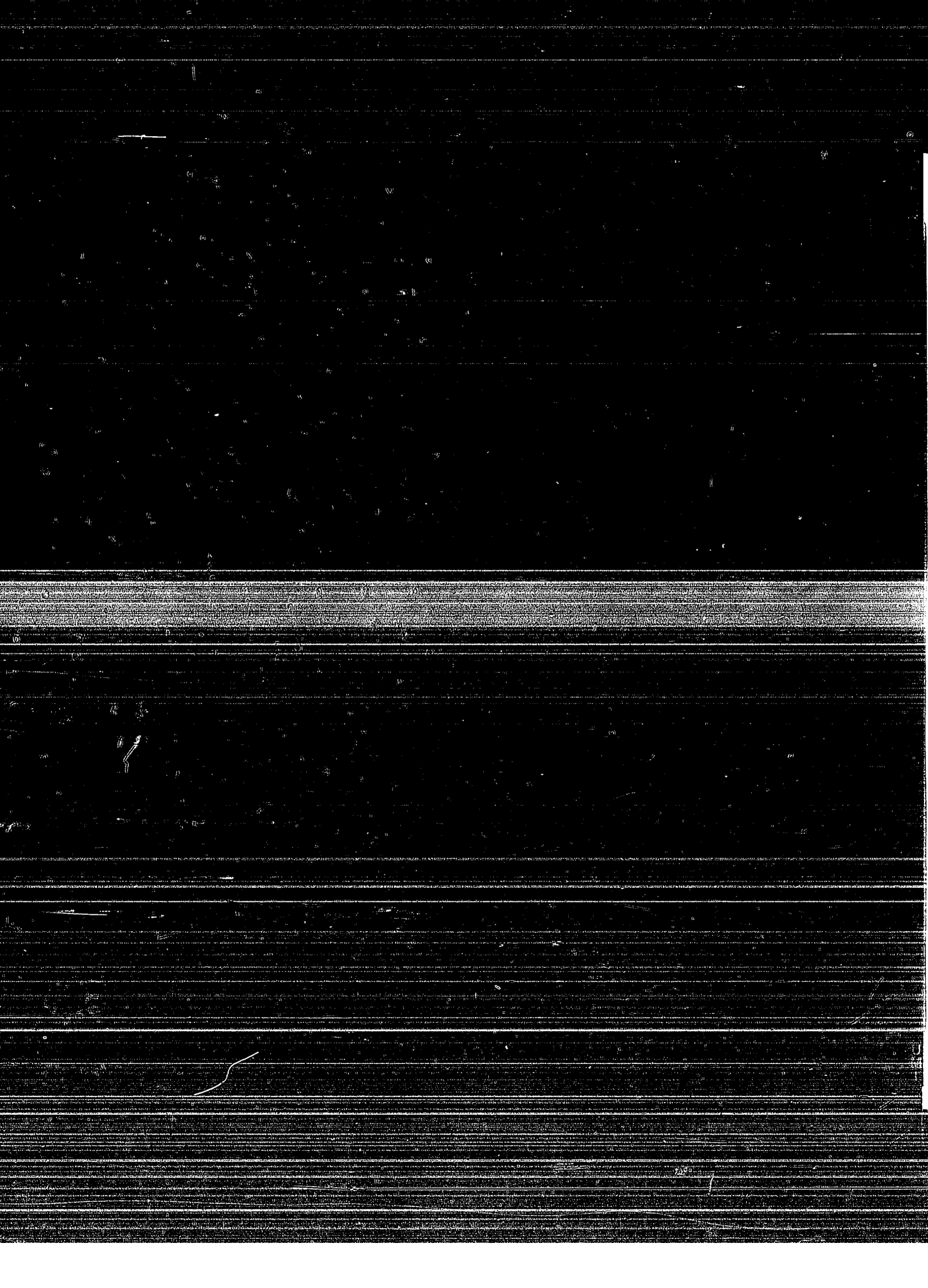


THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

COGNITIVE STYLE AND LEADER ADAPTABILITY OF MANAGERS

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

BY

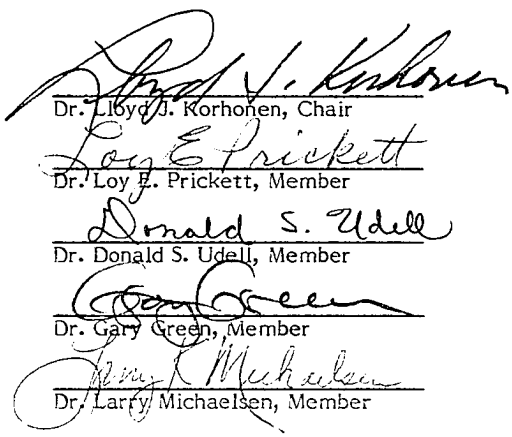
PEGGY FLETCHER MALONE

Norman, Oklahoma

1984

COGNITIVE STYLE AND LEADER ADAPTABILITY

OF MANAGERS



VITAE

Peggy Fletcher Malone was born in Oklahoma City, Oklahoma attended Bishop McGuinness High School there, and received a B.A. degree from Mt. Saint Scholastica College in Atchison, Kansas. She Graduated from West Virginia University with a Masters of Social Work in 1970. Mrs. Malone was accepted into the Adult and Community Education Doctoral Program at Oklahoma University. Mrs. Malone has conducted management training and holds membership in the National Association of Social Workers and is accredited by the ACSW.

ACKNOWLEDGMENTS

Acknowledgement is given to the following persons who have been indispensible to the formulation of this study: First to my husband, Edmund L. Malone, III for his loving support, encouragement, and computer assistance with the data. Next, to my Committee Chairman, Dr. Lloyd Korhonen, for his patience and intelligent guidance throughout the study. Then, to my Committee members, Dr. Loy Prickett, for his providing of opportunities and to Dr. Gary Green, Dr. Donald Udell, and Dr. Larry Michaelsen for their cooperation and support. To Dr. Bill Graves, Jr. for his statistical assistance, to the participants in the study, and to Mrs. Norma Potts for her generous coordination efforts in producing the text. And finally, to my parents, sisters, brother, and children for their caring and support.

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CHAPTER I

INTRODUCTION

Statement of the Problem

The goal of managers is to influence the behavior of others to achieve a desired end, such as productivity. To achieve this goal, managers and researchers strive to identify situational variables and individual differences, such as leadership styles and cognitive styles, that may influence the managerial process.

Available research on the managerial process concentrates almost entirely on attitudinal and trait characteristics (Hersey and Blanchard, 1982). There are a limited number of studies dealing with the behavioral and situational variables of leadership as combined with perceptual styles. Hersey and Blanchard have refined a Situational Leadership Model which utilizes a behavioral approach used to identify effective leadership styles in the context of the maturity states of the followers (Hersey and Blanchard, 1982). This approach synthesizes earlier leadership studies which largely ignored the situation and reported managers' traits ranging from authoritarian to laissez-faire, from initiating structure to consideration, and from employee orientation to production orientation (Wren, 1972). The extremes of leadership traits, ranging from employee orientation to production orientation, are reflected in descriptions of the cognitive style field dependence-independence. Cognitive

styles are the characteristic, self-consistent modes of functioning which individuals show in their perceptual and intellectual activities (Witkin, et. al., 1971). One of the major cognitive styles which has been studied extensively is the dimension of field-dependence/field-independence. (See Table I.) It is the perceptual aspect of a highly complex dimension of cognitive style known as psychological differentiation or an analytic (field-independent) versus global (field-dependent) field approach to learning (Witkin, Dyk, et. al., 1962). Field-dependence is the dimension of cognitive style in which perception is guided by the organization of the field (environment) as a whole. Field-independence is the dimension of cognitive style in which perception is guided by the parts of the field (environment) as discrete from the surrounding field. Field-dependents are described as being sociable, having concern for others, tending to take others' points of view into consideration before forming opinions, and seeming to work more effectively in conflict resolution situations than field-independents (Ragan, 1979). Whereas, field-independents are described as being individualistic, cold and distant in relations with others, preferring solitary activities, being task-oriented, and having work-oriented values such as efficiency, control, competence, and excelling (Ragan, 1979). These findings suggest that a person whose cognitive style is field-independent would tend to be a task-oriented, initiating structure type of manager while a field-dependent person would be an employee-oriented consideration type of manager. An issue of central importance is the relationship of the manager's cognitive style to his situational leadership style and adaptability or ability to diagnose the appropriate leadership style required by a specific management situation. There has been limited research in this area and the findings have been inconclusive.

TABLE I

Types of Cognitive Style*

Style Dimension	Measure	Proponents
Psychological Differentiation Field-Dependence-Independence. An analytic as opposed to global manner of perceiving.	Rod & Frame Test Embedded Figures Test	Witkin, et. al.
Cognitive Tempo Impulsivity-Reflectivity. Individual differences in speed and errors when faced with response uncertainty.	Matching Familiar Figures Test	Kagan
Perceptual Style Visual-Haptic. The visual perceptual type is said to use his or her eyes as the primary sensory intermediaries, while the haptic is said to use his or her eyes only when necessary and relies mainly upon kinestheic and body orientation.	Successive Perception Test	Lowenfeld
Schematizing Process Leveling-Sharpening. Individual differences in assimilation in memory.	Schematizing Test House Test	Holzman, Klein Santostephano
Distractibility Constructed-Flexible Control. Individual differences in reference to susceptibility to distraction.	Stroop Test Fruit Distraction Test	Santostephano Gardner

(continued)

TABLE I (cont'd)

Style Dimension	Measure	Proponents
Breadth of Categorization Broad-Narrow. An individual's preference for broad versus narrow categorization.	Questionnaire (Pettigrew, 1958)	Pettigrew Kogan
Attention Deployment Scanning-Focusing. An individual difference reflected in extensiveness and intensity of attention deployment.	Size Estimation Tasks	Schlesinger Gardner
Tolerance for Unrealistic Experiences Tolerant-Less Tolerant. Individual differences in willingness to accept perceptions which are at variance with normal experiences.	Apparent Movement Illusions	Klein Gardner
Cognitive Complexity Complexity-Simplicity. Differences in individuals' tendency to construe the world in a multi-dimensional and discriminating manner.	Role Construct Repertory Test	Kelly (VS. Harvey, Hunt, Schroder)
Conceptualizing Styles Analytic-Relational. Individual differences in categorization of stimuli with perceived similarities or differences.	Sorting/Grouping Tasks	Gardner, Kagan

* Adapted from Ragan, 1979.

Achievement (a concept which might be related to adaptability) and cognitive style, have been investigated mostly at the academic level. Assessments were largely by grades, test scores, and teacher's rating of student performance (Witkin, et. al., 1977). With college populations, most studies revealed relatively field-independent students were found to perform significantly better in mathematics, sciences, engineering, and architecture domains than field-dependent students (Dubois & Cohen, 1974; Greenfield, 1971; Hunt, 1968; Schmidt, 1973; Stien, 1968; Williams, 1970).

Very little research has been conducted on cognitive style and achievement in vocational domains. Findings indicate that vocational success or achievement largely reflected career choices and cognitive style. Quinlan and Blatt (1972) studied surgical and psychiatric student nurses, utilizing supervisor's performance ratings, and found that student nurses who were judged to have done well in surgery were relatively field-independent, whereas students who did well in psychiatry tended to be more field-dependent. Similarly, MacKinnon (1962) found practicing architects selected as outstandingly creative by their peers to be markedly field-independent, whereas writers selected on a similar basis were quite field-dependent.

There still remains to be investigated the question of the existence of a relationship between leadership style and achievement as a manager and cognitive style.

Purpose of Study

The purpose of the study was to discover the significant cognitive variables which characterize manager's leadership adaptability in order to formulate better management training curricula. The study is needed to enable administrators to increase productivity on the work-site through an enhanced

understanding of managers' leadership styles and cognitive characteristics. Specifi-cally, an investigation will be conducted into the possible significant relationship between the field-dependent-independent dimension of cognitive style and the leadership style and adaptability dimension to determine if manager cognitive style and manager leadership adaptability are significantly related.

The Research Questions

The research questions to be explored in the study are:

1. Are there significant correlations between manager cognitive style and leadership adaptability?
2. Are there significant correlations between manager cognitive style and age?
3. Are there significant correlations between manager cognitive style and education?
4. Are there significant correlations between manager cognitive style and years of managerial experience?
5. Are there significant correlations between manager adaptability and age?
6. Are there significant correlations between manager adaptability and education?
7. Are there significant correlations between manager adaptability and managerial experience?

The Significance of the Study

The findings of the study will lead to an understanding of managers' cognitive styles and leadership adaptability. Such knowledge will be useful to practicing managers as they diagnose their leadership behavior in order to improve weak areas and maintain strong areas. Teachers of potential adminis-

trators will be able to assist their students in greater self knowledge and better direct their efforts to areas needing improvement as well as to management areas congruent with their cognitive style. Administrators can enhance their forecasting skills by being able to better match individual managers with work areas to predict effectiveness. Productivity, morale, and job satisfaction on the work-site can be increased and turnover decreased by the utilization of the study's findings.

Limitations of the Study

The study is limited by the attributes of the population sample. The study sample will be limited to a selected group of managers in a major teaching hospital in the Southwest. There are cultural characteristics of field-dependence-independence which will limit application of findings to populations within the United States. Norms are limited for both the Group Embedded Figures Test (GEFT) and the Leadership Effectiveness and Adaptability Description (LEAD-Self). There are no norms for a population the same as the study sample population. The study will not deal with the question of whether or not a manager is able to modify his management behavior.

Working Definitions for the Study

Cognitive Style: Characteristic, self-consistant modes of functioning which individuals show in their perceptual and intellectual activities.

Field-Dependence-Independence: Dimension of cognitive style in which perception is guided by the organization of the field (environment) as a whole.

Field-Dependent Cognitive Style: Cognitive style of an individual scoring in the first or second quartile on the GEFT.

Field-Independent Cognitive Style: Cognitive style of an individual scoring in the third and fourth quartile on the GEFT.

Style Adaptability: The degree to which one is able to diagnose the appropriate leadership Style, or vary his/her Style appropriately, to the demands of a given situation according to Situational Leadership Theory.

Summary

In summary, the intent of this study is to determine if there are significant correlations between the variables of cognitive style and leadership adaptability in managers. There is evidence in the literature that points to similarities between the characteristics of field-dependence-independence and employee-orientation versus production-orientation in leadership styles. The significance of a manager's adaptability in relationship to his cognitive style is unknown. To better understand the significance of this variable is critical, not only for management educators, but for practicing managers.

CHAPTER II

THEORETICAL FRAMEWORK

Cognitive Style

A widely accepted definition of cognitive style is the characteristic, self-consistent mode of functioning which an individual shows in his perceptual and intellectual activities. It refers to the person's manner of perceiving, i.e., acquiring and processing information. Early studies of cognitive styles centered around the problems of how an individual orients himself in time and space or perceives the upright. (Witkin & Asch, 1948.) Two experimental approaches were used: altering an individual's usual relationship between 1) his visual cues, through use of the Rod and Frame Test (RFT), and 2) his kinesthetic cues, through the Body Adjustment Test (BAT), in perceiving the upright. It was found that some individuals consistently rely on either kinesthetic or body cues and some on cues from the visual field in perceiving the upright (Witkin, 1959). From these perceptual styles the perceptual constructs of field dependence (FD) and field independence (FI) were formulated.

Later a new experimental approach was devised to measure an individual perceptual style called the Embedded-Figures Test (EFT). (Witkin, Oltman, Raskin, & Karp, 1971.) It measured an individual's ability to find a simple geometric figure which was embedded in a visually complicated background. A perceptual consistency was found between persons scoring field-dependent on the RFT, BAT, and the EFT, i.e., they had difficulty in disembedding the simple figure from the complex background. Likewise, persons scoring field-

independent on the RFT and BAT also scored field-independent on the EFT, i.e., they had less difficulty overcoming an embedding context. From these and other findings, Witkin developed his theory of Psychological Differentiation (Witkin, et. al., 1962).

Psychological Differentiation

The theory of Psychological Differentiation was an attempt to recognize that an individual's perceptual or cognitive style was related to and consistent with the other psychological dimensions of his personality. Witkin identified four main areas of differentiation: the articulate-global dimension both in perceptual and intellectual functioning; the degree of articulation of body concept; the sense of separate identity; and the degree of specialization of the defense structures.

Field-dependent persons who have more difficulty than field-independent persons at disembedding figures tend to do less well in solving problems which require isolating an essential element from its original context and using it in a different context. Field-independence is thus an analytical way of experiencing reality, whether the field is immediately present or represented symbolically or intellectually. Even when the material lacks inherent organization and structure, parts of the field are experienced as discrete (articulated) and the field as a whole, organized. At the opposite end with field-dependence, when the field lacks structure, experience tends to be global and diffuse (Witkin, 1971). Frost (1980) found that field-dependents are challenged, whereas field-dependents are overwhelmed, by complex stimuli. Hoffman (1978) found field-independents exhibited more leadership on an unstructured construction task than field-dependents. Field-dependents tend to accept a field as is rather than to impose structure on it (Witkin, 1971).

Evidence shows that individual differences in cognitive style of field-dependence-independence are related to individual differences in body concept. In depicting a body concept, figure drawings made by field-dependent subjects tend to be global in character. Little detail and unrealistic representation and proportioning of body parts are shown and sexual characteristics are indicated minimally or not at all. Additionally, role representation is not attempted in most cases (Witkin, et. al., 1971). In the case of field-independent subjects, the opposites are shown in figure drawings. Significant correlations between articulation of body concept and field-independence have been made. A sense of separate identity in persons with an articulated cognitive style (field-independence) is more developed than those with global cognitive style (field-dependence). A sense of separate identity includes an awareness of needs, feelings, attributes which one recognizes as one's own and distinct from others, an experience of self as structured, and a guide for definition of self from internal rather than external cues and frames of reference. Several researchers referred to these phenomena: Corah (1965), Karp, Silberman and Winters (1969), Winestine (1969), and Witkin, et. al., (1962). Another kind of study centered around confronting the subject with a standard on a particular issue attributed to an authority and then determining the extent of the subject's use of that standard in defining his own attitude on the issue (Bell, 1955). Bell showed that field-dependents were more influenced in their perception of an element by the context, including the social and authoritative context, than field-independents.

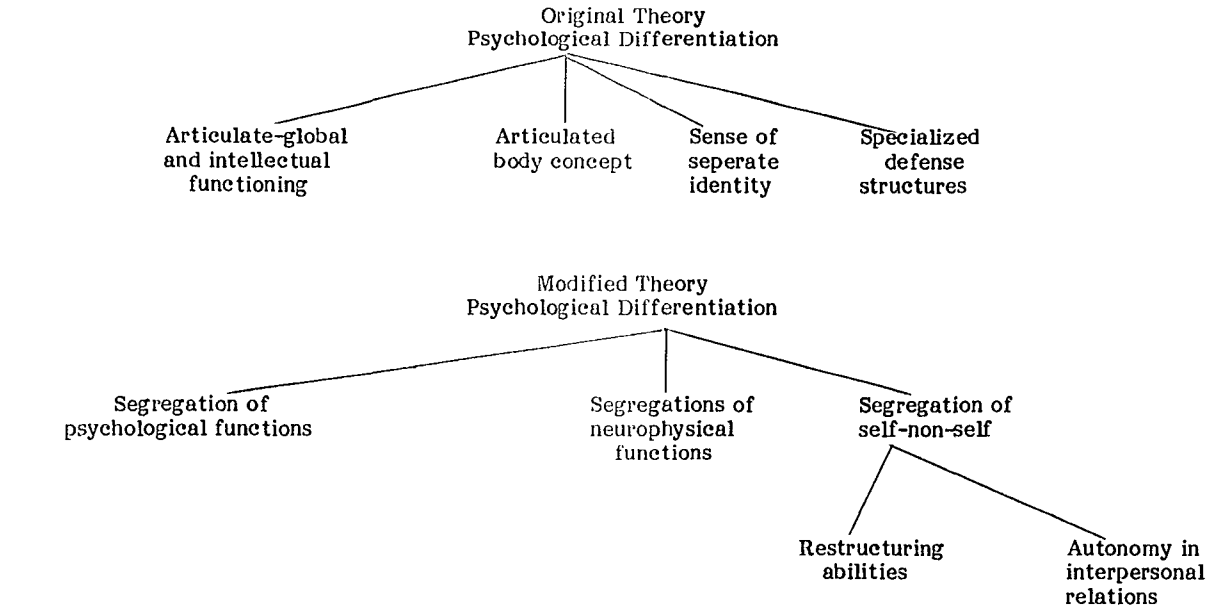
The relationship between cognitive style and the nature of defenses shows that persons with articulated (field-independent) perceptions tend to use specialized defenses, such as isolation, withdrawing, and projection. Whereas,

persons with global (field-dependent) perceptions tend to use repression and denial which are relatively nonspecific ways of functioning. Use of these defenses tends to lead persons with a global cognitive style to experience a strong influence of feelings on thought and perception while articulated persons maintain the descreteness of feelings and ideas, although the feeling component may be split off (Bertini, 1960; Witkin, et. al., 1962).

Witkin and his coworkers (1976) later modified their theory of Psychological Differentiation to include three areas: segregation of psychological functions, segregations of neurophysical functions, and self-non-self segregation. They further divided self-non-self segregation into restructuring abilities and autonomy in interpersonal relations. Most of the elements of the older theory were retained in the modified theory (Ragan, et. al., 1979). The main addition was that area of neurophysiological functioning which includes findings that the cerebral cortex of the brain is the center for the segregation of neurophysical functioning with each hemisphere being more specialized in more differentiated (field-independent) individuals. Right-handed individuals are more often field-independent than are ambidextrous or left-handed ones. Right-handed persons are also generally more strongly lateralized. (Pizzamiglio, 1974.) (See Table II.) Witkin and Goodenough (1976) found that the cognitive styles of field-dependence-independence are stable over time, are bipolar, are pervasive across one's personality, and are neutral in value, i.e., each one has positive values depending upon whether the situation called for social or structuring abilities. Additionally, they discuss the phenomena of fixity versus mobility. They found that some individuals were fixed in operating in one mode of cognitive style while others were mobile in operating in either a field-dependent or field-independent mode based on inner states and needs or on the task at hand (Ragan, et. al., 1979).

TABLE II*

Psychological Differentiation



*Adapted from Witkin, et. al., 1971 and Ragan, et. al., 1979.

Origins of Individual Differences

Socialization practices within the family appear to be one source of the origins of individual differences (Barclay & Cusumano, 1967; Berry, 1966; Dawson, 1967a, 1967b; Dershowitz, 1966; and Seder, 1957). Studies show the extent of a child's field-dependence was influenced by the degree to which his early socialization experiences hampered or fostered achievement of separate, autonomous functioning. Field-independence was fostered by the extent of opportunity for an achievement of separate, autonomous functioning, and an encouragement of separation, particularly from the mother; the manner of dealing with a child's expression of impulse, particularly whether or not it served to help him identify and internalize standards; and characteristics of parents themselves which influenced their role in the separation process and in the regulation of impulse (Witkin, et. al., 1971).

Another source of individual differences appeared to be differences in constitutional characteristics as they interacted with socialization experiences. Studies with adults as reviewed by Witkin and Ottman (1967) showed evidence relating differences in field-dependence to differences in central nervous system and autonomic nervous system functions. Additionally, studies with infants point to the neonatal period as a source of somatic differences found later in life and which served as precusors in the development of more differentiated or less differentiated functioning (Dyk, 1969).

Sex Differences in Cognitive Style

Boys and men tend to be more field-independent than girls and women. The differences between the sexes is small in magnitude compared to the range of individual differences within each sex but it is clear-cut and pervasive (Witkin, 1967). Sex differences are found in groups of various educational and

social backgrounds and across Western European cultures (Witkin, et. al., 1962), and in Israel (Rothman), Japan (Kato, 1965), Hong Kong (Goodnow, an unpublished study), and Sierra Leone, Africa (Dawson, 1963, 1967), but not in the Eskimo (Berry, 1966a, 1966b; McArthur, 1967). Sex differences prevail over a large segment of the life span, with the exception of children under 8 (Crudden, 1941; Goodenough and Eagle, 1963) and in geriatric groups (Schwartz and Karp, 1966). Before age eight there is no reliable measurement for field-dependence-independence. From eight to fifteen years of age, there is an increase in field-independence in both girls and boys. From fifteen to twenty-four years, boys tend to increase in field-independence at a higher rate than girls. Between twenty-four and forty years, there is a plateau with little change. From age forty to sixty there is a gradual increase in field-dependence in both males and females. Between ages sixty and seventy a marked increase in field-dependence occurs in both sexes and then slows again between seventy and eighty.

A plateau is then maintained until death (Witkin, et. al., 1971). Cognitive style influences behavior. Osipow (1969) pointed out that individuals are prone to organize their perceptual experiences along distinctive and significant lines and these differences in perceptual organization have important behavioral consequences. Field-independence has been related to scores of masculinity-feminity inventories which reflect social roles (Miller, 1953; Crutchfield, Woodworth, Albrecht, 1958; Fink, 1959).

Leadership

Leadership is distinguished from the concept of management. Management is defined as working with and through individuals and groups to accomplish organizational goals (Hersey and Blanchard, 1982). Leadership is a broader concept. It is the process of influencing the activities of an individual

or a group in efforts toward goal achievement in a given situation. According to these definitions, leadership occurs at any time one attempts to influence others towards the achievement of any goal, not necessarily organizational goals. The leadership process involves the dynamic variables of the functions of the leader, the follower(s), and the situation (Hersey and Blanchard, 1982).

Early attempts to explain the leadership process included Max Weber's (1865-1920) emphasis on the importance of formal legitimate authority; Frederick Taylor's emphasis on the importance of the knowledge and expertise possessed by the leader, Mary Parker Follett's (1868-1933) emphasis on the importance of obeying the "law of the situation," and Chester I. Bernard's emphasis on the acceptance by workers of the leader's orders (Wren, 1972).

The study of leadership traits (intelligence, friendliness, etc.) characterized an early approach to the study of leadership. This viewpoint, however, left many inconsistencies as noted by Eugene E. Jennings (1961) that fifty years of study failed to produce one personality trait or set of qualities that can be used to discriminate leaders and nonleaders.

Elton Mayo (1880-1949) initiated the human relations movement which emphasized the importance of the leader addressing individual humanistic needs, motivations and cooperative efforts. The leader's concern for people and relationships was in contrast to early scientific management's concern for tasks and production. The University of Michigan Studies, under the direction of Rensis Likert (1961) beginning in 1945, identified two types of leadership orientations: employee and production. Ralph M. Stogdill and Carroll L. Shartle in the Ohio State Studies (1955), identified two related leadership dimensions: initiating structure and consideration. These works moved the focus on leadership from traits to group interactions. A grid depicting ranges

of possible combinations between people and work orientations was developed by Blake and Mouton (1964) and Douglas McGregor in his Theory X - Y (1960). Kurt Lewin (1948) was one of the first to identify leadership styles as a continuum ranging from laissez-faire to democratic to authoritarian. Lewin's focus was on the effect of group dynamics as the field or environment for leadership. Fred E. Fiedler (1967) expanded the notion of best leadership style to include the context of the situation. Retaining the dimensions, task-people orientations, he developed a Leader Contingency Model which showed the most leader-effective arrangement of the variables: leader-member relations, task structure, and position power.

Situational Leadership

Wm. J. Reddin was the first to add an effectiveness dimension to the task and relationship concerns of leadership (1967, 1970). Reddin, Hersey, and Blanchard utilized a behavioral approach in analyzing leadership in contrast to previous approaches which were attitudinal: for example, McGregor's Theory X & Y and Blake and Mouton's grid. Hersey and Blanchard postulated that an effective leadership style is determined by the needs of the situation and not that a certain leadership style is best or most effective in all circumstances. The stimulus (S) is the situation, the organism (O) is the follower, and the response (R) is the resulting effective leadership style: S-O-R. They suggest the following formula: effectiveness depends on the leader, the follower(s), and other situational variables; E = f(l,f,s). (Hersey and Blanchard, 1982). The elements of Situational Leadership are: (1) the amount of guidance and direction (task behavior) a leader gives, (2) the amount of socio-emotional support (relationship behavior) a leader provides; and (3) the readiness (matur-

ity) level that followers exhibit in performing a specific task, function, or objective (Hersey and Blanchard, 1982).

The concept of maturity is defined as the ability and willingness of people to take responsibility for directing their own behavior. It includes three qualifications: (1) Maturity is considered only as it relates to a specific task. (2) It includes the individual's maturity levels, i.e., his experience and ability to perform the task. (3) It includes the group's maturity level, i.e., their experience and ability in working with each other to perform the task. The maturity of followers is viewed as a continuum ranging from M1 to M4, low to high. Each level of maturity is matched to an appropriate leadership style (Hersey and Blanchard, 1982).

Hersey and Blanchard identify four styles of leadership. Style one (S1) is characterized by "telling" and directing behavior. The leader engages in defining roles and telling people what, how, when and where to do various tasks. (S1) is most effective for followers of low maturity (M1). It involves low relationship and high task behavior because too much supportive behavior with people at this maturity level may be seen as permissive, easy and, most importantly, as rewarding of poor performance. Style two (S2) is appropriate for followers with low to moderate maturity (M2), people who are unable but willing to take responsibility, are confident but lack skills at this time. Style three (S3) is characterized by "participating," with the leader and follower sharing in decision making. The leader utilizes facilitating and communication behaviors. (S3) is most effective with followers with moderate to high maturity (M3), who are able but unwilling to do what the leader wants. Poor performance is related to motivational problems rather than security ones. Style four (S4) is characterized by "delegating" and little directive and

supportive behavior from the leader. (S4) is effective with followers of high maturity who may be given responsibility to accomplish the tasks as identified by the leader. Highly mature persons need less socio-emotional support and increased autonomy (Hersey and Blanchard, 1982). (See Table III.)

The successful use of this Tri-Dimension Leader Effectiveness Model depends upon the leader's adaptability or ability to assess/diagnose the group's maturity level and the degree to which he is able to vary his style appropriately to the demands of a given situation. Use of the model also involves determining a leader's flexibility or ability to use various Styles, his Style Range. Most individuals have a primary Style and a supporting Style while few persons prefer each of the four Styles equally. It is thought that the ability to learn diagnostic skills (increase adaptability) may be accomplished through training and practice. (See Figure 1.)

Women and Leadership

The literature reveals few definitive findings on women and leadership. Successful women executive managers report that their fathers were more important than their mothers in the development of a sense of personal identity and belief in their abilities to succeed in non-traditional roles. Their mothers fostered social training skills and were not perceived as being as influential in their career development as their fathers. Movement upwards into management often occurred under the sponsorship of an executive male upon whom the women depended and was seen by her as a father figure (Henning, 1977). Women who have been recently promoted to middle management positions show a preference for Style profiles of 3 - 4. They tend to be able to raise and lower their socio-emotional support or relationship behavior but often feel uncomfortable if they have to initiate structure or provide direction for people (Styles

TABLE III*

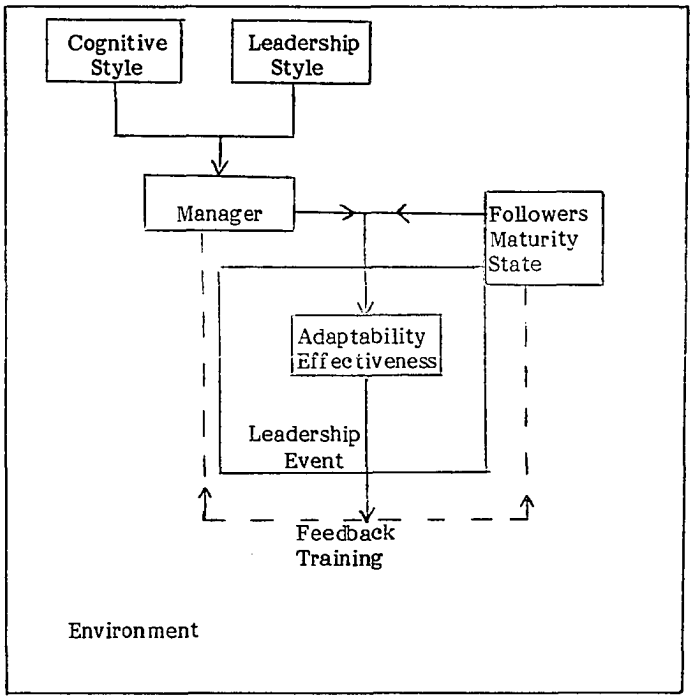
Basic Leader Behavior Styles as Seen by
Others When They are Effective or Ineffective

Basic Styles	Effective	Ineffective
High Task and Low Relationship Behavior (Style I)	Seen as having well-defined methods for accomplishing goals that are helpful to the followers.	Seen as imposing methods on others; sometimes seen as unpleasant and interested only in short-run output.
High Task and High Relationship Behavior (Style II)	Seen as satisfying the needs of the group for setting goals and organizing work, but also providing high levels of socio-emotional support.	Seen as initiating more structure than is needed by the group and often appears not to be genuine in interpersonal relationships.
High Relationship and Low Task Behavior (Style III)	Seen as having implicit trust in people and as being primarily concerned with facilitating their goal accomplishment.	Seen as primarily interested in harmony; sometimes seen as unwilling to accomplish a task if it risks disrupting a relationship or losing "good person" image.
Low Relationship and Low Task Behavior (Style IV)	Seen as appropriately delegating to subordinates decisions about how the work should be done and providing little socio-emotional support where little is needed by the group.	Seen as providing little structure or socio-emotional support when needed by members of the group.

*Adapted from Hersey and Blanchard, 1982.

FIGURE 1

The Cognitive-Leadership Process



1 and 2) (Hersey and Blancahrd, 1981). Alice Sargent (1981) proposes that effective leaders and managers need to use both logic and intuition, recognize both facts and feelings and be both technically competent and emotionally caring. Henning (1977) states that frequently women do not progress past first line supervisory positions, partially due to their tendency to not set upward career goals and to ignore informal lines of communication in the organization while insisting on the emotional values of openness, honesty, and use of the formal structure to conduct business, including promotions. Additionally, she points out that women tend to be task oriented, myopically seeking status and satisfaction from a specific job mastered rather than upward career mobility.

Leadership and Cognitive Style

A study of all male engineers in Israel by Miriam Erez (1980) supported the following hypotheses: (1) Field-independence is pcstively related to social intelligence but is negatively related to social orientation, (2) The employee-centered leadership style is associated with the cognitive variables of field-independence and social intelligence rather than with the motivational version of social orientation. In contrast, the job-centered style is associated with field-dependence and a low social intelligence (Weissenberg and Gruenfield, 1966). Weissenberg and Gruenfield (1966) utilized Fielder's Esteem for the Least Preferred Co-Worker (LPC) instrument and Fleishman's Leadership Opinion Questionnaire (LOQ) and Witkins Group Embedded Figures Test (GEFT) with managers to discover a relationship between the leadership variables of initiation of structure and consideration and field-dependence-independence. They found individuals who are intermediate between extreme field-dependence and extreme field-independence discriminated most sharply between their most and least preferred co-workers and therefore, according to Fiedler (1964), they

would presumably be more task oriented than their peers at either exteme. They confirmed that the relatively field-independent person is less considerate than either the intermediate or extremely field-dependent person. Additionally, they uncovered that the initiation of structure scale of the LOQ was not related to field-dependence-independence. They attributed the later finding to shortcomings of the LOQ measure.

Summary

The effectiveness of managers is proportional to managers utilizing the appropriate leadership style(s) as dictated by the situational needs including the maturity of the followers (Hersey and Blanchard, 1982). The cognitive style of field-independence is related to the employee-centered leadership style while field-dependence is related to the job-centered leadership style (Weissenberg and Gruenfield, 1966). Field-independent persons tend to impose structure on a field and to experience it analytically while field-dependent persons tend to accept a field as is, experience it globally and as diffuse (Witkin, et. al., 1971). The relationship between the manager's cognitive styles, leadership styles and adaptability is unknown. The literature suggest that there may be significant correlations in the directions of managers' higher adaptability scores correlating with field-independence in general due to the presence of a higher degree of analytic skills. Secondly, the literature suggests that higher adaptability scores may significantly correlate with the compatibility of managers' cognitive styles and management area (Osipow, 1969). For example, a higher adaptability score would be expected in the management area of psychiatry when the manager has a cognitive style of field-dependence and utilizes leadership styles two and three, depending upon the maturity of the followers.

An area of interest will be the degree of correlation between the manager's adaptability and the cognitive style of field-dependence in light of a manager's need to be able to resolve conflicts and be sensitive to social cues, to consider the views of others, to seek emotional closeness with others, and to provide social motivation. Conversely, it will be helpful to find the degree of correlation between manager's adaptability (also described as diagnostic ability as measured by LEAD-Self) and the cognitive style of field-independence in light of a manager's need to be able to structure work situations (impose organization on an unorganized field) and to be socially intelligent and be able to diagnose work related problems (experience analytically). From these considerations, the researcher expects to find a significant correlation between the cognitive style of field-dependence and leadership styles two (selling) and three (participating) and between the cognitive styles of field-independence and leadership styles one (telling) and four (delegating).

CHAPTER III

RESEARCH DESIGN

The Study Sample

The Study Sample consisted of 136 managers drawn from a health care institution. Subjects were evenly selected when possible from each department. Ages ranged from 20's-50's years to control for the effects of age changes in field-dependence-independence which occur above and below these ages.

The Study Measurements

Each study subject was required to complete an information form stating his/her age, sex, educational level, management position, and years of management experience. The Group Embedded Figures Test was administered to each subject to determine his/her cognitive style and the Leader Effectiveness and Adaptability Description, (LEAD-Self) will be administered to each to determine his/her leadership style. The Group Embedded Figures Test, GEFT, is an instrument which tests one's ability to break up an organized field in order to keep a part of it separate from the surrounding field.

The GEFT is an adaptation of the Embedded Figures Test, (EFT), which reduces test administration time to a single timed, twenty minute session and a group setting. The GEFT consists of eighteen complex figures of which seventeen were selected from the EFT (Witkin, et. al., 1971). The GEFT consists of three sections. The first is a practice section containing seven very simple embedded figures. The second and third sections each consist of

increasingly complex and difficult embedded figures. A time limit of five minutes is imposed for each of sections two and three. The test booklet is organized with an array of eight simple geometric forms listed A through H displayed on the back cover. The simple forms are embedded in complex figures inside the booklet. The task is to identify and trace the simple forms embedded within the complex forms while not being able to view the simple and complex figures simultaneously.

Norms for the GEFT were based on students from a middle eastern liberal arts college, men N=155, women N=242. Men performed slightly but significantly better than women ($P < .005$). This finding is consistent with the sex differences usually obtained with the EFT. Reliability estimates for the GEFT compare well with those for the EFT. Since the GEFT is a timed instrument, the appropriate reliability estimate is the correlation between parallel forms with identical time limits. Correlations between the 8-item first section scores and the 9-item section scores were computed and corrected by the Spearman-Brown prophecy formula producing a reliability estimate of .82 for both males (N=80) and females (N=97). Validity for the GEFT derived from three sources: First, the EFT, the parent form of the test, was compared to the GEFT by administering section three of the EFT and section two of the GEFT. The correlations were corrected for reduced test length and were joined for the two groups and showed the GEFT to be valid. (See Table IV.)

LEAD-Self

The LEAD-Self is a paper and pencil instrument requiring approximately ten minutes to complete. It may be administered in a group setting or individually. The LEAD-Self measures task and relationship aspects of leader behavior in terms of Hersey's and Blanchard's situational leadership model and

TABLE IV*

GEFT NORMS
NUMBER CORRECT

Quartiles	Men	Women
1	0-9	0-8
2	10-12	9-11
3	13-15	12-14
4	16-18	15-18
N	155	242
Mean	12.0	10.8
S.D.	4.1	4.2

*Adapted from Witkin, et. al., 1971.

was originally developed as a training tool. It contains twelve items describing work-related situations. There are three instances of each of the four maturity states described in the situational leadership model. The respondent is to select for each of the twelve items his alternate choice among four answers, each of which represents one of the four basic styles of leader behavior. The respondent's answer reflects the style which most closely describes his behavior in each work-related situation (Green, 1980). The higher the adatability score (-24 to +24), the higher is the individual's overall probability of success in all twelve work-related situations. There is no correlation between this score and actual effectiveness of a manager in his present position. This is due to the fact that a manager may be actually engaged in dealing with only one or two levels of follower's maturity, whereas the LEAD-Self is designed to measure diagnostic ability of selecting the most appropriate Style for all four levels of maturity (Hersey, 1981).

Standardization Procedures and Normative Information

The LEAD-Self was standardized on a sample of 264 North American managers. The ages of the subjects ranged from 21 to 64 years. Females represented 12.4% and males 87.6% of the sample. Educational levels were bachelors degree (66%), masters or doctoral degrees (24%), and associate degree or less (10%). Years of experience in management positions ranged from less than ten years (62%), 10 - 19 years of experience (24%), to 20 or more years (14%). Types of business and indurstry included energy, mining, computers, and others. Management levels ranged from entry level (30%), middle management (55%), to high level of management (14%). Location of subjects included 72% from the United States and 28% from the North American countries. The LEAD-Self produces one normative adaptability (effectiveness)

score and four ipsative style scores. Since ipsative measures are designed to allow intra-individual comparisons, they make a normative interpretation process difficult and will not be used in this study as a basis of statistical evidence. Additionally, the precedure of determining a respondent's primary and supporting style(s) is not adequately defined and therefore style findings will be reported only as tendencies and trends (Green, 1980).

Three types of scores are generated by the LEAD-Self: raw score, percentile ranks, and normal curve equivalent for each style and the adaptability measure. The raw scores are derived by summing the items' response values. The percentile score represents the percentage of respondents (managers) below a specific raw score relative to the standardization sample. The normal curve equivalent (NCE) scores are deviation standard scores derived from the cumulative frequency distribution of raw scores. The NCE represents a normalized standard score with a mean of 50 and a standard deviation of 21.06. NCE scores have the property of normality and provide for the use of parametric statistics (Green, 1980). Face validity for the LEAD-Self was established in the following way. The coefficients for each item validity for the adaptability score ranged from .11 to .52, and 10 of the 12 coefficients were significant beyond the .01 level and one was significant at the .05 level. Each response option met the operationally defined criterion of less than 80% with respect to selection frequency. Items five and nine did not contribute as strongly as other items to the total adaptability score. Item derivation was performed by structural interviews and discussions with managers, expert managerial consultants, and followers. In addition, in-depth interviews were conducted by two organizational development experts. A 48 item pool was constructed from these sources. A committee of professors, experts, trainers

of management and organizational behavior as well as managers and practitioners then reviewed, eliminated, and revised the selection to 12 items or work-related situations across the four maturity states. Item response was analyzed to determine if it could differentiate various styles given the four response options. The relationship of the item adaptability scores to the total adaptability scores was considered as a measure of item validity. Face validity were established by these procedures. The LEAD-Self is considered to be empiracally valid based upon several studies. Reliability was established by determining the stability of adaptability scores over a five to six week time interval. The LEAD-Self was administered twice, five to six weeks apart, to forty-four managers enrolled in graduate classes. A correlation coefficient of .69 (significant beyond the .01 level) resulted between the total adaptability scores. As hypothesized, correlations with the demographic/organismic variables of sex, age, years of experience, degree and management level were generally low, indicating the relative independence of the scales with respect to these variables. (See Table V.) Pearson Product-Moment and point bi-serial coefficients were calculated. One study found a significant ($P < .01$) correlation of .67 between the adaptability scores of managers and the independent ratings of their supervisors (Green, 1980).

Study Hypotheses

The major study hypothesis is:

H_O There is no significant correlation between manager cognitive style, as measured by the GEFT, and leadership adaptability, as measured by the LEAD-Self.

The supplementary hypotheses are:

TABLE V*

LEAD-SELF CORRELATIONS WITH
DEMOGRAPHIC VARIABLES
(International Subjects)

		Domain				
Demographic Variable	N	Style 1	Style 2	Style 3	Style 4	Adaptability
Sex	251	.15	-.07	-.04	.00	-.05
Age	263	-.05	.17	-.06	-.13	.06
Years of Experience	255	.06	.12	-.08	-.15	-.03
Degree	211	-.03	-.09	.08	.05	-.11
Management Level	262	-.05	.10	-.05	.04	-.04

*Adapted from Green, 1980

H_{OA} There is no significant correlation between manager cognitive style, as measured by the GEFT, and manager age.

H_{OB} There is no significant correlation between manager cognitive style, as measured by the GEFT, and manager education.

H_{OC} There is no significant correlation between manager cognitive style, as measured by the GEFT, and years of managerial experience.

H_{OD} There is no significant correlation between manager adaptability, as measured by the LEAD-Self, and manager age.

H_{OE} There is no significant correlation between manager adaptability, as measured by the LEAD-Self, and manager education.

H_{OF} There is no significant correlation between manager adaptability, as measured by the LEAD-Self, and years of managerial experience.

The Study Procedure

The subjects will be selected from those individuals within nine departments at a health-care institution who meet the study criteria. Each will be asked to complete an information sheet. An informal consent will be signed by each subject. Each participant will be administered the GEFT and the LEAD-Self by persons knowledgeable of the proper administration procedures of each test. All test data and information sheets will be coded to assure anonymity of subjects.

The Design for Statistical Analysis

Arrangement of the data will occur two stages. First each subject's scores will be computed from the GEFT and LEAD-Self raw scores. Each subject will be classified field-dependent or independent for both cognitive style and leardership adaptability. A normal curve equivalent (NCE) score,

which represents a normalized standard score with a mean of 50 and a standard deviation of 21.06, also relative to the standardization sample, will be assigned each subject based upon the raw scores. Raw and computed scores will be placed into a table and means will be calculated for total groups and sub-groups on both adaptability and cognitive style. The data will be analyzed as follows: The variable, cognitive style, will be correlated with the variable leadership adaptability to discover if significant relationships exist. The Pearson Product-Moment Correlation Coefficient with significance set at 0.05 will be utilized.

CHAPTER IV

ANALYSIS OF DATA

Stages of Analysis

The analysis of data was accomplished in two procedures: raw scores were tabulated and correlational analysis of scores were performed.

In the first procedure of data analysis, one hundred and thirty-six (136) individual's raw scores were computed from the Group Embedded Figures Test (GEFT), and the Leadership Effectiveness and Adaptability Description-Self (LEAD-Self). Self-reported demographic information (age, gender, years of management experience, and education) was tabulated. Subjects were designated as field-dependent (FD) or Field-independent (FI) for both cognitive style and leadership adatability. The data are shown in a table (see Appendix E).

In the second procedure of data analysis, strength of relationship between manager cognitive style and leadership adatability was tested. Correlational analyses of scores on cognitive style and leadership adaptability were performed using the Pearson Product-Moment Correlation Coefficient. The correlation coefficient ($r = 0.30$) was significant at the .05 level. Therefore, a significant relationship was found between managers' cognitive style and leadership adaptability (see Table VI).

Testing of Major Hypothesis

The major hypothesis was:

H_O There is no significant relationship between managers' cognitive style, as measured by the GEFT, and leadership adaptability.

TABLE VI

PEARSON PRODUCT CORRELATION OF MANAGER COGNITIVE STYLE AND ADAPTABILITY

0.30	0.09	0.0002
Correlation (R)	R Squared	*Significance

*Significant if less than 0.05

The major hypothesis was tested by correlational analysis, utilizing the Pearson Product-Moment Correlation Coefficient to determine the strength of relationship between cognitive style and leadership adaptability of managers. The results of the correlational analysis were statistically significant at the .05 level. Therefore, the hypothesis is rejected.

Testing of Supplemental Hypotheses H_{OA} through H_{OF}

Supplemental hypotheses H_{OA} through H_{OF} determined the strengths of the relationships between managers' cognitive style and leadership adaptability and their ages, level of education and years of managerial experience. Correlational analyses were performed on the data.

H_{OA} There is no significant correlation between manager cognitive style, as measured by the GEFT, and manager age.

In hypothesis H_{OA} the relationship between the cognitive style of managers and their ages was examined. Results of the analysis indicated there was a significant correlation ($r = -0.22$) at the .05 level between manager cognitive style and age (see Table VII). The hypothesis is rejected.

H_{OB} There is no significant correlation between manager cognitive style, as measured by the GEFT, and manager education.

In hypothesis H_{OB} the relationship between manager cognitive style and years of education was examined. Results of the analysis indicated there was a significant difference ($r = 0.34$) at the .05 level between manager cognitive style and level of education (see Table VIII). The hypothesis is rejected.

H_{OC} There is no significant correlation between manager cognitive style, as measured by the GEFT, and years of managerial experience.

TABLE VII

PEARSON PRODUCT CORRELATION OF MANAGER COGNITIVE STYLE AND AGE

Correlation (R)	R Squared	*Significance
-0.22	0.05	0.0044

*Significant if less than 0.05

TABLE VIII

PEARSON PRODUCT CORRELATION OF MANAGER COGNITIVE STYLE AND YEARS OF EDUCATION

Correlation (R)	R Squared	*Significance
0.34	0.11	0.00003

*Significant if less than 0.05

In hypothesis H_{OC} the relationship between manager cognitive style and years of managerial experience was examined. The results of the analysis indicated there was not a significant correlation ($r = -0.09$) at the .05 level between manager cognitive style and years of managerial experience (see Table IX). The hypothesis is not rejected.

H_{OD} There is no significant correlation between manager adaptability, as measured by the LEAD-Self, and manager age.

In hypothesis H_{OD} the relationship between manager adaptability and age was examined. The results of the analysis indicated there was a significant correlation ($r = -0.38$) at the .05 level between manager adaptability and age (see Table X). The hypothesis is rejected.

H_{OE} There is no significant correlation between manager adaptability, as measured by the LEAD-Self, and manager education.

In hypothesis H_{OE} the relationship between manager adaptability and education was examined. The results of the analysis indicated there was a significant correlation ($r = 0.25$) at the .05 level between manager adatability and education, (see Table XI). The hypothesis is rejected.

H_{OF} There is no significant correlation between manager adaptability, as measured by the LEAD-Self, and years of managerial experience.

In hypothesis H_{OF} the relationship between manager adatability and years of managerial experience was examined. The results of the analysis indicated there was a significant correlation ($r = -0.28$) at the .05 level between manager adaptability and years of managerial experience (see Table XII). The hypothesis is rejected.

TABLE IX

PEARSON PRODUCT CORRELATION OF MANAGER
COGNITIVE STYLE AND YEARS OF MANAGEMENT EXPERIENCE

-0.09	0.007	0.17
Correlation (R)	R Squared	*Significance

*Significant if less than 0.05

TABLE X

PEARSON PRODUCT CORRELATION
OF MANAGER ADAPTABILITY AND AGE

-0.38	0.14	0.000
Correlation (R)	R Squared	*Significance

*Significant if less than 0.05

TABLE XI

PEARSON PRODUCT CORRELATION OF
MANAGER ADAPTABILITY AND YEARS OF EDUCATION

0.25	0.06	0.001
Correlation (R)	R Squared	*Significance

*Significant if less than 0.05

TABLE XII

PEARSON PRODUCT CORRELATION OF MANAGER
ADAPTABILITY AND YEARS OF MANAGERIAL EXPERIENCE

-0.28	0.08	0.00055
Correlation (R)	R Squared	*Significance

*Significant if less than 0.05

Summary

The study postulated seven hypotheses: one major study hypothesis and six supplemental hypotheses. Six of the seven hypotheses were rejected; one was accepted. Results of the analysis found there were significant differences between manager cognitive style, as measured by the GEFT, and adaptability, as measured by the LEAD-Self. Significant differences were found between manager cognitive style and age and years of education. Additionally, significant differences were found between manager adaptability and age, years of education, and years of management experience. No significant differences between manager cognitive style and years of management experience were found.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of the study was to investigate the relationship between manager cognitive style (measured on the field dependence-independence dimension) and adaptability so that the field of management training might be enriched by the findings of the study. Management adaptability, or the ability to diagnose the most appropriate management style required in a specific behavioral situation, was found to be significantly correlated with a higher degree of the cognitive style dimension of field-independence in managers. The study sample consisted of one hundred and thirty-six hospital managers from a large Southwestern teaching hospital. Subjects were selected from nine departments and included males (N = 40) and females (N = 96). Subjects completed an information sheet (see Appendix A) providing demographic information. They signed a consent sheet (see Appendix B) and were administered the Group Embedded Figures Test, a measure of field dependence-independence. Management adaptability was measured by the subjects completing the Leadership Effectiveness and Adaptability Description - Self instrument.

Data analysis included raw score computations and classification of subjects as field-dependent or field-independent for both cognitive style and adaptability based on their test scores. Correlational analyses using the Peason Product-Moment Correlation Coefficient were performed on the data to

determine whether significant differences existed between variables. Significant relationships were found between cognitive style and adaptability, age, and years of education. No significant relationship was found between cognitive style and years of managerial experience. Significant differences were found between adaptability and age, level of education, and years of managerial experience.

Discussion and Conclusions

Based on Witkin and Associates, descriptions and research on cognitive style identifying field independence as including analytical abilities, such as those necessary to disembed figures from a background, and based on Hersey's and Blanchard's identification of a manager's adaptability characteristics as the ability to analyse and diagnose the most appropriate management style required in a certain behavioral situation, it was expected that a significant relationship between cognitive style and leadership adaptability would be found. Study findings supported this expectation ($r = .30$ at .05 level).

It was expected that there would be a significant relationship between managers' age and cognitive style consistent with Witkin's findings that adult field dependency increases with age. Ages of the subjects ranged from twenty-four to sixty-two and fit between the plateau ages in cognitive style as decribed by Witkin. The results of the study supported this expectation ($r = -.22$ at the .05 level).

It was expected that there would be a significant relationship between level of education and cognitive style from Mayne's (1979) findings on college teachers. The results of the study confirmed this expectation ($r = .34$ at the .05 level). As the managers' level of education increased, they showed more field independence. It was expected that there would be a significant relationship

between cognitive style and years of managerial experience due to the reasoning that increased experience and familiarity with the management process would lead to increased ability to diagnose the most appropriate management style required by a certain situation. However, this expectation was not met. Managers' cognitive style was found to be not significantly related to years of management experience ($r = -0.09$ at .05 level).

A point of interest in the study was that the majority of managers were field-dependent (N = 96, 71 percent) rather than field-independent (N = 40, 29 percent). A possible influence on this finding might have been that the vocational position of manager incorporates many social and interrelational skills and might attract to it field dependent persons. However, the analytical aspects of a manager's position, as represented by an adaptability score indicating one's ability to diagnose the appropriate leadership style for a certain situation, assume a role of major importance, as illustrated in Hersey's and Blanchard's Situational Leadership Model. It might follow that leadership training for managers could enhance their diagnostic skills and would be a more feasible approach than attempting to change one's cognitive style, since cognitive style appears to be a stable attribute, according to Witkin. Additional research is needed in these areas.

In the area of adaptability, it was unexpected that there would be a significant negative relationship between adaptability and manager age due to the reasoning that increasing age would be an enriching influence on adaptability. However, the results of the study showed that manager adaptability and age are significantly correlated ($r = -0.38$ at the .05 level). The data would suggest that since adaptability decreases markedly after age fifty-five, managerial training in adaptability of managers over fifty-five might be most

needed. More research is needed in this area. It was expected that there would be a significant correlation between manager adaptability and education due to the assertions of Hersey and Blanchard that managers are able to increase their skills through training. The results of the study confirmed the fact that there is a significant correlation ($r = 0.25$ at the .05 level) between manager adaptability and education. The educational level in this study does not necessarily reflect management training but rather level of education in subjects' area of professional expertise (nursing, pathology, etc.). A point of interest was the finding that the highest levels of adaptability were found among those subjects whose levels of education ranged from fifteen to twenty-one years. A possible implication might be that managers with levels of education below fifteen years and above twenty-one years may most need managerial training in adaptability. More research is needed in this area. It was unexpected that there would be a significant negative correlation between manager adaptability and years of managerial experience due to the supposed enrichment of experience and abilities. The results of the study did show a significant correlation ($r = -0.28$ at the .05 level) between adaptability and years of managerial experience. A possible application of this finding would be to design special adaptability training development for managers with long-term managerial experience.

The study data revealed interesting general findings in adaptability and gender. The females in the study had significantly higher adaptability scores than the males (females $\overline{x}_{\text{adaptability}} = 51.07$, males $\overline{x}_{\text{adaptability}} = 43.60$). The value t was significant for females at 2.00, 134 df, at .05 level. A possible use of this finding might be to structure the design of adaptability training materials for managers to allow for gender differences. The data also showed that males and females preferred the use of different primary leadership styles

(Styles One through Four as defined by Hersey and Blanchard's Situational Leadership Model). Style One (telling) was significantly preferred by men ($\bar{x}_{\text{Style 1}} = 49.04$) over women ($\bar{x}_{\text{Style 1}} = 38.94$). The value of t was significant for males at 2.34, 134 df, at the .05 level). This result might reflect women's hesitancy to appear dominant and commanding, in accordance with society's definitions of sex roles. It would point to the need for more managerial training in the use of style one for women managers. Style Two (selling) was preferred almost equally by both males and females (females $\bar{x}_{\text{Style 2}} = 45.56$, males $\bar{x}_{\text{Style 2}} = 47.09$). The value of t was not significant. Style Three (participating) was significantly preferred by women ($\bar{x}_{\text{Style 3}} = 46.59$) over men ($\bar{x}_{\text{Style 3}} = 35.41$). The value of t was significant for females at 2.91, 134 df at the .05 level. This result is consistent with Hersey and Blanchard's findings on women and style profiles. It might reflect women's approved sex role use of highering and lowering socio-emotional support as a way of influencing others. The finding points to the possible need for managerial training designed to assist women in learning other leadership styles to improve overall managerial effectiveness. Style Four (delegating) was not significantly preferred by one sex more than the others (males $\bar{x}_{\text{Style 4}} = 25.00$, females $\bar{x}_{\text{Style 4}} = 22.82$). The value of t was not significant.

Additional general findings on persons classified field-dependent (FD) and field-independent (FI) showed significant differences between them as groups and adaptability. The field-dependents in the study had a significantly higher preference for the use of Style One (telling) than did the field-independents. The value of t for FD ($\bar{x}_{\text{Style 1}} = 45.52$) was significant at 2.40, 134 df at the .05 level (FI $\bar{x}_{\text{Style 1}} = 34.78$). Field-dependents and field-independents equally preferred the use of style two. The value of t was not significant (FD $\bar{x}_{\text{Style 2}}$

= 46.25, FI $\bar{x}_{\text{Style 2}}$ = 45.68). Style Three (participation) was preferred by FI ($\bar{x}_{\text{Style 3}}$ = 47.83) over FD ($\bar{x}_{\text{Style 3}}$ = 40.72) but not significantly so. The value of t was not significant for FI at 1.75, 134 df at the .05 level. Style Four (delegating) was preferred by FI ($\bar{x}_{\text{Style 4}}$ = 28.00) more than FD ($\bar{x}_{\text{Style 4}}$ = 21.71) but not significantly so. The value of t for FI was not significant at 1.10, 134 df, at the .05 level. The trend (not significant) of field independents for the use of Styles Three (participating) and Four (delegating), the "people" styles, and of field-dependents for the use of Style One (telling) suggests a possible association of FI with an employee-centered leadership style and social intelligence. Likewise as noted in Chapter II, p. 22, the job centered style (Style One) is associated with field-dependence and a low social intelligence (Weissenberg and Gruenfield, 1966). The trend of these possible associations might suggest that field-dependent managers would benefit from more highly structured work areas and from subordinates who are of entry-level status, (M1), the type of employee with whom the use of Style One (telling) is most appropriate. Further research is needed on the strength of the relationships between cognitive styles and leadership styles.

Limitations

The sampling procedure was designed to obtain an even distribution of males (N = 40), and females (N = 96). This was not accomplished due to the natural distribution of the sexes in the institution. It was judged that the results of the study would not be skewed by these distributions since the total numbers of both males and females were of adequate sample sizes. An early attempt was made to utilize gender and departments as sub-groups. It proved unfeasible, however, due to a serious uneven distribution of numbers of subjects in those sub-groups. To have rearranged the numbers of subjects in the sub-

groups to achieve an even distribution would have imposed an artificialness on the sample and rendered the study unrepresentative of the population and thus meaningless. Soundness in the study was consequently achieved by treating the totals in the sample.

There was no normative data for the GEFT on the population sample in the study. A normal distribution was assumed to exist in the sample.

Recommendations

It is recognized that there is a need for more normative data on the Group Embedded Figures Test to include persons at higher educational levels. Further research is needed on the effectiveness of training in improving managers adaptability scores. More research is needed to investigate the findings of this study that most subjects were field dependent. The question presents itself as to whether a significant relationship exists between the cognitive styles of managers in this study and in other hospital institutions or industries. From the findings of this study, a significant correlation between manager cognitive style and adaptability, it is recommended that training in adaptability be given to students in management who are field-dependent to enrich their management skills. Additionally, it is recommended that curriculum materials which teach and encourage the use of analytical, adaptability, and diagnostic skills for managers be developed and utilized, especially with managers who have long-term management experience and who are over fifty-five years of age. Further research is needed to determine differences between male and female managerial adaptability and implications for manager training activities. Additional research is needed to explore males and females preferred use of certain management styles and their effects on subordinates in terms of productivity.

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APPENDIX A

CONSENT TO PARTICIPATE IN RESEARCH

The purpose of the research is to investigate the relationship between manager cognitive style and leadership style so that the management cognitive process may be better understood. The dimension of cognitive style used in the study is Witkin's field-dependence-independence dimension as measured by the Group Embedded Figures Test (GEFT). The LEAD-Self is used to identify management and leadership styles.

There is no known social, personal, physical or other risk to study participants.

To assure anonymity of study participants, information is collected on coded forms. The information collected becomes group data and will be treated with confidentiality. Individual hospitals will not be identified.

Information collected from study participants is to be used for doctoral research at the University of Oklahoma. The results of the research will be disseminated through the dissertation, and possibly a paper presented at a professional meeting, and an article in a professional journal.

The research investigator will answer any questions participants may have prior to consenting and during the study.

The participant may withdraw consent and discontinue participation any time prior to termination of study without prejudice.

I have read the above information and consent to participate in the research.

_____ _____

Name Date

Investigator: Peggy F. Malone 214-292-2177

APPENDIX C

MANAGER COGNITIVE STYLE AND LEADERSHIP

ADAPTABILITY

Information Sheet

CODE _____

AGE _____ BIRTH DATE _____

SEX _____

EDUCATION LEVEL _____ (Years)

MANAGEMENT AREA (Department) _____

_____

MANAGEMENT POSITION (Title) _____

YEARS OF MANAGEMENT EXPERIENCE _____

RIGHT HANDED _____ LEFT HANDED _____ AMBIDEXTROUS _____

Scores

Lead-Self: Styles 1 ____ 2 ____ 3 ____ 4 ____ Adapatability ____

% 1 ____ 2 ____ 3 ____ 4 ____ %

Geft: _____

APPENDIX B

GROUP EMBEDDED FIGURES TEST

The Group Embedded Figures Test by Phillip Oltman, Evelyn Raskin, and Herman Witkin, is a copyrighted publication available from:

Consulting Psychologists Press
577 College Avenue
Palo Alto, CA 94306

and

APPENDIX D

LEADER EFFECTIVENESS AND ADAPTABILITY DESCRIPTION

The LEAD-Self by Paul Hersey and Kenneth H. Blanchard is a copyrighted publication available from.

Center for Leadership Studies
P. O. Box 1536
230 West Third
Escondido, CA 92025

(714)741-6595

APPENDIX E

RAW DATA

Code	Age	Sex	Ed	Dept	Exp	Primary Styles	s1s2s3s4	Adpt	Gft	FD/FI
0001	57	F	170	01	015	XPSX	33485801	27	03	FD
0002	25	F	160	01	020	XSPX	01378001	59	16	FI
0003	38	F	150	01	090	XPSX	33485801	23	10	FD
0004	30	F	160	01	030	PPSS	75282071	33	18	FI
0005	29	F	180	01	060	XPXX	33830754	87	15	FI
0006	57	F	140	01	060	SPSX	75482001	07	03	FD
0007	47	F	210	01	080	SPPX	48375801	76	00	FD
0009	45	F	170	01	060	SPSX	48722001	44	05	FD
0010	42	F	140	01	012	XPSX	01605801	19	02	FD
0011	28	F	150	01	020	SSPX	61177001	13	01	FD
0016	35	M	150	02	040	SPSX	75482001	33	04	FD

Code	Age	Sex	Ed	Dept	Exp	Primary Styles	s1s2s3s4	Adpt	Gft	FD/FI
0017	28	F	180	02	030	XPSX	33723401	59	11	FD
0018	34	M	140	02	070	SPSX	48722001	48	08	FD
0019	42	F	150	02	140	SPSX	48603401	63	13	FI
0020	41	F	120	02	060	XPXX	10930701	39	09	FD
0021	35	F	140	02	070	PSPX	90105801	33	08	FD
0022	30	F	150	02	020	SPXX	61720701	15	16	FI
0023	35	F	140	02	050	SPSX	48902001	33	06	FD
0024	31	F	160	01	100	XPSX	33604601	55	03	FD
0025	56	M	160	03	290	SPXX	48830701	39	05	FD
0026	35	F	140	03	100	XPSX	33604601	39	00	FD
0027	38	F	120	03	140	SPSX	61374601	51	00	FD

Code	Age	Sex	Ed	Dept	Exp	Primary Styles	s1s2s3s4	Adpt	Gft	FD/FI
0028	29	M	150	03	110	SPSX	61602001	36	06	FD
0029	49	F	180	03	120	PSSX	99173401	01	03	FD
0030	45	M	090	03	040	PSXS	99170771	01	00	FD
0031	34	M	160	03	120	SPSX	75373401	23	00	FD
0032	65	M	110	03	370	PPPP	61173478	10	00	FD
0033	55	F	130	03	170	SPXX	61720101	01	00	FD
0034	63	M	150	03	340	PSXX	99280701	01	04	FD
0035	41	F	140	03	030	SPSX	75373401	33	00	FD
0036	53	F	150	04	020	SPPX	48375801	72	01	FD
0037	36	M	170	04	040	XPSX	01724601	39	18	FI
0038	30	F	200	04	050	SPSS	48372078	44	12	FD

Code	Age	Sex	Ed	Dept	Exp	Primary Styles	s1s2s3s4	Adpt	Gft	FD/FI
0039	51	M	180	04	250	SPSX	48902001	44	12	FD
0040	42	M	200	04	200	SSPX	61285801	59	13	FI
0041	37	M	210	04	040	SPSX	61482054	55	14	FI
0042	31	F	180	04	000	XPPX	33375801	44	10	FD
0043	33	F	190	04	030	SPSX	61373454	55	02	FD
0044	34	M	190	04	040	SPSS	48482071	48	12	FD
0045	57	M	160	04	300	SPSX	48374654	01	16	FI
0046	27	F	180	04	020	SPSX	48602054	55	03	FD
0047	47	F	200	04	090	SPSX	48483454	44	02	FD
0048	40	M	180	04	130	XPSX	01605801	63	04	FD
0049	52	M	180	04	190	SPSX	61373454	39	03	FD

Code	Age	Sex	Ed	Dept	Exp	Primary Styles	s1s2s3s4	Adpt	Gft	FD/FI
0050	36	F	180	04	040	XPSX	01832054	63	12	FD
0051	39	M	180	04	100	XPSX	33723401	36	16	FI
0052	41	M	190	04	170	SPPX	48375801	51	10	FD
0053	36	M	180	04	130	PSPX	75174654	23	15	FI
0054	34	M	260	04	080	SSPX	61285801	72	17	FI
0055	40	M	180	04	050	SPSS	48482071	55	17	FI
0056	32	M	180	04	090	SPXS	61480178	44	06	FD
0057	52	M	160	04	250	PSPX	75174654	44	10	FD
0062	37	F	200	05	040	XPSX	33604601	36	16	FI
0063	34	F	160	05	070	XPPX	01487001	36	14	FI
0064	47	F	160	05	130	SSPX	48285854	44	11	FD

Code	Age	Sex	Ed	Dept	Exp	Primary Styles	s1s2s3s4	Adpt	Gft	FD/FI
0065	31	F	160	05	030	XPPX	01487001	36	15	FI
0066	48	M	240	05	050	SPSX	48484601	63	11	FD
0067	31	F	160	05	050	XSPX	33377001	72	08	FD
0068	51	M	190	05	220	SPPX	48375801	59	13	FI
0069	39	F	160	05	060	SPSX	48484601	59	15	FI
0070	32	F	170	05	030	SSPS	48174678	72	15	FI
0071	30	F	160	05	070	XPSX	33485801	23	14	FI
0072	34	M	200	05	050	XPSX	33604601	39	13	FI
0073	33	M	250	05	040	PSSX	99173401	01	09	FD
0074	51	M	240	05	130	XPSX	01605801	39	05	FD
0075	44	F	180	05	170	XPSS	33483471	81	08	FD

Code	Age	Sex	Ed	Dept	Exp	Primary Styles	s1s2s3s4	Adpt	Gft	FD/FI
0076	32	M	240	05	010	SPSX	48483454	68	17	FI
0077	34	M	240	05	020	XPSX	33723401	48	09	FD
0078	30	F	170	06	030	PSSX	90283401	48	01	FD
0079	27	F	160	06	025	SPSX	61483401	48	07	FD
0080	31	F	160	06	010	XPSX	33604601	36	07	FD
0081	31	F	180	06	040	XPSX	33484654	87	12	FD
0082	32	F	150	06	030	XPPX	01487001	68	04	FD
0083	28	F	180	06	010	XPPX	33375854	63	14	FI
0084	30	M	180	06	010	XSPX	01289001	59	13	FI
0085	34	F	160	06	050	XSPS	33285871	48	01	FD
0086	27	F	160	06	010	SPSX	48603401	23	05	FD

Code	Age	Sex	Ed	Dept	Exp	Primary Styles	s1s2s3s4	Adpt	Gft	FD/FI
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0088	40	F	140	06	010	SPSX	48722001	51	04	FD
0089	34	F	180	06	090	XSPX	33178054	72	00	FD
0090	30	F	170	06	060	SSPX	48109001	68	10	FD
0093	46	F	150	07	000	SPSX	61602001	44	13	FI
0094	59	M	18	07		SPSS	61372071	36	06	FD
0095	62	M	120	07	420	XSPX	33287054	28	04	FD
0096	58	M	18	07	300	SPSS	48373471	39	07	FD
0097	34	M	120	07	140	XPSX	33484654	63	13	FI
0098	37	M	200	07	080	XPSS	33602071	76	16	FI
0099	50	M	180	07	080	XPXX	33720701	10	00	FD

Code	Age	Sex	Ed	Dept	Exp	Primary Styles	s1s2s3s4	Adpt	Gft	FD/FI
0100		M	170	07	080	SPPX	48375801	68	14	FI
0101	45	M	120	07	120	SPSX	61483401	48	09	FD
0102	59	M	120	07	200	SPSX	48484601	44	08	FD
0103	32	M	160	07	095	XSPX	01378001	76	16	FI
0104	60	M	120	07	030	SPXX	61720701	33	05	FD
0105	31	M	160	08	090	SPSX	75372054	51	10	FD
0106	34	F	220	08	040	XPSX	33603454	59	10	FD
0107	29	F	150	08	025	SPSX	48602054	55	01	FD
0108	30	F	160	08		XPSX	33604601	63	02	FD
0109	36	F	180	08	010	XSPS	01287071	63	16	FI
0110	34	M	160	08	010	XPSX	33604601	87	18	FI

Code	Age	Sex	Ed	Dept	Exp	Primary Styles	s1s2s3s4	Adpt	Gft	FD/FI
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0112	32	F	160	08	060	XPSX	01723454	72	15	FI
0113	38	F	150	08	080	SXPS	61017078	39	07	FD
0114	38	F	150	08	040	XSPX	01289001	68	14	FI
0115	40	F	180	08	110	PSSX	90283401	28	04	FD
0116	29	F	160	08	015	XPSX	33723401	23	03	FD
0117	30	F	160	08	005	SSPX	61177001	28	04	FD
0118	28	F	160	08	015	SPSX	61373401	39	07	FD
0119	33	F	160	08	050	XPPX	01487001	39	04	FD
0120	33	F	160	08	010	XPPX	33375854	76	17	FI
0121	42	F	150	08	050	XSPX	33287054	76	18	FI

Code	Age	Sex	Ed	Dept	Exp	Primary Styles	s1s2s3s4	Adpt	Gft	FD/FI
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0123	29	F	170	08	030	XSPX	33178054	63	18	FI
0124	38	F	160	08	040	SPSS	48373471	76	03	FD
0125	29	F	160	08	010	XPSX	33604601	59	04	FD
0126	29	F	160	08	003	PPPP	61173478	59	03	FD
0127	37	F	150	08	110	SSPP	48104690	76	02	FD
0128	24	F	150	08	010	XPSX	33604601	51	05	FD
0129	35	M	200	08	060	XPSX	33722001	63	15	FI
0130	27	F	160	02	010	PPPX	75284601	36	04	FD
0131	39	F	140	02	100	XPSX	01832054	48	01	FD
0132	38	F	220	05	005	SPSX	48483454	72	11	FD

Code	Age	Sex	Ed	Dept	Exp	Primary Styles	s1s2s3s4	Adpt	Gft	FD/FI
0133	27	F	160	09	020	XPSS	33374671	63	15	FI
0134	24	F	140	09	025	XPSX	01604654	59	07	FD
0135	56	F	150	09	160	SPSX	48722001	39	08	FD
0136	38	F	160	09	100	XPSX	33604601	76	08	FD
0137	30	F	190	09	085	XSPX	33377001	81	16	FI
0138	28	F	160	09	040	PSSS	75173471	59	06	FD
0139	33	F	180	09	010	XSPX	33285854	63	10	FD
0140	47	F	150	09	070	XPSX	01724601	72	02	FD
0141	33	F	180	09	030	XPSX	33723401	68	02	FD
0142	30	F	180	09	050	SPXS	48600771	68	14	FI
0143	36	F	150	09	080	XSPX	01378001	48	02	FD

Code	Age	Sex	Ed	Dept	Exp	Primary Styles	s1s2s3s4	Adpt	Gft	FD/FI
0144	30	F	160	09	010	XSPX	33377001	93	04	FD
0145	39	F	160	09	005	XPSX	01605801	44	00	FD
0146	40	F	110	09	130	XSPX	33179001	44	00	FD
0147	38	F	160	09	040	XPPX	01487001	55	04	FD