. The department manager encourages employees to improve their weaknesses.
62. The department manager checks on the capability of all employees.
77. The department manager schedules work for all employees.

VII-THRUST

14. The department manager shares new ideas with his employees.
15. The department manager explains reasons for criticism.
16. The department manager goes out of his way to help employees.
24. The department manager uses constructive criticism.
36. The department manager sets an example by working hard himself.
53. The department manager looks out for the personal welfare of employees.
57. The department manager is usually well prepared at group meetings.
61. The department manager is easy to understand.
75. The department manager is on the job before the other employees arrive.

VIII-CONSIDERATION

27. The department manager helps employees settle any differences.
28. The department manager tries to get better salaries for his employees.
39. The department manager helps employees solve personal problems.
45. The department manager stays after work to finish any uncompleted work.
69. The department manager does personal favors for his employees.
71. Employees help select jobs to be worked on.

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NOTES: 1. Those items indicated by a minus sign (-) are scored inversely.
2. Item numbers agree with corresponding question numbers in Appendix I.

SOURCE: N. Margulies, A Study of Organizational Culture and the Self-Actualizing Person (Unpublished Doctoral Dissertation, University of California, 1965).

In a pilot study testing the validity of the revised OCDQ, agreement was found between the organizational climate of four departments in an industrial organization as evaluated by two outside judges and as indicated by the responses to the revised OCDQ by department members. Margulies (1965) used the pilot study to justify use of the revised OCDQ. He did not provide data on the reliability of the dimensions, nor did he investigate the dimension intercorrelations.

Evaluation of Revised OCDQ Dimensions

Prior to the present study, the revised OCDQ had been applied only once in health-care organizations (Lyon and Ivancevich, 1974; Wallace, Ivancevich, and Lyon, 1975). In that study, the eight dimensions as specified did not emerge in factor analysis of separate data for two hospitals. Instead, 18 factors explaining 68 percent of the item variance emerged in one hospital and 17 factors explaining 74 percent of the item variance emerged in the other.[1] Estimates of dimension reliability using Coefficient Alphas varied from .48 to .87 in one hospital and from .35 to .89 in the other. These results suggested that the eight dimensions would not necessarily emerge from analysis of data from the three health-care organizations in the present study, nor would the dimensions necessarily be reliable.

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[1]Factors with eigenvalues less than 1.0 were not considered.

Accordingly, the decision was made to conduct analysis of the health-care data using the revised OCDQ with dimensions as originally specified and, at the same time, to assess the interdependence and reliability of the "independent" dimensions for the same data. If the dimensions did not appear independent and/or reliable, a factor analysis of the revised OCDQ items would be performed to identify new dimensions more appropriate for the health-care data. Analysis would then be repeated using the new dimensions.

Interpendence of the revised OCDQ dimensions was assessed in two ways. First, eight separate linear regression models were constructed, each with a different dimension as dependent variable and the other seven dimensions as independent variables. $R^2$, the percent of variance in the dependent variable explained by the independent variables, indicated the degree of dependence of one dimension on the others. Ideally, if the dimensions were completely unrelated, $R^2$ would be close to zero for all eight regression models. Table 10a shows the actual $R^2$ for each model, applied to data for each separate health-care organization and for the organizations combined. The $R^2$ values for intimacy and aloofness were acceptably low. The $R^2$ values for disengagement, hindrance, and production emphasis were marginally acceptable. However, the $R^2$ values for esprit, thrust, and consideration were unacceptably high. By this test, the eight dimensions of the revised OCDQ did not appear to be essentially independent dimensions.

TABLE 10

TESTS FOR INDEPENDENCE OF REVISED OCDQ DIMENSIONS

a. $R^2$ When Dimension Dependent on other Dimensions

| Dependent Subtest | Org. 1 | Org. 2 | Org. 3 | Org. 1-3 Combined | Level of Dependency |
|---|---|---|---|---|---|
| Disengagement | .47 | .29 | .57 | .30 | Marginally acceptable |
| Hindrance | .48 | .23 | .20 | .25 | Marginally acceptable |
| Esprit | .64 | .48 | .65 | .52 | Unacceptable |
| Intimacy | .28 | .10 | .31 | .11 | Acceptable |
| Aloofness | .22 | .24 | .12 | .10 | Acceptable |
| Production Emphasis | .35 | .33 | .40 | .29 | Marginally acceptable |
| Thrust | .79 | .68 | .76 | .67 | Unacceptable |
| Consideration | .74 | .66 | .80 | .65 | Unacceptable |

b. Dimension Intercorrelations

| Measure | Org. 1 | Org. 2 | Org. 3 | Org. 1-3 Combined |
|---|---|---|---|---|
| Percent of intercorrelations significant at .05 level | 54% | 61% | 39% | 71% |
| Median intercorrelation in absolute value (Significance level) | .28 (.045) | .24 (.019) | .21 (.110) | .20 (.007) |

Dimension intercorrelations were also examined as an indication of their interdependence. As Table 10b shows, large portions of the intercorrelations were significant at the .05 level. The median intercorrelation for all health-care organizations combined was significant at the .01 level. By this test as well, the eight dimensions of the revised OCDQ do not meet acceptable standards for independence.

As a test of the reliability of the revised OCDQ, Coefficient Alpha was calculated for each of the eight dimensions, both for each health-care organization separately and for the organizations combined. Results of the calculations appear in Table 11. By Nunnally's criteria (1967), the coefficients for esprit and thrust were acceptably high. The coefficients for disengagements, intimacy, production emphasis, and consideration were marginally acceptable. Although the coefficient for hindrance for all organizations combined barely met the standards for marginal acceptance, the coefficients for the separate organizations rendered the dimension unacceptable in reliability overall. The coefficient for aloofness was also clearly unacceptable. The strong differences in the reliability of individual dimensions in the present study cast further doubt on the overall reliability of the instrument in health-care settings.

## Factor Analysis of Revised OCDQ Items

The degree of interdependence and lack of consistency

TABLE 11

ALPHA RELIABILITY COEFFICIENTS FOR

REVISED OCDQ DIMENSIONS

| Scale | Org. 1 | Org. 2 | Org. 3 | Org. 1-3 Combined | Level of Internal Consistency |
|---|---|---|---|---|---|
| Disengagement | .60 | .65 | .55 | .61 | Marginally acceptable |
| Hindrance | .28 | .46 | .45 | .50 | Unacceptable |
| Esprit | .72 | .71 | .65 | .71 | Acceptable |
| Intimacy | .57 | .53 | .41 | .54 | Marginally acceptable |
| Aloofness | .07 | .26 | -.35 | .12 | Unacceptable |
| Production Emphasis | .60 | .60 | .60 | .60 | Marginally acceptable |
| Thrust | .90 | .89 | .90 | .89 | Acceptable |
| Consideration | .63 | .70 | .53 | .64 | Marginally acceptable |

in reliability of the dimensions of the revised OCDQ for Organizations 1-3 warranted a new factor analysis of responses to the climate items. The method of factoring chosen was principal factoring with rotation. An orthogonal factor rotation method was employed with the varimax criterion to simplify the interpretation of the rotated factors (Nie, *et al.*, 1975).

Table 12 contains the results of the principal factoring with rotation. There were 19 factors in all, with 11 factors, explaining 83 percent of the item variance, having eigenvalues above 1.0. Factor 1 explained 32 percent of the item variance, with factors 2-11 explaining from 10 to 3 percent of the item variance respectively. Upon rotation using the varimax rule, only 24 of the 64 items, or 37 percent, were correlated at r= .6 or above with any of factors 1-11. Correlations of r = .4 or above were obtained for 40 of the 64 items wich any of the 11 factors.

Table 13 analyzes the composition of factors 1-11. Only items correlated .4 or above with a factor were included in the analysis. Factor 1 alone included over half of the items for all 11 factors (21 of 40 items). The bulk of the items in factor 1 (17 of 21 items) came from the leader's behavior dimensions of aloofness, production emphasis, thrust, and consideration. Eight of its items came from the dimension of thrust. Factor 1 also contained 17 of the 25 items which used the term department manager and was named positive regard for department manager.

TABLE 12

FACTOR ANALYSIS OF 64 ORGANIZATIONAL CLIMATE ITEMS

| Factor | Eigenvalue | Percent of Item Variance Explained | Cumulative Percent of Item Variance Explained | |
|---|---|---|---|---|
| 1 | 11.62 | 32.3 | 32.3 | |
| 2 | 3.48 | 9.7 | 41.9 | |
| 3 | 2.64 | 7.3 | 49.3 | |
| 4 | 2.23 | 6.2 | 55.4 | |
| 5 | 1.83 | 5.1 | 60.5 | Eigenvalue Above 1.0 |
| 6 | 1.73 | 4.8 | 65.3 | |
| 7 | 1.48 | 4.1 | 69.4 | |
| 8 | 1.37 | 3.8 | 73.2 | |
| 9 | 1.29 | 3.6 | 76.8 | |
| 10 | 1.18 | 3.3 | 80.1 | |
| 11 | 1.09 | 3.0 | 83.1 | |
| 12 | .99 | 2.7 | 85.8 | |
| 13 | .92 | 2.6 | 88.4 | |
| 14 | .86 | 2.4 | 90.8 | Eigenvalue Below 1.0 |
| 15 | .79 | 2.2 | 93.0 | |
| 16 | .67 | 1.8 | 94.8 | |
| 17 | .66 | 1.8 | 96.6 | |
| 18 | .63 | 1.8 | 98.4 | |
| 19 | .58 | 1.6 | 100.0 | |

TABLE 13

ANALYSIS OF ITEMS COMPOSING NEW

ORGANIZATIONAL CLIMATE FACTORS

| Factor | Factor Name | Number of Items | Items[1] |
|---|---|---|---|
| 1 | Positive Regard for Department Manager | 21 | 14,15,16,18,24,25,27, 28,36,39,40,44,45,50, 51,53,57,59,61,62,70 |
| 2 | Task Facilitation | 3 | 56,65,67 |
| 3 | Intimacy of Employee Relationships | 4 | 22,38,43,47* |
| 4 | Annoying Employee Behavior | 2 | 48*,49* |
| 5 | Formality of Meetings | 2 | 21,37 |
| 6 | Favors from Department Manager | 2 | 29,69 |
| 7 | Employee Friendships | 2 | 20*,76 |
| 8 | Acceptance of Faults of Co-workers | 1 | 74 |
| 9 | Preference for Solitary Work | 1 | 55 |
| 10 | Work Scheduling by Department Manager | 1 | 77 |
| 11 | Burdensome Paperwork | 1 | 63 |

[1]Items correlated .4 or above with the factor. Items are referred to by their question numbers as they appeared in the questionnaire used by the study (Appendix I) and Table 9.

*Items correlated negatively with the factor.

Other factors were named as in Table 13. Only 2 of the remaining 10 factors (factors 6 and 10) referred specifically to the department manager. Five of the factors (factors 3, 4, 7, 8, and 9) applied to employees' behavior, with little difference existing between factors 3 and 7. Two of the factors (factors 2 and 11) referred to non-interpersonal characteristics such as the availability of equipment and supplies and requirements for administrative reports. The formality of group meetings received attention in a separate factor (factor 5).

Obviously, the new factors had little resemblance to the dimensions of the revised OCDQ specified by Margulies (1965). Most of the items from the leader's behavior dimensions were consolidated into one general factor. The members' behavior dimensions similarly failed to emerge from the factor analysis.

In summary, many instruments which claim to measure organizational climate were available for consideration. The three considered had been identified as the instruments most often used in a previous survey (Hellriegel and Slocum, 1974). The OCDQ instrument originally designed by Halpin and Croft (1962) and revised by Margulies (1965) was selected on the basis of extent of usage and examination of content. Information pertaining to the reliability and validity of both the original and revised OCDQ from previous studies was presented. The interdependence and reliability of dimensions of the revised OCDQ were examined using data

from the present study. The dimensions were not independent as previously concluded nor adequately reliable to support unquestioning use of the instrument.

Factor analysis was then performed to identify factors which were independent for the present data. One large factor explaining one-third of the item variance and 10 smaller factors emerged. The new factors bore little relation to the dimensions of the revised OCDQ. Both the original dimensions and the new factors were used in the testing of hypotheses for the study. Results will be described in the next chapter.

# C H A P T E R  I V

## RESULTS

The purpose of this chapter is to present the results of the study. The chapter is divided into five sections. The first section will examine the relationships between scores on attitude toward change and individual dimensions of organizational climate, using the Trumbo Change Scale and the revised OCDQ. The second section will examine the effect of controlling other variables on the relationships reported in the first section. The third section will replicate the analysis of the first section, using a revised change scale with greater reliability for the data collected than the Trumbo Change Scale. The fourth section will also replicate the analysis of the first section, using the new organizational climate factors which emerged from factor analysis of the revised OCDQ items. The fifth section will summarize the results presented in previous sections.

All sections of the chapter will report analysis of data from the three health-care organizations individually and combined. The first two sections will also present analysis of data from the fourth, non-health-care organization for purposes of comparison.

## Relationship between Attitude Toward Change and Organizational Climate (Original Scales)

This section will first examine the variability of the attitude toward change and organizational climate scores within and between the health-care organizations (Organizations 1-3). It will next test the major hypotheses of relationships between attitude toward change and each of the dimensions of organizational climate. The variance in attitude toward change scores explained by organizational climate scores will also be examined. Finally, results for the industrial organization (Organization 4) will be compared with the above results. All analysis will be conducted using the Trumbo Change Scale as the measure of attitude toward change and the revised OCDQ as the measure of organizational climate.

### Variability of Data

Table 14 presents the mean and standard deviation of the scores on attitude toward change and organizational climate dimensions for Organizations 1, 2, and 3. Table 15 reports the results of one-way analysis of variance by organization for attitude toward change and each of the organizational climate dimensions. Scores on attitude toward change were significantly different at the .01 probability level, demonstrating that employees' attitudes toward work-related change actually do differ between

TABLE 14

ATTITUDE TOWARD CHANGE AND

ORGANIZATIONAL CLIMATE:

ORGANIZATIONS 1-3

| Scale | Org. 1 (N=38) | | Org. 2 (N=77) | | Org. 3 (N=35) | |
|---|---|---|---|---|---|---|
| | Mean[1] | Standard Deviation | Mean[1] | Standard Deviation | Mean[1] | Standard Deviation |
| Attitude Toward Change[2] | 3.49 | .65 | 3.23 | .78 | 2.86 | .79 |
| Organizational Climate:[3] | | | | | | |
| Disengagement | 3.26 | .67 | 3.21 | .64 | 3.16 | .58 |
| Hindrance | 3.28 | .63 | 3.23 | .63 | 2.59 | .67 |
| Esprit | 2.62 | .65 | 2.69 | .67 | 3.14 | .63 |
| Intimacy | 2.24 | .53 | 2.58 | .63 | 2.69 | .57 |
| Aloofness | 3.35 | .46 | 3.44 | .51 | 3.30 | .39 |
| Production Emphasis | 2.73 | .76 | 2.72 | .77 | 2.84 | .75 |
| Thrust | 2.52 | 1.05 | 2.52 | 1.02 | 2.35 | 1.03 |
| Consideration | 3.14 | .84 | 3.05 | .88 | 3.02 | .78 |

[1]All mean scores represent the average score per item and vary from 1 to 5.

[2]A higher score, *i.e.*, closer to 5, indicates a more positive attitude toward change.

[3]A lower score, *i.e.*, closer to 1, indicates a perception of the organizational climate dimension applying to a greater extent.

TABLE 15

ANALYSIS OF VARIANCE IN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE BY ORGANIZATION: ORGANIZATIONS 1-3

| Scale | F Ratio | p |
|---|---|---|
| Attitude Toward Change | 6.54 | .002 |
| Organizational Climate: | | |
| Disengagement | .24 | .78 |
| Hindrance | 14.07 | <.001 |
| Esprit | 7.14 | .001 |
| Intimacy | 6.07 | .003 |
| Aloofness | 1.21 | .30 |
| Production Emphasis | .34 | .71 |
| Thrust | .34 | .71 |
| Consideration | .19 | .83 |

organizations. Scores on the organizational climate dimensions of hindrance and esprit were significantly different at the .001 level, while scores on intimacy were significantly different at the .01 level. Scores on the remaining five dimensions of organizational climate were not significantly different. Overall, the perceived climates of the three organizations were somewhat, but not entirely, different.

## Testing of Individual Hypotheses

Table 16 reports the correlations between attitude toward change and each of the dimensions of organizational climate for Organizations 1, 2, and 3 separately and combined. One-tailed tests of significance were used because the directions of the relationships were predicted. Only the coefficients for the relationship with aloofness were significant for more than one organization of the three. For the organizations combined, the coefficient for hindrance was significant at the .10 level in the direction hypothesized; also the coefficients for intimacy and aloofness were significant at the .01 level but only that for aloofness in the predicted direction.

As a whole, the correlations reported in Table 16 were low, inconsistent for the different organizations, and did not support the hypotheses formulated in Chapter II. The only hypothesized relationship supported strongly overall was that between attitude toward change and aloofness.

TABLE 16

PEARSON CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE: ORGANIZATIONS 1-3

| Climate Scale | Relationship with Attitude Toward Change[1] | | | | |
|---|---|---|---|---|---|
| | Hypothesis: Predicted Sign | Org. 1 (N=38) | Org. 2 (N=77) | Org. 3 (N=35) | Org.'s 1-3 Combined (N=150) |
| Disengagement | Negative | .24+ | -.12 | -.05 | -.04 |
| Hindrance | Negative | -.08 | -.09 | .16 | -.13+ |
| Esprit | Positive | .06 | -.03 | .01 | .08 |
| Intimacy | Negative | .01 | .13 | .38* | .22** |
| Aloofness | Negative | .19 | -.32** | -.32* | -.21** |
| Production Emphasis | Negative | -.18 | -.20* | .18 | -.08 |
| Thrust | Positive | -.18 | -.08 | .06 | -.09 |
| Consideration | Positive | -.13 | .02 | .18 | .01 |

[1]Signs of all coefficients have been reversed due to the Change Scale being scored in the opposite direction from organizational climate scales on the questionnaire. One-tailed tests of significance were used. A correlation of .24 between attitude toward change and disengagement in Organization 1 thus means the higher the disengagement, the more positive the attitude toward change.

+ $p < .10$

* $p < .05$

** $p < .01$

However, the strength of this finding was diluted by the coefficient for Organization 1 being nearly significant at the .10 level in the opposite direction. It was diminished even further by aloofness proving to be the least reliable dimension of organizational climate for the present data (see Chapter III).

## Variance in Attitude Toward Change Explained by Organizational Climate

In the previous subsection, correlations between attitude toward change and dimensions of organizational climate were predominantly low and insignificant, and hypotheses for relationships generally not supported. From these results it would be expected that scores on individual climate dimensions explained attitude toward change only to a small extent. However, the scores on climate dimensions taken as a group conceivably could have explained attitude toward change in some overall sense to a greater extent. The following analysis was conducted to determine whether this was the case.

Table 17a presents the variance in attitude toward change explained by the individual climate dimensions as determined by simple regression. As expected, they played a small role in explaining attitude toward change. Table 17b presents the variance in attitude toward change scores explained by all the dimensions of organizational climate as determined by multiple regression. The variances explained

TABLE 17

VARIANCE IN ATTITUDE TOWARD CHANGE EXPLAINED BY ORGANIZATIONAL CLIMATE: ORGANIZATIONS 1-3

| Independent Variables | Org. 1 (N=38) | Org. 2 (N=77) | Org. 3 (N=35) | Org.'s 1-3 Combined (N=150) |
|---|---|---|---|---|
| | $r^2$ | $r^2$ | $r^2$ | $r^2$ |
| a. Individual Climate Scale: | | | | |
| Disengagement | .06 | .01 | .00 | .00 |
| Hindrance | .01 | .01 | .03 | .02 |
| Esprit | .00 | .00 | .00 | .01 |
| Intimacy | .00 | .02 | .15* | .05** |
| Aloofness | .03 | .10** | .10+ | .04** |
| Production Emphasis | .03 | .04+ | .03 | .01 |
| Thrust | .03 | .01 | .00 | .01 |
| Consideration | .02 | .00 | .03 | .00 |
| | $R^2$ | $R^2$ | $R^2$ | $R^2$ |
| b. All Climate Scales | .31 | .15 | .32 | .12* |

+ p <.10

* p <.05

** p <.01

were insignificant for the organizations considered separately. The variance explained when the organizations were considered at the same time was a significant but small 12 percent.

In summary, individuals' scores of their organization on eight climate dimensions explained only a small portion of the variance in their scores on attitude toward change. Combining of the eight climate dimensions did not enable appreciably better prediction of attitude toward change than consideration of the dimensions separately.

## Comparison with Industrial Organization

For comparison purposes the data from Organization 4, although not from the same type of organizations as Organizations 1-3, were similarly analyzed.

Table 18 presents the mean and standard deviation of the scores on attitude toward change and the dimensions of organizational climate for Organization 4. Table 19 reports the correlation between attitude toward change and each dimension of organizational climate for Organization 4. Four of the coefficients are significant at the .10 level, one in the direction hypothesized (production emphasis) and the others in the opposite direction. The coefficient for aloofness, as for Organizations 1-3 combined, is significant at the .01 level in the direction hypothesized. Thus additional support is given to the hypothesized relationship between attitude toward change and aloofness. As a whole, however, the hypothesized relationships between

TABLE 18

ATTITUDE TOWARD CHANGE AND

ORGANIZATIONAL CLIMATE:

ORGANIZATION 4

| Scale | Mean (N=70) | Standard Deviation |
|---|---|---|
| Attitude Toward Change | 3.23 | .85 |
| Organizational Climate: | | |
| Disengagement | 3.33 | .64 |
| Hindrance | 3.56 | .82 |
| Esprit | 2.60 | .61 |
| Intimacy | 2.78 | .60 |
| Aloofness | 3.33 | .51 |
| Production Emphasis | 3.06 | .71 |
| Thrust | 2.40 | .75 |
| Consideration | 3.12 | .65 |

TABLE 19

PEARSON CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE: ORGANIZATION 4

| Organizational Climate Scale | Relationship with Attitude Toward Change[1] | |
|---|---|---|
| | Hypothesis: Predicted Sign | Correlation (N=70) |
| Disengagement | Negative | .16+ |
| Hindrance | Negative | .13 |
| Esprit | Positive | -.17+ |
| Intimacy | Negative | .07 |
| Aloofness | Negative | -.28** |
| Production Emphasis | Negative | -.16+ |
| Thrust | Positive | -.13 |
| Consideration | Positive | -.16+ |

[1]Signs on all coefficients have been reversed due to the Change Scale being scored in the opposite direction from organizational climate scales on the questionnaire. One-tailed tests of significance were used.

+ $p < .10$

** $p < .01$

attitude toward change and organizational climate dimensions were not supported for Organization 4, verifying the results obtained for Organizations 1-3.

Twenty-two percent of the variance in attitude toward change scores, significant at the .10 level, was explained by all the dimensions of organizational climate as a set of independent variables for Organization 4. Overall, organizational climate scores did not account for a large and highly significant proportion of the variance in attitude toward change for Organization 4, as was also the case for Organizations 1, 2, and 3.

## Summary

The results obtained by using the original attitude toward change and organizational climate scales are summarized in the following statements:

1. Members of the three health-care organizations differed significantly between organizations in attitude toward change and perceptions of their organization on three of the eight dimensions of organizational climate. Overall, the perceived organizational climates were characterized as somewhat different.
2. Hypothesized relationships between attitude toward change and the dimensions of organizational climate did not exist as a whole in the data collected. Only one of the eight hypotheses was supported by the analysis.

3. The amounts of variance in attitude toward change explained by organizational climate were extremely low for the individual climate dimensions and higher but not strongly significant for all the climate dimensions considered as a whole within each organization. For the three health-care organizations combined, the amount of variance explained was significant but low.
4. Relationships between attitude toward change and organizational climate in the industrial organization generally paralleled the relationships found in the health-care organizations.

## Effect of Controlling Other Variables on Relationship between Attitude Toward Change and Organizational Climate

This section will examine the relationships which exist between attitude toward change and each dimension of organizational climate while adjusting for the effects of other variables.

The other variables selected for the study were satisfaction with job, satisfaction with the organization, sex, age, education, department, level of present position (managerial level), years in present position, and length of service (years in organization). These variables were selected for various reasons. Sex, age, education, and level of present position had been significantly related to

attitude toward change in previous studies; also, satisfaction with job and level of present position had been significantly related to organizational climate (see Chapter II). Length of service had been hypothesized to be related but was found unrelated to attitude toward change in one previous study (Trumbo, 1961). Satisfaction with the organization and years in present position measured similar properties to satisfaction with job and length of service, respectively. Department was included for two reasons: (1) perceptions of the organization represented by organizational climate scores are likely to be strongly influenced by the departmental location of the employee in the organization, and (2) the revised OCDQ focuses on the "department manager" rather than the top manager of the whole organization.

Thus it seemed likely that each of the other variables could be related to attitude toward change, organizational climate, or both. If such was the case, any significant relationships found between attitude toward change and dimension of organizational climate could conceivably be spurious and due solely to the intervening effects of other variables. On the other hand, relationships actually present between attitude toward change and dimensions of organizational climate could be hidden or masked by the effects of other variables.

Partial correlation is a statistical technique which enables such effects to be isolated and examined. Nie, *et al.* (1975) describe partial correlation in general terms as follows:

> Partial correlation provides the researcher with a single measure of association describing the relationship between two variables while adjusting for the effects of one or more additional variables. . . . In essence, partial correlation enables the researcher to remove the effect of the control variable from the relationship between the independent and dependent variables without physically manipulating the raw data. In partial correlation the effect of the control variable(s) is assumed to be linear throughout its range, and it is this linear assumption that makes partial correlation possible. . . . When properly used, partial correlation becomes an excellent technique for uncovering spurious relationships, locating intervening variables, and can even be used to help the researcher make certain types of causal inferences. (pp. 302-303)

For convenience of analysis, it was desirable to use partial correlation to examine the effects of other variables wherever a linear effect could be safely assumed. The assumption could most readily be made for satisfaction with job and satisfaction with the organization (Appendix I, Questions 78 and 79) since they approximated interval variables, *i.e.*, response categories measured approximately equal amounts of the property. Age, education, years in present position, and length of service (Questions 81, 82, 85, and 86) were ordinal variables, *i.e.*, response categories did not measure equal amounts of the property but were ranked in ascending or descending order. An assumption of linearity did not strictly apply for these variables but

was made for initial analysis; if a significant effect of any of the variables was detected, more complex analysis could follow. Although sex (Question 80) was a nominal variable, *i.e.*, response categories consisted of unordered classifications, its having only two response categories enabled the assumption of linearity to be made.

The effect of level of present position could not initially be assumed linear because it combined categories for nursing and non-nursing positions (Question 84 for Organizations 1 and 2. See page 120 for Organization 3). Once it was redefined into the two ordinal variables of level-nursing services and level-non-nursing services, a linear effect could be assumed within the separate groups. The department variable (Question 83), a nominal variable with several response categories, could in no way be assumed to have a linear effect. Simple correlations within the separate response categories were used to examine its effect.

The remainder of this section of the chapter is divided into four subsections. The first subsection will present the results of partial correlation analysis of data from each of the three health-care organizations, controlling for each other variable except level of present position and department. The second subsection will present the results of partial correlation analysis of nursing and non-nursing data separately, controlling for the effect of level of present position. The third subsection will analyze the

effect of department. The fourth subsection will present comparable findings for the industrial organization. A summary of results for the whole section will be provided at the end.

## Effect of Controlling Satisfaction and Demographic Variables

Tables 20, 21, and 22 present the results of partial correlation analysis for Organizations 1, 2, and 3, respectively. The first column of each table contains the simple correlations (zero-order) between attitude toward change and each dimension of organizational climate. Subsequent columns contain the first-order partials between attitude toward change and dimensions of organizational climate, adjusting for the effects of each control variable in turn. Comparison of each subsequent column with the first column shows the effect of the particular control variable. If they differed not at all or only slightly, the control variable had little effect on the relationships. If they differed substantially, the control variable apparently affected the relationships.

In Organization 1 (Table 20), the control variable of satisfaction with job had the greatest effect. In all eight rows of the table, its first-order partial correlation differed most from the corresponding zero-order correlation. However, controlling for satisfaction did not generate strong support (coefficient with predicted sign, significant at

TABLE 20

PARTIAL CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE CONTROLLING FOR SATISFACTION AND DEMOGRAPHIC VARIABLES:[1,2] ORGANIZATION 1

| Organizational Climate Scale | Predicted Sign | Zero Order Correlation with Attitude Toward Change | Partial Correlation with Attitude Toward Change Controlling for: | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Satis. with job | Satis. with Org. | Sex | Age | Education | Years in Pres. Pos. | Length of Service |
| Disengagement | - | .30* | .23+ | .28* | .31* | .28+ | .29* | .30* | .30* |
| Hindrance | - | -.08 | -.24+ | -.16 | -.10 | -.14 | -.01 | -.08 | -.08 |
| Esprit | + | .07 | .24+ | .23+ | .09 | .21 | .10 | .07 | .07 |
| Intimacy | - | -.06 | -.01 | -.04 | -.05 | -.11 | -.04 | -.06 | -.06 |
| Aloofness | - | .16 | .11 | .14 | .15 | .19 | .13 | .16 | .16 |
| Production Emphasis | - | -.20 | -.10 | -.17 | -.25+ | -.15 | -.23+ | -.20 | -.20 |
| Thrust | + | -.23+ | -.09 | -.21 | -.25+ | -.16 | -.26+ | -.23+ | -.24+ |
| Consideration | + | -.15 | -.01 | -.10 | -.20 | -.06 | -.14 | -.15 | -.15 |

[1]Satisfaction with job, satisfaction with organization, sex, age, education, years in present position, and length of service.

[2]Based on N=37. One respondent with missing control data was not included.

+ $p < .10$

* $p < .05$

TABLE 21

PARTIAL CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE CONTROLLING FOR SATISFACTION AND DEMOGRAPHIC VARIABLES:[1,2] ORGANIZATION 2

| Organizational Climate Scale | Predicted Sign | Zero Order Correlation with Attitude Toward Change | Partial Correlation with Attitude Toward Change Controlling for: | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Satis. with job | Satis. with Org. | Sex | Age | Education | Years in Pres. Pos. | Length of Service |
| Disengagement | - | -.07 | -.11 | -.07 | -.07 | -.07 | -.05 | -.06 | -.06 |
| Hindrance | - | -.07 | -.12 | -.09 | -.08 | -.07 | -.10 | -.07 | -.07 |
| Esprit | + | -.04 | .03 | -.03 | -.03 | -.04 | -.03 | -.05 | -.04 |
| Intimacy | - | .07 | .05 | .07 | .07 | .08 | .06 | .06 | .07 |
| Aloofness | - | -.24* | -.26* | -.24* | -.22* | -.24* | -.22* | -.23* | -.24* |
| Production Emphasis | - | -.14 | -.13 | -.15 | -.13 | -.14 | -.09 | -.15 | -.15 |
| Thrust | + | -.09 | -.04 | -.09 | -.08 | -.09 | -.06 | -.11 | -.09 |
| Consideration | + | .03 | .11 | .04 | .04 | .03 | .03 | .02 | .03 |

[1]Satisfaction with job, satisfaction with the organization, sex, age, education, years in present position, and length of service.

[2]Based on N=72. Five respondents with missing control data were not included.

* $p < .05$

TABLE 22

PARTIAL CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE CONTROLLING FOR SATISFACTION AND DEMOGRAPHIC VARIABLES[1,2] ORGANIZATION 3

| Organizational Climate Scale | Predicted Sign | Zero Order Correlation with Attitude Toward Change | Partial Correlation with Attitude Toward Change Controlling for: | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Satis. with Job | Satis. with Org. | Sex | Age | Education | Years in Pres. Pos. | Length of Service |
| Disengagement | - | -.04 | -.04 | -.04 | .00 | -.04 | -.02 | -.01 | -.04 |
| Hindrance | - | .17 | .17 | .18 | .23+ | .16 | .02 | .23 | .18 |
| Esprit | + | .00 | .00 | -.01 | -.01 | -.05 | .08 | -.07 | -.02 |
| Intimacy | - | .39* | .40* | .36* | .41** | .35* | .36* | .30* | .38* |
| Aloofness | - | -.33* | -.33* | -.38* | -.30* | -.29+ | -.21 | -.26+ | -.32* |
| Production Emphasis | - | .17 | .18 | .15 | .15 | .12 | .43** | .10 | .15 |
| Thrust | + | .05 | .05 | .05 | .04 | .04 | .24+ | .01 | .04 |
| Consideration | + | .18 | .19 | .19 | .21 | .12 | .33* | .12 | .17 |

[1]Satisfaction with job, satisfaction with the organization, sex, age, education, years in present position, and length of service.

[2]Based on N=34. One respondent with missing control data was not included.

+ p <.10
* p <.05
** p <.01

the .05 level) for any of the eight hypothesized relationships. Weak support (at the .10 level) was generated for the relationships with hindrance and esprit. Looking at the table as a whole, no strong support was observed for the hypotheses of the study with or without adjusting for the effects of other variables.

The control variables had very little effect on the relationships between attitude toward change and dimensions of organizational climate in Organization 2 (Table 21). No matter what was controlled, the hypothesized relationship with aloofness continued to receive strong support and the other hypothesized relationships remained unsupported.

In Organization 3 (Table 22) the control variable of education had considerable effect on several of the relationships. Relationships between attitude toward change and each of aloofness, production emphasis, thrust, and consideration received a different type of support controlling for education than without the control. However, the changes did not yield further support for the hypotheses as a whole. Strong support was eliminated for the hypothesized relationship with aloofness. The relationship with production emphasis became more highly significant but in the wrong direction. Weak support was gained for the hypothesized relationship with thrust and strong support for that with consideration. After the dust settled, still only one hypothesized relationship of the eight received strong support with the education variable controlled.

Of the other control variables, only years in present position affected support of the hypotheses in Organization 3. Its effect was not advantageous: when it was controlled, support for the hypothesized relationship with aloofness changed from strong to weak.

In summary, controlling for the effects of seven individual variables in turn did little to increase the support for the major hypotheses of the study in any of the three health-care organizations. The hypothesized relationships remained unsupported as a whole in each organization.

## Effect of Controlling Level of Present Position

Level of present position was measured differently for both Organizations 1 and 2 than for Organization 3 and for nursing than for non-nursing positions within each organization. The question used for Organizations 1 and 2 as it appears in Appendix I is repeated below:

84. What is your present position in your department?
CHECK ONE:
a. If in Nursing Services, answer below:
___(1) Nursing Assistant
___(2) Licensed Practical Nurse (LPN)
___(3) Registered Nurse (RN)
___(4) Other (please specify)_____
b. If not in Nursing Services, answer below:
___(5) Department Head
___(6) Supervisor
___(7) Other (please specify)_____

For Nursing Services, the "Other" responses were not included and the remaining responses were ranked with

Registered Nurse (RN) as the highest level. Licensed Practical Nurse (LPN) and Nursing Assistant were at successively lower levels. For other than Nursing Services, the "Other" responses were assumed to apply to positions below the level of supervisor. Department head was considered the highest level for non-nursing positions.

The question used for Organization 3 appeared as follows:

84. What is your present position in your department?
CHECK ONE:
a. If in Nursing Services, answer below:
___(1) Mental Health Assistant IV
___(2) Mental Health Assistant III
___(3) Mental Health Assistant II
___(4) Mental Health Assistant I
b. If not in Nursing Services, answer below:
___(5) Department Head
___(6) Supervisor
___(7) Other (please specify)_____

In Organization 3, Mental Health Assistant I ranked as the highest level in Nursing Services and Mental Health Assistant IV as the lowest such level. The same assumptions were made for non-nursing positions as for Organizations 1 and 2.

Earlier (see Chapter III) note was made of the non-systematic selection of subjects in Organization 1. The ultimate effect of the procedure for selection may be present in the distribution of responses to the question on Level of Present Position. Organization 1 had a greater percentage of non-nursing responses than Organizations 2 and 3 (seventy-nine percent, as opposed to seventy-two percent and sixty percent, respectively) and a greater percentage

of department heads and supervisors in the non-nursing responses (forty-three percent, as opposed to twenty-one percent and fourteen percent, respectively). Perhaps non-nursing department heads and supervisors were the safest employees to poll in the eyes of the administrators of Organization 1. At any rate, the correlations reported below should not have been affected by the above imbalances between organizations because the results are reported for each organization separately.

Tables 23, 24, and 25 report the results of partial correlation analysis for Organizations 1, 2, and 3, respectively. Separate analysis is reported for nursing and non-nursing positions within each organization. Interpretation of the tables was performed in the same manner as in the preceding section.

The most striking feature of the results in the three tables was that the control variables had very little effect compared to the effect of dividing the subjects of each organization into nursing and non-nursing groups. Large differences in coefficients between nursing and non-nursing positions were common.

No support was generated for any of the hypotheses among nursing or non-nursing subjects in Organization 1. Strong support was generated for the hypothesized relationships between attitude toward change and both aloofness and consideration and weak support for that between attitude toward change and thrust among the nursing subjects in

TABLE 23

PARTIAL CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE CONTROLLING FOR LEVEL OF PRESENT POSITION:

ORGANIZATION 1

| Organizational Climate Scale | Predicted Sign | Nursing Positions (N=6) | | Non-Nursing Positions (N=30) | |
|---|---|---|---|---|---|
| | | Zero Order Correlation with Attitude Toward Change | Partial Correlation Controlling for Level[1] | Zero Order Correlation with Attitude Toward Change | Partial Correlation Controlling for Level |
| Disengagement | - | .65+ | .65 | .24+ | .25+ |
| Hindrance | - | -.14 | -.12 | -.10 | -.09 |
| Esprit | + | .22 | .25 | .06 | .05 |
| Intimacy | - | .34 | .70 | -.04 | -.03 |
| Aloofness | - | .07 | .00 | .17 | .19 |
| Production Emphasis | - | -.07 | -.05 | -.23 | -.24 |
| Thrust | + | -.42 | -.46 | -.15 | -.18 |
| Consideration | + | -.51 | -.56 | -.09 | -.10 |

[1]Degrees of freedom too low to calculate levels of significance.

+ $p < .10$

TABLE 24

PARTIAL CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE CONTROLLING FOR LEVEL OF PRESENT POSITION:

ORGANIZATION 2

| Organizational Climate Scale | Predicted Sign | Nursing Positions (N=16) | | Non-Nursing Positions (N=54) | |
|---|---|---|---|---|---|
| | | Zero Order Correlation with Attitude Toward Change | Partial Correlation Controlling for Level | Zero Order Correlation with Attitude Toward Change | Partial Correlation Controlling for Level |
| Disengagement | - | -.19 | -.19 | -.03 | -.03 |
| Hindrance | - | .17 | .14 | -.26* | -.26* |
| Esprit | + | .31 | .33 | -.08 | -.08 |
| Intimacy | - | .18 | .17 | .00 | .00 |
| Aloofness | - | -.57** | -.57* | -.17 | -.17 |
| Production Emphasis | - | .22 | .12 | -.37** | -.37** |
| Thrust | + | .39+ | .44+ | -.26+ | -.26+ |
| Consideration | + | .47* | .52* | -.12 | -.12 |

+ p <.10

* p <.05

** p <.01

TABLE 25

PARTIAL CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE CONTROLLING FOR LEVEL OF PRESENT POSITION:

ORGANIZATION 3

| Organizational Climate Scale | Predicted Sign | Nursing Positions (N=14) | | Non-Nursing Positions (N=21) | |
|---|---|---|---|---|---|
| | | Zero Order Correlation with Attitude Toward Change | Partial Correlation Controlling for Level | Zero Order Correlation with Attitude Toward Change | Partial Correlation Controlling for Level |
| Disengagement | - | -.20 | -.24 | .04 | .05 |
| Hindrance | - | .06 | .04 | .22 | .21 |
| Esprit | + | .18 | .23 | -.09 | -.10 |
| Intimacy | - | .43+ | .54* | .35+ | .35+ |
| Aloofness | - | -.21 | -.11 | -.38* | -.38* |
| Production Emphasis | - | .66** | .64** | -.26 | -.25 |
| Thrust | + | .13 | .08 | .02 | .01 |
| Consideration | + | .36 | .31 | .06 | .06 |

+ p <.10

* p <.05

** p <.01

Organization 2. This support was not present for non-nursing subjects in the same organization; however, strong support for the hypothesized relationships with both hindrance and production emphasis was present. In Organization 3, support was generated in the wrong direction for two hypotheses, those pertaining to intimacy and production emphasis, and in the right direction only for the relationship with aloofness.

In summary, controlling for the effect of level of present position had negligible effect on the relationships between attitude toward change and dimensions of organizational climate in the three health-care organizations. However, segregating responses within the organizations into nursing and non-nursing groups had considerable effect. Support for the hypotheses as a whole remained at the same low level for Organizations 1 and 3. Their support increased in Organization 2, although for different hypotheses for nursing subjects than for non-nursing subjects. Overall, the results suggested a possible intervening effect of departmental location in the organization. This possibility will receive further attention in the next subsection.

## Effect of Controlling Department

Department was measured for Organizations 1-3 as follows:

83. What is your department? CHECK ONE:
___(1) Nursing Services
___(2) X-Ray, Laboratory, Physical Therapy, Respiratory Therapy, EKG, Speech, Dental Clinic, Family Planning, or Pharmacy
___(3) Dietary, Housekeeping, Maintenance, Laundry, Storeroom, or CSR
___(4) Billing, Credit, DP, Admitting, Business Office, Switchboard, or Administration
___(5) Other (please specify)_____

A number of departments which performed a similar type of work were included in each of the response categories. Departments were grouped as such because the number of subjects from individual departments was expected to be too small to enable meaningful comparisons between departmetns. A response of 1 indicated that the subject worked in a department which provided regular nursing care to patients or residents. A response of 2 indicated that the department of the subject provided non-routine special care to patients or residents. A response of 3 designated a department which provided non-clerical support to the organization as a whole. A response of 4 indicated that the subject did clerical or administrative work.

Table 26 reports the correlations between attitude toward change and each of the dimensions of organizational climate in the different types of departments for Organizations 1-3 combined. As the previous subsection of the chapter suggested, the correlations varied widely among

TABLE 26

PEARSON CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE FOR DIFFERENT DEPARTMENTS: ORGANIZATIONS 1-3

| Organizational Climate Scale | Relationship with Attitude Toward Change | | | | | | |
|---|---|---|---|---|---|---|---|
| | Predicted Sign | Nursing Services Depts. (N=35) | Special Patient Care Depts. (N=35) | Non-Clerical Support Depts. (N=18) | Office & Adminis. Depts. (N=28) | All Data[1] Combined (N=150) | Range of Correlations |
| Disengagement | - | -.10 | .09 | -.29 | .01 | -.04 | .38 |
| Hindrance | - | -.03 | -.21 | -.07 | -.07 | -.13+ | .18 |
| Esprit | + | .24+ | .18 | -.04 | -.14 | .08 | .38 |
| Intimacy | - | .35* | -.04 | .25 | -.04 | .22** | .39 |
| Aloofness | - | -.45** | .26+ | -.42* | .06 | -.21** | .71 |
| Production Emphasis | - | .42** | -.08 | -.61** | -.18 | -.08 | 1.03 |
| Thrust | + | .18 | -.01 | -.35+ | -.38* | -.09 | .56 |
| Consideration | + | .35* | .17 | -.26 | -.07 | .01 | .61 |

[1]Subjects who responded "Other" to the question on department are included in this column, which is identical to the last column of Table 16.

+ p <.10

* p <.05

** p <.01

the department groups. The range of correlations was particularly large for production emphasis, aloofness, consideration, and thrust.

The data in Table 26 suggest that the extent of support given to the hypotheses of the study was greatly affected by the department variable. The hypothesized relationships between attitude toward change and each of aloofness and consideration were strongly supported in the nursing services departments. Hypotheses for each of aloofness and production emphasis with attitude toward change were strongly supported in the non-clerical support departments. None of the hypotheses were supported in the other departments.

Correlations also varied to a large extent among employees of the same type of department in different organizations. For example, the range of correlations among nursing services employees for Organizations 1-3 was particularly high for disengagement, aloofness, production emphasis, thrust, and hindrance (Table 27). Similar differences in correlations were seen for the other types of departments (analysis not shown).

These findings show that the effect of the department variable was not the same for all three health-care organizations and indeed was difficult to ascertain for the data in the study. There was substantial reason to believe that the variable had some effect, but the nature of the effect was not clear.

TABLE 27

PEARSON CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE FOR NURSING SERVICES DEPARTMENTS: ORGANIZATIONS 1-3

| Organizational Climate Scale | Relationship with Attitude Toward Change | | | | | |
|---|---|---|---|---|---|---|
| | Predicted Sign | Org. 1[1] (N=5) | Org. 2 (N=14) | Org. 3 (N=16) | Org.'s 1-3 Combined (N=35) | Range of Correlations |
| Disengagement | - | .65 | .04 | -.21 | -.10 | .86 |
| Hindrance | - | -.23 | .25 | -.01 | -.03 | .48 |
| Esprit | + | .31 | .06 | .21 | .24+ | .25 |
| Intimacy | - | .36 | .36 | .40+ | .35* | .05 |
| Aloofness | - | .25 | -.61** | -.17 | -.45** | .86 |
| Production Emphasis | - | -.05 | .17 | .71*** | .42** | .76 |
| Thrust | + | -.47 | .27 | .13 | .18 | .74 |
| Consideration | + | .53 | .52* | .32 | .35* | .21 |

[1]Number of subjects was too small to calculate significant levels.

+ p <.10

* p <.05

** p <.01

*** p <.001

Comparison with Industrial Organization

All of the other variables in the study were measured for Organization 4 as they appear in Appendix I except level of present position and department.

Level of present position was measured as follows:

84. What is the level of your present position? CHECK ONE:
___(1) Exempt
___(2) Non-exempt salaried
___(3) Hourly - H18 or above
___(4) Hourly - H14 or H16
___(5) Hourly - H12 or below

Exempt employees were considered at the highest level and hourly - H12 employees or below at the lowest level. Although each of the response categories could have been expanded, their number was limited to five to better group the responses.

Department, or work area, was measured as follows:

83. What is your present work area? CHECK ONE:
___(1) Toolroom
___(2) Tubes
___(3) Vanes
___(4) Sectors
___(5) Plant I Office
___(6) Plant II Office
___(7) Other _____

As for Organizations 1-3, each response category included a number of departments. Departments were grouped into response categories by their physical location, which yielded the same effect as grouping them by type of function performed in all cases except for Plant I and Plant II Office.

Table 28 reports the results of partial correlation analysis controlling for all other variables except department.

TABLE 28

PARTIAL CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE CONTROLLING FOR SATISFACTION AND DEMOGRAPHIC VARIABLES:[1,2] ORGANIZATION 4

| Organizational Climate Scale | Predicted Sign | Zero Order Correlation with Attitude Toward Change | Partial Correlation with Attitude Toward Change Controlling for: | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Satis. with Job | Satis. with Org. | Sex | Age | Education | Level of Pres. Pos. | Years in Pres. Pos. | Length of Service |
| Disengagement | - | .16 | -.01 | .00 | .22* | .10 | .14 | .12 | .12 | .17+ |
| Hindrance | - | .09 | -.13 | -.12 | .13 | .05 | .08 | .06 | .08 | .08 |
| Esprit | + | -.21* | -.10 | -.09 | -.12 | -.17+ | -.21* | -.18+ | -.13 | -.19+ |
| Intimacy | - | .13 | .16+ | .14 | .15 | .05 | .13 | .14 | .12 | .11 |
| Aloofness | - | -.28* | -.40*** | -.39*** | -.22* | -.30** | -.27* | -.27* | -.28* | -.29** |
| Production Emphasis | - | -.23* | -.20+ | -.20+ | -.17+ | -.21* | -.23* | -.20+ | -.23* | -.31** |
| Thrust | + | -.21* | -.09 | -.12 | -.17+ | -.17+ | -.22* | -.19+ | -.19+ | -.20+ |
| Consideration | + | -.18+ | -.20+ | -.16+ | -.14 | -.14 | -.19+ | -.18+ | -.19+ | -.21* |

[1]Satisfaction with job, satisfaction with the organization, sex, age, education, level of present position, years in present position, and length of service.

[2]Based on N=66. Four respondents with missing control data were not included.

+p <.10 * p <.05 ** p <.01 *** p <.001

The control variables which had the greatest effect on the relationships between attitude toward change and dimensions of organizational climate were satisfaction with job and satisfaction with the organization. As each of these variables were controlled, strong support was generated for the hypothesized relationship with aloofness and weak support for that with production emphasis. As other variables were controlled, support remained strong for the aloofness relationship and varied between weak and strong for production emphasis. Without the controls, the same two hypotheses were supported strongly. (Significant results were obtained for three other relationships but in the wrong direction.) Controlling for the effects of other variables only served to dilute the support given to the hypotheses as a whole.

The relationships between attitude toward change and organizational climate were examined for separate types of departments according to responses to Question 83. Table 29 reports the correlations in each of the six types of departments and for all departments combined. Correlations again varied widely among the types of departments. Also, the hypotheses of the study received generally slight support in all types of departments.

## Summary

The effect of controlling other variables on the relationships between attitude toward change and each dimension of organizational climate was essentially the same for

TABLE 29

PEARSON CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE FOR DIFFERENT DEPARTMENTS: ORGANIZATION 4

| Organizational Climate Scale | Relationship with Attitude Toward Change | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted Sign | Toolroom (N=12) | Tubes (N=13) | Vanes (N=14) | Sector (N=15) | Plant I Office (N=6) | Plant II Office[1] (N=4) | All Depts. Combined[2] (N=70) | Range of Correlations |
| Disengagement | - | -.13 | .10 | .18 | .22 | .55 | .18 | .16+ | .68 |
| Hindrance | - | -.23 | .04 | .17 | .15 | .77 | -.97 | .13 | 1.74 |
| Esprit | + | .24 | -.65** | -.18 | -.23 | .56 | .10 | -.17+ | 1.21 |
| Intimacy | - | .19 | -.07 | -.01 | .38+ | -.10 | -.35 | .07 | .73 |
| Aloofness | - | .06 | -.23 | -.33 | -.55* | -.54 | -.21 | -.28** | .61 |
| Production Emphasis | - | .40+ | -.45+ | .04 | -.50* | .20 | .35 | -.16+ | .90 |
| Thrust | + | .11 | .13 | -.34 | -.43+ | .62+ | .31 | -.13 | 1.05 |
| Consideration | + | .53* | -.28 | -.20 | -.46* | .58 | .94 | -.16+ | 1.40 |

[1]Number of subjects was too small to calculate significance levels.

[2]Subjects who responded "Other" to the question on department are included in this column, which is identical to the last column of Table 19.

+ p <.10 * p <.05 ** p <.01

the three health-care organizations and the industrial organization. According to the results of partial correlation analysis, the following variables had little impact on the relationships in each organization: satisfaction with job, satisfaction with the organization, sex, age, education, years in present position, length of service, and level of present position.

Differences in relationships between nursing and non-nursing subjects in the three health-care organizations suggested that the department variable may have a significant effect. Correlations between attitude toward change and organizational climate in the various types of departments within the three health-care organizations and the industrial organization were compared and found sizably different. In addition, the same correlations for the same type of department differed considerably between the health-care organizations. This evidence indicated that the department variable did have an effect on the relationships but not a consistent effect for the different organizations.

## Effect of Using Revised Change Scale

This section will examine the effect of changing the measure of attitude toward change on the relationships which exist between attitude toward change and dimensions of organizational climate. The new measure to be used is the revised Change Scale, consisting of the original Change Scale with Question 5 eliminated. It was found to have

greater reliability for the data in the study than the original Change Scale (see discussion in Chapter III). Analysis will be limited to the data from subjects of the three health-care organizations.

Table 30 presents the results of one-way analysis of variance by organization for attitude toward change using the revised Change Scale. As for the original (see Table 15), the scores for subjects in the three organizations were significantly different at the .01 level. The mean and standard deviations of the scores, also reported in Table 30, were close to those found before (see Table 14).

Table 31 reports the correlation between attitude toward change and each of the dimensions of organizational climate for the organizations separately and combined. The results were very similar to those presented in Table 16 for the original Change Scale. Comparable correlations using the two scales differed by a maximum of .09. The only changes in support given to the hypotheses were (1) weak support for the hypothesized relationship between attitude toward change and disengagement in Organization 2, rather than no support as before; and (2) support for the hypothesis pertaining to aloofness at the .001 level in Organization 2 and Organizations 1-3 combined, rather than at the .01 level as before. Overall, the hypotheses remained unsupported as a whole.

TABLE 30

ANALYSIS OF VARIANCE IN ATTITUDE TOWARD CHANGE BY ORGANIZATION: ORGANIZATIONS 1-3 (Revised Change Scale)

| Organization | Number of Subjects | Attitude Toward Change | | F Ratio | p |
|---|---|---|---|---|---|
| | | Mean | Standard Deviation | | |
| 1 | 38 | 3.56 | .70 | 5.73 | .004 |
| 2 | 77 | 3.29 | .86 | | |
| 3 | 35 | 2.91 | .88 | | |

TABLE 31

PEARSON CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE: ORGANIZATIONS 1-3

(Revised Change Scale)

| Organizational Climate Scale | Relationship with Attitude Toward Change | | | | |
|---|---|---|---|---|---|
| | Predicted Sign | Org. 1 (N=38) | Org. 2 (N=77) | Org. 3 (N=35) | Org.'s 1-3 Combined (N=150) |
| Disengagement | - | .18 | -.16+ | .00 | -.06 |
| Hindrance | - | -.08 | -.13 | .19 | -.13+ |
| Esprit | + | .15 | -.04 | -.03 | .08 |
| Intimacy | - | -.04 | .10 | .34* | .19* |
| Aloofness | - | .15 | -.36*** | -.33* | -.25*** |
| Production Emphasis | - | -.20 | -.23* | .19 | -.10 |
| Thrust | + | -.10 | -.06 | .01 | -.07 |
| Consideration | + | -.05 | .02 | .15 | .02 |

+ p <.10

* p <.05

** p <.01

*** p <.001

The amount of variance in individuals' attitude toward change scores explained by the set of all dimensions of organizational climate also remained at the same level. Using the original Change Scale, the variance explained was 31 percent for Organization 1, 15 percent for Organization 2, 32 percent for Organization 3, and 12 percent for Organizations 1-3 combined (see Table 17b). Using the revised Change Scale, the percent of variance explained was 30 percent for Organization 1, 18 percent for Organization 2, 32 percent for Organization 3, and 12 percent for Organizations 1-3 combined. Use of the revised scale caused no change in the power of scores for the organizational climate dimensions to predict scores for attitude toward change.

Given the above findings, further analysis of the effect of substitution of the revised Change Scale was unwarranted. The substitution had virtually no effect on the results reported.

## Effect of Using New Organizational Climate Factors

This section will examine the effect of changing the measure of organizational climate on the relationships which exist between attitude toward change and dimensions of organizational climate. The new measure to be used is the set of factors identified in Table 13. These factors emerged as the primary factors from factor analysis of responses to the 64 items which composed the revised Organizational

Climate Description Questionnaire (OCDQ) developed by Margulies (1965). Analysis was performed only on the data collected from subjects of the three health-care organizations.

Factors were built using the items which had substantial loadings, *i.e.*, correlations of .4 or above, on the given factor. A score on a factor was calculated for each subject from the factor-score coefficient matrix (not shown) and the standardized value of each item included in the factor (Nie, *et al.*, 1975). For example, the score of each subject for factor 7, employee friendship, was:

$$f_7 = F_{7,20} Z_{20} + F_{7,76} Z_{76}$$

where

1. $F_{7,20}$ and $F_{7,76}$ were the factor-score coefficients for factor 7, Questions 20 and 76 respectively,
2. $Z_{20}$ and $Z_{76}$ were equal to (Q20 - $Mean_{Q20}$)/Standard $Deviation_{Q20}$ and (Q76 - $Mean_{Q76}$)/Standard $Deviation_{Q76}$,
3. Q20 and Q76 were the subject's responses to Questions 20 and 76, and
4. Means and standard deviations were calculated for the responses of the subjects in the three organizations combined.

As for the dimensions of the revised OCDQ, the lower the score on a factor, the more the factor was perceived to apply to the organization.

Table 32 presents the mean and standard deviation of subjects' scores of their organization on the new organizational climate factors. The means were close to zero because standardized values were used in calculating factor scores and because the factors were derived from the same set of data. The standard deviations varied considerably between factors but were generally consistent for the same factor across different organizations.

Table 33 presents the results of one-way analysis of variance by organization for the new factors. Significant differences existed between organizations in scores for three of the eleven factors. Overall, the factors distinguished between the organizations to a moderate extent.

It was hypothesized that significant relationships would exist between individuals' scores for attitude toward change and their perceptions of the organizational properties represented by the factors. Table 34 reports the correlation between attitude toward change and each of the new factors for the three organizations separately and combined. The directions of the relationships were not predicted; therefore, two-tailed tests of significance were used. As before for the revised OCDQ (Table 16), correlations were inconsistent for the different organizations and low. They had the same sign for all three organizations in only two cases (intimacy of employee relationships and preference for solitary work). The four coefficients which

TABLE 32

NEW ORGANIZATIONAL CLIMATE FACTORS:

ORGANIZATIONS 1-3

| Factor | Org. 1 (N=38) | | Org. 2 (N=77) | | Org. 3 (N=35) | |
|---|---|---|---|---|---|---|
| | Mean[a] | Standard Deviation | Mean[a] | Standard Deviation | Mean[a] | Standard Deviation |
| 1. Positive Regard for Dept. Manager | .09 | 1.05 | -.01 | 1.03 | -.10 | .99 |
| 2. Task Facilitation | -.15 | .58 | -.19 | .54 | .62 | .61 |
| 3. Intimacy of Employee Relationships | -.30 | .54 | -.02 | .72 | .37 | .69 |
| 4. Annoying Employee Behavior | -.03 | .37 | -.02 | .39 | .06 | .45 |
| 5. Formality of Meetings | -.05 | .69 | .01 | .68 | .01 | .57 |
| 6. Favors from Dept. Manager | -.10 | .75 | .02 | .73 | .02 | .75 |
| 7. Employee Friendship | -.03 | .43 | -.01 | .42 | .05 | .39 |
| 8. Acceptance of Faults of Coworkers | .00 | .45 | .00 | .45 | .04 | .43 |
| 9. Preference for Solitary Work | .02 | .24 | -.03 | .27 | .06 | .22 |
| 10. Work Scheduling by Dept. Manager | -.12 | .41 | .04 | .45 | .01 | .39 |
| 11. Burdensome Paperwork | .02 | .28 | .04 | .26 | -.11 | .23 |

[a]Based on standardized values.

TABLE 33

ANALYSIS OF VARIANCE IN ORGANIZATIONAL CLIMATE BY ORGANIZATION: ORGANIZATIONS 1-3 (New Climate Factors)

| Factor | F Ratio | p |
|---|---|---|
| 1. Positive Regard for Dept. Manager | .32 | .73 |
| 2. Task Facilitation | 26.58 | < .001 |
| 3. Intimacy of Employee Relationships | 9.06 | < .001 |
| 4. Annoying Employee Behavior | .64 | .53 |
| 5. Formality of Meetings | .11 | .90 |
| 6. Favors from Dept. Manager | .40 | .67 |
| 7. Employee Friendships | .31 | .73 |
| 8. Acceptance of Faults of Co-workers | .11 | .90 |
| 9. Preference for Solitary Work | 1.92 | .15 |
| 10. Work Scheduling by Dept. Manager | 1.77 | .17 |
| 11. Burdensome Paperwork | 4.11 | .018 |

TABLE 34

PEARSON CORRELATIONS BETWEEN ATTITUDE TOWARD CHANGE AND ORGANIZATIONAL CLIMATE: ORGANIZATIONS 1-3

(New Climate Factors)

| Factor | Relationship with Attitude Toward Change[1] | | | |
|---|---|---|---|---|
| | Org. 1 (N=38) | Org. 2 (N=77) | Org. 3 (N=35) | Org.'s 1-3 Combined (N=150) |
| 1. Positive Regard for Dept. Manager | .21 | .07 | -.11 | .08 |
| 2. Task Facilitation | -.03 | .01 | .31+ | -.06 |
| 3. Intimacy of Employee Relationships | -.07 | -.18 | -.17 | -.24** |
| 4. Annoying Employee Behavior | .26 | -.24* | -.24 | -.16+ |
| 5. Formality of Meetings | -.10 | .17 | .02 | .07 |
| 6. Favors from Dept. Manager | -.14 | -.06 | .04 | -.07 |
| 7. Employee Friendships | -.02 | .13 | -.46** | -.06 |
| 8. Acceptance of Faults of Co-workers | -.29+ | -.03 | .12 | -.06 |
| 9. Preference for Solitary Work | .05 | .23* | .07 | .12 |
| 10. Work Scheduling for Dept. Manager | -.00 | .26* | .11 | .13 |
| 11. Burdensome Paperwork | .19 | .12 | -.09 | .14+ |

[1]Levels of significance for each correlation coefficient are based on a two-tailed test.

+ $p < .10$ * $p < .05$ *** $p < .01$

were significant at the .05 level within an organization were scattered among four different factors. Only one coefficient was strongly significant for all organizations combined, and that was for a fifth different factor. This constituted lack of support for the hypothesis that significant relationships would exist between attitude toward change and the new factors.

Table 35, analogous to Table 17 for the revised OCDQ dimensions, reports the variance in attitude toward change scores explained by scores on the new factors. As before, the climate factors taken individually explained attitude toward change scores to a minimal extent. When the new climate factors were considered as a set, they explained a substantial and highly significant 58 percent of the total variance in attitude toward change scores in Organization 1. Otherwise, the set of factors explained greater amounts of variance in attitude toward change than the dimensions of the revised OCDQ but the amounts were less significant.

In summary, substitution of the organizational climate factors identified in this study for the dimensions of the revised OCDQ did not result in greater support for the existence of significant relationships with attitude toward change. It also did not enable better prediction of attitude toward change scores.

TABLE 35

VARIANCE IN ATTITUDE TOWARD CHANGE EXPLAINED

BY ORGANIZATIONAL CLIMATE:

ORGANIZATIONS 1-3

(New Climate Factors)

| Independent Variables | Org. 1 (N=38) | Org. 2 (N=77) | Org. 3 (N=35) | Org.'s 1-3 Combined (N=150) |
|---|---|---|---|---|
| a. Individual Climate Factors: | $r^2$ | $r^2$ | $r^2$ | $r^2$ |
| 1. Positive Regard for Dept. Manager | .05 | .01 | .01 | .01 |
| 2. Task Facilitation | .00 | .00 | .10+ | .00 |
| 3. Intimacy of Employee Relationships | .00 | .03 | .03 | .06** |
| 4. Annoying Employee Behavior | .07 | .06* | .06 | .02+ |
| 5. Formality of Meetings | .01 | .03 | .00 | .00 |
| 6. Favors from Dept. Manager | .02 | .00 | .00 | .00 |
| 7. Employee Friend-ships | .00 | .02 | .21** | .00 |
| 8. Acceptance of Faults of Co-Workers | .09+ | .00 | .01 | .00 |
| 9. Preference for Solitary Work | .00 | .05* | .00 | .02 |
| 10. Work Scheduling by Dept. Manager | .00 | .07* | .01 | .02 |
| 11. Burdensome Paperwork | .04 | .02 | .01 | .02+ |
| b. All Climate Factors | $R^2$ .58** | $R^2$ .18 | $R^2$ .40 | $R^2$ .14* |

+ p <.10 * p <.05 ** p <.01

## Summary

Considered in their entirety, the results did not support the hypothesized existence of significant relationship between employees' attitudes toward work-related change and their perceptions of climate properties of the organization. The one relationship strongly supported, that between attitude toward change and aloofness, was with the least reliable dimension of organizational climate for the data collected in the study.

Eight other variables, including measures of satisfaction, level, length of service, sex, age, and education, did not affect the relationships to a noticeable extent. The departmental location of the employee did affect the relationships, but the nature of its effect could not be determined from the data available.

Improved instruments for the measurement of both attitude toward change and organizational climate emerged from the study. Substitution of a more reliable Change Scale for the original Change Scale to measure attitude toward change did not affect the support given to hypotheses. Likewise, substitution of new organizational climate factors for the dimensions of the revised OCDQ, shown to be interdependent and of widely varying reliability in Chapter III, did not yield relationships of greater significance.[1]

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[1]At this point a final attempt was made to discover relationships between attitude toward change and

The implications of the results and of the study as a whole will be discussed in the next and final chapter.

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organizational climate. The results of canonical correlation analysis, originally not planned for the study, are discussed separately in Appendix IV.

# C H A P T E R  V

## CONCLUSIONS

The purposes of this chapter are to reach conclusions based on the results of the study, to state the limitations of the study, and to make recommendations for future research. The results were summarized at the end of the last chapter. As a whole, the hypotheses of the study were not supported.

### Conclusions of the Study

The following three areas will be considered in this section:

1. The existence of relationships between attitude toward change and organizational climate;
2. The existence and measurement of attitude toward change; and
3. The existence and measurement of organizational climate.

As each area is considered, first alternative conclusions will be enumerated. Next, the amount of support given to each alternative by the study will be evaluated. Finally a conclusion will be reached on which alternative or alternatives are most strongly supported. After conclusions have been reached in each of the three areas, final conclusions will be reached for the study.

## Existence of Relationships Between Attitude Toward Change and Organizational Climate

The following are alternative conclusions which might be reached about the relationships between attitude toward change and organizational climate:

1. Significant relationships exist between attitude toward change and other dimensions of organizational climate but not those used in the study.
2. Significant relationships exist which would support other hypotheses for the same dimensions of organizational climate but not the hypotheses formulated in the study.
3. Significant relationships exist for more representative data in the organizations sampled but not for the data collected in the study.
4. Significant relationships exist in other types of organizations but not in health-care organizations.
5. Few if any significant relationships exist.

Of course, many more alternatives could be generated. However, the above list contains an adequate range of alternatives to address the central concerns of the study in this area.

The dimensions of organizational climate used in hypotheses were prescribed by the use of the revised OCDQ to measure organizational climate in the study. The selection of source materials on which to base hypotheses was also influenced by the instrument. Halpin and Croft's (1962)

standard profiles of scores for open and closed organizational climates were the best sources to use the dimensions of the revised OCDQ. The profiles would not have been appropriate for other dimensions of organizational climate, and hypotheses would probably have been based on different research. Thus, it is possible that a change in dimensions of organizational climate considered would have led to the formulation of hypotheses which would have received greater support. However, there is no evidence generated by the study to support this alternative.

Given the dimensions of the revised OCDQ, hypothesized relationships in opposite directions to those formulated in the study might have been suggested by sources other than Halpin and Croft's (1962) standard profiles if only the author was aware of them. The thorough review of the literature made this possibility unlikely. Also, the strategy of hypothesizing simply the existence of significant relationships rather than their existence and direction could have been taken. Two-tailed tests of significance for correlation coefficients in Tables 16, 19-29, and 31 would have been appropriate, rather than the one-tailed tests which were applied. Visual inspection of the tables shows that the correlation coefficients were generally low and significant when one-tailed tests of significance were used. It appears that two-tailed tests would not have increased the overall support for hypotheses in the study. Thus a

conclusion that greater support would have been received for hypotheses opposite to those originally formulated for the same dimensions of organizational climate is unwarranted.

There is always the possibility in any sample survey that the sample was biased; this should rightfully be recognized whenever inferences are drawn from sample data. Since the representativeness of the data in the present study was not determined (see Chapter III), there is no way to ascertain the amount of support for the alternative that different data would have yielded underlying relationships which the present data did not uncover. It suffices to say that the study does not support or discount the alternative.

Although the study addressed the issue of the relationship between attitude toward change and organizational climate in organizations in general, the bulk of the data was collected in one type of organization. However, comparison of results for the three health-care organizations and a completely dissimilar industrial organization showed similar lack of support for hypotheses. Thus, the alternative that another type of organization would have yielded more significant relationships is unsupported. It is still possible, however, since only two types of organizations were used in the present study.

The only alternative remaining is that few or no relationships exist between attitude toward change and

organizational climate as measured in the present study. One relationship, that between attitude toward change and aloofness, was significant in the hypothesized direction for three of the four organizations surveyed. However, the unreliability of the scale used to measure aloofness in the present study diminishes the importance of this result. This alternative is the one most consistent with the overall results of the study and deserves the strongest support.

## Existence and Measurement of Attitude Toward Change

There are two sets of alternative conclusions which may be reached in this area: (1) attitude toward change does or does not exist as a distinct job-related attitude of individuals; and (2) it is or is not adequately measured by the Change Scale. These sets of alternatives will be considered separately below.

### Existence of Attitude Toward Change

Prior to the study, the number and range of correlates of attitude toward change (Table 4) already supported its existence. The addition of organizational climate to the list of its correlates would have expanded the range to include organizational properties; this would have increased the amount of support for the existence of a generalized attitude toward change. As concluded in the previous subsection of the chapter, such an addition was unwarranted by the results of the study.

Other findings do increase the amount of support for the existence of attitude toward change. The significant relationships between attitude toward change (in general) and feelings about past and future change (Table 8) enhance the validity of the concept. Also, the significant difference in attitude toward change scores for the health-care organizations (Table 15) indicates for the first time that the typical employee's attitude toward change may be used to distinguish between organizations.

It is appropriate to speculate at this time on the usefulness of attitude toward change in characterizing and distinguishing between organizations. In research previously described (see Chapter II), Burns and Stalker (1961) proposed that mechanistic and organic systems of organizational structure can be distinguished by their typical response to change. Mechanistic systems were seen to be less responsive to change than organic systems. Subsequent research has expanded the concepts of mechanistic and organic systems into a "contingency theory of organizations" (Lawrence and Lorsch, 1967). Contingency theorists claim that there is no one best way to organize, *i.e.*, along mechanistic or organic lines, for maximum organizational effectiveness. Instead, different organizational structures are called for by different characteristics of the human resources, technology, and external environment of the organization. The characteristics of individuals which have been included in the theory to date are the amount and

distribution of skills and experience among employees, and the prevailing needs of employees either for security and stability or for achievement, autonomy and self-realization (Porter, *et al.*, 1975).

As Burns and Stalker implied, perhaps clues to the proper structure in an organization may be obtained from examining individuals' attitudes toward change. An organically-designed organization may be best suited for individuals with positive attitudes and a mechanistically-designed organization best suited for individuals with negative attitudes toward change. If this is the case, the contingency theory as described by Porter, *et al.* (1975) may be extended to include attitude toward change as a characteristic of the human resources in an organization which influences the choice of the best organizational structure.

Attitude toward change may also be a key determinant of the success of efforts to implement actual change in organizations. If such a relationship does exist, the same change strategy will probably achieve different degrees of success in different situations.[1] The theoretical implication would be further support for a "contingency model of organizational change." According to Tushman (1974), change strategies ought to be based on task predictability in a system:

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[1]The lack of a "best" approach for implementing organizational change was demonstrated by the dramatic difference between the effect of group participation methods in Coch and French's original study (1948) and its replication by French, Israel, and As (1960).

> . . .the best change sequence for systems with unpredictable tasks is behavioral followed by structual change. . . .the best change sequence for systems with predictable tasks is structured followed by behavioral change (1974, p. 76).

Porter, *et al.* (1975), concluded that an organic design was most appropriate for systems with nonroutine, unpredictable tasks. If an organic design is also most appropriate in systems where attitude toward change are positive as speculated above, Tushman's (1974) theory may be extended to include attitude toward change as a critical factor in selecting the best organizational change strategy.

In the terms of Lewin's model of change processes (1947), the typical attitudes toward change held by organizational members are an indication of the extent to which the system is frozen. If attitudes toward change are strongly positive, the system will be less frozen than if they are strongly negative. Knowledge of attitudes toward change could help the change agent decide what actions are necessary to unfreeze the system before changing and refreezing are attempted.

In summary, notwithstanding the lack of significant relationships with dimensions of organizational climate, the existence of the attitude toward change concept is supported by the study. The existence of positive or negative attitudes toward change among employees may have substantial impact on the effectiveness of various organizational designs and strategies for implementing organizational change; further research is necessary to test such assertions in this area.

### Measurement of Attitude Toward Change

Previous research had shown the Change Scale to be a valid and reliable instrument to assess attitude toward change. The present study has demonstrated that the Change Scale has even greater validity and reliability than has been reported previously (see Chapter III). Elimination of one item further increased its reliability for the data collected in the study. A conclusion that the Change Scale, with or without the item in contention, is an effective instrument for measuring attitude toward change is supported.

## Existence and Measurement of Organizational Climate

Concerns related to the existence and measurement of organizational climate have been aired and addressed many times in the literature in recent years but have not been alleviated. They arise again in the present study and are given separate treatment below.

### Existence of Organizational Climate

Three alternative conclusions deserve consideration in this area:

1. Organizational climate exists as a property of organizations.

2. Organizational climate doesn't exist, but a "departmental climate" exists as a property of separate departments within organizations.
3. Climate is an individual and not an organizational or departmental property.

The weight of previous research evidence (see Chapter II) supported the view that organizational climate does exist as a property of organizations and discounted the view that climate is solely affected by individual characteristics. In the present study, significant differences were found in the climates of the health-care organizations along three of the eight original climate dimensions (Table 15) and three of the eleven new climate factors (Table 33). These findings provide minimal support for at least some climate dimensions attributable to the organization itself. Relationships between climate and individual characteristics were not examined in the study. However, individual characteristics were examined as moderators of the relationships between attitude toward change and dimensions of organizational climate and found to be of no consequence.

The results of the study suggest the possibility that climate is a property of departments within the organization. The department variable appeared to exert a strong influence on the correlations between attitude toward change and dimensions of "organizational" climate. The correlations for different department groups in both the three health-care

organizations combined (Table 26) and in the industrial organization (Table 29) varied widely and showed little consistency. Perhaps what was thought to be organizational climate was really departmental climate all along! The results support a conclusion that climate is determined at least to some extent by the department within the organization.

The possibility that climate is a departmental property has seldom been raised in recent discussions of its validity and usefulness as a concept. This is surprising, considering its roots in studies of group climate and leadership style (*e.g.*; Hemphill and Westie, 1950; Stogdill and Coons, 1957). Perhaps the lack of consideration of the departmental effect on climate can be attributed to the nature of the organizations in which climate has most often been studied. For example, Halpin and Croft (1962) focused on school systems, which are organizations characterized by a highly visible and dominant leader (the principal) and a weak departmental structure. Litwin and Stringer (1968) simulated small business firms with no departmental structure. In a series of studies, Schneider (Schneider and Bartlett, 1968 and 1970; Schneider, 1972; Schneider and Snyder, 1975) examined the climate of life insurance agencies with no departmental structure.

One would expect that perceptions of the climate of the working environment will be significantly affected by that part of the environment most immediately accessible to

to the employee, *i.e.*, his or her department. If work groups exist within departments, they should have some impact on perceptions of climate as well.

Reflecting further on the concept of climate, one would also expect that employees differ in the extent to which they have a perception of the organization outside of their departments. The more departments in which the employee has worked, the more he or she might be expected to have a feel for the general climate of the organization beyond the individual departments. Possibly the longer the employee has been an organizational member or the higher the level of the employee's present position, the more he or she recognizes an organizational climate. What is implied by such propositions is not that climate is a property of individuals but instead that individuals vary in their capability of perceiving the organizational property of climate.

The above discussion and the results of the study support a conclusion that departmental climate exists to some extent and organizational climate exists to some extent. Whether organizational climate is a property of the organization itself or simply the result of aggregating departmental climates cannot be inferred from the data; both alternatives are possible in theory. The greatest contribution of the study in this area may be that new lines of research are suggested as a means of further examining the concept of organizational climate. Recommendations

for future research in the area will be presented in the last section of the chapter.

Measurement of Organizational Climate

The alternative conclusions to be considered for this area are that the revised OCDQ used in the study is or is not an appropriate instrument for the measurement of organizational climate, particularly in health-care organizations.

The revised OCDQ was clearly inappropriate for the present data. Its supposedly independent dimensions were heavily interdependent (Table 10) and widely varying in reliability (Table 11). The instrument itself was judged to have low overall reliability.

It also seems inappropriate for non-school organizations in general. The original OCDQ (Halpin and Croft, 1962) was designed to be applied in schools, whose authority structure generally consists of a single leader, the principal. Its dimensions and items (Appendices II and III) placed heavy emphasis on the behavior of the one leader. When Margulies (1965) revised the OCDQ, he kept the same dimensions on faith. Maybe he shouldn't have; in other settings, no one person may dominate perceptions of organizational climate as much as in school systems. The present study and another study (Wallace, Ivancevich, and Lyon, 1975) similarly generated factors which were better suited for health-care organizations than the dimensions of the revised

OCDQ. Perhaps other settings also require their own sets of factors.

The question may be raised as to whether the revised OCDQ is designed to measure climate as an organizational property. Its items use the term "department manager" and "group meetings" in place of "principal" and "faculty meetings" in the original OCDQ. Group meetings usually occur at the work group or department level rather than at the organizational level. The department manager is usually not the head of the organization, unless the organization refers to its major components in different locations, often viewed as organizations themselves, as departments. In contrast, faculty meetings occur at the organization level in schools and the principal is typically the top administrator. Thus, the revised OCDQ appears to assess departmental climate rather than organizational climate.[2]

In summary, the conclusion most supported is that the revised OCDQ is inappropriate for the measurement of organizational climate as contrasted with departmental climate. It may also be inappropriate for non-school organizations, particularly health-care organizations as indicated by the results of the study.

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[2]Margulies (1965) ingeniously avoided this issue. He first applied the revised OCDQ in four large departments of the same organization, each of which apparently had a highly visible department manager. However, he called what he assessed "organizational climate" and proceeded to compare the departments' climates as if they were separate organizations!

## Final Conclusions

The results of the study support a conclusion that attitude toward change is not significantly related to dimensions of organizational climate. The discussion pertaining to the existence and measurement of organizational climate supports a conclusion that the lack of significant relationships in the data collected *may* have been due to:

1. Organizational climate not existing, and departmental climate existing instead; and/or
2. Organizational climate not being measured, and departmental climate being measured instead.

Further alternative conclusions are suggested by consideration of climate as a departmental phenomenon:

1. Different departments in the organizations sampled were combined into general type-of-department categories for purposes of aggregation of data. An unintended effect may have been the obscuring of relationships between attitude toward change and climate within the categories. Perhaps strong relationships existed between attitude toward change and *departmental* climate when departments were not combined.
2. Assuming that climate existed at the department level, relationships between attitude toward change and departmental climate may have varied due to the nature of the department. The offsetting effects of these relationships may have led to low correlations

between attitude toward change and climate when climate was considered at the organization level.

The study cannot and was not designed to achieve resolution on such issues. This might be construed as a limitation of the study; however, the raising of the issues was an unexpected consequence of the inclusion of department as a possible intervening variable.

Support for attitude toward change as a valid and reliable job-related attitude of individuals has been increased by the study. The typical attitude toward change of employees may be used as a distinguishing characteristic of organizations. It also may have a significant influence on the appropriateness of various alternative approaches to the design of the organization and to implementing change within the organization.

The limitations of the study will be discussed in the next section of the chapter.

## Limitations of the Study

One possible limitation of the study is sample size. Conclusions which were reached from the sample data of three similar and one dissimilar organizations may have been different if (1) the sample of subjects within the organizations were larger, and (2) the sample of organizations were larger and more varied. The variables considered as intervening variables, although selected after review of related studies and several collections of organizational and

attitudinal measurements (*e.g.*, Robinson, Athanasiou, and Head, 1969; Price, 1972), inevitably omitted important predictors of attitude toward change and organizational climate which may have affected the relationship between them.

Some researchers have considered the nature of the organizational climate construct itself a limitation of all studies using it. What is really measured is individual perception of organizational climate, which may be biased and inaccurately reflect the organization. The attempt was made to limit such bias by comparing results for different organizations and by including intervening variables in the analysis; however, some biases may have gone uncovered.

The use of cross-sectional rather than longitudinal data imposed restrictions on conclusions which could be reached from the study. Only degrees of association were determined, not direction or extent of causality. Little insight was provided into how attitudes toward change and organizational climate change over time and under what conditions. Further research is necessary to shed light on such questions.

## Recommendations for Future Research

This section will make recommendations for research investigations into two major areas, (1) workers' responses to change, and (2) climate as a departmental/organizational phenomenon.

## Investigation of Worker's Responses to Change

As previously noted (see Chapter I), workers' responses to change differ in the extent to which they are (1) attitudinal or behavioral; (2) positive or negative; (3) to particular change or to change in general; and (4) for particular change, to the content or process of change. The emphasis of research in the organizational change area has been primarily on the effectiveness of various techniques or approaches for implementing change. A shift in emphasis toward a more response-oriented approach in regarding organizational change is recommended.

The study advises against the making of any assumption about workers' attitudes toward change in general. It stresses the capability of workers to exhibit an eagerness or readiness for change as well as a reluctance or resistance to change. It also points out the weaknesses of the literature which has assumed resistance to change or opposing forces for and against change, compared to studies which have examined attitudes toward change without making assumptions about resistance or forces for and against.

The present study and others make the alternative assumption that attitude toward change is unidimensional; *i.e.*, when considered in relation to other variables, it varies along a continuum from positive to negative and is subject to the influence of the variables equally at both

ends of the continuum. The assumption is plausible; however, to date it has not been empirically tested.

One way of testing the assumption of unidimensionality would be to split subjects into two groups according to whether their attitudes toward change were positive or negative. Variables expected to exert a major influence on attitude toward change would be assessed for each subject. The correlations between attitude toward change and the other variables would then be compared for the two groups. If the differences in correlations were large and significant, the factors promoting positive attitudes would be different from those promoting negative attitudes and the assumption of unidimensionality would be discredited. If the differences were small and insignificant, the factors promoting positive and negative attitudes toward change would be essentially the same and the assumption would be supported. The study would be analogous in design to Herzberg's (1966) examination of the determinants of job satisfaction and dissatisfaction. Such a study or one with similar purpose is recommended.

Effort should be devoted to identifying further correlates of workers' responses to change. It is likely that responses will be affected by the properties of the particular change involved and its effect on social interaction, task, status, level, pay, supervision, responsibility, *etc.* There is also evidence that responses to change are affected by variables having no connection with the nature of change, *e.g.*, age, education, managerial level, sex, group

cohesiveness. The work cited in Table 4 has correlated individual and group characteristics with attitude toward change (in general), one type of response to change. Although the present study did not find significant relationships between attitude toward change and dimensions of organizational climate, further testing of the relationships in other organizations under different conditions is recommended. Two key conditions are the use of unaggregated departmental data and a different instrument for the assessment of climate. Strict adherence to these conditions may yet yield significant relationships with climate at the department and/or organizational level.

Research questions may also be posed which relate to the level or degree of change in workers' jobs. Is there an optimum amount of change for workers, and what determines it? Is there a minimum amount of change necessary to provide variety and offset boredom? Is there a maximum amount of change which workers will accept without pushing back or resisting? What are the effects on individual, group, and organizational performance when the actual amount of change does not fall between the above boundaries? Discovery of upper and lower boundaries or optimum levels for the amount of change desired by workers would make job change as important an issue for organizations today as job enlargement has been in recent years.

In the first section of this chapter, the possibility was raised that the match between attitude toward change and organizational structure has an impact on the effectiveness of the organization. Employees' attitudes toward change, the extent to which the organizational structure is mechanistic or organic, and organizational performance would have to be assessed in several organizations to determine whether such a relationship exists. Investigation of the role of attitude toward change is recommended in conjunction with future research on the applicability of a contingency theory of organizations.

It was suggested that the match between attitude toward change and change strategy may influence the success of efforts to implement change in organizations. Attitude toward change may also affect the success of change efforts regardless of the strategy selected. Attitudes toward change and the success of efforts at change would have to be assessed in future "action research" interventions, preferably in several organizations where different change strategies were used, to determine whether these relationships held. Such research is necessary to determine the ultimate value of a response-oriented approach to organizational change and is highly recommended.

As can be seen, taking a fresh point of view towards workers' responses to change raises a number of interesting questions to which few empirically-based answers are available. The above recommendations have concentrated on the

attitude toward change in general, the variable examined in the study. Similar recommendations may be developed which refer to the other types of responses to change which can be examined. Researchers, change agents, and managers will all gain from following these recommendations in future research studies.

## Investigation of Climate

The examination of two interrelated research questions is suggested by the conclusions of the study:

1. Is climate, *i.e.*, individuals' experience-based perceptions of their working environment, influenced by characteristics of the individual department which are separate and distinct from characteristics of the whole organization? In other words, is there such a property as departmental climate?
2. Is climate influenced by characteristics of the whole organization, or, is there such a property as organizational climate?

Previous research implies that the answer to at least one of the questions is yes. Climate has been found related to numerous properties of individuals and organizations (Table 5). However, the issue of whether climate is attributable to the department, the organization, or both has not been examined in the research cited. Instead, the sole assumption has been made in virtually all of the studies that climate exists at the organization level. No

consideration has been given to the possibilities that departmental climates exist independently from the organizational climate or that organizational climate is simply the result of aggregating departmental climates.

Other questions arise as the above questions are considered. If organizational climate exists, are some organizational members more capable of perceiving it than others; *e.g.*, members who have worked in more different departments or in the organization longer; members whose jobs are at higher levels in the organization; "boundary-spanners," or members whose jobs call for frequent interaction with members of other departments? Do some departments influence the total organizational climate more than others? If departmental climate exists separately from organizational climate, what unique characteristics of departments as compared to organizations compose and affect their climate? Does the head of the department have a greater influence on the departmental climate than the head of the organization on the organizational climate? Do work flow or technology affect departmental and/or organizational climate? What are reliable instruments for the measurement of each type of climate?

One approach to such questions would be to conduct semi-structured interviews with a large number and cross-section of employees of an organization. Perceptions of their working environment and the bases for perception, *e.g.*, supervision, organizational policies, as well as demographic

information such as age, length of service, and level would be solicited. Inferences could be drawn from the data in their raw form, or responses could be coded for content and subjected to statistical analysis, *e.g.*, simple correlations between department variables and perceptions, partial correlations between the same variables while controlling for demographic variables.

Another approach would be to assess both departmental and organizational climate in an organization with large and well-defined departments. Half of the subjects in each department would be asked to describe their *organization* along particular dimensions by filling out a climate instrument. The other half of subjects in each department would be asked to describe their *department* by filling out the same instrument with "department" substituted for "organization." Variables which might affect perceptions of climate would be assessed for all subjects and departments, *e.g.*, extent of boundary-spanning activity, length of service, nature of technology in the department.

Several statistical tests would be performed in the study, *e.g.*, tests of significance of correlations between mean departmental and organizational climate scores of departments, one-way analysis of variance of departmental and organizational climate scores by department, t tests of the difference between mean departmental and organizational climate scores within each department, tests for the effects of other variables. Small differences between organizational

climate scores by department would argue for the existence of climate as an organizational property. Large differences between departmental climate scores by department would argue for the existence of climate as a departmental property. Large correlations between mean departmental and organizational climate scores and small differences between the mean scores in each department would argue against the existence of distinct departmental and organizational climates. Comparison of scores for non-departmental groups of subjects, *e.g.*, those who have worked in more than one department vs. those who haven't, would identify other influences on perceptions of climate. Numerous other studies may be designed to deal with the same issues.

If studies indicate that climate does exist as an organizational phenomenon, the implication for the conduct of organizational change would be that interventions at the organization level to improve climate are appropriate. If climate does not exist as an organizational phenomenon, such interventions are inappropriate and climate can only be improved on a department-by-department basis if it exists at that level.

Also, if organizational climate is distinct from departmental climate, researchers and change agents should be clear on to which they are referring and use different instruments to assess them. In this case or if climate does not exist as an organizational phenomenon, the findings of past research on organizational climate, including the

climate instruments on which they have relied, have been fallacious and should be recast if they are to be preserved at all.

Regardless of whether climate exists as a departmental or organizational property, restrictions on the future use of the revised OCDQ are recommended. If the instrument is to be used again in health-care organizations, the eleven factors identified in the present study, or the first seven factors which are composed of more than one item (Table 13), are recommended for dimensions rather than the eight dimensions previously prescribed (Table 1). For non-school organizations in general, consideration should be given to whether the type of organization is similar to the school, which has a highly visible and dominant leader and a weak departmental structure. If so, a new factor analysis of data from the particular type of organization would be appropriate to insure that the dimensions of climate assessed are in fact independent. If not, another instrument would probably be more appropriate to assess climate.

As stated in the review of previous research, the conceptualization and usage of the term organizational climate have evolved considerably in recent years. Further research along the lines of that recommended above will aid in the specification of climate as a departmental and/or organizational property and will contribute greatly to continued evolution of the concept of climate. The

implications of such research will be important for:

1. The conduct of subsequent research which draws on perceptions of the organization;
2. The conduct of organizational change interventions; and
3. Our understanding of attitudes and behavior in organizations.

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# A P P E N D I C E S

I. Questionnaire Used in the Study

II. Dimensions of Organizational Climate Measured by the OCDQ, Form IV

III. Items Composing Eight Dimensions of the OCDQ, Form IV

IV. Canonical Correlation Analysis

APPENDIX I

The Commonwealth of Massachusetts

University of Massachusetts

Amherst 01002

ol of Business Administration
Department of Management

JOB-RELATED CHANGE - JOB ENVIRONMENT RESEARCH PROJECT

This study involves individuals at different levels and in different parts of the organization. We are not interested in the names of individuals so please do not put any initials and identifying marks on the questionnaire.

Answering the questions

1. Most questions can be answered by checking or marking the number of one of the answers. If you do not find the exact answer that fits your case, check or mark the one that comes closest to it. Please, answer all questions as instructed. It should take you about 20 minutes.
2. Feel free to write in the margins and on the back of the questionnaire any explanations or comments you may have. If you do not understand something, feel free to ask it at any time.
3. Please answer the questions in order.
4. Remember, the answers you give will be completely confidential. The value of the study depends on your being as candid as you can in answering the questionnaire.
5. Ignore the numbers in the margins. They help get the information onto IBM cards.

Please return your completed questionnaire directly to the University of Massachusetts representative (or in the accompanying self-addressed envelope).

Thank you for your cooperation.

Gary N. Powell
D. Anthony Butterfield

## CHANGE IN YOUR JOB

Let's begin by looking at what your feelings are about change in your job.

1. Within the past year, have there been any changes in the way your job is done--like the equipment you work with, the work procedures, the job standards and requirements, the kind of records you have to keep, etc.? (Answer for changes affecting you in your present job classification.) There have been: CHECK ONE:
   _____(1) No changes; my work is done exactly the way it was a year ago.
   _____(2) One or two changes; but it is not too different.
7  _____(3) A few changes: it's a little different now.
   _____(4) Quite a few changes; things are fairly different.
   _____(5) Many changes; my work is almost completely different now from the way it was a year ago.

2. In general, how do you now feel about changes during the past year that affected the way your job is done? CHECK ONE:
   _____(1) They made things somewhat worse.
   _____(2) They didn't improve things at all.
8  _____(3) They didn't improve things very much.
   _____(4) They improved things somewhat.
   _____(5) They have been a big improvement.
   _____There have been no changes in my job in the past year.

3. In the next year, how many changes do you expect in the way your job will be done, compared to how it is done now? CHECK ONE:
   _____(1) No changes; one year from now, my work will be done exactly the way it is now.
   _____(2) One or two changes; but it will not be too different.
9  _____(3) A few changes; it will be a little different.
   _____(4) Quite a few changes; things will be fairly different.
   _____(5) Many changes; one year from now, my work will be almost completely different from the way it is now.

4. How do you feel about the changes you expect in the way your job is done in the next year? CHECK ONE:
   _____(1) They will make things somewhat worse.
   _____(2) They won't improve things at all.
10 _____(3) They won't improve things very much.
   _____(4) They will improve things somewhat.
   _____(5) They will be a big improvement.
   _____There will be no changes in my job in the next year.

5. If I could do as I please, I would change the kind of work I do every few months. CHECK ONE:
   _____(1) Strongly agree
   _____(2) Agree a little
11 _____(3) Neither agree or disagree
   _____(4) Disagree a little
   _____(5) Strongly disagree

6. One can never feel at ease on a job where the ways of doing things are always being changed. CHECK ONE:
   _____(1) Strongly agree
   _____(2) Agree a little
12 _____(3) Neither agree or disagree
   _____(4) Disagree a little
   _____(5) Strongly disagree

7. The trouble with most jobs is that you just get used to doing things one way and then they want you to do them differently. CHECK ONE:
13 _____(1) Strongly agree
_____(2) Agree a little
_____(3) Neither agree or disagree
_____(4) Disagree a little
_____(5) Strongly disagree

8. I would prefer to stay with a job I know I can handle rather than change to one where most things would be new to me. CHECK ONE:
_____(1) Strongly agree
14 _____(2) Agree a little
_____(3) Neither agree or disagree
_____(4) Disagree a little
_____(5) Strongly disagree

9. The trouble with many people is that when they find a job they can do well, they don't stick with it. CHECK ONE:
_____(1) Strongly agree
15 _____(2) Agree a little
_____(3) Neither agree or disagree
_____(4) Disagree a little
_____(5) Strongly disagree

10. I like a job where I know I will be doing my work about the same way from one week to the next. CHECK ONE:
_____(1) Strongly agree
16 _____(2) Agree a little
_____(3) Neither agree or disagree
_____(4) Disagree a little
_____(5) Strongly disagree

11. When I get used to doing things one way, it is disturbing to have to change to a new method. CHECK ONE:
_____(1) Strongly agree
17 _____(2) Agree a little
_____(3) Neither agree or disagree
_____(4) Disagree a little
_____(5) Strongly disagree

12. It would take a sizable raise in pay to get me to voluntarily transfer to another job. CHECK ONE:
_____(1) Strongly agree
18 _____(2) Agree a little
_____(3) Neither agree or disagree
_____(4) Disagree a little
_____(5) Strongly disagree

13. The job that you would consider ideal for you would be one where the way you do your work: CHECK ONE:
_____(1) Is always the same.
19 _____(2) Is usually the same.
_____(3) Undecided
_____(4) Changes to some extent.
_____(5) Changes a great deal.

## JOB ENVIRONMENT

The questions on the next few pages (14-77) are about how you feel and react to your job environment. The term "department manager" refers to the person who is in charge of your department or organization (see Question 83).

Please read each statement carefully and mark each statement with a number as follows:

If you strongly agree with the statement, then mark it 1.

If you agree a little with the statement, then mark it 2.

If you neither agree or disagree with the statement, then mark it 3.

If you disagree a little with the statement, then mark it 4.

If you strongly disagree with the statement, then mark it 5.

_____14. The department manager shares new ideas with his employees.

_____15. The department manager explains reasons for criticism.

_____16. The department manager goes out of his way to help employees.

_____17. Employees interrupt each other in group meetings.

_____18. The department manager contacts employees every day.

_____19. Employees leave the hospital grounds whenever possible.

_____20. Employees in this department keep to themselves

_____21. The supervisor runs the group meeting in a formal way.

_____22. Employees talk about their personal life to other employees.

_____23. There is a minority group of employees who always oppose the majority.

_____24. The department manager uses constructive criticism.

_____25. Employees go about their work with great vim, vigor, and pleasure.

_____26. Group meetings are mainly management report meetings.

_____27. The department manager helps employees settle any differences.

_____28. The department manager tries to get better salaries for his employees.

_____29. Employees seek special favors from the department manager.

_____30. Employees spend time after work with other employees who have problems.

_____31. The department manager talks a great deal.

_____32. The department manager makes all work-related decisions.

_____33. Employees socialize together in small select groups.

_____34. The morale of employees in this department is high.

_____35. The department manager corrects the mistakes of employees.

_____36. The department manager sets an examplet by working hard himself.

_____37. Group meetings are organized with a strict agenda.

_____38. Employees know the family background of other employees.

_____39. The department manager helps employees solve personal problems.

_____40. The department manager insures that employees work to their fullest capacity.

_____41. Employees exert group pressure on non-conforming workers.

_____42. Employees work together when doing routine duties.

_____43. Employees have fun socializing together during working hours.

_____44. The department manager encourages employees to improve their weaknesses.

_____45. The department manager stays after work to finish any uncompleted work.

_____46. Routine duties interfere with our primary jobs.

_____47. Employees usually eat lunch by themselves.

_____48. Employees ask senseless questions in group meetings.

_____49. The mannerisms of employees in this department are annoying.

_____50. The department manager exchanges ideas with employees.

_____51. Employees in this department have a good deal of loyalty.

_____52. Employees are informed of the reasons for a department manager's visit.

_____53. The department manager looks out for the personal welfare of employees.

_____54. Assistance from other departments is readily available when needed.

_____55. Employees prefer to work by themselves.

_____56. Extra materials are available for job use.

_____57. The department manager is usually well prepared at group meetings.

_____58. There is considerable laughter when employees gather informally.

_____59. Sufficient instruction is available for the operation of equipment.

_____60. Too much time is spent in committee meetings.

_____61. The department manager is easy to understand.

_____62. The department manager checks on the capability of all employees.

_____63. Administrative paper work is burdensome to this hospital.

_____64. The rules set by management are never questioned.

_____65. Sufficient time is given to prepare administrative reports.

_____66. Procedures in this company are bothersome.

_____67. Supplies are quickly available.

_____68. Employees in this department talk about leaving the hospital.

_____69. The department manager does personal favors for his employees.

_____70. In group meetings there is a feeling of "let's get things done."

_____71. Employees help select jobs to be worked on.

_____72. Employees invite other employees to visit them at home.

_____73. Employees ramble when they talk in group meetings.

_____74. Most employees accept the faults of their co-workers.

_____75. The department manager is on the job before the other employees arrive.

_____76. Employees' closest friends are other employees of this department.

_____77. The department manager schedules work for all employees.

78. All in all, how satisfied are you with your present job? CHECK ONE:
:18 _____(1) Extremely satisfied
_____(2) Moderately satisfied
_____(3) Neutral
_____(4) Moderately dissatisfied
_____(5) Extremely dissatisfied

79. All in all, how satisfied are you with your organization as a place to work? CHECK ONE:
:19 _____(1) Extremely satisfied
_____(2) Moderately satisfied
_____(3) Neutral
_____(4) Moderately dissatisfied
_____(5) Extremely dissatisfied

## BACKGROUND INFORMATION

80. What is your sex?
:20 _____(1) Male
_____(2) Female

81. What is your age?
_____(1) Below 20
_____(2) 20-24
_____(3) 25-29
:21 _____(4) 30-34
_____(5) 35-39
_____(6) 40-44
_____(7) 45-49
_____(8) 50 or older

82. How much formal education have you had? CHECK ONE:
_____(1) High school
_____(2) Some college studies
:22 _____(3) Associates degree
_____(4) Nursing diploma program degree
_____(5) Four-year college degree
_____(6) Some graduate studies
_____(7) Graduate degree

83. What is your department? CHECK ONE:
_____(1) Nursing Services
:23 _____(2) X-Ray, Laboratory, Physical Therapy, Respiratory Therapy, EKG, Speech, Dental Clinic, Family Planning, or Pharmacy
_____(3) Dietary, Housekeeping, Maintenance, Laundry, Storeroom, or CSR
_____(4) Billing, Credit, DP, Admitting, Business Office, Switchboard, or Administration
_____(5) Other (please specify) _____

84. What is your present position in your department? CHECK ONE:
a. If in Nursing Services, answer below:
_____(1) Nursing Assistant
:24 _____(2) Licensed Practical Nurse (LPN)
_____(3) Registered Nurse (RN)
_____(4) Other (please specify) _____
b. If <u>not</u> in Nursing Services, answer below:
_____(5) Department head
_____(6) Supervisor
_____(7) Other (please specify) _____

85. How many years have you been in your present position? CHECK ONE:

2:25
_____(1) Less than one year
_____(2) One year
_____(3) Two years
_____(4) Three years
_____(5) Four years
_____(6) Five years
_____(7) Six to ten years
_____(8) Eleven to twenty years
_____(9) Twenty-one years or more

86. What year did you first start working for the hospital?

2:26
_____(1) 1975
_____(2) 1974
_____(3) 1973
_____(4) 1972
_____(5) 1971
_____(6) 1970-1965
_____(7) 1965-1959
_____(8) 1958-1953
_____(9) Before 1953

Thank you very much for your cooperation in filling out this questionnaire.

If you have any further ideas or comments you would like us to know about, please feel free to write them below or on the other side.

# A P P E N D I X  I I

## DIMENSIONS OF ORGANIZATIONAL CLIMATE MEASURED BY THE OCDQ, FORM IV

### Teachers' Behavior

1. *Disengagement* refers to the teachers' tendency to be "not with it." This dimension describes a group which is "going through the motions," a group that is "not in gear" with respect to the task at hand. It corresponds to the more general concept of *anomie* as first described by Durkheim.[1] In short, this subtest focuses upon the teachers' behavior in a task-oriented situation.

2. *Hindrance* refers to the teachers' feeling that the principal burdens them with routine duties, committee demands, and other requirements which the teachers construe as unnecessary busy-work. The teachers perceive that the principal is hindering rather than facilitating their work.

3. *Esprit* refers to "morale." The teachers feel that their social needs are being satisfied, and that they are, at the same time, enjoying a sense of accomplishment in their job.

4. *Intimacy* refers to the teachers' enjoyment of friendly social relations with each other. This dimension describes a social-needs satisfaction which is not necessarily associated with task-accomplishment.

### Principal's Behavior

5. *Aloofness* refers to behavior by the principal which is characterized as formal and impersonal. He "goes by the book" and prefers to guide by rules and policies rather than to deal with the teachers in an informal, face-to-face situation. His behavior, in brief, is universalistic rather than particularistic; nomethetic

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[1]Emile Durkheim, *Le Suicide* (Paris: Librarie Felix Alcan, 1930), p. 227. *Anomie* describes a planlessness in living, a method of living which defeats itself because achievement has no longer any criterion of value; happiness always lies beyond any present achievement. Defeat takes the form of ultimate disillusion—a disgust with the futility of endless pursuit.

rather than idiosyncratic. To maintain this style, he keeps himself—at least, "emotionally"—at a distance from his staff.

6. *Production Emphasis* refers to behavior by the principal which is characterized by close supervision of the staff. He is highly directive, and plays the role of a "straw boss." His communication tends to go in only one direction, and he is not sensitive to feedback from the staff.

7. *Thrust* refers to behavior by the principal which is characterized by his evident effort in trying to "move the organization." "Thrust" behavior is marked not by close supervision, but by the principal's attempt to motivate the teachers through the example which he personally sets. Apparently, because he does not ask the teachers to give of themselves any more than he willingly gives of himself, his behavior, though starkly task-oriented, is nonetheless viewed favorably by the teachers.

8. *Consideration* refers to behavior by the principal which is characterized by an inclination to treat the teachers "humanly," to try to do a little something extra for them in human terms.

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SOURCE: A. W. Halpin and D. B. Croft, *The Organizational Climate of Schools* (Washington, D.C.: U. S. Office of Education, Department of Health Education, and Welfare, 1962).

# A P P E N D I X  I I I

## ITEMS COMPOSING EIGHT DIMENSIONS OF THE OCDQ, FORM IV

### Teachers' Behavior

I-DISENGAGEMENT

17. Teachers interrupt other faculty members who are talking in staff meetings.
20. Teachers at this school stay by themselves.
23. There is a minority group of teachers who always oppose the majority.
29. Teachers seek special favors from the principal.
33. Teachers socialize together in small select groups.
41. Teachers exert group pressure on non-conforming faculty members.
48. Teachers ask nonsensical questions in faculty meetings.
49. The mannerisms of teachers at this school are annoying.
68. Teachers talk about leaving the school system.
73. Teachers ramble when they talk in faculty meetings.

II-HINDRANCE

46. Routine duties interfere with the job of teaching.
-59. Sufficient time is given to prepare administrative reports.
60. Teachers have too many committee requirements.
63. Administrative paper work is burdensome at this school.
-65. Instructions for the operation of teaching aids are available.
66. Student progress reports require too much work.

III-ESPRIT

25. The teachers accomplish their work with great vim, vigor and pleasure.
30. Teachers spend time after school with students who have individual problems.
34. The morale of the teachers is high.
51. Teachers at this school show much school spirit.
54. Custodial service is available when needed.
56. Extra books are available for classroom use.
58. There is considerable laughter when teachers gather informally.
67. School supplies are readily available for use in classwork.
70. In faculty meetings, there is the feeling of "let's get things done."
74. Most of the teachers here accept the faults of their colleagues.

IV-INTIMACY

22. Teachers talk about their personal life to other faculty members.
38. Teachers know the family background of other faculty members.
42. Teachers work together preparing administrative reports.
43. Teachers have fun socializing together during school time.
-55. Teachers prepare administrative reports by themselves.
72. Teachers invite other faculty members to visit them at home.
76. Teachers' closest friends are other faculty members at this school.

## Principal's Behavior

V-ALOOFNESS

18. Teachers are contacted by the principal each day.
19. Teachers leave the grounds during the school day.
21. The principal runs the faculty meeting like a business conference.
26. Faculty meetings are mainly principal-report meetings.
37. Faculty meetings are organized according to a tight agenda.
47. Teachers eat lunch by themselves in their own classrooms.
-50. School secretarial service is available for teachers' use.
-52. Teachers are informed of the results of a supervisor's visit.
64. The rules set by the principal are never questioned.

VI-PRODUCTION EMPHASIS

31. The principal talks a great deal.
32. The principal makes all class scheduling decisions.
35. The principal corrects teachers' mistakes.
40. The principal insures that teachers work to their full capacity.
44. Extra duty for teachers is posted conspicuously.
62. The principal checks the subject matter ability of teachers.
77. The principal schedules the work for the teachers.

VII-THRUST

14. The principal tells teachers of new ideas he has run across.
15. The principal explains his reasons for criticism to teachers.
16. The principal goes out of his way to help teachers.
24. The principal uses constructive criticism.
36. The principal sets an example by working hard himself.
53. The principal looks out for the personal welfare of teachers.
57. The principal is well prepared when he speaks at school functions.
61. The principal is easy to understand.
75. The principal is in the building before teachers arrive.

VIII-CONSIDERATION

27. The principal helps staff members settle minor differences.
28. The principal tries to get better salaries for teachers.
39. The principal helps teachers solve personal problems.
45. The principal stays after school to help teachers finish their work.

69. The principal does personal favors for teachers.
71. Teachers help select which courses will be taught.

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NOTES: 1. Those items indicated by a minus sign (-) are scored inversely.

2. Item numbers agree with corresponding question numbers in Appendix I.

SOURCE: A. W. Halpin and D. B. Croft, *The Organizational Climate of Schools* (Washington, D. C.: U. S. Office of Education, Department of Health, Education, and Welfare, 1962).

# A P P E N D I X  I V

## CANONICAL CORRELATION ANALYSIS

Canonical correlation analysis was performed in an additional attempt to uncover relationships between attitude toward change and organizational climate, this time using responses to the sets of nine change and 64 climate items without combining them into scales. Canonical correlation is described by Warwick (1975) as follows:

> The basic strategy of canonical correlation analysis is to derive a linear combination from each of the sets of variables in such a way that the correlation between the two linear combinations is maximized. Many such *pairs* of linear combinations may be derived. These *canonical variates*, as they are known, are essentially equivalent to the principal components produced by principal-component analysis, with the exception that the criterion for their selection has altered. Whereas both techniques produce linear combinations of the original variables, canonical correlation analysis does so not with the object of accounting for as much variance as possible within one set of variables but with the aim of accounting for a maximum amount of the relationship *between* two sets of variables (1975, p. 517).

Decomposition of the attitude toward change and organizational climate scales into sets of items increased the variance in attitude toward change explained by organizational climate. Twelve percent of the variance, significant at the .05 level, was explained for Organizations 1-3 combined when the composite scales were used (see Table 17b). Sixty-six percent of the variance, significant at the .001

level, was explained when the first pair of canonical variates was used. Eight other independent pairs of canonical variates which explained additional variance in attitude toward change scores also emerged from canonical correlation analysis.

The canonical variates themselves defied simple interpretation. On the one hand, the attitude toward change variates made heavy use of the nine items composing the Change Scale. Each item was correlated with at least two variates at r = .4 or above, and variates averaged three items with correlations of .4 or above. Over half of the items correlated at .4 or above with a variate were also correlated at .6 or above. The excessive loadings made interpretation of the attitude toward change variates difficult.

On the other hand, the organizational climate variates had a combined total of only 19 of 64 items correlated at .4 or above with any one variate. None of the items was correlated at .6 or above with a variate. The four items with high correlations in the first variate (Appendix I, Questions 15, 23, 36, and 63), considered the most important in enabling interpretation of the relationship between the two sets of items, appeared to have little in common. So few items were even moderately correlated with a variate that the concept of climate would have to be altered drastically for the claim to be made that the variates reflected organizational climate.

At first glance, the large amount of variance explained by the first pair of canonical variates in each other provided a basis for believing that some relationships existed between attitude toward change and organizational climate, with the relationship being more complex than previously imagined. However, *any* such decomposition of scales into individual sets of items will increase the variance explained in the scores of one set of items by the other. The increase in variance explained does not mean anything in itself; meaning must be derived from the canonical variates. Since the variates in this case did not lend themselves to meaningful interpretation, little was gained from the canonical correlation analysis. Further analysis along these lines was concluded to be unwarranted.