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AN INVESTIGATION OF A PATH-GOAL
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by
GARY DESSLER

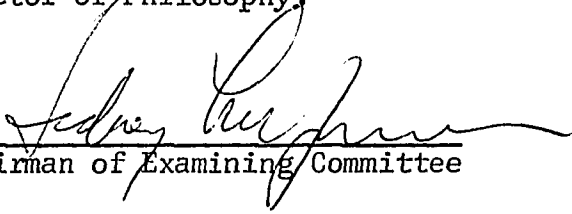
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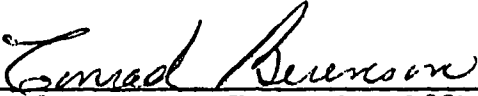
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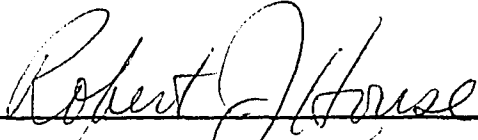
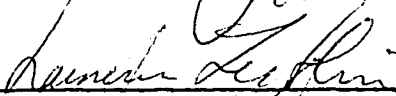
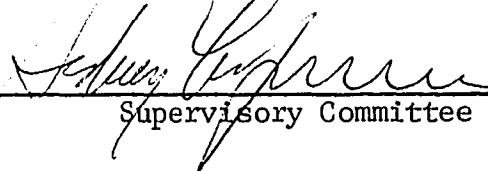
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Chairman of Examining Committee

January 29, 1973


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 per
 per

Supervisory Committee

Abstract

A TEST OF A PATH-GOAL THEORY OF LEADERSHIP

by

Gary Dessler

Advisor: Professor Sidney Lirtzman

This dissertation describes a test of the House path-goal theory of leadership. In essence, this theory states that the motivational functions of a leader consist of clarifying the goals of his subordinates, as well as the path to these goals. In line with this, the intrinsic certainty or predictability of the task-environment is seen as moderating the relationship between leader behavior and subordinate attitudes. In particular, the theory holds that as task certainty increases the relationship between leader initiating structure and subordinate satisfaction and expectancies decreases, while the relationship between leader consideration and these dependent variables increases.

A first test based upon a specially designed intrinsic certainty scale provided partial support for the hypothesis. A second, exploratory test based upon a refined moderator resulted in confirmation of many aspects of the theory, particularly after leader consideration was partialled out. A third test, based upon a sample of the data, suggested that the appropriate level of leader initiating structure depended upon the levels of both intrinsic task certainty, and subordinate tolerance for ambiguity.

The results strongly suggest that the House path-goal theory of leadership warrants further analyses. These should be carried out using an improved task certainty moderator as well as controls for leader consideration and subordinate individual differences such as authoritarianism.

ACKNOWLEDGMENTS

Professor Sidney Lirtzman and the members of my dissertation committee made a number of extremely useful comments which improved the final product significantly. In addition, the theoretical work of Bob House established a groundwork for the study, and his methodological policies have been targets which helped to guide the research. Finally, I want to thank my wife, Claudia, for the harrowing days and nights she spent typing and retyping the questionnaire and first drafts, and Derek, whose arrival proved to be an incentive to completing the degree.

TABLE OF CONTENTS

	<u>Page</u>
Chapter I Introduction	1
Chapter II Relevant Research and Hypothesis	4
Chapter III Methodology, and Statistical Results For Hypothesis I	28
Chapter IV Tests of Hypothesis 2: Covarying Influence of Leader Consideration	54
Chapter V Preliminary Analysis: The Influence of Other Factors	59
Chapter VI Conclusions, and Implications for Future Research	78
Appendices	82
References	99

LIST OF TABLES

	<u>Page</u>
Zero Order Correlations; Original 3 Groups	40
White/Blue Collar Zero Order Correlations; Middle Group	43
Scale Averages and Standard Deviations; Original and Revised Groups	44
Zero Order Correlations; Revised 3 Groups	48
Correlation Matrices	51-56
Partial Correlations; Original 3 Groups	59
Partial Correlations; Revised 3 Groups	60
Significant Differences Between 3 Groups	64
Manova Results	66, 68, 69
Significant Interactions and Main Effects	70

LIST OF DIAGRAMS

	<u>Page</u>
Time With Company - Initiating Structure Interaction	71
Intrinsic Certainty - Initiating Structure - Authoritarianism Interaction	73
Matrix of Preferable Level of Initiating Structure	74

Chapter I

INTRODUCTION

Behavioral scientists have long recognized the importance of situational factors to an explanation of leader effectiveness. Stogdill, for example, after reviewing a large number of leadership studies concluded that the traits and skills required in a leader are determined, to a large extent, by the situation in which he is to exercise leadership (1948). Similarly, no one style of leadership, such as authoritarian or democratic, has been found to be universally effective, a fact which led Tannenbaum and Schmidt to conclude that "effective leadership depends on the leader, his followers, the situation, and the interrelationships between them (1958)."¹

In spite of this general acceptance of the importance of situational dimensions in leader effectiveness, there have been few attempts to establish controls for such factors.² Consequently, a series of studies exists in which the observed relationships between leader and subordinate behavior are generally applicable to only the unique research setting. Thus, Lowin and his associates point out that,

There appears to be much evidence that consideration and initiating structure can each correlate

-
1. See also Fleishman (1953) Vroom and Mann (1960) Katz and Kahn (1966) Oaklander and Fleishman (1964) Parker (1963) and Hemphill (1955).
 2. An exception to this is the work of Fiedler and his associates.

positively, negatively, both positively and negatively (depending on other variables) and only weakly if at all with effectiveness and morale indices. There seems to be no apparent preponderance of any one of these kinds of findings. (1969, 240)

Korman carried out an extensive review of the relevant literature and came to a similar conclusion. In particular, he notes that,

...There is very little evidence that leadership behavioral and/or attitudinal variation, as defined by scores on a leader behavior and leadership opinion questionnaire are predictive of leader effectiveness and/or satisfaction criteria. ...In most cases the researchers have made little attempt to either conceptualize situational variables which might be relevant and/or measure them. Instead, the researchers have tended almost always to follow the two-variable design which consists simply of correlating the test variable with the criterion variable, with little appreciation of the possible situational variables which might moderate these relationships ... What is needed (is) a systematic conceptualization of situational variance as it might relate to leadership behavior and a research program designed to test derivations from such a conceptualization ... (1966)

The object of this study is to test one such conceptualization, a conceptualization formulated by House (1971), which has been called a Path-Goal Motivational Theory of Leadership. Basically, this theory states that the motivational functions of a leader consist largely of increasing personal pay-offs to subordinates for work goal attainment and of making the path to these pay-offs easier to travel. The extent to which the leader must exercise these functions is seen as depending largely on the ambiguity and uncertainty inherent in the subordinate's task-environment. In line with this, the major purpose of the present study is to test a

pivotal hypothesis of House's model:

Leader initiating structure will have differential effects, depending upon whether the task-role demands are certain or ambiguous. In general, the more uncertain or ambiguous the task the more positive the relationship between initiating structure and subordinate path-goal clarity and satisfaction. "Structure serves to reduce role ambiguity and clarify path-goal relationships for ambiguous tasks but is viewed as unnecessary and redundant for non-ambiguous tasks." (House, 1971, p. 11)

In addition to describing tests of the preceding hypothesis, this study presents analyses of two extensions of the basic path-goal theory. First, the covarying effects of leader consideration on the relationships hypothesized above are analyzed. Second, the influence on these relationships of subordinate authoritarianism is analyzed on a preliminary basis.

Chapter II

RELEVANT RESEARCH AND HYPOTHESES

Section 2.1 Introduction

The purpose of Chapter II is to summarize prior research findings relevant to the hypotheses of this study. In Section 2.2 the relationships between (1) ambiguity and behavior, (2) leader structure and ambiguity, and (3) leader structure and behavior are discussed. Sections 2.3 and 2.4 present findings relevant to an elaboration and extension of these basic relationships. Section 2.3 describes research suggesting the possible covarying influence of leader consideration; Section 2.4 presents results which suggest that individual differences between subordinates in factors such as authoritarianism might further complicate the relationship between task certainty, leader structure, and subordinate satisfaction.

Section 2.2 The Relationship Between Ambiguity, Leader Structure, and Subordinate Satisfaction and Expectations.

Section 2.2.1 Ambiguity and Behavior

Role ambiguity has been described as "a function of the discrepancy between the information available to a position occupant and that necessary for the adequate performance of his role (Kahn et al, 1964)." Rizzo, House, and Lirtzman refer to role ambiguity as the "lack of the necessary information available to a given organizational position."

These latter researchers suggest that role ambiguity is a function of a number of factors including: "(1) The predictability of the outcome or responses to one's behavior and (2) The existence or clarity of behavioral requirements, often in terms of inputs from the environment, which would serve to guide behavior and provide knowledge that the behavior is appropriate." Essentially, therefore, role ambiguity tends to reflect the degree of uncertainty associated with a particular role.

There are a number of possible sources of such uncertainty. Kahn (1964) has described some of the mechanisms through which ambiguity can arise to influence individual behavior. He and his associates assert, for example, that role ambiguity can result from organizational size, complexity, and growth, all of which generate informational demands that exceed the individual's span of comprehension. Similarly, frequent changes in the environment or technology of the organization, as well as managerial idiosyncrasies, such as restricted channels of communication, will also contribute to role ambiguity. That these do indeed act as sources of ambiguity has been corroborated recently by a number of researchers, including Bennis (1965), Perrow (1970), Burns and Stalker (1961), Woodward (1966), and Thompson (1967).

While ambiguity has a variety of sources, its effects appear to be generally consistent: role ambiguity or uncertainty seems to be closely associated with individual stress, tension, anxiety, and dissatisfaction. The findings of a number

of diverse studies tend to corroborate this assertion. For example, in a test carried out in an experimental setting, Sinha has shown that increasing uncertainty regarding the timing and volume of electrical shock resulted in increasing tension and anxiety (1950).

Similar results have been obtained in industrial settings. Cohen (1959) found that anxiety and decreased productivity resulted from ambiguously defined and inconsistently directed tasks. Similarly Wispe and Thayer (1957) interviewed three levels of management in a life insurance company and found that those managers whose roles were most ambiguous tended to be most anxious. Mandell (1956) found that the ability to issue clear instructions and to provide clear information to subordinates was considered a primary characteristic of good supervision in a survey which included almost 700 persons in a wide variety of jobs and with a wide variety of individual personality traits.

Role ambiguity or uncertainty has been found to have other dysfunctional effects in addition to increased tension or dissatisfaction. For example, in an experimental study with 140 college students, Smith (1957) found that: (1) Groups in which each member clearly understood his role performed significantly better in a problem solving task than groups in which members had relatively ambiguous roles: (2) Groups high in role ambiguity were significantly more dissatisfied; and (3) These ambiguous groups had significantly higher hostility levels. It, therefore, seems reasonable to conclude that role

ambiguity or uncertainty will, at least at some point, increase dissatisfaction and tension, as well as undermine individual and group problem solving effectiveness.

Further insight into the effects of ambiguity on behavior can be obtained by turning briefly to research which emphasized the reactions of individuals to stressful, anxious situations. As Lewin (1959, 225) has pointed out, ambiguity or uncertainty has the potential for being stressful so that studies carried out under conditions of stress or anxiety should provide some useful, if indirect, evidence for use in the present discussion.

Frequently, stress and anxiety result in behavior which appears irrational to an objective observer. This apparently is due in part to the effect of stress on perception, or the way in which people see aspects of the situation. For example, people under stress appear to form much less accurate impressions of a situation than do those not under stress (Smock, 1955). In addition, individuals under stress appear to have, interestingly, a relatively high intolerance for ambiguity and need for closure or "filling in the picture." This is suggested by Moffit's finding (1953) that under anxiety-stress subjects tended to "see" a complete design rather than one in which portions of the lines were missing. This is particularly interesting since it seems to suggest that under stressful conditions individuals will be more prone to accept increased structuring of a task by a leader.

A number of other studies have analyzed the reactions of individuals to stress. Torrance (1954) studied a group of 200 Air Force personnel who were downed in enemy territory during World War II and Korea. He found that two types of structural uncertainty were likely to be evidenced in this very stressful survival situation: (1) Unclear structure of path to survival, and (2) Unstabilized relations among persons. Torrance found that these types of structural uncertainties were likely to result either in random trial and error behavior or in the development of a feeling of hopelessness, which generally resulted in surrender to the enemy. Similarly, both Gerard (1960) and Weitz (1956) found that whenever group goals were unclear, subjects became dissatisfied with their roles and tended to withdraw from their groups.

In summary it is evident that ambiguous or, similarly, stressful situations generally result in a reasonably standard behavior pattern. Individuals faced with such situations develop an extraordinarily high need for structure. Their intolerance of ambiguity increases, and they exhibit a high tendency for closure even if it means reading into the picture things that are not actually there. Individuals faced with this situation attempt to withdraw from the group, but if this option is not open to them, they may engage in increasingly confused trial and error behavior which may ultimately result in a feeling of hopelessness which is associated with a heightened propensity toward submission. One

would imagine that at the extreme, this tendency toward submission may manifest itself in the acceptance of an authoritarian leader who actively seeks to maintain absolute control over every action in the group. In any case, it is evident that the findings of a variety of studies suggest that role ambiguity may result in tension, stress, anxiety, confusion, and similar dysfunctional reactions.

Section 2.2.2 Leader Structure, and Role Ambiguity

A number of theorists have concluded that the reduction of such ambiguity is a major leadership function. Katz and Kahn (1964), for example, have suggested that the essence of organizational leadership is "... the influential increment over and above mechanical compliance with the routine directives of the organization (302)." Leader structure is necessary, they suggest, because,

No organizational chart and no book of policies and procedures can specify every act and prescribe for every contingency encountered in a complex organization. To attempt such specification merely produces an array of instructions so ponderous that they are ignored for the sake of transacting the business of the organization. Moreover, even if such specifications could be provided, they would soon be out of date. Organizations are open systems and exist in ever-changing environments. Each change in the environment implies a demand for change within the organization. To some extent such demands are foreseeable and the appropriate responses can be programmed; to some extent they require leadership beyond such responses. (334)

In practice, leader structure is frequently measured through the use of the "initiating structure" scale of the Ohio State Leader Behavior Description Questionnaire. This scale was factor-analytically derived by the Personnel Research Board of the Ohio State University and has been described by Fleishman and Harris as follows:

Initiating structure includes behavior in which the supervisor organizes and defines group activities and his relation to the group. Thus, he defines the role he expects each member to assume, assigns tasks, plans ahead, establishes ways of getting things done, and pushes for production. This dimension seems to emphasize overt attempts to achieve organizational goals. (1962, pp.43-44)

It is apparent from the descriptions of Katz and Kahn and of Fleishman and Harris that one of the primary goals of increased leader structure should be a decrease in the uncertainty or ambiguity associated with the subordinate's task. Research in the area seems to indicate that such a negative relationship does, in fact, exist. For example, Rizzo et al (1970) found correlations of $-.20$ and $-.41$ between "leader structure and standard setting" and subordinate role ambiguity.

Section 2.2.3 Leader Structure, Intrinsic Task Certainty and Subordinate Behavior.

In the preceding sections it has been suggested that ambiguity is stressful and dissatisfying, and that leader structure can be influential in reducing ambiguity. These points taken together suggest that leader structure can result in increased satisfaction of subordinates with ambiguous tasks. The purpose of the present section is to formalize this relationship as Hypothesis 1.

The concept of legitimacy of leader structure is discussed first, since the proposed hypothesis seems to imply that subordinates can "sense" when more leader structure is called for and when it is not. A description of a path-goal motivational mechanism through which leader structure can reduce ambiguity and increase satisfaction follows this as the second point.

Legitimacy of leader structure. Research findings concerning the legitimacy of leader structure suggest two conclusions. First, the findings suggest that subordinates can sense when a leader is behaving in a manner congruent with the demands of the task. Further, these findings also suggest that leader behavior which is viewed as legitimate and appropriate to the demands of the task will result in relatively satisfied employees. It would be useful to briefly review a number of these studies.

Schein and Lippitt (1966) carried out a study in which supervisors in different kinds of organizations were asked to indicate the number of areas in which they felt they could legitimately influence their subordinates. Based upon their findings, Schein and Lippitt suggest that,

... It would be our hypothesis that more important than either consideration or employee centeredness is congruence or agreement as to what is a legitimate area of the superiors' influence on the subordinate and what is not. It is agreement at this level that might well determine whether the subordinate perceives the superior to be considerate or not. And, in different organizational settings, the area of agreement might well be different ... (335)

The idea that leader structure should be legitimate and appropriate to the task has also been confirmed by Likert. For example, Likert presents evidence which indicates that there is,

... A marked inverse relationship between the average amount of "unreasonable" pressure the men in a department feel and the productivity of the department. (1961; 8)

Likert goes on to point out that:

Feeling a high degree of unreasonable pressure is associated with low performance, according to unpublished data from a study conducted by Stanley E. Seashore and Basil Georgopoulos... the question asked was, "On the job, do you feel any pressure for better performance over and above what you yourself, think is reasonable?" The answers could vary from "I feel a good deal of pressure" to "I feel no pressure at all"... Unreasonable pressure for better performance is also associated with a low level of confidence and trust in the supervisor. The greater the amount of unreasonable pressure the men feel from the supervisor for better performance, the less confidence for trust the men have in that supervisor. (1961;8)

Findings similar to those of Schein and Lippitt and those of Likert have also been obtained by researchers investigating the effectiveness of leaders who structure their subordinates' tasks through participation. In particular, the research findings suggest that the reaction of subordinates to participative leadership appears to be contingent upon whether or not they view it as legitimate and appropriate.

French, Israel and Aas (1960) demonstrated that the response of workers to participation in job related decisions was influenced significantly by whether or not the employee felt that the participation was legitimate. In their study (which took place in Norway), French and his associates found that workers who perceived their participation to be legitimate responded significantly more favorable to the experience than those who felt that their participation was not legitimate. French defines legitimacy of participation as the extent to which "it is considered right and proper by the parties

involved."

Similar results were obtained by Foa (1957). He found that, in general, subordinates' satisfaction tended to be higher under participative leadership than under autocratic leadership. He notes, however, that the more important consideration appeared to be whether or not leaders conformed to the expectations of their subordinates, since those doing so are more likely to have satisfied workers, regardless of whether they are participative or autocratic.

In summary, two conclusions concerning legitimacy of leader structure appear to be warranted: (1) Subordinates can sense when structure provided by the leader is appropriate to the task and therefore legitimate; and (2) the behavioral response of a subordinate to his leader's initiation of structure may depend largely upon whether or not that structuring is viewed as legitimate and appropriate given the nature of the task. As explained in sections 1 and 2, we feel that the intrinsic uncertainty or ambiguity of the task is of particular importance.

The argument to this point can be summarized as follows: (1) Ambiguity is stressful and dissatisfying; (2) Leader structure can be influential in reducing such ambiguity; (3) subordinates can "sense" when a task is unstructured or uncertain and therefore requires structuring by the leader. This being the case, the problem becomes one of describing a behavioral mechanism through which leader structure, task uncertainty, and subordinate behavior interact.

In Section 2.2.1 a number of findings were described which, taken as a whole, suggest that ambiguity or uncertainty is stressful to individuals. One way to explain the emergence of this stress is by considering it within the framework of the expectancy theory of motivation which was developed by Atkinson, (1958); Vroom, (1964); and Georgopoulos, Mahoney, and Jones, (1958). The central concept of this theory is that the force inducing an individual to engage in a specific behavior is a function of both his expectations that the behavior will result in a specific outcome and the sum of the personal utilities or satisfactions he derives from that outcome. Therefore, in terms of this expectancy theory, we could conclude that uncertainty or ambiguity is stressful for two reasons. First, uncertainty or ambiguity makes it difficult or impossible for the individual to identify outcomes and resultant personal utilities. Second, ambiguity or uncertainty undermines the individual's ability to formulate probabilities concerning his expectations that behavior will result in particular outcomes. As Lewin (1959, 225) points out,

As unstructured region has the same effect as in impassable obstacle. Being in unstructured surroundings leads to uncertainty of behavior because it is not clear whether a certain action will lead to or away from a goal.

This expectancy motivation framework can help to explain the mechanism through which leader structure, task uncertainty, and subordinate attitudes interact. From the principles of the expectancy theory it appears that subordinates with

ambiguous, uncertain tasks will tend to view increased leader structure as appropriate and legitimate. In particular, the leader's attempts to clarify the goals of subordinates as well as the paths to these goals should result in increased worker satisfaction.

Along these lines, House (1971) has proposed a Path-Goal Motivation Theory of leadership. The central concept of this theory is that,

... The motivational functions of a leader consists of increasing personal payoffs to subordinates for work goal attainment, and making the path to these payoffs easier to travel by clarifying it, reducing road blocks and pitfalls, and increasing the opportunities for personal satisfaction en route.

With this in mind the relevant empirical evidence can be reviewed. Unfortunately, the task of analyzing the interrelationship between leader structure, task uncertainty, and subordinate behavior is a difficult one because most studies of leadership styles, as pointed out previously, did not include controls for situational variables.

One exception to this is the work of Fiedler and his associates. These researchers hypothesized that the leadership style appropriate in any particular situation depended upon how "favorable" or "unfavorable" the situation was for the leader. Briefly, Fiedler chose three situational dimensions - leader member relations, formal leader position power, and group task structure - and concluded that,

... In very favorable conditions when the leader has power, informal backing, and a relatively well structured task, the group is ready to be directed on how to go about its task. Under a

very unfavorable condition, however, the group will fall apart unless the leaders' act of intervention and control can keep the members on the job. In moderately unfavorable conditions, the accepted leader faces an ambiguous task, or his relation with group members is tenuous. Under these circumstances, a relationship oriented, non-directive, permissive attitude may reduce member anxiety or intra-group conflict and this enables the group to operate more effectively.. .. (165).

While Fiedler quotes considerable evidence in support of his theory, his contingency model has recently failed to replicate in a laboratory setting. (Graen, Greenwood, Alvarez; 1970). As Fiedler himself points out (1970), there is considerable doubt as to whether his leadership style scale is measuring what it is purported to measure. Further, considerable doubt has arisen over the methods used to distinguish between high and low leader member relations and position power (Fiedler, 1970). Therefore, while the Fiedler studies represent an attempt at approaching leader effectiveness from a situational point of view, his findings are presently open to considerable doubt.

Lawrence and Lorsch (1967) used Fiedler's leadership scale and findings in order to determine the appropriate leadership style under various task uncertainty conditions. Building liberally upon Fiedler's conclusions, Lawrence and Lorsch hypothesized that:

... Members of units engaged in either highly certain or highly uncertain tasks would develop task oriented interpersonal styles. Members of units with moderately uncertain tasks would develop relationship oriented styles. (p. 33).

Specifically, Lawrence and Lorsch felt that manufacturing personnel such as production engineers, with their relatively certain tasks, and fundamental scientists, with their highly uncertain tasks, would both tend to prefer task oriented leadership. On the other hand, sales people and applied scientists, with only moderately uncertain tasks, would, they hypothesized, fall toward the middle of the Fiedler scale and therefore prefer relationship oriented leadership.

According to Lawrence and Lorsch "the data collected generally supported our prediction" (p. 33). Specifically, sales departments generally tended to be the most relationship oriented while production personnel "indicated a preference for task oriented relationships" (p. 34). Furthermore "the applied people (scientists) having a moderately uncertain task lean towards the relationship orientation of sales and the fundamental researchers tended more toward the task orientation of production" (p. 34).

The Lawrence and Lorsch findings are interesting but are subject to considerable skepticism for a number of reasons. First, they are open to the same criticisms which have been leveled at Fiedler's own work concerning the validity of his leadership style (LPC), position power, and leader-member relations scales. Therefore, we can not be sure what Lawrence and Lorsch say they are measuring was actually being measured. A second source of skepticism is the lack of any specific data provided by Lawrence and Lorsch concerning leadership styles or interpersonal skills in their methodological appendix - or

elsewhere in their study for the matter (pp. 246-268). In fact, what they have done is to combine leader structure and intrinsic task structure scores into a single "structure" value for each department and they have not provided any way of unscrambling the data (See for example page 95).

Another series of studies which approached the subject of leadership effectiveness from a situational point of view was carried out by House (1971). Using indirect measures of intrinsic task uncertainty (such as occupational level and task autonomy) House found evidence which tends to substantiate the usefulness of his path-goal motivation theory of leadership. In particular, subordinates whose tasks one could assume to be intrinsically uncertain tended to react favorably to increased leader initiating structure while subordinates with relatively routine tasks reacted unfavorably.

While proposing that "the findings, when viewed collectively, generally support the theory" House points out that only tentative conclusions should be drawn from the evidence cited. This is because theoretical constructs including intrinsic task uncertainty were inferred from situational measures such as task autonomy, and from occupational characteristics of the population studied.

Therefore, while research in this area is proceeding in desirable directions the findings to date are inconclusive, although they do tend to suggest that situational variables are important. While results of the research carried out by organizational behaviorists is not altogether enlightening

some interesting and useful findings have been formulated concerning the interaction of leader structure, task uncertainty, and subordinate satisfaction by researchers in other branches of the behavioral sciences. In particular a good deal of evidence exists which substantiates the idea that ambiguous, stressful situations are particularly adapted to the rise of a highly structuring, authoritarian leader.

In a study of school children Waring, Dwyer, and Junkin (1939) found that during meals on the first day of nursery school the children were more ready to acquiesce to the instructions of the adult than later on when they felt themselves to be on surer grounds. Thus, in the initially ambiguous period they seemed to be willing to listen to an authoritarian leader who reduced some of the ambiguity by structuring the situation.

Hamblin (1958) carried out a study using laboratory groups which he subjected to an apparent crisis during their problem solving experience. He found that the groups tended to replace their old leader with a new leader if the old leader did not have an immediate solution to the problem.

Similar conclusions were reached by Adorno and his associates (1950) in their explanation of the rise of dictators, and by Hertzler (1940) who concluded, after an analysis of 35 historical dictatorships, that,

A befuddled and fearsome mass in times of crisis is nearly always ready, nay anxious, to give over control to anyone who gives evidence of ability to wield it efficiently. This situation, in turn, both demands and provides the opportunity for a

leader or cohesive minority group which offers a ready made formula of social procedure and which promises a dynamic attack upon the problems.

As might be expected, the willingness of individuals to acquiesce to the instructions of a highly structuring leader decreases as the intrinsic ambiguity and stress of the situation decreases. Hamblin (1958) found that the person in the group with the highest influence had the highest influence when the group was in a crisis situation. As the group's goal was reached and the crisis reduced, the influence of this individual decreased.

In summary, therefore, the research evidence generally lends support to the idea, first stressed by House, that subordinate response to leader structure is contingent upon intrinsic task uncertainty. The primary purpose of the present study is to test this hypothesis, utilizing a direct measure of intrinsic task uncertainty. The formal predicted relationships are stated in hypothesis 1.

Hypothesis 1. Leader initiating structure will have differential effects, depending upon whether the task-role demands are certain or ambiguous. In general, the more uncertain or ambiguous the task, the more positive the relationship between initiating structure and subordinate path-goal clarity and satisfaction. "Structure serves to reduce role ambiguity and clarify path-goal relationships for ambiguous tasks but is viewed as unnecessary and redundant for non-ambiguous tasks." (House, 1971).

Specifically:

A) Under conditions of high task uncertainty or ambiguity there will be a strong positive correlation between leader initiating structure and subordinate:

- a) Path-goal clarity
- b) Satisfaction

B) Under conditions of high task certainty initiating structure will be viewed as redundant and unnecessary and will be weakly or negatively related to subordinate:

- a) Path-goal clarity
- b) Satisfaction

Section 2.3 Hypothesis 2: The Covarying Influence of Leader Consideration

The direct relationship hypothesized between task uncertainty, leader structure, and subordinate satisfaction receives substantial support from prior research findings. However, there is also considerable evidence which suggests that other factors, such as leader consideration and subordinate authoritarianism, may act to influence this relationship.

Fleishman and Harris (1962), for example, found that when the leader's "consideration toward subordinates needs" was used as a moderating variable -- that is, when separate correlations were computed for high-considerate, medium-considerate, and low-considerate leaders -- the relationship between leader structure and subordinate grievances and turnover varied. Specifically, they found no relationship between structure and grievances or turnover for highly considerate leaders; but for leaders with low consideration, the relationship was clear and significant. These findings were obtained with blue-collar, production plant workers who might be assumed to have relatively routine, unambiguous tasks.

House and his associates (1971) attempted to conduct a replication of Fleishman and Harris study. In this case, however, the populations studied were salaried engineers, scientists, and technicians in three large research, design, and development organizations. These employees might reasonably be expected to have non-routine, ambiguous, satisfying jobs in comparison with those of the Fleishman-Harris populations. House found that the data not only failed to replicate as expected, but suggested findings opposite to those of Fleishman and Harris. For example, he found a positive unmoderated effect between leader structure and half the satisfaction indices in two of the three organizations.

Taken together, these findings suggest the following hypothesis:

Hypothesis 2. Leader consideration will have differential covarying influence on the relationship between leader initiating structure and subordinate satisfaction and expectancies. This influence will be monotonic in nature, depending upon the intrinsic certainty and satisfaction of the task. Specifically, the correlation between initiating structure and the dependent variable will be unchanged when consideration is partially out in the low uncertainty (high satisfaction) group, somewhat lower in the medium certainty (medium satisfaction) group, and considerably lower in the high certainty (low satisfaction) group.*

* This assumes a direct relationship between (1) job scope, and occupational level, and (2) satisfaction. (See for example Porter and Lawler, 1965; Walker and Guest, 1952).

Section 2.4 Preliminary Analysis: The Influence of Authoritarianism

A number of researchers have concluded that the closely associated factors of authoritarianism, need for cognition, and intolerance of ambiguity act to moderate an individual's reaction to ambiguity or uncertainty. For the present study it was possible to obtain data from a small sample of the total population on a modified version of the authoritarianism (F) scale. Thus, it is possible to present exploratory findings concerning the influence of subordinate authoritarianism on the relationships proposed in Hypothesis 1 and 2. The purpose of this section is to present research findings relevant to the effects of authoritarianism, intolerance of ambiguity, and need for cognition.

The need for cognition was first suggested by such theorists as Maslow (1943) and Harlow (1950) and has been defined as "a need to structure relevant situations in meaningful ways" (Cohen et al, 1955). Since an individual with a high need for cognition will exhibit a corresponding intolerance for ambiguity, the need for cognition is also occasionally referred to as "intolerance of ambiguity" or "need for structure."

While the hypothesis that greater ambiguity results in greater stress, anxiety, and dissatisfaction generally holds true, several studies have concluded that need for cognition has a magnifying effect upon the relationship. For example, Kahn (1955) found that tension was significantly more pronounced in subjects with a high need for cognition than in those with a low need when a task was ambiguous. Conversely, when the

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task was low in ambiguity, the group with a high need for cognition had a significantly lower tension rating than did the group with a low need.

There is considerable evidence which indicates that need for cognition or intolerance of ambiguity may often be but one characteristic of what has been called the authoritarian personality, which we will now discuss in some detail. High authoritarians achieve "social adjustment only by taking pleasure in obedience and subordination" (Adorno. et al, 1950). In turn this prevailing drive towards obedience and subordination generally manifests itself in a variety of identifiable symptoms including stereotyping, conventionality, conformity, rigidity, and intolerance of ambiguity.

Significant investigation of the authoritarian personality began in the period of World War II primarily as an attempt to explain and understand anti-semitism and the apparent relative susceptibility of certain groups to fascism.¹ Under the auspices of the American Jewish Committee, a series of investigations were undertaken and subsequently published as "Studies in Prejudice". One of these, "The Authoritarian Personality" by Adorno, Frenkel-Brunswick, Levinson, and Sanford, has become one of the classic analyses of the authoritarian personality. The major hypothesis of the Adorno study was that,

1. See, for example, Adorno, 1946; Frenkel-Brunswick, 1948; Fromm, 1941; Maslow, 1943; Katz and Cantril, 1940.

The political, economic, and social convictions of an individual often form a broad, coherent pattern as if bound together by a "mentality" or a "spirit", and that this pattern is an expression of deep lying trends in his personality.

This underlying "mentality" or "spirit", appeared, at the time, to be more prevalent in some countries (Germany, Italy) than in others (United States, Great Britain). The existence of this mentality in turn seemed to explain the relative susceptibility of the German People, for example, to anti-democratic propaganda. The problem facing researchers at the time, therefore, was one of understanding the development and manifestations of the "Potential fascist" or "Authoritarian personality" both of whom turned out to be one and the same individual.

The studies began by investigating the concepts of anti-semitism and prejudice or "ethnocentrism". The latter term was apparently first utilized by Sumner (1906) and generally referred to "a tendency of the individual to be ethnically centered, to be rigid in his acceptance of the culturally 'alike' and in his rejection of the 'unlike', (1950, 102).

Through the development and administration of an ethnocentrism scale, Levinson found that "people are notably consistent in their acceptance or rejection of general ethnocentrism" (1950, 145). In particular, Levinson found that individuals appeared to be consistent in the acceptance or rejection of prejudice against Negroes, minorities, and Jews. Based upon this analysis, Levinson concludes that,

Ethnocentrism is based on a pervasive and rigid in group - out group distinction; it involves stereotype negative imagery and hostile attitudes regarding out groups, stereotyped positive imagery and submissive attitudes regarding in groups, and a hierarchical, authoritarian view of group interaction in which in groups are rightly dominant, out groups subordinate. (1950, 150).

Levinson's ethnocentrism scale suffered from the shortcoming of forcing the individual to describe, knowingly, his prejudices against specific minority groups. In order to obtain a relatively unobtrusive measure of prejudice and underlying authoritarianism, Sanford, Adorno, Frenkel-Brunswick, and Levinson developed their "F" or fascist scale. The "F" and "E" scales had a correlation of .75, lending support to the idea that "...Central personality dispositions give rise to this (authoritarian) pattern" (279).

As became apparent during subsequent interviews carried out by the Adorno team, this authoritarian pattern was also characterized by intolerance of ambiguity and rigidity. In particular, the researchers found that rigidity and intolerance of ambiguity correlated both with each other and with the subject's rating of the "E" or "F" scale. Individuals rating high in the "E" scale, for example, tended to "...show more rigidity and avoidance of ambiguity; low scorers tend toward greater flexibility and acceptance of ambiguity" (463).

This intolerance of ambiguity or need for structure is a result of the authoritarian's need to "keep unacceptable tendencies and impulses out of consciousness...any loosening of these defenses involves breaking through of repressed tendencies

(480). Furthermore,

In order to keep the balance a simple, firm, often stereotypical, cognitive structure is required. There is no place for ambivalence or ambiguities. Every attempt is made to eliminate them, but they remain as potentials which might interfere at any time. (480)

To some extent, this type of personality appears in turn to be the result of "a basically hierarchical authoritarian, exploitative parent-child relationship..." (1971). In any event, intolerance of ambiguity often appears to be closely associated with a personality characterized by conformity, conventionality, rigidity, repressive denial, power orientation, categorization by dichotomy, a tendency to classify others as superior-inferior, hostility, dependence upon external signs of status, rejection of kindness as "weakness" and a tendency toward projection.

Ironically, the authoritarian personality appears to have both a sadistic and masochistic dimension. As Maslow points out,

Which tendency will appear depends largely (but not entirely) on the situation. If he is in dominance status he will tend to be cruel; if he is in subordinate status, he will tend to be masochistic. But because of these tendencies in himself, he will understand and deep down within himself will agree with the cruelty of the superior person, even if he himself is the object of the cruelty. (1943)

The related factors of intolerance for ambiguity, need for cognition, and authoritarianism are particularly important to the path-goal theory for a number of reasons. First, authoritarianism has been found to moderate the relationship

between leadership style and subordinate satisfaction. For example, Vroom (1959) found that subordinates high in authoritarianism did not respond favorably to participative leadership.

A second reason for the particular interest in authoritarianism is the general belief held by many researchers that employees in routine jobs exhibit a greater tendency toward authoritarianism, submission, and intolerance of ambiguity, than do those in non-routine jobs. Argyris (1959) found that such indices of "poor mental health" as high authoritarianism were associated with routine jobs, and he came to the conclusion that this type of job results in a decrease in mental health. However, as Hulin and Blood (1968) point out,..... "... There is no reason to believe that these differences were caused by the job rather than brought to the work situation".

In summary, prior research findings suggest that subordinate authoritarianism may have a strong moderating influence upon the relationship between leader structure and subordinate satisfaction and expectancies.

The nature and extent of this influence will be analyzed on a preliminary, exploratory basis in Chapter 5.

METHODOLOGY, AND STATISTICAL RESULTS FOR HYPOTHESIS 1

Section 3.1 Introduction

This chapter has a dual purpose. First, it describes the basic methodology of the study. Second, it contains the data and analysis of the statistical results of Hypothesis 1, the major hypothesis of this study.

Section 3.2 Methodology

Section 3.2.1 Research Sites and Sample

The central concern of this study is the relationship between leader and subordinate satisfaction and expectancies under various levels of task certainty. Therefore, in order to minimize the influence of outside factors, a search was undertaken for a firm whose tasks varied markedly in intrinsic certainty. This was based on the assumption that research, top management, and product development in such a firm would be subject to the highly uncertain, turbulent environments described by Lawrence and Lorsch, (1967), Burns and Stalker, (1961), and Emery and Trist, (1963) while the manufacturing and assembly tasks would be buffered from these uncertainties as Perrow (1970) and Thompson (1967) suggest and fall into the certain, routine mass production group of Woodward.

The organization in which this study was conducted is an autonomous division of a large holding company and develops and manufactures complex electronic timing devices. The firm

employs approximately 260 persons, including a research staff, development and application engineers, management personnel, inspection crews, clerical aids, computer programmers, machinists, and assembly line workers

Top management was advised in personal meetings of the purpose and scope of this study, the general parameters of the questionnaire, the optimal method of its administration, and of the desirability of being able to promise the employees that only broad feedback by company level would be provided to management as a courtesy for the use of their facilities. Finally, the local union representatives were contacted and given a presentation concerning the general nature of the study in order to obtain their approval of the administration of the questionnaire to the hourly assembly line workers. The only stipulation made by these representatives was that, aside from the group questionnaire instructions, no verbal contact be carried out with these workers. This stipulation was agreed to. An open letter to all employees was posted on the bulletin boards two days before the administration of the questionnaire; a copy is included in the Appendix.

The procedure for administering the questionnaires was as follows. Groups of 40 to 80 employees were assembled in the company cafeteria and given a speech by the researchers which stressed the anonymous nature of the questionnaire, and its research purpose. It was stressed that the questionnaire was confidential, anonymous, and voluntary. The employees were told that they were free to omit any answers they chose,

and that their anonymity was insured, but that the researchers would be aided immeasurably by the inclusion of the employee's name. They were told that with their names included we would be able to tie their supervisors' descriptions of their performance to the corresponding employee and that this was extremely desirable for research purposes.

A short question and answer period followed and then work began on the questionnaires. The researchers circulated constantly, giving instructions to each sub-group in the cafeteria on the proper method of filling out each scale. Each individual dropped his completed questionnaire into a box which was then taped shut and locked in the researchers' automobiles in sight of most of the employees.

The questionnaires were administered to all employees present during the two to three days on which we were at each site. This resulted in 245 completed questionnaires. Of these, 204 were usable after eliminating those with missing data.

Section 3.2.2 Description of the Measures

The scales used in the present research will be described under the following headings:

- Leader Behavior
- Satisfaction
- Intrinsic Task Certainty
- Role Ambiguity
- Path-Goal Clarity
- Authoritarianism (F scale)

Leader Behavior

Basically, two dimensions of leader behavior were analyzed: initiation of structure, and consideration, According to Fleishman and Harris (1962),

Consideration includes behavior indicating mutual trust, respect, and a certain warmth and rapport between the supervisor and his group...initiating structure includes behavior in which the supervisor organizes and defines the group activities and his relation to the group.

Initiating structure and consideration scores were obtained from 10 scored questions in the 100 question leader behavior description questionnaire - Form XII. This questionnaire was adapted by Stodgill (1965) from the Halpin and Weiner (1957) instrument which was an earlier, military version. For a further discussion of the development of the scale, the reader is referred to Stogdill and Coons, (1957). The two leader behavior scales used in this study may be found in Appendix 2. The reliability of these scales has been shown in prior research to be at consistently acceptable levels. For example, reliabilities of the consideration and initiating structure scales were reported by Fleishman (1957) as .98 and .78 respectively House (1971), utilizing Kuder-Richardson reliabilities for the scales used here, corrected for the Spearman-Brown prophecy formula, found the reliabilities to be .86, and .90 respectively. Stogdill (1965) reports consistent reliabilities above .55 for several diverse occupational groups.

The leader initiating structure scale has been shown by Halpin (1957) to have concurrent criteria validity. Furthermore

Stogdill (1969) showed that this scale also has experimental criteria validity.

Satisfaction

Employee satisfaction was measured by utilizing a satisfaction questionnaire developed by Rizzo, House and Lirtzman (1970). House (1970) and his associates have utilized this scale and found that it consistently yields reliabilities in the .70 and .80 range (House, Personal Communication, 1971). Satisfaction categories and sample questions may be found in Appendix 1.

Intrinsic Task Certainty

This scale was designed to measure the extent to which an individual in a particular job-task is faced by certain, predictable, stable demands. The scale may be found in Appendix 2; an example is as follows:

If you were to write a list of the exact activities you would be confronted by on an average work day, what percent of these activities do you think would be interrupted by unexpected events? (alternatives: 80-100%; 60-80%; 40-60%; 20-40%; 0-20%)

The scale is based upon one suggested by Bell (1969) and, in fact, utilizes all of his suggested items. Bell concluded that his questions accurately reflected the predictability of the task. The scale items individually and collectively are in keeping with the broad operationalizations of task

certainty which have been developed recently in the behavioral literature. Perrow (1970), for example, defines task certainty in terms of the "number of exceptions" and contingencies. Similarly, Thompson (1967) uses the terms "uncertainty" and "contingencies" interchangeably. Burns and Stalker (1961) define certainty in terms of "the appearance of novelties".

Similarly, findings such as those of Fiedler (1967), and Lawrence and Lorsch (1967) would suggest that a job such as research engineer would be intrinsically more uncertain than that of assembly line worker. To a large extent, this is probably due, as Thompson suggests, to the organization's attempts to buffer its "technological core" from the uncertainties of the environment, so that specialization can be carried as far as possible. One method of assessing the validity of this scale would involve aligning the individuals by indicators of intrinsic uncertainty and then correlating responses to the scale with this ordering. We would expect to find that intrinsic certainty is negatively correlated with educational and organizational level, and positively correlated with respondent job scope. As we move into the lower levels of the organization, jobs generally become relatively routine and repetitious, in line with the description of Thompson above. This phenomenon has been described by others, including Argyris (1964). The point is that one would expect to find a significant correlation between intrinsic certainty and job scope, educational level, and levels from the president.

These product moment correlations in fact turned out to be $-.53$, $-.38$, and $.26$, which were significant at the $.01$ level. There was also a correlation of $-.56$ between intrinsic certainty and "occupational level" which was a combined scale averaging all of the items from the job scope, educational level and levels from the president (reversed) scales. These correlations are significant and in the predicted direction. However, they indicate weak validation, with substantial unexplained variance.

Path-Goal Clarity

Strictly speaking, the basic hypothesis of this study can be tested using only the leader behavior, satisfaction, and task certainty scales described above. However, it was felt that a method of correlating subordinate expectations with leader behavior would permit a more direct test of the theory. Therefore, two new scales were developed, which together measure the extent to which effort is seen as leading to desirable personal outcomes, such as increased pay, quicker promotion, or greater security. Some of the items used in these two scales, which were based on those developed by Evans (1968), are as follows:

"Trying as hard as I can leads to a high quantity of output". (Effort $\rightarrow$ Performance)

"Producing a high quality output increases my chances for promotion". (Performance $\rightarrow$ Personal outcomes)

The reliabilities for these scales were as follows:

1 - Effort leads to timeliness	.86	} (Expectancy 1: Effort → Performance
2 - Effort leads to quality	.83	
3 - Effort leads to quantity	.89	
Average of 1, 2, and 3:	.95	
4 - Timeliness leads to personal outcome	.86	} (Expectancy 2: Performance → Rewards)
5 - Quality leads to personal outcome	.84	
6 - Quantity leads to personal outcome	.88	
Average of 4, 5, and 6:	.95	

.

The scale used to measure role ambiguity is one developed and reported by Rizzo, House and Lirtzman (1970). This scale has been shown to be factorially independent of role conflict and to have reliabilities in excess of .70 in seven different samples. (House, Personal Communication.)

Authoritarianism

The measure of authoritarianism used in this study is a version of the Adorno, Frenkel-Brunswik F. Scale, form 60. This version, which has been utilized in the past by House and his colleagues, is composed of a sample of 9 of the F scale questions. These questions represent 8 of the 9 original F scale categories: Conventionalism, Authoritarian Submission, Authoritarian Aggression, Anti-Intraception, Superstition and Stereotype, and Power and Toughness. This version was deemed adequate in light of its purpose in this study, to collect preliminary information subsidiary to the primary and

secondary hypothesis. However, due to the selective nature of this version, it must be emphasized that caution should be used in drawing conclusions based upon data derived from it.

Section 3.2.2 Description of Statistical Procedures

The groups in this sample were placed in descending order according to intrinsic certainty and then trichotomized into approximately equal groups. Pearson product moment and first order partial coefficients were then computed within each group between leader initiating structure and the various dependent variables of subordinate satisfaction, and expectancies.

Section 3.3 Hypothesis 1: Statistical Results, Original Groups

Section 3.3.1 Introduction

The central hypothesis of this study states that:

Leader initiating structure will have differential effects, depending upon whether the task role demands are certain or ambiguous. In general, the more uncertain or ambiguous the task, the more positive the relationship between initiating structure and subordinate path-goal clarity and satisfaction.

Section 3.3.2 Results: Original Groups

In order to test this hypothesis, the sample was trichotomized into low, medium, and high certainty groups, using the

intrinsic certainty scale as a moderator. Product moment correlations between initiating structure, consideration, and the dependent variables (satisfaction and expectancies) for these three groups are presented in Table 3.1.

The correlations are in the predicted direction with respect to six of the eight measures of expectancies. As predicted, all correlations in the low certainty group are significant at .01 while only one is significant in the medium and high certainty groups. Thus, with respect to expectancies, the hypothesis is strongly confirmed. However, it is apparent that with respect to satisfaction Hypothesis 1 met with striking disconfirmation. In particular, the correlation between initiating structure and all but one measure of satisfaction tend to be relatively high in groups 1 and 3, and consistently low in group 2. This U curve distribution of correlations is directly at odds with the House path-goal theory which predicts a monotonic decrease in the relationship between initiating structure and satisfaction. The correlation between role ambiguity and leader structure was generally in the predicted direction. It should be noted that although we did not obtain the hypothesized monotonic relationship, the results of comparing Group 1 to Groups 2 and 3 are consistent with the path-goal hypothesis. Thus, the theory was confirmed with respect to Group 1 as compared with 2 and 3, but not with respect to 2 compared with 3.

Probably the most striking aspect of the findings summarized in Table 4.1 is their compatability with the theory proposed by Fiedler and his associates (Fiedler, 1967). Generally,

Table 3.1 PRODUCT MOMENT CORRELATIONS BETWEEN LEADER
BEHAVIOR AND SUBORDINATE ATTITUDES:
ORIGINAL 3 GROUPS

	<u>Group I</u> <u>Low Certainty</u>		<u>Group II</u> <u>Medium Certainty</u>		<u>Group III</u> <u>High Certainty</u>	
	(N=67)		(N=68)		(N=67)	
	IS	C	IS	C	IS	C
Satisfaction:						
Pleasantness	.32	.36	.05	.64	.32	.88
Job	.35	.38	.35	.60	.15	.53
Recognition	.44	.44	.09	.61	.32	.54
Pay	.41	.34	.01	.45	.58	.62
Freedom	.28	.48	-.02	.61	.22	.60
Security	.31	.29	-.00	.51	.21	.44
Average	.43	.42	-.17	.49	.29	.67
Advance	.45	.43	.04	.28	.26	.47
Expectancies:						
Effort-Quantity	.26	.06	.12	.19	.06	.28
Effort-Time	.32	.09	.04	.04	.08	.25
Effort-Quality	.29	.18	.04	.33	.28	.34
Average	.32	.14	-.06	.19	.17	.33
Quantity-Pers. Out.	.30	.36	-.23	.20	.14	.43
Quality-Pers. Out.	.41	.47	-.04	.44	.05	.44
Time-Pers. Out.	.35	.39	-.14	.32	.07	.37
Average	.39	.44	-.19	.34	.12	.44

IS = Initiating Structure
C = Consideration

as illustrated in Chapter II, Fiedler, and Lorsch (1967) predict that task-oriented leaders (high on IS) will be most effective when managing extremely structured or unstructured tasks, while relationship-oriented leaders are most effective for moderately structured tasks.

Section 3.4 Hypothesis 1: Exploratory Results, Exposte, Revised Groups

Section 3.4.1 Introduction and Development of Revised Groups

Our tests of Hypothesis 1 resulted in a number of unexpected findings. In particular, the frequently repeated U distribution of correlations reported above is inconsistent with expectations and with prior research (House, 1971). One possible explanation for this is that, since the intrinsic certainty scale accounts for only a moderate amount of variance in occupational level, large numbers of workers who technically belong in Group 3 (because of the intrinsic routineness and certainty of their tasks) had found their way into Group 2, and perhaps into Group 1 as well. In order to pursue this question, Group 2 was divided into white and blue collar groups. New correlations were computed for these subgroups and are presented in Table 3.2. Generally, these correlations between leader structure and subordinate satisfaction and expectancies suggest that occupational level may account for the various unexpected findings described in the

preceding chapter. Although few were significant, the predictor-criterion satisfaction correlations for the blue collar employees of the middle certainty group were consistently lower than corresponding white collar correlations.

A subsequent worker by worker analysis indicated that 24 factory assembly workers had found their way into the low certainty group, 43 into the medium certainty group, and 50 were where we had expected them to be, in the high certainty group. However, this last group was not homogeneous but was found to contain 17 white collar office workers whom one would expect to have found in the medium certainty group.

Therefore, it was apparent that while the intrinsic certainty scale was reflecting task differences in the expected direction, it was not adequately discriminating among low, medium and high occupational levels. Thus, the initial classification could not, on the basis of jobs, be considered low, medium, or high in intrinsic task certainty. This lack of discriminating ability of the scale, which resulted primarily from assembly workers finding their way into groups 1 and 2, probably reflected a number of factors.

First, some of the intrinsic certainty questions might have been confusing, particularly to lower level employees. (for example, "If you were to write a list of the exact activities you would be confronted by on an average work day, what percent of these activities do you think would be interrupted by unexpected events?").

A second possible explanation for the contamination with

Table 3.2 PRODUCT MOMENT CORRELATIONS
BETWEEN LEADER STRUCTURE AND
SUBORDINATE ATTITUDES - GROUP II
SUB-GROUP ANALYSIS

	Office- White Collar (From Group II)	Factory- Blue Collar (From Group II)
	(N=24) *	(N=43) *
	IS	IS
Satisfaction:		
Pleasantness	.33	.04
Job	.40	.38
Recognition	.38	.16
People X	.15	-.09
Pay	.13	.02
Freedom	.34	-.03
Security	.38	-.18
Average	.40	-.67
Advance	.16	.05
Experience:		
Effort-Quantity	.16	.14
Effort-Time	-.07	.13
Effort-Quality	-.03	.13
Average	.05	.13
Quantity-Pers. Cut.	-.21	-.14
Quality-Pers. Out.	.06	.05
Time-Pers. Out.	-.08	.00
Average	-.08	-.14
Role Ambiguity	-.42	-.05

IS = Initiating Structure

* 1 person with no job description or supervisor

Table 3.3 Scale Averages and
Standard Deviations

Original Groups

	<u>AV</u>	<u>SD</u>	<u>AV</u>	<u>SD</u>	<u>AV</u>	<u>SD</u>
Intrinsic Certainty	2.29	.47	3.20	.20	4.07	.38
Job Scope	3.08	.56	2.79	.44	2.38	.48
Educational Level	2.81	1.11	2.15	.78	2.02	.72
Levels from President	4.27	2.39	5.10	2.15	5.13	1.78
Occupational Level	6.16	1.20	5.33	1.10	4.69	1.00

Revised Groups

	<u>AV</u>	<u>SD</u>	<u>AV</u>	<u>SD</u>	<u>AV</u>	<u>SD</u>
Intrinsic Certainty	2.17	.47	3.21	.20	4.06	.38
Job Scope	3.26	.50	2.89	.38	2.33	.50
Educational Level	3.26	.95	2.53	.77	1.79	.58
Levels from President	3.10	1.90	4.12	2.19	5.52	1.51
Occupational Level	6.53	1.15	5.78	.96	4.38	1.02

assembly workers of groups 1 and 2 derives from the nature of work assignment at this company. While the actual work performed by each of the factory workers is of a consistently routine nature, the work is frequently not assigned until the worker arrives at the factory in the morning. Thus, while the task which the employee will be assigned to - such as soldering a particular connection - may be routine and high in certainty, many of these people are probably quite uncertain as to which routine job they will be working on the next day. Many are, in fact, often switched from bench to bench within the same general work group. One result of this sort of scheduling is that frequently the workers, when asked how well they can predict what they will be doing the following day (as we asked on our intrinsic certainty scale), will exhibit a level of uncertainty incongruent with the actual nature of their jobs.

Therefore, it was decided to homogenize the three groups in order to insure that three distinct levels of intrinsic task certainty were being considered. The method for doing this was as follows. First, all factory workers were eliminated from groups 1 and 2, and the 17 white-collar office workers were eliminated from group 3. This had the effect of isolating all of the assembly workers in the high certainty group, all of the top management and research and development people in the low certainty group, and resulted in a medium certainty group which was composed primarily of office clerks and secretaries. Next, each group was checked for combined homogeneity in

job scope, educational level, levels from the president, and occupational level.

These procedures resulted in a grouping which had a number of definite advantages over the preceding three groups. First, the three groups were relatively homogeneous in terms of the nature of their members' tasks, and, furthermore, these tasks fit their intrinsic certainty level in a manner congruent with descriptions given by Fiedler (1965), Lawrence and Lorsch (1967), Perrow (1970), and Thompson (1967). In addition, the average intrinsic certainty levels between groups 1 and 3 now had a broader spread, permitting a clearer test of the theory. It is now apparent from Table 3.3 that the three new homogeneous groups are more clearly ranked 1, 2, 3 in job scope, educational level, levels from the President, and occupational level than were the three original groups.

Section 3.4.2 Hypothesis 1: Results, Revised, Exposte Groups

To check the possibility that the tests of Hypothesis 1 described in Section 3.2 could have resulted in a type 1 error (rejecting a valid hypothesis), the various correlations were recomputed for the adjusted, more homogeneous groups. The revised data is presented in Table 3.4. It is apparent that these results do not support Hypothesis 1. In particular, the U shaped phenomenon was found with 7 of 9 indices of satisfaction and 7 of 9 indices of expectancies.

Section 3.5 Hypothesis 1: Conclusions

In line with the findings presented above, the following conclusion seems warranted:

Hypothesis 1 was generally not supported by data from either the original or ex-poste revised groups. A U shaped relationship was found between leader structure and 7 of 9 satisfaction indices for both the original and revised groups. The data with respect to expectancies, and role ambiguity was somewhat more supportive for both sets of groups, but still not generally monotonic.

TABLE 3.4

ZERO ORDER CORRECTIONS BETWEEN LEADER
BEHAVIOR AND SUBORDINATE ROLE EMBIGUITY,
SATISFACTION AND EXPECTANCIES
(HOMOGENEOUS GROUPS)

	<u>Group I</u> <u>Low Certainty</u>		<u>Group II</u> <u>Medium Certainty</u>		<u>Group III</u> <u>High Certainty</u>	
	(N=41)		(N=28)		(N=50)	
	IS	C	IS	C	IS	C
Satisfaction:						
Pleasantness	.27*	-.02	.25	.21	.41**	.62**
Job	.28*	.06	.49**	.29	.32**	.59**
Recognition	.39**	.23	.35*	.34*	.36**	.55**
Pay	.37**	.16	.07	-.09	.62**	.70**
Freedom	.20	.12	.18	.14	.34**	.64**
Security	.51**	.14	.33*	.22	.38**	.56**
Average	.40**	.16	.24	.15	.39**	.65**
Advancement	.37**	.28*	.25	.21	.27	.47**
Expectancies:						
Effort→Quantity	.06	-.18	.14	-.22	.09	.24*
Effort→Time	.16	-.09	-.04	-.14	.20	.28*
Effort→Quality	.07	-.19	.02	-.02	.35**	.27*
Average	.11	-.17	.06	-.20	.25*	.30*
Quantity→Pers. Out.	.30*	.04	-.27	-.36*	.17	.44**
Quality→Pers. Out.	.39**	.11	-.09	-.16	.13	.45**
Time→Pers. Out.	.30*	.11	-.14	-.20	.06	.41**
Average	.35**	.09	-.18	-.26	.16	.47**
Role Ambiguity	-.46**	-.03	-.36**	-.10	-.30*	-.50**

IS = Initiating Structure
C = Consideration

* = $P < .05$

** = $P < .01$

APPENDIX: CHAPTER III
CORRELATION MATRICES

Section 3.6

Correlation matrices for the original three groups are presented in appendix tables 3-1, 2, and 3. The correlations with leader consideration, and intrinsic certainty warrant scrutiny.

The correlation between leader consideration and subordinate satisfaction and expectancies is generally strongly positive in all three groups. Since it could be hypothesized that these correlations would be moderated by the intrinsic routineness, and satisfaction of the employees' task, this finding is unexpected. It probably reflects the fact that a number of blue collar workers are to be found in all three groups, a point which is discussed below.

The correlation between intrinsic certainty and average satisfaction varies from $-.37$ in Group I, to $+.35$ in Group II, to $-.01$ in Group III. Generally, other things equal, a negative or insignificant relationship might be expected, depending upon the Homogeneity of the groups. This assumes that there is an underlying negative relationship between intrinsic task certainty and most measures of task satisfaction.

The positive correlations evident in Group II may reflect the large number (43) of blue collar workers in this group. As noted above, these people are assigned to different routine jobs at unexpected intervals, as the need arises.

This procedure created artificial task uncertainty, and may explain why the positive relationship between intrinsic task certainty and satisfaction exists. It is interesting to note that the leader structure - satisfaction correlations (table 3.2) which probably reflect providing structure on a specific task rather than removing the uncertainty of work assignment, are negative for these blue collar workers.

Correlation matrices for the revised groups are presented in appendix tables, 4, 5, and 6. The correlations between consideration and satisfaction increase monotonically from Group I to Group II to Group III. For example, the correlation with average satisfaction in Groups I, II, and III is .14, .22, and .55 respectively. This is compatible with the fact that these groups are relatively Homogeneous and reflect a range of tasks from uncertain to routine.

In summary it should be noted that the consideration - satisfaction correlations for the original three groups were generally all high, while those in the revised groups increased monotonically from Group I to Group II. This difference between the two sets of groups could be expected to effect the results obtained by partiallying out leader consideration in computing partial correlation coefficients. This point will be investigated in Chapter IV.

The correlations between intrinsic certainty and satisfaction in the revised groups are generally either insignificant or negative. The correlations for Group I, while negative, are insignificant at the .01 level.

APPENDIX TABLE 3-1
Correlation Matrix
Original Group I
(N=67)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1-Intrinsic Certainty Expectancy 1:																							
2-Effort → Quantity	-04																						
3-Effort → Time	09	84																					
4-Effort → Quality	-11	79	75																				
5-Average Expectancy 2:	-02	95	93	90																			
6-Quantity → Pers. Out.	-34	59	34	49	55																		
7-Time → Pers. Out.	-30	50	32	62	50	89																	
8-Quality → Pers. Out.	-26	56	36	54	51	94	90																
9-Average	-30	55	37	57	54	97	96	97															
10-Job Scope	-23	-11	-22	-02	-10	13	15	20	18														
11-Initiating Structure	12	26	32	30	32	30	42	35	39	01													
12-Consid. Satisfaction:	-02	07	09	18	14	36	47	40	44	-02	54												
13-Pleas.	-19	33	21	33	29	61	66	62	66	-05	32	36											
14-Job	-37	27	33	42	36	60	67	55	63	17	35	37	67										
15-Recog.	-23	29	23	32	27	68	68	64	68	02	44	44	73	84									
16-Pay	-18	24	14	26	18	44	54	48	51	01	41	33	75	69	77								
17-Freedom	-36	34	22	39	29	69	71	65	70	12	28	48	71	79	86	72							
18-Security	-15	14	12	21	15	41	44	39	43	01	31	30	51	62	60	45	60						
19-Average	-37	33	31	44	36	68	72	64	70	18	43	41	79	94	93	83	93	68					
20 -Advance	-19	34	24	32	28	54	63	63	64	15	45	42	60	68	65	60	63	52	73				
21-Author.	32	15	31	02	15	-32	-27	-51	-34	-53	04	-14	-17	-22	-16	-17	-26	-37	-51	-42			
22-Occ. Level	-35	10	-09	23	08	49	45	42	47	87	17	12	33	40	47	43	45	17	52	48	-45		
23-Role																							

APPENDIX TABLE 3-2
Correlation Matrix
Original Group II
(N=68)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1-Intrinsic Certainty																							
Expectancy 1:																							
2-Effort → Quantity	21																						
3-Effort → Time	05	73																					
4-Effort → Quality	03	81	70																				
5-Average	12	93	88	92																			
Expectancy 2:																							
6-Quantity → Pers. Out.	24	46	26	54	48																		
7-Time → Pers. Out.	14	35	24	56	42	86																	
8-Quality → Pers. Out.	09	35	30	45	43	85	89																
9-Average	16	41	28	54	46	95	96	95															
10-Job Scope	04	01	-12	-07	-08	37	36	29	38														
11-Initiating Structure	00	12	04	04	06	-24	-04	-14	-20	-03													
12-Consid.	16	19	04	33	20	20	45	32	34	-17	43												
Satisfaction:																							
13-Pleas.	28	28	13	46	32	59	70	60	66	18	05	64											
14-Job	07	37	36	59	48	42	51	37	45	-17	35	61	70										
15-Recog.	40	40	24	60	48	74	79	72	79	-05	09	61	77	81									
16-Pay	19	35	25	49	41	54	60	58	62	-13	01	45	76	76	77								
17-Freedom	25	33	19	59	41	68	81	69	77	03	02	61	78	68	84	82							
18-Security	19	25	12	42	28	51	51	42	51	04	00	51	73	68	69	76	76						
19-Average	35	27	30	65	46	72	81	69	76	11	-17	49	83	85	89	88	90	76					
20-Advance	22	18	11	36	24	56	68	61	65	04	04	28	62	56	72	66	68	58	75				
21-Author.	-12	32	34	17	18	-14	-08	-12	-14	-25	26	17	01	26	05	10	06	-12	06	-19			
22-Occ. Level	-13	02	-13	19	01	65	68	57	66	86	-18	-13	41	-12	23	-20	36	15	32	22	-27		
23-Role																							

APPENDIX TABLE 3-3
Correlation Matrix
Original Group III
(N=67)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1-Intrinsic Certainty																							
Expectancy 1: 2-Effort →																							
Quantity	04																						
3-Effort →																							
Time	-05	66																					
4-Effort →																							
Quality	10	80	62																				
5-Average	06	93	85	91																			
Expectancy 2: 6-Quantity →																							
Pers. Out.	-04	52	48	51	56																		
7-Time →																							
Pers. Out.	-12	35	28	37	35	81																	
8-Quality →																							
Pers. Out.	-11	51	47	50	55	89	82																
9-Average	-09	48	43	50	52	95	93	95															
10-Job Scope	-16	12	14	24	19	19	25	32	29														
11-Initiating Structure	11	06	08	28	17	14	06	07	12	-06													
12-Consid.	-07	28	25	34	33	43	44	37	44	02	54												
Satisfaction: 13-Pleas.	18	37	36	42	42	58	63	52	61	10	32	58											
14-Job	-12	32	44	48	46	54	63	52	60	24	15	53	71										
15-Recog.	-02	26	38	38	37	54	67	57	65	07	31	54	75	77									
16-Pay	11	24	28	33	30	50	54	48	55	-14	58	62	83	67	81								
17-Freedom	05	28	31	34	34	48	62	47	54	15	22	60	77	85	88	75							
18-Security	06	05	16	13	12	34	50	37	45	-12	21	44	58	53	70	69	70						
19-Average	-01	31	33	41	37	65	84	63	75	24	29	67	85	91	94	85	96	82					
20-Advance	00	21	21	32	39	44	50	42	47	08	26	47	57	61	69	64	64	57	75				
21-Author.	-11	23	14	16	31	26	19	13	11	-08	20	42	32	27	10	27	24	06	13	-05			
22-Occ. Level	-37	-14	-05	11	-03	36	58	43	51	84	-04	21	32	42	30	10	37	19	48	44	-14		

APPENDIX TABLE 3-4
Correlation Matrix
Revised Group I
(N=41)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1-Intrinsic Certainty																							
Expectancy 1:																							
2-Effort -- Quantity	-10																						
3-Effort -- Time	-06	-84																					
4-Effort - Quality	-17	77	73																				
5-Average	-12	95	93	87																			
Expectancy 2:																							
6-Quantity - Pers. Out.	-27	75	58	58	70																		
7-Time -- Pers. Out.	-25	53	44	59	56	82																	
8-Quality - Pers. Out.	-24	79	64	68	75	91	81																
9-Average	-27	73	59	63	71	97	91	96															
10-Job Scope	-13	03	-03	16	05	24	38	24	30														
11-Initiating Structure	01	05	16	06	11	30	39	29	35	02													
12-Consid.	08	-18	-09	-19	-17	04	10	10	08	08	61												
Satisfaction:																							
13-Pleas.	-08	29	27	23	29	49	51	48	52	04	26	-01											
14-Job	-23	25	35	27	33	42	54	37	47	22	28	05	60										
15-Recog.	-17	24	19	13	21	51	59	47	54	07	39	23	74	69									
16-Pay	-08	17	19	19	20	37	44	36	41	09	14	-04	86	51	64								
17-Freedom	-28	23	17	19	21	40	45	37	42	01	36	15	67	59	74	51							
18-Security	-02	41	27	32	27	58	62	60	60	26	20	11	62	56	82	54	57						
19-Average	-25	16	24	11	17	11	21	14	17	23	50	14	49	38	45	35	50	42					
20-Advance	-28	32	32	25	33	56	66	53	61	17	39	15	79	88	88	72	87	87	56				
21-Author.	20	-7	-01	01	13	-07	-01	-19	-11	-36	34	02	-11	-20	10	-20	-35	16	-9	-24			
22-Occ. Level	-29	18	-06	26	13	48	55	43	51	93	14	14	24	29	34	24	48	-19	43	50	-38		
23-Role																					12	-20	

- 54 -

APPENDIX TABLE 3-5
Correlation Matrix
Revised Group II
(N=28)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1-Intrinsic Certainty Expectancy 1:																							
2-Effort -- Quantity	13																						
3-Effort -- Time	01	81																					
4-Effort - Quality	-24	59	75																				
5-Average Expectancy 2:	-04	90	96	85																			
6-Quantity - Pers. Out.	20	33	42	23	41																		
7-Time -- Pers. Out.	06	20	30	22	30	84																	
8-Quality - Pers. Out.	03	17	29	10	25	88	89																
9-Average	11	24	35	19	33	95	95	97															
10-Job Scope	-22	-08	-11	06	-05	35	39	46	42														
11-Initiating Structure	03	13	-04	02	06	-27	-09	-14	-17	-04													
12-Consid. Satisfaction:	-0	-21	-14	-02	-19	-36	-16	-19	-25	-24	64												
13-Pleas.	.29	-07	08	.11	00	34	54	44	46	20	.29	25											
14-Job	-20	37	55	53	54	25	34	24	28	-10	48	28	17										
15-Recog.	22	18	33	25	30	55	60	56	60	24	-19	34	34	43									
16-Pay	02	-13	50	02	-04	37	57	47	49	40	05	-00	89	00	22								
17-Freedom	08	39	45	38	45	56	61	51	58	05	07	-09	29	71	64	09							
18-Security	-03	25	39	51	38	52	65	46	56	37	18	13	58	50	57	50	58						
19-Average	16	46	57	54	56	27	32	32	32	07	32	22	27	50	37	09	52	58					
20-Advance	02	27	49	47	43	59	68	54	62	-03	24	14	47	78	84	32	80	77	50				
21-Author.	-07	30	29	34	28	17	21	-07	01	00	44	47	-12	41	43	22	44	35	47	07			
22-Occ. Level	-42	-28	-21	-00	-19	45	44	54	50	85	-19	-26	26	-35	-36	-25	40	-06	-27	-02	-35		
23-Role																							

APPENDIX TABLE 3-6
Correlation Matrix
Revised Group III
(N=50)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1-Intrinsic Certainty Expectancy 1:																							
2-Effort -- Quantity	.19																						
3-Effort -- Time	.00	.60																					
4-Effort -- Quality	.14	.77	.60																				
5-Average	.16	.90	.82	.91																			
Expectancy 2:																							
6-Quantity - Pers. Out.	-.01	.39	.47	.42	.47																		
7-Time -- Pers. Out.	-.18	.25	.24	.27	.27	.84																	
8-Quality - Pers. Out.	-.16	.37	.46	.42	.46	.84	.82																
9-Average	-.10	.32	.36	.38	.39	.95	.94	.92															
10-Job Scope	-.37	-.01	.04	.16	.07	.18	.21	.38	.34														
11-Initiating Structure	.20	.08	.20	.35	.25	.16	.12	.05	.16	.01													
12-Consid.	.02	.24	.28	.27	.30	.44	.44	.40	.47	-.06	.57												
Satisfaction:																							
13-Pleas.	.22	.33	.40	.42	.42	.59	.60	.49	.58	.02	.41	.61											
14-Job	-.20	.25	.43	.47	.43	.58	.61	.53	.60	.07	.32	.59	.73										
15-Recog.	-.10	.22	.45	.37	.37	.50	.62	.54	.59	.03	.36	.54	.72	.81									
16-Pay	.11	.37	.40	.43	.45	.46	.46	.37	.44	-.01	.26	.41	.89	.58	.63								
17-Freedom	-.05	.23	.37	.39	.36	.52	.54	.49	.54	-.19	.62	.69	.84	.78	.80	.71							
18-Security	.03	.26	.34	.35	.35	.52	.51	.51	.54	.02	.34	.63	.75	.85	.89	.65	.78						
19-Average	-.16	.08	.20	.16	.16	.29	.40	.32	.38	-.15	.38	.55	.61	.53	.70	.58	.78	.67					
20-Advance	-.08	.25	.36	.35	.33	.71	.84	.69	.79	.12	.39	.65	.85	.93	.92	.80	.89	.97	.81				
21-Author.	.04	.26	.23	.24	.22	.30	.41	.30	.23	-.23	.28	.40	.35	.55	.28	.52	.18	.04	.25	.07			
22-Occ. Level	-.66	-.44	-.20	-.16	-.30	.35	.42	.50	.49	.93	.07	-.15	.14	.16	.01	-.04	-.03	-.06	.11	.50	-.05		
23-Role																							

Chapter IV

TESTS OF HYPOTHESIS 2: COVARYING INFLUENCE OF
LEADER CONSIDERATIONSection 4.1 Introduction

As shown in Chapter 2, prior research findings strongly suggest that leader consideration moderated the relationship between leader structure and subordinate satisfaction. In line with this, Hypothesis 2 states that,

Leader consideration will have differential covarying influence on the relationship between leader initiating structure and subordinate satisfaction and expectancies. This influence will be monotonic in nature, depending upon the intrinsic certainty and satisfaction of the task. Specifically, the correlation between initiating structure and the dependent variables will be unchanged when consideration is partialled out in the low certainty (high satisfaction) group, somewhat lower in the medium certainty (medium satisfaction) group, and considerably lower in the high certainty (low satisfaction) group.*

The purpose of this Chapter is to present data obtained from both the original and ex-poste revised groups pertinent to this hypothesis.

Section 4.2 Test of Hypothesis 2: Original Groups

Partial correlation coefficients were computed between leader structure and subordinate satisfaction and expectancies by removing the covarying effects of leader consideration. The results are presented in Table 4.1. Hypothesis

*This assumes a direct relationship between (1) job scope, and occupational level, and (2) satisfaction. (see for example Porter and Lawler, 1965; Walker and Guest, 1952).

2 was not supported by data from the three groups. Specifically, the correlations between leader structure and subordinate satisfaction and expectancies are all generally lower across the three groups.

Of particular interest is the persistence of the U shaped relationship in spite of the partialling out of the covarying influence of consideration. Thus, even with the effects of leader consideration held constant, the monotonic trends predicted by Hypothesis 1 are not supported. In particular, 7 of 9 satisfaction measures and 6 of 9 expectancies measures are curvilinearly correlated with initiating structure.

Section 4.3 Test of Hypothesis 2: Ex-poste, Revised Groups

The data was reanalyzed with the revised 3 groups in order to test for a type 1 error. These findings are presented in Table 4.2. Hypothesis 2 was supported by the data for revised Groups. The partial correlations for Group 1 are generally equal to or higher than the zero order correlations. The partial correlations for Group II and III are consistently lower than the corresponding zero order correlations. These findings are similar to the prior findings of Fleishman-Harris, and House et al described in Section 2.3.

However, the finding which is more striking in the present context is the replacement of the U shaped curves by monotonic relationships. For example, 6 of 9 satisfaction indices, as well as 5 of 9 expectancies indices, now exhibit

Table 4.1 PARTIAL CORRELATION BETWEEN LEADER
STRUCTURE AND MAJOR DEPENDENT VARIABLES
WITH LEADER CONSIDERATION CONSTANT:
ORIGINAL 3 GROUPS

		Group I Low <u>Certainty</u> (N=67)	Group II Medium <u>Certainty</u> (N=68)	Group III High <u>Certainty</u> (N=67)
Satisfaction:				
Pleasantness		.16	-.32*	.01
Job	X	.19	.12	-.19
Recognition		.27*	-.23	.04
Pay		.29*	-.23	.37**
Freedom		.03	-.39**	-.15
Security		.18	-.30*	-.04
Average		.27*	-.48*	-.11
Advancement		.29*	-.09	.01
Expectancies:				
Effort→Quantity	X	.26	.04	-.11
Effort→Time	X	.32*	.03	-.07
Effort→Quality		.25	-.12	.12
Average		.29*	-.03	-.01
Quantity→Pers. Out		.13	-.37**	-.12
Quality→Pers. Out		.22	-.29*	-.23*
Time→Pers. Out.		.17	-.32**	-.17
Average		.20	-.41**	-.16
Role Ambiguity		-.32*	.08	.07

X = Correlations moderated as predicted

* = P .05

** = P .01

Table 4.2 PARTIAL CORRELATION BETWEEN LEADER
STRUCTURE AND MAJOR DEPENDENT VARIABLES
WITH CONSIDERATION CONSTANT:
REVISED 3 GROUPS (HOMOGENEOUS GROUPS)

		Group I Low <u>Certainty</u> (N=41)	Group II Medium <u>Certainty</u> (N=28)	Group III High <u>Certainty</u> (N=50)
Satisfaction:				
Pleasantness	X	.36**	.15	.08
Job		.32**	.41**	-.04
Recognition	X	.34**	.18	.06
Pay		.35**	.17	.36**
Freedom	X	.16	.12	-.05
Security	X	.54**	.25	.08
Average	X	.39**	.19	.02
Advancement	X	.26	.20	.00
Expectancies:				
Effort→Quantity		.22	.38**	-.06
Effort→Time	X	.27*	.07	.05
Effort→Quality		.25	.04	.25
Average	X	.27*	.26	.10
Quantity→Pers. Out.		.35**	.71**	-.12
Quality→Pers. Out.	X	.41**	.26	-.18
Time→Pers. Out.	X	.30*	-.01	-.24
Average	X	.37**	-.02	-.16
Role Ambiguity	X	-.56**	-.38**	-.01

X = Correlations moderated as predicted

* = P .05

** = P .01

The monotonic relationship predicted by the path-goal theory. This finding is interesting, but must be viewed with caution. In particular, it is a product of exploratory research and an ex-poste reanalysis and revision of the intrinsic certainty moderator.

Section 4.4 Hypothesis 2: Conclusions

Hypothesis 2 was not supported for the original group, and was supported for the revised groups. This may reflect the correlations discussed in Chapter 3 between consideration and satisfaction. In the original groups the correlations were all high. In the revised groups they varied directly with task certainty.

The findings presented in this chapter also suggest an interesting implication for future research. Although the partial correlations for the original groups remained U shaped, those for the revised groups were rather consistently monotonic. This would seem to indicate that in addition to developing an improved moderator, the path-goal hypotheses might be best tested after being reformulated to control for this second major dimension of leader behavior, consideration.

Chapter V

PRELIMINARY ANALYSES:

THE INFLUENCE OF OTHER FACTORS

Section 5.1 Introduction

There are a number of individual/personality factors, such as educational level and authoritarianism, which might be expected to moderate the relationship between leader structure and subordinate expectancies and satisfaction. For example, as discussed in Section 2.4, individuals rating high on authoritarianism would be expected to be more amenable to leader structuring than those rating low on this factor. Similarly, individuals ranking high in time with the company might be expected to find leader structure more acceptable because, for example, they have had the opportunity to internalize the organization's goals and therefore view added structure as relatively legitimate.

The possible moderating influence of factors such as these has important ramifications for the exploratory findings presented above. This is because of the possibility that trichotomizing the sample by intrinsic certainty inadvertently resulted in groups which differed significantly in one or more of these individual/personality factors. By inspection, for example, it is apparent that there are monotonic decreases in educational level, time with company, and age, as well as a similar increase in authoritarianism as we move from the low (I) to high (III) revised certainty group. This being the

case, a second stage analysis of the data was carried out in order to ascertain the contribution of the various individual/personality factors to our findings.

Section 5-2 Methodology

Analysis of variance was the basic statistical method used for this stage of the analysis. First, a simple analysis of variance was performed in order to ascertain those factors by which the three revised groups differed significantly. Second, three multiple analyses of variance, with leader consideration as a covariate were performed. These provided information on both the main effects and interactions of three sets of predictor variables on the dependent variables.

In order to classify individuals, it was advisable to have complete information on three or more predictor variables, and three or more dependent variables. Most of the individual/personality scales appeared in a section at the end of the questionnaire after an introduction which minimized their importance relative to the preceding scales so that many individuals did not complete them. In total, 42 individuals could be classified for multiple analysis of variance purposes. Of these, one half were supervisory personnel. Therefore, the multiple analysis of variance is based upon a limited and somewhat unrepresentative sample of workers. However, it is considered important in terms of understanding the relationships among the variables discussed.

TABLE 5.1

Significance of Differences Among Three Groups

<u>FACTOR</u>	<u>F RATIO</u>	<u>SIGNIFICANT AT:</u>	<u>.05</u>	<u>.01</u>
Intrinsic Certainty	30		yes	yes
Educational Level	20		yes	yes
Time with Company	4.60		yes	no
Authoritarianism	4.60		yes	no
Age	2.30		no	no

Section 5.3 Findings

Section 5.3.1 One Way Analysis

These findings indicate the existence of significant differences in the three revised groups in intrinsic certainty, authoritarianism, time with company, and educational level (Table 5.1). Intrinsic certainty and educational level were significant at the .01 level. Authoritarianism and time with company were significant at the .05 level. No significant differences were found in age.

Section 5.3.2 Factorial Analyses

Three factorial analyses of covariance were performed with the following classifications: (1) intrinsic certainty, initiating structure, time with company (all levels dichotomized as high/low), (2) intrinsic certainty, initiating structure, authoritarianism (all levels dichotomized as high/low), (3) intrinsic certainty initiating structure, educational level (all levels dichotomized as high/low). The significance levels and F ratios are presented in Tables 5.2, 5.3, and 5.4. Significant main effects and interactions are summarized in Table 5.5. In all cases leader consideration was held constant as a covariate.

TABLE 5.2

Analysis of variance results for Intrinsic
 Certainty (A), Initiating Structure (B),
 Authoritarianism (C) classification (Leader
 consideration covariate).

<u>VARIABLE</u>	<u>F RATIO</u>	<u>MEAN SQ.</u>	<u>SIGNIFICANCE LEVEL</u>
Test of ABC			
Expec. One	1.398	1.830	.246
Expec. Two	1.626	2.379	.211
Satis	4.322	5.448	.046
Role Amb.	1.583	1.648	.217
Test of BC			
Expec. One	6.161	8.065	.018
Expec. Two	1.228	1.796	.276
Satis.	2.405	3.032	.131
Role Amb.	4.739	4.933	.037
Test of AC			
Expec. One	.692	.905	.412
Expec. Two	3.633	5.315	.066
Satis	2.473	3.117	.126
Role Amb.	2.885	3.004	.099
Test of AB			
Expec. One	.804	1.052	.377
Expec. Two	.153	.225	.698
Satis.	.037	.046	.850
Role Amb.	.890	.927	.353
Test of C			
Expec. One	.117	.153	.735
Expec. Two	.626	.916	.435
Satis.	.008	.010	.928
Role Amb.	.124	.130	.727
Test of B			
Expec. One	2.082	2.725	.159
Expec. Two	.312	.456	.580
Satis.	1.415	1.784	.243
Role Amb.	4.751	4.947	.037
Test of A			
Expec. One	2.552	3.340	.120
Expec. Two	13.147	19.234	.001
Satis.	7.867	9.916	.008
Role Amb.	1.949	2.029	.172

Section 5.4 Discussion

Section 5.4.1 Initiating Structure-Time Company Interaction

A graphical representation of the significant interaction between time with company and initiating structure is presented in Table 5.6. It should be noted that the conclusions drawn from such graphs will generally be contingent, to some extent, on the scales chosen. This particular graph suggests that for subordinates with "high" time with company, high initiating structure will result in higher EI (expectancy that effort leads to output) than does low initiating structure. On the other hand, low initiating structure is superior in this respect for individuals with low time with company.

This finding is interesting and is open to further investigation. Our own tentative interpretation is that increased time with company leads to a gradual acceptance of the organization's goals as one's own, as indicated by March and Simon (1958). Therefore, the Leaders' attempts to clarify paths and goals of "old timers" is viewed as relatively sincere and understandable and results in increased expectancies. Another more parsimonious interpretation is that increased time with company results in a self-selection of basically more satisfied, agreeable employees.

Section 5.4.2 Intrinsic Certainty-Initiating Structure Interaction

We did not find a significant interaction between intrinsic certainty and initiating structure. This can be inter-

TABLE 5.3

Analysis of variance results for Intrinsic
 Certainty (A), Initiating Structure (B),
Educational Level (C) classification (leader
 consideration covariate).

<u>VARIABLE</u>	<u>F RATIO</u>	<u>MEAN SQ.</u>	<u>SIGNIFICANCE LEVEL</u>
Test of ABC			
Expec. One	.166	.258	.686
Expec. Two	1.054	1.589	.312
Satis.	.916	1.355	.345
Role Amb.	.927	1.133	.343
Test of BC			
Expec. One	.166	.258	.686
Expec. Two	.480	.723	.493
Satis.	.581	.859	.451
Role Amb.	.793	.969	.380
Test of AC			
Expec. One	1.517	2.363	.227
Expec. Two	1.569	2.365	.219
Satis.	.000	.000	.986
Role Amb.	.029	.035	.866
Test of AB			
Expec. One	.077	.120	.783
Expec. Two	1.735	2.615	.197
Satis.	.325	.480	.573
Role Amb.	1.746	2.133	.195
Test of C			
Expec. One	.019	.029	.892
Expec. Two	.350	.528	.558
Satis.	1.142	1.689	.293
Role Amb.	.231	.283	.634
Test of B			
Expec. One	.483	.753	.492
Expec. Two	.036	.054	.851
Satis.	.258	.381	.615
Role Amb.	2.855	3.487	.101
Test of A.			
Expec. One	1.789	2.787	.190
Expec. Two	12.729	19.187	.001
Satis.	6.818	10.087	.013
Role Amb.	1.633	1.995	.210

TABLE 5.4

Analysis of variance results for Intrinsic
 Certainty (A), Initiating Structure (B),
Time with Company (C) classification (leader
 consideration covariate).

<u>VARIABLE</u>	<u>F RATIO</u>	<u>MEAN SQ.</u>	<u>SIGNIFICANCE LEVEL</u>
Test of ABC			
Expec. One	.045	.055	.833
Expec. Two	1.054	1.388	.312
Satis.	.869	.982	.358
Role Amb.	.274	.322	.604
Test of BC			
Expec. One	5.491	6.650	.025
Expec. Two	3.030	3.989	.091
Satis.	.001	.001	.976
Role Amb.	.000	.000	.985
Test of AC			
Expec. One	.163	.198	.689
Expec. Two	1.088	1.433	.304
Satis.	1.465	1.655	.235
Role Amb.	.117	.137	.735
Test of AB			
Expec. One	.531	.644	.471
Expec. Two	.380	.500	.542
Satis.	.184	.208	.671
Role Amb.	1.431	1.678	.240
Test of C			
Expec. One	4.724	5.721	.037
Expec. Two	5.157	6.788	.030
Satis.	10.310	11.646	.003
Role Amb.	1.590	1.865	.216
Rest of B.			
Expec. One	1.151	1.394	.291
Expec. Two	.001	.001	.981
Satis	.542	.612	.467
Role Amb.	3.773	4.426	.061
Test of A			
Expec. One	2.082	2.521	.159
Expec. Two	13.093	17.236	.001
Satis.	7.926	8.953	.008
Role Amb.	1.421	1.666	.242

TABLE 5.5*

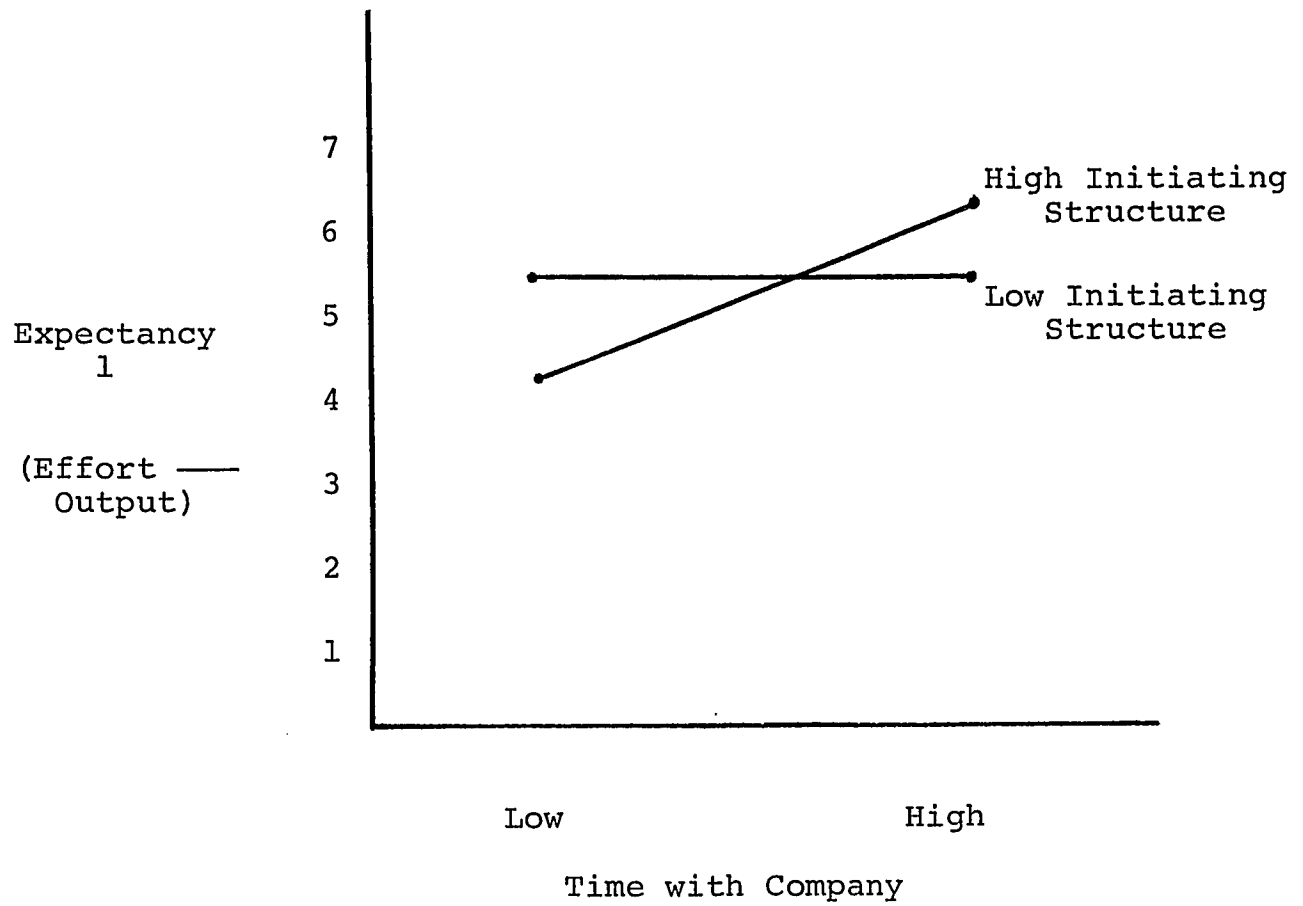
Significant Interactions and Main Effects

<u>FACTORS INTERACTING</u>	<u>ON DEPENDENT VARIABLES</u>	<u>LEVEL OF SIGNIFICANCE</u>
Intrinsic certainty & Initiating structure & Authoritarianism	Satisfaction	.05
Initiating structure & Time with company	Effort→output (E1)	.05
Initiating structure & Authoritarianism	E1, role ambiguity	.05
Time with company	E1, E2 (output→rewards)	.05
Time with company	Satisfaction	.01
Initiating structure	Role ambiguity	.05
Intrinsic certainty	E2, satisfaction	.01

*Covariate: Leader Consideration

TABLE 5.6

Graph of Time with Company-Initiating
Structure Interaction



preted as meaning that, for this sample, initiating structure does not have different effects on subordinate attitudes under different intrinsic certainty conditions. Thus these findings are not supportive of the path-goal hypotheses.

As noted above, this sample of 42 persons is probably not entirely representative of Able Company employees. For example, about one-half of these persons are supervisors. Furthermore, for methodological reasons, we differentiated only between high and low intrinsic certainty groups, and this resulted in two groups which were actually comparable in average intrinsic certainty to our low (I) and medium (II) revised groups. However, this analysis was considered important in terms of understanding the relationships among the variables involved and these nonsupportive findings must be considered significant. They point up the need for further research into the path-goal hypothesis generally and into the intrinsic certainty moderator and influence of individual/personality factors specifically.

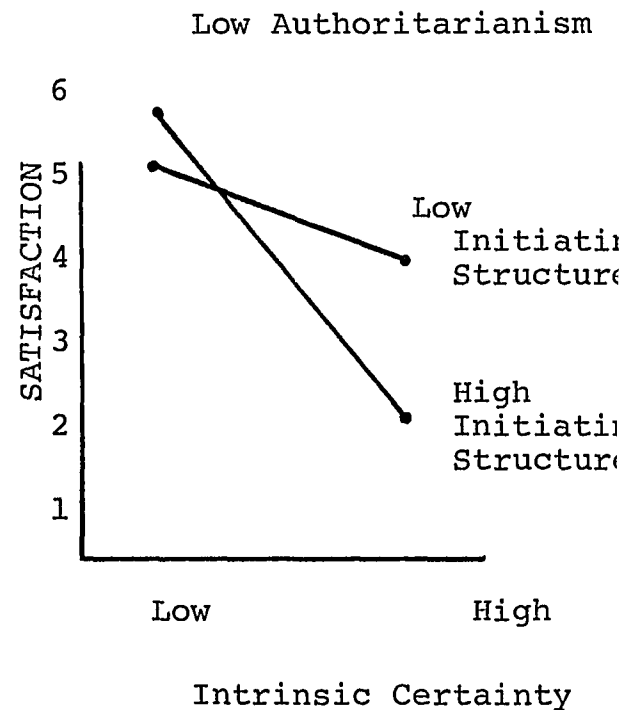
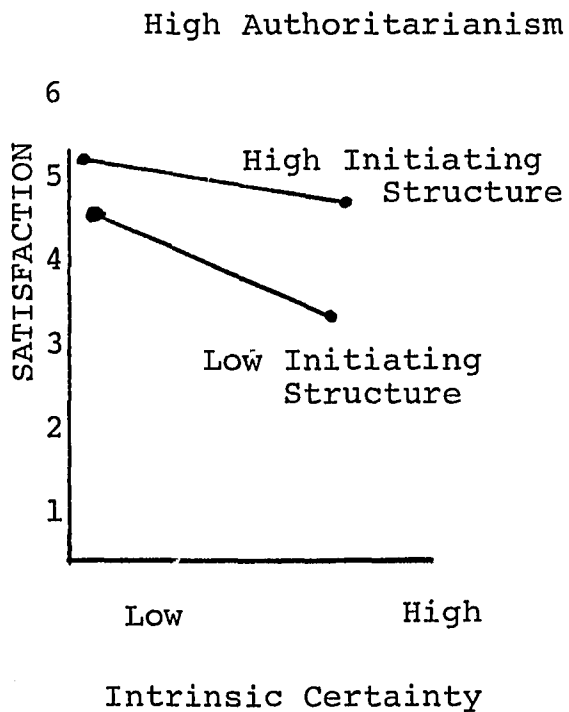
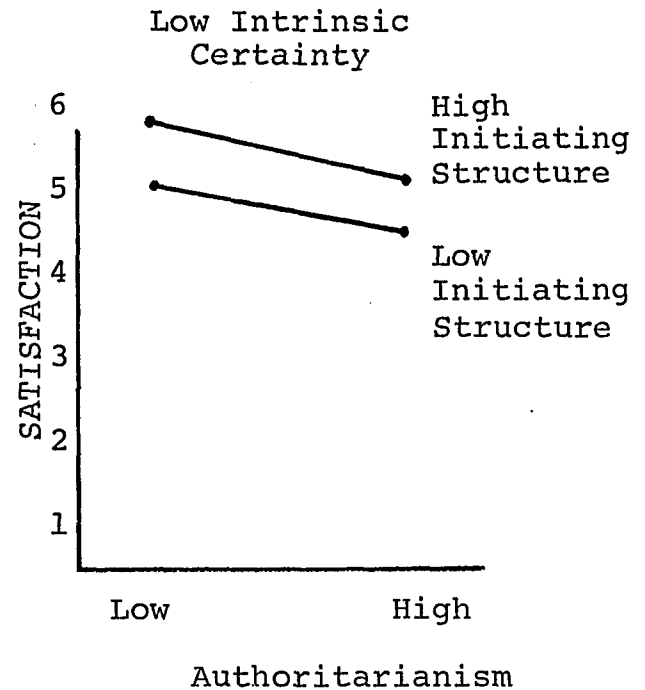
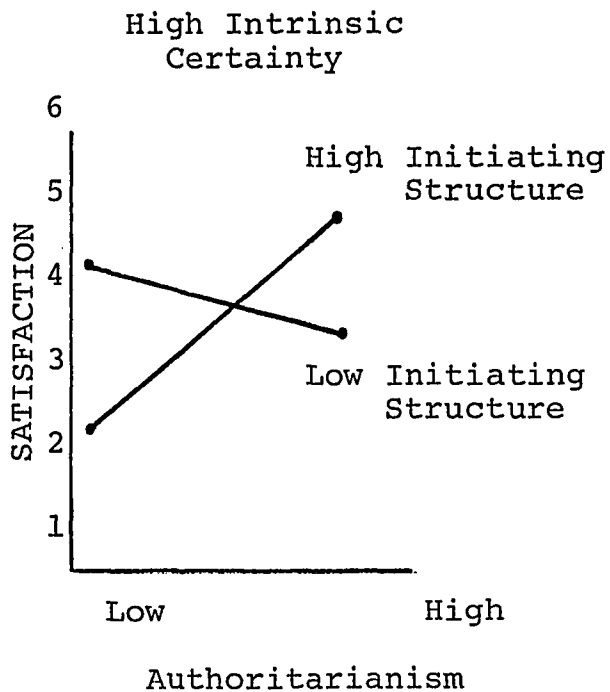
Section 5.4.3 Intrinsic Certainty-Initiating Structure Authoritarianism Interaction

This leads to the three factor interaction which intrinsic certainty, initiating structure, and authoritarianism were found to have on average satisfaction. The interaction is presented graphically in Table 5-7. One interpretation of this interaction is as follows:

- (1) Under conditions of high subordinate

TABLE 5.7

Graph of Intrinsic Certainty-Initiating
Structure-Authoritarianism Interaction



authoritarianism, high initiating structure will result in higher satisfaction than will low initiating structure, regardless of the certainty of the task.

- (2) Under conditions of low intrinsic task certainty, high initiating structure will result in higher satisfaction than will low initiating structure, regardless of subordinate authoritarianism.

This interpretation may be represented in matrix form as follows:

<u>PREFERABLE LEVELS OF INITIATING STRUCTURE*</u>			
		<u>INTRINSIC CERTAINTY</u>	
SUBORDINATE		Low	High
	Low	High I.S.	Low I.S.
AUTHORITARIANISM	High	High I.S.	High I.S.

*Effects of Leader Consideration held constant.

Section 5.4 Conclusions: Chapter V

While the results of the exploratory correlation analysis are supportive of the path-goal hypotheses their significance must be tempered with the findings of the analyses of variance. No significant two way interaction was found between initiating structure and intrinsic certainty, a fact which is clearly not supportive of the path-goal hypotheses. On the other hand, a significant three way interaction between these two factors and authoritarianism was found, a finding which may suggest support for a modified path-goal theory.

In summary, the failure to find a two way interaction between initiating structure and intrinsic certainty may possibly be explained by the nature of the 42-subject sample but it demands added caution and a reemphasis that the supportive findings described in Chapter 4 were the result of ex poste, exploratory research. The analysis of variance results in particular point up the need for additional research into the intrinsic certainty moderator and influence of individual/personality factors.

Chapter VI

CONCLUSIONS AND IMPLICATIONS FOR FUTURE RESEARCH

Section 6.1 Introduction

This chapter has a dual purpose. First, it summarizes the conclusions of this study. Second, it contains a number of implications which these conclusions have for future research.

Section 6.2 Conclusions of the Study

The primary hypothesis of this study described a predicted relationship between task certainty, leader structure, and employee satisfaction. This hypothesis was tested with both the original set of groups, as well as an ex-poste, revised set of groups. The basic finding of this study is that the hypothesis was not supported with either set of groups. In most cases the strategic relationships were U curved rather than monotonic.

In order to test hypothesis 2 partial correlation coefficients were computed by removing the effects of leader consideration. For the original groups the resulting partial correlations in all 3 groups were lower. In the revised, ex-poste groups the partial correlations were lower in groups 2 and 3. The result of partialling out the effect of leader consideration in these revised groups was to eliminate the U curve relationship. In particular, the partial correlations between leader structure and the various dependant

variables was now monotonic and in the predicted direction. As noted several times, however, these supportive results were obtained through the use of a second level task moderator (occupational level) and more generally, an ex-poste analysis of the data.

The need for caution in interpreting these results is particularly pronounced in light of the findings of the analyses of variance. No significant interaction was found between intrinsic certainty and initiating structure, with respect to employees' satisfaction. While this preliminary analysis was carried out with only 42 available respondents, half of whom were supervisors, the findings cast some doubt on the noted supportive findings, and demand further analyses with a refined task certainty moderator. A significant interaction was found between intrinsic certainty, initiating structure, and subordinate authoritarianism. This interaction can be interpreted as suggesting that subordinate authoritarianism modifies the relationship between task certainty, leader structure, and employee satisfaction.

In summarizing, it is helpful to differentiate between three broad findings of this study. First, the basic finding is that hypothesis I was not supported with either the original or revised groups. Second, there is contradictory evidence concerning the effect of leader consideration on the task certainty, leader structure, employee satisfaction relationship. Two types of analyses with two somewhat different groups of respondents resulted in two possible conclusions, and

it is evident that further analysis with an improved moderator is required to solve the problem. Third, the analysis of variance suggests that individual differences, and in particular authoritarianism, have a significant impact on the way in which task certainty and leader structure interact to effect employee satisfaction.

Section 6.3 Implication for Future Research

The three broad findings of this study result in at least three parallel implications and are concerned with:

(1) The intrinsic task certainty moderator, (2) The covarying influence of leader consideration, and (3) The influence of subordinate authoritarianism.

First, it is apparent that additional work is necessary in the development of a task certainty moderator. In particular, it is necessary to develop a scale which clearly categorizes individuals on the basis of task certainty without the necessity for an ex-poste second level moderator such as occupational level.

Second, while the findings concerning the covarying influence of leader consideration were inconclusive there was sufficient evidence to warrant a closer analysis of the role of consideration in the path-goal theory. Specifically, there was some indication that leader consideration should be made an integral part of the basic path-goal hypothesis by formalizing its role as a covarying influence.

Finally, the findings of this study suggest that the

subordinates' tolerance for ambiguity may be a key variable in understanding the interplay of task certainty, leader structure, and employee satisfaction. Future tests of the path-goal theory should include measures of this factor as well as hypotheses aimed at making subordinates' need for structure a more integral part of the path-goal theory.

APPENDIX 1: QUESTIONNAIRE SCALES

On the next few pages you will find a list of items that may be used to describe the behavior of your supervisor. The purpose of the questionnaire is simply to obtain a description of your supervisor's behavior.

Note: The term "group" as used in the following items refers to the department, division, or other unit that is supervised by the person you are describing.

The term "members" refers to all people in the unit that is supervised by the person being described.

In order for us to study the problem of what makes a good manager, we need to compare different descriptions of the same supervisor. We would therefore like you to indicate the name of your supervisor below. If you have any question that your identity might be revealed please do not fill it out. Remember that all information supplied by this questionnaire is confidential and will be used for research purposes only.

Col. #39

My supervisor's name is _____

Please draw a circle around one of the five numbers (1 2 3 4 5) following each item to show the answer you have selected.

- 1 = Always
- 2 = Often
- 3 = Occasionally
- 4 = Seldom
- 5 = Never

Col. #40

- | | |
|--|-----------|
| 1. He lets group member know what is expected of them | 1 2 3 4 5 |
| 2. He is friendly and approachable | 1 2 3 4 5 |
| 3. He encourages the use of uniform procedures | 1 2 3 4 5 |
| 4. He does little things to make it pleasant to be a member of the group | 1 2 3 4 5 |
| 5. He tries out his ideas in the group | 1 2 3 4 5 |
| 6. He puts suggestions made by the group into operation | 1 2 3 4 5 |

1 = Always
 2 = Often
 3 = Occasionally
 4 = Seldom
 5 = Never

- | | |
|---|-----------|
| 7. He makes his attitudes clear to the group | 1 2 3 4 5 |
| 8. He treats all group members as his equals | 1 2 3 4 5 |
| 9. He decides what shall be done and how it shall be done | 1 2 3 4 5 |
| 10. He gives advance notice of changes | 1 2 3 4 5 |
| Col. #50 | |
| 11. He assigns group members to particular tasks | 1 2 3 4 5 |
| 12. He keeps to himself | 1 2 3 4 5 |
| 13. He makes sure that his part in the group is understood | 1 2 3 4 5 |
| 14. He looks out for the personal welfare of group members | 1 2 3 4 5 |
| 15. He schedules the work to be done | 1 2 3 4 5 |
| 16. He maintains definite standards of performance | 1 2 3 4 5 |
| 17. He is willing to make changes | 1 2 3 4 5 |
| 18. He refuses to explain his actions | 1 2 3 4 5 |
| 19. He asks that group members follow standard rules and regulations | 1 2 3 4 5 |
| 20. He acts without consulting the group | 1 2 3 4 5 |
| Col. #60 | |
| 21. When faced with a problem he consults with his subordinates | 1 2 3 4 5 |
| 22. He makes it easier for me to carry out my tasks | 1 2 3 4 5 |
| 23. He keeps me informed as to how well I am doing at my task | 1 2 3 4 5 |
| 24. Before making decisions he gives serious consideration to what his subordinates have to say | 1 2 3 4 5 |

On the following pages are listed a number of characteristics or qualities associated with your company or your job. The following is an example of how they will appear:

	(A) Should be	(B) is Now
1. The feeling of security I have		
2. The prestige of my position		

For each characteristic you are asked to give two ratings:

Column (A): How much of the characteristic SHOULD BE
connected with your job.

Column (B): How much of the characteristic IS NOW
connected with your job.

Rating Scale

Use the following rating scale in rating each characteristic. Low numbers indicate a minimum amount (very little) and high numbers indicate a maximum amount (a great deal).

Very Little 1 2 3 4 5 6 7 A Great Deal

Simply select a scale number for Column (A) and Column (B) for each characteristic, and enter it into the blank spaces.

CD 3 - Col #1=D Characteristic	Should Be	Is Now
Col. #	Col. #	
1. My chances for a promotion to the next higher level	2	3
2. The challenge that my job provides for me	4	5
3. The feeling of being able to use one's own unique capabilities, realizing one's potential	6	7
4. The feeling of security in my position	8	9
5. The pay I receive for my work	10	11
6. The feeling that my job is an important one	12	13

Very Little 1 2 3 4 5 6 7 A Great Deal

Characteristic	Col. #	Should Be	Is Now
7. My pride in working for the company	14	_____	15 _____
8. My chances of going as high as I would like to here	16	_____	17 _____
9. The feeling of self-esteem in my position	18	_____	19 _____
10. The feeling of worthwhile accomplishment at work	20	_____	21 _____
11. The appreciation shown for my work	22	_____	23 _____
12. The existence of reward based on accomplishment	24	_____	25 _____
13. The opportunity to plan ahead and carry out the plan	26	_____	27 _____
14. Pay here compared to most places	28	_____	29 _____
15. The opportunity to develop friendships in the company	30	_____	31 _____
16. My feeling that the company is a good place to work	32	_____	33 _____
17. The pleasure of interacting with fellow employees	34	_____	35 _____
18. The opportunity for independent thought	36	_____	37 _____
19. Company recognition for a job well done	38	_____	39 _____
20. Company encouragement to attend professional meetings	40	_____	41 _____
21. Chances of keeping this job as long as I want it	42	_____	43 _____
22. The feeling of self-fulfillment from work	44	_____	45 _____
23. Fairness of compensation	46	_____	47 _____
24. My chances for advancing at a reasonable rate	48	_____	49 _____
25. The knowledge that my work is acceptable	50	_____	51 _____

```
END CARD 3      Col #76 = ID
                  Col #77 = ID
                  Col #78 = ID
                  Col #80 = 3
```

19. How repetitious are your duties?
 1 ☐ Very little
 2 ☐ Some
 3 ☐ Quite a bit
 4 ☐ Very much
 5 ☐ Almost completely
20. How similar are the tasks you perform in a typical work day?
 1 ☐ Almost all the same
 2 ☐ Quite a few the same
 3 ☐ Only a few the same
 4 ☐ Very few the same
 5 ☐ Almost all different
- Col. #22
21. To what extent do you set objectives, goals, and procedures for your job rather than following directions or established procedures?
 1 ☐ Almost never
 2 ☐ Little
 3 ☐ Somewhat
 4 ☐ Large
 5 ☐ Very large
22. To what extent do you participate in decisions concerning the methods to be used in performing your job?
 1 ☐ Almost never
 2 ☐ Occasionally
 3 ☐ Frequently
 4 ☐ Usually
 5 ☐ Almost always
- Col. #24
23. If you were to write a list of the exact activities you would be confronted by on an average work day, what percent of these activities do you think would be interrupted by unexpected events?
 1 ☐ 80-100%
 2 ☐ 60-80%
 3 ☐ 40-60%
 4 ☐ 20-40%
 5 ☐ 0-20%
24. To what extent do you control your job and the general pace of your work?
 1 ☐ Very little
 2 ☐ Some
 3 ☐ Quite a bit
 4 ☐ Very much
 5 ☐ Almost completely
25. How much variety is there in the work tasks which you perform?
 1 ☐ Very much
 2 ☐ Quite a bit
 3 ☐ Some
 4 ☐ Little
 5 ☐ Very little
26. How often do you encounter problems in performing your task which you have encountered previously?
 1 ☐ Hardly ever
 2 ☐ Seldom
 3 ☐ Occasionally
 4 ☐ Frequently
 5 ☐ Almost always

27. Every job is confronted by certain routine and repetitive demands. What percent of the activities or work demands connected with your job would you consider to be of a routine nature?
- 1 ☐ 0-20%
 2 ☐ 20-40%
 3 ☐ 40-60%
 4 ☐ 60-80%
 5 ☐ 80-100%
28. To what extent does your immediate supervisor influence what you do in a typical work week?
- 1 ☐ Almost completely
 2 ☐ Very much
 3 ☐ Quite a bit
 4 ☐ Some
 5 ☐ Very little
29. If you were asked to sit down the night before you go to work and make a list of the precise events that would confront you on your job the following day, how complete would your list be?
- 1 ☐ 80-100%
 2 ☐ 60-80%
 3 ☐ 40-60%
 4 ☐ 20-40%
 5 ☐ 0-20%
- Col. #31
30. How often does your supervisor keep a close check on what you are doing and closely observe your work?
- 1 ☐ Almost always
 2 ☐ Frequently
 3 ☐ Occasionally
 4 ☐ Seldom
 5 ☐ Hardly ever

The tasks of some individuals are more "structured" than others: the goals are clearer, the methods to be used are more understood, and the problems are more repetitive and less unique, for example. Would you please rate what you feel is the degree of "structure" of your job by circling the best response.

Col. #32

My job is	My job is
Highly	Highly
Unstructured 1 2 3 4 5 6 7	Structured

Some workers, such as social workers face problems which may have many "correct solutions". Others, such as assembly line solderers typically face problems which have just one or two "correct solutions". Please rate your job on the following scale by circling the appropriate answer. Col. #33

Problems which arise on my job usually have just one or two correct solutions	1 2 3 4 5 6 7	Problems which arise on my job usually have many correct solutions
--	---------------	---

11. How much time do you have on your job to perform your regularly assigned functions rather than those specially assigned by your superiors?
- 1 ☐ Very little
 2 ☐ Little
 3 ☐ Some
 4 ☐ Quite a bit
 5 ☐ Very much
12. To what extent are you able to schedule and plan your task requirements independently of others in the organization?
- 1 ☐ Hardly ever
 2 ☐ Seldom
 3 ☐ Occasionally
 4 ☐ Frequently
 5 ☐ Almost always
13. In your effort to get ahead on your job, to what extent do you act as an innovator?
- 1 ☐ Hardly ever
 2 ☐ Seldom
 3 ☐ Occasionally
 4 ☐ Frequently
 5 ☐ Almost always
- Col. #15
14. To what extent do the resources (Personnel, budget, etc.) you receive depend upon your superiors?
- 1 ☐ Very large
 2 ☐ Large
 3 ☐ Some
 4 ☐ Slight
 5 ☐ Almost none
- Col. #16
15. What is the average time it takes for you to complete a typical assignment?
- 1 ☐ One day or less
 2 ☐ Between 1 and 3 days
 3 ☐ Between 3 days and 1 week
 4 ☐ Between 1 and 2 weeks
 5 ☐ Longer than 2 weeks
16. How often are you required to perform tasks which previously had not been part of your job responsibility?
- 1 ☐ Very often
 2 ☐ Often
 3 ☐ Sometimes
 4 ☐ Seldom
 5 ☐ Rarely
17. How often do you see projects through to completion?
- 1 ☐ Rarely
 2 ☐ Seldom
 3 ☐ Sometimes
 4 ☐ Often
 5 ☐ Very often
18. To what extent are you able to allocate a portion of your time to tasks related to corporate objectives but not specifically assigned to you?
- 1 ☐ Very large
 2 ☐ Large
 3 ☐ Sometimes
 4 ☐ Little
 5 ☐ Almost never

The statements listed on the next few pages describe some specific characteristics about your particular job. They will appear as follows:

Job Characteristic	Definitely Not True Of My Job							Extremely True Of My Job						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
I know what my responsibilities are														

Please read each job characteristic, and circle the number that best reflects your opinion of how true the characteristic is for your job.

Your answers to these questions will help us to understand what working in this company is like.

Job Characteristic	Definitely Not True Of My Job							Extremely True Of My Job						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Col. #9														
1. I know what my responsibilities are														
2. Putting forth as much energy as possible leads to my turning out my production requirement on time.														
3. If a project (or task) is going badly, it would be better to keep it quiet.														
4. Producing a high quality output increases my chances for promotion.														
5. The requirements of my job are clearly stated.														
6. Putting forth as much energy as possible leads to my producing high quality output.														

Job Characteristic	Definitely Not True Of My Job							Extremely True of My Job						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Job Characteristic	Definitely Not True of My Job							Extremely True of My Job	
	1	2	3	4	5	6	7		
Col. #15									
7. Information flows freely between people at my level.	1	2	3	4	5	6	7		
8. Producing a high quantity of output increases my chances for promotion.	1	2	3	4	5	6	7		
9. I know exactly what is expected of me.	1	2	3	4	5	6	7		
10. Doing things as well as I am capable leads to turning out my production requirement on time.	1	2	3	4	5	6	7		
11. Jobs are highly specialized at my level.	1	2	3	4	5	6	7		
Col. #20									
12. Working with the other people on my job is more enjoyable when I produce a high quality output.	1	2	3	4	5	6	7		
13. Standards of performance and control systems have been established in writing.	1	2	3	4	5	6	7		
14. Doing things as well as I am capable leads to high quality output.	1	2	3	4	5	6	7		
15. My work group receives a good deal of cooperation from other groups.	1	2	3	4	5	6	7		
16. Producing a high quality output is rewarded with higher pay here.	1	2	3	4	5	6	7		
	Definitely Not True of My Job							Extremely True of My Job	
	1	2	3	4	5	6	7		

Job Characteristic	Definitely Not True of My Job							Extremely True of My Job
	1	2	3	4	5	6	7	

Col. #25

17. Schedules, Programs, or project specifications are used to guide work. 1 2 3 4 5 6 7
18. Putting forth as much energy as possible leads to my producing a high quantity of output. 1 2 3 4 5 6 7
19. Jobs are planned before they are started. 1 2 3 4 5 6 7
20. Producing a high quantity of output is rewarded with higher pay here. 1 2 3 4 5 6 7
21. I can generally find out if a decision which I made on my job was the best one I could have made. 1 2 3 4 5 6 7

Col. #30

22. Doing things as well as I am capable leads to a high quantity of output. 1 2 3 4 5 6 7
23. If I make one serious mistake my opportunities for future promotion would be seriously jeopardized. 1 2 3 4 5 6 7
24. Working with the other people on my job is more enjoyable when I produce a high quantity of output. 1 2 3 4 5 6 7
25. Written procedures and guides are available. 1 2 3 4 5 6 7
26. Trying as hard as I can leads to turning out my production requirement on time. 1 2 3 4 5 6 7

Definitely Not True of My Job								Extremely True of My Job
	1	2	3	4	5	6	7	

Job Characteristic	Definitely Not True of My Job							Extremely True of My Job
	1	2	3	4	5	6	7	
Col. #35								
27. Frequent changes in directions or projects result in confusion and wasted time and effort.	1	2	3	4	5	6	7	
28. Working with the other people on my job is more enjoyable when I get my job done on time.	1	2	3	4	5	6	7	
29. Written documents (such as budgets, schedules, project specifications, procedures, program plans, job descriptions, etc.) are used as an integral part of the job.	1	2	3	4	5	6	7	
30. Giving the job all I can leads to turning out my production requirement on time.	1	2	3	4	5	6	7	
31. I have enough authority to handle emergency situations adequately.	1	2	3	4	5	6	7	
Col. #40								
32. Getting the job done on time increases my chances for promotion.	1	2	3	4	5	6	7	
33. I can easily check to see if I have done my job correctly.	1	2	3	4	5	6	7	
34. Trying as hard as I can leads to high quality output.	1	2	3	4	5	6	7	
35. Top management takes action on recommendations made from people at my level.	1	2	3	4	5	6	7	
36. Getting the job done on time is rewarded with higher pay here.	1	2	3	4	5	6	7	

Definitely Not True of My Job	1	2	3	4	5	6	7	Extremely True of My Job
-------------------------------------	---	---	---	---	---	---	---	--------------------------------

Job Characteristic	Definitely Not True of My Job							Extremely True of My Job	
	1	2	3	4	5	6	7		
Col. #45									
37. Explanation is clear of what has to be done.	1	2	3	4	5	6	7		
38. I should be allowed to make some decisions that are now being made at a higher level.	1	2	3	4	5	6	7		
39. Producing a high quality output makes my work here more satisfying.	1	2	3	4	5	6	7		
40. My duties, authority, and accountability are documented in policies, procedures, or job descriptions.	1	2	3	4	5	6	7		
41. The chain of command is clear to everyone.	1	2	3	4	5	6	7		
42. Getting my job done on time makes my work here more satisfying.	1	2	3	4	5	6	7		
Col. #51									
43. Problems which arise on my job can generally be solved by using standard procedures.	1	2	3	4	5	6	7		
44. Someone in addition to my immediate supervisor gives me direct orders.	1	2	3	4	5	6	7		
45. Producing a high quality output leads to job security here.	1	2	3	4	5	6	7		
46. I can generally perform my job by using standardized methods.	1	2	3	4	5	6	7		
47. Trying as hard as I can leads to a high quantity of output.	1	2	3	4	5	6	7		
	Definitely Not True of My Job							Extremely True of My Job	
	1	2	3	4	5	6	7		

Job Characteristic	Definitely Not True of My Job							Extremely True of My Job						
	1	2	3	4	5	6	7							
Col. #56														
48. Good ideas get serious consideration from top management	1	2	3	4	5	6	7							
49. Producing a high quantity of output makes my work here more satisfying	1	2	3	4	5	6	7							
50. I can perform my job in a number of different ways	1	2	3	4	5	6	7							
51. Giving the job all I can leads to a high quantity of output	1	2	3	4	5	6	7							
Col. #60														
52. Communications are prompt and timely	1	2	3	4	5	6	7							
53. Performance appraisals are based on written performance standards or criteria	1	2	3	4	5	6	7							
54. Problems which I encounter in my job can generally be solved in a number of different ways	1	2	3	4	5	6	7							
55. The company gives me recognition for producing high quality output	1	2	3	4	5	6	7							
56. I feel certain about how much authority I have	1	2	3	4	5	6	7							
Col. #65														
57. Producing a high quantity of output leads to job security here	1	2	3	4	5	6	7							
58. People give assignments or directions that conflict with each other	1	2	3	4	5	6	7							
59. The company gives me recognition for getting my job done on time	1	2	3	4	5	6	7							
	Definitely Not True of My Job							Extremely True of My Job						
	1	2	3	4	5	6	7							

Job Characteristic	Definitely Not True of My Job								Extremely True of My Job
		1	2	3	4	5	6	7	
60. I know that I have divided my time properly		1	2	3	4	5	6	7	
61. Communications flow both up and down		1	2	3	4	5	6	7	
62. The company gives me recognition for producing a high quantity of output		1	2	3	4	5	6	7	
Col. #71									
63. There are clear, planned goals and objectives for my job		1	2	3	4	5	6	7	
64. There is always too much work and too little time or manpower to accomplish it		1	2	3	4	5	6	7	
65. Getting my job done on time leads to job security here		1	2	3	4	5	6	7	
Col. #74									
66. Giving the job all I can leads to high quality output		1	2	3	4	5	6	7	

End Card 1.

76=ID

77=ID

78+ID

80=1

CD2 - Col. #1=D

Please check the best answer to each question below

- | | |
|--|---|
| | Col #2 |
| 1. To what extent are you able to act independently of your superior in performing your job | 1 ☐ Hardly ever
2 ☐ Seldom
3 ☐ Occasionally
4 ☐ Frequently
5 ☐ Almost always |
| 2. How much are you required to depend on your supervisor for the non-financial resources (information, supplies, etc.) necessary for the performance of your job? | 1 ☐ Almost always
2 ☐ Very Often
3 ☐ Quite a bit
4 ☐ Some
5 ☐ Not at all |

The following questions are not directed toward your work or the things you do at the company, but rather toward life as a whole. In answering these questions, we are interested in what you as a person believe and feel.

Please indicate your agreement or disagreement with each statement as follows by circling the best answer.

- 1 - Strongly disagree
- 2 - Disagree
- 3 - I cannot make up my mind
- 4 - Agree
- 5 - Strongly agree

Card 5 Col. #1=D

Col. #2

1. Obedience and respect for authority are the most important virtues children should learn 1 2 3 4 5
2. If people would talk less and work more, everybody would be better off 1 2 3 4 5
3. Science has its place but there are important things that can never possibly be understood by the human mind 1 2 3 4 5
4. Making plans only brings unhappiness because the plans are hard to fulfill 1 2 3 4 5
5. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down 1 2 3 4 5
6. What this country need most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith 1 2 3 4 5
7. No same, normal, decent person could ever think of hurting a close friend or relative 1 2 3 4 5
8. In our modern world, knowledge must be practical in order to be meaningful 1 2 3 4 5

Col. #10

9. It does not make much difference if the people elect one candidate or another, for nothing will change 1 2 3 4 5
10. There is hardly anything lower than a person who does not feel a great love, gratitude, and respect for his parents 1 2 3 4 5

Col. #12

- | | | |
|-----|---|-----------|
| 11. | With things as they are today, an intelligent person ought to think only about the present, without worrying about what is going to happen tomorrow | 1 2 3 4 5 |
| 12. | When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things | 1 2 3 4 5 |
| 13. | People can be divided into two distinct classes: the weak and the strong | 1 2 3 4 5 |
| 14. | It is important to know clearly in advance your plans for the future | 1 2 3 4 5 |

End Card 5

Col. #76=ID
Col. #77=ID
Col. #78=ID
Col. #80=5

APPENDIX 2: SCALE ITEMS REPORTED IN THIS STUDY
(See Appendix 1)

- I) Leader Behavior Items; Pages 82-83
 - A) Initiating Structure:
Items 1, 3, 5, 9, 11, 13, 15, 16, 19.
 - B) Consideration:
Items 2, 4, 8, 10, 12, 14, 17, 18, 20.
- II) Satisfaction Items; Pages 84-86
 - A) Pleasantness:
Items 15, 16, 17, 29, 30.
 - B) Intrinsic Job:
Items 2, 3, 6, 9, 10, 22, 31, 36.
 - C) Recognition:
Items 11, 19, 25, 26, 27.
 - D) People: *
Items 15, 17, 30, 33.
 - E) Pay:
Items 5, 12, 14, 23.
 - F) Freedom:
Items 13, 18, 28, 32.
 - G) Security:
Items 4, 21.
 - H) Average:
Items--All.
 - I) Advancement:
Items 1, 8, 24.
*Experimental Sub-Scale.
- III) Intrinsic Task Certainty; Pages 87-88
Items 19, 20, 23, 25, 27, 29.
- IV) Job Scope; Page 89
Items 15, 16, 17, 18.
- V) Path-Goal Expectancies; Pages 90-96
 - A) Effort Leads to Work Goal Attainment:
 Quantity: Items 18, 22, 47, 51.
 Timeliness: Items 2, 10, 26, 30.
 Quality: Items 6, 14, 34, 66.
 Average: Items--All.
 - B) Attainment Leads to Personal Outcomes:
 Quantity: Items 8, 20, 24, 49, 57, 62.
 Quality: Items 4, 12, 16, 39, 45, 63.
 Timeliness: Items 28, 32, 36, 42, 59, 65.
 Average: Items--All
- VI) Role Ambiguity; Pages 90-96
Items 1, 9, 37, 56, 60, 63.

VII) F Scale; Pages 97-98

Items 1, 2, 3, 5, 6, 7, 10, 12, 13.

NOTE: Item numbers refer to the question number to the immediate left of each question, not to the column numbers.

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