ELLERBROCK, Geraldine Byrne, 1920-
A STUDY OF THE INTERACTIVE EFFECT BETWEEN
PERSONALITY AND A PARTICIPATORY ENVIRONMENT
UPON PERFORMANCE.

The Ohio State University, Ph.D., 1971
Business Administration

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A STUDY OF THE INTERACTIVE EFFECT BETWEEN PERSONALITY
AND A PARTICIPATORY ENVIRONMENT UPON PERFORMANCE

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

Geraldine Byrne Ellerbrock, B.S., M.A.

The Ohio State University
1971

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PLEASE NOTE:

Some pages have indistinct print. Filmed as received.

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ACKNOWLEDGMENTS

It would have been impossible to plan, conduct, and complete this study without the encouragement, support, and help in diverse ways of numerous individuals. It is not possible to name each person. My family, friends, colleagues, and committee have been invaluable to me. I am especially grateful to our daughter, Mona, for her understanding, independence, and maturity. Without her cooperation my graduate work could not have been completed.

I can only name those who were most prominent in their contributions. First of all, I would like to thank the Department of Management, and the College of Business Administration, University of Dayton. There has been an atmosphere conducive to research, and assistance was readily given. Three of my colleagues rearranged their schedules to allow me to teach their classes for one week. Others have made suggestions, lent books, and edited my manuscript. I am especially indebted to Professor Edward L. Marrinan, Jr. for his advice and consultation in regard to the statistical measures. In addition, he worked with pencil and the computer to be sure the results were correct.

Joy Riddell has conscientiously worked with each phase of the study, and could always be depended upon to do a good job. Jeanne Heimberger, a graduate student, assisted in the experiment, and when time was a critical factor helped with the editing and typing.
Professor Robert C. Miljus, Chairman of the Faculty of Management Sciences, has been my adviser during all of my graduate work. He has given me insights by his reasoned, fair and balanced view of people and situations. This is reflected in the study.

Professor James P. McNaul has thoughtfully read and commented upon each phase of this study. Often these comments were taped. His probing questions, legitimate criticisms, and pertinent suggestions have helped immeasurably. He has given me support at crucial stages.

Professors Joseph Yaney and Theodore Sokoloski were members of my committee and made worthwhile suggestions.

I am grateful to the publishers, Harper & Row, for permission to use the 29 items from the F scale.

In spite of time and distance problems, as well as personal inconvenience, Mrs. Matthew Golis has typed the final manuscript with speed and accuracy.

I thank these people and all others who have either aided or showed tolerance during the period of this study.
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CHAPTER I

INTRODUCTION

The Nature of the Problem

The performance of a person is dependent upon his ability and his motivation to perform effectively. There is a need to identify the environment that is motivational for individuals. A participatory environment is motivational for some--but not all--individuals. Generalizations concerning the positive effects on motivation are over-simplifications.

What has not been determined is the effect personality has upon performance in a participatory environment. This study hypothesizes that the effects of participation in decision making depends on certain personality characteristics of the participant. The interactive effects of environment and personality are used to discover the effect upon performance.

This basic working premise of multiple interaction is not original. Vroom (1965), after reviewing research by psychologists to predict or explain differences in level of performance among people working on the same job, argues that the research was based on two different sets of assumptions. The first assumption was that the performance of a person is to be understood in terms of his abilities and their relevance to the job to be performed. This has led to an
effort to make personal ability consistent with criteria for selection, training, and job design. The second assumption was that the level of performance of a person on a job is dependent on his motivation to perform effectively. The Hawthorne experiments (Roethlisberger and Dickson, 1964), and the experiments of Kurt Lewin and others in group decision making and democratic leadership (Lewin, Lippitt, and White, 1939; Coch and French, 1948) suggest the motivational influence of participation. Vroom (1960) found that certain personality characteristics interacted with the environment to affect performance.

One principle is clear from this research: efficient alterations of environment to increase productivity must take personality factors into consideration. Additional controlled experimentation to measure the influence of leadership in participatory environments is clearly needed if necessary progress is to be made. The university classroom situation reported in this study offered such an opportunity to assess students in business administration.

In the participatory environment students had an opportunity to take part in decision making that affected them directly. Participation in the decision-making process was seen as a continuing activity. An evaluation was made to determine what effect personality characteristics had upon performance. This particular study used the interactive effects of participation and personality to determine the effects on performance.
The Significance of the Problem

The philosophy behind numerous studies on business psychology available today is that an organization is only as effective as its people. By "effective," these studies are judged on the criteria of "productive." Thus whatever increases productivity is "good" for business, whether it is the productivity of physical or human resources. Productivity, by definition is a function of behavior. Behavior has been described or measured in most recent research in terms of a) environment and b) personality. At the simplest level environment can be dealt with in purely physical terms. More complete portrayal of the term has to include indices of the psychological surroundings. Environment seen in its full complement of factors makes artificial the division between it and personality.

Past research has concentrated to an inordinate degree on one or the other of these variables to the exclusion of the other. Some predictions about job performance have been based on knowledge of attitudes, interests, and other personality factors. Others have been based on the effects of environmental factors and social conditions. The possibility that such results portray only part of the problem has not received adequate attention. Thus the hypothesis on which this study is based begins with the tenet that the most productive research arises from studies where these two basic categories are dealt with simultaneously not separately.
The Purpose of the Study

This particular study is aimed at the managerial level where personality and environmental factors come together. It is common knowledge that a few individuals, through effective leadership, can commit an institution or firm to a course of action or a way of life. An understanding or awareness of personality variables can help predict certain courses of action or structuring of situations. To obtain an understanding of individuals, an awareness of personality variables becomes essential. Certain of these variables lead to related and hence predictable courses of management action or structuring of situations within a firm.

It is equally important that leaders accurately recognize their own personality sets and the personality variables of the people under them. A manager should recognize which factors in his personality make it more difficult for some individuals to accept his leadership so that he is able to make the necessary adjustments in individual situations. He should also be able to recognize those people under him whose personality characteristics are not thoroughly congruent or reinforced by the environment in which they are working.

It is self-evident that to provide the environment conducive to top performance by personnel (if not also the opportunity for personnel to develop their individual talents further) is accepted as good business. If the purposeful alteration of environment is done effectively, one could expect increases in productivity (Litwin, 1968).

When the complexity of the environment-personality interaction is recognized, a decision is required of an organization. There are
two alternate pathways for resolution, but the organization may choose one: 1) it can first determine what its environmental situation is or should be, and then select personnel who fit this, or 2) it can choose its personnel and then determine what environment will fit its staff.

The first is a possibility that is feasible only for new organizations. Established companies with existing personnel clearly must approach their problem from the other direction. Training and development programs can recognize the greater effectiveness of certain types of leadership behavior and environmental conditions for optimization by individuals (Lewin, 1938).

When an organization looks to its staff, and then determines the environment to raise the productivity of that staff, the central problem is seen in terms of motivation. It should be apparent that any attempts to match the capabilities of people with the requirements of their jobs is largely futile unless an organization can successfully and simultaneously develop a high level of motivation in these people. Until an organization has identified the environment that creates motivation for its individual staff members, its efforts at environmental change may be subject to error. One expects to find the majority of organizations having a large mixture of various personality types. No environment can be found which is maximally motivational for all personality types. If these people could be sorted in some way, some modification in management style (an important part of the working environment) is feasible. Without the ability to recognize such motivated people the manager is unable to know where additional reinforcement is needed and the productivity of his division is
consequently less than optimum.

An attempt has been made in this study to find the effects of a participatory environment on performance for individuals with certain personality characteristics. Based on exploratory research of the literature and previous reported studies, developed hypotheses are discussed.

**Hypotheses**

1. Participation will in general lead to a positive attitude toward the environment (class work).
   1a. The more authoritarian the individual the less the extent to which participation in the decision-making process will result in a favorable attitude.
   1b. Participation in the decision-making process will have a greater effect on attitudes of those with low authoritarian needs.

2. There is a difference between low authoritarian individuals and high authoritarian individuals in their use of the opportunity to participate in decision making.
   2a. The more authoritarian the individual the less the use of the opportunity for participation in decision making.
   2b. The less authoritarian the individual the more participation in the decision-making process.

3. Participation will lead to more effective performance by individuals with certain personality variables, and to a less effective performance by individuals with other personality variables.
   3a. The less authoritarian individual will be motivated to improve performance with participation.
   3b. Participation will not affect the performance or the motivation to perform of the high authoritarian individual.
Definitions

Terms and concepts used in this experiment have been defined differently in some studies. A brief definition is given below. They are defined in more detail in another section of this manuscript.

**Environment:** Environment does not mean the physical setting only, but the psychological orientation and philosophy which brings this into being. The psychological orientation and philosophy is evidenced by the different assumptions made as to the degree of contribution which is acceptable, and the amount of control over the situation by those participating. A more detailed explanation is found in Chapter III, METHODOLOGY OF THE STUDY.

**Personality:** The general definition (Janis, et al., 1969) agreed upon by most leading psychologists is that, "'Personality' designates the patterns of behavior and predispositions that determine how a person will think, feel, and act." The major components of personality are those characteristics that most directly affect a person's adjustment to his environment--including his emotions, abilities, and skills in getting along with others. The degree of authoritarianism as measured by the F scale (Adorno, et al., 1950) was used to identify personality types.

**Participation:** Participation is voluntary involvement and commitment in the decision-making process, where the decisions have an effect upon the involved individuals. Decisions are used here to denote the output. A more detailed explanation is found in Chapter III, METHODOLOGY OF THE STUDY.
General Methodology

The subjects of the present experiment are sophomores in three different classes of "Principles of Management" at the School of Business Administration, University of Dayton. "Principles of Management" is a required course for management majors in the School of Business in their second year of college. The students are assigned to each section at random. These three classes were chosen by the researcher at random. None of them was taught regularly by the researcher, and none of these classes conflicted with the times the researcher taught her own classes.

An assistant, a graduate student in communication arts with several years business experience, aided the researcher. Two tests were given the subjects on the first day of the first term 1971-1972 by the assistant. These tests were the F scale (Adorno et al., 1950) and an attitude test developed by the researcher. The tests were given on the first day in order to measure what they were purported to measure--personality characteristics and attitudes.

The student-subjects were taught by the researcher for one week using participation as defined elsewhere. The assistant recorded the performance of each student as defined on the attached score sheet.

At the beginning of the second week--after the experimental period--both the F scale and the attitude tests were given again. A performance record was kept of each student. Measures were used to determine if there was a change in attitude of the student-subjects. Other measures were used to determine if personality characteristics
affected performance in a participatory environment. This is more fully developed in Chapter III, METHODOLOGY OF THE STUDY.

**Limitation of the Study**

The principal limitation of this study is the short period of time the subjects are in the experimental environment. The subjects were in the participatory environment a total of less than three hours. The average number of courses taken by a student each week is five. This means they spent at least twelve hours in classrooms in which the environment was different from the participatory environment.

One can make this assumption from the results of the survey in which students in the School of Business Administration defined participation. Furthermore, Question 9, "Which of these do you consider the most appropriate class environment for learning?", showed that the expectations of the students were different from the environment of the experimental setting.

The expectations of the students could also be a limitation. In order to react naturally in such a participatory environment, dissonance must first be overcome.

Any time one implies that the results from a study can be applied to another group, the assumption is made that the subjects come from the same population. A time factor is involved. Some business students transfer to professional schools or choose other careers.

A recognition must be made that the results of this experiment cannot be applied to all students—or all subordinates or managers—all tasks, and all situations.
Organization of the Remainder of the Dissertation

The remainder of this dissertation is organized to: 1) review relevant research, 2) describe the methodology used in this study, 3) present and analyze the findings of this study, 4) summarize conclusions and suggest implications.

In particular, this study will investigate the interactive effects of personality and environment--participatory--on the performance of individuals. Chapter II is concerned with relevant studies. Chapter III discusses methodology. Chapter IV presents the analysis of results. Chapter V contains the conclusions and implications.
CHAPTER II

LITERATURE SEARCH

The desire to improve the effectiveness of organizations and managers has been the focus of research in recent years. Studies relevant to this specific research have been reviewed. Research has been approached from a variety of orientations. Investigations have been concerned with a) environment and b) personality. Several studies have worked from the basic premise of the interactory effects of these two variables.

The productivity of individuals is a factor of their ability and their motivation. Environment can be conducive to performance by individuals. All individuals are not motivated by the same environments. There is a need to investigate the environment-personality interaction.

Until the 1920's and 1930's the human problems at work had been largely ignored. The Hawthorne experiment (Roethlisberger & Dickson, 1964) found that participation by the work force resulted in economic and psychological benefits. This suggested the use of participation in a problem area--the change situation (Coch & French, 1948). This proved so successful at the Harwood Manufacturing Company that there was a decided shift from authoritative management to a more participative style. When Weldon was purchased by Harwood, this style was incorporated. John F. Smith (Marrow, Bowers & Seashore, 1967),
plant manager, reported that the demands for change were slight for some, but difficult for others.

This statement by Mr. Smith illustrated a reason for non-acceptance of participatory management. It can be successfully used in some instances, but it cannot be used with all people successfully.

Behavior is a factor of environment and personality. The research cited here examines findings concerned with the environment and studies related to the personality of individuals.

Research cited in this chapter describes or measures behavior in terms of environment or personality. This investigator suggests that there is a fusion of personality and environment in the work environment. Experiments by Vroom (1960), Campion (1968) and Tosi (1971) are cited and were reviewed. These studied the interactive effects of personality and environment.

**Early Industrial Research Studies**

**Hawthorne Studies**

Until the 1920's and 1930's the human character of business organizations had been largely ignored. Although the Hawthorne studies have been criticized (Carey, 1967; Landsberger, 1958) for not being a model in the application of scientific methodology to problems of human behavior, they do represent a benchmark in such studies. The studies generated a great amount of interest in the field of human problems at work.
In 1927, the Western Electric Company (Roethlisberger and Dickson, 1964), at its Hawthorne plant in Chicago began a series of inquiries into the human effect of work and working conditions. At the beginning the interest was primarily in the relation between conditions of work and the incidence of fatigue and monotony among employees. It was thought that within a year definite answers would be obtained. In most cases the results obtained, instead of giving definite answers to the original questions, demanded a restatement of them. As a result the inquiry continued for five years, from 1927 to 1932. From the original observation of five workers, the investigation during one phase of its development had expanded until it included about 20,000 employees.

As the experiment proceeded through eleven periods and almost two years time, productivity rose substantially above the base period before changes were introduced. Rather than accepting the general conclusions that rest periods, refreshments, and a certain amount of shortening of the working day were responsible for higher productivity, Elton Mayo had a twelfth experimental period in which the girls were to return to the original conditions—no specified rest periods, no refreshments, and a working day of the standard factory length. Productivity in this twelfth period rose to a new high. The improvement in mental attitude through the two-year period was also puzzling.

Roethlisberger and Dickson (1964) felt that the most important result was management's improved understanding of many of its problems. The fact that carefully conducted experiments failed to provide
conclusive findings on such subjects as work hours, wage incentives, and methods of supervision was in itself illuminating. They made management see that such factors as hours of work and wage incentives were not things in themselves having an independent effect upon employee efficiency. Rather these factors were no more than parts of a total situation and their effects could not be predicted apart from that total situation.

According to Roethlisberger and Dickson (1963), what impressed management most was the latent energy and productive cooperation which clearly could be obtained from its working force under the right conditions. The predominant factor making for these conditions was the attitude of the employees as being of predominant importance. Management decided, therefore, that everything pointed to the need for more research on employee attitudes and the factors to which they could be related.

In looking back on the findings of the Hawthorne Studies after many years of reflection, Elton Mayo (1945) summarized their significance. He said the major experimental change was introduced when an attempt was made to hold the situation steady—by getting the cooperation of the workers. Six individuals became a team and the team gave itself "wholeheartedly and spontaneously to cooperation in the experiment. The consequence was that they felt themselves to be participating, freely and without afterthought."
Coch and French

A classic study of the use of participation in decision making by the affected individuals of a continuously changing situation was conducted by Coch and French (1948). The Harwood manufacturing plant was involved in constant changes in styles and production methods. Evidence of the workers' reaction to the changing situations was reflected in their attitudes, the absenteeism, and the turn-over rate. Four groups were established to determine the effects of varying degrees of employee participation on a change in work methods and accompanying piece rates. The control groups were approached in the usual manner: the new method and piece rate were prepared and installed by line management, methods engineers, and the training staff. The second group participated through representation in designing the changes. A meeting was held and the need for change was presented by management. Management submitted for group approval, an approach to determine and implement these changes. The workers selected some of their members to work out the details of the change, try the new methods, and train the other operators in the new procedures. Total participation was attempted in the third and fourth groups.

The control group had a decline in production after the autocratically imposed changes. Seventeen per cent of this group quit during this period. There was conflict and hostility with the supervisor.

The number of units increased for the other groups. There was a high degree of cooperation with both line and staff in the other groups. The greatest productivity came from the groups with the
most participation.

When the control group was transferred to a new job of comparable difficulty the total participation approach was used. Their hostile attitudes were not referred to in any way. They increased productivity and there were no resignations.

Likert

Seashore and Bowers (Likert, 1967) of the Institute of Social Research at the University of Michigan have been obtaining measurement of the causal and intervening variables each year since 1962 when the Weldon plant was purchased by the Harwood Manufacturing Company. The Weldon Company had been unprofitable for several years.

The Harwood Company had continued to use the participative management approach for employees on all levels of the organization. Its basic leadership style as reported by upper managers, supervisors, and assistant supervisors, is one varying between consultative supervision and total participation. Starting in 1962, a number of changes were introduced in the management system of the Weldon plant and in the layout and organization of the work. The type of management style used in the Harwood Company was incorporated into the Weldon Company. This was a decided shift from authoritative management to a more participative style.

Not only was productivity increased but there were improvements in cooperative relationship. These were noticed not only by the researchers but also by the technical consultants and production workers as well. Average earnings of piece-rate workers increased by
nearly thirty per cent. Manufacturing costs were reduced. Turn-over dropped to half its former level. Length of employee training was substantially reduced. The researcher found in interviews a more friendly attitude toward the company.

The basic wage structure was not changed. The chairman of the board of directors attributed the changes to the "heightened motivation and improved managerial skills."

Marrow, Bowers & Seashore

John F. Smith (Marrow, Bowers & Seashore, 1967), plant manager of the Weldon Company, reported that some on the management level, who felt at home in the old Weldon system found it very difficult to change. Others went through the motions of accepting the principles and values involved. One senior member of the Weldon management staff left the other organization. Some have made an adjustment that is satisfactory to them and to Weldon, but it has not affected their view of their role in the organization. A majority, even though it was a strain, have made a good adjustment to their work for the first time, and derived a great deal of satisfaction from it. Mr. Smith said that the changes affected different people in different ways according to their personality and their roles in the organization. The demands for change were slight for some, while for others the demands were very heavy and difficult. Even though the kind and degree of change was clear early in the process, the actual change took longer than anticipated.
Summary

Probably the major contribution of the Hawthorne experiments was that they called attention to the human problems in the work environment. These experiments acted as a catalyst for studies of human behavior in organizations.

After the Hawthorne studies the emphasis on the physical setting diminished and problems with psychological and sociological overtures replaced them. Change has always posed a threat. Participation was used successfully for involvement and communication.

The use of participation—even though it increases productivity—is not uniformly acceptable. This was illustrated at Weldon.

Personality

The Hawthorne studies (Roethlisberger & Dickson, 1964) and others with "human relations" concerns had an impact on management practices. There were indications that practices could be changed to give more employee satisfaction and higher productivity. These studies stimulated an interest in human problems in the work environment. Unfortunately, managers tended to generalize beyond research evidence. This has led to controversy, and sometimes to rejection of participation.

For the optimal use of resources there needs to be a focus on the motivation of the individual and productivity. An individual brings his personality—his instrument of psychological growth and development—to the work situation. The environment interacts with this personality.
The research by Lewin (1938), Adorno (1950), Sayles (1963), Bales and Slater (1955), Bales (1970), Tannenbaum and Allport (1956), Borgatta (1961), and Haythorn (1965) are reviewed because of their relevance to this particular study. This research which follows is concerned with the personality of the individual.

Kurt Lewin

Kurt Lewin (1938) developed and investigated cognitive, or expectancy theories of motivation. Basic to the cognitive view of motivation is the assumption that individuals have cognitive expectancies concerning the outcomes that are likely to occur as a result of what they do and that individuals have preferences among outcomes. The individual has expectancies about possible consequences of his acts, and he makes conscious choices among alternatives according to their probability of occurrence and their value to him. It is the anticipation of reward that starts behavior and the perceived value of the outcome that determines the direction. If a physical or social object is rewarding to a person, he will develop a positive attitude toward it. Therefore, participation in decision making will affect the attitudes toward objects to the extent that it satisfies needs. If participation in decision making satisfies important needs, then it will result in positive attitudes toward those objects or persons.

T. W. Adorno et al.

T. W. Adorno et al. (1950), as a result of a scientific study of intergroup relations, acceptance and hostility, found that individuals could be described fairly well as having a cluster of personality
characteristics of a fairly definitive type. These characteristics have been described as being highly authoritarian. The degree of authoritarianism is measured by responses to items of the F scale developed by Adorno et al. The characteristics have been described as: 1) Over-conventionalism; 2) Authoritarian submission; 3) Authoritarian aggression; 4) Anti-intraception; 5) Power and toughness—a tendency to identify and value strongly power, strength, and toughness in others; 6) A strong unconscious tendency to project one's own strong emotional impulses to others due to the anxiety that would result if one would recognize it in oneself.

Haythorne

In a study (Haythorne, 1965) comparing two groups, there was a difference in performance between the groups but even more marked were the differences between the kinds of leaders who emerged in the two kinds of groups. One group was composed of individuals high on the F scale and the other composed of individuals low on the F scale. It was found that a more "democratic" group culture prevailed in the low-F groups, and the low-F groups were more effective in dealing with the task problem. Emergent leaders in the groups made up of non-authoritarian persons were more sensitive to others, more effective leaders, more likely to make their suggestions for action subject to group sanction, and less likely to give direct orders to others.
Sayles

In reporting upon his studies of individuals in the work environment, Sayles (1964) says that individuals look upon supervision very differently. He cites his interviews with two lacquer-mixers who worked pretty much by themselves at opposite ends of a long factory floor. They did the same job and were under the same foreman (who said that each of them did a good job). Each man wished acceptance and approval from his boss. The foreman used general supervision. This was perceived by one man as respect of his ability to do the job on his own. While the other man felt that the foreman showed rejection of him and lack of interest because he did not pay closer attention to his work.

Bales and Slater

Studies of Bales and Slater (1955) have shown that the persons best liked in some small groups, especially in early meetings, may have relatively high "F" scores. But these best-liked persons do not act as most people expect authoritarians to act. Other research (Haythorne, 1953; Haythorne et al., 1956) has shown that those who score high on the F-scale do not act in the stereotyped concept of the "authoritarian personality." They act like "nice guys" rather than the "Prussian" stereotype.

Bales

Bales (1970) in his attempt to supplement a natural observation approach to the understanding of personalities and groups used a type-description classification system. The types are defined in
terms of the way the acting person is perceived and evaluated by others in the group. Each type is an abstract theoretical construction. "A factual compendium tied together with many inferences and a set of theories as to what things go together psychologically and sociologically, and why." The type description infers that some given aspect of interpersonal behavior observable in a group is likely to be associated with something else not yet observed.

In categorizing interaction according to this type description, Bales (1970) says that the findings infer that there are probably critically important discrepancies between the value-statements that a member will initiate in group discussion, and those that we will agree to on in written tests and probably also in group discussion. He gives this as a probable reason that the person scoring high on the F-scale does not fit the stereotyped conception of the "authoritarian."

Tannenbaum and Allport

Tannenbaum and Allport (1956) concluded from a review of studies and two in particular that individuals' reactions to patterns of organization control may differ according to personality. This he illustrates by an experiment in a large clerical organization in which approximately two hundred clerks were given greater responsibility to make decisions about some of the rules that affected their work groups. Previously the decisions had been made at a higher level in the organization. There was a favorable reaction from most of the clerks, but not from others. Workers who
received low scores on measures of authoritarianism were more likely to react favorably when participative methods were used involving them in the decision making. Those who scored high authoritarianism scores preferred the type of supervision incorporating rules and directions from another level in the organization.

Borgatta

Borgatta (1961) reported research he performed to determine the relationship between personality and social structure. He found that an individual tends to do things consistent with his personality, and what he does tends to affect his personality. When persons of given characteristics are placed in a situation that makes demands of them consistent with their characteristics, they will be able to satisfy the demands well and will do so with relatively little discomfort or with relatively more enjoyment.

Summary

Most psychologists agree that the major components of personality are those characteristics that most directly affect a person's adjustment to his environment. This includes his motives, emotions, abilities, and skills in getting along with others. He interacts with other individuals there and with the environment. One cannot be a leader or a manager without an awareness of this, because it may be different for different individuals. It may be different than the expectations of the leader or of management.
As seen by the reviewed research the individual is motivated by his expectations and perceptions as well as his attitudes. One cannot postulate a simple stimulus-response. An individual is part of an environment. Personality is not passively respondent to the environment. Reaction to the environment is internalized which results in different responses by individuals.

**Participatory Environment**

Research by social scientists has created doubts that bureaucratic structures are appropriate for modern organizations. There are studies which suggest that there are better forms of organization that will achieve productivity goals, and at the same time give the individual an opportunity for self-realization at work.

In the search for an environment that will be congruent with personality characteristics of the individual, a participatory environment with its motivational effects is examined. There has been a variance in the definitions and use of participation. In this particular research the human resource model conceptualized by Miles (1965) is the one adopted. This model and its contrast to the human relations model is explained in "Concept of Participative Management."

The studies which follow immediately compare the effects of a participatory environment with other environments. These studies are: Lewin et al., 1939, Lewin (1948), George H. Litwin (1968), Meyer, et al., (1965). Patchen's (1970) study describes the resultant atmosphere and reaction of individuals to a participatory environment.
Concept of Participative Management

Raymond E. Miles (1965) contends that managers do not appear to have accepted a single, logically consistent concept of participation. Rather, managers have adopted two different theories or models of participation—one for themselves and one for their subordinates. One he calls the human relations model, which managers appear to accept for use with their own subordinates. The other he calls the human resources model which managers would apparently like their superiors to follow.

Miles says the basic differences found in the human resource model are: 1) All organization members are looked upon as reservoirs of untapped resources; 2) The purpose and goal of participation is to improve the decision making and total performance efficiency of the organization. Decisions may actually be made more efficiently by those directly involved in and affected by the decisions. The manager does not use participation to improve subordinates' satisfaction and morale; 3) Control is often most efficiently exercised by those directly involved in the work in process, rather than by someone or some group removed from the actual point of operation; 4) The more important the decision, the greater the obligation to encourage ideas and suggestions from subordinates; 5) The area over which subordinates exercise self-direction and control should be continually broadened in keeping with their growing experience and ability.

The crucial point, Miles feels, at which the human resource model differs dramatically from other models is in its explanation of the causal relationship between satisfaction and performance. In the
human relations approach improvement in subordinate satisfaction is considered the intervening variable which is the ultimate cause of improved performance. In the human resource model increased subordinate satisfaction is not considered the primary cause of improved performance. Rather, improvement results directly from creative contributions which subordinates make to departmental decision making, direction, and control. Subordinates' satisfaction is viewed as a by-product of the process—the result of their having made significant contributions to organizational success.

The human resources model does not deny a relationship between participation and morale. Subordinates' satisfaction may increase as they become more involved in decision making. The model rejects as unsupported the concept that improvement of morale is a necessary or sufficient cause of improved decision making and control. Miles contends that those improvements come directly from the full utilization of the organization's resources.

Summary

Miles (1965) distinguishes between a human relations model and the human resources model. The crucial difference he feels is that a stress upon human relations means that satisfaction is the objective sought. With the human resource model increased subordinate satisfaction is not the primary cause of improved performance. The ability of the subordinate to make a contribution, and the acceptance of the ideas in terms of their relevance to the organizational goals are recognized. The resulting performance comes from internal forces
and not from external, and this achievement and opportunity for growth leads to satisfaction.

The model postulated by Miles has structured the environment of this particular experiment.

The studies which immediately follow perceive the participatory environment according to the human resource model.

Lewin et al.

The Lippitt and the Lippitt and White studies comparing the effects of autocratic, democratic, and laissez-faire leadership on group productivity gave some interesting insights. There were some diverse reactions to the democratic and laissez-faire methods. One boy is described who found the democratic style as frustrating as others found the authoritarian style.

In writing of the Lippitt and the Lippitt and White studies, Lewin says that the autocratic atmosphere was found to result in more aggressive dominance of the leader, and a weakening of power of the individuals involved. A strong barrier prevented any one from increasing his status by acquiring leadership in an autocratic atmosphere, while in the democratic atmosphere the difference in social status is slight and there is no barrier against acquiring leadership.

Lewin

Lewin (1948) defined atmosphere as a property of the social situation as a whole. He cites the experiments of Lippitt and Lippitt and White to bear out the observations of cultural anthropology that
the relation of an individual to his group and his status in it are the most important factors for his feeling of security or insecurity. Lippitt used a comparison between a democratic and an autocratic atmosphere for his study. On the whole the autocratic atmosphere was found to result in more aggressive dominance of the leader, and awakening of power of the individuals involved. A strong barrier prevents any one from increasing his status by acquiring leadership in an autocratic atmosphere, while in the democratic atmosphere the difference in social status is slight and there is no barrier against acquiring leadership. This has the effect on the amount of individuality. In the democratic atmosphere every individual showed relatively greater individuality in spite of the "we" feeling among them.

There was high tension in the autocratic situation. The autocratic child in the experiment was more dominating and less friendly and objective than the democratic one. In order to determine if the differences were caused merely by individual differences a transfer of children was made between the two groups. After the transfer the behavior changed so that the previously autocratic child now became less dominating and more friendly and objective. The behavior of the children mirrored very quickly the atmosphere of the group in which they moved. Lewin says that experimental studies on individuals and groups show that one of the most important factors in the frequency of conflict and in the building up of an emotional outbreak is the general level of tension at which the person or group lives.
George H. Litwin

George H. Litwin (1968) conducted an experimental study to test certain hypotheses regarding the influence of leadership style and organizational climate on the motivation and behavior of organization members. The research objects were: 1) to study the relationship of leadership style and organizational climate; 2) to study the effects of organizational climate on individual motivation by measuring content analysis of imaginative thought; 3) to identify the effects of organizational performance. The study created several simulated business organizations.

The design of the experiment allowed only one variable input, leadership style, and measured the climate and motivation that were produced. An attempt was made to test three distinct styles and measure their effect. The physical locations were the same, the technology and essential tasks were identical, and the members of the organization were matched with respect to age, sex, background, motive patterns, and personality characteristics. The design represents a refinement of the Lewin, Lippitt, and White (1939) study.

Each simulated business operated in a one hundred-seat classroom. The work involved the production of miniature construction models of radar towers and radar-controlled guns of various kinds. The experiment was conducted over a two-week period, with a six-hour day. Fifteen subjects were assigned to each business.

Organization A placed strong emphasis on the maintenance of a formal structure. Seriousness, order, and relative status were heavily stressed. Members were assigned roles, their operation was
tightly defined, and they were held responsible for strict performance of their duties. Management stressed that reliable and consistent quality were more important than product innovation.

Organization B was a loose, informal structure. Management emphasized friendly, cooperative behavior, group loyalty, and teamwork.

In Organization C an emphasis was placed on high productivity. Participants were encouraged to set their own goals and take personal responsibility for results. Creative and innovative behavior were supported and reinforced by management. Free feedback was given frequently so that progress toward goals could be easily evaluated. Recognition and approval, as well as promotions and pay raises were given for excellent performance. Competition against an external standard was used to create a feeling of pride and teamwork.

The experiment was designed to demonstrate the relationship between climate and three specific kinds of aroused motivation. Observation, interview, and questionnaire data revealed three distinct social and work environments emerging during the course of the experiment.

A major conclusion of this experiment is that distinct organizational climates can be created by varying leadership style. Such climates can be created in a short period of time, and their characteristics are quite stable. These climates seem to have significant, often dramatic effects on motivation, and correspondingly on performance and job satisfaction. Each of the induced climates aroused a different motivational pattern.
Organization A was characterized by isolation, organizational formality, and an avoidance of conflict. The climate data indicate high scores on the Structure dimension, and low scores on the Responsibility, Reward, and Warmth and Support dimensions. These data seemed to reflect the feelings of the members about the climate, as indicated by answers to open-ended questions and in post study interviews. They reported the climate as highly constraining, conservative, cold and formal. Conflicts between managers were reported to be widespread but suppressed.

Organization B members reported a climate that was relaxed, friendly, very loosely structured and personally satisfying. This was demonstrated by the high scores on the dimensions of Warmth and Support, and the Reward.

Organization C was characterized by activity, teamwork, competitiveness, and an enjoyment of work. There were high scores on Responsibility, Risk, Reward, and Warmth and Support.

The effects of climate on before-after measures of motivation were not confirmed, but other measures of personality did reveal significant before-after changes. Three scales on the California Psychological Inventory (CPI) showed significant before-after changes. These scales were: Self-Acceptance, Responsibility, and Communality. Members of Organization A became less content with themselves, less accepting of others and more anxious and impatient. Members of Organization B changed little in respect to these dimensions. Members in Organization C tended to grow in responsibility, patience, and resourcefulness.
Satisfaction was reported to be high in Organization B and C, low in Organization A. The sources of satisfaction in Organization B and C seemed to be quite different. Organization B aroused affiliation motivation, and it is suggested that members are reporting satisfaction with the warm, friendly, relaxed atmosphere. Organization C aroused achievement motivation, and it is suggested that members are reporting satisfaction with the challenging goals and the rewards for excellent performance.

Organization C significantly outperformed Organizations A and B. It produced more new products, enjoyed the highest profits, and cut material costs substantially.

The findings, according to Litwin, suggest that organizational climate is an important variable in the study of human organizations. If, he says, significant changes in relatively stable personality factors can be created in less than two weeks then we can imagine dramatic changes over a period of years. Litwin makes the point that an understanding of climate will aid in the study of the management process, particularly with regard to the effects that different styles of management have on people, on organizational performance, and on organizational health.

Meyer et al.

A study at the General Electric Company (Meyer et al., 1965) found that participation by the employee in the goal-setting procedure helps produce favorable results. Men who usually worked under high participation levels performed best on goals they set for themselves.
The high participation level was associated with greater mutual understanding between them and their managers, greater acceptance of job goals, a more favorable attitude toward the appraisal system, and a feeling of greater self-realization on the job. It is suggested that the man accustomed to a high participation level may have stronger motivation to achieve goals he sets for himself than to achieve those set by his manager.

The "highs" also, in most cases achieved a greater percentage of their improvement goals than did their "low" counterparts. But employees who had traditionally been accustomed to low participation in their daily relationship with the manager did not necessarily perform better under the high participation treatment.

In general, the experiment showed that the men who usually worked under high participation levels performed best on goals they set for themselves. Those who indicated they usually worked under low levels of participation performed best on goals that the managers set for them.

Patchen

From the beginning of TVA in the 1930's the management has encouraged employees to participate in decisions affecting their work. Participation is in the form of cooperative conferences and committees to discuss a wide range of work problems. Martin Patchen (1970) of the Survey Research Center, University of Michigan conducted a study in selected units.
The results showed a strong association between participation in the cooperative program and acceptance of changes introduced into the work situation. This appeared to be caused only partly by the shared interest between management and employees, but also because greater participation resulted in the changes being seen as "theirs" by the employees as well as management's.

Participation in decision making in the immediate work group resulted in higher scores for solidarity with co-workers, i.e., the extent to which co-workers feel closer to each other and help each other out. Work groups whose members feel a high degree of solidarity with co-workers are especially likely to perceive common goals with management and to attend TVA social events.

Thus, at TVA cohesiveness among co-workers appears to form part of a single pattern of feelings of solidarity with the entire organization. The results suggest that member identification with the total organization are strongly affected by the employee's most immediate organizational situation.

The study found that if people belong to a cohesive group, they are more likely to be concerned about each other's work and less likely to be absent. These results are consistent with previous research which shows attendance and turn-over on the job to be related to the existence of cohesive, mutually supportive work units. Participation encourages acceptance of responsibility in the work group. This leads to teamwork.

Results of the study at TVA indicate that jobs of moderate difficulty, as compared with jobs of lesser challenge, lead to stronger
motivation—as reflected by stronger interest in work innovation and by fewer absences. They suggest that there are important motivational advantages to be gained by trying to structure job content in a way so there is problem solving and challenge. Results concerning job features relevant to achievement incentives also indicate the great importance of employees' control over work methods as a determinant of work motivation. The more control employees have over work methods, the greater the general job interest and their interest in work innovation, and the fewer absences. In the study control over work methods was shown as the one factor which has sizable associations with all indicators of job motivation. Where employees were encouraged, within limits of training and abilities, to participate in deciding how the work should be done, their motivation was increased.

Summary

The effects of a participatory environment has been shown by the studies reviewed to cause less tension and more cohesion. Not only did the subjects enjoy their work, but they achieved high performance.

**Participation As A Variable**

Additional studies in which participation is the independent variable are examined. Each of these view participation in relation to a different dependent variable.

In "Participation" an examination is made of the results of the use of participation on those involved.
"Participation and Change" is concerned with the use of participation in a change situation and its ability to bring about acceptance.

"Communication" is a process and a ramification of a philosophy. This section illustrates that participation facilitates the growth of a social system by reducing mechanical communication malfunctions, by being concerned with psychological and sociological needs.

"Interaction in Participation" exemplifies the fact that participation allows individuals to achieve interpersonal consensus and the reduction of conflict.

"Participation and Perception" considers the means by which participation can bridge gaps by allowing individuals to make their own psychological reorganizations in a supportive environment.

"Relationships of Participation and Supervision" suggests that participation aids in learning supervisory practices.

Participation

The definitions of participation have varied widely. Participation has been used in reference to a manager who considers the feelings and ideas of his employees before making decisions, or it may be a formal system of delegation that results in substantial influence by employees.

Tannenbaum (1967) points out that hierarchical organizations create sharp differences in the satisfactions and adjustments of persons at different ranks. Participation ameliorates this condition. In general, members of organizations want some control, and find parti-
Participation gratifying. Participation can be ego enhancing. Participative decisions are more likely to take into account the needs and interests of all concerned parties. Participation reduces some of the frustration by increasing authority and status and tends to replace hostility and opposition by more cooperative attitudes.

Although much confusion in the literature still exists concerning the relationship between need satisfaction and performance there appears to be the beginnings of some consistency in findings. This is especially true if one considers only managers. Lawler and Porter (1967) conducted a study which indicated that performance leads to rewards which may in turn lead to satisfaction. They thus argue that performance causes satisfaction, not that satisfaction causes performance as has been previously assumed. A second study by Lawler and Porter (1967) correlated satisfaction of managers' needs (with the exception of physiological needs) with performance. The researchers concluded that satisfaction of higher order needs is more closely related to performance than satisfaction of lower order needs.

The Tavistock Institute (Trist et al., 1965) in a study of mining groups found that work groups as large as fifty can be capable, under certain conditions, of self-sustained regulation. When a composite group was formed of men of many skills, and the group was made jointly responsible for all its tasks, the men rotated tasks, shifts, and activity subgroups among themselves. Comparing the composite group with miners working under traditional organization, it was found that the composite group was producing 5.3 tons per man shift while the conventional group produced 3.5 tons.
A plan was worked out through group discussion involving every man at each plant of the Imperial Chemical Industries of England between ICI and the nine unions involved. Now the men have formed small teams to work out their own program of work, to operate the machines at the speed they desire to get the work done, to finish a run on one machine and go on to the next, and if a machine breaks down, switch it off and fix minor failures themselves. Profits have increased, productivity has increased, wages have increased 60% and the men say, "We are getting more out of our work...feel a relaxed, sensitive mood in this plant."

Harold L. Sheppard, a sociologist with the Upjohn Institute for Employment Research says, "There is no question that job dissatisfaction is increasing. The alienation of blue-collar workers is one of the most important issues of the day." This can be measured in a number of ways. Even in time of recession, the absentee rate has remained disturbingly high. Many young workers in auto plants simply walk out. Related to the absentee problem is alcoholism and drugs.

One recent attempt to deal with the problem was a conference at Colonial Williamsburg, Virginia, sponsored by the Ford Foundation and the Upjohn Institute and attended by businessmen, union leaders and academicians. "The biggest difficulty we have," says one industrial relations executive, "is making top management aware of the blue-collar problem--and, more important, getting them to do something about it." An official of the U. S. Labor Department, who has been making a study of worker alienation, put it more bluntly: "The amount of time corporate boards spend on making human decisions is
infinitesimal. Recently, industry has been forced to think about these problems, but they are still regarded as secondary."

General Electric (1971) reported a two-year pilot program designed to give machine operators greater participation in job-policy decisions. They reported the response of a lathe operator, "I'm enjoying going to work for the first time since I came here."

Robert N. Ford (1969) who directs AT&T's manpower utilization office, noticed that in a great number of exit interviews, employees had expressed the desire for more responsibility in their jobs. Ford drew on the studies of Herzberg stressing the importance of the nature of the task. First, in a year's time one hundred twenty groups of managers met to discuss how to improve their employees' jobs. At first they brainstorm, then hew out six or eight of the most feasible ideas. For the next six months, keymen meet once a week with the managers, to help implement ideas. Employees make suggestions. As a result operators participating decided to use their own words rather than standard phrases in speaking to customers and other operators. They also asked to help in training new employees, and to report equipment failure to the plant by themselves. Service representatives' jobs were restructured so that they were given full responsibility for determining customers' credit ratings, setting the amount of deposit from customers, denying service for nonpayment, and signing adjustment vouchers.

Texas Instruments (Roche & MacKinnon, 1970) has developed a program since the fifties in which employees have been heavily involved as participants and contributors. There are three main
characteristics: 1) the participation of the workers in identifying and solving problems that affect them, 2) the cooperation of the supervisors in priming and maintaining the participative attitude of the workers, and 3) the commitment of top management to the value of this participation and cooperation. They found that after using these techniques at a plant in Attleboro, Mass. with 1500 employees that the groups became self-motivating, morale went up, as did productions, and they took on more and more management functions.

M. Scott Myers (1971) reports on the mutually satisfactory results from using a participatory approach in union management relationships leading to cooperation.

In some studies under the direction of Dale Yoder of Stanford, an overwhelming majority of managers indicated their agreement with statements emphasizing the desirability of subordinate participation in decision making.

Profs. Mason Haire, Edwin Ghiselli, and Lyman Porter (1963) found in a study of managers from eleven countries, including the United States, an agreement with such concepts as sharing information with subordinates and increasing subordinate influence and self-control.

A later study to clarify aspects of managers' attitudes uncovered by these two research studies was done by Prof. Raymond E. Miles (1963). It was conducted with a group of 215 middle and upper level managers and over 300 administrators from public agencies. In these studies, managers overwhelmingly endorsed participative leadership policies.
Rensis Likert (1967), director of the University of Michigan's Institute for Social Research, believes that the predominant management style in U.S. industry today falls in the middle between authoritarian and participative management. Even though most managers seem to know from personal observation of other organizations that a more participative approach works better. Likert comes to this conclusion from experiments he has conducted with executives. This involves the use of a chart to assist managers in gaining a deeper understanding of the way they operate. By answering a series of questions an executive sketches a profile of the way his company is run and whether it leans to the "authoritative" or the "participative." Hundreds of businessmen have used the chart.

Likert (1967) shows the businessmen using the chart that most of them do not practice as they believe. First, the executive is asked to think of the most successful company (or division of a company) he knows intimately. He then checks off on the chart his answers as they apply to the company. Nearly always the executive traces the profile of a strongly "participative" management system. He is then asked to repeat the procedure for the least successful company (or division) he knows well. The results are usually the same, but the profile is of a strongly "authoritative" organization.

Then the executive is asked to describe his own company or division. Almost always, the resulting profile is that of a company somewhere in the middle, a blend of the "benevolent authoritative" and the "consultative"—well to the left of what the executive had previously indicated as the most successful method. In order to check
the reliability of this self-analysis, employees in the same company or division have been asked to draw its profile. They tend to rate it slightly more "authoritative" than the boss does.

One of the experiments conducted by the Institute for Research of the University of Michigan (Likert, 1961) involved the study of 500 clerical employees in four parallel divisions. Each division was organized the same way and did exactly the same kind of work. The supervisory and managerial personnel of each division were given a training program of about six months' duration before the actual experimental changes were introduced into each division. In two of the divisions a participative type of leadership was used. Supervisors practiced more general supervision and used group methods wherein subordinates could actively participate in making decisions related to their work. In the other two divisions a hierarchically controlled program was used. This meant close supervision with decision making at higher levels of the organization. At the end of a year, productivity had increased an average of twenty-five per cent for the two hierarchically controlled divisions and twenty per cent for the two participative divisions. The increases in productivity in the hierarchically led divisions were accompanied by negative reactions in terms of loyalty, attitudes, interest, and involvement in the work. In the participative divisions the employees' feeling of responsibility to see that the work was accomplished increased after the introduction of participatory leadership. When the supervisor was away temporarily, the employees kept right on working.

Just the opposite reactions occurred in the hierarchically controlled
divisions. Employees in the participative divisions held more favorable attitudes toward high-producing workers, believed that their managers became "closer to them," and considered that their supervisors "pulled for them" to a greater extent than did those in the hierarchically controlled divisions. Throughout the experimental year turnover increased in the hierarchically led program.

Wickert (1951) conducted a study of operators and service representatives of the Michigan Bell Telephone Company. He studied those hired during the period January 1945 to February 1948. A comparison was made between the attitudes and characteristics of that group of employees who were still on the payroll at the time the study was made and those who had left the company. It was found that those who had stayed with the company showed a more favorable attitude toward supervision, and this was particularly derived from the fact that they had an opportunity to make decisions on the job. They felt that they were making an important contribution to the success of the company. Those who left the company, as found by questionnaires and interviews, said they left because they had little chance to make decisions on their jobs.

To determine the effects of participation upon the rate of recovery of output when a new style was introduced in a women's dress factory, Fleishman (1965) matched experimental and control groups. The subjects were sixty sewing machine operators working on a piece-rate basis. A problem was that output and piece-work earning on new styles were always low. It took about seven weeks for output to reach a satisfactory level, and the girls complained vigorously about the
unfairness of the piece prices.

The experimental group determined the sequence of operations, the bundling procedures, and pricing of individual operations. The control group did not participate in planning their work. The participation group achieved a high rate of output almost immediately after introduction of the new style. They retained their high level of output even when shifted back to a previous style.

As a result Fleishman concluded that attitudinal factors rather than skill factors were the major contributory cause for the customary drop in output and later recovery in output when a new style was introduced.

Because of the complex interrelationships and recognition of the need for the development of coordination among the parts of an organization, Zander and Wolfe (1964) feel there is a growing dependence on committees. They point out the dilemma that arises: Interaction patterns which are appropriate to helping others or to working on the group task may be inappropriate to one's own goal-directed activity. Besides, the organization frequently rewards personal achievement more than collaboration. In a study of a company's coordinating committees covering twenty-three geographical districts and each having four or five departments it was apparent that the members of these committees were torn between strategies.

Summary

Studies have shown that participation in decisions that involve their work environment have been need satisfying to individuals. Participation involves not only thoughts but emotions as well. It takes
into consideration the needs and interests of all involved. Decision making about the job gives employees a feeling of control over the work environment.

Management recognizes the benefits of participation (Likert, 1967) but has tended to use a blend of the "benevolent authoritative" and the "consultative." Lawrence and Lorsch (1967) observed a difference in the personalities of managers in different industries they investigated. The manager in the older industries preferred to know where to go to get a decision made. In the plastic industries managers preferred their autonomy.

Although there is some confusion in the literature concerning the relationship between need satisfaction and performance, Lawler and Porter (1967) contend some consistency is developing. They conducted two studies with managers in which they found that performance is rewarding, and this in turn leads to satisfaction.

This particular study is concerned with the kind of environment that results in increased productivity.

Participation and Change

The Menninger Foundation (Levinson et al., 1963) through its Industrial Mental Health program conducted a study in a utility company for a year to determine the problem of relationship between work and mental health. The purpose was to understand some of the effects of work experience on mental health.

From their findings the Menninger Research team concluded that only those changes which are interpreted as violations of the psychological contract result in anger, withdrawal, hostility and similar
reflections of distress.

The fact that some changes in the psychological contract do arise out of the changing expectancies of both parties does not itself constitute a violation of the psychological contract. Violations occur when the changing expectancies of one party are imposed on and threaten the state of interdependence and balance in psychological distance achieved by the other.

Whether any given change was important to a person and how he reacted to this change was significantly related to the perspectives of the work situation, work life involving other people and other groups and the task. The reciprocal process involves all the various aspects of work life. In addition to reciprocation, an important characteristic of the three central concerns was the expectations which people hold about them.

The study led to the conclusion, upon examining change experience, that only those changes which are interpreted as violations of the psychological contract result in anger, withdrawal, hostility, and similar reflections of distress.

If change is not imposed, if it involves no loss of interdependence or psychological distance, or if it is not accompanied by increasing demand, then it appears not to be interpreted as a contractual violation. The partnership remains equally acceptable to both parties. If interdependence and balanced distance can be maintained in the face of change, then the person has greater flexibility for coping with the stress of the increasing demands. Flexibility under stress means essentially the capacity to find adequate substitutes
for that which has been lost or to make extraordinary efforts to meet demands.

Herzberg (Herzberg et al., 1957) and others present evidence that if groups of workers discuss the necessity for change, and develop the changes through group decisions, change is often very easily accepted. They feel that employees often resist change if there is no possibility for participation in decision making on their part.

Over a four year period Kurt Lewin (1958) conducted experiments to see the relationship of motivation to action and the effect of a group setting on the individual's readiness to change. How to bring about change so that it would not slide back to the old level within a short time was the problem.

Lewin showed that homemakers would accept undesirable meats that were abundant in preference to steaks and chops, which were in short supply. The homemakers who participated in discussion groups that came to a consensus concerning the less popular meat were more likely to make the change than a comparable group who were lectured on the desirability of the change.

Throughout the case descriptions of organization change and its methodology there are certain elements of commonality: 1) The interpersonal relationship of teams and work units, intergroup relations, superior-subordinate relations; 2) Interpersonal and group interaction—communication, problem-solving, conflict resolution; 3) Participation in problem solving; 4) Adaptation and change. The events documented at Union Carbide (Burck, 1965) and others point to the interdependence of the total system with a need for competence in
interpersonal relationships, rather than upon task skills, thus necessitating participatory approaches in organizations to change situations.

March and Simon (1958) in discussing participative management say: "where there is participation, alternatives are suggested in a setting that permits the organizational hierarchy to control (at least in part) what is evoked. Participative management can be viewed as a device for permitting management to participate more fully in making decisions as well as a means for expanding the influence of lower echelons in the organization."

Dale S. Beach (1970) says participation is the term used to designate the process by which people contribute ideas toward the solution of problems affecting the organization and their jobs. Participation is ego and task involvement of an individual or group. It includes not only the physical contribution of the person but also his intellectual and emotional involvement in the affairs of the organization.

Summary

Changes of varying degrees occur continually in firms and institutions. The inauguration of change is a common management problem. Change may be technically and economically correct but it has different implications for the people involved. The change itself is not the only factor. Change has different meanings for different people. If individuals can contribute ideas, and become involved in the changes by participation they can identify with the changes and become committed to them.
Communication

To survive and grow a social system must communicate. Communication is the means for providing information which permits the system or subsystem to change, grow, and achieve its goals.

Communication may be considered in social, psychological, and administrative terms. It is a means to establish policy and to obtain action, yet it is as important to an individual as it is to an organization.

William G. Scott (1967) says that in most administrative definitions of communication are two factors: 1) the need for a high order of understanding to evoke goal-directed behavior, and 2) the idea of feedback control. At the same time communication is the basis of social interaction. Effective action as seen by the manager does not necessarily constitute satisfaction of the communication needs of the receiver. Tensions for the individual result from his needs to know the reasons for his job activities and the overall role of these activities to the total organization.

The capacity of an organization to function well has been shown, according to Likert (1967) to depend both upon the quality of its decision-making processes and upon the adequacy and accuracy of the information used. Sound decisions require accurate information about relevant dimensions of the problem as well as correct interpretation of that information. Decisions are likely to be in error or inappropriate if the information available is inaccurate or is incorrectly interpreted.
Access to information or an opportunity to be heard is a dignifying and reassuring experience. It is a sign of respect for the individual and his ability to use information constructively. He is considered able to understand his work environment. Information is power. The sharing of information is the sharing of power and influence. The greater the involvement in policy decisions the greater the sense of identification with the organization.

Karl W. Deutsch (1952) says communication is a mechanism which links segments of the organization together. Communication is seen as the method by which action is brought about in the parts of the system. Communication acts not only as stimuli resulting in action, but also as a control and coordination mechanism linking the decision centers in the systems into a synchronized pattern.

Communication is a linking process between the parts of an organization. Research on communication networks has shown that greater effectiveness of the network tends to reduce satisfaction individuals find in the communication process. The minimization of the number of links in a network increases effectiveness and increases authoritarianism. Experiments by Bavelas and Barrett showed that the wheel and chain networks gave the best job performance, but they also had the lowest morale and showed low flexibility to changes.

Laboratory research led Bavelas and Barrett (1951) to conclude, "Communication is not a secondary or derived aspect of organization—a 'helper' of the other or more basic functions. Rather it is the essence of organized activity and is the basic process out of which all other functions derive."
William Foote Whyte (1961) concluded from some cases studied that: 1) Written communication alone is not an effective means of introducing significant changes in interactions and/or activities. There are two difficulties. Written communication goes just one way. The recipient is not offered any means of replying while the message is being presented to him. A working-through process is necessary for any complex problem. A single written statement is not enough. 2) Written communication can be used effectively—and without hazard—to set off interactions and activities that are within the customary pattern for the people receiving the communication. 3) Written communication can be used to confirm or make official what has already been worked through in other ways. The written communication has the function of providing a set of stable symbols around which future interactions and activities can be organized.

Whyte further concludes that a sharp change in the frequency of initiation of exchanges from superiors to subordinates, without any compensating increase from subordinates to superiors, is likely to give rise to disturbances within the organization. Effective initiation of activities requires the use of verbal symbols that are (1) appropriate to the culture pattern and past pattern of activities, and (2) clear in specifying who does what, with whom, when, and where. Whyte stresses that written communication cannot be used without adverse effects to initiate unaccustomed interactions and activities. Yet, written communications may be of vital importance in symbolically stabilizing a new pattern of interactions and activities which has grown out of previous interactions and activities.
Douglas McGregor (1967) contends that difficulties in communication within an organization are symptoms of underlying difficulties in relationships between parties involved. When communication is ineffective, one needs to improve the real relationships rather than find ways to improve communication. The characteristics of the system in which the communication is made is the important factor. Management works under these assumptions: 1) Management's reasons for its policies and actions are rational; 2) Subordinates would react rationally and accept them if they were properly informed; 3) Better communications would inform them and solve whatever difficulties exist.

McGregor believes that the reason management almost universally agrees that two-way communication is essential, but heavily relies on one-way communication is: 1) Two-way communication is not conceived to be a transaction, but a means of ensuring that others understand what is being communicated; 2) What is being communicated is obviously right, rational, and reasonable; 3) It consists primarily in discovering the questions or objectives generated by management communication and answering them. This McGregor is convinced is a one-way process and coercive. Two-way communication is a process of mutual influence.

Empathy is the ability to put oneself in another's position, to understand what he feels or why he must act in a given way in a particular situation. Research by E. A. Fleischman and J. A. Salter (1963) indicates that the superior who can empathize with the subordinate is also more considerate of his needs with respect to accomplishing the task. The superior who demonstrates greater consideration
engages in more reciprocal two-way communication with subordinates.

According to studies by Rensis Likert (1962), a scientist in industry performs more effectively if there is frequent communication within the research organization than if he is isolated. Where there is such communication, particularly if there is diverse thinking on subjects, the number of patent applications and scientists' evaluation of each other's work are higher in laboratories where there is such communication. Likert reports the best performance occurs when the scientist has considerable self-determination about his work and when this is combined with free access to someone in authority, i.e., there is better performance if their administrative chiefs are seen often.

The Pillsbury Company made a company-wide study (Gelfand, 1970) to determine the effectiveness of all internal communication. The study found: 1) Good communication is characterized by providing information to employees which they want and getting information to them quickly and through the channels they prefer. The employees, regardless of their rank in corporate society, were most interested in provisions for job security, company plans, growth predictions, manpower development, and research and new products. The interviewees expressed a vital interest in the speed of communication. The study included union and non-union employees and managerial personnel.

As a result of the study an in-plant communications program was instituted. Its principal organizational procedures are: 1) Setting aside about 15 minutes of the workday every week, during which each supervisor meets with his group. 2) Taking a few minutes to report
verbally to the group on matters that interest them. 3) Spending the balance of the time learning what is on the mind of the employees through a question-and-answer session.

Evaluation of the in-plant communications program has proved encouraging. One vice president and general manager, after attending a meeting of plant managers in another area of Pillsbury and reviewing the results of the in-plant communications program achieved by those plant managers, write: "1) The ideas that flow back to the plant have more value than the suggestion system. It was determined that twenty-five per cent of the ideas were practical and of value. 2) Grievances have been reduced. More meaningful differences are being discussed. 3) The supervisors have become more involved with their people, and a better understanding has been reached. In fact, the attitudes of all participants have been changed."

The experiments of Festinger (1948) and others show that participation helps prevent and reduce rumors because it allows the members some part in determining the things which affect them. It is recognized that "rumors will tend to arise in situations where developments especially relevant to people's existence lie largely outside their control."

If communication is the means not only for dissemination of knowledge but also to accomplish the goals of the organization, then a participatory or democratic atmosphere which allows the exchange of ideas results in the willing compliance of authority. Chester I. Barnard (1939) was one of the first administrators to make a systematic statement of the consent theory of authority. He argued that since
all formal organizations are founded on the consent of those governed, the administrators of these organizations should act consistently. Managers would be better able to achieve results with a cooperative system. The consent theory is seen as emanating from those led rather than from the delegation process of a hierarchical system. Authority is meaningless unless consent is secured from subordinates. Action is impossible without the willing cooperation of those who are led to act.

Individuals wish to be perceived as of special worth. Communication that conveys empathy for the feelings and worth of the individual is supportive.

Defensiveness is aroused if a person communicates to another that he feels superior in power, position, intellectual ability or in other ways. Information is power. Whatever causes feelings of inadequacy causes the listener to become defensive and not hear the message or distort it in some way. Defenses are reduced when there is participation with mutual trust and respect. Differences in ability, power, status may exist, but these are of less importance if there is little defensiveness. The sharing of information leads to feelings of self-worth and breaks down defenses.

Communication is involved in almost every aspect of human relations. Straus and Sayles (1966) state that face-to-face communications are superior, under most circumstances, to written orders, printed announcements, or business letters. Only when the sender is able to experience direct feedback from the receiver can he really know what the receiver is hearing and what he is failing to hear.
The sender can become aware of the symbolic significance or the contradictory information already in the receiver's mind. Most of us communicate more easily, completely, and frequently by voice. To illustrate the importance of feedback Straus and Sayles cite an experiment in which it is impossible to arrive at the solution of a simple problem with one-way communication and no feedback. The experiment also showed that communications gain in speed and efficiency as more and more feedback is permitted.

People interpret the same stimulus in different ways, depending on their previous experience. In large organizations, the difficulties of perception are compounded. An announcement may go to dozens of groups with different occupational and status interest. What each group "hears" depends on its own interest. When we know little about the point of view of those to whom the message is directed it is likely to miscarry. The structure of the organization has a significant effect on the ability of people to communicate easily and quickly.

Straus and Sayles (1966) contend that a strong case can be made for participative management, in which the manager makes a practice of encouraging his subordinates as a group to discuss a wide variety of significant work-related problems. Ideally, this will lead to both greater cohesion and to greater acceptance of management's objectives. An atmosphere of cooperation provides essential need satisfaction for subordinates, the social satisfaction of working together, a feeling of identification with the group and the overall organization, and a pride in accomplishment.
Summary

Communication is more than a functional process. Meanings which may be received by one person are not the same meaning another gives the communication. Our needs and experiences tend to color what we hear. Individuals have different orientations and perceptions. With participation one can get and utilize feedback for clarification and understanding.

Communication is a linking process between the parts of the organization. If one understands, he can more easily adapt and adjust to situations. Participation allows two-way communication. The individual can get information he wants, and discuss what he does not understand. The individual can better understand his role in the organization and feel a part of it. If one understands, he can more easily adapt.

Barnard (1939) argues that authority requires willing compliance to be most effective. Participation which allow an exchange of ideas is likely to result in willing compliance.

Straus and Sayles (1966) contend that discussions lead to a cohesive group and to greater acceptance of management’s objectives.

Interaction in Participation

Individuals need to interact with others to solve problems, to obtain goals, to facilitate coordination, to reduce tension, and to achieve a balance in human relationships. In order for a group to exist there must be interpersonal consensus. Given appropriate circumstances, consensus forms naturally. In the absence of pathological barriers, face-to-face contact among people usually produces consensus
or withdrawal from interaction. Homans (1950) has shown that, "The more frequently persons interact with one another, the more alike in some respects both their activities and their sentiments tend to become. Moreover, the more a person's activities and sentiments resemble those of others, the more likely it is that interaction between him and these others will increase." Generally, consensus is rewarding to group participants.

It has become more and more evident from social experiments (Deutsch & Collins, 1958) that prejudices rarely originate in personal experience with individuals. From the nature of prejudice it is seen that it results in a reduction of intimate, equal-stature contacts with the objects of prejudice. A study was conducted in which one of the basic hypotheses was: "That the greater physical and functional proximity of Negro and white families in the integrated interracial projects will result in more frequent and more intimate contacts between Negroes and whites in these projects as contrasted with the segregated bi-racial projects." In Newark and New York two public housing projects were selected for study. In Newark the projects have a segregated occupancy pattern; in New York the pattern is integrated. The data for the study were collected primarily through systematic interviewing of white homemakers, although some Negro homemakers and Negro and white adolescent boys and girls were also interviewed.

One of the basic hypotheses of the study was that living in an integrated project will result in more frequent and more intimate interpersonal relations between Negroes and whites than will living in a segregated one. The data strongly confirmed this hypothesis.
Where there was an opportunity for close contact with members from the other race, an atmosphere more favorable to friendly interracial associations, and friendlier interpersonal relations resulted. Empathy is an interaction process. Empathic understanding is limited by a person's experience. In getting to understand a person we must observe his behavior and interact with him. Participation allows this.

Deutsch and Collins conclude: that prejudices are likely to be diminished when prejudiced people are brought into situations that compel contact between them and the objects of prejudice.

Leavitt and Mueller (1951) conducted research whose findings support the hypothesis that free feedback is an aid to accuracy in interpersonal communication. Free feedback seems to permit the participants to learn a mutual language, which language once learned may obviate the necessity for further feedback.

The findings also support the hypothesis that the presence or absence of feedback affects the sender-receiver relationship. Zero feedback is accompanied by low confidence and hostility; free feedback is accompanied by high confidence and amity.

A study was conducted by Seashore, Georpoloulos and Tannenbaum (Likert, 1961) in thirty-one geographically separated departments in a company which operates nationally. The departments varied in size from about fifteen to over fifty employees. It was found that the effect of group loyalty and group meetings upon the efficiency of communication throughout the organization is both marked and important. The research findings indicate that the achievement of satisfactory efficiency in the communication process requires a relatively high
level of effective group functioning in every work group in the organization. Whenever a work group is ineffective, communication at and through that point in the organization breaks down.

In those departments where there are effective group meetings or high total group loyalty—loyalty which includes the men and supervisors—management has appreciably more influence than does the management in the other clusters of departments. In all departments the nominal authority may be the same, but the data showed that the actual capacity to exercise influence and achieve greater coordination and better results existed where there is high peer group loyalty coupled with favorable attitudes between management and workers.

The evidence demonstrated that effective group meetings are important. The departments in which the manager makes effective use of group meetings are significantly better in productivity, communication, influence, and attitudes and have much less anxiety, stress and conflict than other departments. The data showed that skilled use of group meetings, both formal and informal, for dealing with problems can contribute significantly to high performance and better overall organization.

George P. Schultz (1951) comments that although the Scanlon Plan was originally developed to reduce costs and increase wages, the efficient use of Scanlon-type plans is obtained by teamwork throughout the organization. New ideas or improvements are suggested by employees and their supervisors which tend to reduce the labor cost to sales revenue ratio. Workers throughout the company are more ready to accept technological devices and methods which improve productivity.
Under these plans workers are willing to share short cuts and cut down overtime. Ideas which were unacceptable when suggested by management, are used under the Scanlon-type plans when suggested by the employees. Scanlon plans have been introduced in both union and non-union firms with from sixty to over five thousand employees.

Summary

Groups do not necessarily achieve superior technical solutions to problems than individuals working alone, although this will sometimes be the case. Sometimes group acceptance of a solution is more important than arriving at the technically most perfect solution, in which case group problem solving is more helpful than individual efforts. Participation contributes to the fulfillment of social and interaction needs. This does not preclude individual challenge and problem solving. It suggests rather an eclectic, flexible, adaptable approach in a democratic atmosphere.

Participation and Perception

Harold Leavitt (1968) speaks of learning as a "reorganization" of perceptions. When new or old things in the perceived world are related to one another in new ways, the person has learned. There is an emphasis on the relations of parts rather than content, i.e., people can learn something new even where there is nothing new--by putting old things together in new ways. Leavitt's conception of learning implies an emphasis on understanding as distinct from knowledge in the learning process. It leads to an emphasis on
simultaneous concern with all aspects of a problem rather than the building-up of individual elements.

Leavitt feels motivation needs to be brought in. People seem to reorganize their perception best against a goal or objective. The mere fact of experience without relevance to needs and motives does not seem to yield much learning. Knowledge and skills are brought to bear when there is a goal requiring the organization of them. People learn when there is a problem to solve.

Festinger (1957) developed a theory of cognitive dissonance which says that cognitions are dissonant if the obverse of one element would follow from the other. Since dissonance is psychologically uncomfortable, the theory states that the individual will try to reduce the dissonance and achieve consonance.

The theory proposes that a dissonant set of cognitions constitutes a negative motivational state which an individual is motivated to reduce. The negative motivational state is eliminated by changing one's cognitions and the behavior leading to cognitions so that they will be consonant.

Festinger further proposes that the importance of dissonance as a negative motivational state, and therefore as a determinant of behavior, increases with the number of cognitions which are in a dissonant relationship with one another and their importance.

Aronson and Carlsmith (1962) tested the theory of cognitive dissonance by an experiment. The subjects were manipulated in such a manner to think that they had either done well or poorly on a succession of four tasks which were similar in nature. On the fifth task the
individuals were differentially treated, in a way ensuring that two of the group would perform in a manner consistent with their expectations, while the two others were given an experience different from their expectations. That is, those who were used to doing well were told they "failed," while those who were used to failing were told they "passed." This was a dissonant experience. According to the theory, this dissonant experience could be reduced by changing one's cognitions and/or the behavior leading to the cognitions. The subjects changed "good" responses in order to be consistent with their "bad" self in relation to the task. They gave up achievement in order to be consistent with themselves. The cognitive dissonance research suggests that we seek consistency in our cognitions and we adjust in a manner to get this consistency.

Business and news magazines are reporting the pressures upon business in terms of social and people problems. Institutions are part of the times in which they exist. Participation has much to offer in terms of understanding and adapting to people and events in the environment.

At TRW Systems (Leider & Zenger, 1967) it was recognized that there was considerable resistance on the part of both workers and their supervisors to industrial engineers. This resistance was expressed through lack of cooperation and even subtle sabotage. The reaction of the engineers was not to try to understand the resistance, but to "push harder."

An industrial engineering conference described the model of "man" as having no initiative and little judgment or imagination, as
working only for money, having to be forced to work, and knowing less than the industrial engineer. TRW Systems is based on different assumptions, which attempt to create an organizational environment in which individuals can grow. An administrative operations group was established to develop a program in which industrial engineers would assist supervisors and individual employees in obtaining better performance, rather than "police" operations.

When the engineers gathered data by themselves, observed, took notes, collected forms, and talked with people when necessary only, the relationship between the manager and others in the department was tense and unfriendly, and the setting of standards was difficult. After a briefing session where the engineer was coached to try a new approach the results were different. One of the concepts of the industrial engineer's function was, "He should, whenever possible, seek the client's counsel, guidance, and participation." The company newspaper became interested in the new approach and quoted one of the engineers: "I got insights from the employees themselves. I talked with all fifty people in the mailroom, for instance, and they were a tremendous source of information." The mail services' supervisor said: "We had standards before, but never as refined as the ones we've worked out. . . ." (Note " . . .we've worked. . . .") When the engineer asked the manager for his help, and explained that he was having trouble, the manager and his people not only helped in collecting information, but became involved and committed to the project and designed forms for collecting data and analyzing the information obtained.
Summary

Individuals must learn and respond to demands in the work situation. How they do this depends upon their attitudes and perceptions in regard to the situation.

Leavitt (1968) speaks of learning as "reorganization" of perceptions. If there is need for changes in perception, people are willing to change if they understand the objective or goal. Participation makes possible a greater understanding of objectives and the reasons for the need to change perceptions. Participation is motivational. This was found to be the case at TRW Systems (Leider & Zenger, 1967).

Festinger's (1957) theory of cognitive dissonance says that discomfort and tension results when an individual simultaneously holds two cognitions (ideas, beliefs, opinions) which are psychologically inconsistent. This can result in motivational frictions. Individuals strive to reduce this dissonance or discomfort. Participation where one can get information that he desires, allows him to understand and adjust. He can see his old ideas in new ways.

Relationship of Participation and Supervision

In order to coordinate the activities of one organizational group with another the supervisor needs administrative competence. The manager needs technical competence for the performance of technical operations. To integrate organizational objectives with individual member needs, he must have human relations competence. Studies by Mann (1965) indicate that the most competent supervisor has these three kinds of skills.
Studies by Fleischman, Harris, and Burtt (1955) show that we tend to supervise as we are supervised, not as we are taught to supervise. Of course, if we are taught the same kind of supervision that our supervisor uses, this serves as support. Management through the climate it creates is really preparing their subordinates for supervision. Studies have shown that the way that supervisors handle people is a reflection on how they and their subordinates behave. Those who receive general supervision are more likely to practice general supervision themselves, and that those who are supervised closely will supervise their subordinates closely.

Mann, Likert, Pelz (1954) and others have shown that each subordinate leader is influenced by the behavior of his superior. The superior's emphasis on production-centered or employee-centered practices can be directly traced to the superior's orientation. Mann and Dent (1954) have found that a supervisor rated highly by his superiors and his employees says: 1) His superiors allow participation; 2) His superior tells him what he thinks of his work; and 3) His superior frequently asks his opinion.

Paul Pigore (1962) says, "Leadership is a process of mutual stimulation which by a successful interplay of relevant differences, controls human nature in pursuit of the common cause." That is, whenever an individual contributes an idea that is needed at a particular time he is a leader. Leadership passes from one to another as the individual contributes an idea or action toward growth, or the common goal. The feelings of self esteem, and involvement satisfies the higher needs of the individual.
Denhardt (1970) in a study in New Orleans attempted to investigate the effects of various styles of management. The study discovered that persons who were working in the more democratic organization not only felt a part of the group but were in fact gaining positive personal satisfaction from their work organization with their fulfillment in other groups, such as civic clubs and fraternal organizations.

To test whether or not the workers under democratic conditions would also be more independent in their attitudes toward authority a questionnaire was circulated. A six-item Guttman-type scale measuring a generalized deference to authority was used to determine attitudes about organizational authority. In the more democratic company, the workers were actually becoming more deferent to such authority.

Denhardt suggests that through participation the employer may develop not only happy workers, but also persons with a greater commitment to the work establishment.

Summary

Participation not only has certain effects on individuals and work groups, but it also has reverberations throughout the organization. The supervisor influences the behavior of his subordinates. Subordinates supervise as they are supervised. Mann and Dent (1954) have shown that a supervisor rated highly by his superior and his employees allows participation in decision making.

Denhardt's study suggests that a supervisor does not lose authority in a participatory situation. The willing compliance by
the participants makes it easier to achieve goals. This would be congruent with Barnard's (1939) theory that the best way for legitimizing authority in organizations is communication. If people think the information they receive is legitimate, they will accept the source. If they accept the authority, they will act accordingly to achieve their goals and those of the organization. How better can one receive information and resolve uncertainty than by participation?

Some degree of commitment is necessary for any organization to achieve its goals. One might assume that commitment follows need fulfillment, and in a participatory environment it is possible to produce positive benefits both for the individual and management.

**Interactive Research of Personality and Environment**

Personality and environmental research have been reviewed. This particular study wishes to determine the influence of personality structure on the effects of participation. Vroom (1960) hypothesized in a study he conducted that there were different effects as a result of participation depending upon the personality characteristics.

Campion (1968) replicated this experiment as did Tosi (1970), but Campion did this in a laboratory setting. Tosi did it in a different industrial setting. Campion's conclusions were the same as Vroom's. Tosi did not have the same findings. This research is reviewed immediately. In addition a report is given of some observations made by Lawrence and Lorsch as a result of some interviews they made while doing research in the plastic and container industries.
Victor Vroom studied employees in a package delivery firm to determine if there was correlational evidence for the interaction of management style and employee characteristics. He wished to determine the influence of personality structure on the effects of participation.

In the plants that Vroom studied it was found that there was considerable variation in the way in which supervisors at all levels worked with their subordinates. Some supervisors constantly sought the ideas and opinions of those working for them and others were much less inclined to involve their men in decisions. There were also variations in participatory practices with a single supervisor's relationship with different subordinates.

Research questionnaires and company records were used to obtain the information in Vroom's study. The degree of authoritarianism of the subject was measured by responses to 25 items from Forms 40 and 45 of the F scale developed by Adorno et al. (1950).

The findings showed that generalizations concerning the positive effects of participation on motivation was over-simplification. In general, it was shown that employees who were low on authoritarianism and high on need for independence tended to produce more under democratic leaders, while the reverse tended to be true for employees who scored high on authoritarianism and low on need for independence. That is, such employees tended to produce more under directive supervision. Vroom's criteria of effectiveness was supervisory ratings.
Vroom's finding supported his hypothesis that the effects of participation in decision-making depend on certain personality characteristics of the participant. The evidence suggested that authoritarianism interacted with participation in determining attitudes toward the job and motivation for effective performance. No measure of objective participation was used, but rather a questionnaire measuring psychological participation was given. Vroom suggests further research using objective participation.

Vroom explains the findings concerning the joint effects of participation and personality on motivation for effective performance. He hypothesizes that a person's aroused motivation to perform a series of acts is a multiplicative function of strength of motive, the value of the incentive offered in the situation, and the expectancy that the acts will lead to the attainment of the incentives. Therefore, the effects of participation will vary with the strength of the motives satisfied.

J. E. Campion, Jr. conducted a study of the interactive effect of managerial style and subject characteristics in a laboratory setting. The subjects were given the F scale (Adorno, et al., 1950), and a questionnaire to measure the need for independence. Then the subjects were divided into two blocks, high authoritarianism and low need for independence and low authoritarianism and high need for independence. Results similar to Vroom's (1960) were found; that is, subjects who were low in authoritarianism and high on need for independence performed better under participative supervision. Subjects who were high on authoritarianism and low on need for independence
performed better under nonparticipative supervision (Campbell, et al., 1970).

Henry Tosi

Henry Tosi (1970) operating under the assumption that only when findings have been replicated, in some manner, with a degree of consistency can they be given serious consideration, attempted to replicate Vroom's experiment (1960). The analytical techniques are similar, but the sample is markedly different in the nature of the work done and the geographical dispersion.

The data was collected as part of an experiment to study the effects of changing participation levels of managers in large organizations. It was expected that if personality variables affected reactions to participation, they may have an impact on the reaction to changes to participation.

A questionnaire similar to Vroom's (1960) was used to determine participation. Respondents checked a five-point scale ranging from "very little" to "a great deal." Vroom used Adorno, et al., (1950) Forms 40 and 45 of the F scale selecting 25 items. Tosi used 13 items. The effectiveness measure was the most recent year's returns on investment of the units in the study. Vroom's criteria were supervisory ratings.

Participation was considered the independent variable. It was measured on a scale similar to Vroom's (1960).

The questionnaires were mailed to 520 managers of consumer finance offices spread throughout the country. 488 were answered and
returned. Their basic duties were concerned with the management of a local office. They had primary responsibility for hiring and training all clerical and administrative personnel, planning and administering marketing programs, and improving operating costs and reducing losses. There was a great deal of autonomy in the branches although they operated within a set of policies and procedures developed in the home office.

Relationships were examined in much the same way as by Vroom. Differences in personality categories did not produce different relationships between participation and the dependent variables.

Tosi suggests that the reasons for the difference in research results as possibly: 1) Methodological differences between the two studies; 2) Differences in the criterion used; 3) The lack of similarity between the subjects, the organizations, and the specific characteristics of the job. He feels the third reason is most likely the reason for the differences between the findings. At any rate, Tosi suggests that there is a need for reconsideration of the personality/participation/effect relationship.

Lawrence and Lorsch

In reporting on research in the plastic and container industries Lawrence and Lorsch (1967) speculate that managers in the two organizations have different personality needs. They suggest that the two organizations are two quite different places to work. Managers in the plastic organization were in a dynamic and diverse environment and most highly differentiated, while managers in the container
organization were in a relatively stable and homogeneous environment and not highly differentiated. The managers were generally quite well satisfied with their situations, but for quite different reasons. Although Lawrence and Lorsch made no systematic effort to collect data to examine the major sources of satisfaction and stress, they asked questions relevant to these interviews. They found in the plastic organization an important source of satisfaction was the active involvement in decisions. Managers in the container organization indicated that they liked their jobs for a different reason—they knew where to go to get a decision. Those in the plastic organization seemed to prefer more independence and had a greater tolerance for ambiguity. Those in the container industry were bothered by ambiguity, and were better satisfied with greater dependence upon authority.

Summary

Miles (1965) defines participation by developing a human resource model. This model conceives the individual as being capable of making decisions to improve the total organization performance. Control comes from the work group itself—from the individuals involved—not from the external pressures. The human resource approach differs from the human relations approach. The human relations approach strives for satisfaction. With the human resource approach, satisfaction is a by-product of performance.

This does not mean that participation is not satisfying. Participation as shown by the research is satisfying because it can be need fulfilling. It acts as a two-way or multi-way communication
process of give the individual information he wishes to know. Understanding and commitment are facilitated by the opportunity to ask questions and voice criticisms. It is tension reducing because increased information reduces dissonance. It leads to commitment making the use of power in supervision unnecessary.

Participation can be satisfying, but satisfaction is not the goal of participation. Using the human resource model, satisfaction is the by-product. The research has shown that satisfaction can be increased by participation. In addition, studies have shown that productivity can be increased by participation. It is possible for satisfaction to occur during the process of participation. More importantly, research suggests (Lawler and Porter, 1970), that participation results in performance, and a secondary effect is the satisfaction that results from the achievement.

Vroom's (1960) findings supported his hypothesis that the effects of participation in decision making depend on certain personality characteristics of the participants. The evidence suggested that authoritarianism interacted with participation in determining attitudes toward the job and motivation for effective performance. Campion (1968) attained the same result in a laboratory setting. Tosi (1970) attempted to replicate Vroom's experiment with different managers. His results differed from Vroom's. Difference in personality characteristics did not produce different relationships between participation and the dependent variables.
This exploratory research of the literature related to organizational behavior and managerial practices was begun during the planning and development of the courses for the 1970-1971 terms at the School of Business Administration at the University of Dayton. An attempt was made to incorporate into the classroom environment all the elements of good management practices.

A recognition of the impact of the leader not only in a contemporary situation, but also upon the students' own future leadership practices led the researcher to make an effort to integrate practices considered highly desirable for the use of executives. The research into the environment and personality, and their effects separately and simultaneously led to the research which follows. The findings have been integrated into this experiment.
CHAPTER III

METHODOLOGY OF THE STUDY

Introduction

Analysis of the actions of a person make it necessary to understand the interacting variables of personality and the individual's response to a situation. The performance of a person is dependent upon his ability and his motivation. A participatory environment has been shown to be motivational for some individuals. It is not motivational for all. This study wishes to determine what effect personality has upon performance in a participatory environment.

Personality is defined in this study as predispositions and patterns of behavior that determine how a person thinks, feels and acts. The major facets of personality are those characteristics that most directly affect a person's adjustment to his environment--including his emotions, abilities, and skills in getting along with others.

Participation is defined in this experiment as voluntary involvement and commitment in the decision-making process, where the decisions have an effect upon the involved individuals.

Participation by people introduces these additional values: a) a desire on the individual's part to bring his goals closer to his expectations, b) an opportunity for the exchange of information,
c) an opportunity to view more alternative solutions, and d) one-to-one interaction both vertical and horizontal.

The participation process must be perceived as a genuine method to achieve an end—in this case: a) a broadening of knowledge and the ability to interrelate with reading and experience, b) the capacity of the individual to grow and change from forces within himself, c) acknowledgment of the ability of subordinates to make a contribution, and d) the acceptance of the ideas in terms of their relevance and not to any status or role perception.

Democratic leadership is an integral ingredient of participation used in this experiment. This implies a respect for the abilities of the members of the group and an assumption that they are capable of improving their thought processes and behavior by reflection, interaction, acceptance of responsibility for problem solution, and that they are capable of maximizing without emphasis on evaluation. Even though the individuals in the group must take a responsibility in the decision-making, there is also a recognition that there is "freedom in the situation" and that the climate exists within a framework. The leader initially selects and presents the problems for discussion after becoming convinced that the discussion material is relevant and important to the subject matter.

This does not preclude an adaptability or flexibility which is shown by a willingness to listen, by an acceptance, by support, questions, and reflection. Supportive conditions in the environment compensate for any feelings of inadequacy in the learning situation that may be present. The climate affects not only the degree of
learning, but also the feelings of acceptance and tension. This is evidenced by comments of agreement, disagreement, or exception by participants to peers or teacher statements or questions, which leads to further questioning and scrutiny by all. This differs from a group-centered situation where the material for discussion is selected by a member or by the group. In a group-centered situation the members take the responsibility for group functioning and individual and group growth. This is different in a democratic leadership environment. In democratic leadership situations the leader can bring about change by questions, interpretations, clarification, and by acceptance of answers, questions, and perceptual interrelationships with the contribution of the participants. Thinking is encouraged by the climate maintained. The assumption is made that integration takes place as a result of clarification, synthesis, and evaluation of alternatives in the established framework. An environment is provided that allows the individual to function in a way that results in his growth.

For example, the classes were allowed to decide how their work in the second week of the term would be evaluated. They were given the opportunity to or not to accept the observer's evaluation in terms of class contribution, and construct their own test. In class, students could discuss cases as a form of participation arriving at individual solutions or group decisions. They could choose to discuss and evaluate them in small groups or as a class, establishing their own criteria of evaluation before hand. They were afforded the opportunity to consider the use of role playing as a discussion.
technique. They were offered the opportunity to do outside reports and were asked if they wished to hear an authority outside of the university speak on a particular relevant area.

A backward look at the process and the interaction of the individuals can be profitably used by the individuals and the group in illustrating the connection between action and theory. Overlearning on the part of the teacher makes it possible to profitably utilize all class time.

Three hundred and twenty-five students were asked to check the items that defined participation (Appendix). These students were freshmen, sophomores, juniors, and seniors enrolled in the School of Business Administration at the University of Dayton. These students were enrolled in classes in statistics, law, personnel, principles of management, and organization behavior and human relations. All the definitions given by the students were incorporated into the participatory situation of this experiment. The definitions in order of frequency are: 1) "Discussion," 2) "Oral Questions by the Teacher--Answers by Students," 3) "Choosing Topics for Papers," 4) Deciding Content of Course, 5) "Cases," 6) "Projects or Interviews with Business Men or Women and/or Students." In this study these variables were incorporated in an environment that allows for the growth of the individual. The individual participates in problem solving and in decisions that affect him and the group.

In order to determine the effect upon performance of personality characteristics in a participatory environment the hypotheses which follow were developed.
Hypotheses

1. Participation will in general lead to a positive attitude toward the environment (class work).
   1a. The more authoritarian the individual the less the extent to which participation in the decision-making process will result in a favorable attitude.
   1b. Participation in the decision-making process will have a greater effect on attitudes of those with low authoritarian needs.

2. There is a difference between low authoritarian individuals and high authoritarian individuals in their use of the opportunity to participate in decision-making.
   2a. The more authoritarian the individual the less the use of the opportunity for participation in decision-making.
   2b. The less authoritarian the individual the more participation in the decision-making process.

3. Participation will lead to more effective performance by individuals with certain personality variables, and to a less effective performance by individuals with other personality variables.
   3a. The less authoritarian individual will be motivated to improve performance with participation.
   3b. Participation will not affect the performance, or the motivation to perform of the high authoritarian individual.

In order to test these hypotheses a research model has been designed. The experimental tests and the procedures used for
Research Design

The choice of the research design was conditioned by the following factors:

1. To find out if certain personality variables could be factors that would inhibit or encourage personal involvement in the decision-making process.

2. Participation would be the same for all the individuals in the experiment.

3. All individuals in the experiment would come from the same population. The individuals became subjects based upon random selection of classes.

4. Participation would be as defined.

5. The applicability of the research to business practices is suggested.

6. A short time span between tests to avoid outside influences on results.

7. A desire to study interaction of personality variables.

8. A desire to study interaction effects keeping participation the same for all.

9. A desire to discover the effect of personality upon performance in a participatory environment.

The ideas used in this research were conceived before the September, 1970 classes began. The modus operandi developed as the
plan was carried toward completion in each of the first term classes. The involved students were asked to make an evaluation on a lengthy form supplied—upon the request of the instructor—by the School of Business Administration at the University of Dayton. From the feedback, namely, in-class discussions, conferences with students, comments on the evaluation sheets, the writer made adaption in her script as seemed required. She practiced to become poised in the practices and techniques to be used. In the 1970 second term the ideas were carried further with the same kinds of feedback.

A pre-test of the experiment was made the first week of the term by the researcher in her own section of "Principles of Management." It was discovered during the past year and verified during these sessions that the beginning of the class session was important in setting the tone of class participation. If the teacher made statements, or gave a short lecture first, students responded with brief statements related to the class material. There was little or no inter-relating with outside material or experience, and little or no agreement or disagreement with student contributions. They reverted to stereotyped, reserved class behavior and answered questions in a more "book-related" manner.

The people involved in the experiment were the researcher and an assistant—a graduate student in communication arts who had several years experience in advertising. The setting was three sections of the "Principles of Management" taught by the researcher during the second week of the 1971-1972 term at the University of Dayton School of Business Administration. These sections were taught the first
week of the term by three different professors other than the researcher. "Principles of Management," a required course at the sophomore level for students in the School of Business, utilizes the text, Management: A Behavioral Approach by Edwin B. Flippo, published by Allyn and Bacon, 1970. The assignment for the second week was Chapter 6, "The Human Element"; Chapter 7, "The Human Element in Business Organizations"; and Chapter 11, "Informal Organization."

The F scale (Adorno et al., 1950) and an attitude test (Appendix I) were given to the three subject sections of the experiment on the first day of class and at the beginning of the third week after the research had been completed. The assistant gave out and collected all tests, and attended each session to record attendance and responses to questions and class participation on a score sheet during the session (Appendix III).

At the beginning of the second week the researcher entered three different professors' classes of "Principles of Management" and announced that she was to teach them this particular week. She stated that she would not lecture, but rather they would be given the opportunity to participate. They were asked how they wished to be evaluated in their professor's absence as he wished to know that they had learned. They were afforded the opportunity to choose whether or not to have a test and who--they or the researcher--would construct it. If they chose, they would be graded solely on their participation in class, which would be scored by the assistant who attended each class.

They also were asked to decide whether only material from the book should be the sole basis of class discussion or whether pertinent
outside reading and experience or other factors should also be included. Anyone who wished was given an opportunity to do supplementary work relevant to the class, and submit it in oral or written form. At other sessions they decided whether or not to read and discuss the cases, and if so to select the ones that would be discussed. They also chose the manner of case discussion--written or oral reports--individually or in groups. They decided at another class session whether they wanted to do a morale survey. Opportunities to hear outside speakers were also afforded them. These class procedural decisions were considered questions that involved the individual student in the decision-making process. Decisions in respect to content, evaluation, cases, outside speakers, etc., were all settled by general consensus. When the students were asked about a particular course of action they nodded their assent, agreed in chorus, and then after deciding that the majority would rule, voted.

Participation in the decision-making process is a continuing activity in a participatory environment. It is therefore not restricted to major questions such as in this case, content and evaluation.

Throughout the session, questions not directly affecting the students and class but relevant to topic matter were also considered. Such questions were: Some executives think of worker discontent as the gripings of a few malcontents. Do you agree? In your work experience have you heard a great deal of griping? To what do you attribute this or the lack of this? What would you do in the same situation? In the last job that you had did you see Theory X or Theory Y in operation? How did this affect you? What would you do as supervisor? Individual
involvement in the class was scored by the assistant according to a set of criteria on a score sheet.

The students agreed or disagreed with the interpretations of their fellow students as to their experience in relation to theory.

Research Model

The problem is to find out if certain personality characteristics could be factors that would inhibit or encourage personal involvement in the decision-making process. As stated in the section on research, Adorno et al. found that individuals could be described fairly well as having a cluster of personality characteristics of a fairly definitive type. These characteristics have been described as being highly authoritarian. The degree of authoritarianism is measured by responses to items of the F scale developed by Adorno et al. (1950). In this research the degree of authoritarianism of the subjects is measured by responses to twenty-nine items from Forms 40 and 45 of the F scale. A number of studies have been carried out to determine the reliability of this scale. The average of the reliability coefficients reported by the original authors is .90. In addition to the F scale, a test of their attitudes toward school was given. After the experimental period both the F scale and the attitude test were given again (test/retest).
An assistant, a graduate student in communication arts with
several years business experience aided the researcher. Two tests
were given the subjects on the first day of the first term, 1971-1972,
by the assistant alone. These tests were the F scale (Adorno et al.,
1950) and attitude test developed by the researcher. They were given
on the first day in order to measure what they were purported to
measure—personality characteristics and attitudes.

Those subjects were taught by the researcher for one week using
participation as defined elsewhere. The assistant recorded the perform-
ance of each student as defined on the score sheet (Appendix III).
The first week of the term the researcher with the assistant present
followed the procedures and practices of the research with her own
"Principles of Management" class. She tape-recorded all sessions in
order to be sure participation as defined was occurring. This trial
period helped the assistant perfect her scoring system.

The F scale (Adorno et al., 1950) and an attitude test were
given the three subject sections of the experiment on the first day
of class at the beginning of the term and at the beginning of the
third week after the research had been completed. The assistant
gave out and collected all tests.

The "Attitude Toward the Classroom" questionnaire (Appendix
I) was given before and after to determine if the participatory
environment resulted in a change in attitude.
Since the data collected consisted of a test-retest, it was necessary to have all subjects take the two sets of tests. It was also necessary to have the tests administered under the same conditions in all instances. Since there is shifting of schedules, and absences for a variety of reasons, not everyone enrolled in the three classes at a later date took the first test. For similar reasons, not everyone who took the first test took the test at the end of the research period. This means that there are seventy-three students in the three classes with two sets of tests (before and after). Five of the students transferred to the researcher's class. Others transferred from one class to another. These students are included in the research group if there were members of a class during the period and their two tests were available. In addition, the F scale scores of the transfer students are compared with the total group and the three research groups. The transfer students to the researcher's are scrutinized in the same way. These students are unique in that they transferred after the regulation transfer period. It was necessary for them to make special arrangements. Several other students tried to transfer earlier to the researcher's class but there was a class schedule conflict.
Research Measures

F Scale (Adorno et al., 1950)

Twenty-nine items from Forms 40 and 45 of the F scale were used as the test for personality characteristics. This measures the degree of authoritarianism. The subjects were asked to check their degree of agreement with each of the statements. The Likert method of scaling was used. The procedure used for all scales was to allow six choices of response for each item; slight, moderate, or strong agreement and the same degrees of disagreement, with no middle or neutral category. Each subject indicated the degree of agreement by marking, plus (+) 1, 2, 3; or disagreement by minus (-) 1, 2, 3. The scoring was the same as that used by Adorno et al., (1950):

- $3 = 1$ point
- $2 = 2$ points
- $3 = 3$ points
- $-3 = 1$ point
- $-2 = 2$ points
- $-3 = 3$ points

+ $1 = 5$ points
+ $2 = 6$ points
+ $3 = 7$ points
It will be noted that Adorno et al., suggests skipping from 3 to 5 points since the "don't know" category has been a source of difficulty and controversy in many fields of psychological research. Four points represents the hypothetical neutral response, and was assigned when the item was omitted.

A person's scale is the sum of his scores on the single items. For the twenty-nine items the scores can range between twenty-nine points (1 point on each item, indicating low authoritarianism), and two hundred and three (7 points on each item, high authoritarianism).

In this experiment, as explained in the section that follows, "Description of Statistical Procedures," the F scores are divided into groups for testing purposes. They are divided into two groups and into three groups. The division into three groups is illustrated below.

<table>
<thead>
<tr>
<th>Number of Subjects</th>
<th>F Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Authoritarian</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>111 or more</td>
</tr>
<tr>
<td>Moderate Authoritarian</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>91-110</td>
</tr>
<tr>
<td>Low Authoritarian</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>90 or less</td>
</tr>
</tbody>
</table>

When the group is divided into two sections, this is done at the mean (99.7) of the F scale scores of the total group. This is shown below.

<table>
<thead>
<tr>
<th>Number of Subjects</th>
<th>F Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Authoritarian</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>100-140</td>
</tr>
<tr>
<td>Low Authoritarian</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>39-99</td>
</tr>
</tbody>
</table>
A mean and a standard deviation are determined for the total group and for each of these sub-groups. Comparisons are made by tables and graphs.

Performance Scoring

The research environment as defined elsewhere places emphasis on decision-making by the subjects. The decision-making process is a continuing activity in a participatory environment. It is not restricted to major questions such as in this case, content and evaluation. The quality of participation is defined on the performance sheet (Appendix III) in terms of degree of involvement in the decision process on a voluntary basis. These scores range from a (-) three to a plus (+) three. The plus 3 score shows the greatest insight and interrelationship between experience and theory. There is a range down to a minus 3. A minus 3 is given for a statement of opinion contrary to fact, which the subject defends in the face of available information and studies. A zero is given for no participation. These scores are summed.

Attitude Test

This test was designed to measure the subjects' attitudes toward the institutional environment. The questions were: 1) "How well do you like to attend classes?" 2) "How much chance do you have in classes to overcome your weak points and add to your strengths?" 3) "How good have your college teachers been in helping you overcome your weak points and add to your knowledge?" 4) "The environment of the
classroom tends to be one conducive to learning?" (Appendix I) and 9) "Which of these do you consider the most appropriate class environment for learning?" (Table 1)

Each subject indicated the degree of his agreement by marking +1, +2, +3, or if in disagreement -1, -2, or -3. A pre-test and a post-test were given. These were summed. To ascertain whether or not a significant attitude change had taken place appropriate statistical tests were made.

Description of Statistical Procedures

Hypothesis I: Participation will in general lead to a positive attitude toward the environment (class work).

Hypothesis I has been tested by a summation of the questions measuring the attitudes of the subjects. The questions 1, 2, 3, 4, (Appendix I) and 9 (Table 1) were given before and after the experiment. Significance was studied based on the student distribution.

The F scale was given before the experiment. A summation was made of the scores. From these scores three groups were made. For further testing of results the subjects were divided into two groups at the mean.
Following the experiment the F scale was given again. The student distribution was used to see if there was a significant difference in these scores.

**Hypothesis II.** There is a difference between low authoritarian individuals and high authoritarian individuals in their use of the opportunity to participate in decision making.

Hypothesis II has been tested by recording the performance by the subjects during the experiment. Not only was the number of performances recorded but the quality of performance as well (Appendix III). A summation was made of subjects in each group that participated, as well as subjects' performance scores. A comparison between groups was made by descriptive percentages. A test for independence was performed to see if there were significant differences between groups in regard to performance.

**Hypothesis III:** Participation will lead to a more effective performance by individuals with certain personality variables, and to a less effective performance by individuals with other personality variables.

Hypothesis III has been tested by relating measurements of one variable with simultaneous measurements on another. A correlation scattergram (Table 9) pictorially shows the correlation between scores on the F scale and performance. Pearson product-moment correlation (r) coefficients have been used to determine
the degree of relationships between the F scores and performance (Table 10). The Pearson r assumes interval scales in the variables being related. Since this requirement is not met in this study, there cannot be a strict interpretation of the magnitude of individual correlations or of the obtained level of confidence. This was used for comparison with the results of the research of Vroom (1950), Campion (1968) and Tosi (1970).

The .05 level of confidence has been used as the basis for rejecting or accepting the hypotheses. Results at the .05 to .10 level of confidence will be used to suggest trends.

The results of the study with appropriate tables are given in Chapter IV, RESULTS, which follows.
CHAPTER IV

RESULTS

If the assumption is made that the effectiveness of an organization is to a large extent dependent upon the people that comprise it, there is a need to identify the motivational environments. The interacting effects of personality and environment have been investigated. Data relevant to the testing of our hypotheses are discussed in this chapter. An attempt is made to determine the significance of these findings for theoretical purposes, and as guidelines for further study.

Hypothesis I. Participation will in general lead to a positive attitude toward the environment (class work).

This hypothesis states that participation will result in a more favorable attitude toward the environment. The next two hypotheses (IA, IB) are more refined statements of this hypothesis. Hypothesis IA states that the more authoritarian the individual the less the extent to which participation in the decision-making process will result in a favorable attitude. Hypothesis IB states that participation in the decision-making process will have a greater effect on attitudes of those with low authoritarian needs.

The questions used to test these hypotheses are related to the total class environment, and not just the experimental classroom situation. The questions used to measure attitude were 1, 2, 3, 4.
<table>
<thead>
<tr>
<th>Activity</th>
<th>High Participation with No Lecture &amp; with Students Involved in Discussion, Selection of Course Content &amp; Evaluation</th>
<th>High Participation with No Lecture but Questions, Summarizations &amp; Clarifications</th>
<th>Participation with Lecture, Questions and Answers</th>
<th>Lecture, Discussion Reports &amp; Papers</th>
<th>Lecture &amp; Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Authoritarian</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before</td>
<td>4</td>
<td>3</td>
<td>10</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>After</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Moderate Authoritarian</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before</td>
<td>0</td>
<td>5</td>
<td>1</td>
<td>18</td>
<td>4</td>
</tr>
<tr>
<td>After</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>Low Authoritarian</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before</td>
<td>3</td>
<td>3</td>
<td>10</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>After</td>
<td>5</td>
<td>0</td>
<td>11</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0</td>
<td>12</td>
<td>7</td>
<td>38</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>19</td>
<td>5</td>
<td>33</td>
<td>9</td>
</tr>
</tbody>
</table>
(Appendix I) and question nine. The compilation for this question is shown in Table 1.

Question nine, "Which of these do you consider the most appropriate class environment for learning?" was included for two reasons. It could be used to detect a change in attitude, and the expectations and perceptions of the subjects.

The other questions aimed at measuring possible changes in attitude are: 1) How well do you like to attend classes? 2) How much change do you have in classes to overcome your weak points and add to your strengths? 3) How good have your college teachers been in helping you overcome your weak points and add to your knowledge? and 4) The environment of the classroom tends to be one conducive to learning.

A test of hypotheses showed no significant difference in attitudes toward the total class environment as a result of attending one class for a week in a participatory environment when there is a division into three groups. This is shown in Table 2 below.

TABLE 2

CHANGES IN ATTITUDES IN A PARTICIPATORY ENVIRONMENT FOR PERSONS WITH DIFFERENT PERSONALITY CHARACTERISTICS (3 GROUPS)

<table>
<thead>
<tr>
<th>F Scale</th>
<th>Number of Subjects</th>
<th>t Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Authoritarian</td>
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<td>91-110</td>
<td>28</td>
</tr>
<tr>
<td>Low Authoritarian</td>
<td>90 or less</td>
<td>22</td>
</tr>
</tbody>
</table>

aNot significant
When the group was divided into two sections there was no significant difference for the low authoritarians, but there was a trend in the negative direction for the high authoritarians. Table 3 below illustrates this.

TABLE 3

CHANGES IN ATTITUDES IN A PARTICIPATORY ENVIRONMENT FOR PERSONS WITH DIFFERENT PERSONALITY CHARACTERISTICS (2 GROUPS)

<table>
<thead>
<tr>
<th>F Scale</th>
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<tbody>
<tr>
<td>High Authoritarian</td>
<td>100-140</td>
<td>39</td>
</tr>
<tr>
<td>Low Authoritarian</td>
<td>39-99</td>
<td>34</td>
</tr>
<tr>
<td>Mean 99.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>P < .10

<sup>b</sup>Not significant

This trend in the negative direction by the high authoritarians was as predicted. No effort was made to change attitudes. The entire experimental period was devoted to the subject matter. In addition, one would expect only those with strong negative feelings to reflect them in such a short experimental period.

The average number of courses taken by a student each week is five. This means that students were present in the participatory environment a fifth of their classroom time during the experimental period—a total of less than three hours. These questions applied to the total classroom environment, not just to the experimental environment. All questions had to be relevant to the total environment
because they were given the first day of the school term. After this period the questions were given again. The questions asked were of a general nature, not specifically associated with the research environment.

In addition to the fact that a participatory environment as described by the investigator occurs in only one of the subjects' classes, another factor enters. The expectations of the students in regard to the class environment are involved. Question 9 (Table 1) illustrates this. The question was: "Which of these do you consider the most appropriate class environment for learning?"

This question relevant to the class environment for learning could be answered on a continuum from a minus three--"lecture" to a plus three--"high participation with no lecture, and with students involved in discussions, selection of course content and evaluation." The research environment incorporated the plus three category. The mode for the students' answers to Question 9 was: "Participation with lecture, questions and answers." This was near the mid-point on the continuum--a plus one. There were few changes in perception of the appropriate class environment by the test subjects. This is shown in Table 1.

Questions 5, 6, 7, and 8 (Appendix II, p. 128) show few changes in the retesting. The modal answers were in the mid-range of the possible choices. No attempt was made to change attitudes. The entire class period was devoted to the subject under discussion. No reference was made to the class environment.
If one studied the results of the survey (Appendix III) of the three hundred and twenty-five students in the School of Business Administration, one would expect these results. These students were asked to choose one or more definitions of participation. Eighty per cent chose, "Discussion." Fifty-eight per cent chose, "Oral questions by the teacher—answers by the students." These two answers would allow the teacher wide latitude and could take place under autocratic or democratic leadership. In contrast forty per cent chose "Deciding content of the course" and "Deciding weights to be given to parts of the course" as two of their answers.

As shown by this survey the students in the group—representing freshmen, sophomores, juniors and seniors—perceived participation in a more restricted way than was conceived by the investigator.

When the subjects were divided into three groups there was no significant change in the F scores of those with high authoritarian scores, or those with moderate authoritarian scores. There was a significant change (.01 level of significance) in F scores for the low authoritarians. They went away from the extreme position toward the mean. This is shown by Table 4.
TABLE 4
CHANGES IN F SCALE IN A PARTICIPATORY ENVIRONMENT FOR PERSONS WITH DIFFERENT PERSONALITY CHARACTERISTICS

<table>
<thead>
<tr>
<th>Number of Subjects</th>
<th>F Scale</th>
<th>t Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Authoritarian</td>
<td>23</td>
<td>111 or more</td>
</tr>
<tr>
<td>Moderate Authoritarian</td>
<td>28</td>
<td>91 - 110</td>
</tr>
<tr>
<td>Low Authoritarian</td>
<td>22</td>
<td>90 or less</td>
</tr>
</tbody>
</table>

a Not significant
b p < .01

This tends to show a responsiveness to the environment and to the people in it by individuals with low F scale scores.

If the subjects are divided at the mean of their F scale scores, changes in the F scores are seen to occur. There is a change for the low authoritarians that is significant (.01 level of significance). The low authoritarians move away from the extreme position toward the mean of the entire group. High authoritarians moved to a more extreme position. This shows a trend (.10 level of significance). Table 5 shows the results of the testing for changes in F scale.

The results suggest that a participatory environment has a mellowing effect for low authoritarians, but not for high authoritarians. The findings suggest that it makes them more extreme in their views.
TABLE 5

CHANGES IN F SCALE IN A PARTICIPATORY ENVIRONMENT FOR PERSONS WITH DIFFERENT PERSONALITY CHARACTERISTICS

<table>
<thead>
<tr>
<th></th>
<th>Number of Subjects</th>
<th>t Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Authoritarian</td>
<td>39</td>
<td>1.5756&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Low Authoritarian</td>
<td>34</td>
<td>4.0386&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup><sub>\( p < .10 \) </sub>

<sup>b</sup><sub>\( p < .01 \) </sub>

Mean 99.7

According to the hypotheses these are in the expected direction. The surprising factor is that it shows up in the F scale scores. Litwin's (1968) experiment showed changes in seemingly stable personality traits in eight actual days of (simulated) work life. The literature does not seem to show any studies where a change in the F scale took place. The reason may be that a pre test and a post test of the F scale is rare.

These findings suggest that the environment has an influence on individuals according to their personality characteristics. In this experiment their expectations and perceptions were not that of the environment in which they found themselves. The reaction of the high authoritarians was toward a more extreme position, and a trend toward a negative attitude change. The low authoritarians went toward the mean which tends to suggest a softening influence of the participatory environment away from a polarized position.
Hypothesis II. There is a difference between low authoritarian individuals and high authoritarian individuals in their use of the opportunity to participate in decision-making.

This hypothesis states that low authoritarian individuals will respond differently from high authoritarian individuals in a participatory environment. Hypothesis 2a states that the more authoritarian individual will use the opportunity to participate less than the low authoritarian. Hypothesis 2b states the less authoritarian individual will make use of the opportunity to participate in the decision-making process.

To test these hypotheses a record was kept of the number of times each individual participated. This participation was concerned with course content, evaluation, and the subject matter. This social interaction was evidenced by their listening to members of the class, and commenting upon their remarks. They used these opportunities to illustrate or elaborate their point of view as well as, on occasion, to disagree. In addition, they related work experiences that interrelated with the subject matter. A Performance Score Sheet was used (Appendix III).

As evident in Table 6, there are differences in the opportunity to participate by the groups. The number of subjects not participating among the high high authoritarians is seven, which is thirty per cent of the group. Only two persons did not participate in the low authoritarian group, which is nine per cent of this group. An hypothesis test for independence was performed. Performance when measured by complete absence of participation was found to be independent of the authoritarian level. There was no significant difference in the lack of participation at each level.
TABLE 6

F SCALE AND PERFORMANCE FOR PERSONS WITH DIFFERENT PERSONALITY CHARACTERISTICS

<table>
<thead>
<tr>
<th></th>
<th>No. of Subjects</th>
<th>No. of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>with Performance</td>
</tr>
<tr>
<td>Total Group</td>
<td>73</td>
<td>56</td>
</tr>
<tr>
<td>High Authoritarian</td>
<td>23</td>
<td>16</td>
</tr>
<tr>
<td>Moderate Authoritarian</td>
<td>28</td>
<td>20</td>
</tr>
<tr>
<td>Low Authoritarian</td>
<td>22</td>
<td>20</td>
</tr>
</tbody>
</table>

The mean scores of performance for subjects with different F scores is shown by Table 7. The mean performance for the entire group was nine points.

TABLE 7

MEAN SCORES OF PERFORMANCE FOR PERSONS WITH DIFFERENT PERSONALITY CHARACTERISTICS

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Range</th>
<th>Mean Performance</th>
<th>Mean Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Group</td>
<td>73</td>
<td>0-36</td>
<td>9.466</td>
<td>7.879</td>
</tr>
<tr>
<td>High Authoritarian</td>
<td>23</td>
<td>0-21</td>
<td>5.000</td>
<td>4.087</td>
</tr>
<tr>
<td>Moderate Authoritarian</td>
<td>28</td>
<td>0-32</td>
<td>8.714</td>
<td>6.867</td>
</tr>
<tr>
<td>Low Authoritarian</td>
<td>22</td>
<td>0-36</td>
<td>15.090</td>
<td>9.363</td>
</tr>
</tbody>
</table>

The mean performance for high authoritarians was five—almost one-half the mean of the total group. The mean performance for low authoritarians was fifteen—three times that of the high authoritarian group.

The findings reveal that the performance of individuals with certain characteristics will be affected by a participatory environment. A
participatory environment allows all individuals equal opportunity to take part in the decision making process. Only some individuals use this opportunity.

**Hypothesis III.** Participation will lead to more effective performance by individuals with certain personality variables, and to a less effective performance by individuals with other personality variables.

This hypothesis states that low authoritarians will have an effective performance in a participatory environment. Hypotheses 3a and 3b are more specific. Hypothesis 3a says that the low authoritarian individual will be motivated to perform well. Hypothesis 3b says that the high authoritarian individual will not be affected by a participatory environment in regard to performance.

Table 8 below shows differences among groups in performance. An hypothesis test for independence was performed to test performance with relation to average (mean) performance. A dependence between performance and authoritarianism was found at the .01 level of significance.

**TABLE 8**

**COMPARISON OF PERFORMANCE FOR PERSONS WITH DIFFERENT PERSONALITY CHARACTERISTICS WITH THE MEAN**

<table>
<thead>
<tr>
<th></th>
<th>No. of Subjects Below Mean</th>
<th>No. of Subjects at/or Above Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Group</td>
<td>45</td>
<td>28</td>
</tr>
<tr>
<td>High Authoritarian</td>
<td>(23) 19</td>
<td>4 (17%)</td>
</tr>
<tr>
<td>Moderate Authoritarian</td>
<td>(28) 19</td>
<td>9 (32%)</td>
</tr>
<tr>
<td>Low Authoritarian</td>
<td>(22) 7</td>
<td>15 (68%)</td>
</tr>
<tr>
<td>Mean 9.46</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Fifteen of the subjects in the low authoritarian group were at or above the mean performance of the total group of subjects. Four of the high authoritarian group were at or above this mean. Table 8 shows that seventeen per cent of the high authoritarian group, and sixty-eight per cent of the low authoritarian group were at or above the mean. This shows a decided percentage difference in performance between the two groups. An individual is motivated to satisfy a need or relieve a tension. One could conclude that the participatory environment allows this for some, but has a different effect on others.

In order to see if there was a correlation between performance and the F scale scores a graphic presentation is made on the next page (Table 9). This shows a negative correlation between performance and scores on the F scale. Those in the high F scale group tended to show few performance points, while those in the low F scale group tended to show high performance points.

In order to measure the degree of this observable relationship, the coefficient of correlation, $r$, was computed. The Pearson product moment was used. With this method $r$ is a measure of correlation. It may be zero if there is no relationship between the pairs of scores. The maximum size of $r$ is 1.00, hence the range of $r$ is from plus one to minus one.
| Performance | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |
|-------------|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 136-140     | 2 |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 131-135     | 1 |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 126-130     | 1 | 1 | 1 |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 121-125     | 1 |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 116-120     | 1 | 1 | 2 |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 111-115     | 1 | 1 | 1 | 1 |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 106-110     |   | 1 | 1 | 1 |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 101-105     |   | 1 | 1 |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 96-100      |   | 1 | 1 | 1 |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 91-95       |   | 1 | 1 | 1 |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 86-90       |   | 1 | 1 |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 81-85       |   | 1 | 1 |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 76-80       |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 71-75       |   |   | 1 |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 66-70       |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 61-65       |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 56-60       |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 51-55       |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 46-50       |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 41-45       |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 36-40       |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
This test measured the relationship between performance and scores on the F scale. It was found that there is no significant relationship at the .05 level of significance. This is shown by Table 10.

### Table 10

**RELATIONSHIP BETWEEN PERFORMANCE AND F SCALE FOR PERSONS WITH DIFFERENT PERSONALITY CHARACTERISTICS**

<table>
<thead>
<tr>
<th></th>
<th>Number of Subjects</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Group</td>
<td>73</td>
<td>-.402316&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>High Authoritarian</td>
<td>23</td>
<td>-.336318&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Moderate Authoritarian</td>
<td>28</td>
<td>.35648&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Low Authoritarian</td>
<td>22</td>
<td>-.13209&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup><span>_P<.01</span>

<sup>b</sup><span>Not significant</span>

A trend can be noted in the data, showing a relationship at the .10 level of significance for the entire group. A negative correlation can be seen for the high authoritarians, meaning that there is a tendency for high F scores and low performance to go together. A negative correlation is seen for low authoritarians, meaning that there tends to be low F scores and high performance. There is a positive correlation for moderate authoritarians. Table 11 examines this.
TABLE 11

RELATIONSHIP BETWEEN PERFORMANCE AND F SCALE FOR PERSONS WITH DIFFERENT PERSONALITY CHARACTERISTICS

<table>
<thead>
<tr>
<th>Number of Subjects</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Group</td>
<td>73</td>
</tr>
<tr>
<td>High Authoritarian</td>
<td>39</td>
</tr>
<tr>
<td>Low Authoritarian</td>
<td>34</td>
</tr>
</tbody>
</table>

<sup>a</sup><span> P<.10</span>

<sup>b</sup>Not significant

The subjects are divided into two groups at the mean. With this grouping it is seen that there is no significant correlation for the high authoritarians. A trend is seen (.10 level of significance) for the low authoritarians. This means that for the low authoritarians there is a tendency for low F scores and high performance to go together. These results made it desirable to examine other data.

Mean scores on the F scale were examined for students who transferred out of the class in which they first took the F scale test (the first day of the term). Table 12 gives this information.

In order to determine if there were differences between the people who transferred and those that remained, means were compared. The investigator wished to determine if individuals with different F scale scores responded differently to an environment. This response would be shown by an overt act--transferring out of the class.
TABLE 12
MEAN SCORES ON F SCALE FOR PERSONS WITH DIFFERENT PERSONALITY CHARACTERISTICS.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Range</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Group</td>
<td>73</td>
<td>140-39</td>
<td>99.70</td>
<td>19.530</td>
</tr>
<tr>
<td>High Authoritarian</td>
<td>23</td>
<td>111 or more</td>
<td>120.91</td>
<td>7.879</td>
</tr>
<tr>
<td>Moderate Authoritarian</td>
<td>28</td>
<td>91-110</td>
<td>100.67</td>
<td>5.636</td>
</tr>
<tr>
<td>Low Authoritarian</td>
<td>22</td>
<td>90 or less</td>
<td>76.272</td>
<td>11.826</td>
</tr>
<tr>
<td>Transfers</td>
<td>16</td>
<td>75-124</td>
<td>98.0</td>
<td>13.299</td>
</tr>
<tr>
<td>Transfers to Researcher</td>
<td>5</td>
<td>84-109</td>
<td>94.0</td>
<td>11.045</td>
</tr>
</tbody>
</table>

Sixteen individuals transferred out of the test classes (Table 12). These subjects acted during the first week of the term before the investigator began the experiment, with five exceptions. There were five transfers to the investigator's own "Principles" class after the experimental period. This is noteworthy because they transferred after the University approved transfer time, so they had to confer with their assigned instructor and make special arrangements. Several others were not able to transfer to the investigator's class because of time schedule conflicts.

An examination is made of these mean scores on the F scale (Table 12). The mean for the total group of subjects is 99.70. The mean for the transfers is 98.0, which is below the mean. The mean F scale scores for the transfers to the investigator is 94.0. This is more than five points below the mean for the group. This leads to
the assumption that those with low authoritarian scores are responsive
to the environment and react to it. A participatory environment
elicits motivation for some individuals; it does not for others.

A summary of the above findings is included in the final
chapter along with conclusions and implications.

Summary

1. There is no significant change in attitudes toward the
total class work environment as a result of being in one class with
a participatory environment. If the subjects are divided at the mean
of their F scale scores into two groups, there is a negative trend
(.10 level of significance for high authoritarians). Questions 1, 2,
3, 4 and 9 were used to test this (Appendix). To understand the
expectations of the students and perhaps partially account for the
results Questions 5, 6, 7, 8, and 9 were asked (Appendix II).

2. There was a significant change (.01 level of significance)
for low authoritarians for the F scale (Table 4). When the group
consisted of three sections, there was no significant difference for
the high authoritarians or the moderate authoritarians. This changed
when the group was divided at the mean of the F scores. Then the
high authoritarians showed a trend (.10 level of significance) toward
a more extreme position. When the low authoritarians moved (.01
level of significance) away from an extreme position toward the mean
of the total group.
3. Subjects low on the F scale avail themselves of the opportunity to participate three times as often as those high on the F scale. This is shown by Table 6.

4. There is a difference in performance between those high on the F scale and those low on the F scale. The mean performance is three times as high for those low on the F scale in contrast to those high on the F scale. Table 7 shows this. The difference between the mean performance scores of the three groups is significant at the .01 level of significance.

5. Table 12 shows the mean scores on the F scale for the subjects. The students who transferred out of classes had lower mean scores than the average mean for the total group. The five students who were able to transfer to the researcher with some difficulty had a mean score 5.7 points lower than the mean of the total group of subjects.

6. Low Authoritarian subjects were motivated to perform well. Fifteen subjects in the low authoritarian group were at/or above the mean performance of the total group of subjects. Four of the high authoritarian group were at/or above this mean. Table 6 shows that seventeen per cent of the high authoritarian group, and sixty-eight per cent of the low authoritarian group were at/or above the mean.

7. The Pearson product moment was used to see the correlation between performance and the F scale. There was no significant relationship at the .05 level of significance. There was a negative correlation in the predicted direction at the .10 level of significance. This is shown by Tables 10 and 11.
8. Table 13 shows the groupings for the F scale. This is on the next page. If the groupings are made at the mean as shown, there is a trend in the predicted direction for both the high and the low authoritarian groups. Both groups show a relationship at the .10 level of significance. That is, those with high F scale scores tend to have low performance scores, and those with low F scale scores tend to have high performance scores.

This study corroborated previous findings that participation in decision making by persons with different personality characteristics will have an effect upon their performance. Participation must be seen by an individual as a path toward fulfillment of a need or goal for it to be motivating. The opportunity to perform is need satisfying or tension reducing for some individuals. A participatory environment allows all individuals equal opportunity to take part in decision making. Only some people avail themselves of this opportunity.

It was found that the use of the opportunity to participate was different for individuals high on the F scale, and those low on the F scale. Those low on the F scale took the opportunity to participate three times as often as those high on the F scale.

There is a difference in performance between those high on the F scale and those low on the F scale. The mean performance is three times as high for those low on the F scale in contrast to those high on the F scale.
TABLE 13

F SCALE FOR PERSONS WITH DIFFERENT PERSONALITY CHARACTERISTICS

<table>
<thead>
<tr>
<th>High Authoritarian</th>
<th>Moderate Authoritarian</th>
<th>Low Authoritarian</th>
</tr>
</thead>
<tbody>
<tr>
<td>111 or more</td>
<td>91-110</td>
<td>90 or less</td>
</tr>
<tr>
<td>(23 subjects)</td>
<td>(28 subjects)</td>
<td>(22 subjects)</td>
</tr>
</tbody>
</table>

Mean - 99.7
CHAPTER V
CONCLUSIONS AND IMPLICATIONS

Introduction

The performance of an individual is dependent upon his ability and his motivation to perform effectively. This study attempted to identify a motivational environment for individuals with certain personality characteristics. A participatory environment has been shown to be motivational for some persons—but not all. An effort was made in this investigation to discover the effect personality has upon performance in a participatory environment.

This particular study was designed relative to its implications at the managerial level in organizations, where personality and environmental factors merge. The interactive effects of environment and personality were investigated.

The subjects of the experiment are sophomores in three different classes of "Principles of Management" at the School of Business Administration, University of Dayton. These subjects were taught by the researcher for one week in a participatory environment. An assistant, a graduate student in communication arts with several years business experience, aided the researcher. Two tests were given the subjects on the first day of the 1971-1972 term by the assistant. The tests given were the F scale (Adorno et al., 1950) and an attitude
test developed by the researcher. These tests were administered again at the end of the test period to determine if there were changes. It was determined whether these changes were significant.

The subjects were taught by the researcher for one week in a participatory environment. The assistant recorded the performance of each student as defined on the attached Performance Score Sheet. The subjects were divided into groups according to their scores on the F scale—a measure of personality type. Comparisons of performance scores were made according to these divisions.

Summary of Results

This study has shown that, in addition to other variables, the effects of participation in decision making depend on certain personality characteristics. There was a significant change (.01 level of significance) in the F scale for low authoritarians, who had an opportunity to participate in decisions influencing their learning environment. They tended to depart from an extreme position toward the mean. This is in contrast to the effect it had upon high authoritarians, who revealed a trend toward a more extreme position. One could interpret this as a negative reaction to the participatory environment. Each of the subjects in this experiment had the same opportunity to take part in the decision-making process. Over three times as many high authoritarians chose not to participate in contrast to the low authoritarians.

Secondly, it appears that low authoritarians perform well in a participatory environment. In comparison, there was a tendency for high authoritarian scores and low performance to go together. Thus,
it appears that performance is affected by a participatory environment, but is moderated by the personality characteristics of individuals.

Students who transferred out of classes were examined to determine if their F scale scores were different from the mean scores of the total group. It was found that their scores were lower than the mean. This would tend to show that the low authoritarian individuals show a responsiveness to the environment by overt acts; that is, when the environment is participatory those who score low on the F scale usually are more inclined to participate.

This responsiveness to the participatory environment to such a degree by low authoritarians makes one conclude that the motivation to perform is strong, because one would expect dissonance as a result of the participatory environment. Dissonance results when expectations are not met. A degree of tension or discomfort is aroused and the individual attempts to overcome this. This results in a negative motivational state. The negative motivational state is eliminated by changing one's cognitions and the behavior leading to cognitions so that they will be consonant. Question 9 (Table 1) as well as the Survey (Appendix III) shows that the students tended to define participation as "discussion," and "discussion with lecture and questions and answers." Participation as used in this experimental setting was not as expected. The normal reaction to such a situation is to keep one's definitions and cognitions intact in order to conform to the other classroom environments in which the students are a part. Yet, in spite of his expectations, individuals with low F scale scores responded.
In general, the findings suggest that organization environment has an influence on individuals according to their personality characteristics. It revealed that there was a more effective performance by individuals with certain personality characteristics than by individuals with other personality variables.

**Overview of the Study**

Given the needs of a society and the availability of resources, there is a choice between making industries or firms labor intensive or capital intensive. However, the tendency has been towards capital intensive. Economists generally agree that the American economy has changed from an "industrial" based towards a "service" economy. More than half of the private, non-governmental work force is engaged in supplying services. For a competitive international advantage, as well as the best possible use of physical and human resources, one must give attention to improving the performance of individuals—both in management and the work force.

Productivity is a factor of behavior. Behavior has been described in most recent research in terms of a) environment and b) personality. This study contends that there is an interactive effect of environment and personality on performance.

Motivation involves the mobilization of energy toward a goal. Experiments have given rise to the assumption that the level of performance on a job is dependent upon the motivation to perform effectively.
An examination has been made of the possible reasons a participatory environment is more motivational for certain individuals but not for others. This has implications for management as well as for greater understanding of subordinates. The manager needs to recognize that adjustments are necessary because of his subordinate's characteristics, and/or that incongruencies may also exist because of his own personality characteristics. If one can identify the factors that make the environment motivational to the individual, this can serve both the individual and the firm. At the managerial level personality and environment factors come together. In its planning function management must take this into consideration. It is necessary for an organization to commit its resources—to plan for the short term and the long term. Physical and human resources must be considered in aligning priorities and allocating resources. Participation has been defined in this experiment as voluntary involvement in decision-making that affects the individual. This is a continuing process that evolves from a philosophical orientation that believes in the integrity of the individual and his desire and ability to contribute to the situation and problem solving, especially as these have an impact upon his own destiny. It is a recognition of the potential creativity of the individual.

The individual brings his personality, skills, psychological, sociological, as well as his economic needs to the work place. When placed in situations that make demands consistent with needs, individuals usually can meet the demands with little or no discomfort. From a theoretical standpoint, participation is more likely to take into
consideration the needs and interests of all persons concerned.

It provides an opportunity to involve the emotions as well as the
skills and thoughts. Some self-regulation removes a sense of power-
lessness and may be ego satisfying.

Participation allows the sharing of information that concerns
the individual and permits him to see how he fits into the whole.
Communication through feedback is facilitated and understanding may be
improved. It makes possible interpersonal relationships with manage-
ment figures that are not possible in a formal hierarchical structure.

Participation allows the individual to be more open to learning
because he can understand the reasons and obtain feedback from other
individuals in a supportive environment. The way individuals—managers
and employees alike—respond to demands of the work situation depends
upon their ability and perceptions of the situation. Through partici-
pation they can comprehend why their attitudes and perceptions need to
be adapted.

When change takes place in the work situation a reciprocal
process may occur. Studies have shown that if workers discuss the
necessity for change, and develop the changes through group decision
processes, change is often easily accepted. If changes are imposed
that violate the expectations of the individual, they are more likely
to result in frustrated behavior. With participation there is an
opportunity to discuss alternatives, and this intellectual and emo-
tional involvement can make a threatening situation into one of
opportunity.
Implications for Institutions and Firms

One could argue that there is no need to make a distinction between the implications for the firm and the individual, as an institution is a composite of its people. However, there is a critical linkage among the structure, tasks, technology and the human resources. Structure, task and technology could be grouped under environment. This study has shown that individuals with certain personality characteristics are responsive to a participatory environment. There is reason to be aware of this in order to select and retain personnel of a high caliber. It gives clues to the type of developmental and supervisory programs that are appropriate for certain individuals.

This could serve as a signal to institutions and firms to take personality variables and environment into consideration in making assignments. This has implications for domestic as well as international assignments. For example, in Japan before a decision is made, all involved management discuss the proposition. Objectives, alternatives, plans and procedures are examined; the decision is a consensus.

In any organization each individual needs to be considered. Some are motivated by a participatory environment, while others seem to prefer a highly structured environment. We need to understand the individuals and provide a motivational environment for each. Performance is rewarding to an individual, and it aids the firm or institution in achieving productivity.

Learning and performance take place if the environment is motivational to each individual and meets his expectations. We should
endeavor to provide a motivational environment if at all possible. The least we can do is provide an environment without motivational frictions.

Implications for Future Research

This study shows increased involvement and higher performance for individuals with certain personality characteristics in a participatory environment. The findings reflect a responsiveness to a participatory environment according to personality characteristics—interaction of environment and personality. Most studies have dealt with either personality or environment. This has resulted in controversial interpretations when generalizations have been made. More studies need to be undertaken investigating the interactive effects of personality and environment. Previous studies have defined participation subjectively. This study defined participation objectively. Studies using objective participation would tend to make comparisons of results easier.

Studies conducted over a longer period of time should also be attempted. Since the experimental period in this study was short and the expectations and perceptions of participation at variance with the experimental setting, one would expect some dissonance which might bias responses in such a short span of time. Observations of the investigator's class has shown this to be true. The discomfort from an unfamiliar situation that is contrary to expectations would tend to be overcome by individuals with certain personality characteristics, if they were in this situation over a period of time.
With a longer experimental period additional questions could be asked to determine if there was an attitude change, and if this change was the result of the experimental environment. Because of the design of the present experiment, all attitude questions had to be relevant to the total environment.

One would not expect the same results with all individuals. Because of the implications of this and other studies in regard to the interactive effects of personality and environment, it is suggested that a variety of groups be investigated in various participatory environments.
APPENDIX I

DATA COLLECTING TESTS

1. F Scale
2. Attitude Test.
The following is a study of what the general public thinks and feels about a number of important social and personal questions. The best answer to each statement below is your personal opinion. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others; and perhaps uncertain about others; whether you agree or disagree with any statement, you can be sure that many people feel the same as you do.

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one.

Write +1, +2, +3, or -1, -2, -3, depending on how you feel in each case.

  +1 -- I AGREE A LITTLE   -1 -- I DISAGREE A LITTLE
  +2 -- I AGREE ON THE WHOLE -2 -- I DISAGREE ON THE WHOLE
  +3 -- I AGREE VERY MUCH   -3 -- I DISAGREE VERY MUCH

____1. Obedience and respect for authority are the most important virtues children should learn.
____2. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.
____3. If people would talk less and work more, everybody would be better off.
____4. The businessman and the manufacturer are much more important to society than the artist and the professor.
____5. Science has its place, but there are many important things that can never possibly be understood by the human mind.
____6. Every person should have complete faith in some supernatural power whose decisions he obeys without question.
____7. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.
____8. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.
____9. No sane, normal, decent person could ever think of hurting a close friend or relative.
____10. Nobody ever learned anything really important except through suffering.
11. What youth needs most is strict discipline, rugged determination, and the will to work and fight for family and country.

12. An insult to our honor should always be punished.

13. Sex crimes, such as rape and attacks on children, deserve more than mere imprisonment; such criminals ought to be publicly whipped, or worse.

14. There is hardly anything lower than a person who does not feel a great love, gratitude and respect for his parents.

15. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked, and feebleminded people.

16. Homosexuals are hardly better than criminals and ought to be severely punished.

17. When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things.

18. Nowadays more and more people are prying into matters that should remain personal and private.

19. Some people are born with an urge to jump from high places.

20. People can be divided into two distinct classes: the weak and the strong.

21. Some day it will probably be shown that astrology can explain a lot of things.

22. Wars and social troubles may someday be ended by an earthquake or flood that will destroy the whole world.

23. No weakness or difficulty can hold us back if we have enough willpower.

24. It is best to use some prewar authorities in Germany to keep order and prevent chaos.

25. Most people don't realize how much our lives are controlled by plots hatched in secret places.

26. Human nature being what it is, there will always be war and conflict.

27. Familiarity breeds contempt.

28. Nowadays when so many different kinds of people move around and mix together so much, a person has to protect himself especially carefully against catching an infection or disease from them.

29. The wild sex life of the old Greeks and Romans was tame compared to some of the goings-on in this country, even in places where people might least expect it.
FOR RESEARCH PURPOSES PLEASE PUT STUDENT I.D. NO. HERE __________

1. HOW WELL DO YOU LIKE TO ATTEND CLASSES (Check one)
   ___ I like it very much
   ___ I like it pretty well
   ___ I like it in some ways
   ___ I don't like it very much
   ___ I don't like it in some ways
   ___ I don't like it at all

2. HOW MUCH CHANCE DO YOU HAVE IN CLASSES TO OVERCOME YOUR WEAK POINTS AND ADD TO YOUR STRENGTHS. (Check one)
   ___ A very good chance to do the things I am best at
   ___ A fairly good chance to do the things I am best at
   ___ Some chance to do the things I am best at
   ___ Little chance to do the things I am best at
   ___ Very little chance to do the things I am best at
   ___ No chance to do the things I am best at

3. HOW GOOD HAVE YOUR COLLEGE TEACHERS BEEN IN HELPING YOU OVERCOME YOUR WEAK POINTS AND ADD TO YOUR KNOWLEDGE
   ___ An excellent job
   ___ A very good job
   ___ A good job
   ___ A fairly good job
   ___ A fairly poor job
   ___ A poor job

4. THE ENVIRONMENT OF THE CLASSROOM TENDS TO BE ONE CONducTIVE TO LEARNING. (Check one)
   ___ All of the time
   ___ Most of the time
   ___ Half of the time
   ___ Infrequently
   ___ Never

5. WHICH OF THESE DO YOU THINK IS THE GREATEST BARRIER TO LEARNING?
   ___ Course content
   ___ Student
   ___ Class structure
   ___ Class environment
   ___ Teacher
   ___ College structure

6. COURSE CONTENT TENDS TO BE: (Check one)
   ___ Highly appropriate for subject knowledge
   ___ Appropriate for subject knowledge
   ___ Inappropriate
   ___ Student and teacher should decide content
   ___ Student should decide on content

7. COURSE EVALUATION TENDS TO BE: (Check one)
   ___ Highly appropriate
   ___ Appropriate
   ___ Somewhat appropriate
   ___ Inappropriate
   ___ Students and teachers should decide
   ___ Students should decide
8. WHICH OF THESE HAS THE GREATEST POSITIVE EFFECT ON YOUR LEARNING?

- Course content
- Class Structure
- Teacher
- YOU-the student
- Class environment
- College structure

9. WHICH OF THESE DO YOU CONSIDER THE MOST APPROPRIATE CLASS ENVIRONMENT FOR LEARNING? (Check one)

- Lecture
- Lecture and discussion
- Lecture, discussion, reports and papers
- Participation with lecture, questions and answers
- High participation with no lecture, but questions, summarizations and clarifications
- High participation with no lecture, and with students involved in discussion, selection of course content and evaluation.

PLEASE CHECK TO SEE IF YOU HAVE PUT YOUR STUDENT NUMBER ON THE FIRST PAGE. IT IS FOR RESEARCH PURPOSES ONLY, BUT IT IS ESSENTIAL TO THE RESEARCH.
APPENDIX II

COMPILATIONS OF ANSWERS TO QUESTIONS 5, 6, 7, 8,
BY SUBJECTS OF THE EXPERIMENT
### TABLE 1

5. WHICH OF THESE DO YOU THINK IS THE GREATEST BARRIER TO LEARNING?

<table>
<thead>
<tr>
<th>Course Content</th>
<th>Class Structure</th>
<th>Teacher</th>
<th>Student</th>
<th>Class Environment</th>
<th>College Structure</th>
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### Table 2

6. **Course Content Tends to Be:**

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<th>Highly Appropriate for Subject Knowledge</th>
<th>Appropriate for Subject Knowledge</th>
<th>Somewhat Appropriate for Subject Knowledge</th>
<th>Inappropriate</th>
<th>Student and Teacher Should Decide Content</th>
<th>Students Should Decide</th>
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### TABLE 3

7. COURSE EVALUATION TENDS TO BE:

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<th>Inappropriate</th>
<th>Students &amp; Teachers Should Decide</th>
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8. WHICH OF THESE HAS THE GREATEST POSITIVE EFFECT ON YOUR LEARNING?

<table>
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<th>Class Structure</th>
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APPENDIX III

ADDITIONAL FORMS USED

1. Performance Score Sheet
2. Results of Survey Concerning Student's Definition of Participation
PLUS 3
Volunteered answer under all circumstances

Decision-making process, i.e., "Does your supervisor use Theory X or Theory Y in your present job, or in your last job? How did this affect your attitude toward your work? Why?"

Explanation in depth showing insights related to subject matter past or present

Explanation with an example from work experience

Explanation with contrast or ramification of previous discussion

Interrelating opinion with theory

Ego involvement related to theory

PLUS 2
Volunteered answer under all circumstances

Some decision-making, i.e., "Why was there a great amount of turnover or little turnover on your present or last job?" A good answer given, but shows little depth.

Minor fact tied to experience or observation

In depth explanation showing understanding, but without interrelating to experience or observation.

Some ego involvement related to theory.

PLUS 1
Brief volunteered answer

Little or no ego involvement

Volunteered answer that is factually correct, but not interrelated to experience or observation.

MINUS 1 - 3
Statement of opinion that is contrary to the available facts

Statement of opinion as fact contrary to available information and studies.
| Definitions                                      | 0   | 20  | 40  | 60  | 80  | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 300 |
|-------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Discussion                                      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Oral Questions by the Teacher—Answers by Students|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Choosing Topics for Papers                      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Deciding Content of Course                      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Cases                                           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Projects of Interviews with Businessmen or Women and/Or Students |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Choosing Kind and Source of Material for Paper  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Deciding Weights to Be Given to Parts of the Course |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Making Out Tests for Class                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Grading Tests Given                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Others                                          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
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