AN EXPERIMENTAL INVESTIGATION OF THE EFFECTS ON

GROUP AND LEADER EFFICIENCY AND LEADER ANXIETY

WHEN VARIED LEADERSHIP STYLES ARE IMPOSED

by

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ABSTRACT

The research reported in this study compares
equalitarian and authoritarian personality types in terms
of the use of prescribed leadership styles. Authoritarian
and equalitarian individuals were used as leader subjects
in two separate experimental small groups situations. In
one experimental situation, an autocratic leadership style
was prescribed for the subject. In the other experimental
case, the individual used a prescribed democratic leadership
style.

The research involves testing with the use of an
"F-scale" test, a population of M.B.A. students at the
University of British Columbia in order to draw out six
subjects which demonstrate authoritarian personality
tendencies and also six subjects which demonstrate
equalitarian personality tendencies. These twelve
individuals were used as the leader subjects in the
experimental runs.

This study contains the results obtained from placing
the authoritarian and equalitarian subjects in leadership
positions for two small groups per leader subject. In one
experimental run, the leader subject used an imposed
democratic leadership style. In the second experimental
run, an imposed autocratic leadership style was used.
To make the experimental situation more realistic, an

actual construction group task was simulated. The leader subject was given materials and a blueprint for the construction of a model skyscraper. Each leader was given instructions as how to divide the construction tasks among the workers of the group.

Immediately after the elapse of the construction time limit the productivity of the group was assessed by the measurement of the height of the skyscraper completed. The anxiety perceived by the leader subjects during the experimental runs was assessed by their response to a self-reporting anxiety test administered immediately after each experimental run. The anxiety test used in this study is based on the anxiety test developed by Fenz and Epstein.

Before the start of the experiment hypotheses were formulated regarding the expected results of the experiment. They were as follows:

(1) For a given personality tendency, a congruent imposed leadership style is likely to be more effective as measured by group productivity than is an incongruent leadership style.

(2) Leaders with democratic tendencies combined with an imposed democratic leadership style are likely to be more effective as measured by group productivity than are leaders with authoritarian personality tendencies with an imposed autocratic leadership style.

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(3) Where personality tendencies are apparently incongruent with the leadership style which is imposed, greater anxiety is likely to be perceived by the leader subject than in a congruent situation.

The results of the study tend to support hypothesis No. 1 but are not significant at the 5% confidence level. The findings regarding productivity indicated that the congruency of personality tendencies and an imposed leadership style affected productivity more when the leader had authoritarian personality tendencies than when the leader had equalitarian personality tendencies.

The experimental results relevant to hypothesis No. 2 did not substantiate it. The group productivity was higher in authoritarian congruent situations than it was in democratic congruent situations. However the difference was not large nor significant at the 5% confidence level.

In general, the results tended to substantiate hypothesis No. 3. The greatest difference in anxiety scores was noted in experimental runs where the leader subjects had authoritarian personality tendencies. The authoritarian leaders had a mean of 24 for perceived anxiety in incongruent runs while equalitarian leaders had a mean for perceived anxiety of 18 in incongruent runs. However, this difference was not significant at the 5% confidence level.

This study must be considered as an exploratory study. Although the results tended to substantiate the first and third hypotheses, the sample of leader subjects was small. It is recommended that further research be done with a larger sample of leader subjects using a refinement of the tools used and developed in this study.

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I. INTRODUCTION

Few areas in the behavioral science field have

attracted so much study as has leadership. Every

organization wants to select and develop effective leaders,

and this desire for effective leadership has been the

impetus for many studies in the area of leadership. From

the studies undertaken, two main theories regarding

leadership have emerged; the "great man" theory, and the

"situational" theory.

The great man theory is the oldest, the simplest,

and the most widely held notion of effective leadership.[1]

This theory assumes that inborn traits determine the

leadership abilities of a man, and that a man possessing

certain traits will be a great leader in any situation.

The situational theory of leadership implies that a

leader is the product of the organizational environment and

the requirements of the group he is leading. This situational

approach to leadership regards a leader as a socially

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[1]H. C. Smith, _Psychology of Industrial Behavior_,
(New York: McGraw-Hill Book Company, 1964), p. 246.

determined product rather than as a product of heredity and psychological attributes.[2]

II. DEFINITION OF TERMS USED

Leadership. Leadership is the use of interpersonal influence to gain a goal. Leadership is the use of words and ideas rather than force to influence others. Leadership thus defined is a process rather than a position or a role.[3]

Leadership Style. A leadership style is a distinctive way of using interpersonal influence to gain a goal.

Autocratic Leadership. Autocratic leadership or authoritarian leadership is a leadership style in which the leader assumes total responsibility for all action. The leader directs the group towards goals by the issuance of orders. He determines all policy, and holds the control of decision making to himself.[4]

Democratic Leadership. Democratic leadership is a leadership style in which the leader draws from the ideas

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[2]Dorwin Cartwright and Alvin Zander, Group Dynamics: Research and Theory, (New York: Row Peterson and Company, 1962), p. 492.

[3]Smith, op. cit., p. 248.

[4]Auren Uris, "How Good A Leader Are You?", People and Productivity, Robert Sutermiester editor, (New York: McGraw-Hill Book Company, 1963), p. 386.

and suggestions of the group.[5] A democratic leadership

style is a consultative approach to leadership by the

leader. In this leadership style group members are

encouraged to participate in policy setting.

There are many other classifications of leadership

styles. However, they can be considered as subclasses of

autocratic and democratic leadership styles.[6]

III. THE PROBLEM

Research in the area of leadership has not substan-

tiated the great man theory.[7] Personality studies of

leaders have been unable to find consistent common traits

of leaders. The only conclusions drawn from these studies

up to this time is that leaders excel over nonleaders in

intelligence, scholarship, dependability and responsibility.[8]

To conclude that the great man theory is totally

incorrect because it has not thus far been proven is perhaps

a hasty decision. Cartwright and Zander, authorities in the

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[5]Ibid.

[6]Donald A Laird and Eleanor Laird, The New Psychology
for Leadership, (New York: McGraw-Hill Book Company, Inc.,
1956), p. 44.

[7]Ralph M. Stogdill, "Personality Factors Associated
With Leadership", Journal of Psychology, Vol. 25, (1948),
pp. 35-71.

[8]Dorwin Cartwright and Alvin Zander, op. cit., p. 490.

field of psychology have expressed the thought that at present, personality traits are poorly conceived and unreliably measured. As knowledge about personality improves and as techniques for measurement become more dependable, it may well be discovered that traits do distinguish leaders from nonleaders.[9] To justify the support given to the great man theory of leadership, further scientific findings are required.

The case for the situational approach to leadership has considerable research support. Research conducted regarding the training of leaders suggests that the situational approach is required. Fleishman, Harris, and Burtt in their evaluation of a foreman training program documented evidence demonstrating the effect of the organizational environment on the leadership activities of the foremen.[10]

Leadership theory is divided between the situational approach and the great man approach. The correct approach to leadership theory probably lies somewhere between these two approaches. Robert Tannenbaum has suggested that leadership style be considered as an important factor in

[9]Ibid.

[10]Edwin A. Fleishman, Edwin F. Harris, and Harold E. Burtt, "Leadership and Supervision in Industry", People and Productivity, Robert Sutermiester editor, (New York: McGraw-Hill Book Company, 1963), pp. 410-425.

leadership theory. In particular a leadership style should

be considered in conjunction with personality traits.

As he states:

> There are some managers who seem to function more
> comfortably and naturally as highly directive leaders.
> Resolving problems and issuing orders come naturally
> to them. Other managers seem to operate more comfortably
> in a team role, where they are continually sharing their
> functions with their subordinates.[11]

This statement sounds logical and appealing but it

lacks scientific support.

Joan Woodward seems to recognize the significance of

the social and technological environment on leadership, but

still feels that the personality tendencies of the leader

are significant. Woodward brings out the point that it is

very possible for a leader to find himself in a situation

where he is forced into a leadership role that is incongruent

with his personality tendencies.[12]

> Technology, because it influences the roles defined
> by formal organization, must therefore influence
> industrial behavior, for how a person reacts depends as
> much on the demands of his role and the circumstances
> in which he finds himself, as on his personality. There
> can be occasions when the behavior forced on him by his
> role is in conflict with his personality.[13]

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[11]Robert Tannenbaum, Irving Weschler and Fred Massarik,
Leadership and Organization: A Behavioral Science Approach,
(New York: McGraw-Hill Book Company, Inc., 1961), pp. 73-74.

[12]Joan Woodward, Industrial Organization: Theory and
Practice, (London: Oxford University Press, 1965), p. 79.

[13]Ibid.

If how a person reacts is a function of his role, his
circumstances, and his personality tendencies, and if an
individual may be in a congruent or incongruent situation,
then it is important to find out how congruency and
incongruency of personality tendencies and leadership
style influence the behavior of leaders.

IV. OBJECTIVES

It is intended that this study should serve as an
exploratory study. This study is looking at the effect of
imposed autocratic and democratic leadership styles on
authoritarian and equalitarian personality tendencies.
It is intended that through this study, insight will be
gained into the effect on the congruency of personality
tendencies on comparative group productivity and leader-
perceived anxiety.

With the relatively small sample of leader subjects
being used, the findings of this study will be useful in
justifying further investigation into the question of
congruency. The findings cannot be considered conclusive
but can be very useful indicators.

V. OVERVIEW OF THE STUDY

Working hypotheses which are relevant to the
objectives of the study were developed.

Hypothesis No. 1. For a given personality tendency, a congruent imposed leadership style is likely to be more effective as measured by group productivity, than is an incongruent imposed leadership style.*

Hypothesis No. 2. Leaders with democratic personality tendencies combined with a democratic leadership style are likely to be more effective as measured by group productivity than are leaders with authoritarian personality tendencies combined with an autocratic leadership style.

Hypothesis No. 3. Where personality tendencies are apparently incongruent with the leadership style that is imposed, greater anxiety is likely to be perceived by the leader than in a congruent situation.*

To test these hypotheses, an adaption of the "F-scale" test developed by Adorno[14] was used to determine the authoritarian personality tendencies of seventy M.B.A. students at the University of British Columbia.[15] Twelve of the tested students were selected to be leader subjects on the basis of their test results. Six of the students

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*Hypotheses No. 1 and No. 3 are restated with two subsections in Chapter III, pp. 26-27.

[14]T. W. Adorno, et al., The Authoritarian Personality, (New York: Harper, 1950), pp. 222-279.

[15]See Appendix I, p.62 for the test used.

selected demonstrated the highest authoritarian personality tendencies of the seventy tested students, while the other six students selected demonstrated the lowest authoritarian tendencies of the seventy students.

Each leader subject selected went through a leadership training program designed to acquaint him with the philosophies and characteristics of democratic and autocratic leadership styles. These were the two leadership styles the subject would be required to use in experimental situations.[16] No title was given to either leadership style during the program, nor were any statements made regarding their appropriateness or usefulness.

Task groups for the experimental situation were composed of undergraduate students of the University of British Columbia. Each work group consisted of four workers and a leader subject using a prescribed imposed leadership style. Leaders went through two experimental situations, using a democratic leadership style in one run and an autocratic leadership style in another run.[17] The leaders did not lead the same group twice, nor did the same group of workers operate under the same leadership style twice.

The experiments were run in small group laboratories designed for inconspicuous observation through one-way

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[16]See Appendix II, p. 66.

[17]See Appendix IV, p. 70.

windows. The group project for the experiment was the construction of a model skyscraper from a toy building set containing plastic pieces.[18] Each set supplied to the group contained 484 pieces.* The variety of structures and the variation of structures which could be constructed with each set was vast but each group was given a specific building plan calling for the construction of one particular building. The advantage of using such a task was that productivity could be measured by the amount of construction completed on the building in the 25 minute time allotted for the experimental run. The task required group creativity and cooperation because of the complex interdependent activities. The leadership function therefore was an essential element for the accomplishment of the group task.

Immediately after each experimental run, the amount of construction was recorded and any deviations from the building requirements were noted. While the facts regarding the building were being recorded, the leader subject completed a self-reporting test designed to give a comparative measure of anxiety experienced by the leader subject during the experimental situation.[19]

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[18]See Appendix III, p. 68.

*Each building set supplied to the group contained two 242 piece "Kenner Girder and Panel Building Sets", available at most hobby shops.

[19]See Appendix V, p. 75.

VI. LIMITATIONS

This study is an exploratory study and the findings of it must be considered within the context of an experimental situation. The findings present a logical basis for speculation about actual work situations and are therefore useful. It must also be remembered that the findings of this study are limited in their validity by the tools used in the study. Effort was made to use tools which have been tested and used in previous research. In this study however, the particular combination of tools was used for the first time making the study unique.

Measures given in the results of this study cannot be considered absolute but are only relative measures used in comparing one experimental task group to another.

VII. OUTLINE OF CHAPTERS

Chapter II consists of a review of research and theory which will contribute to the readers' understanding of the study. The information contained in Chapter II must be considered as a foundation for the study itself. The theory and research presented is designed to (1) give the reader a grasp of the knowledge critical to the study, and (2) to furnish information regarding the tools and procedures used in the study.

Chapter III contains in detail the hypotheses to be tested, and the methodology used to test the hypotheses.

Chapter IV contains the results of the experiment and a statistical analysis of the findings.

Chapter V contains the implications of the results of the study with their limitations. The chapter also develops recommendations for further research and future refinements for studies similar to this one.

CHAPTER II

PREVIOUS RESEARCH AND RELEVANT THEORY

I. INTRODUCTION

Useful exploratory work is dependent on previous research and theory contributed by others. This is particularly true in this study since research, theory, and psychological tools developed by others are combined for use in an attempt to contribute further knowledge. Newton's statement, "If I have seen farther, it is by standing on the shoulders of giants." seems very appropriate here.

In this chapter, the review of pertinent concepts to this study will include:

(1) Theory regarding the leadership function, and "democratic" and "autocratic" leadership styles.

(2) The influence of the organizational environment on leader behavior.

(3) The influence of personality tendencies on leader behavior.

(4) Relevant characteristics of the authoritarian personality.

(5) Pertinent information relating to psychological tools used in the study.

II. THE LEADERSHIP FUNCTION, AUTHORITARIAN AND
DEMOCRATIC LEADERSHIP STYLES

This study is concerned with leadership as a process of interpersonal influence associated with a function and a position. This study is not concerned with leadership as a gifted attribute of an individual.[1]

When a formal position exists in an organization, it must have associated with it the necessary authority to carry out the responsibilities of that position. Without authority a leader cannot logically be expected to fulfil the responsibilities assigned to him in an organization.[2] Chester Barnard presents the thought that, whether the authority delegated by the organization to the leader is legitimate or not depends on the leader. If the leader is accepted as a leader by his subordinates then the authority has become legitimate.[3]

There are different leadership styles which may be used to exercise the authority delegated by the organization.

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[1]A very few leaders, such as Mahutma, Gandi, and Adolph Hitler, are referred to as charismatic leaders. Such leaders are perceived by their followers as being infallable and possessing infinite wisdom.

[2]Harold Koontz and Cyril O'Donnell, _Principles of Management_, (New York: McGraw-Hill Book Company, 1964), pp. 49-68.

[3]Chester I. Barnard, _The Functions of the Executive_, (Cambridge, Mass., Harvard University Press, 1947), pp. 161-185.

Two of these leadership styles which are central to this study are the democratic and autocratic styles.

Democratic leadership is described as a leadership style in which the leader brings the group towards pre-described goals through consultation with group members. This leadership style makes policy a matter for group consideration and decision. The leader aids the group in the decision by furnishing a perspective of objectives and functions which have been assigned to the group.[4] Democratic leadership usually implies a high degree of group participation in decision making and subsequent support by the leader. In most cases democratic leadership does not mean that the subordinates make decisions regarding what the goals of the organization are to be. The terms "permissive", "employee-centered", and "equalitarian" are often used in place of "democratic" by authors describing this leadership style.[5]

Autocratic or authoritarian leadership is described as a leadership style in which the leader moves the group towards the accomplishment of organizational goals by the

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[4]Ralph White and Ronald Lippitt, "Leader Behavior and Member Reaction in Three 'Social Climates'" in Dorwin Cartwright and Alvin Zander, editors, Group Dynamics: Research and Theory, (Evanston, Illinois: Row Peterson and Company, 1962), pp. 527-553.

[5]Wendell French, The Personnel Management Process, (Boston: Houghton Mifflin Company, 1964), pp. 519-520.

issuance of orders without consultation with subordinates.
In autocratic leadership, policy governing group affairs is
determined by the leader, and full responsibility for action
is assumed by him. The leader keeps the knowledge of goals
and objectives to himself, giving out information only as
required for the immediate work of the group. The subordi-
nates are left in doubt as to what their future required
actions will be.[6] "Authoritarian", "leader-centered" and
"directive" are other terms used for the leadership style
here termed as autocratic. All of these terms imply a high
degree of direction from the leader, and a minimum or no
participation on the part of the subordinates.[7]

"Initiating structure" and "consideration" are
frequently used to analyze leadership for comparison purposes.
"Initiating structure" is leader behavior typified by task
and position assignment, personal praise and criticism, and
the establishment of deadlines and policies to attain
organizational goals. "Consideration" is leader behavior
typified by performing personal favors for subordinates,
seeking subordinate support and approval, listening to
subordinates and being interested in their needs. Democratic

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[6]Auren Uris, "How Good A Leader Are You?", Robert
Sutermiester, editor, People and Productivity, (New York:
McGraw-Hill Book Company, 1963), pp. 386-394.

[7]French, op. cit., p. 519.

leadership is characterized by a high degree of consideration and a moderate amount of initiating structure. Autocratic leadership is characterized by a high degree of initiating structure and a low degree of consideration.[8]

III. SIGNIFICANCE OF THE ORGANIZATION

Leadership does not take place in a vacuum. The environment of the organization influences the appropriateness and usefulness of a leadership style or pattern.

The results of studies conducted by Donald Pelz demonstrate that the effects of a leadership style on subordinates is a function of the leaders' influence in the organization.[9] Pelz found that employee-centered leaders with influence in the organization usually lead high morale groups. Leaders using the same leadership style but lacking influence in the organization usually lead low morale groups. Apparently the employee-centered leader through his leadership style arouses the hopes of subordinates and then because of lack of influence is unable to meet their expectations. The disappointment that subordinates experience tends to contribute to low

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[8]Ibid., p. 520.

[9]Donald C. Pelz, "Influence: A Key to Effective Leadership in the First-Line Supervisor", Personnel, Vol. 29, 1952, pp. 209-217.

morale.[10]

H. A. Shepard in an unpublished study reports his observations of twelve research laboratories. Shepard divided the laboratories into four categories according to the leadership style of the laboratory supervisor and his superior. Each man's leadership style was categorized as either autocratic or democratic. Supervisor-superior combinations were described as (1) autocratic-autocratic, (2) autocratic-democratic, (3) democratic-autocratic, and (4) democratic-democratic. Shepard found that in laboratories where the autocratic-autocratic condition existed, performance tended to be high and subordinate satisfaction low. In situations where the leadership styles of the supervisor and superior were incongruent, the democratic-autocratic and the autocratic-democratic cases, Shepard found the lowest productivity and satisfaction patterns. This study by Shepard clearly demonstrates that a leadership style must be evaluated in an organizational context before judgements can be made regarding its appropriateness or usefulness.[11]

A study by Fleishman and his associates further demonstrates the significance of the organizations' influence

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[10]Ibid, p. 213.

[11]See Louis B. Barnes, Organizational Systems and Engineering Groups, (Norwood, Mass., Harvard Business School, Division of Research, 1960), pp. 28-29.

of leader behavior. In Fleishman's study at the Inter-
national Harvester Company it was found that the leadership
patterns of foremen were influenced by the leadership
patterns of their superiors. The I. H. C. foremen went
through a leadership training program away from the plant.
At the end of the training period the foremen were tested
for attitudes regarding supervision; it was noted that
through the training program the foremen did show progress
in human relations. After the foremen had been back at the
plant for two months they were tested again for attitudes
of supervision. It was found that the foremen had reverted
to attitudes and supervisory behavior which corresponded to
their superiors' attitudes and behavior.[12]

Solomon Asch in testing conformity of individuals
in groups, found that there is definite psychological
pressure for individuals to conform to group norms.[13]
Asch found that when individuals chose a behavior pattern
which conformed to the group norm but which conflicted
with their own judgment, these individuals experienced
psychological tension.

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[12]Edwin Fleishman, Edwin Harris, and Harold Burtt,
"Leadership and Supervision in Industry", (Columbus:
Personnel Research Board, Ohio State University, 1955).

[13]Solomon E. Asch, "Effects of Group Pressure Upon
the Modification and Distortion of Judgments", Dorwin
Cartwright and Alvin Zander, op. cit., pp. 189-200.

Organizations in the course of their existence seem to develop personalities and norms for behavior. Individuals functioning in leadership positions in the organization are subject to psychological pressure created by these norms. The findings of Asch and Fleishman indicate that leaders tend to conform to organization norms. If conformity to organization norms conflicts with the judgment of the individual, psychological tension may result.

IV. PERSONALITY TENDENCIES AND LEADER BEHAVIOR

The personality tendencies of the leader and of the subordinates should be considered in the selection of an appropriate leadership style. The proposition that the personality tendencies of a leader determine the suitability of a leadership style has, as a rule, been assumed but not tested. It has been noted that some leaders seem to have a need for the predictability of the outcome of decisions; therefore such a leader is unsuited for a democratic leadership style.[14]

The postulate that the personality tendencies of subordinates influence the effectiveness of a leadership style has been substantiated. Victor Vroom conducted a

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[14]Robert Tannenbaum, Irving Weschler, and Fred Massarik, Leadership and Organization: A Behavioral Science Approach, (New York: McGraw-Hill Book Company, 1961), pp. 22-43.

study on the effectiveness of subordinate participation in decision making.[15] Vroom found that the effectiveness of participation by the subordinates was a function of the subordinates' personality tendencies. Vroom concluded that the satisfaction a subordinate feels under a leadership style is partially determined by the subordinates' personality tendencies.[16]

Research findings of F. H. Sanford seem to indicate that people with authoritarian personality tendencies prefer to be led in an autocratic manner. Authoritarian individuals feel that an autocratic leader is more effective than a democratic leader. In contrast, equalitarian individuals prefer democratic leadership, feel it is more effective, and will accept autocratic leadership only as circumstances force it.[17]

William Haythorn has conducted research which indicates that the personality tendencies of subordinates influence the leadership style used by a leader regardless of his own

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[15]Victor H. Vroom, Some Personality Determinants of Participation, (Englewood Cliffs, N. J., Prentice-Hall, Inc., 1960).

[16]Ibid., pp. 60-74.

[17]F. H. Sanford, Authoritarianism and Leadership, (Philadelphia: Institute for Research in Human Relations, 1950).

personality tendencies.[18] Haythorn found that authoritarian personality tendencies of subordinates, as measured by the "F-scale" test, affected the behavior of leaders. When subordinates ranked high in authoritarianism, leaders were psychologically influenced to use a more autocratic approach to leadership than they did with equalitarian subordinates.

In 1955 P. M. Blau conducted a study of the bureaucratic structure of a federal enforcement agency.[19] Blau reports that leaders in the agency were trained to use democratic leadership in their positions. After the training program, the leaders attempted to use a democratic leadership style. However, despite their deliberate attempts, authoritarian individuals frequently and unconsciously returned to an autocratic leadership style.[20]

Berkowitz conducted a series of studies of executives in actual conference situations. Berkowitz found that the executives expressed more satisfaction when the conferences were conducted in an autocratic manner rather than in a

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[18]William Haythorn, "The Effects of Varying Combinations of Authoritarian and Equalitarian Leaders and Followers", E. Maccoby, T. Newcomb, and E. Hartley editors, Readings In Social Psychology, (New York: Holt, Rinehart, Winston, 1958), pp. 511-522.

[19]P. M. Blau, The Dynamics of Bureaucracy, (Chicago: University of Chicago Press, 1950).

[20]Ibid., pp. 115-127.

democratic manner. He concluded that the executives them-
selves used an autocratic leadership style and, therefore,
in normal situations, felt that it was the most effective
leadership style.[21]

V. CHARACTERISTICS OF THE AUTHORITARIAN PERSONALITY

The authoritarian individual is primarily a conserva-
tive, regimented individual.[22] He has a preoccupation with
power and tends to look at situations in a weak-strong,
leader-follower, dominant-submissive perspective.[23] The
authoritarian personality tends to have a rigid personality
organization with a low tolerance level for ambiguity.[24]

Certainly there is an authoritarianism continuum; at
one end are those individuals who are extremely authoritarian
and at the other end of the continuum are those who are
extremely equalitarian. The equalitarian individual is
primarily a liberal adaptable person. He is objective in

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[21]Leonard Berkowitz "Sharing Leadership in Small,
Decision-Making Groups", Journal of Abnormal and Social
Psychology, 1953, 48, pp. 231-238.

[22]David Krech, Richard Crutchfield, and Egerton
Ballachey, Individual In Society, (New York: McGraw-Hill
Book Company, 1962), p. 203.

[23]R. Christie, et. al., Studies in the Scope and
Method of the Authoritarian Personality, (Glencoe, Illinois:
Free Press, 1954), pp. 36-39.

[24]T. W. Adorno, et. al., The Authoritarian Personality,
(New York: Harper Bros., 1950), pp. 350-365.

viewing his relationships with others and is quite uncon-
cerned about status. The equalitarian individual has a
flexible personality organization and a high tolerance
level for ambiguity.[25]

VI. THE INFLUENCE OF TECHNOLOGY ON LEADERSHIP
STYLE EFFECTIVENESS

Significant research has been presented indicating
that different leadership styles and organizational systems
are suited to different technological processes.[26] Joan
Woodward's systematic study of business organizations in
England indicates that technology influences the roles
defined by the organization and individual behavior within
roles. Woodward found that the successful companies were
those who had adapted themselves organizationally to fit the
technology of the process in production.[27] The organization
and the technology influence individual leadership patterns.
As Woodward states:

> ... how a person reacts depends as much on the
> demands of his role and the circumstances in which
> he finds himself, as on his personality. There can

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[25]David Krech, op. cit., pp. 201-204.

[26]Joan Woodward, Industrial Organization: Theory
and Practice, (London: Oxford University Press, 1965).

[27]Ibid., pp. 68-83.

be occasions when the behavior forced on him by his role is in conflict with his personality.[28]

VII. INCONGRUENCY AND ANXIETY

Individuals who are faced with psychological or cognitive incongruencies are subject to tension or anxiety. The natural process is to react in a manner that will reduce the tension.[29] Anxiety or tension can, for comparative purposes, be measured by a self-reporting test. Self-reporting tests give a more reliable measure of anxiety than do random questions in an interview.[30]

SUMMARY

The behavior of an individual in a leadership position is a function of: (1) the leader's background, personality traits, needs and capacity, (2) the leader's perception of his organizational environment including his superior and the corporate personality, (3) the leader's perceptions of his subordinates including their personality traits, needs, and actions, and (4) the technological requirements of the situation that the leader is functioning in.

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[28]Ibid., p. 79.

[29]David Krech, op. cit., pp. 261-263.

[30]P. F. Vernon, Personality Assessment, (New York: John Wiley, 1964), pp. 227-260.

FIGURE 1

SOME FACTORS RELEVANT TO LEADER BEHAVIOR

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┌─────────────────────────────────┐
│ Leader Background & Personality │
│  Traits, Needs, and Capacities. │
└─────────────────────────────────┘

┌───────────────────────────┐
│ Perceived Organizational  │
│        Environment        │               ┌──────────────────────┐
└───────────────────────────┘               │       Emergent        │
                                             │  Leader Behavior &    │
                                             │  Psychological State  │
┌───────────────────────────┐               └──────────────────────┘
│ Perceived Subordinate Needs│
│and Personality Tendencies │
└───────────────────────────┘

      ┌───────────────────────────────┐
      │ Technological Requirements    │
      │         of Situation          │
      └───────────────────────────────┘
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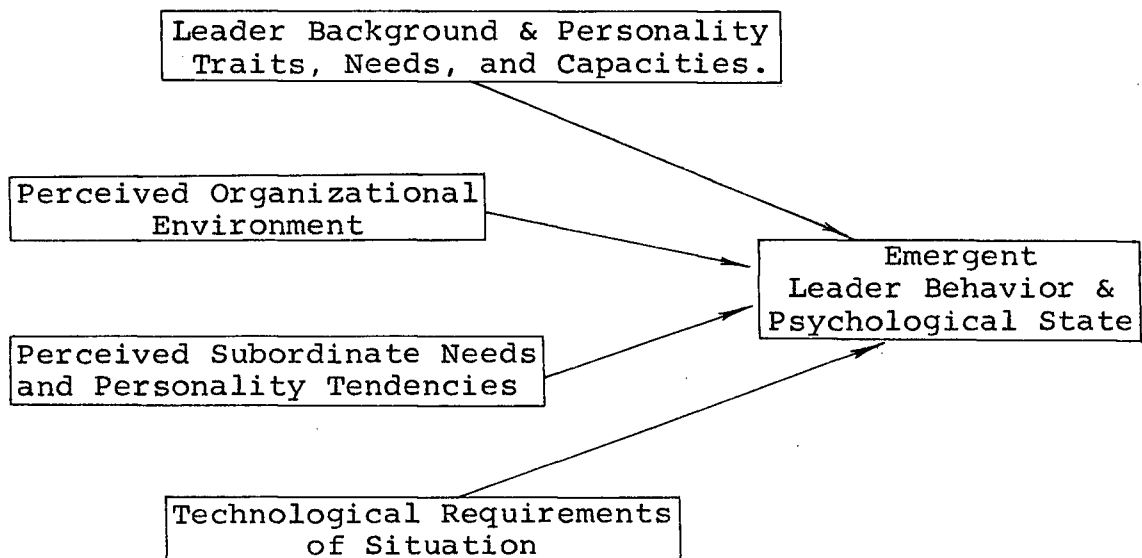
The leader's emergent behavior includes the leadership style he uses in a leadership position. The factors which influence the leader's emergent behavior also influence the leader's psychological state which may not be totally reflected in leader behavior. A leader may feel psychological tension but show no action which reflects the anxiety he is experiencing. Tension or anxiety can be caused by psychological or cognitive incongruency.

CHAPTER III

HYPOTHESES AND METHODOLOGY

I. CONCEPTS AND HYPOTHESES

Working hypotheses were developed to present in specific terms the relationships investigated by this study.

Hypothesis No. 1: For a given personality tendency, a congruent imposed leadership style is likely to be more effective as measured by group productivity than is an incongruent leadership style.

(A) Leaders with authoritarian personality tendencies combined with an imposed autocratic leadership style are likely to be comparatively more effective than leaders with the same personality tendencies with a democratic leadership style.

(B) Leaders with democratic personality tendencies combined with a democratic leadership style are likely to be comparatively more effective than leaders with the same personality tendencies combined with an autocratic leadership style.

Hypothesis No. 2: Leaders with democratic personality tendencies combined with a democratic leadership style are likely to be more effective, as measured by group productivity, than are leaders with authoritarian personality tendencies combined with an autocratic leadership style.

Hypothesis No. 3: Where personality tendencies are apparently incongruent with the leadership style that is imposed, greater anxiety is likely to be perceived by the leader than in a congruent situation.

(A) An authoritarian personality tendency combined with an imposed autocratic leadership style is likely to result in less anxiety for the leader than will an authoritarian personality tendency and an imposed democratic leadership style.

(B) A democratic personality tendency combined with an imposed democratic leadership style is likely to result in less anxiety for the leader than will a democratic personality tendency and an imposed autocratic leadership style.

II. TESTING FOR AUTHORITARIANISM

For this study an adaptation of the "F-scale" test developed by Adorno was used to estimate the authoritarian personality tendencies of potential leader subjects.[1] The reliability and validity of the test used in this experiment is dependent upon the original test, forms 40 and 45, used by Adorno and his associates.[2] The test used was composed

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[1]See Appendix I, p. 62.

[2]T. W. Adorno, et al., The Authoritarian Personality, (New York: Harper Bros., 1950), pp. 255-257.

of twenty statements such as, "There are two kinds of people:
the strong and the weak." The subject responded to the
question on a five-point scale ranging from strongly agree,
graded 5, to strongly disagree, graded 1. The Likert
five-point scoring was used on all twenty questions. A
high score indicated authoritarian personality tendencies
while a low score indicated equalitarian or democratic
personality tendencies. As a whole, the scale measures the
emphasis that an individual places on the importance of
conventional standards and power-dominance relationships.[3]

III. THE GROUP TESTED AND THE LEADERS SELECTED

Seventy first and second year M.B.A. students from
two Commerce 381 classes at the University of British
Columbia were tested. From the results of the test, the
six top scoring and the six bottom scoring individuals
were selected as leader subjects for the experiment. The
six top scorers were called the authoritarian group while
the six bottom scorers were termed the equalitarian group.
By statistical comparison, the two groups were significantly
different at the 1% confidence level. Table I gives the
individual scores for members of each group and also the
group means. This statistical comparison indicates that

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[3]Ibid., pp. 222-279.

the two groups do differ regarding authoritarian personality
tendencies.

TABLE I

AUTHORITARIAN SCORES AND MEANS FOR LEADERS SELECTED

AUTHORITARIAN GROUP			EQUALITARIAN GROUP		
SUBJECT	SCORE	MEAN	SUBJECT	SCORE	MEAN
*A-1	75		*E-1	25	
A-2	71		E-2	27	
A-3	71	70.83	E-3	27	28
A-4	71		E-4	29	
A-5	69		E-5	30	
A-6	68		E-6	30	

In an attempt to establish the fact that the M.B.A.
test group was not an unusual group, the same test was
administered to seventy second and third year Economics
students at the University of British Columbia. The Group
mean and extremes were comparable to the M.B.A. students
tested. Table II gives the mean and extreme scores for both
the Economics class and the M.B.A. students tested. The
difference in the means and extremes for the two groups was
not significant at the 5% confidence level.

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*A - denotes authoritarian; *E - denotes equalitarian

TABLE II

A COMPARISON OF MEAN & EXTREMES OF TEST SCORES

FOR M.B.A. & ECONOMICS STUDENTS

M.B.A. TEST GROUP		
EQUALITARIAN EXTREME	GROUP MEAN	AUTHORITARIAN EXTREME
25	49	75

ECONOMICS TEST GROUP		
EQUALITARIAN EXTREME	GROUP MEAN	AUTHORITARIAN EXTREME
26	50.25	77

IV. LEADERSHIP TRAINING

Since all leader subjects were required to use both an imposed autocratic and democratic leadership style in the experimental runs, it was necessary to educate the subjects regarding these two leadership styles. All the leader subjects went through a simple training program designed to acquaint the subjects with differentiating characteristics of the two leadership styles to be used. One week before the leader subjects were placed in the experimental situation, they were given an information sheet outlining the pattern of leader behavior expected of them in two different situations.[4]

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[4]See Appendix II, p. 66.

The leadership styles were never given a name during the training period but only identified as the style to be used in experimental situation A or B. The leader subjects were asked to keep the sheet of instructions containing the basic philosophy of the two leadership styles and some examples of behavior using those styles, and they were also asked to study them. One day before the experimental runs commenced, a one-hour discussion period was held with the leader subjects during which time the styles were discussed and the leader subjects were given the opportunity to ask questions regarding the leader behavior to be used in the experimental situations. Fifteen minutes before the leader subject went into the small-groups lab to lead his particular group, he was given the specific instructions and building requirements for the experimental run.[5] The leader subject then had the opportunity to study the requirements and to ask questions.

V. THE SUBORDINATES

The subordinates working under the leader subjects were undergraduate volunteer students. When their assistance was requested, they were informed only that they would be participating in a small-groups experiment. The workers were

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[5]See Appendix III, p.68 , and Appendix IV, pp. 70.

given no information as to what their task was to be; they were left totally dependent on the leaders for information about their task.

VI. THE TASK AND THE SETTING

The leader subjects were placed in the role of construction foremen for a group of workers with the task of building a model skyscraper from the materials provided. The leaders were informed that the company which they represented had made them totally responsible for the construction of the skyscraper, and that their future pay and promotion would be influenced by their success in the completion of the task.[6] This information was given in order to motivate the leaders.

The leader subjects were informed that they would be observed and judged regarding their conformity to company policy and prescribed leadership style. The leaders were advised that the goal for the group should be to build the skyscraper as high as possible in the time available for the project.

The material used for the construction task consisted of two large boxes of Kenner "Girder and Panel Building Sets".[7] Two boxes of material were used for each

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[6]See Appendix III, p. 68.

[7]See general building instructions, Appendix IV, p. 70.

construction setting so that there would be more material available than could be used in the twenty-five minutes allotted for each experimental run.

Small-groups laboratories were used for the construction site. A work table, chairs and the building sets were the only fixtures provided with the building plans for each experimental run. The small-groups labs were equipped with one-way glass and a listening system so that observation of the work group would be inconspicuous.

VII. OBSERVATION

The original experimental design did not call for detailed observation of leader behavior. Productivity and anxiety were to be tested and measured at the end of each experimental run. Any building deviations from plans were counted when the height of the building was measured. During the first few experimental runs, it was noted that some leader behavior deviated from the prescribed leadership style. To study these behavior deviations, a graduate student was placed as observer for each experimental run. The observer kept a record of leader deviations from prescribed leadership style.

VIII. MEASUREMENT OF TENSION OR ANXIETY

Immediately following each experimental run, a self-reporting test for estimating anxiety was administered to each leader subject. The test consisted of nine questions with a Likert five-point scoring system used in grading each question. The test used is an adaptation of an anxiety test developed by Fenz and Epstein.[8]

The questionnaire test administered was designed to give a comparison of tension experienced during the experimental run for each leader subject. It was not intended that the results of the test be taken as an absolute measure of tension, but rather an indication of the tension that the leader subject was aware of during the experimental run.

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[8]W. D. Fenz and S. Epstein, "Manifest Anxiety", Perceptual and Motor Skills, Vol. 20:20, 1965, pp. 773-780.

CHAPTER IV

EXPERIMENT RESULTS AND FINDINGS

I. RESULTS RELEVANT TO HYPOTHESIS NO. 1

Hypothesis No. 1 is: For a given personality tendency, a congruent imposed leadership style is likely to be more effective as measured by group productivity than is an incongruent leadership style.

At the conclusion of each experimental run, productivity was assessed by counting the spans completed on the skyscraper construction. Table III shows the productivity scores of each leader in the congruent and incongruent situations. The productivity mean for leaders using a congruent leadership style was $34\frac{1}{2}$. The mean number of spans completed by groups under a leader using an incongruent leadership style was 32.

Group productivity was slightly higher in situations where the imposed leadership style was congruent with the personality tendency of the leader, compared to the situations where the personality tendency and leadership style were incongruent. A statistical "T-test" analysis demonstrated that this difference was not significant at the 5% level of confidence. Although these findings certainly are not conclusive, they do lend support to the contention that productivity is influenced by the congruency or incongruency of personality tendencies and leadership style.

TABLE III

A PRODUCTIVITY COMPARISON OF

CONGRUENT & INCONGRUENT SITUATIONS

CONGRUENT SITUATION			INCONGRUENT SITUATION		
LEADER	SCORE	MEAN	LEADER	SCORE	MEAN
*E-1	40		E-1	33	
E-2	31		E-2	30	
E-3	34		E-3	29	
E-4	30		E-4	33	
E-5	36		E-5	35	
E-6	33		E-6	32	
*A-1	34	34.50	A-1	26	32
A-2	38		A-2	33	
A-3	36		A-3	34	
A-4	34		A-4	35	
A-5	32		A-5	30	
A-6	36		A-6	34	

Hypothesis No. 1 - part "A" states: Leaders with authoritarian personality tendencies combined with an imposed autocratic leadership style are likely to be comparatively more effective than leaders with the same personality tendencies combined with an imposed democratic leadership style.

Leader subjects with basic authoritarian personality tendencies using an imposed autocratic leadership style had a mean of 35 completed spans. In situations where the same leader subjects used an imposed democratic leadership style,

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*E - denotes equalitarian; *A - denotes authoritarian

the mean number of completed spans was 32. Table IV gives
the authoritarian leader productivity scores and means for
the congruent and incongruent situations.

A statistical "T-test" analysis of the productivity
results of leaders with authoritarian personality tendencies
under the two imposed leadership styles demonstrated that
the difference in the two means was not significant at the
5% level of confidence. The productivity mean for authori-
tarian congruent situations was higher than the incongruent
mean, which was as anticipated, thus lending support to
hypothesis 1-A.

TABLE IV

A PRODUCTIVITY COMPARISON OF AUTHORITARIAN

CONGRUENCY AND INCONGRUENCY

AUTHORITARIAN LEADERS					
IMPOSED AUTOCRATIC LEADERSHIP			IMPOSED DEMOCRATIC LEADERSHIP		
LEADER	SCORE	MEAN	LEADER	SCORE	MEAN
A-1	34		A-1	26	
A-2	38		A-2	33	
A-3	36	35	A-3	34	32
A-4	34		A-4	35	
A-5	32		A-5	30	
A-6	36		A-6	34	

Hypothesis No. 1 - part "B": Leaders with democratic
personality tendencies combined with an imposed democratic
leadership style are likely to be comparatively more

effective than leaders with the same personality tendencies combined with an autocratic leadership style.

Leader subjects with basic equalitarian or democratic personality tendencies under an imposed democratic leadership style had a mean of 34 completed spans. The same leaders using an imposed autocratic leadership style had a mean of 32 completed spans. Table V shows the equalitarian leader productivity scores and means for the congruent and incongruent situations.

TABLE V

A PRODUCTIVITY COMPARISON OF EQUALITARIAN

CONGRUENCY AND INCONGRUENCY

EQUALITARIAN LEADERS					
IMPOSED AUTOCRATIC LEADERSHIP			IMPOSED DEMOCRATIC LEADERSHIP		
LEADER	SCORE	MEAN	LEADER	SCORE	MEAN
E-1	33		E-1	40	
E-2	30		E-2	31	
E-3	29		E-3	34	
E-4	33	32	E-4	30	34
E-5	35		E-5	36	
E-6	32		E-6	33	

A statistical "T-test" analysis found that the difference in the means of the congruent and incongruent situations were not significant at the 5% level of confidence. The finding indicates that the equalitarian leader subjects in this experiment had slightly higher productivity

when they use an imposed democratic leadership style rather than an autocratic leadership style.

II. RESULTS RELEVANT TO HYPOTHESIS NO. 2

Hypothesis No. 2 states: Leaders with democratic personality tendencies combined with a democratic leadership style are likely to be more effective, as measured by group productivity, than are leaders with authoritarian personality tendencies combined with an autocratic leadership style.

The experimental results relevant to hypothesis No. 2 failed to support the hypothesis as stated. Leaders with equalitarian personality tendencies using a democratic leadership style had a productivity mean of 34 completed spans. Authoritarian leaders using a congruent autocratic leadership style completed a mean of 35 spans. Table VI shows the leaders' scores and means.

The T-test analysis indicates that the difference in the means is not significant at the 5% level of confidence. The experimental results indicate that in this experimental situation, equalitarian personality tendencies combined with a democratic leadership style were not more effective as measured by group productivity than authoritarian personality tendencies and an autocratic leadership style. In this case, the autocratic congruent situation seemed the most effective.

TABLE VI

A PRODUCTIVITY COMPARISON OF CONGRUENT AUTOCRATIC

AND DEMOCRATIC SITUATIONS

AUTHORITARIAN-AUTOCRATIC			EQUALITARIAN-DEMOCRATIC		
LEADER	SCORE	MEAN	LEADER	SCORE	MEAN
A-1	34		E-1	40	
A-2	38		E-2	31	
A-3	36	35	E-3	34	34
A-4	34		E-4	30	
A-5	32		E-5	36	
A-6	36		E-6	33	

III. RESULTS RELEVANT TO HYPOTHESIS NO. 3

Hypothesis No. 3 states: Where personality tendencies
are apparently incongruent with the leadership style that is
imposed, greater anxiety is likely to be perceived by the
leader than in a congruent situation.

The self-reporting anxiety test administered to the
leader upon completion of the leadership task assessed the
perceived tension or anxiety experienced by the leader
during the experimental run. The scores from the tests
were compiled for statistical analysis. The findings
relevant to hypothesis No. 3 are displayed in Table VII.

In the experimental runs where leaders were required
to use a leadership style which was apparently incongruent
with their own personality tendencies, the mean of perceived
anxiety scores was 21. The same leaders in congruent

experimental situations had a mean of 18.17 for perceived anxiety. A statistical "T-test" analysis demonstrated that this difference of means was not significant at the 5% confidence level, but the results tend to contribute to the support of hypothesis No. 3.

TABLE VII

LEADER PERCEIVED ANXIETY

INCONGRUENT SITUATION			CONGRUENT SITUATION		
LEADER	SCORE	MEAN	LEADER	SCORE	MEAN
E-1	15		E-1	18	
E-2	19		E-2	12	
E-3	23		E-3	26	
E-4	17		E-4	12	
E-5	13		E-5	14	
E-6	21		E-6	15	
A-1	17	21	A-1	18	18.17
A-2	24		A-2	22	
A-3	27		A-3	21	
A-4	29		A-4	23	
A-5	21		A-5	20	
A-6	26		A-6	17	

Part "A" of hypothesis No. 3 states: An authoritarian personality tendency combined with an imposed autocratic leadership style is likely to result in less anxiety for the leader than will an authoritarian personality tendency and an imposed democratic leadership style.

Leaders with authoritarian personality tendencies had a mean of 24 for perceived anxiety when they were in

experimental situations where they were required to use the incongruent democratic leadership style. The same leaders had a mean of 20.17 for perceived anxiety when they were required to use the congruent autocratic leadership style. Table VIII shows the individual leader anxiety scores and means.

TABLE VIII

ANXIETY PERCEIVED BY AUTHORITARIAN LEADERS IN

CONGRUENT AND INCONGRUENT EXPERIMENTAL RUNS

INCONGRUENT DEMOCRATIC			CONGRUENT AUTOCRATIC		
LEADER	SCORE	MEAN	LEADER	SCORE	MEAN
A-1	17		A-1	18	
A-2	24		A-2	22	
A-3	27	24	A-3	21	20.17
A-4	29		A-4	23	
A-5	21		A-5	20	
A-6	26		A-6	17	

Although the authoritarian leaders' mean anxiety score was higher in the incongruent situation than it was in the congruent situation, the difference was not statistically significant at the 5% confidence level.

Part "B" of hypothesis No. 3 states: A democratic personality tendency combined with an imposed democratic leadership style is likely to result in less anxiety for the leader than will a democratic personality tendency and an imposed autocratic leadership style.

Leaders with democratic personality tendencies had a mean for perceived anxiety of 18 when they were required to use an incongruent autocratic leadership style. In situations in which the same leaders used a congruent democratic leadership style, the mean for perceived anxiety by the leaders fell to 16.17. Table IX gives the individual leader scores and means for the democratic leaders.

TABLE IX

ANXIETY PERCEIVED BY DEMOCRATIC LEADERS IN

CONGRUENT AND INCONGRUENT EXPERIMENTAL RUNS

| INCONGRUENT AUTOCRATIC | | | CONGRUENT DEMOCRATIC | | |
LEADER	SCORE	MEAN	LEADER	SCORE	MEAN
E-1	15		E-1	18	
E-2	19		E-2	12	
E-3	23	18	E-3	26	16.17
E-4	17		E-4	12	
E-5	13		E-5	14	
E-6	21		E-6	15	

The difference in anxiety means for the congruent and incongruent situations for leaders with democratic personality tendencies was small, only 1.83. The variation of anxiety scores around the means was great and therefore the difference in anxiety means for the congruent and incongruent situations was not statistically significant at the 5% confidence level.

IV. FINDINGS RELEVANT TO CONSTRUCTION DEVIATION

At the end of each experimental run, the height of
the skyscraper was measured and the number of deviations
from construction requirements were tabulated. The wrong
number of levels to a tower, improperly located windows and
wrong exterior panelling were some of the deviations from
building requirements.

In the original experimental design it was not
anticipated that construction deviations would be of
consequence and therefore working hypotheses were not
developed regarding deviation. As the deviation results
were tabulated they became significant. An analysis of
deviation results was completed by comparison of deviation
means for congruent and incongruent situations. Table X
gives the individual leader deviations and mean scores for
the two experimental situations.

The mean number of deviations for situations in which
personality tendencies were congruent with the imposed
leadership style was 5. The mean number of deviations in
the incongruent situations was 6.83. The difference of
means was not statistically significant at the 5% confidence
level.

Further analysis of deviation results demonstrated
two relationships that should be of interest. The first
relationship is the comparison of construction deviations

TABLE X

DEVIATION RESULTS FOR LEADERS IN CONGRUENT AND

INCONGRUENT EXPERIMENTAL RUNS

CONGRUENT SITUATION			INCONGRUENT SITUATION		
LEADER	SCORE	MEAN	LEADER	SCORE	MEAN
E-1	4		E-1	5	
E-2	7		E-2	8	
E-3	8		E-3	6	
E-4	6		E-4	4	
E-5	5		E-5	3	
E-6	7	5	E-6	4	6.83
A-1	3		A-1	14	
A-2	2		A-2	6	
A-3	4		A-3	7	
A-4	5		A-4	10	
A-5	6		A-5	5	
A-6	3		A-6	10	

under autocratic and democratic leadership. Table XI shows

the deviation results under the two leadership styles.

The mean number of deviations for groups under a

prescribed democratic leadership style was 7.42. The mean

number of deviations for the same groups under a prescribed

autocratic leadership style was 4.42. This difference,

although not significant at the 5% confidence level, would

seem to indicate that the construction task was suited to

an autocratic leadership style if the major goal is a

structure that conforms to the building requirements.

The second relationship regarding construction

deviations to be noted involves the leader with authoritarian

TABLE XI

DEVIATIONS UNDER AUTOCRATIC AND

DEMOCRATIC LEADERSHIP STYLES

DEMOCRATIC LEADERSHIP			AUTOCRATIC LEADERSHIP		
LEADER	SCORE	MEAN	LEADER	SCORE	MEAN
E-1	4		E-1	5	
E-2	7		E-2	8	
E-3	8		E-3	6	
E-4	6		E-4	4	
E-5	5		E-5	3	
E-6	7	7.42	E-6	4	4.42
A-1	14		A-1	3	
A-2	6		A-2	2	
A-3	7		A-3	4	
A-4	10		A-4	5	
A-5	5		A-5	6	
A-6	10		A-6	3	

personality tendencies. A statistical "T-test" analysis of

the mean number of deviations in groups led by leaders with

authoritarian personality tendencies in the congruent and

incongruent situations demonstrated a statistically

significant difference at the 5% confidence level. Table XII

shows the deviations results for authoritarian leaders in the

congruent and incongruent situations.

Authoritarian leaders using a prescribed autocratic

leadership style had an average of 3.83 deviations per

experimental run. The same leaders using a prescribed

democratic leadership style had an average of 8.67 deviations

per experimental run. The difference of means in the

congruent and incongruent situation is significant at the

5% confidence level.

TABLE XII

DEVIATION RESULTS FOR LEADERS WITH

AUTHORITARIAN PERSONALITY TENDENCIES

CONGRUENT SITUATION			INCONGRUENT SITUATION		
LEADER	SCORE	MEAN	LEADER	SCORE	MEAN
A-1	3		A-1	14	
A-2	2		A-2	6	
A-3	4		A-3	7	
A-4	5	3.83	A-4	10	8.67
A-5	6		A-5	5	
A-6	3		A-6	10	

V. DEVIATIONS FROM PRESCRIBED LEADERSHIP STYLE

The observation of experimental runs was intended to

be general, picking up any behavior that might be of interest

to the study. The first experimental run observed was that

of an authoritarian leader using a prescribed democratic

leadership style. Early in this first experimental run it

was observed that the leader deviated from the prescribed

leadership style and used autocratic leadership. This

deviation was not constant, but rather was sporadic. The

subject would deviate to an autocratic leadership pattern

and then return to the prescribed leadership style. Similar

deviations from prescribed leadership patterns were noted in

the second and third experimental runs also. After these runs, an observer was given the specific responsibility of recording deviations from prescribed leader behavior.

The deviations from prescribed leader behavior followed a general pattern. Most of the deviations occurred at "critical instances", which are times during the experimental run when the group had to start a new phase of construction, or when there was some confusion regarding building requirements. The deviations were most frequent when the leader had authoritarian personality tendencies and he was in an incongruent situation with a prescribed democratic leadership style.

There were some deviations from a prescribed autocratic leadership style to democratic leadership behavior, however these deviations were not as frequent as the deviations from the prescribed democratic style. Usually the deviations from the autocratic leadership style also occurred at critical instances. In these instances the leader would revert to a consultative behavior and the group would help make the decision.

The original experimental design did not anticipate deviations from prescribed leadership style, therefore, observers were not adequately trained to make their recorded observations meaningful. Also recorded information failed to cover all groups so a statistical comparison is impractical.

VI. SUMMARY OF RESULTS

The postulate of hypothesis No. 1 was: In situations where personality tendencies were congruent with an imposed leadership style, group productivity would likely be higher than in situations where the personality tendencies were incongruent to the imposed leadership style. The results of the study tended to support this contention but they were not significant at the 5% confidence level. The findings regarding productivity indicated that the congruency of personality tendencies and an imposed leadership style affected productivity more when the leader had authoritarian personality tendencies than when the leader had equalitarian personality tendencies.

The congruent productivity mean for authoritarian leaders was three spans greater than the incongruent mean. The congruent productivity mean for equalitarian leaders was only two spans greater than the incongruent mean. However, the difference in means was not significant at the 5% level for either groups.

Hypothesis No. 2 speculated that leaders with democratic personality tendencies combined with a democratic leadership style were likely to have greater group productivity than leaders with authoritarian personality tendencies combined with an autocratic leadership style.

The experimental results did not substantiate this hypothesis. The group productivity mean was higher in authoritarian congruent situations, 35, than it was in democratic congruent situations with a mean of 34. However the difference was not statistically significant at the 5% confidence level.

Hypothesis No. 3 postulated that where personality tendencies are apparently incongruent with the leadership style that is imposed, greater anxiety is likely to be perceived by the leader than in a congruent situation.

In general, the results tended to substantiate the hypothesis. The greatest anxiety difference was noted in runs where leader subjects had authoritarian personality tendencies.

Authoritarian leaders had a mean of 24 for perceived anxiety in incongruent runs while equalitarian leaders had a mean of 18 for perceived anxiety in incongruent runs. Using perceived anxiety as an indicator, equalitarian leaders seem more adaptable to incongruent situations than do authoritarian leaders.

The comparison of construction deviations for authoritarian leaders in the congruent and incongruent situations demonstrated a significant difference of means at the 5% confidence level. In the congruent situation construction deviation had a mean of 3.83 compared to a

mean of 8.67 in the incongruent situation. The difference in means for the congruent and incongruent situations for the equalitarian leaders was not significant.

CHAPTER V

SOME IMPLICATIONS OF THIS STUDY FOR MANAGEMENT

AND FOR FUTURE RESEARCH

I. IMPLICATIONS FOR MANAGEMENT

The findings of this study have implications for
the management of organizations when the most suitable
leadership style for their organization can be determined,
or the personality tendencies of the leaders determined.

A. WHEN THE SUITABLE LEADERSHIP STYLE IS DETERMINED

If management is desirous of having a particular
leadership style used in its organization or in particular
positions in its organization, then the findings of this
exploratory study suggest that leaders should probably be
selected who have personality tendencies which are congruent
with the leadership style that is to be used. When a leader
is placed in situations where his personality tendencies are
congruent with an imposed leadership style, he is probably
inclined to deviate less from that leadership style, perceive
less anxiety, and be more productive than if he is placed in
a situation where his personality tendencies are incongruent
with the imposed leadership style.

B. WHEN THE SUITABLE LEADERSHIP STYLE IS UNKNOWN

When the management of an organization is unable to
ascertain the most suitable leadership style for their
organization or positions in the organization, the findings
of this exploratory study suggest that leaders who have
democratic or equalitarian personality tendencies may be
more suitable than authoritarian leaders. Individuals with
equalitarian personality tendencies tend to be more flexible
and adaptable to incongruent leadership situations than are
authoritarian individuals. When the most suitable leadership
style has not been ascertained, then it is impossible to
always select leaders who will have personality tendencies
which will be congruent with the leadership style they may
be required to use. When such is the case, the findings of
this study suggest that it may be best to select the most
versatile and adaptable individuals for positions where the
leadership style to be used is uncertain.

II. LIMITATIONS

This study was an exploratory study and the implica-
tions are projections of the findings to actual situations.
While the projections may be logical, it must be considered
that these projections have not as yet been substantiated
by field work.

The findings of this study are as crude as the tools used in the construction and development of the experiment. Although the tools used in this study have been used elsewhere for similar tasks, they had to be adapted somewhat for this study; they are far from perfect.

As Chapter IV brought out, some of the results used to base implications on were significant at the 5% level of confidence; some results fell below this level. It therefore must be remembered that these results do contribute to existing knowledge but are not to be considered proven facts.

III. IMPLICATIONS FOR FURTHER RESEARCH

There needs to be further research done regarding the results of this study to ascertain their reliability and validity. One way to test the reliability of the results of this study would be to use the same methodology and tools as used in this study and run the experiments again with a greater number of subjects. Now that the results can be predicted more closely, observation of subjects could be arranged. To help refine the results noted in the observation section of Chapter IV, trained observers could use a category system of behavior analysis such as the Bayles category system. This would help to make the results regarding deviation and expression of anxiety more precise.

Validity for the study could be further substantiated by comparing equalitarian and authoritarian subjects drawn

by the experimental design to known authoritarian and equalitarian personalities. There is a difficulty here, though, in getting known groups as there may always be some doubt. However, this is one of the best ways to test the validity of the selection of the process.

A major direction for further research is to take the hypotheses of this study into the field situation. That is, revise the working hypothesis of this study to conform to the results found in this study and then adapt the study to an actual work situation.

Through observation and testing in an actual work situation, the validity and reliability of tools and theory presented and developed in this study could be further supported. Until it is demonstrated that the findings of this study hold true in field conditions, the application of the findings are very limited.

One possible area for further research is the comparative natural or normal anxiety levels of authoritarian and democratic individuals. This study hints that authoritarian individuals experience more anxiety in natural circumstances than do equalitarian individuals.

Further research would also be very useful on the effects of anxiety on different personality types. It may be that an equal anxiety level has different effects and results on authoritarian individuals than it does on equalitarian individuals.

Further work is required in developing useful tools
for determining authoritarian personality tendencies on a
leadership level. Refinement of the tools used in this
study, found in the appendices, is required for further
research. Certainly this study was able to separate two
significantly different groups in terms of authoritarianism.
It is felt however, that the tools could be sharpened with
further research.

IV. CONCLUSION

There is no one appropriate leadership style that
should be used by all leaders in all situations. In choosing
a leadership style for an individual or an organization, all
factors of the leadership environment should be considered.
Management, in selecting a leadership style for the organiza-
tion or for particular positions in the organization, should
first determine the reality of the situation. This study
suggests that a leadership style which is congruent with the
personality tendencies of the leader is likely to produce
better results than an incongruent leadership style.

When an imposed leadership style is incongruent to
the personality tendencies of the leader, productivity is
likely to be lower, and anxiety is likely to be higher than
in congruent situations. While this general statement is
true for this study, it is particularly true for leaders

for leaders with authoritarian personality tendencies. In this study with productivity and anxiety used as indicators, leaders with equalitarian personality tendencies are more flexible and adaptable than are the authoritarian leaders.

This study must be considered as an exploratory study. It has been designed and carried out in an attempt to contribute information to the body of knowledge in the field of leadership. It is hoped that this study may have opened up avenues for further research.

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APPENDIX

APPENDIX I

TEST FOR AUTHORITARIANISM

Instructions: Read each of the following statements care-

fully and then circle the word that most

closely describes your opinion regarding

the statement.

Example: Most grass is green.

strongly agree, agree, undecided, disagree,

strongly disagree.

1. Obedience and respect for authority are the most
    important virtues children should learn.

strongly agree, agree, undecided, disagree,

strongly disagree.

2. A person who has bad manners, habits and breeding can
    hardly expect to get along with decent people.

strongly agree, agree, undecided, disagree,

strongly disagree.

3. If people would talk less and work more, everybody
    would be better off.

strongly agree, agree, undecided, disagree,

strongly disagree.

4. The business man and the manufacturers are more important
    to society than the artist and the professor.

strongly agree, agree, undecided, disagree,

strongly disagree.

5. Science has its place, but there are many important
   things that can never be understood by the human mind.

   strongly agree, agree, undecided, disagree,

   strongly disagree.

6. Every person should have complete faith in some super-
   natural power whose decisions he obeys without question.

   strongly agree, agree, undecided, disagree,

   strongly disagree.

7. Young people sometime get rebellious ideas, but as they
   grow up they ought to get over them and settle down.

   strongly agree, agree, undecided, disagree,

   strongly disagree.

8. What this country needs most, more than political laws
   and political programs, is a few courageous, tireless,
   devoted leaders in whom people can put their faith.

   strongly agree, agree, undecided, disagree,

   strongly disagree.

9. No sane, normal, decent person could ever think of
   hurting a close friend or relative.

   strongly agree, agree, undecided, disagree,

   strongly disagree.

10. Nobody ever learned anything really important except
    through suffering.

    strongly agree, agree, undecided, disagree,

    strongly disagree.

11. What the youth needs most is strict discipline, rugged
    determination, and the will to work and fight for
    family and country.

    strongly agree, agree, undecided, disagree,

    strongly disagree.

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

    strongly agree, agree, undecided, disagree,

    strongly disagree.

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

    strongly agree, agree, undecided, disagree,

    strongly disagree.

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

    strongly agree, agree, undecided, disagree,

    strongly disagree.

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

    strongly agree, agree, undecided, disagree,

    strongly disagree.

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

    strongly agree, agree, undecided, disagree,

    strongly disagree.

17. No weakness or difficulty can hold us back if we have
    enough will power.

    strongly agree, agree, undecided, disagree,

    strongly disagree.

18. People can be divided into two distinct classes, the
    weak and the strong.

    strongly agree, agree, undecided, disagree,

    strongly disagree.

19. Most people don't realize how much our lives are con-
    trolled by plots hatched in secret places.

    strongly agree, agree, undecided, disagree,

    strongly disagree.

20. Any good leader should be strict with the people under
    him in order to gain their respect.

    strongly agree, agree, undecided, disagree,

    strongly disagree.

APPENDIX II

HANDOUT FOR LEADERSHIP EDUCATION

        The information following is an outline of the guiding
principles behind the two different leadership styles to be
used in the two different experimental situations. All of
your leader behavior displayed during the experimental
situation must conform to the basic principles outlined
below; otherwise, the experiment cannot be discriminating.
Just before you begin your leadership of the group, you will
be given a building plan to guide you in the completion of
the group task. Your direction of the group in completing
the task is to be governed by the following leadership
principles:

                        For Situation A

1. All determination of policy is to be done by you.

2. Construction techniques and activity steps are dictated
    by you, one at a time, so that future steps are always
    uncertain to a large degree.

3. You must dictate the particular work tasks and work
    companion for each group member.

4. You must tend to be personal in your praise and criticism
    regarding the accomplishment of the group task. You must
    remain aloof from active participation in the group
    except to give orders, praise and criticism, or when you
    are demonstrating.

                EXAMPLES OF A BEHAVIOR

1. "Bill, you assemble the beams." "George, you will put
    on the girders." "Fred, you separate the beams and give
    them to Bill." "George, Hank will separate the girders
    and hand them to you."

2. "Hank and Fred, now that you have finished separating the
    beams and girders, start putting windows on the bottom
    floor."

3. "Bill, you're too slow assembling the beams; George is waiting on you."

For Situation D

1. All policies are a matter for group consideration, and decisions are to be encouraged and assisted by you.

2. Activity and construction perspective gained during a discussion period at the beginning of the experimental period. General steps to the accomplishment of group goal is sketched, and where advice is needed the leader suggests two or more alternative procedures from which choice can be made.

3. You must allow the group members to choose their work tasks, and allow the group to see how the tasks fit together.

4. You are to be objective or "fact-minded" in your praise and criticism. Praise and criticism should be directed towards group rather than individuals. Try to be a group member in spirit without actually doing any construction.

EXAMPLES OF D BEHAVIOR

1. "We need one worker to assemble beams and one to assemble girders, and two people separating them out to hand to the assemblers. How shall we organize the group?" (Get volunteers)

2. "When you have finished separating the beams and girders, you two can start putting on the exterior."

3. "If we get a system for assembling the beams and girders, the building will go up faster. Maybe, Bill, if you lay beams ahead of George, that would work best."

APPENDIX III

GENERAL LEADER INSTRUCTIONS

You are a construction foreman in a highly unionized
industry with three separate unions represented. The unions
are very strong and insist that work which falls under the
jurisdiction of their union must be done only by their union
members. The three unions involved with this project are:
the Girder Erectors International, the Beam Layers Union,
and the Sky Scraper Exterior Finishers Union. One quarter
of your work force belongs to the Girder Erectors Union,
one quarter to the Beam Layers Union, and one half to the
Finishers Union.

Your company has made you totally responsible for the
building of the skyscraper. Your future pay and promotions
depend on your success with this project. Your superiors
will judge primarily on the basis of the height of the tower
completed in the limited time that will be available to you.
You must also follow the building plans given to you, lead
your workers in the manner prescribed, and ensure that
quality is being maintained in the construction of the
building.

You will be observed and judged regarding your con-
formity to the policies and standards of the company for
which you work.

BUILDING INSTRUCTIONS FOR AUTOCRATIC

AND DEMOCRATIC EXPERIMENTAL RUNS

SITUATION A: INSTRUCTIONS

In this situation, your success as a leader is
dependent upon your ability to get the most out of your
work group through choosing people wisely yourself for
the positions required, establishing good policy and
procedures, and then following through to ensure that
your instructions are being carried out. You can get
more of the task accomplished through praise and criticism
of your individual workers as the situation would indicate.

SPECIFIC STEPS TO BE ACCOMPLISHED

1. Using your own judgment entirely, select one worker to
    erect girders, one worker to lay beams, and two to put
    on the exterior.

2. Start the workers separating out the materials they
    will require for their specific task.

3. As soon as the girder erector has enough girders for
    one level, he may begin putting girders into the base.

4. The beam layer must being laying beams right behind
    the girder erector.

5. Put the Finishers to work on the exterior as soon as the seond level of beams and girders is begun.

6. Work on ways of getting more speed and efficiency from the work group through procedures that you develop.

7. Because of the tight unions, the workers are not allowed to do any work not associated with their union. The beam layer and girder erector may however, put on the roof.

BUILDING DESIGN AND REQUIREMENTS
BEAMS AND GIRDERS

1. The ground level and the second level are to be three beams wide. The structure must be centered on the building lot.

2. The third level through the ninth level shall consist of two towers each one beam wide situated at opposite ends of the structure so that there is a blank space between them.

3. The tenth through the thirteenth levels shall once again be three beams wide.

4. The fourteenth level shall be two beams wide.

5. The fifteenth level up is to consist of one tower rise from the center of the structure.

EXTERIOR REQUIREMENTS

1. The bottom level is to be entirely glassed in with a door in the center on either side of the structure.

2. The inside walls of the twin towers are to be finished in solid brick so that there are no windows in the towers facing each other. One side is to be done entirely in solid red exterior, the other side in solid blue.

3. One side of the building is to be left unfinished.

4. On the side of the building that is finished there must always be at least one window in each beam span.

5. All roofs are to be finished with a sky dome.

SITUATION D: INSTRUCTIONS

In this situation, your success as a leader depends on your ability to get the work group to feel that you are a part of that group. You are to do none of the construction yourself but you must make the workers feel that you are as much of the construction task as they are. You must encourage the group and build morale through praise for the group as a whole rather than individuals. Encourage the group members to coordinate with each other. Let your work group know what the whole plans for construction are, give them a hand in policy setting and group operation.

SPECIFIC STEPS TO BE ACCOMPLISHED

1. Allow the group members to join the unions which they desire but encourage the group to select the best qualified individuals.

2. Allow the group to organize their work but still stay within the bounds of the experiment.

3. Let the workers know what the full construction requirements are at the beginning of the experiment and then allow them to review any information they need as time goes on.

BUILDING DESIGN AND REQUIREMENTS
BEAMS AND GIRDERS

1. The ground level and the second level are to be five beams wide.

2. The third level through the tenth level shall consist of two towers each one beam wide situated directly on top of the second and fourth spans. The third span shall be left blank between the towers.

3. The eleventh and twelvth levels shall be three spans wide uniting the two towers.

4. The remaining levels of the building shall consist of a single tower one beam wide rising from the center of the structure.

EXTERIOR REQUIREMENTS

1. The ground level must have three sets of glass doors on either side of the building. The remaining two spans on the sides of the ground floor are to be glassed in. The ends of the building on the ground floor are to be in solid brick finishing.

2. Only one side is to be completely finished, and this front side must be completed in double windows that have a red brick trim.

3. The ends of the building must be finished with solid blocks and half windows.

4. One end must be done entirely in blue and the other end of the structure must be done in such a way that no blue is showing.

5. The inside of the towers that face each other must be done with half window and half red brick panels.

6. All roofs are to be finished with sky domes.

APPENDIX V

ANXIETY TEST

Instructions:

The following are some statements on feelings, attitude, and behavior. Read each statement carefully, and decide how often it applied to you while you were in the leadership position. Check "1" if the statement never applied to you, check "5" if you experienced it all the time; use "2", "3", and "4" for in-between ratings. Be honest, but do not spend too much time over any one statement. As a rule, first impressions are as accurate as any.

1. I felt on edge.
    1 2 3 4 5

2. I felt frustrated.
    1 2 3 4 5

3. I felt relaxed.
    1 2 3 4 5

4. I laughed at things that weren't really funny.
    1 2 3 4 5

5. I felt tied up inside.
    1 2 3 4 5

6. I felt satisfied.
    1 2 3 4 5

7. I wished the experiment was over.
    1 2 3 4 5

8. I felt awkward.
    1 2 3 4 5

9. I felt my heart beating faster.
    1 2 3 4 5