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A Study of  
THE USE OF SUBORDINATE FEEDBACK  
IN CHANGING MANAGER IMAGE

by

Kenneth B. Bootsma

A Dissertation  
Submitted to the  
Faculty of The Graduate College  
in partial fulfillment  
of the  
Degree of Doctor of Education

Western Michigan University  
Kalamazoo, Michigan  
April, 1972

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## TABLE OF CONTENTS

CHAPTER		PAGE
1	THE PROBLEM .....	1
	Introduction .....	1
	Rationale .....	3
	Purpose of the Study .....	6
	Hypotheses .....	7
	Definition of Terms .....	9
	Summary .....	11
II	REVIEW OF SELECTED RESEARCH .....	13
	Criteria for Measuring Manager Effectiveness .....	13
	The Significance of Perceptions .....	16
	The Significance of Feedback .....	19
	The Usefulness of Training .....	23
	Summary .....	26
III	DESIGN AND PROCEDURES .....	28
	Selection of the Cooperating Company .....	28
	Selection of Subjects .....	30
	The Instrument .....	32
	The Manager Image Profile .....	41
	Design and Data Collection .....	42
	Data Analysis .....	45
	Summary .....	46
IV	RESULTS .....	48
	Differences Between Treatment Groups .....	48

CHAPTER	PAGE
IV	
Manager's Intent to Change .....	50
Characteristics of Managers as they Relate to Subordinate Perceptions .....	55
Summary .....	61
V     SUMMARY, DISCUSSION, AND IMPLICATIONS .....	64
Summary .....	64
Discussion .....	67
Implications .....	72
References .....	76
Appendix .....	81



# LIST OF TABLES

TABLE		PAGE
I	Intercorrelation Matrix for the Manager Image Questionnaire .....	36
II	Factor Loadings for the Manager Image Questionnaire ....	37
III	Factor Loadings Squared for the Manager Image Questionnaire .....	39
IV	Summary Data and Analysis of Variance of the Differences Between Treatment Groups .....	49
V	Summary Data and Analysis of Variance of Data Based on Other-than-intent Items of Groups' I and II Compared to All Items of Group III .....	51
VI	Summary Data and Analysis of Variance of Data Based on Intent Items of Groups I and II Compared to all Items of Group III .....	52
VII	Summary Data and Analysis of Variance of the Relationship Between Managers' Age and Subordinate Perceptions ..	56
VIII	Summary Data and Analysis of Variance of the Relationship Between Managers' Educational Level and Subordinate Perceptions .....	57
IX	Summary Data and Analysis of Variance of the Relationship Between Managers' Years of Experience and Subordinate Perceptions .....	59
X	Summary Data and Analysis of Variance of the Relationship Between Subordinates' Age and Their Perceptions of Managers .....	90
XI	Summary Data and Analysis of Variance of the Relationship Between Subordinates' Educational Level and Their Perceptions of Managers .....	91
XII	Summary Data and Analysis of Variance of the Relationship Between Subordinates' Years of Experience and Their Perceptions of Management .....	92

## CHAPTER I

### THE PROBLEM

#### Introduction

The continuing rash of articles on the subject of developing better managers suggest, on the one hand, a continuing concern that existing methods are not providing the talent which is needed at the higher levels of industry and, on the other hand, that we continue to lack clear-cut formulations about the process by which such development occurs. We need more and better managers and we need more and better theories of how to get them (Schein, 1961, p. 59).

The scientific and technological activity of the past few decades has placed new demands on industry with the need for effective management becoming more critical. This need becomes obvious when salary schedules of persons in these positions are observed or when dollars are totalled for yearly recruitment, selection, and training of today's managerial personnel. These factors have given impetus to new types of training, new methods of evaluation procedures, and an abundance of literature on the subject of management development. However, because there is more than one individual involved where leadership occurs, it may be a long while before all the variables necessary to produce effective management are pinpointed.

Aside from the many variables necessary to thoroughly explain management theory, it appears that the principle task of the manager is to skillfully blend together the formal organization and the informal organization. The formal organization includes job relationships,

lines of communications, delegation of authority and responsibility, and line-staff relations, while the informal organization includes the network of interpersonal relations arising out of common beliefs, attitudes, fears, interests, and needs. Human relations theory has been the primary source in aiding the manager in the integration of people with the organization. The desired behavioral response on the part of the subordinates seems to result only when the employee understands and accepts the information that is being transmitted to him. Therefore, it seems apparent that managers must learn to see and recognize the ideas and opinions, talents and abilities, as well as the maturity and dignity of his subordinates.

In that the management process takes place in situations involving person-to-person interaction, it is also important to recognize that these interactions are founded on the notion of perceptions. Perceptions become the basis from which a person operates; they tell a manager much about the effects his ways of doing things have on the people who work for him. Perceiving plays the major part in the interpersonal interactions which happen hundreds of times every day, which seems to be at the very core of the management process.

Persons are likely to want to change their images when they are provided with the feedback of how they are perceived because of the lack of congruence between how they see themselves and how others see them. Feedback creates an imbalance if it is different from what is commonly expected by the person, and if correction occurs, others' perceptions of that person will most likely change also. It was the intent of this study to see if managers could modify their images as

perceived by their subordinates when given feedback based upon their subordinates' perceptions. This primary objective was accomplished through the use of the Manager Image Questionnaire, an instrument designed by the investigator to measure subordinate perceptions of managers. The results of the field test of this questionnaire are presented in Chapter III, and a copy of it is presented in Appendix A. A second objective of the study was to determine if written feedback accompanied by a conference directing the manager in how to use the feedback was more effective than written feedback alone in helping a manager to modify his image.

#### Rationale

Several behavioral researchers have attempted to develop rather complete explanations for the observable phenomenon of managerial behavior; a management theory. Griffiths (1959), Halpin (1966), Getzels, Lipham, and Campbell (1968) have looked only upon the leadership behavior of administrators. Shartle (1956) restricted his Ohio Leadership Studies to investigating executive leadership in organizations. Berelson and Steiner (1964) cataloged research findings relating to leaders and leadership in voluntary groups. Various other researchers in the area of human relations have stressed certain other variables related to the management process.

Argyris (1965) was particularly concerned with the relationship between interpersonal competence among managers. Druker (1967) focuses primarily on improving the skills and tasks of managers. Herzberg (1959) stresses job enrichment for improved managerial effectiveness by removing

some controls, increasing accountability, granting additional authority, and by introducing more difficult and specialized tasks. Likert's (1967) research demonstrates the value to productivity of (1) supportive relationships as opposed to threatening supervisions, and (2) participative management as opposed to hierarchically-controlled management. These findings cast doubt on the long-range success of organizations which use people for short-range goals.

Fiedler (1967) equates leader effectiveness with group performance, and uses three factors to classify the situation. These are: (1) the power of the position, which he believes is least important; (2) the task itself, whether structured or unstructured; and (3) the leader-member interpersonal relationships, the most important variable. He suggests that the job be engineered or fitted to the manager, and that organizations be built in which specific types of leaders can perform well.

It appears from the above that the attempt to explain managerial effectiveness has passed through three approaches, which include: (1) the traitist theory, which measures effectiveness on the basis of personal characteristics; (2) leadership types, including democratic, laissez-faire, autocratic, and dictatorial; and (3) the situationist approach, which holds that managerial effectiveness is specific and related to the situation in which it occurs. However, it is generally agreed upon by behavioral researchers that no matter how managerial effectiveness is viewed, individuals behave on the basis of how they perceive themselves, others and the situation in which the interactions take place.

Everything within the management process happens within some perceptual framework, and perception is a cooperative affair, dependent both upon the viewer and the viewee. One's perceptual screen is the "map" from which he operates. This map, or internal construction of reality and unreality, have been labeled differently by various investigators, including: phenomenal field (Snygg, 1966), cognitive structure (Berlyne, 1965; Festinger, 1965) schemata (Piaget and Inhelder, 1969), and perceptual screen (National Training Laboratories, 1969). Each individual, according to the researchers, acts according to the way in which he perceives the situation at the moment of action. To change behavior, then, requires a change in the "map" which is the basis for behavior (Wallace, 1961).

There appear to be two main sources of motivation and reinforcement for change. These are: (1) dissonance (Festinger, 1957), conflict (Berlyne, 1965), or discrepancy (Piaget, 1964) between some aspect of a person's map (thinking) and feedback from others; and (2) intrinsic reinforcement that comes with correcting the imbalance. It was the purpose of this study to provide managers with the experience of dissonance (the felt need to change) in areas where they intended to change, and then to measure the changes which occurred.

It was also the intent of the study to determine the congruence between how a manager views himself and how he is viewed by others. The more accurately a manager sees himself, the better judge of other persons he will become. In their review of research, Costello and Zalkind (1963) have identified certain conclusions relative to several interpersonal factors related to perception. These include: (1) when

managers become aware of what their own personal characteristics are, they will make fewer errors in perceiving others; (2) managers tend to see others with a wider range of vision when they accept themselves; (3) the relatively few categories managers use in describing others tend to be those they use in describing themselves; and (4) managers are oftentimes influenced more by the situation than by the person being perceived. Therefore, it appeared to be reasonable to provide managers feedback on how they were perceived by others as well as how they actually viewed themselves. This type of dissonance was believed to be effective in providing the desire to improve each manager's image.

#### Purpose of Study

Interpersonal relationships appear to be at the very heart of the management process, and in order to help managers improve this most important aspect of managing, it seemed appropriate to develop an instrument that would provide managers with feedback concerning these relations. The initial step, then, was the development of the twenty-five item Manager Image Questionnaire. The results of the field test and reliability studies of this instrument are reported in Chapter III.

The primary intent of the study was to determine whether subordinate perceptions of manager effectiveness can be used as a feedback device, and whether changes made by the managers as a result of this feedback can be observed by the subordinates. Two different types of informational feedback were used; the first was written feedback only in the form of the Manager Image Profile, and the second was the profile supplemented by a conference directing the manager in how to use the feedback.

Another purpose of the study was designed to determine if a manager's intent to change particular items on the profile would result in an observable change as perceived by the persons with whom he works. An additional aspect of the study was to determine the relationship which might exist between subordinate perceptions of a manager and the subordinates' age, educational level, years of experience, and whether he was a salary or an hourly employee. Closely related to this was the investigation of the relationship between the age, experience, and educational level of managers and the amount of change which they were able to make as perceived by their subordinates.

The final aspect of the study was to determine the congruence between how a manager viewed himself and how he was viewed by those with whom he worked. A lack of congruence here would certainly support the purpose for the entire study in that the image of the manager seems to be one of the most significant variables in the managerial process. How a manager manages is a result of his perceptions of himself, of others, and of the situation in which the act of managing takes place. According to Likert (1967), it is important to remember that a "manager learns to behave in ways he considers appropriate to himself, and this appropriateness of behavior is defined by each manager through the internalization of expectations as he perceived them and which others hold for him."

#### Hypotheses

The major hypothesis of the study was to determine the relationship between two types of feedback devices and observable changes in



manager images as perceived by the persons with whom the managers work.

The specific hypotheses to be investigated appear here in the null form.

Ho<sub>1</sub>: There is no significant difference between the three treatment groups of managers as perceived by the subordinate at the time of the pretest.

Ho<sub>2</sub>: There is no significant difference between the other-than-intent items of Groups I and II compared to all items of Group III with relation to change scores.

Ho<sub>3</sub>: There is no significant difference between the items of intent for Groups I and II and all items of Group III.

Ho<sub>4</sub>: There is no difference between written feedback and no feedback with respect to intent items.

Ho<sub>5</sub>: There is no difference between written feedback plus a conference and no feedback with respect to intent items.

Ho<sub>6</sub>: There is no difference between written feedback alone and written feedback plus a conference with respect to intent items.

Ho<sub>7</sub>: There is no significant relationship between the three groups and subordinate perceptions of their managers.

Ho<sub>8</sub>: There is no significant relationship between the three age groups and subordinate perceptions of managers.

Ho<sub>9</sub>: There is no significant relationship between the interaction of the three groups with the age of managers and subordinate perceptions of managers.

- Ho<sub>10</sub>: There is no significant relationship between three groups and subordinate perceptions given managers' educational level.
- Ho<sub>11</sub>: There is no significant relationship between the three educational levels and subordinate perceptions of managers.
- Ho<sub>12</sub>: There is no significant relationship between the interaction of the three groups and educational level and subordinate perceptions of managers.
- Ho<sub>13</sub>: There is no significant relationship between the three groups and subordinate perceptions given managers' years of experience.
- Ho<sub>14</sub>: There is no significant relationship between the years of managerial experience and subordinate perceptions of managers.
- Ho<sub>15</sub>: There is no significant relationship between the interaction of the three manager groups and years of experience and subordinate perceptions of managers.
- Ho<sub>16</sub>: There is no significant relationship between how a manager perceives himself and how he is perceived by his subordinates.

#### Definition of Terms

The following list of definitions is presented so that the study may be understood and interpreted more accurately.

Experimental Group I The group of managers who received written feedback in the form of image profiles representing how they were perceived by their subordinates.

Experimental Group II The group of managers who received the same type of feedback as Group I, in addition to a conference with a person skilled in helping managers to interpret their profiles.

Control Group This group of managers served as a control for the study in that these managers received no feedback based on their subordinates' perceptions of them until after the posttest.

Subordinate Perceptions The perceptions of subordinates of their managers' behavioral characteristics as defined by the Manager Image Questionnaire.

Subordinate Feedback Written objective information based on how subordinates feel about, and perceive important characteristics of their managers. The information was plotted on the Manager Image Profile form, which ranges from 1 to 5 on a five-point scale.

Manager Image Questionnaire An instrument developed by the author, consisting of twenty-five items designed to measure the image which managers portray with respect to their technical, conceptual, and human skills.

Conference Two one-half hour sessions held during the time between the pretest and the posttest, with each manager of Experimental Group II for the purpose of directing the manager in how to use the written feedback.

Change Scores The difference between the mean scores of each of the twenty-five items on the questionnaire used in the pretest and the mean scores of each of these same items used in the posttest.

Intent Items The items on the profile which the managers intended to do something about in an attempt to change their subordinates' perceptions of them.

Other-than-intent Items The items which the managers did not make any declaration of intent to change.

Managerial Effectiveness The changes in the group's or organization's successes and achievements which are accounted for by the behavior of the manager.

#### Summary

The underlying purpose of the study was to gain additional insight into the task of managers to blend together the various aspects of the formal and informal organization in which they find themselves. The interpersonal interactions between two persons seems to be at the very heart of the management process. In these interactions, perceiving plays a major part, for literally hundreds of times during a single day, a manager is perceived and his behavior interpreted by those with whom he works. He, in turn, perceives others' behavior, and reacts appropriately. These perceptions help to make up the human atmosphere in which a manager lives and functions, and appear to be the critical segment of the process of managing people.

The primary purpose of the study was to see if managers are able to modify their images as perceived by their subordinates, and if this is possible, then the type of feedback was also investigated in order to determine which type yielded the most significant results. It was necessary to develop an instrument to measure these behavioral characteristics as perceived by the persons with whom a manager works, in order to measure any change which became visible to these subordinates over a given time period. The Manager Image Questionnaire appeared to be a reliable instrument for gathering such data, and the results of the field tests are presented in Chapter III.

Finally, it should be mentioned that the study also was used to determine whether a declared intent to change on the part of the manager had any effect on the perceived image of the manager as measured by The Manager Image Questionnaire (Hereafter, occasionally called MIQ). Related to this, was the determination of the congruence between how a manager was perceived by his subordinates and how he viewed himself.

## CHAPTER II

### REVIEW OF SELECTED RESEARCH

The basic question asked in the study was if managers can modify their images as perceived by subordinates when given feedback based upon subordinates' perceptions. Much has been written with respect to effective management, the use of feedback in the learning process, and various evaluation and rating techniques. However, there has been a limited amount of research related to the specific problem presented in this study. The following review stresses the findings of research studies and reports which are directly concerned with the use of feedback in changing behavior, attitudes, and images. Literature relative to the following specific areas will be presented: (1) criteria for measuring manager effectiveness, (2) the significance of perceptions, (3) the significance of feedback, and (4) the usefulness of training.

#### Criteria for Measuring Manager Effectiveness

There appear to be three basic criteria by which managerial effectiveness is judged. Researchers have divided them into these general areas: (1) product criteria, (2) presage criteria, and (3) process criteria. The type of feedback described in this study deals most directly with process criteria for reasons discussed below.

Product criteria refer to the more stable, long-term outcomes of managerial effectiveness. An example of this would be the

organizational climate which would exist in ten or fifteen years, after a new approach or technique was introduced, and the changes which one could possibly measure during that time. Accurate measures of this type of criteria are extremely difficult to develop and lack of a certain degree of reliability due to the number of possible influences exerted by uncontrolled and extraneous variables. Product criteria have not been very useful for purposes of providing feedback to managers for the immediate improvement of their effectiveness.

Presage criteria refer to the experiences of a manager which are somehow related to effectiveness. These criteria, being predictive in nature, might include such factors as age, intelligence, educational level attained, or even types and years of experience. There seems to be very little research to support a positive relationship between these criteria and indications of manager effectiveness. Therefore, measures of presage criteria appear to be of little value to the manager in his effort to predict his effectiveness.

Process criteria refer to those variables which are measurable and over which a manager has some control when operating in a given situation. Variables of this type might include: (1) attitudes, (2) behavior, and (3) group perceptions of a manager along several measurable dimensions. According to some of the most current thinking, (Likert, 1967; Fiedler, 1967; Druker, 1969) how others viewed management appears to be a very useful tool for purposes of providing feedback to improve managerial effectiveness. Although attitudes and behavior are directly related to group perceptions of one's effectiveness, it seems to be the way in which a manager is perceived by those with whom he

is in daily contact which surfaces as the most significant factor in changing manager image. What then, is the relationship between a manager's attitudes, behavior, and image?

Berelson and Steiner (1964) state that "men differ in many ways; in social class or position, in intelligence, in personality, in group and institutional affiliations. Interwoven with all of these are variations in their opinions, attitudes, and beliefs." When a person recognizes disparity between his attitudes and the way in which he behaves, and it is brought to his attention frequently and forcefully, he tends to reduce this uncomfortable feeling.

Although a manager may have wholesome attitudes regarding the factors believed to be important to managerial success, he may exhibit behaviors which belie his true attitudes, intentions, and beliefs. The strain to reduce such dissonance (Festinger, 1957), internal discomfort, should be based on improved understanding of the attitudes of the persons with whom managers work. If this were done, it is likely that the relationship between these attitudes and the way each group is going to react to one's various behaviors, would probably improve.

"Any situation, then, which is ambiguous for the individual is likely to produce attitude change. His need for cognitive structure is such that he will modify his beliefs to impose structure or accept some new formula presented by others. He seeks a meaningful picture of his universe, and when there is ambiguity he will reach for a ready solution" (Katz, 1960).

To paraphrase Coats (1969), a manager may have good attitudes, be competent, and engage in desirable behaviors, but be relatively



unconcerned about certain kinds of perceptions which others have of him. If this can be so, then lower scores on these items should not necessarily be interpreted as a problem, although he will most likely want to consider modifying his desired level of perceived effectiveness. Research seems to support the contention that managerial effectiveness is directly related to the way in which the manager is perceived.

### The Significance of Perceptions

The emphasis in the previous section on the phenomenon called perception warrants further discussion of this particular concept as well as making an attempt to relate it to managerial effectiveness as described in the literature.

Perceptions of a manager tell us much about the effects his ways of doing things have on those who work with or for him. It should also be remembered that perceptions may be incorrect when compared to one's actual attitudes, understandings, and behavior, but how one person views another person becomes the basis from which he operates. Costello and Zalkind (1963) define perception as "the power exercised in reacting to sense presentations, and further modifying them by attention, interests, and previous experience. Perceptions are a result of how one sees something or someone else through his own eyes and interprets what he sees in terms of his own background, understandings, skills, opinions, attitudes, behavior, prejudices, interests, fears, and satisfactions." This supports the contention that perceptions are basic to our understanding of ourselves and others, but also gives some credence to the idea that perceptions can be modified. Theorists

(Fiedler, 1965; Likert, 1967; and Stogdill, 1967) agree that what a manager is perceived as doing, what the followers are perceived as doing, and the perceptions of both parties of the situation, are more important than what the manager does, what his subordinates are doing, and what the situation is. Thus, it appears to the investigator, that it is the way in which a manager is perceived by those with whom he works which appears to be the most important variable in the management process. The following studies seem to support this statement.

In a study done by Ruttner and O'Malley (1962) dealing with salesmen for a dental supply company who were working out of twenty-one different branches, it was found that the group with the lowest sales record rated themselves almost exactly the same as the effective salesmen who had the highest sales record. The two groups were not significantly different in aptitude scores, age, training, or experience. However, the investigators attributed the difference in self-rating to the lack of understanding of their own weak as well as strong points, and it was recommended that feedback based on their performance quite possibly would have improved their accuracy in scoring themselves.

Perceptions of self also vary among different populations at the various levels within the hierarchy of an organization. Porter's study involving self-descriptions of managers and line workers indicates that both groups see themselves differently. This was based on the fact that each group held different positions of responsibility within the organizational hierarchy. (Costello and Zalkind, 1963). Likert further supports this in the following statement, "an individual will

always interpret an interaction between himself and the organization in terms of his background and culture, his experience and expectations" (Likert, 1959). He also goes on to say that one's reaction to any situation is always a function of his perception of it. Likert concludes that "it is how he sees things that counts, not objective reality."

To paraphrase a summary statement made by Costello and Zalkind (1963) to fit the managerial situation: (1) the manager should become aware of the complexity of the perceptual process; (2) this understanding will help the manager avoid arbitrary judgments and to seek reliable evidence before making important decisions; (3) this increased accuracy in one's self-perception can increase flexibility, it can provide additional input in the decision-making process, and it will allow the manager to shift positions as time provides additional information about the decision or evaluation to be made. This appears to support the idea that a manager should be concerned about his image, even though it may be completely accurate; it does little good for a person in a management position to encourage staff participation if his staff doesn't feel free to raise questions, express their own opinions, or initiate new ideas.

Researchers have found some consistency, however, between different groups and their perceptions of the same individual. In his investigations of students' perceptions of teachers, Coats (1969) found that just because there is a difference of opinion within two chance-half groups, this does not mean that there isn't close agreement between the halves. "One chance-half group of fair size will usually contain about the same number of dissenters from majority opinion as the other."

Even though perceptions are understandings, misunderstandings, likes, dislikes, insights, prejudices, etc., they do tell us something about the effects of one person's actions on the other person with whom he interacts. This information, provided to managers in the form of written feedback, appears to be a useful tool in helping the managers to change their images. Coats (1969) also reports that "most school administrators are able to make significant and favorable modifications in their images with a concentrated effort based on the feedback revealed by written feedback." It seems reasonable, realizing the importance of perceptions, to discuss next their relationship to feedback and how it can be utilized by managers.

#### The Significance of Feedback

"As one learns to behave in a given manner, knowledge of the effects of this behavior is the important corrective and reinforcing factor in the process of learning" (Bass and Vaughn, 1966). Knowledge of results is commonly referred to as feedback, which is the most common and probably the single most important source of reinforcement for changes in manager image. Gage, Runkel, and Chatterjee (1960) developed a theory based on the premise that feedback will create an imbalance which the person will attempt to correct, and the most likely response would be to modify his behavior. At least such feedback would cause a manager to modify others' perceptions of this behavior. According to Piaget (1964), managers can develop "appropriate thinking behavior and find support to carry it out" through proper feedback by which

he "can experience discrepancies in settings where resolutions can be reasonably assured."

Smith and Knight (1959) reported that management trainees who met daily and reviewed each other's behavior and contributions to the group showed a significantly greater increase in self-insight and problem-solving ability than did fellow trainees in the same program who received no such daily feedback.

Miller (1953) at the General Electric Corporation used feedback in an attempt to improve the performance of hourly workers, and concluded that if a person with the required abilities to improve his performance on any task, he must do the following. First, he must know what aspect of his performance is under par; second, he must know what type of action on his part is necessary to improve his performance; and third, he must realize that the compelling force to improve his performance comes from his own incentive and interests. Bass and Vaughn (1966) support these three requirements with statements about the type of feedback which gets the best and quickest results. They state that "the relevance, specificity, timing, and accuracy of the feedback of results are the critical factors in determining the speed and accuracy with which the trainee will master what he is learning. A higher level of performance and faster learning results when feedback is accurate and specific as to what behavior is to be changed; when irrelevant information is omitted; when feedback occurs with a minimum of delay; and, when the trainee is motivated."

There have been several studies done recently using student feedback based on their perceptions of teacher effectiveness which seemed relevant to this study in that the same superior-subordinate relationship exists as it does in the management process. Such a study was done at Stanford University by Aubertine (1965), which dealt with teacher interns. During the years of training, these interns were given feedback from three different sources: their university supervisors, their resident supervisors in the schools, and their pupils. A conference-type report was used to provide the interns with the feedback from the two supervisory sources. Feedback from the students was given in two ways: (1) a summary of numerical ratings on a thirteen-item teacher image questionnaire, and (2) a typed manuscript of the exact pupil responses to three general questions about their teacher's specific strengths and weaknesses. It was concluded by Aubertine that most interns perceived the student feedback to be the most helpful, and furthermore, ninety-eight percent claimed that the typed sheets along with the profile were superior to either of the two supervisory ratings.

In a study done by Tuckman and Oliver (1968), using the Teacher Image Questionnaire of the Educator Feedback Center at Western Michigan University, it was found that student feedback led to a positive change in teacher image compared with no feedback, and that supervisory ratings led to negative changes. Thus, student feedback appeared to result in a more positive change than did supervisory feedback. Ryan (1966), in his study of feedback with eighty secondary teacher interns at Stanford University, found no statistically significant differences between his

treatment groups. However, he stated in summary that "it would seem implicit in or combined with the feedback there should be indications of how the teacher can bring about desired behavioral change."

A longitudinal study, covering a two-year period of time, was conducted by Bryan (1963) at Western Michigan University which involved a sample of 119 secondary school teachers, one-half of whom received feedback based on students' perceptions of each teacher's image, and the other half who received no feedback. The reported results are as follows: "Fifty-seven percent of the teachers in the experimental group made significant gains on one item or more as compared with twenty-four percent of the teachers in the control group. Teachers in the experimental group made gains on more items than did teachers in the control group, and ten in the experimental group made gains in six or more behavior items." In a follow-up study, Bryan (1964) reported that ninety-two percent of the teachers in the experimental group felt that the student reactions were helpful, two percent claimed that the reports were harmful, while six percent replied that the feedback was neither helpful nor harmful.

An experiment conducted by Daw (1964) divided a group of elementary school principals into an experimental (feedback) group and a control (no feedback) group in an attempt to change their behaviors. Feedback was obtained from a twelve-item questionnaire on a pretest-posttest basis with the change scores yielding the following results: "Feedback was effective in changing the behaviors of the experimental group of principals for six of the twelve items at the .001 level, one item at the .005 level, and three items at the .05 level of significance."

The gathering of information based on the perceptions of the persons with whom a manager works in order to positively influence the interpersonal relationships through this type of feedback agrees with the whole purpose and process of training. Various methods, using perceptions to obtain insight into one's performance, have been attempted in the past few years to improve the manager-subordinate relationships; human relations training is a very popular current subject. However, the effectiveness of sensitivity training, t groups, etc. are often questioned, and the available evidence does not allow one to make generally favorable assumptions based on improved effectiveness. Greater productivity, more highly motivated workers, and increased job satisfaction depend upon the subjects being exposed to a particular type of training, the ability and materials of the trainer, and the environmental conditions. There are also many other extraneous variables which can influence the training processes. It seems appropriate, here, to review several evaluation programs of training procedures as well as the results which have evolved.

#### The Usefulness of Training

Mann (1957) assumed that human relations training would result in changes in the managers' attitudes and behavior, that these changes would be perceived by the employees and that they would in turn become more highly motivated, attain a higher degree of satisfaction, and ultimately become more productive workers. Such assumptions were not found in the reported outcomes of his research. There seemed to be sudden, temporary acceptable results, but soon the workers were performing



at the same level of output and were working under similar levels of motivation as was found earlier. The long-term gains were not significant, although there were some immediate changes which could have been a result of the well-known Hawthorne effect.

Buchanan (1959) attempted to determine the impact of supervisory training at a large research development laboratory. The supervisor and subordinate of each participant were asked two months after the workshop to return a questionnaire reporting their perceptions of specific behavior, if any, which represented a favorable change in the participant's performance, which in their judgment, was attributed to the training program. The critical part of the evaluation system tested the perceptions of the respondents. It was concluded that the training was effective in that two-thirds of the participants were observed to have positively modified their performance.

Abatello (1967) attempted to determine whether changes in attitudes occurred as a result of exposure to and participation in a training program for supervisory development. He concluded that "if changes can be expected to appear whenever anyone participates in a learning situation, then these changes will be peculiar to the population sampled, and to the training methods used in the program. The amount and direction of change will be limited by these variables." The author believes that this statement is true to the extent that specific concepts or methods are being taught to a particular group of persons, however, when an investigation of training methods takes place, it seems reasonable to assume that one "good" method would be successful in another setting as well.

Ayers (1964) conducted a study with 305 first-line foremen and 97 supervisors who took part in a one-week training course in "Management Techniques." The Leadership Opinion Questionnaire was used to measure attitudinal change. The subjects were divided into eight groups, five of whom responded to the questionnaire on a pretest-posttest basis with no knowledge of the results. The three others, who also completed the pretest-posttest questionnaires, were given an instruction sheet which defined various leadership dimensions and a table of norms provided from the first group. Ayers found no significant differences between the two groups, and no greater occurrence of significant change scores between the two groups who had been involved in the one-week course.

Paploizos (1962) performed an evaluation study of a training class for foremen in human relations training in Switzerland. Two attitudinal questionnaires and a personality inventory were utilized in the study. The evaluation showed a favorable change in attitude toward the subordinates in thirty-three percent of the subjects. However, this group was characterized as "normal-extroverted" by the researcher, and there was no followup done to determine the lasting effect of the change. It was also interesting to note that in this study, the participants were the only ones describing themselves, nor was there any indication of a behavioral change, which was the ultimate goal of the training.

In many instances, significant change scores are obtained on a pretest-posttest basis, but there was no followup to determine whether the changes were of a lasting nature. In other cases, there was no indication of whether or not there was a control group involved.

### Summary

An attempt was made here to review the relevant literature which is related to the development of criteria by which managerial effectiveness is measured, the significance of the phenomenon called perceptions, the significance of feedback, and the usefulness of training. These four areas were reviewed separately for purposes of organization.

In the first section, three basic types of criteria were presented: product, presage, and process. Process appears to be most closely related to effectiveness in that it is based on current attitudes, behavior, and the perceptions of these, rather than on historical data or future results. The second section dealt with the concept of perceptions. Here the literature seems to indicate that what a manager perceives is far more important than the objective reality of the situation, the person being perceived, and of himself. These appear to be true because people respond to each other on the basis of their perceptions, which include needs, drives, values, background, likes, prejudices, etc., in that they all influence how we perceive and are perceived.

The third section presented an attempt to understand the value of providing managers with the "knowledge of results" of their perceived effectiveness which is commonly referred to as feedback. This feedback is the basis for changing one's image in that if a discrepancy exists within one's thinking processes, he will make an attempt to correct the imbalance between how he perceives himself and how he is perceived by

others. Research also indicates that change is possible. The fourth section dealt with training, various training evaluation attempts, and the usefulness of training as a means of changing behavior. A review of the literature indicated that, generally, research design has been rather weak in that there have been very few long-range outcome studies, very few studies have used a control group, and many times the results are summary statements made by the persons receiving the training. It is important that future research be more concerned with the change-scores of the participants of training programs so that the actual on-the-job performance can be evaluated, and hopefully, positive results obtained. This, after all, is the purpose of training.

### CHAPTER III

#### DESIGN AND PROCEDURES

The review of the literature relevant to the study indicates that it is possible for a person to change his image given certain conditions, such as: a perceived need to change, the ability and willingness to change, and an actual mechanism by which change occurs. To accomplish this, a system of feedback was suggested which involved: the orderly collection of data about individual manager characteristics, the feeding of this data to the manager, and the use of it by each manager to make certain adjustments in his behavior. Having this information, Chapter III describes in more detail the cooperating company, the selection of the subjects, the instrument used, the procedures used in gathering the change data, and the actual data analysis.

#### Selection of the Cooperating Company

The Dow Chemical Company at Midland, Michigan, was selected as the industrial enterprise at which to conduct the investigation through the use of the following criteria:

1. A company recognized nationally as a leader in its field
2. A company which recruited nationally and employed individuals from a variety of educational backgrounds to staff positions in the area under study
3. A company which had an established system of personnel and job evaluation
4. A company which had a wide range of job classifications in all areas of management

5. A company employing a large enough work force to be capable of supplying an adequate sample for the study
6. A company of suitable geographical location which would permit relatively easy access to the investigator for testing and holding conferences
7. A company which was willing to cooperate in the study

Original contacts for purposes of doing the study at Dow were made with the head of the company's Professional Placement Department, who introduced the investigator to the head of the Psychology Department from where the study was conducted. After an investigation of the company structure and policies, it was determined that this company adequately met the selection criteria. Although there are several Dow plants located around the world, the home office is at Midland, as well as the largest division of the company with approximately 17,000 employees.

The Dow Chemical Company (hereinafter called the Company) was founded by a twenty-four year old chemist, Herbert Henry Dow, in 1897 at Midland, Michigan. Since its beginning, the Company has expanded to over 2 billion 600 million dollars in assets, has plants around the world, is ranked as the fourth largest chemical company in the United States with over 47,000 employees, and had sales of nearly 1 billion 800 million in 1969. The Company produces over 1,100 major products including: industrial organic and inorganic chemicals; fine chemicals; agricultural, biological and pharmaceutical chemicals; plastics; packaging materials; magnesium, aluminum and other metals; consumer products; and in addition, various industrial and organizational services for industry and government (Dow Annual Report, 1969).

The Midland Division occupies more than five hundred buildings and two thousand acres in plant sites, and is considered to be the most diversified and one of the largest production facilities located in one complex. The Midland location also includes the firm's corporate headquarters, some departments of which were also used in the study.

#### Selection of Subjects

The subjects used in the study were forty-five first line managers and 427 subordinates who worked for these managers. No manager had fewer than eight subordinates that responded to the Manager Image Questionnaire, which indicated their perceptions of the manager for whom each worked.

#### Managers

The personnel of the Psychology Department of the Company selected a representative sample of managers from within the Industrial Relations Department, except for the three production managers, upon the consent of each of these managers to participate in the study. The forty-five managers represented the following areas:

Personnel	
Hourly Personnel	2
Non-exempt Placement	1
Psychology and Testing	1
Professional Placement	1
Education	
Continuing Education	1
Compensation	
Payroll	1
Business Information Service	1

Employee Relations	
Job Evaluation	1
Labor Relations	1
Safety and Loss Prevention	
Loss Prevention	7
General Services	
Safety	1
Fire Protection	8
Plant Protection	8
Sanitation Services	8
Production	
2, 4-D Plant	3

These managers were then randomly assigned by means of a table of random numbers (Edwards, 1966, pp. 472-6) to one of three treatment groups. Treatment group I received written feedback only in the form of the Manager Image Profile, the second treatment group (II) received the written feedback along with a conference on how to use and interpret the profile, and the third group served as the control (III). Each manager was given a three-digit identification number for the project to insure complete confidentiality of the results. All of the managers had been in their present positions for at least six months; all were males; their ages ranged from 23 to 62, and averaged 46.8 years; and their average educational level ranged from eighth grade graduates to two managers with doctoral degrees, although their average educational level was 12.5 grades. Forty-four of these managers were married; all were salaried employees; and there is no reason to believe that the managers used in the study were atypical from any sample that might have been drawn from within the Company.



### Subordinates

Male and female respondents used to obtain the criterion measures of the study were all Company employees who had been on their jobs an average of 7.2 years, the average age of the subordinates being 41.5 years, and their average educational level was estimated by their managers to be 12.3 grades. Approximately ten percent of the respondent group were females; twenty-one subordinate groups were salaried employees; and twenty-four groups were hourly personnel. In almost every case the subordinates were directly responsible to the managers on whom they filled out the questionnaires; in only two cases were the members of the responding groups divided with respect to subordinate and peer relationships.

There were 427 subordinates responding to the pretest and 397 responding to the posttest ten weeks later. This attrition rate, from an average of 9.5 respondents per manager to an average of 8.8 per manager, was accounted for by a "no hiring" policy due to a temporary freeze, the beginning of the vacation period, and the normal number of absentees and transfers.

### The Instrument

The instrument used for measuring the subordinate perceptions of managers was the Manager Image Questionnaire (MIQ). The development of this instrument was accomplished by the author over a two-year period of time by reviewing the literature related to managerial effectiveness and by means of running field tests with various smaller local

organizations. Several faculty members from the departments of Educational Leadership and the Management Department of the School of Business were also consulted regarding the various items and style of presenting the questions. In addition to all of this was the development of a modified MIQ, the Administrator Image Questionnaire, used for the past three years by the Educator Feedback Center at Western Michigan University, for the purpose of providing similar feedback to school administrators based on the perceptions of their staff members. In a study involving 2,113 teacher reactions to 112 administrators during the 1968-69 school year, Coats (1969) reported that the Administrator Image Questionnaire yielded chance-half reliability coefficients ranging from .82 to .93.

The MIQ consists of twenty-five variables related to managerial effectiveness and is responded to on a five-point scale ranging from poor to excellent with the following weights assigned to the scale steps accompanying each question: Poor = 1, Fair = 2, Average = 3, Good = 4, and Excellent = 5. Several sample items are listed here:

Technical Competence: (Does he have a thorough knowledge and understanding of his field?)

Success in Communicating Expectations: (Does he clearly define and explain what is expected of staff members?)

Awareness: (To what extent is he conscious of the problems that exist on your level?)

Ability to Motivate Others: (To what extent does he stimulate others to perform to the best of their ability?)

The complete questionnaire can be found in Appendix A.

### Factor Analysis of the Instrument

The objective of the factor analysis was to determine the number and nature of factors which account for subordinate perceptions of manager effectiveness. The technique consisted of factor analyzing the Manager Image Questionnaire used in the study. The sample consisted of 823 respondents representing the various divisions of the Industrial Relations Department of the Company.

Behavioral researchers appear to agree that managerial behavior generally loads on two essential factors. These factors have been named initiation of structure and consideration by Halpin (1958), and Stogdill (1966); production-centered and human-centered by Kepner and Tregoe (1966); and person-centered and organization-centered by Coats (1970). As a result of the research cited here, and according to what others have to say about the basic factors involved in the management processes, there is reason to believe that two basic factors account for most of the variance in subordinate perceptions of managers. In conjunction with the above labels for these two factors, the author would prefer to use these two terms: manager-centered and subordinate-centered.

The data were obtained in the following manner. The subordinates gathered at various locations around the plant, were given a brief description of what the meeting was called for, handed the questionnaires and a pencil, and were asked to give their honest and frank responses as to how they perceived their managers. The completed questionnaires were collected and taken back to Western

Michigan University where they were scored. The responses were then converted into punched card form and a mean score per manager for each item was computed. These means served as input for preparing the Manager Image Profiles and for the development of the intercorrelation and factor analysis matrices described below.

The data were analyzed in three steps. The first step involved the development of a 25 X 25 intercorrelation matrix for the twenty-five items on the questionnaire. The second step consisted of converting the intercorrelation matrix into a factor matrix based on the principle axis method of rotation. The third step involved squaring the factor loadings from step two which shows the proportion of variance in each item as well as in the entire questionnaire.

The results of the intercorrelation analysis are displayed in the 25 X 25 intercorrelation matrix for the twenty-five item questionnaire in Table II. An examination of this matrix suggests that all items of the questionnaire share a significant amount of the common variance since the 625 pair-wise correlations range from .19 for the correlation between manager openness and appearance, to .67 for the correlation between staff morale and the managers' ability to stimulate others. There do not appear to be meaningful and clearcut clusters of pair-wise correlations. However, there does appear to be some tendency for subordinate-centered items to cluster together and for items related to manager-centered items to cluster together.

The results of converting the intercorrelation matrix into a factor matrix based on the principle axis method of rotation appear in Table III. This matrix contains information for only those two factors

TABLE I

## INTERCORRELATION MATRIX FOR THE MANAGER IMAGE QUESTIONNAIRE

	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
1	1.00	.49	.38	.46	.47	.47	.49	.49	.50	.48	.48	.51	.54	.46	.56	.37	.52	.51	.52	.46	.46	.57	.24	.34	.56
2		1.00	.42	.36	.43	.60	.52	.50	.59	.55	.45	.50	.44	.58	.61	.44	.45	.45	.47	.47	.62	.56	.24	.34	.56
3			1.00	.43	.51	.41	.37	.34	.35	.40	.35	.38	.36	.32	.35	.22	.38	.44	.39	.33	.32	.45	.33	.52	.46
4				1.00	.50	.41	.42	.52	.38	.39	.38	.40	.39	.37	.43	.31	.51	.45	.44	.42	.37	.50	.24	.35	.46
5					1.00	.49	.50	.48	.44	.47	.43	.49	.39	.39	.45	.38	.54	.52	.46	.42	.40	.53	.34	.47	.52
6						1.00	.52	.51	.61	.58	.50	.56	.45	.59	.60	.38	.50	.49	.52	.52	.53	.58	.23	.41	.58
7							1.00	.55	.56	.46	.45	.59	.47	.45	.54	.39	.47	.46	.45	.45	.53	.56	.21	.32	.55
8								1.00	.48	.47	.43	.48	.44	.45	.49	.36	.57	.49	.49	.45	.57	.54	.30	.35	.51
9									1.00	.60	.48	.60	.48	.54	.57	.45	.47	.48	.47	.50	.54	.55	.19	.33	.55
10										1.00	.54	.57	.47	.49	.56	.36	.48	.49	.49	.46	.49	.54	.26	.41	.56
11											1.00	.53	.50	.47	.51	.32	.51	.47	.56	.44	.39	.54	.27	.31	.55
12												1.00	.48	.51	.56	.42	.48	.50	.49	.46	.48	.58	.23	.38	.57
13													1.00	.51	.55	.31	.49	.49	.61	.57	.41	.55	.22	.31	.56
14														1.00	.63	.37	.47	.53	.51	.52	.56	.24	.35	.55	
15															1.00	.47	.55	.50	.62	.59	.53	.63	.23	.35	.67
16																1.00	.39	.38	.33	.40	.48	.47	.18	.25	.40
17																	1.00	.60	.57	.50	.48	.62	.35	.39	.57
18																		1.00	.58	.52	.50	.62	.37	.43	.56
19																			1.00	.57	.47	.65	.30	.38	.63
20																				1.00	.46	.56	.22	.31	.54
21																					1.00	.60	.29	.39	.55
22																						1.00	.35	.48	.64
23																							1.00	.41	.30
24																								1.00	.45
25																									1.00

## KEY TO ITEM NUMBERS

- |                             |   |                                 |
|-----------------------------|---|---------------------------------|
| 1. Verbal Fluency           | 9. Openness                               | 17. Decision-Making Ability     |
| 2. Consideration of Others  | 10. Encouragement of Staff Participation  | 18. Evaluating Ability          |
| 3. Attitude Toward His Job  | 11. Ability to Delegate Responsibility    | 19. Managerial Skill            |
| 4. Technical Competence     | 12. Innovativeness                        | 20. Awareness                   |
| 5. Achievement Drive        | 13. Success in Communicating Expectations | 21. Self-Control                |
| 6. Supportiveness           | 14. Fairness                              | 22. Leadership Skill            |
| 7. Flexibility              | 15. Maintenance of Staff Morals           | 23. Appearance                  |
| 8. Performance Under Stress | 16. Sense of Humor                        | 24. Loyalty to the Organization |
|                             |   | 25. Ability to Motivate Others  |

TABLE II

## Factor Loadings for Manager Image Questionnaire

	Verbal Fluency	consideration of Others	Attitude Toward His Job	Technical Competence	Achievement Drive	Supportiveness	Flexibility	Performance Under Stress	Openness	Encouragement of Staff Participation	Ability to Delegate Responsibility	Innovativeness	Success in Communicating Expectations	Fairness	Maintenance of Staff Morale	Sense of Humor	Decision-Making Ability	Evaluating Ability	Managerial Skill	Awareness	Self-Control	Leadership Skill	Appearance	Loyalty to the Organization	Ability to Motivate Others
1	.63	.73	.24	.41	.41	.71	.67	.58	.77	.65	.60	.69	.65	.72	.79	.58	.55	.52	.63	.67	.67	.67	.04	.21	.69
2	.34	.21	.70	.52	.63	.29	.27	.40	.16	.33	.32	.28	.28	.19	.22	.13	.51	.55	.41	.25	.28	.48	.70	.72	.41

Factors

which accounted for a significant amount of variance in the questionnaire items. Although a single factor seemed to account for much of the variance in most of the items, another factor appears to be worth noting because of its high correlations with some of the items. Table IV contains the squared factor loadings from the second table, which is an indication of the proportion of variance in each item as well as in the total questionnaire which is accounted for by each of the two significant factors.

Factor I accounts for 36.8 per cent of the variance in the questionnaire and factor II accounts for 17.6 per cent more of the total test variance. So these two factors account for 54.4 per cent of the total variance in the questionnaire. Also these factors account for a minimum amount of variance, 35 per cent, in manager sense of humor, and the largest amount of variance, 67 per cent, in the variables maintenance of staff morale and leadership skills.

An examination of the direction of the factor loadings shown in Table III and the coefficients of determination in Table IV suggests some reasonable labels for the two factors. The single most important factor is viewed as subordinate-oriented, being fair, considerate, open, supportive, aware, and interested in the maintenance of staff morale. Factor II might be called manager-oriented since it positively correlated with a manager's attitude toward the job, achievement drive, appearance, ability to evaluate others, and one's loyalty to the organization.

The information presented here should help management development program directors, selection personnel, and managers to recognize

Factor Loadings Squared for Manager Image Questionnaire

	Verbal Fluency
	Consideration of Others
	Attitude Toward His Job
	Technical Competence
	Achievement Drive
	Supportiveness
	Flexibility
	Performance Under Stress
	Openness
	Encouragement of Staff Participation
	Ability to Delegate Responsibility
	Innovativeness
	Success in Communicating Expectations
1. 39.7	53.3
2. 11.6	4.4
$h^2$ 51.3	57.7
	54.8
	43.8
	16.8
	16.8
	50.4
	44.9
	33.6
	59.3
	42.3
	36.0
	47.3
	51.8
	7.8
	7.8
	50.1

TABLE III CONTINUED

	Fairness
	Maintenance of Staff Morale
	Sense of Humor
	Decision-Making Ability
	Evaluating Ability
	Managerial Skill
	Awareness
	Self-Control
	Leadership Skill
	Appearance
	Loyalty to the Organization
	Ability to Motivate Others
	Average
1. 51.8	62.4
2. 3.6	4.8
$h^2$ 55.4	67.2
	35.3
	56.2
	57.2
	56.5
	51.2
	52.7
	67.9
	49.2
	56.2
	64.4
	54.4
	30.2
	27.0
	39.7
	44.9
	44.9
	.2
	4.4
	47.6
	36.8
	17.6
	16.8
	23.0
	7.8
	6.3
	16.8
	4.8
	1.7
	26.0



the strengths and limitations of subordinate reactions to their managers. However, the fact that nearly 50 percent of the subordinate ratings appear to be unrelated to these two factors may be an indication that subordinate ratings might be used profitably as a part of evaluation packages consisting of peer ratings, superordinate ratings, growth factors, and managerial awareness of sound management practices. Only through factor analysis can one achieve some indication of what items share common factor variance as well as the relations between factors.

#### Reliability of the Instrument

The determination of the chance-half reliability of the MIQ was accomplished by randomly selecting two sets of scores and correlating them. An unbiased coin was flipped for every other respondent with "heads" assigned to one (1) and "tails" to two (2). These digits were then punched into data processing cards on which the responses of each subordinate had already been punched. The cards were then sorted into two decks and correlated. This yielded a chance-half reliability coefficient of .67 for the Manager Image Questionnaire.

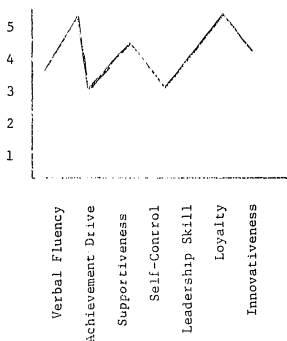
The test-retest method was utilized to determine the stability of the instrument. This is the simplest and most obvious method of obtaining repeated measures for the same individuals, and it provides an estimate of the degree to which an individual's responses vary in the case of identical sets of test items during a given period of time. The correlation yielded a reliability coefficient of .83 for a sample of 154 persons, who were members of the control group. The time interval between tests was ten weeks.

A measure of the internal consistency or homogeneity of the instrument was made by means of the odd-even process of determining reliability. The odd-numbered items and even-numbered items were scored separately and correlated. The division effected by such a grouping has the advantage of equalizing such aspects of the test and the testing situation such as: content, item difficulty, distractions, and other similar factors. The odd-even correlation coefficient was .68. However, when the Spearman-Brown prophecy formula (Hill and Kerber, 1967) was applied so that an estimate could be obtained of the whole test from that of its halves, the resulting coefficient was .80. "It has been shown experimentally that the Spearman-Brown formula yields predicted reliabilities that are in close agreement with obtained whole-test reliabilities, providing the n forms of the test are as equivalent as possible in terms of mean scores, dispersion of scores, and types of items" (Hill and Kerber, 1967).

#### The Manager Image Profile

The basic feedback to managers of the two experimental groups was provided by means of a tabulated image profile representing reactions to subordinates with respect to the twenty-five items of the Manager Image Questionnaire. When the questionnaires were completed they were returned to Western Michigan University for analysis. After the analysis was completed, a Manager Image Profile was developed from the means of each item and given to every manager on whom the information was gathered within the two experimental groups. The profile

was in the form of a line graph which indicated group (subordinate) averages for each manager on the items of the MIQ along a five-point scale with ten subpoints. A sample of the profile is presented here, and the complete Manager Image Profile can be found in Appendix B.



#### Design and Data Collection

The sample consisted of forty-five managers and approximately ten subordinates per manager. The managers were randomly assigned to one of three treatment groups, with the subordinates' perceptions of the various managers ascertained in each group prior to the application of any treatment by means of the Manager Image Questionnaire.

Experimental group 1 ( $N = 15$ ) received image profiles representing how each manager in the group was perceived by his subordinates with respect to the twenty-five variables of the MIQ. This profile was

supplemented by a copy of the questionnaire and a brief written discussion (see Appendix C) of various factors to consider when interpreting and utilizing such a profile. Attached to this discussion was a half sheet of paper on which each of the managers was asked to declare his intent to do something about one or more of the items which he felt needed attention. These short forms were then returned to the investigator.

Each member of Experimental group II ( $N = 15$ ) was given his image profile, the same as group I, along with a copy of the MIQ, plus each manager had two conferences with the investigator three weeks after the pretest and again four weeks later. During the conference the manager and the conferrer considered areas of relative weakness and decided upon the particular areas which the manager felt needed improvement. Specific suggestions were made by the investigator relative to how the perceived image might be effectively improved and what several possible reasons were for the position of the item(s) on the profile. A course of action was agreed upon by the manager and the conferrer before each conference ended. Every attempt was made to insure that the format of these conferences was as uniform as possible. The guideline for these meetings can be found in Appendix D.

The third group of managers ( $N = 15$ ) served as a control group in that subordinate reactions were obtained during both the pretest and the posttest, but the feedback was withheld until two weeks after the posttest. In this way, the changes experienced with the managers of groups I and II were assumed to be due to the experimental effect, and group III could still profit from the profiles in that they too were provided with the discussion sheets after the final testing.

The testing for the study was accomplished according to the following procedures. The pretest took place during the week of March 16, 1970, at the Company located in Midland, Michigan. All testing was arranged by the Psychology Department of the Company at the conveniences of the managers. The investigator, along with a staff member of the Psychology Department, administered all of the tests at the most convenient and familiar locations for assembling the subordinates, and at times when each shift was working, whether day, night, or swing. The subordinates had no advance notice that they were to fill out the questionnaires on their managers.

Each group was informed of why they were being tested, that all responses were to be anonymous, and that no one at the Company would ever see the results of their reactions except for the mean scores which would eventually go to their managers. To insure anonymity, the respondents were asked not to put their names on the questionnaires, and when completed, the questionnaires were sealed in front of them in a large manila envelope which was addressed to Western Michigan University, Kalamazoo, Michigan. The only identification on the envelope was each manager's code number and the date. The total time needed to read the instructions, complete and gather the questionnaires and pencils, ranged from 15 to 20 minutes for each group. The conferences were held April 3, 1970, and April 28, 1970. The posttest took place during the week of May 25, 1970, and followed the same procedures as were taken at the time of the pretest. Every attempt was made to have the same persons respond, the testing

location was the same, the time of the day was nearly the same in all cases, and each was assured of the same anonymity as existed at the time of the pretest.

Each manager received a Manager Image Profile within two weeks after the posttest. This was considered helpful for the control group who had received no feedback until this time, and useful for the two experimental groups in that they could see the changes which took place over the ten week period between the pretest and posttest. A letter was also sent to the managers explaining the changes and expressing the gratitude of the investigator for their willingness to serve as a part of this study. Any questions that arose were phoned into the Psychology Department where the investigator and a member of the department were available for two days after the letters were received by the manager.

#### Data Analysis

The hypotheses, as stated in Chapter I, pages 8 and 9, were analyzed statistically by the analysis of variance techniques, *t* ratios, and the product-moment correlation coefficient. The overall relationship between treatment levels and changes in manager images was investigated by means of the one-way fixed effects analysis of variance model. The specific hypotheses, concerning the three pair-wise comparisons relating the different types of feedback, were tested by using the *t* ratio. The two-way analysis of variance model was selected to test the significant changes between treatment groups and the following variables: manager age, level of education, and years of experience.

The interaction between treatment groups and the above mentioned variables was also determined. The relationship of the personal characteristics of the subordinates was also analyzed by means of the two-way model with respect to change scores of manager images. The subordinate characteristics included age, educational level attained, and time on present job. Finally, the congruence between how a manager viewed himself and how he was viewed by his subordinates was determined through the use of the product-moment correlation coefficient.

#### Summary

The study provides an investigation of the usefulness of feedback in changing manager image. The subjects of the study were forty-five managers and 427 subordinates at Dow Chemical Company located at Midland, Michigan. The managers were employed at various levels of management in the Company, had an average age of 46.8 years, had completed an average of 12.5 years of education, and had been in a management position for an average of 6.5 years. They were randomly assigned to one of three experimental groups and were rated on their perceived managerial effectiveness by the people with whom they worked. One group (I) received a profile only based on group perceptions; another group of managers (II) received the profile in addition to two conferences; and the control group (III) received no feedback. The Manager Image Questionnaire was the instrument used to gather the data as to the perceived effectiveness of the managers. The instrument, developed

by the investigator, consists of twenty-five items, yielded a chance-half reliability coefficient of .67, a test-retest coefficient of .83, and an odd-even coefficient of .68 over a ten-week time period. The data were analyzed by means of the following statistical measure: the one-way fixed-effects model of variance, the t-ratio, the two-way analysis of variance model, and the product-moment correlation coefficient.



## CHAPTER IV

### RESULTS

The data gathered by means of the procedures described in the previous chapter were statistically analyzed by means of analysis of variance techniques, *t* ratios, and the product-moment correlation coefficient. The overall relationship between treatment levels and changes in manager image were analyzed by using a one-way fixed-effects analysis of variance model. A two-way analysis of variance model was selected to determine the relationship between the dependent variables (changes between treatment groups) and each of the independent variables (years of experience, age, and educational level). The specific hypothesis were tested by means of a *t* ratio to determine the significance of the three pair-wise comparisons. A correlation ratio was used to determine the congruence between how each manager perceived himself and how he was perceived by his subordinates relative to managerial effectiveness. Interpretation and analysis of the data were based on the information obtained from the Manager Image Questionnaire which was responded to by the persons with whom each manager worked during the pretest and the posttest which followed ten weeks later. The present chapter contains the results of the statistical operations mentioned above.

#### Differences Between Treatment Groups

In a study such as this one, it is important to be assured that all treatment groups are from the same population. Although such an assumption cannot be proved, the following data gives one no reason

to reject this assumption. There is no reason, therefore, to believe that the assumption has not been met. "Experiments to which this model applies are distinguished by the fact that inferences are to be made only about differences among the different treatments actually administered, and about no other treatments that might have been included" (Hays, 1963).

In determining whether there were any initial differences between the treatment groups, the following null hypothesis was tested:

$H_{01}$ : There is no significant difference between the three treatment groups of managers as perceived by the subordinates at the time of the pretest.

The alpha level chosen was .05. It was assumed that mean scores were normally distributed with the same variance. The data are shown in Table IV.

TABLE IV  
Summary Data and Analysis of Variance of Data  
of the Differences Between Treatment Groups

	Experimental Group I	Experimental Group II	Control Group
n:	15	15	15
M:	3.54	3.74	3.56
SD:	.33	.29	.35

Source	S.S.	d.f.	M.S.	F
Between Groups	.38	2	.19	1.69
Within Groups	4.55	42	.11	
Total	5.04	44		

Since  $F = 1.69$ , which is not significant at the .05 level, the null hypothesis cannot be rejected. There appears to be enough evidence that the mean differences, or effects, were minimal among these different treatment populations. In other words, there is no reason to believe that the three treatment groups didn't come from the same population.

#### Manager's Intent to Change

Each of the forty-five managers was described by his subordinates on the twenty-five item Manager Image Questionnaire. The results of these perceptions were then averaged and the mean scores for each item plotted on the Manager Image Profile which each received. The managers in the two experimental groups were asked to indicate one or more items in which they wished to see an improvement in subordinate ratings due to a lower-than-average score. Most of the managers identified two to four items which they declared an intent to concentrate on in an attempt to change their subordinates' perceptions of them. These items will be referred to as items of intent, and the items which they declared no intent to change will be called other-than-intent items.

Table V presents the data used to compare other-than-intent items for experimental groups I and II and all items of the control group, and is based on the following null hypothesis:

$H_{02}$ : There is no significant difference between the other-than-intent items of Groups I and II compared to all items of Group III with relation to change scores.

A constant of 2 was added to the change scores so that there would be no need to work with negative numbers.

TABLE V

Summary Data and Analysis of Variance of Data  
Based on the Other-than-Intent  
Items of Groups I and II  
Compared to All Items of Groups III

	Experimental Group I	Experimental Group II	Control Group
n:	15	15	15
M:	1.98	1.93	1.99
SD:	.22	.14	.20

Source	S.S.	d.f.	M.S.	F
Between Groups	.03	2	.02	.42
Within Groups	1.64	42	.04	
Total	1.67	44		

In that  $F = .42$ , there appears to be no significant changes between the pretest and posttest on the other-than-intent items for the two experimental groups when compared to all items of the control group. Thus, it was found here, than when managers made no indication of an effort to change various items, nothing happened. During the time between pretest and posttest, subordinate perceptions of managerial effectiveness indicated no change on the items which the managers declared to do nothing about. However, when managers were provided with the type of feedback which created a certain amount of internal desire to change, significant things happened, as indicated in the next table.

The null hypothesis investigated in Table VI is:

$H_{03}$ : There is no significant difference between the items of intent for Groups I and II and all items of Group III.

TABLE VI

Summary Data and Analysis of Variance of Data  
Based on Intent Items of Groups I and II  
Compared to all items of Group III

	Experimental Group I	Experimental Group II	Control Group
n:	11	15	15
M:	2.28	2.22	1.99
SD:	.36	.26	.05

Source	S.S.	d.f.	M.S.	F
Between Groups	.63	2	.32	3.95
Within Groups	3.04	38	.08	
Total	3.68	40		

A constant of 2 was added to the mean change scores in Table VI.

The results of the analysis of the null hypothesis stated above yielded an F of 3.95, which is significant at the .05 level, and therefore, the null hypothesis was rejected. There is a positive indication here that the items which each manager attempted to do something about improved significantly in a positive direction. These changes took place within the ten-week period of time between pretest

and posttest, and were based on the subordinates' perceptions of these behavioral changes on the part of the managers. This lends support to the purpose of the study, in that when feedback is provided which causes a manager some felt need to change, then this effort will possibly result in a change in attitudes and behavior which are visible by the people with whom a manager works. The nature of these observable changes can also be illustrated by describing the differences between the average mean scores between the pretest and posttest. The overall means for all items on the pretest was 3.61 and for the posttest was 3.60 which is a very slight drop, and statistically insignificant. However, when looking only at the items-of-intent means, an average change was observed from 3.25 on the pretest to a positive direction to 3.49 within the ten-week period. This is a very interesting result as well as being highly significant when it is realized that the changes were measured by the perceptions of others and not reported by the manager himself.

It is important next to look at the types of feedback through the analysis of the three pair-wise comparisons presented in the following hypotheses. These hypotheses will be analyzed by means of the t ratio and a constant of 2 was added to avoid negative numbers.

Ho<sub>4</sub>: There is no difference between written feedback and no feedback with respect to intent items.

$$t = \frac{2.28 - 1.99}{.115} = 2.49$$

The results of this t ratio,  $t = 2.49$ , which is significant at the .01 level, indicates that the items of intended change improved

significantly over the estimated change expected when compared with all items of the control group.

Ho<sub>5</sub>: There is no difference between written feedback plus a conference and no feedback with respect to intent items.

$$t = \frac{2.22 - 1.99}{.087} = 2.62$$

Results similar to the previous t ratio were obtained here when the means of the intent items of Group II were compared to the means of all items of the control group between the pretest and posttest. The result of 2.62 is significant at the .01 level which means that deviations this far from zero have a probability of less than .01 of occurring by chance alone when the true difference is zero.

Ho<sub>6</sub>: There is no difference between written feedback alone and written feedback plus a conference with respect to intent items.

$$t = \frac{2.28 - 2.22}{.127} = .46$$

The results of this analysis,  $t = .46$ , is not statistically significant, therefore, the null hypothesis is accepted, and it can be said that written feedback plus a conference appears to be no more effective than written feedback alone in helping a manager to modify his image. In fact, the means for the change scores indicate a more

positive direction in written feedback alone than when the feedback is interpreted to the manager in that the change scores were higher (2.28) for experimental group I than for experimental group II (2.22). The following hypotheses are concerned with the personal characteristics and their relationship to change scores.

Characteristics of Managers  
As They Relate to Subordinate Perceptions

The two-way analysis of variance model was used to compare the change scores (a constant of 2 being added) of each experimental group with the following three factors:

1. Age of each manager
2. Educational level of each manager
3. Managerial experience of each manager

In determining the extent of the relationship between these independent variables and the amount of change for each manager as perceived by his subordinates, the following null hypotheses were analyzed:

$H_{07}$ : There is no significant relationship between the three groups and subordinate perceptions of their managers.

$H_{08}$ : There is no significant relationship between the three age groups and subordinate perceptions of managers.

$H_{09}$ : There is no significant relationship between the interaction of the three groups with the age of managers and subordinate perceptions of managers.

The alpha level chosen for these tests was .05.

Table VII presents the summary data and analysis of variance for the above three hypotheses which looks at the relationship between manager characteristics and subordinate perceptions of managers.



TABLE VII

Summary Data and Analysis of Variance of  
the Relationship Between Managers'  
Age and Subordinate Perceptions

	Experimental Group I	Experimental Group II	Control Group	Totals
Age 20 - 39	2.70	1.94	2.10	6.74
Age 40 - 49	1.89	2.32	1.97	6.18
Age 50 +	2.26	2.28	1.99	6.53
Totals	6.85	6.54	6.06	19.45

Source	S.S.	d.f.	M.S.	F
Rows	.19	2	.10	1.77
Columns	.40	2	.20	3.69
Interaction	1.36	4	.34	6.22
Error	1.75	32	.05	

The results of this analysis indicate that when controlling for age, the overall experimental treatment appears to be effective, plus there is an interaction effect. The results, therein, indicate that the type of feedback given interacts with age level, and allows discussion of how feedback affects various age groups. The nature of this interaction can be, at least partially explained by the 2.70 in the first column and a 2.32 in the second column. Feedback alone appeared to be most effective for the 20 - 39 age group, but the feedback plus the conference was most effective for the 40 - 49 age group, whereas

either type of feedback was about as effective for the 50+ age group.

Table VIII deals with the relationship between the educational level of each manager and subordinate perceptions of the manager. The following null hypotheses were analyzed and again a constant of 2 was added to the change scores.

Ho<sub>10</sub>: There is no significant relationship between the three groups and subordinate perceptions given the managers' educational level.

Ho<sub>11</sub>: There is no significant relationship between the three educational levels and subordinate perceptions of managers.

Ho<sub>12</sub>: There is no significant relationship between the interaction of the three groups and educational level and subordinate perceptions of managers.

The alpha chosen for these tests was .05.

TABLE VIII

Summary Data and Analysis of Variance of  
the Relationship Between Managers'  
Educational Level and Subordinate Perceptions

	Experimental Group I	Experimental Group II	Control Group	Totals
Less than H.S.	2.27	2.42	2.01	6.70
H.S. Graduate	2.19	2.42	2.05	6.51
Above H.S.	2.32	2.10	1.89	6.31
Totals	6.78	6.79	5.95	19.52

TABLE VIII Continued

Source	S.S.	d.f.	M.S.	F
Rows	.09	2	.04	.51
Columns	.57	2	.28	3.33
Interaction	.17	4	.04	.51
Error	2.72	32	.08	

The conclusions from this analysis make it reasonably safe to assume that there is little or no effect of a manager's educational level alone on the change scores based on subordinate perceptions. There was apparently no interaction between the educational level of the managers and the experimental group to which they belonged with respect to any changes which the subordinate might have perceived. In short, a manager's level of education seemed to be unrelated to his perceived image and it did not appear to interact with a specific type of feedback.

Table IX presents the summary data and analysis of variance for the following three null hypotheses:

- Ho<sub>13</sub>: There is no significant relationship between the three groups and subordinate perceptions given managers' years of experience.
- Ho<sub>14</sub>: There is no significant relationship between the years of managerial experience and subordinate perceptions of managers.
- Ho<sub>15</sub>: There is no significant relationship between the interaction of the three manager groups and years of experience and subordinate perceptions of managers.

TABLE IX  
Summary Data and Analysis of Variance of  
the Relationship Between Managers'  
Years of Experience and Subordinate Perceptions

	Experimental Group I	Experimental Group II	Control Group	Totals
Less than 3 yrs.	2.30	2.26	2.09	6.65
3 - 10 yrs.	2.66	2.31	1.92	6.89
More than 10 yrs.	1.97	2.09	1.96	6.02
Totals	6.93	6.66	5.97	19.56

Source	S.S.	d.f.	M.S.	F
Rows	.57	2	.28	4.50
Columns	.72	2	.36	5.68
Interaction	.62	4	.16	2.47
Error	2.02	32	.06	

The hypothesis of no row effects can be rejected since the *F* value is greater than what is required for rejection at the .05 level. The obtained *F* of 5.68 also exceeds this, and so it may be concluded that column effects also existed. However, the *F* for interaction effects is less than the required for rejection, so there seems to be reliable evidence of insignificant interaction effects. It can also be concluded from the above table that managers with 3 - 10 years of experience were

able to make more noticeable changes than were the other managers who had been in management for three years or less and those who had been in management for 10 or more years.

The personal characteristics of the subordinates were also statistically analyzed by means of the two-way analysis of variance model to determine the relationship between subordinates' age, level of education, and time on the present job, and their perceptions of managers. (The tables appear in Appendix E). The tables are not presented here, because, in every case, all F values were less than the .05 level of rejection. In brief, neither the subordinates' levels of attained education, the ages of the subordinates, nor their time on the present jobs, had little if any effect on their perception of managers.

The final hypothesis tested looks at the congruence between how a manager views himself and how he is viewed by his subordinates with respect to managerial effectiveness. The null hypothesis tested is:

Ho<sub>16</sub>: There is no significant relationship between how a manager perceives himself and how he is perceived by his subordinates.

The analysis was accomplished by means of the product-moment correlation coefficient which yielded a value of .20 which is not statistically significant at any meaningful level. The amount of variance, therefore, which is shared by these two variables is about four percent (.04), and permits very little in the way of prediction from one to the other. This lack of congruence between how a manager views himself and how he is viewed by his subordinates certainly supports the need for providing feedback of the type described in the study to managers for their improvement.

As was mentioned in the review of the literature, much depends upon how accurately a manager views himself with respect to how he perceives others, the situation in which the interpersonal relationships take place, and his ability to evaluate all of the factors which make up the managerial and leadership processes.

#### Summary

Analysis of variance models, *t* ratios, and a product-moment correlation coefficient were used to analyze the data obtained from the procedures described in Chapter III. The results of the research were organized under the following general headings; differences between treatment groups, differences between items of intended change and all items of the control group, analysis of the three pair-wise comparisons of the two types of feedback, the relationship between manager characteristics and change scores, and the relationship between how a manager views himself and how he is viewed by his subordinates.

There was no reason to believe that the treatment groups did not come from the same population in that the assumption made by the null hypothesis was not rejected. This was supported further through the two-way analysis of variance tests which partitioned the groups of manager according to age, educational level, and years of experience.

It was also determined that the items which a manager declared to do something about changed significantly in a positive direction when compared to the items of the questionnaire which were completed for the members of the control group. It was also determined that the

items which managers intended to do nothing about did not change during the time between the pretest and posttest. These findings, together, support the contention that although attitudes, behaviors, and perceptions of these are stubbornly stable, it is possible to observe desired change on the part of others. In this instance, the change was noticeable by the subordinates of the managers for whom they worked, and these changes were observed within a ten-week time span.

The results of the analysis in Chapter IV also indicate that the use of written feedback is more effective than no feedback at all in changing manager image. It was also found that written feedback along with a conference designed to help a manager interpret and use this feedback is more effective than no feedback at all in changing manager image. The third t ratio analyzed the difference between these two types of feedback to determine whether one was more effective than the other, and the resulting t of .46 was found to be statistically insignificant. Further, the means of the change scores indicated that written feedback alone resulted in slightly higher mean average (2.28) increases than did feedback plus the conference (2.22).

When comparing the characteristics of managers with subordinate perceptions of the managers, it was found that the type of feedback provided interacted with the age factor, the nature of which indicates that feedback alone was most effective for the 20 - 39 age group, and written feedback plus the conference was most effective for the 40 - 49 age group. It was also determined that there was no significant relationship between a manager's level of education and subordinate

perceptions of the change which took place. It was also concluded that there is a relationship between years of managerial experience and subordinate perceptions of changes in manager image. Written feedback alone was most effective for managers who had been in such a position for 3 - 10 years, while the same held true for written feedback plus the conference for the same group. However, both types of feedback seemed to be least useful for the persons who had been in management positions for more than 10 years.

The two-way analysis of variance model also indicated that the personal characteristics of subordinates (age, educational level, and years in their present position) had little if any effect on their perceptions of the managers for whom they worked. However, a very interesting finding appeared when the relationship between how a manager viewed himself was compared to how he was perceived by his subordinates. The resulting correlation coefficient of .20 was not statistically significant at any meaningful level. This lack of congruence seems to support the basis for providing feedback of this type to managers.

Chapter V contains the overall summary, the discussion of the results of the findings, and the implications for potential application and additional research in areas related to this study.



CHAPTER V  
SUMMARY, DISCUSSION, AND IMPLICATIONS

Summary

The problem investigated by this study was to determine if managers can modify their images as perceived by their subordinates when given feedback regarding these perceptions. Another objective was to determine if written feedback supplemented by a conference directing the manager in how to use the feedback was more effective than written feedback alone in helping a manager to modify his image. Another objective was to determine the relationship between items which a manager declared an intent to do something about compared to all of the items of the control group who received no feedback, in order to determine whether intent items would change significantly if the manager felt the need to change.

The literature reveals that there are several areas of research which attempt to define management theory, yet there appears to be no single agreed-upon complete explanation of the process of management. Several researchers have emphasized the traitist approach which stresses the importance of the personality; some believe that one's attitudes are the most significant influence; while others indicate that a manager's behavior patterns most directly influence his effectiveness. Behavioral scientists tend to agree on one factor, however, and that is that stable, interpersonal relationships must be present if the management process is to be efficient and effective. It is also implied throughout recent

research that perceptions play a very important part in understanding the relationships between managers, peers, superordinates and subordinates.

The perceptual framework in which all persons operate is formed by: (1) how one views himself; (2) by how he views others; and, (3) by how he believes others view him. Although a manager's attitudes and behavior are closely related to his perceived effectiveness, how he is perceived is probably the most important variable to be concerned with. The literature indicates that persons pay more attention to, are more influenced by, have more respect for, and learn more from persons whom they perceive as being competent, enthusiastic, and sincere. Perceptions make the human atmosphere in which the process of managing takes place, and it appears likely that if one sees himself more accurately, he will be a more effective manager and a better evaluator of others.

Although little research has been done with the use of subordinate feedback in changing managers' images, the concept of providing a person with evaluative information regarding his effectiveness or job performance is quite a common practice in industry today. However, it is usually given from manager to subordinate, from teacher to pupil, or from trainer to trainee. The purpose in all cases is to improve one's ability, performance, and/or effectiveness on the job. Unfortunately, in many instances, the degree of improvement is seldom measured, it is most often assumed.

The instrument used in the study was the Manager Image Questionnaire (MIQ) which was developed by the author for the purpose of measuring the perceived effectiveness of managers and being able

then to take this information and provide it to managers in the form of a written, graphic profile. The questionnaire contains twenty-five items related to managerial effectiveness, and are responded to on a five-point scale ranging from poor (1) to excellent (5). The present study dealt with the change scores which were observed between the ten-week time span between pretest and posttest. Chance-half reliability was reported to be .67 for the MIQ, and the test-retest method to determine the stability of the instrument yielded a coefficient of .83.

The subjects used in the study were forty-five managers and 427 subordinates of these managers, all employees of a very large midwest chemical company. The managers were all salaried employees, males, had been in their present positions for at least six months; their ages ranged from 23 to 62 and averaged 46.8 years; and their educational levels ranged from eight grades to doctoral degrees and averaged 12.5 grades. The average age of the subordinates, as determined by an approximation of their managers, was 41.5; their average educational level was determined to be 12.3 grades; 90% were male; and twenty-one of the groups were salaried while twenty-four groups were hourly employees.

The managers were randomly assigned to one of three treatment groups. The members of Group I received written feedback in the form of image profiles which represented how each manager was perceived by his subordinates with respect to the twenty-five variables of the MIQ. The members of Group II were also given written feedback, but this was supplemented by two conferences which were designed to help the manager

interpret and understand the usefulness of the instrument and the resulting profile means. The third group, III, served as the control group in that no feedback of any type was given to them until after the study was completed.

The differences between the three treatment levels was determined by means of the one-way fixed-effects analysis of variance model, and no significant differences were found. The items which the managers of Group I and II declared an intent to change were compared to all of the items of the control group and it was found that the two types of feedback were effective in changing the managers' images as perceived by the subordinate with whom they worked. The overall relationships between the types of treatment and change scores were analyzed by means of the t ratio. The relationship of the personal characteristics of the managers were compared to the subordinate perceptions of changes in the managers' images were analyzed by means of the two-way analysis of variance model. The final statistical analysis in the study looked at the congruence between how a manager viewed himself and how he was viewed by his subordinates by means of the product-moment correlation coefficient. The results of this analysis indicated that there was no relationship between these two factors.

#### Discussion

The data of the study give evidence that feedback gained from subordinate perceptions of a managers' image can be quite useful in

helping a manager to modify his image. It should also be noted that the questionnaire used in the study, the Manager Image Questionnaire, yielded acceptable reliability coefficients and was found to be as useful in the industrial setting as is its very similar counterpart, the Administrator Image Questionnaire, in the educational setting. The AIQ has been used for several years by the Educator Feedback Center at Western Michigan University, and has yielded reliability coefficients ranging from .82 to .93.

The results of the study seem to support the conclusion that a person's image, his perceived attitudes and behavior, are stubbornly stable until they are influenced by some force outside the person which creates a desire to modify his image. Managers in this study were provided with this "felt need to change" through the written feedback, which resulted in their resolution of the "internal discrepancy" that was defined by means of the differences between each manager's self-image and his image as perceived by his subordinates. There were no observable changes with respect to the members of the control group, neither were there noticeable changes on items which the managers of the two experimental groups intended to do nothing about. In short, it is necessary to bring about the conditions which lead to these relevant changes in order to bring about changes in managers' behaviors, attitudes, and images. Another interesting discovery was made when the two types of feedback were compared as to their effectiveness in changing manager images. The mean score for Group I was somewhat higher (not statistically so) than the mean changes observed for Group II, which indicates the images of managers as perceived by their subordinates.

Another important finding was the relationship between the personal characteristics of managers and how they were perceived by their subordinates. With respect to age, it was found that feedback alone in the form of the Manager Image Profile was most effective for the 20 - 39 age group, and that written feedback supplemented by the conference was most effective for the 40 - 49 age group. However, in that both of these types of feedback were similar in their usefulness in changing manager image, and there was an interaction effect between change scores and manager age, the most successful of these two methods of providing feedback should be used with the appropriate age group. It was also concluded from a similar statistical analysis that the educational level of managers had very little effect on their ability to change their images as perceived by their subordinates, although written feedback plus the conference appeared to be more useful for the two categories of high school graduates and those with less than high school diplomas. The least effective technique for inducing change was the written feedback plus the conference for those managers with college and graduate degrees; the change score for this group was the lowest.

The only two-way analysis of variance model relating manager characteristics and change scores that showed significant results was related to managers' years of experience in the supervisory capacity. It was concluded that the managers who had been such for between three and ten years were most receptive of the feedback, especially written feedback only. Those with more than ten years of experience showed the lowest mean change scores, and the manager with less than three

showed improved change scores, but less significant than the 3 - 10 years of experience group. It can be concluded that there is a relationship between years of experience and a manager's ability to change when provided with written only or written feedback supplemented with a conference, although the change was much less for the managers who had more than ten years of experience. There was very little interaction between the group and their years of experience, indicating that the magnitude and direction of the effects of experience didn't differ significantly for the three treatment groups.

As an aside, it was interesting to hear the managers express their reactions to the stronger and weaker items of the profile as well as the fact that these items were visibly a part of their managing processes. At conference time, most of the managers were not too surprised at the items which their subordinates considered weak ones. Many expressed a feeling that these would show up. However, most were also very much interested in knowing how to improve these below-average items which appeared on their profile. Equally important were the high-scoring items for each manager in that these provided some positive reinforcement as well as the motivation necessary to make an attempt at raising the items which each considered to be unsatisfactory.

When examining the two-way analysis of variance models which were used to determine the relationship between subordinate characteristics and manager change scores, no significant findings appeared. The age, level of education, and time on the job factors had no significant effects on the mean change scores.

The results obtained from the final statistical analysis, the product-moment correlation coefficient, adds to the rationale and intent of the study. Simply stated, there was very little correlation between how a manager perceived himself when compared to how he was perceived by his subordinates ( $r = .20$ ). This lack of congruence is worth noting, because a manager may see himself in one way and be perceived entirely different; and as has been stated earlier, perceptions of a manager by those with whom he works appear to be more important than the behavior and attitudes which he believes he exhibits. These factors together with the very low correlation factor lend support to the reason for the study, that of helping managers see themselves more accurately and realistically.

In summary, the data of the study, when analyzed, suggested that: (1) the Manager Image Questionnaire was a useful tool for gathering perceptual data regarding the effectiveness of managers; (2) the Manager Image Profile proved to be a worthwhile means of providing feedback to managers based on subordinate perceptions; (3) the type of written feedback provided to Experimental Group I was as useful as was the written feedback plus the conference for Experimental Group II; (4) both of these types of feedback were effective in helping managers modify their images to a significant degree; (5) the items which the managers declared an intent to change improved significantly compared to all items of the control group; (6) nothing happened to the items which the managers intended to do nothing about when compared to the items of the control group;



(7) written feedback alone was most useful for the 20 to 39 age group, while feedback plus the conference was most effective for the 40 - 49 age group; (8) there was no relationship between educational level and subordinate perceptions of managers; (9) relationships did exist between years of experience and subordinate perceptions of managers; (10) subordinates' perceptions of their managers were not statistically affected by the subordinates' age, educational level, or time on the job; and (11) there was no congruence between how a manager perceived himself and how he was perceived by those with whom he worked.

### Implications

The following section suggests some of the inference considered appropriate, based on the findings of the study as well as suggesting a few ideas for further research relative to changing manager image. These thoughts appear to be closely related to the human relations movement in management training which is a rather new and much-needed approach to managerial development.

Human relations is intended to be a systematic, developing body of knowledge designed to explain the behavior of man and how it can be channeled toward desirable ends. Within this area of study, several interrelated schools have developed. These include, the study of motivation, leadership, organization theory, communications, and participative management. It seems apparent that unless the manager integrates what he learns with his understanding of the managerial process, human relations training is rather meaningless. Interpersonal relationships are at the very heart of the management process, and

until a manager is able to gain a clearer understanding of himself, of the situation in which the interactions take place, of others, and of how he is perceived, there is no reason to believe that his effectiveness will necessarily improve. A manager's attitudes and behaviors are stable factors, as is the image which he portrays. Change doesn't occur until there is some motivating force, some felt need to change, some understanding of the need to be perceived in a certain way.

The type of feedback presented in the study resulted in quite positive improvements in manager's images as perceived by their subordinates, and these types of changes are what human relations training desires from its program. This type of feedback, written or written and supplemented with conference, is far more simple than most human relations training techniques, appears to cost much less, takes less time away from the job for the managers, requires no special training facilities, requires fewer staff members, and is certainly effective in changing images. Another interesting facet of this type of change is the fact that the changes were observed by those with whom the managers worked, and were not reported by the managers themselves or by trainers, and the changes were significant.

Most typically, performance evaluation is done by superordinates which seems most appropriate for determining promotions, transfers, salaries, and some training needs, but the type of subordinate evaluation described in this study is certainly useful for improving the interpersonal relationships between managers and their subordinates. This type of feedback can also be utilized as a supplemented measure

for determining salary increases, training needs, and promotions, in that subordinate responses are often more accurate than superordinate evaluative devices in that more time is spent with the manager on a day-to-day basis, along with the fact that subordinates tend to act in a way which they believe to be appropriate to their manager's expectations. This is Likert's (1967) reasoning for developing the human resources within each organization; improve the effectiveness of the manager and subordinates will also change in a positive way. It seems reasonable then to suggest written feedback or written feedback supplemented by conferences as a means of improving managerial interpersonal relationships, creating a better work environment, and strengthening the perceived weaker characteristics of the management process.

The need for similar studies is implicit in the fact that this study was done with one type of industry and was principally exploratory in nature. In order to generalize beyond the population of this sample, replication is needed in areas where different types of managing occurs, and with corporations of various sizes and products and services.

A similar study is needed for another reason, that of covering a longer period of time with several testing sessions to determine the lasting effects of the image changes. Additional research on the same topic might also give an indication of a need for a different type of conference, or more conferences, or possibly the elimination of the conference in that there was no statistical difference between the two types of feedback given in this study.

Another factor which could be considered is the relationship between how the subordinates get along and how they as a group view their manager. Groups of subordinates who have developed good interpersonal relationships among themselves may view their managers in a more positive way than do groups that have a rather poor relationship.

Other factors which could be considered might include how the manager perceives the group of subordinates with whom he works and correlating this with how the subordinates view their manager; or the relationship between male and female respondents might be studied; or the relationship between how salaried and hourly employees view their managers; other characteristics than the ones investigated here could be analyzed; and further studies seem appropriate with respect to the area of intent items compared to other-than-intent items. Finally, it should be noted that not until human relations trainers and theorists begins to understand that perceptions are the very core of improved interpersonal relationships and a better understanding of one's self, can there be a complete description of the phenomenon called management.

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## APPENDIX A

### MANAGER IMAGE QUESTIONNAIRE

Please respond to the following questions honestly and frankly. Do not give your name. All responses are anonymous. Neither the manager about whom these questions are asked nor anyone else will ever be able to associate your responses with you.

Immediately after completion, your responses, along with responses of others from your group, will be sent to Educational Systems Technology, Inc., Kalamazoo, Michigan, for analysis. Image profiles representing how your manager is perceived along several dimensions by your group will then be sent to him. The profile is sent to no one else unless so requested by your manager.

Fill in the blank which represents your reaction to each question. Be sure to fill in only one blank for each question. If you change an answer be sure to erase thoroughly the incorrect mark.

#### WHAT IS YOUR OPINION CONCERNING THIS MANAGER'S:

1. VERBAL FLUENCY: (Does he express his ideas smoothly? Is he articulate?)
2. CONSIDERATION OF OTHERS: (Is he patient, understanding, considerate, and courteous?)
3. ATTITUDE TOWARD HIS JOB: (Does he show interest and enthusiasm toward his work?)
4. TECHNICAL COMPETENCE: (Does he have a thorough knowledge and understanding of his field?)
5. ACHIEVEMENT DRIVE: (Does he have the initiative and persistence needed to accomplish meaningful goals?)
6. SUPPORTIVENESS: (Does he support those responsible to him?)
7. FLEXIBILITY: (Is he able to adjust rapidly to changes in plans or procedures?)
8. PERFORMANCE UNDER STRESS: (How does he function under pressure?)
9. OPENESS: (Does he consider divergent views?)
10. ENCOURAGEMENT OF STAFF PARTICIPATION: (Does he encourage you to raise questions and express opinions?)
11. ABILITY TO DELEGATE RESPONSIBILITY: (Does he assign tasks to personnel capable of carrying them out?)
12. INNOVATIVENESS: (Is he willing to try new approaches or methods?)
13. SUCCESS IN COMMUNICATING EXPECTATIONS: (Does he clearly define and explain what is expected of staff members?)

14. FAIRNESS: (Does he treat staff members in an unbiased and impartial manner?)
15. MAINTENANCE OF STAFF MORALE: (Does he create a feeling of unity and enthusiasm among those in contact with him?)
16. SENSE OF HUMOR: (Does he have a sense of the ridiculous? Does he laugh at his own mistakes?)
17. DECISION-MAKING ABILITY: (Does the evidence indicate that he is able to make constructive decisions?)
18. EVALUATING ABILITY: (To what extent does he objectively evaluate programs and practices?)
19. MANAGERIAL SKILL: (Does he coordinate the efforts of those responsible to him so that the organization operates at peak efficiency?)
20. AWARENESS: (To what extent is he conscious of the problem that exist on your level?)
21. SELF-CONTROL: (Does he maintain control of his emotions when things are not going right?)
22. LEADERSHIP SKILL: (Does his leadership result in the attainment of mutually acceptable goals?)
23. APPEARANCE: (Are his grooming and attire in good taste?)
24. LOYALTY TO THE ORGANIZATION: (Do his actions indicate enthusiastic support of organizational objectives?)
25. ABILITY TO MOTIVATE OTHERS: (To what extent does he stimulate others to perform to the best of their ability?)
26. IF YOU WISH, PLEASE LIST ONE OR MORE WEAKNESSES OF THIS MANAGER.
27. IF YOU WISH, PLEASE LIST ONE OR MORE STRENGTHS OF THIS MANAGER:

APPENDIX B  
SAMPLE OF FEEDBACK

Enclosed is a compilation of subordinate responses to the questionnaire given recently to the group with whom you work.

On page 1 you will find a graph. This graph is an average of subordinate responses to Questions 1 - 25 of the Manager Image Questionnaire. Note what your group perceives to be your strengths and weaknesses, paying particular attention to those items which appear to be low. Hopefully this information will suggest areas in which you may wish to make a special effort to change your subordinates' perceptions.

On page 2 is a summary of subordinate comments in response to questions 27 and 28 on the questionnaire. These comments have been edited only to avoid unnecessary repetition and eliminate irrelevance.

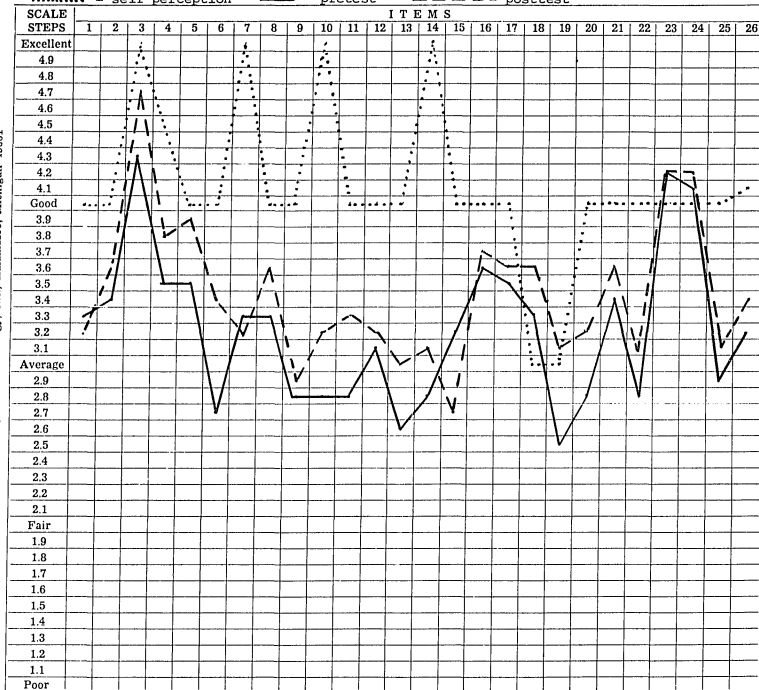
# MANAGER IMAGE PROFILE

Manager John Doe No. 103 Date June, 1970

Group A: Industrial Relations

Group B:

..... = self perception — = pretest - - - = posttest



## KEY TO ITEMS

- |                            |                             |                        |                                 |
|----------------------------|-----------------------------|------------------------|---------------------------------|
| 1. Verbal Fluency          | 8. Performance under Stress | 14. Fairness           | 20. Awareness                   |
| 2. Consideration of Others | 9. Openness                 | 15. Staff Morale       | 21. Self-Control                |
| 3. Attitude Toward Job     | 10. Staff Participation     | 16. Sense of Humor     | 22. Leadership Skill            |
| 4. Technical Competence    | 11. Delegate Responsibility | 17. Decision-Making    | 23. Appearance                  |
| 5. Achievement Drive       | 12. Innovativeness          | 18. Evaluating Ability | 24. Loyalty to Organization     |
| 6. Supportiveness          | 13. Communicating           | 19. Managerial Skill   | 25. Ability to Stimulate Others |
| 7. Flexibility             |                             |                        | 26. Average of 1-25             |

## SUMMARY OF COMMENTS

### 27. Weaknesses listed by a significant number of respondents:

He is slow to accept new ideas ... He doesn't seem to have a plan of action ... Subordinate suggestions seldom get attention ... He has difficulty expressing himself ...

### 28. Strengths listed by a significant number of respondents:

He maintains high standards of performance ... His decisions are firm ... He usually has the support of his people ...

## APPENDIX C

### Interpreting and Utilizing Your Manager Image Profile

The major objective of this study is to provide feedback for improving the effectiveness of managers and supervisors. It is hoped that this feedback will be helpful to you to do a better job. Please read carefully the following discussion, which is intended to assist you in interpreting and using your image profile effectively.

A manager may have good attitudes, be competent, and engage in acceptable behavior, and be totally unconcerned about certain kinds of perceptions--the way in which he is viewed by others. For example, some supervisors may be so committed to encouraging staff participation that they tend to be unconcerned about staff perceptions of their technical competence or self control. When a manager with good attitudes obtains low scores on some dimension of his profile by intent, or due to a lack of concern about how he is "seen" along these dimensions, then these low scores should not necessarily be interpreted as a problem. He may be achieving his desired level of perceived effectiveness. However, he may want to consider modifying or changing his level of perceived effectiveness since there is strong research support for the contention that a manager's effectiveness is directly related to the way in which he is viewed by those around him.

In any case, remember that your profile represents perceptions about you, your attitudes, skills, and behavior, and that it is not a direct measure of your actual attitudes, understandings, and so forth. In some cases the perceptions may be incorrect, although this is not likely. That is, you may be open but viewed as being closed or dogmatic.

## APPENDIX D

### GUIDELINES FOR FEEDBACK CONFERENCES

Pleasant greeting and reassuring remarks to put conferee at ease.

Introduction of feedback from group (summary of ratings and written comments) and explanation of its organization, as well as its promise and limitations.

Suggestions that conferee review materials by himself.

Conferrer to leave room and return in about five minutes.

Discussion begun by encouraging conferee to comment on what he understands his groups' view of his managing to be.

Conferrer to reinforce positive aspects of feedback before alluding to areas where need for improvement is indicated.

Conferrer to probe for items on which conferee was surprised, that is, the feedback does not conform to what he expected.

Conferrer to probe for items which have aroused particular interest on the part of the conferee.

Establishment of the areas for intensive improvement effort.

Conferee to make own selection.

Conferrer to encourage selection of areas where conferee feels confident that he can improve.

Reflection on possible reasons for low ratings in the selected areas.

Exploration of several possible courses of action to improve image in the selected areas.

Reiteration of agreement on areas specified for concentration of effort and reminder that feedback will be collected again in eight weeks.



APPENDIX E

MANAGER IDENTIFICATION FORM

Date \_\_\_\_\_ Master Number \_\_\_\_\_

Name \_\_\_\_\_ Age \_\_\_\_\_

Division or Department \_\_\_\_\_

Highest Degree Earned: High school \_\_\_\_: College \_\_\_\_ Graduate \_\_\_\_:  
Some high school \_\_\_\_: Some College \_\_\_\_ Other \_\_\_\_

Marital Status: Married \_\_\_\_: Divorced \_\_\_\_: Single \_\_\_\_ Other \_\_\_\_

Number of months \_\_\_\_\_ or years \_\_\_\_\_ you have been in the position  
you are now in at Dow

Number of months \_\_\_\_\_ or years \_\_\_\_\_ you have been in supervision,  
at Dow or somewhere else

GROUP IDENTIFICATION FORM

(The remaining questions are to be filled in by you with regard to  
the group which will be responding to the questionnaire.)

Type of group: Hourly \_\_\_\_: Salary \_\_\_\_

Give the approximate educational level of this group in percentage figures:

No high school \_\_\_\_: Some high school \_\_\_\_: High school grad \_\_\_\_

No college \_\_\_\_: Some college \_\_\_\_: College grad \_\_\_\_

What percentage of this group is male \_\_\_\_: female \_\_\_\_

The average age of this group is about \_\_\_\_\_

How many of the group have been on this job for a period of: 0 - 1 years \_\_\_\_:

1 - 2 years \_\_\_\_: 3 - 5 years \_\_\_\_: 6 - 10 years \_\_\_\_:

10 + years \_\_\_\_

Thank you kindly for your cooperation in filling out this information sheet.

Kenneth B. Bootsma  
Western Michigan University  
Kalamazoo, Michigan

APPENDIX F



THE DOW CHEMICAL COMPANY

MIDLAND, MICHIGAN

June 25, 1970

Dear Sir:

Rather than take more time in coming for another meeting, I thought I'd send a copy of your profile to you. As you will notice, this is a duplicate of the one you received earlier, with a few additions.

Notice the following:

- (1) The items circled on the bottom of the page are those which you indicated you wanted to do something about.
- (2) The changes, plus or minus, of these particular items are indicated by a red X, marking the scores you received on these items when retested a few weeks ago.
- (3) The direction of change for these items is indicated by the red arrow by the X.
- (4) Any other significant changes are also indicated. Another complete profile for the second testing was not drawn because three lines to follow would be just too confusing; and we were really interested only in change scores.
- (5) Comments made by the people who work for you are typed on the back, unless no comments were made.

Thank you for your cooperation in this study, and I hope the feedback was useful to you in becoming a more effective manager at Dow.

Sincerely yours,

Ken Bootsma

KB/kbh

It does little good for a manager to encourage staff participation if the persons with whom he works do not feel free to raise questions, express their opinions, or initiate new ideas. You are encouraged to be concerned about your image as a manager even though there is the possibility of it being inaccurate.

It should also be noted that group reactions or image reports are simply reports on how groups are reacting to a manager. Group reactions are group opinions. They reflect individual understandings, misunderstandings, insights, prejudices, likes, dislikes, fears, and satisfactions. They tell the manager much about the effects his ways of doing things have on the people with whom he works and interacts. Differences of opinions concerning one manager will be found among group members in one office or department. Since persons differ in personality, interests, background, aspirations, and wishes, they cannot be expected to react alike to elements in the work situation. Even a "top" supervisor will not get favorable responses from all his workers.

Significant gains in group-reaction averages are not easy to come by. Reactions or image averages are stubbornly stable, but they can be changed with persistence and well-directed effort. It has been the experience of the research center that most (78%) managers are able to make significant and favorable changes in their images with concerted effort based on the feedback revealed in the Manager Image Profile.

In order to make this a meaningful experience and a worthwhile project for you, we are asking you to carefully examine your profile and to indicate below the items you intend to do something about. This will help you to identify those areas of greatest concern to you as well

as giving us some indication of what changes to look for on your profile in the future.

Please send the bottom half of this page to the Psychology Department addressed to Mr. DeWitt Tolly; he will forward them on to Western Michigan University. Do this now! It will be helpful to us, but moreso to you as a tool for improving your image.

Thank you for your cooperation.

Kenneth B. Bootsma  
Western Michigan University  
Kalamazoo, Michigan 49001

-----

Mr. DeWitt Tolly  
Psychology Department  
Building 400

The items on my profile which I intend to do something about include the following: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

The number which appears on the top of my image profile is: \_\_\_\_\_

## APPENDIX G

TABLE X

Summary Data and Analysis of Variance of  
the Relationship Between Subordinates' Age  
and Their Perceptions of Managers

	Experimental Group I	Experimental Group II	Control Group	Totals
Age 20 - 39	2.32	2.29	2.02	6.63
Age 40 +	2.24	2.19	1.99	6.42
Totals	4.56	4.48	4.01	13.05

Source	S.S.	d.f	M.S.	F
Rows	.04	1	.04	.49
Columns	.51	2	.25	2.99
Interaction	.01	2	.004	.05
Error	2.99	35	.08	

TABLE XI  
Summary Data and Analysis of Variance  
of the Relationship Between Subordinates Educational  
Level and Their Perceptions of Managers

	Experimental Group I	Experimental Group II	Control Group	Totals
Less than H.S.	2.52	2.16	2.09	6.77
H.S. Graduate	2.10	2.24	2.01	6.35
More than H.S.	2.46	2.21	1.90	6.58
Totals	7.08	6.62	6.00	19.70

Source	S.S.	d.f.	M.S.	F
Row	.10	2	.05	.64
Column	.65	2	.33	4.11
Interaction	.32	4	.80	1.00
Error	2.55	32	.80	

TABLE XII

Summary Data and Analysis of Variance  
of the Relationship Between Subordinates' Years of  
Experience and Their Perceptions of Managers

	Experimental Group I	Experimental Group II	Control Group	Totals
Two Years or less	2.12	2.14	1.96	6.22
Three or more years	2.42	2.34	2.02	6.78
Totals	4.54	4.48	3.98	13.00

Source	S.S.	d.f.	M.S.	F
Rows	.36	1	.36	4.72
Columns	.61	2	.31	4.07
Interaction	.09	2	.04	.60
Error	2.63	35	.07	