Psychology Theses & Dissertations

Psychology

Spring 1985

A Perception Based Integrative Theory of Individual Behavior in Organizations

John Edward Mathieu
Old Dominion University

A PERCEPTION BASED INTEGRATIVE THEORY OF INDIVIDUAL

BEHAVIOR IN ORGANIZATIONS

by

John Edward Mathieu
B.A. May 1980, The University of Connecticut
M.S. August 1982, Old Dominion University

A Dissertation Submitted to the Faculty of
Old Dominion University in Partial Fulfillment of the
Requirements for the Degree of

DOCTOR OF PHILOSOPHY

INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY

Old Dominion University
May 1985

Approved by:

Albert S. Glickman (Director)

ABSTRACT

A PERCEPTION BASED INTEGRATIVE THEORY OF INDIVIDUAL
BEHAVIOR IN ORGANIZATIONS

John Edward Mathieu
Old Dominion University, 1985
Director: Dr. Albert S. Glickman

The purpose of this study was to develop an integrative theoretical approach to the study of individuals' behavior in organizations, and to present an application of the approach to understanding the performance of Reserve Officer Training Corps (ROTC) cadets. Individuals' perceptions of the environment were proposed to exist at three levels of analysis: 1) psychological climate (i.e., individual); 2) group climate; and organizational climate. Further, climate perceptions were proposed to result from the simultaneous influence of objective (i.e., actual) situational characteristics, and individuals' needs and characteristics. The underlying dimensions that linked climate perceptions operationalized at the three levels of analysis with objective situational characteristics were refered to as life space dimensions and used in a causal model of three forms of affective responses: 1) a valence-instrumentality-expectancy motivation composite; 2) organizational commitment; and 3) general satisfaction, intention to remain in the service, and performance.

Performance was examined both with self-ratings and with supervisor ratings.

Army (N=456) and Navy (N=132) ROTC cadets from three universities in the Southeast participated in the study. The results provided support for the existence of aggregate climate perceptions and their relationship both to objective situational characteristics and to individual needs and characteristics. A causal model of life space dimensions, affective responses, intention to remain, and performance was proposed and tested with the Army sample. The hypothesized model was disconfirmed by the observed correlations of the Army sample using either self of supervisor performance ratings.

Revised causal models for both self and supervisor rated performance were developed from the observed correlations of the Army sample and the earlier developed theory. The revised models were assessed using the Navy sample. The Army sample revised supervisor rated performance model exhibited a reasonable fit with the Navy sample. The revised self rated performance model failed to generalize to the Navy sample. Several differences between, and similarities among the findings from the two samples were highlighted.

The results were discussed in terms of their application to the recruitment, selection, and training of ROTC cadets. In addition, limitations of the study were

identified and an agenda for future applications of the theoretical approach to the study of individuals' behavior in organizations was offered.

ACKNOWLEDGEMENTS

I would like to take this opportunity to acknowledge the contributions of my dissertation committee members, friends, and family to this work and to my professional development over the past few years. All have served invaluable roles.

Firstly, I would like to thank Drs.: Glynn Coates, Donald Davis, and Russell Leonard who served as my dissertation committee members, and Dr. Albert Glickman who directed this work. The influence of Dr. Coates on my professional development dates back to my first semester of graduate training. He has constantly served not only as a insighful teacher but, also as a role model. His confidence and support has been muchly appreciated.

Dr. Davis should be singled out for his critical eye and his guidance regarding the more "Macro" issues involved in this work. He is also responsible for kindling my interest in the aggregation issues involved in organizational research.

Dr. Leonard has served as a constant reminder of the importance of relevancy. Here, and in other endeavors, he has provided me with a greater appreciation of the importance of being able to translate work of this sort in to action steps in organizational settings.

ii

Over the past few years, I have worked most closely with Dr. Glickman. In that time, he has been a source of insight, support, and review. I have benefited from his efforts of each sort. He has demonstrated a confidence in me which has allowed my more creative ideas to emerge, yet, a wisdom to asked the pointed questions such that my ideas might take better form.

I would also like to thank Steven Cesare, Scott Tannenbaum, and Steven Woods for their efforts in the data collection phase of this work. Their generous contributions of time and effort enabled me to conduct a study of the magnitude of the present work. In addition, I would like to acknowledge the many thoughts and contributions of Steven Woods on earlier research which led up to the present work.

Finally, and perhaps most importantly, I would like to thank my family and many friends for their influence on this work and my professional development. Although their contributions can not be observed in the text that follows, nevertheless, they have enhanced this work greatly. They have provided friendship, love and support while I have immersed myself in this and other work. I would like to make special mention of a few of them.

First, I thank my parents, Edward and Marjorie Mathieu, for their guidance and support long before the present work was ever conceived, and for their never ending love and confidence in me. Scott Tannenbaum and Bob Jones have been

friends and colleagues throughout my graduate training. Their support, both professional and personal, has helped to guide me through the more difficult times. Finally, having saved the most special for last, I would like to thank Susan Johns for her friendship, love and support throughout the duration of this and other work. Her patience and understanding have been admirable.

I thank you one and all for your contributions.

TABLE OF CONTENTS

Page

v

vii

LIST OF TABLES

viii

LIST OF FIGURES

x

CHAPTER 1

Introduction

The roots of organizational psychology as we know it today, are generally traced back to the famous Hawthorne studies (Roethlisberger & Dickson, 1939). Those early studies helped to move management thinking beyond the confines of the structures of Bureaucracy (Weber, 1947) and the precepts of Scientific Management (Taylor, 1923). They showed that it is important to take into account the social influences which exist in an organization in order to understand fully individuals' behavior in work settings. Many theories and programs of research have been spawned in the 45 years since the Hawthorne studies in an effort to understand better the influence of various aspects of the social environment of organizations. Some have focused on the influence of roles and role states (Graen, 1976; Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964), while others have emphasized the effects of job characteristics (Arnold & House, 1980; Hackman & Lawler, 1971).

Several lines of inquiry have expanded beyond individual centered variables and have considered the effects of group processes (Hackman & Morris, 1975; Shaw, 1976), and of leader behaviors (Fiedler, 1967; House, 1971). Still other foci have been on the impact of

organizational structure (Berger & Cummings, 1979; Herman, Dunham & Hulin, 1975), and organizational climate (James & Jones, 1974; Litwin & Stringer, 1968) on individuals' behavior. Much has been learned from this variegated body of research; yet, a growing concern about the lack of integration of these lines of inquiry has been manifested in recent years (cf., Cummings, 1982; James, 1973; Mitchell, 1979).

The purpose of this research is twofold. First, an integrative theoretical approach to the study of individual behavior in organizations is offered. Second, an application of the theory to behavior in a military organization is presented. Army and Navy cadets enrolled in Reserve Officer Training Corps (ROTC) at three universities participated in this study (see Note 1). The theory developed here is offered as a general approach to the study of individual behavior in organizations, although some specific qualifications are noted for the application to the particular research population.

Several comments are pertinent before beginning this discussion. Firstly, this work proposes a theory as opposed to a model of behavior. While several specific hypotheses are included which begin to form a descriptive model, it is recognized that all variable linkages cannot be anticipated a priori. The necessity of this approach will shortly be made evident.

A second point which requires emphasis is that this is a theory of individual behavior. That is, the focus here is upon understanding and predicting individuals' behavior. While this orientation neither precludes the use of aggregate explanatory constructs (e.g., group processes), nor of commonalities among individuals in a given setting, no attempt is made here to predict group or organizational functioning or effectiveness.

A final preliminary point is that the proposed theory is cognitively structured and based upon perceptual processes. That is, it is a descriptive theory which uses, primarily, individuals' perceptions of their organizational environment as the basis upon which individuals' affective responses and behavior are predicted. Again, this approach does not preclude the use of constructs operationalized at higher levels of analysis, it simply draws inferences at the individual level of analysis.

Theoretical Overview

Kurt Lewin's (1951) famous B=f(P,E) formulation that behavior (B) is a function (f) of the person (P) and of his/her environment (E), is perhaps the most widely held view of individual behavior in organizations. It has become so embedded within the theories of organizational behavior, and in organizational behavior research, that it is essentially considered as axiomatic. Few even bother

to state it explicitly. However, the manner in which recent organizational behavior researchers have operationalized constructs should be held up and reexamined in the light of Lewin's original propositions.

Lewin (1936, 1938, 1951) emphasized that it is the perceived environment which influences individuals' behavior. The perceived environment is not necessarily isomorphic with the objective environment. The following passage best summarizes Lewin's position:

> In [the equation B=f(P,E)] the person (P) and his environment (E) have to be viewed as variables which are mutually dependent upon each other. In other words, to understand or to predict behavior, the person and his environment have to be considered as one constellation of interdependent factors. We call the totality of these factors the life space (LSp) of that individual, and write B=f(P,E)=f(LSp). The life space, therefore, includes both the person and his psychological environment. The task of explaining behavior then becomes identical with (1) finding a scientific representation of the life space (LSp) and (2) determining the function (f) which links the behavior to the life space (Lewin, 1951, pp. 239-240; italics in the original).

Three types of constructs are, therefore, necessary in order to identify the dimensions of life space (LSp): 1) measures of individual needs and characteristics; 2) measures of objective situational characteristics; and 3) measures of the perceived environment. Examination of the relationship between the first two types of constructs and the third will yield a representation (i.e., dimensions) of LSp. Figure 1 depicts the three types of constructs as components of life space. The left side of the figure

Figure 1

A Model of Life Space Components

Individual Needs and Characteristics

- Need for Achievement

- Need for Affiliation

- Need for Autonomy

- Need for Dominance

- Early Military Socialization

- Sex

- Race

- Veteran Status

- Scholarship Status

Objective Situational Characteristics

- Group Membership

- Group Size

- Organizational Size

Life

Space

Dimensions

Psychological Climate

- Role Ambiguity   - Variety

- Role Conflict   - Feedback

- Role Overload   - Challenge

- Dealing with Others   - Autonomy

- Friendship Opportunities

Group Climate

- Cohesiveness

- Attitudes Toward ROTC

- Performance Readiness

- Supportive Leadership

- Instrumental Leadership

- Team Oriented Leadership

- Leader Upward Influence

Organizational Climate

- Structure

- Rewards

- Identity

- Warmth & Support

lists the individual needs and characteristics, and measures of the objective situational characteristics included in this study. The right side of Figure 1 lists measures of the perceived environment included in this study at three levels of analysis. LSp dimensions are proposed to develop from the distillation of the three sets of variables. Several aspects of the perceived environment are discussed in detail below. Following the representation of LSp dimensions, it then becomes necessary to develop a causal model (i.e., Function-f), which links LSp dimensions to individuals' behavior. Such a model should also include additional constructs which may mediate the relationships between LSp dimensions and behavior; namely, affective responses.

The following discussion reviews the theories and research pertaining to the nature of the perceived environment. The distinction between the perceived environment as operationalized in previous research and the concept of LSp used here is then drawn. Hypotheses are advanced regarding the nature and operationalization of the perceived environment, and its relationship to individual variables and objective situational characteristics as dimensions of LSp. A later discussion proposes a causal model of LSp dimensions, individuals' affective responses, and behavior.

The Perceived Environment

Research on climates in organizations has focused on the perceived environment (Joyce & Slocum, 1979; Schneider, 1981). It has generally been accepted that the concept of psychological climate represents the individual analog of the perceived environment (Jones & James, 1979; Joyce & Slocum, 1979; Schneider, 1981).

> Psychological climate refers to the individual's internalized representations of organizational conditions and interrelationships among organizational conditions, and reflects a cognitive structuring of perceived situational influences in the situation (James, Harman, Stebbins & Jones, 1977, p.20).

In this sense, psychological climate represents a product of perceptual-cognitive processes whereby individuals develop psychologically meaningful interpretations of their environment. Psychological climate is an intervening process resulting from interactions between individual and organizational characteristics which are translated into a set of perceptions of the environment (Jones, James, Bruni, Hornick & Sells, 1975). The concept of psychological climate also includes several other assumptions pertinent to the present discussion: 1) it is primarily descriptive rather than evaluative; 2) it is not "a single climate" per se; rather, it is a multidimensional set of climates; and 3) it may exist at multiple levels of analysis. (James, Gent, Hater & Coray, 1979; James, Hater, Gent & Bruni, 1978; Jones & James, 1979).

Descriptive Nature of Psychological Climate

Guion (1973), and Johanneson (1973) suggested that early research on organizational climate failed to differentiate perceptions of the work environment from affective responses (e.g., job satisfaction). Later works have drawn finer distinctions between the descriptive/cognitive nature of climate perceptions, and the evaluative/attitudinal nature of affective responses to the environment (LaFollette & Sims, 1975; Newman, 1977; Schneider & Reichens, 1983). Climate measures reflect respondents' perceptions of, or opinions regarding, the nature of environmental characteristics. Affective responses represent evaluations of, and/or reactions to the perceived characteristics. While this conceptual distinction between climate perceptions and affective responses has gained general acceptance, the interrelationships of the two concepts remain to be articulated fully (Jones & James, 1979; Schnake, 1983).

A Multidimensional Set of Climates

The issue of multidimensionality in climate research arises from the existence of several climates rather than a climate that pervades an organization. A single omnibus indicator of the organizational climate fails to reflect many of the salient elements in the environment which influence individuals' behavior (Schneider & Reichers, 1983). Jones and James (1979) identified six underlying

dimensions of psychological climate while Newman (1975) specified 11. These authors described climate perceptions as an individual level phenomenon. Both studies also examined such perceptions at higher levels of analysis (i.e., work group), and concluded that aggregate individual psychological climate measures adequately described and differentiated between work group climates. Others have suggested that multiple climates may exist at different levels of analysis within an organization (Howe, 1977; Mossholder & Bedeian, 1983; Powell & Butterfield, 1978; Woodman & King, 1978). This lack of specificity regarding the appropriate level of analysis for climate perceptions creates a great deal of confusion and represents both the major conceptual and analytic problems in the use of climate as an explanatory construct (Schneider, 1981).

Aggregate Climates

Roberts, Hulin and Rousseau (1978) suggested that the unit of theory upon which a concept is based specifies the appropriate level for operationalizing a construct. They cautioned that one must consider whether "a concept developed to refer to individuals [psychological climate] is equally applicable to higher level units" (Roberts et al., 1978, p.83). James (1982, p.221) submitted that "given perceptual agreement [among individuals]...a climate construct at the aggregate level is defined in precisely the same manner as it is at the individual

level." This position is based implicitly on a composition theory of climate perceptions.

"Theories of composition specify the functional relations producing variables at different levels that are presumed similar along some dimension" (Rousseau, 1985, p.10). For example, James (1982) offered the position that perceptions of an ambiguous environment are the same for a group as for an individual. However other examples can be drawn which suggest an alternative strategy. For instance, group cohesiveness is clearly a group phenomenon that does not have a direct corollary meaning at an individual or organizational level of analysis. The important point to realize is that the level at which a variable is hypothesized to exert influence, and at which inference is to be drawn (i.e., the focal unit), prescribes the level at which it should be operationalized. The decision as to whether, or not, variables measured at the individual level of analysis should be aggregated depends not only on the psychometric properties of the measures, but also on the level of reference that is intended (Rousseau, 1985). This requires precise specification of what aggregated, or disaggregated, data represent:

> Aggregatable survey items (or interview
> responses) are those which refer to events,
> practices and procedures existing in the unit
> (department, position level, organization) that
> will be the unit of analysis. Operationally
> this means that a survey which will be used to
> compare organizations should contain items
> descriptive of organization level variables

(e.g., ways in which the organization communicates its management philosophy) rather than job variables (e.g., the reward attributes of tasks) (Schneider, 1981, p.15).

Therefore, it is important to specify, a priori, the focal unit of climate measures. This does not necessarily restrict the scope of a study to any single level of analysis. Cross-level theories may be developed to link climate perceptions operationalized at different levels of analysis. Cross-level theories simultaneously examine the relationship among several variables operationalized at multiple levels of analysis (Mossholder & Bedeian, 1983; Rousseau, 1985). The present study applies a cross-level theory of climates in organizations, and operationalizes perceptions at three levels of analysis: individual, group, and organizational. Climate perceptions at the individual level of analysis (i.e., psychological climate) are designed to measure variables that are unique to individuals. These include role states and perceptions of task dimensions. Individuals' roles represent their summary psychological states resulting from the contingencies perceived in the environment (Naylor, Pritchard & Ilgen, 1980). In a review of the research on task design, Roberts and Glick (1981) emphasized the fact that perceptions of task dimensions contain variance which is unique to each individual.

Group climate refers to common perceptions of group-level phenomenon. A distinction is drawn here between shared group climate and collective climate. Collective climate describes a set of perceptions of an organization held in common by a group of individuals (Joyce & Slocum, 1984). This definition of climate is nonspecific as to its focal unit (i.e., intended level of analysis). Joyce and Slocum (1984) established aggregates of individuals from spacially separated areas of an organization on the basis of common perceptions of the organization. This analytic approach may provide descriptive information regarding the manner in which an organization is viewed by its members, but leads to ambiguity regarding the nature of, and appropriate level of analysis for the perceptions. Group climate is here defined as a common perception of shared group level phenomenon (e.g., cohesiveness). The constructs intended for this level of analysis refer to group processes and practices which form on the basis of interaction between individuals (Shaw, 1976). This study also adopts the Ohio State (Stogdill & Coons, 1957), and Path-Goal (House, 1971) conception of leader behaviors as group level phenomenon. It is recognized that leader behaviors may also be conceptualized as an individual level variable (Graen, 1976), or at both the individual and the group level of analysis (Mossholder & Bedeian, 1983).

Organizational climate refers to shared perceptions of organizational characteristics, policies or practices. The focal unit here is the organization, and requires, at a minimum, that individuals share a common organizational membership.

Given that individuals in an aggregate group demonstrate perceptual agreement on a climate measure designed for that level of analysis, the mean score for the aggregate on the measure may be assigned to each of its members. This strategy then permits the simultaneous examination of the influence of climates operationalized at different levels of analysis, and the development of a cross-level theory of climates in organizations (cf., Roberts et al., 1978). It also maintains the consistency between the level of specificity of theoretical constructs and the measures used to represent them.

Climate Perceptions and Life Space Dimensions

Climate perceptions have been defined as individuals' perceptions of the environment which result from person by situational interactions (James et al., 1978; Schneider, 1981). Schneider (1983) noted that most organizational behavior research has unduly limited the conceptualization of an interaction to refer to statistical interaction (such as the interaction term in analysis of variance). Pervin and Lewis (1978), and Schneider (1983) enunciated four additional interpretations of the meaning of

interaction. For the present purposes, climates are considered to result from an <u>interdependent interaction</u>--which refers to the case when two or more person and situation variables can be independently measured, but the effects of those variables can only be understood in relation to one another (Schneider, 1983, p.10; See Note 2). Pervin and Lewis (1978, p.14) proposed that:

> when a phenomenon is conceived of in terms of
> the effects of many interdependent variables, we
> are faced with the problem of a system, a
> complex network of interdependent variables such
> that a change in the status of one variable may
> have varying consequences for all other
> variables.

Previous studies have proposed that climate perceptions result from an interaction between individual variables and situational characteristics; yet, these works have typically not operationalized climate in such a manner. The most common analytic strategy has been to factor analyze environmental perceptions and to treat the resulting factors as climate perceptions. In turn, these factors have been examined as related to individual variables and situational characteristics (e.g., Gavin & Howe, 1975; James et al., 1977; Jones & James, 1979; Jones et al., 1975; Joyce & Slocum, 1984; Newman, 1977). Such an analytic strategy acts to derive climate dimensions strictly from environmental perceptions isolated from the other influences in the interdependent system.

For the present study, the definition of climate is constrained to refer only to the perceived environmental characteristics and conditions. This definition is adopted in order to maintain a clear distinction between the environment as perceived by individuals, and the interactional processes which link the individual variables and objective situational characteristics to the resulting perceptions. The dimensions which underlie the interdependent interactional relationship between the three sets of variables are here considered to represent dimensions of LSp. Therefore, the specification of the interactional relationship between individual variables, objective situational characteristics, and climate perceptions, within an interdependent system, is analogous to finding a scientific representation of LSp. This study presents an operationalization of LSp dimensions for Army and Navy ROTC cadets. Later a causal model (i.e., function-f) is developed which links the LSp dimensions with affective responses and behavior. In so doing, this study provides an illustration of Lewin's B=f(LSp) theoretical formulation of individual behavior.

Life Space Dimensions, Affective Responses, and Behavior

Figure 2 presents the theoretical framework and specifies the general function which links LSp dimensions to individuals' affective responses and behavior. It also lists the affective responses and forms of behavior examined in this study. As depicted in Figure 2 and

Figure 2

A Perception Based Integrative Model of Individual Behavior in Organizations

Individual Needs
and Characteristics

Objective
Situational
Characteristics ⟶ Life Space ⟶ Affective ⟶ Behavior
Dimensions Responses

Perceived
Environment

- Motivation   - Performance
- Commitment   - Turnover
- Satisfaction
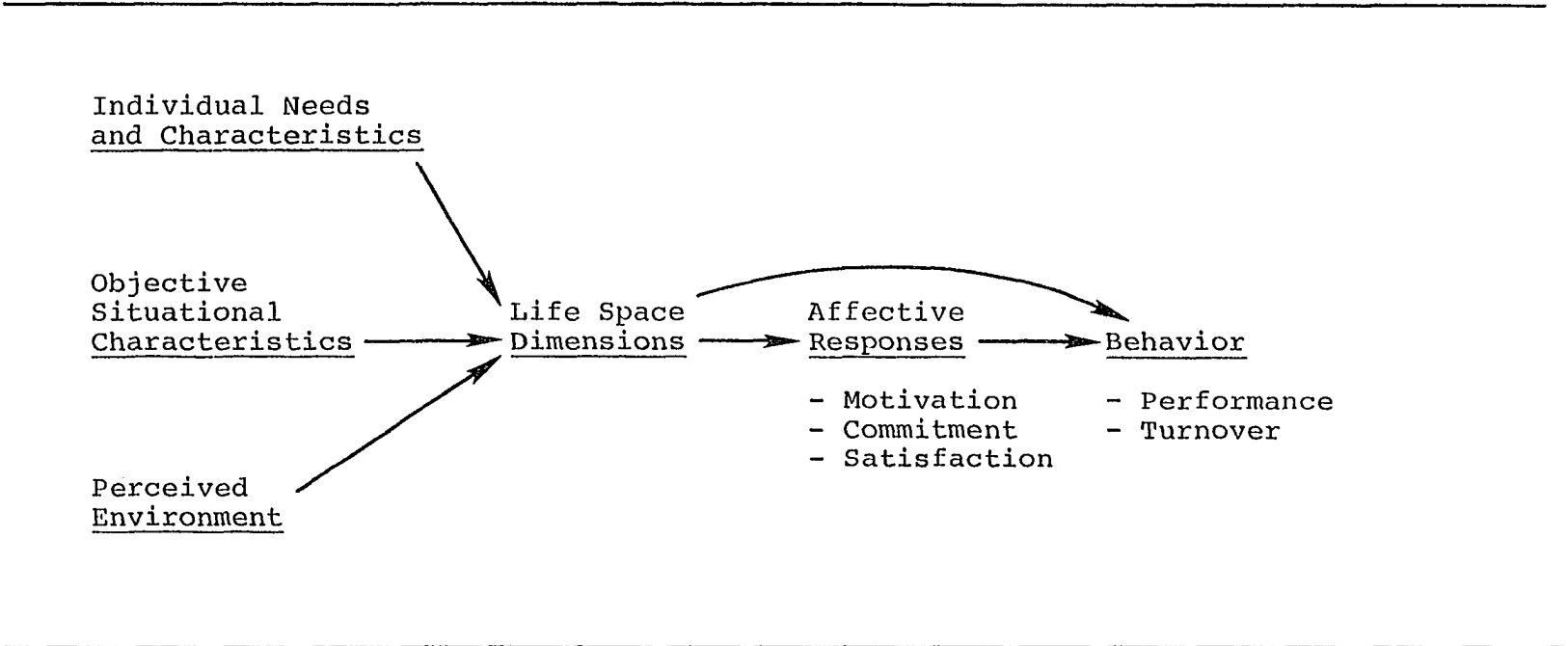
consistent with Field theory concepts developed by Lewin
(1943) and by Brunswick (1943), LSp dimensions are
considered to be post-perceptual, and pre-behavioral. In
addition, the present theory regards affective responses
as mediating variables between LSp dimensions and
behavior. The present theory is similar in many respects
to the Theory of Reasoned Action developed by Fishbein and
Ajzen (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975).

Fishbein and Ajzen proposed that individuals'
perceptions of the contingencies in the environment (i.e.,
beliefs) lead to specific attitudes regarding various
behaviors. Attitudes are believed to combine with
perceived normative beliefs regarding certain behaviors to
produce intentions to engage (or not to engage) in the
behaviors. Intentions are considered by Fishbein and
Ajzen to be the primary, and most direct determinant of
the actual behavior exhibited in the situation. The
present theory integrates individuals' beliefs in the form
of psychological climate perceptions and normative beliefs
in the form of perceptions of group climate and
organizational climate as components of life space. In
turn, it is proposed here that LSp dimensions impact
directly upon individuals' affective reponses to the
environment. Individuals' behavior is considered to
result primarily from the direct influence of affective
responses, and to a lesser extent from the direct
influence of LSp dimensions. The affective reponses

included in this study are the Valence-Instrumentality
-Expectancy (VIE) model of motivation, organizational
commitment, and job satisfaction.

It should also be recognized that the present theory
of individual behavior differs from Fishbein and Ajzen's
theory in terms of the specificity of constructs. That
is, Fishbein and Ajzen's theory of behavior generally
concentrates on the prediction of specific attitudes that
are relevant only to a single, or relatively limited
number of behaviors. In this sense, their theory
represents a rather micromediational theory that deals
with fairly specific entities (Cook & Campbell, 1979). In
contrast, the theory developed here deals with more
generalized processes and more abstract constructs and is,
therefore, more molar in design (Cook & Campbell, 1979).

VIE theories of motivation have considered the force
to perform in a given situation as a function of cognitive
processes which reflect both situational and individual
influences (Campbell & Pritchard, 1976; Feather, 1982;
Mitchell, 1974; Vroom, 1964). Specifically, individuals'
cognitions concerning the relationships between: a) their
effort and performance (effort-performance expectancies);
b) the relationship between performance and a salient set
of outcomes (instrumentalities); and c) the subjective
attractiveness of the outcomes (valences), combine as
follows:

$$F = E\left[\sum_{j=1}^{n} (I_j V_j)\right]$$

where

F= the force to perform

E= effort-performance expectancy

n= the number of salient outcomes

I_j = the instrumentality of performance to each of the second level outcomes

V_j = the valence of each second level outcome

Expectancy and instrumentality concepts are based, in part, on individuals' perceptions of the relationship between environmental forces and the attainment of second level outcomes. Therefore, individuals' expectancy and instrumentality cognitions incorporate the effects of climate perceptions, and represent an additional stage of information processing (i.e., the formulation of probabilities or correlations; James et al., 1977, p. 232). James et al (1977) describe the distinction between psychological climate perceptions and VIE cognitions as the difference between the perceived state of salient situational events (i.e., psychological climate), and an individual's beliefs pertaining to the relationships between "my" behavior and "my" performance, and certain outcomes (VIE cognitions). A similar distinction is adopted for use here which considers VIE cognitions to be based in part, on LSp dimensions.

The second affective response examined here was organizational commitment. Organizational commitment is defined as the relative strength of an individual's identification with and involvement in a particular organization (Porter, Steers, Mowday & Boulan, 1974). Conceptually, it is characterized by three factors: a) a strong belief in and acceptance of the organization's goals and values; b) a willingness to exert considerable effort on behalf of the organization; and c) a strong desire to maintain membership in the organization (Mowday, Porter & Steers, 1982, p. 27). The third and final affective response included in this study was job satisfaction, defined as a pleasurable or positive emotional state resulting from perceptions of one's environment and/or experience (Locke, 1976).

Performance and turnover are two of the most commonly studied outcome variables in organizational behavior research (Staw, 1984). In this study, individuals' current level of performance was assessed with both self ratings, and ratings by supervisors (see Note 3). The use of actual organizational turnover as a behavioral criterion poses unique difficulties in a cross-sectional design of the type employed in this study, and involves the yet unresolved issue of how to specify the "proper time span" between measurements of LSp dimensions, affective responses, and actual turnover (cf., Price, 1977; Roberts et al., 1978). Therefore, behavioral

intention to remain in the organization is used as a surrogate measure of turnover in this study.

Several empirical investigations have demonstrated evidence of a strong direct (negative) relationship between intention to remain and actual turnover (Arnold & Feldman, 1982; Hom & Hulin, 1981; Hom, Katerberg & Hulin, 1979; Michaels & Spector, 1982; Mowday, Koberg & McArthur, 1984; Waters & Roach, 1979). Naturally, however, behavioral intentions can not be used interchangeably with actual behaviors. The theoretical approach used here stems from Fishbein and Ajzen's (1975) general theory of reasoned action, and Mobley's (1977) theory of turnover in organizations in particular, and considers intention to remain in the organization as a post-attitudinal and pre-behavioral construct. Specific hypotheses regarding the interrelationships between LSp dimensions, affective responses, intention to remain, and performance are advanced following the specification of LSp dimensions.

The theoretically based model depicted in Figure 2 also specifies a causal ordering of variables, and a causal direction of processes which link variables to one another. It should be noted that this particular ordering and direction of causal flow is derived from the theoretical precepts of Lewinian Field theory and Fishbein and Ajzen's theory of Reasoned Action. It states

explicitly that LSp dimensions develop from the interactions among individual needs and characteristics, the objective environment, and perceptions of the environment at multiple levels of analysis. LSp dimensions are also considered to lead to affective responses to the environment. In turn, affective responses are proposed as intervening variables which mediate LSp dimension and behavior relationships. Further elaboration of the rationale for this ordering of constructs and direction of causal flow is crucial not only for gaining an understanding of the dynamics of LSp dimensions and individuals' behavior, but also because it establishes the functional relations among variables and, therefore, the functional equations used to test the propositions of the theory (James, Mulaik & Brett, 1982).

Recently, the direction of causation between perceptions of the environment and affective responses has been questioned (e.g., James & Jones, 1980; Ø'Reilly, Parlette & Bloom, 1980). O'Reilly et al. (1980, p. 128) argued that "one's general satisfaction is more likely to result in differential assessments of job characteristics [i.e., perceptions of job dimensions] than the opposite". James and Jones (1980) argued that job perceptions and job satisfaction are related in a constant reciprocal fashion. In fact, the conceptual framework developed here includes the assumption that the present levels of affective responses may alter an individual's life space and thereby

one's perceptions of the environment on _future_ occasions

(Lewin, 1938). However, the "Principle of

Contemporaneity" developed by Lewin states that "any

behavior or any other change in a psychological field

depends only upon the psychological _field_ _at_ _that_ _time_

[italics in the original]" (Lewin, 1943, p. 295). Since

affective responses are reactions to the perceived

environment, they logically must derive from perceptions.

The particular form of such relationships will be

determined by the structure and relative salience of the

various LSp dimensions at that time (Lewin, 1951). This

approach does not suggest that affective responses cannot

affect perceptions of the environment in the future, it

merely highlights the fact that future environmental

perceptions are not isomorphic with those that lead to the

present affective responses.

The specification of the dynamics of the

interrelationships among LSp dimensions, affective

responses, and behavior, over time, requires multiple

measurements of each of the constructs and the development

of cyclical recursive models (James et al., 1982).

Cyclical recursive models permit one to delineate the

relationships between perceptions of the environment and

affective responses _within_ a meaningful time frame, and

the relationship between affective responses and

environmental perceptions _over_ _time_. A prerequisite to

the development of complex cyclical recursive models is an

understanding of the nature of interrelationships among variables within a relatively stable, meaningful time interval. The present study is designed with the latter goal in mind and offers a perception based theory of individual behavior in organizations, and uses data collected from a single period in time.

To summarize, the theory offered here is cognitive in nature and proposes a synthesis of the influence of individual variables, objective situational characteristics, and climate perceptions operationalized at multiple levels of analysis as dimensions of Life Space (LSp) from a Lewinian framework. Three sets of propositions were advanced regarding: 1) the operationalization of multiple levels of climate perceptions; 2) the relationship between individual variables, objective situational characteristics, and climate perceptions as LSp dimensions; and 3) the relationship of LSp dimensions, affective responses and behavior. The first two sets are delineated below. A detailed discussion of the third set of propositions is presented following the specification of LSp dimensions (see Results: Causal Models).

Levels of Aggregation and Life Space Hypotheses

Climate Perceptions

Climate perceptions were proposed to exist at three levels of analysis: individual, group, and organization. The focal unit of each scale specifies the level of analysis of the measure (see right side of Figure 1). Role states and task dimension perceptions were regarded as individual psychological climate perceptions. Group processes and leader behaviors were represented as group-level phenomenon. Perceptions of organizational characteristics and conditions represented organization-level phenomenon. The degree to which these propositions were supported by empirical evidence was assessed by examination of the perceptual agreement among members of the same aggregate.

Life Space Dimensions

Individual needs and characteristics, and objective situational characteristics were each hypothesized to relate significantly to climate perceptions operationalized at multiple levels of analysis. The combined set of individual variables and situational characteristics was hypothesized to relate significantly to climate perceptions. The underlying pattern of relationships between the three sets of variables were considered to establish the dimensions of life space (LSp).

CHAPTER 2

Method

Participants and Procedure

The participants were 456 Army and 132 Navy Reserve Officer Training Corps (ROTC) cadets enrolled at two medium-sized public universities and one smaller private university in the Southeast. The combined Army sample was 66% male with a mean age of 22. In the Army sample, 19% reported their race as White, 74% as Black, 3% as Spanish-speaking American, 2% as Oriental, and 2% as other. Nine percent had previous military experience. Table 1 contains a breakdown of the Army sample participants' characteristics by detachment and class year.

The combined Navy sample was 81% male with a mean age of 21. In this sample, 43% reported their race as White, 46% as Black, 3% as Spanish-speaking American, 4% as Oriental, and 4% as other. Twenty five percent had previous military experience. Table 2 contains a breakdown of the Navy sample participants' characteristics by detachment and year. The Navy sample contained individuals in only the first three years, since, these detachments had only been formed recently.

Questionnaires were administered during approximately 1-1/2 hour long periods normally set aside for drill training. Respondents were asked to provide their Social Security number for use in the matching of their responses

Table 1

Army Participant Characteristics by

Detachment and Class

Class	No. of Members	No. Surveyed	Sex %		Veteran %		Race %				
			M	F	Yes	No	W	B	S	O	Ot
Army 1											
1	33	25	76	24	8	92	80	20	0	0	0
2	35	21	85	15	9	91	76	14	0	5	5
3	27	23	91	9	9	91	64	23	0	14	0
4	32	32	75	25	22	78	84	13	0	0	3
Total	127	101	81	19	13	87	77	17	0	4	2
Army 2											
1	212	63	52	48	7	93	0	90	5	0	5
2	101	34	56	44	7	93	0	90	3	3	4
3	59	42	69	31	12	88	0	94	3	3	0
4	37	13	77	23	11	89	0	92	8	0	0
Total	409	151	60	40	8	92	0	92	4	2	2
Army 3											
1	106	106	57	43	3	97	5	86	3	3	3
2	48	37	71	29	8	92	0	94	6	0	0
3	30	30	67	33	7	93	3	97	0	0	0
4	34	30	70	30	21	79	0	93	7	0	0
Total	218	204	63	37	7	93	3	91	3	2	2
Total	754	456	66	34	9	91	19	74	3	2	2

Table 2

Navy Participant Characteristics by

Detachment and Class

Class	No. of Members	No. Surveyed	Sex % M	F	Veteran % Yes	No	Race % W	B	S	O	Ot
Navy 1											
1	54	41	85	15	17	83	73	10	5	7	5
2	30	21	90	10	25	75	70	10	10	5	5
3	17	11	82	18	9	91	82	18	0	0	0
Total	101	73	86	14	18	82	74	11	6	5	4
Navy 2											
1	13	12	75	25	25	75	8	83	0	9	0
2	9	8	63	37	25	75	0	100	0	0	0
3	8	8	88	12	25	75	38	62	0	0	0
Total	30	28	75	25	25	75	14	82	0	4	0
Navy 3											
1	22	17	81	19	37	63	0	94	0	0	6
2	12	9	67	33	67	33	0	100	0	0	0
3	5	5	60	40	0	100	0	80	0	0	20
Total	39	31	73	27	40	60	0	93	0	0	7
Total	170	132	81	19	25	75	43	46	3	4	4

with other types of information, but were assured of anonymity. Some individuals were absent on the administration dates, hence the samples constituted 60% of the Army detachments' population, and 78% of the Navy detachments' population. Tables 1 and 2 also present a breakdown of the total number of members, and the number of individuals surveyed from each detachment by class year. The smaller percentage of Army as compared to Navy cadets surveyed is attributable, mainly to a low percentage (37%) of cadets from Army 2. Unavoidably, questionnaires were administered during periods otherwise used for volunteer participation in activities in this detachment. Thus, the sample from Army 2 may be somewhat biased toward more involved or more enthusiastic cadets. The remaining detachments' sampling ratios ranged from 72% to 94% and do not appear to have any biasing induced.

ROTC training is a part-time activity on campus. The nature of the training differs from class to class over the four years of the program with the primary distinction occurring between the second and third year. During the first two years of Basic ROTC training, cadets are engaged primarily in classroom instruction and participation in drill activities, typically in large groups. An important goal during these years is to gain acceptance to the Advanced Course (third and fourth years) by demonstrating superior classroom and drill achievement. On the average, approximately 40% of the first year cadets are admitted in

to the Advanced Course. Some scholarships are also awarded to first and second year cadets on the basis of merit.

Performance in the third year is crucial for Army ROTC cadets. Most of the academic year is spent in leadership roles and in preparation for a two-week Performance Test conducted during the following summer. The Army uses the Performance Test to assess cadets' prior training and readiness to be commissioned as an Army officer. Failure to complete the two-week test successfully may result in the cadet's discharge from the program. Roughly, 10-15% of the cadets fail the summer performance test. The third year is also important for Navy ROTC cadets. They take on several on the leadership positions and responsibilities (e.g., leading drill practice) within the detachment. The third year is also spent in preparation for a summer tour of sea duty aboard a Navy ship. In both of the service branches, individuals with previous military experience may sometimes enter the ROTC program in the third year (approximately 5-10%). The fourth year of ROTC training focuses primarily on final preparation for commissioning as an Army or Navy officer. Cadets may still be discharged for poor performance at this stage of the program, although such an event occurs infrequently.

The selection and attrition processes naturally reduce the number of cadets in each year of the programs. This, combined with the different types of training received in each year, was hypothesized to relate significantly to perceived climates in each year.

Objective Situational Measures

Three measures were used to assess the influence of objective situational characteristics on environmental perceptions. The actual number of cadets in each class (i.e., group), and detachment (i.e., organization) were used as measures of group size and organizational size. Since the unit of analysis in this study is the individual, all cadets were assigned a group size and an organizational size value corresponding to the aggregates of which they were members (See Roberts et al., 1978 and Rousseau, 1978 for further discussion of this technique). These values are found in the second column of Tables 1 and 2. The third objective situational measure was a set of dummy codes which represented each cadet's current ROTC class (i.e., Freshman, Sophomore, Junior or Senior).

Instruments

A questionnaire was constructed to assess cadets' self-ratings of performance, intention to remain in military service, affective responses to ROTC, climate perceptions, and individual resource variables (see Appendix A). A list of the items included in each scale

is presented in Appendix B. Measures were drawn from
existing instruments, with some modifications to make them
suitable for use with the ROTC samples, as noted below.
The particular scale versions employed here have been
found to possess acceptable psychometric qualities with
ROTC populations in previous research (Mathieu, 1984;
Mathieu, Cauthorne, Glickman & Woods 1983; Woods &
Mathieu, 1984).

All items were responded to on five-point,
Likert-type scales utilizing response anchors particular
to each instrument. Approximately 20% of the items were
negatively worded in order to reduce response bias, and
were reverse coded prior to analysis. Scale scores were
computed for each individual by summing items responded
to, and dividing the total by the number of responses
made. Higher scale scores indicate greater amounts of
each variable (e.g., "5" indicates greatest satisfaction;
"1" indicates least role ambiguity). Performance,
intention to remain, and affective response measures are
presented individually for Army and Navy samples since
they were used in separate causal models (see Results:
Causal Models). Individual resource variable and climate
perception scale qualities are presented for the total
study population since both the Army and Navy populations
were used collectively to specify LSp dimensions. (see
Results: Life Space Dimensions).

<u>Performance Criteria</u>

 <u>Army Performance</u>. Two sources of performance
criteria were obtained for Army cadets: self and
supervisor ratings (see Appendix C). Supervisor ratings
were obtained from commissioned officers who provided both
formal classroom military instruction and informal
guidance regarding cadets' progress in ROTC. Five
dimensions deemed salient in ROTC cadets' performance by
the Army were rated:

1. <u>Oral Communication Skills</u>- the ability to
express oneself effectively in individual or
group situations; includes gestures and other
nonverbal communication.

2. <u>Initiative</u>- the discipline that requires
attempting to influence events to achieve goals
beyond those called for; originating action;
self-starting rather than passive acceptance.

3. <u>Planning and Organization</u>- the ability to
establish a course of action for self or others
to accomplish a specific goal; planning proper
assignments of personnel and appropriate
allocation of resources.

4. <u>Influence</u>- the art of using appropriate styles
and methods in guiding subordinates, peers,
supervisors or group toward task accomplishment.

5. <u>Judgment</u>- the ability to develop alternative
courses of action and make decisions based on
logical assumptions that reflect factual
information.

 Each dimension was rated on a five-point, Likert-type
scale with response anchors which ranged from <u>Much more
than acceptable</u> '5', to <u>Much less than acceptable</u> '1'. A
principal-axis analysis of the cadets' self ratings
extracted a single factor (i.e., eigenvalue ≥ 1.0) which

accounted for 59% of the trace of the correlation matrix. A similar analysis performed using the supervisor ratings also extracted one factor (i.e., eigenvalue ≥ 1.0) which accounted for 76% of the trace of the correlation matrix. Therefore, global performance criterion scores were computed for each Army cadet by averaging unit weighted ratings across the five dimensions. The reliability of these scores computed using coefficient alpha (Cronbach, 1970) were .82 for the self ratings, and .92 for the supervisor ratings. Self and supervisor performance ratings correlated significantly in this sample ($r= .32$, $p< .001$).

Navy Performance. Both self and supervisor ratings (see Appendix D) were also obtained for Navy ROTC cadets. Four performance dimensions were rated:

1. Professional Performance- one's skill and efficiency in performing assigned duties (except supervisory).

2. Military Behavior- how well one accepts authority and conforms to standards of military behavior.

3. Leadership and Supervisory Ability- one's ability to plan and assign work to others and to direct their activities effectively.

4. Military Appearance- one's military appearance and neatness in person and dress.

Each dimension was rated by cadets on a five-point, Likert-type scale with descriptive anchors specific to each aspect of performance. Supervisors rated on a 10-point, 5 anchor system which was converted to a

corresponding scale for conformity with self ratings.
Principal-axis analyses were also performed with these
ratings. Both analyses found a single factor (i.e.,
eigenvalue ≥ 1.0) which accounted for 55% and 79% of the
trace of the correlation matrices for self and supervisor
ratings, respectively. The alphas for the Navy
performance criterion measures computed as unit weighted
averages of the four dimensions were .72 for the self
ratings, and .91 for the supervisor ratings. The self and
supervisor performance ratings also correlated
significantly in this sample ($\underline{r}$= .41, $\underline{p}$<.001).

Intention to Remain

Intention to remain was measured with a five item
scale constructed of items from Card (1978) and from
Steers (1977). The scale contained items which refer both
to intention to remain in ROTC and intention to remain in
the service. A principal-axis analysis of these items
extracted a single factor (i.e., eigenvalue ≥ 1.0) which
accounted for 59% of the trace of the correlation matrix,
which suggests that cadets do not differentiate much
between the two intentions. Therefore, this scale is
labelled Intention to remain in Military Service.
Coefficient alphas were .81 and .84 for the Army and Navy
samples, respectively.

Affective Responses

Commitment. Organizational commitment was measured with a 15 item scale from Mowday, Steers and Porter (1979). This scale has been found previously to exhibit high reliability and validity (Ferris & Aranya, 1983; Mowday et al., 1982; Mowday et al., 1979). Coefficient alphas were .84 and .89 for the Army and Navy samples, respectively.

Satisfaction. Cadets' satisfaction with ROTC training was assessed with a 20-item adaptation of the Minnesota Satisfaction Questionnaire (Weiss, Dawes, England & Lofquist, 1967). Items in the original questionnaire which refer to present job security, compensation, and advancement prospects did not pertain to cadets. They were replaced with new items which refer to future job security, opportunities for financial assistance while in school, and the opportunity to be commissioned as an officer. Coefficient alphas were .89 and .87 for the Army and Navy samples, respectively.

Motivation. Components of VIE motivation theory were assessed with scale items and outcomes developed in earlier research (Woods & Mathieu, 1984). Effort-performance expectancies were assessed with a three item scale (alphas: Army= .66; Navy= .78). A 17-item outcome list was employed to provide instrumentality and valence estimates. Three aspects of this particular

operationalization of VIE components should be
highlighted.

First, although the participants rated perceived
performance-outcome instrumentalities and outcome valences
on 1-5 point Likert-type scales, the response anchors were
designed to represent negative to positive correlations
(instrumentalities), and negative to positive
attractiveness (valences). Both scales were rescored (-2,
-1, 0, 1, 2) to provide accurate predictions concerning
individuals' motivational forces (cf., Mitchell, 1974;
Wahba & House, 1974). Second, the outcomes included here
were generated by Army and Navy ROTC cadets in an
open-ended questionnaire developed in previous research
(Woods & Mathieu, 1984). This technique enabled us to
construct a list of outcomes that was more experientially
based than those that have typically been used in
between-subjects expectancy theory research. Third, the
outcome list contains both positive and negative valence
outcomes, which permits a more complete examination of VIE
predictions than is commonly conducted (Leon, 1981).

The means and standard deviations of the
instrumentality and valence items were computed separately
for the Army and Navy samples and are presented in Table
3. The mean valence for the positive outcomes (1,2,3,6,7,
9,12,14,15,16,17) was significantly higher than the mean
valence for the negative outcomes (4,5,8,10,11,13) in both

Table 3

Outcome Instrumentality and Valence Means and Standard Deviations

for Army and Navy ROTC Cadets

| | | Army | | | | Navy | | | |
| | Predicted | Instrument. | | Valence | | Instrument. | | Valence | |
Outcomes	Valence	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
1. The development of leadership skills.	+	1.42	1.10	1.37	1.05	1.61	.77	1.47	.94
2. Obtaining financial assistance while in school.	+	1.05	1.07	1.17	1.12	1.39	.91	1.37	.98
3. Future travel opportunities.	+	1.13	1.08	1.27	1.02	1.38	.80	1.36	.83
4. Being assigned additional responsibilities.	-	1.09	1.03	.65	1.04	1.16	.90	.62	.96
5. Stress and mental pressure.	-	.39	1.24	-.49	1.21	.48	1.09	-.83	1.12
6. An opportunity to obtain military benefits (e.g., medical insurance, commissary privileges, etc.)	+	1.23	.99	1.36	1.01	1.26	.91	1.39	.92
7. A job upon graduation.	+	1.46	.99	1.54	.91	1.56	.80	1.62	.80
8. Making an early career commitment.	-	1.12	1.04	.84	1.14	1.16	.91	.82	1.05
9. A feeling of pride and accomplishment.	+	1.44	.90	1.38	.99	1.40	.82	1.41	.92
10. Lower overall academic performance.	-	-.29	1.28	-.89	1.32	-.45	1.24	-1.23	1.18
11. The amount of free time you have.	-	-.21	1.33	-.16	1.21	-.51	1.18	-.22	1.24
12. Future job security.	+	1.34	1.01	1.43	.95	1.49	.81	1.59	.74
13. Dealing with military discipline and orders.	-	1.17	1.04	.75	1.04	1.15	1.07	.60	1.01
14. The prestige associated with excelling in ROTC.	+	1.33	.93	1.23	1.06	1.35	.83	1.27	.81
15. The development of self discipline.	+	1.40	.88	1.34	.96	1.44	.75	1.36	.89
16. Your choice of future job locations.	+	.96	1.13	1.03	1.19	.82	1.11	1.06	1.11
17. Gaining job-related experience.	+	1.24	1.04	1.45	.94	1.15	.86	1.42	.77

Note. Table values based on -2 to +2 scale ranges. Army N = 456. Navy N = 132.

samples (Army t(455)= 29.54, p<.001, positive X̄= 1.30, SD= .74, negative X̄= .12, SD= .62; Navy t(131)= 22.13, p<.001, positive X̄= 1.39, SD= .62, negative X̄= -.04, SD= .58). Table 3 shows that although outcomes 4 (Being assigned additional responsibilities), 8 (Making an early career commitment), and 13 (Dealing with military discipline and orders) were identified by cadets as negative outcomes in previous research (Woods & Mathieu, 1984), the present mean valence ratings were in fact more "neutral" than unattractive for both samples.

The finding that negative valence outcomes were rated as neutral replicates earlier work conducted with this outcome list and ROTC cadets (Woods, 1984; Woods & Mathieu, 1984), and other investigations with quite dissimilar sample populations (James et al., 1977; Lawler & Suttle, 1973). The standard deviations for the outcomes designed as negative valences were generally much higher than those of the positive valence outcomes. In sum, these findings suggest that perceptions of negative valence outcomes may differ over time and individuals even within a well defined population. The development of a greater understanding of this issue would appear to represent a fruitful area for future VIE research.

The instrumentality values varied across outcomes, and like the valence scores, were consistent for the two populations. The mean instrumentality associated with the

positive outcomes was significantly higher than the mean instrumentality associated with the negative outcomes in both samples (Army $\underline{t}$(455)= 23.96, $\underline{p}$<.001, positive $\overline{X}$= 1.27, SD= .68, negative $\overline{X}$= .54, SD= .61; Navy $\underline{t}$(131)= 16.21, $\underline{p}$<.001, positive $\overline{X}$= 1.36, SD= .56, negative $\overline{X}$= .50, SD= .54). It is important to note that two of the outcomes that exhibited negative valences (i.e., 10 - Lower overall academic performance, and 11 - The amount of free time you have) also received negative mean instrumentality estimates. The resultant force from these two outcomes is, thus, positive. The results presented in Table 3 indicate that the only negative resultant force against high performance in ROTC stems from outcome 5 (Stress and mental pressure), which received a positive mean instrumentality rating and a negative mean valence rating in both samples.

These findings support Mitchell's (1974, 1982) contention that failure to measure both instrumentalities and valences along a negative to positive continuum would result in a methodological confound from application of the VIE formula presented earlier. However, the average resulting force on behavior (i.e., VI, absolute value) from the negative outcomes was significantly lower in both subpopulations (Army $\underline{t}$(455)= 23.23, $\underline{p}$<.001, positive $\overline{X}$= 9.08, SD= 5.35, negative $\overline{X}$= 4.24, SD= 3.69; Navy $\underline{t}$(131)= 15.64, $\underline{p}$<.001, positive $\overline{X}$= 9.11, SD= 4.62, negative $\overline{X}$= 3.95, SD= 3.44). (cf., Leon, 1981; Parker & Dyer, 1976).

A single motivation composite score was computed for each cadet using the VIE formula presented earlier for use here.

Individual Resource Variables

Resource variables describe individual chararcteristics that each cadet brings to the ROTC context, and which are relatively independent of organizational control. Cadets' sex, race, and scholarship status were measured with single items. For purposes of analysis, males were dummy coded "0", females were coded "1". Similiarly, individuals with no prior military experience were coded "0", and veterans were coded "1". A single item 1-5 dummy coding scheme was used to assess the general effects of racial differences (Cohen & Cohen, 1975, p. 207). Amount of scholarship support received was coded on a five-point ratio scale which ranged from "4" (a four year scholarship) to "0" (none at all). Although scholarship awards are contingent on both an individual cadet's performance, and the amount of funds available at each detachment, the present classification as an individual variable reflects the personal nature of these awards with this population (cf., Herman & Hulin, 1972).

Four individual needs (achievement, affiliation, autonomy, and dominance) were measured with scales based on Steers and Braunsteins' (1976) Manifest Needs

Questionnaire (MNQ). These particular needs were selected on the basis of their popularity in previous research which provides for easier comparisons between this and other work, and due to their theoretical consistency with the Lewinian Life Space concepts. Recent examinations of the psychometric properties of the MNQ have indicated that the scales demonstrate unacceptably low internal consistencies (Dreher & Mai-Dalton, 1983; Joiner, 1982; Williams & Woodward, 1980). Therefore, several original items were slightly reworded, and three items were adapted from Murray (1938) and added to each scale.

Examination of the psychometric properties of the revised instrument suggested the elimination of three items after which the following scale qualities were estimated: achievement (8 items, alpha= .63); affiliation (6 items, alpha= .60); autonomy (8 items, alpha= .57); and, dominance (7 items, alpha= .75). These coefficients represent substantial improvements over median MNQ reliabilities (mean increase= .26) reported in Dreher and Mai-Dalton's review (1983), and are considered sufficiently high to be used here. A 3-item scale which measured early life military socialization (alpha= .84) was also included from Card (1978), since it had been previously shown to relate significantly to ROTC cadets' training related perceptions (Card, 1978; Mathieu et al., 1983; Mathieu, 1984).

Climate Perceptions

Climate perceptions were assessed with 20 scale measures falling within five categories: role, task, group, leadership, and organizational factors. Each scale is shown in Table 4 within its respective category. Also included in Table 4 are scale definitions, scale reliabilities, and the number of items in each scale. These measures were all considered to exhibit acceptable reliabilities.

Role. Three role perceptions were included: role ambiguity, role conflict, and role overload. Role ambiguity and role overload were measured with items drawn from House, Schuler and Levanoni's (1983) examination and refinement of scales developed by Rizzo, House and Lirtzman (1970). The psychometric properties of the original Rizzo et al. (1970) scales have recently been questioned (cf., Schuler, Aldag & Brief, 1977; Tracy & Johnson, 1981). The House et al., (1983) revisions have addressed and rectified the earlier scale deficiencies. Role overload was assessed with selected items from Abdel-Halim (1978).

Task. Five task dimension perceptions were measured with scales drawn from Sims, Szilagyi and Keller (1976): autonomy, variety, feedback, friendship opportunities, and dealing with others. The psychometric qualities of these scales have been supported by Brief and Aldag (1978),

Table 4

Climate Perception Scale: Number of Items,

Internal Reliabilities, and Definitions

Items Alpha

Role

8   .77   Role Ambiguity. The extent to which duties or tasks have unclear demands, criteria, or relationships with other duties and tasks.

8   .69   Role Conflict. The extent to which there are pressures for conflicting or mutually exclusive behaviors.

3   .70   Role Overload. The extent to which there is a lack of adequate resources required to comply with role expectations or demands.

Task

6   .58   Autonomy. The extent to which individuals can select their tasks and duties, and can control the way in which the tasks and duties are carried out.

4   .67   Variety. The extent to which an individual is presented with a wide range of tasks and experiences during training.

5   .81   Feedback. The extent to which an individual receives information indicating how well she/he is performing.

6   .81   Friendship Opportunities. The degree to which the training situation allows for individuals to talk with others and to establish informal relationships with other cadets.

4   .65   Dealing with Others. The degree to which training activites require individuals to deal with other people in order to complete tasks and duties.

4   .76   Challenge. The extent to which an individual's skills and abilities are tried during training activities.

Table 4 continued

Group

8   .85   <u>Cohesiveness</u>. The degree to which a collective feeling of unity and belongingness exists on the part of class members.

5   .80   <u>Attitudes Toward ROTC</u>. The extent to which class members generally speak highly of, and seem to care about ROTC.

8   .84   <u>Performance Readiness</u>. The extent to which the class group can handle pressure and emergency situations, and uphold ROTC standards of order and discipline.

Leadership

7   .80   <u>Supportive</u>. The extent to which leader behavior is characterized as friendly and approachable, with consideration shown for the needs of cadets.

7   .75   <u>Instrumental</u>. The extent to which leader behavior is directed at clarifying expectations, assigning specific tasks, duties, and operational procedures.

7   .73   <u>Team Orientation</u>. The extent to which leader behavior emphasizes the development of team spirit and cooperation between members of the class.

5   .81   <u>Leader Upward Influence</u>. The degree to which a leader is successful at influencing individuals at higher levels of command, and makes sure that his cadets are treated fairly.

Table 4 continued

Organization

6   .75   Structure. The extent to which rules, regulations, and standardized procedures are emphasized, and the detachment has clear-cut, reasonable goals and objectives.

6   .66   Rewards. The degree to which the detachment places a value on rewarding a job well done; an emphasis on positive rewards rather than punishments.

4   .65   Identity. The degree to which a feeling that individuals belong to the organization and are valuable members of a working team.

8   .74   Warmth & Support. The degree to which a general feeling of good fellowship prevails in the detachment, and a perceived helpfulness of the officers and other cadets in the detachment.

Griffin, Moorehead, Johnson and Chonko (1980), and Pierce and Dunham (1978). A sixth scale which measured task challenge from Jones and James (1979) was also included.

Group. Three perceptions of group processes were included: group cohesiveness, group attitudes toward ROTC, and group performance readiness. Cohesiveness and attitudes toward ROTC were measured with scales from Moos (1980). Performance readiness was assessed with items from Jones and James (1979), and from Mathieu et al. (1983). The group membership referent was each cadet's class year (i.e., Freshman, Sophomore, Junior, or Senior). Discussions with ROTC officers and cadets established this to be the most salient group membership within each detachment.

Leadership. Four leadership variables were included in this study. Two scales which measured supportive leader behaviors and instrumental leader behaviors were constructed with items from House and Dressler (1974). A scale which measured leader team orientation from Stogdill and Coons (1957), and a scale which assessed perceptions of leader upward influence, adapted from Jones and James (1979), were also included. Leader behavior descriptions applied to the cadets' officer supervisor (see Note 3).

Organization. Five perceptions of organizational climate were measured with scales from Litwin and Stringer (1968): structure, rewards, identity, warmth, and

support. Previous examinations of these scales have
indicated that they possess acceptable internal
reliabilities (Muchinsky, 1976; Sims & Lafollette, 1975).
However, a psychometric examination of the warmth, and the
support scale items in this study indicated that they tap
a single underlying construct. Therefore, a single scale
score was used composed of four items from each of the
original two scales and labelled organizational warmth &
support. Organization referred to the specific ROTC
program (i.e., Army or Navy) that a cadet was enrolled in
at his or her university.

CHAPTER 3

Results

The results of this study are presented in three sections. The first section contains an analysis of the perceptual agreement among indviduals on group climate and organizational climate constructs. The second section examines the relationships between: 1) individual resource variables and climate perceptions; 2) objective situational characteristics and climate perceptions; and 3) a combined analysis using both individual resource variables and objective situational characteristics as a predictor set, with climate perceptions serving as the criterion set, in order to specify the underlying LSp dimensions. The third Results section contains a discussion of necessary conditions for confirmatory causal modeling, the development of a theoretical model which links LSp dimensions, affective responses, intention to remain, and behavior, and finally a test of the hypothesized model using the Army sample. Two models were tested; one using self ratings of performance, the second using supervisor ratings. Lastly, the two models were revised on the basis of the observed results and theory developed earlier, and generalization was tested using the Navy sample.

Aggregate Climates

In order to assess whether or not climate exists at multiple levels of analysis, the perceptual agreement among individuals of group and organizational aggregates was assessed. The focal level of theory for perceptions of the three role states and six task dimension measures was the individual. Since aggregate climates were defined previously as experiences shared among individuals, the role and task dimension measures represent individual psychological climate perceptions and are not considered as aggregate constructs. The use of aggregated (i.e., mean) climate scores requires an empirical demonstration that various criteria have been met. James (1982) has suggested that significant differences in the means of perception measures between groups, and perceptual agreement within groups be used as evidence of the existence of aggregate climate.

Between group differences in perceptions of group-level climate were assessed by separate one-way Analyses of Variance (ANOVAs) computed for each group and leadership variable. Each class year from the six detachments (N=21) represented a treatment cell and individual scores on the group and leadership measures were the dependent variables. The results of these analyses are presented in Table 5. All resulting F ratios were significant ($p < .001$). The magnitude of perceptual

Table 5

Perceptual Agreement among Members on

Group Aggregate Climate Constructs

Group Variables	F	DF	ICC [1]
1. Cohesiveness	5.411 ***	20, 567	.174
2. Group performance readiness	6.407 ***	20, 567	.205
3. Group attitudes toward ROTC	4.359 ***	20, 567	.138

Leadership Variables	F	DF	ICC [1]
1. Supportive	4.241 ***	20, 559	.134
2. Instrumental	3.150 ***	20, 559	.093
3. Team oriented	3.468 ***	20, 559	.105
4. Upward influence	3.283 ***	20, 559	.098

Note. All analyses were computed using listwise deletion of cases with missing values.

[1] Computed with ICC formula 1,1 (Shrout & Fleiss, 1979).

*** $p < .001$

agreement was assessed by converting the ANOVA results to intraclass correlation coefficients (ICCs: Formula 1,1; Shrout & Fleiss, 1979) as recommended by James (1982, p. 223). These coefficients are also presented in Table 4 for the group-level climate variables. ICCs provide point estimates of interrater reliability and can be interpreted as indicators of perceptual agreement. A high ICC indicates small within-group variance, relative to between group variance. The test for the statistical significance of an ICC is the corresponding ANOVA F ratio.

The mean ICC of the group-level aggregates in this study was .172 for the group variables, and .108 for the leadership variables. These values are comparable to a median ICC estimate (.12) for psychological climate measures determined in a review of previous literature discussed by James (1982). The present findings indicate high levels of agreement among cadets on the group constructs, and lower, but significant, levels of agreement on the leadership constructs.

Between group differences in perceptions of organizational-level climate perceptions were also assessed by separate one-way ANOVAs. Organizational (i.e., detachment) membership (N=6) represented the treatment cells for these analyses and individuals' scores on the organizational measures were the dependent variables. The results of these analyses, and the

corresponding ICCs are presented in Table 6. Structure, rewards, and identity all produced significant F ratios ($p < .001$) and high ICCs ($\overline{X} = .490$).

The between group warmth & support difference was nonsignificant ($F(5,573) = 1.290$, $p > .05$), and the ICC was low (.046). However, the within-group variance was low on this measure, in fact, lower than the other three organizational climate measures. The lack of significance was attributable to the low between-group variance on this measure. This leads to two interpretations for this finding. First, it could indicate that there is not a shared perception of "good fellowship and helpfulness of others within the detachment" among members. Alternatively, the six detachments may not differ significantly on this measure, although there may be a shared perception within each detachment. The present analysis cannot distinguish clearly between the alternative explanations. Since the warmth & support measure was operationalized with "this detachment" as the focal unit, and there is not clear evidence that individuals within a detachment do not agree on this variable, it was retained for further analysis as an indicator of organizational climate. However, caution should be used when drawing inferences regarding relationships which involve this measure.

Table 6

Perceptual Agreement among Members on Organizational

Aggregate Climate Constructs

Organizational Variables	F	DF	ICC[1]
1. Structure	7.345 ***	5, 573	.514
2. Rewards	6.275 ***	5, 574	.468
3. Identity	6.749 ***	5, 573	.489
4. Warmth & Support	1.290	5, 573	.046

Note. All analyses were computed using listwise deletion of cases with missing values.

[1] Computed with ICC formula 1,1 (Shrout & Fleiss, 1979).

*** $p < .001$

Group climate and organizational climate mean scores were computed and assigned to each cadet corresponding to those aggregates of which he or she was a member. This strategy permitted the simultaneous examination of the influence of climates operationalized at three levels of analysis: psychological climate, group climate, and organizational climate.

Life Space Dimensions

Canonical correlation analyses were used to test the hypotheses that individual resource variables and objective situational characteristics relate significantly to climate perceptions operationalized at multiple levels of analysis. The technique of canonical correlation develops linear combinations of two sets of variables which are maximally correlated with each other (Cooley & Lohnes, 1971). Canonical variates are formed by differentially weighting each set of variables so that the maximum possible correlation between the two sets is obtained. More than one significant canonical variate may exist between the two sets of variables but, the number of variates is limited to the number of variables in the smaller set. Variates are extracted such that they are uncorrelated with one another (Cooley & Lohnes, 1971; Pedhazur, 1982).

A canonical correlation was computed between the individual resource variables and the climate perceptions in order to test the hypothesis that they are related significantly. Since the primary aim here is to identify the causes of the perceived environment (i.e., climate perceptions), individual resource variables were considered to constitute the predictor set and climate perceptions to represent the criterion set. The multivariate significance test showed the first five canonical correlations were statistically significant ($\underline{p} < .05$). Redundancy coefficients were computed in order to determine the portion of variance in climates accounted for by the individual resource variables. A redundancy coefficient represents the portion of variance in the criterion set accounted for by a canonical variate given the predictor set (Cooley & Lohnes, 1971). Since canonical variates are orthogonal, the sum of the significant individual redundancy coefficients is the total variance accounted for in the criterion set, given the predictor set. The total redundancy coefficient of the climate set for the individual resource variable analysis was .092 which is comparable to somewhat similar findings (.09) reported by Herman et al. (1975), and (.06) by Rousseau (1978).

A second canonical correlation was performed, using the objective situational characteristics as the predictor set, to test the hypothesis that these variables relate

significantly to climate perceptions. This analysis also derived five significant canonical correlations ($p<.001$), the maximum number available given the five variable predictor set, with a total redundancy coefficient of .161. The magnitude of this redundancy coefficient is also comparable to findings (.19) reported by Herman et al. (1975), and (.12) by Rousseau (1978).

The previous two analyses indicate that both individual resource variables and objective situational characteristics relate significantly to climate perceptions. However, of central interest here is the relationship between climate perceptions and the two sets of predictor variables considered simultaneously. Therefore, a third analysis was conducted including both individual resource variables and objective situational characteristics in the predictor set. The resulting canonical variates obtained from this analysis were considered to represent LSp dimensions. The findings from this analysis are presented in Table 7. The first 10 canonical correlations were significant ($p<.05$) with a total redundancy coefficient of the climate set of .279 (see Note 4). These results indicate that the 10 canonical correlations accounted for over 37% of the variance in climate perceptions, and that 28% of the climate perceptions could be predicted given the predictor set. This represents a substantial amount of predictive

Table 7

Canonical Correlation Statistics Describing Life Space

Dimensions from Individual Resource Variables, Situational

Characteristics, and Multiple Climate Perceptions

	Eigen-Value	Canonical Correlation	χ^2	DF	% of Matrix Trace		Redundancy Coefficients	
					X	Y	X	Y
1.	.968	.984	4855.860	280	9.33	4.02	.090	.039
2.	.884	.940	3080.682	247	4.83	3.67	.043	.033
3.	.785	.886	1964.149	216	8.08	11.77	.064	.092
4.	.637	.798	1167.583	187	13.00	5.48	.083	.035
5.	.349	.591	643.183	160	10.89	16.74	.038	.059
6.	.231	.481	420.669	135	3.12	2.49	.007	.006
7.	.186	.431	284.445	112	7.39	3.12	.014	.006
8.	.118	.344	178.209	91	7.93	4.19	.009	.005
9.	.077	.267	113.105	77	6.31	3.14	.005	.002
10.	.048	.220	74.691	55	6.18	6.77	.003	.003

Note. All canonical correlations listed are statistically significant (1-9, $p < .001$; 10 $p < .05$).

N= 588.

power (cf., Herman et al., 1975; Oldham & Hackman, 1981; Rousseau, 1978).

The nature of the canonical variates were interpreted with the use of structure coefficients. Structure coefficients represent the correlations between the original variables in each set and their corresponding canonical variate scores (Darlington, Weinberg & Walberg, 1973; Pedhazur, 1982). They are used to identify a canonical variate in much the same manner that one names a dimension in exploratory factor analysis. The complete stucture coefficient matrix is presented in Appendix E. Darlington et al. (1973, p. 444) discussed rotation as an additional consideration for the interpretation of canonical variates:

> Since canonical correlation derives canonical variates in a way which assures they will be uncorrelated, use of canonical analysis... assumes that the explanatory traits are mutually uncorrelated. This assumption does not affect the determination of the number of traits, but it does affect the determination of their nature. Assuming the traits to be mutually intercorrelated may aid in their interpretation, just as oblique rotations in factor analysis may lead to a simpler interpretation of factors [emphasis added].

Empirical presentations of orthogonal rotation in canonical variate analysis have been offered by Krus, Reynolds and Krus (1976), and by Reynolds and Jackosfsky (1981).

In order to facilitate the intepretation of the canonical variates in this study, the full structure coefficient matrix was rotated with a direct oblimin oblique technique, since the underlying LSp dimensions were not hypothesized to be orthogonal. Several different rotations were examined by varying the Delta value from 0 (highly correlated) to -5 (nearly orthogonal) (Gorsuch, 1983, pp. 188-206). The rotation with Delta= -3 was retained and used for substantive interpretation because it provided the clearest solution and would reduce multicollinearity problems in later analyses (see Results: Causal Models). The rotated structure coefficient matrix is presented in Table 8. Only coefficients $\geq .30$ (absolute value) are presented and used for interpretation, as recommended by Pedhazur (1982, p. 732). In instances where it was necessary to dummy code a variable (i.e., race, class membership), the squared multiple correlation of the set of dummy codes on the predictor variates is reported (cf., Herman et al., 1975).

Table 9 contains the correlations among the rotated canonical variates. The diagonal entries in Table 9 represent Omega reliability estimates which reflect the degree that each rotated variate identifies a single construct (cf., Heise & Bohrnstedt, 1971, formula 43, p. 118). The average dimension reliability was .77 with all but one variate exceeding .70.

Table 8

Rotated Structure Coefficient Matrix Identifing

Life Space Dimensions

Variables	Canonical Variates									
	1	2	3	4	5	6	7	8	9	10
Need Dominance					47			41	31	
Need Achievement					51				63	-64
Need Autonomy								90		
Need Affiliation		43			92	-38				
Early Military Soc						-45				
Vetaran Status[1]		-30				45				-69
Scholarship Status	-34								-63	-40
Race[2]							79			
Sex[3]							40			
Class Membership[2]		74	90	94		38				
Group Size	85			-49						
Org Size	92									
Autonomy								66		
Variety		40			68	-31				
Feedback		36			62				30	
Friendship Opport		37			85	-31				
Dealing w/ Others		33			72	-46			40	
Challenge		39			53	-35			51	
Role Ambiguity					-54				-54	46
Role Conflict								52		
Role Overload									-57	31
Group Cohesiveness	-31	41	59	52						
Group Performance			63	51		-42				
Group Att ROTC			62	67		-30				
Supportive Lead			-79	-45						
Instrumental Lead		62	53							
Team oriented Lead		53								
Lead Upward Influence		58		-35						
Org Structure	52					-48				37
Org Rewards	53					-39	-40		31	41
Org Identity						-56				42
Org Warmth & Support						-49				

Note. Coefficients > |.30| are presented (decimals eliminated).
Matrix was rotated to a direct oblimin oblique solution
(Delta= -3).
Abbreviations: Soc, Socialization; Org, Organization;
Opport, Opportunities; Att ROTC, Attitudes toward ROTC;
Lead, Leadership.
[1]Dummy coded: Nonveteran= 0; Veteran= 1.
[2]Dummy coded vector.
[3]Dummy coded: Males= 0; Females= 1.
N= 588.

Table 9

Correlations Among Rotated Canonical Variates

Canonical Variates		1	2	3	4	5	6	7	8	9	10
1. (LSp1)	Organizational Formalization	(.78)									
2. (LSp2)	Esprit de Corps	.02	(.79)								
3. (LSp3)	Team Performance Orientation	-.08	.19	(.81)							
4. (LSp4)	Peer Relations	-.12	-.00	.32	(.79)						
5. (LSp5)	Friendly/Enriched Training	-.13	.29	.10	.13	(.79)					
6. (LSp6)	Alienation	-.06	-.11	-.06	-.14	-.25	(.78)				
7. (LSp7)	Inequitable Rewards	.07	.03	.01	-.04	.04	.01	(.75)			
8. (LSp8)	Individualism	-.03	-.01	.03	.02	.13	-.02	-.04	(.80)		
9. (LSp9)	Individual Performance Orientation	.11	.18	-.02	.01	.22	-.25	.01	.00	(.64)	
10. (LSp10)	Frustration	.15	.16	.05	.00	-.18	-.20	-.06	.00	-.11	(.79)

Note. Values in parenthesis represent variate reliabilities (Omega).

N= 588.

Interpretation of Life Space Dimensions

The first rotated canonical variate (i.e., dimension) was identified primarily by group size (.85) and organizational size (.92) from the predictor set, and by perceived organizational structure (.52) and organizational rewards (.53) from the climate set. This LSp dimension seemed to reflect Organizational Formalization (James & Jones, 1976; Oldham & Hackman, 1981). The fact that group cohesiveness (-.31) related negatively to this dimension supports this interpretation (Porter & Lawler, 1965). These results also indicate that individuals with scholarships (-.34) perceive less formalization in the detachments.

The second dimension of LSp was labelled Esprit de Corps. Five psychological climate perceptions: variety (.40); feedback (.36); friendship opportunities (.37); dealing with others (.33); and challenge (.39); and four group climate perceptions: cohesiveness (.41); instrumental leadership (.62); team oriented leadership (.53); and leader upward influence (.58) related positively to this dimension. Individuals with high need for affiliation (.43) loaded positively, and veterans negatively (-.30) on this dimension. The meaning of the class membership loading (.74) is difficult to evaluate because it represents a squared multiple correlation of the set of dummy codes on the rotated predictor variate.

In order to interpret the influence of the dummy coded predictor variables (i.e., class membership and race) on the underlying rotated variates, variable category mean values for each criterion variate which exhibited a meaningful loading in the predictor set were computed and compared (Herman et al., 1975). These values are presented in Table 10.

The class membership influence on the second variate was found to be attributable to negative relationships in the second year of training (prior to admittance to the advanced course), and in the fourth year of training (prior to actual commissioning). The first year group was significantly higher (Scheffe, $p<.01$) than both the second and fourth year groups, and the third year group was significantly higher than all others. It follows that Esprit de Corps among cadets would be highest when confronted with challenging situations which involve teamwork (i.e., third year training), and when they are new to the program (i.e., in the first year).

The third dimension was labelled Team Performance Orientation. The class membership affect (.90) was identified generally as a positive affect in the third and fourth years and a negative affect in the first two years. Discussions with the ROTC cadre had indicated previously that performance is emphasized primarily in the third and fourth years of training. From the criterion set, group

Table 10

Class and Race Categories Mean Scores on Related

Criterion Canonical Variates

	Class			
Criterion Variates	1	2	3	4
2. Esprit de Corps	.183 b	-.547 cd	.750 a	-.884 d
3. Team Performance Orientation	-.465 c	-.884 d	.886 b	1.762 a
4. Peer Relations	-.817 b	.794 a	.658 a	.489 a
6. Alienation	.111 b	.054 b	.539 a	-1.341 c

	Race				
Criterion Variate	W	B	S	O	Ot
7. Inequitable Rewards	-1.70 c	.610 b	.226 b	-.616 b	.166 a

Note. Race abbreviations: W, White; B, Black; S, Spanish-speaking American; O, Oriental, Ot, Other. Variables not sharing a common subscript differ significantly (Scheffe, $p < .01$).

N= 588.

cohesiveness (.59), group performance readiness (.63), and group attitudes toward ROTC (.62) loaded positively on this dimension. Leaders were not perceived to be supportive (-.79), yet they were perceived to exhibit instrumental behaviors (.53).

The third and fourth LSp dimensions were the most correlated rotated canonical variates (r=.32). Both dimensions involved peer relationships. However, the focus of the third LSp dimension was on performance while the fourth was more interpersonal in nature. The fourth variate was entitled Peer Relations. Examination of the class membership (.94) effect reveals that first year cadets fell significantly lower (p<.01) on this dimension than cadets in the other three years. The negative group size effect (-.49) indicates that cadets in larger classes perceived lower peer relations to exist. This would be expected since cadets' opportunities to meet and to develop relationships with other members are more limited in larger classes (Shaw, 1976). The second, third and fourth year classes all loaded positively on this dimension. The positive group variable loadings of cohesiveness (.52), group performance readiness (.51), and group attitudes toward ROTC (.67), combined with the negative supportive leadership (-.45) and leader upward influence (-.35) loadings suggests that cadets are deriving support from their peers rather than from their supervisor. It is possible that a compensatory mechanism

is at work here.

The fifth dimension of LSp was labelled <u>Friendly</u> <u>and</u>
<u>Enriched</u> <u>Training</u>. Individuals with high needs for
dominance (.47), achievement (.51), and affiliation (.92)
related positively to this dimension. Psychological
climate perceptions of variety (.68), feedback (.62),
friendship opportunities (.85), dealing with others (.72),
challenge (.53), and role ambiguity (-.54) defined this
dimension from the criterion set. The variables which
comprise this dimension reflect concepts related to the
job characteristics model of work motivation discussed by
Hackman and Lawler, (1971), and by Arnold and House
(1980).

The sixth dimension illustrated the dynamics of the
concept of life space. This LSp dimension was entitled
<u>Alienation</u> and seems to reflect a generalized cognition of
psychological distancing from ROTC (Kanungo, 1979). The
predictor set influence was defined by a negative
influence of need for affiliation (-.38), and a positive
influence of veterans status (.45). The veteran status
effect, as was observed in the reverse direction on LSp2,
reflects the fact that cadets with previous military
experience often do not consider ROTC to be the "real
Army", or the "real Navy". At times, this creates a
barrier between veteran and nonveteran cadets and would
account for the negative climate perceptions of variety

(-.31), friendship opportunities (-.31), dealing with others (-.46), challenge (-.35), group performance readiness (-.42), group attitudes toward ROTC (-.30), organizational structure (-.48), organizational rewards (-.39) organizational identity (-.56), and organizational warmth & support (-.49). Inspection of the class membership affect (.38) shows fourth year cadets to be the least alienated group ($p<.01$), the third year cadets to be the most, with the first and second years assuming middle values. This finding is most likely attributable to the "sink or swim" type of pressure experienced by cadets in the third year of training.

The seventh dimension, labelled <u>Inequitable Rewards</u> was identified by the positive weighting of sex (i.e., females .40) and race (.79, in general, White cadets load negatively, and Black, Spanish-Speaking American and Oriental cadets loaded positively). Individuals with early military socialization (-.45) loaded negatively on this LSp dimension. The climate set exhibited a single negative loading (-.40) for organizational rewards.

The eighth dimension, tentatively labelled <u>Individualism</u> had four meaningful loadings: need for dominance (.41), need for autonomy (.90), perceived autonomy (.66), and role conflict (.52). Two interpretations could be advanced for this dimension. First, it may be a product of method variance resulting

from the assessment of need for autonomy and perceived autonomy in the same questionnaire. A second interpretation might be that this dimension reflects a need for individual autonomy and dominance, for which there is a perceived opportunity (i.e., autonomy perceptions) which is in conflict with the general team orientation of ROTC (i.e., role conflict). The second interpretation seems more plausible, given the methods of operationalizing constructs that were employed and the absence of other clear method factors in this analysis.

The ninth LSp dimension is entitled Individual Performance Orientation. This dimension reflects perceptions of feedback (.30), dealing with others (.40), challenge (.51), organizational rewards (.31), and the absence of role ambiguity (-.54) and role overload (-.57). The predictor set shows individuals with high needs for dominance (.31) and achievement (.63) load positively on this dimension, while scholarships (-.63) relate negatively. The scholarship relationship offers the interesting interpretation reminiscent of earlier internal/external motivation discussions (cf., Staw, 1976), that providing financial rewards for ROTC participation may be "de-motivating" cadets.

The tenth dimension of LSp was labelled Frustration. It exhibited positive climate loadings for role ambiguity (.46), role overload (.31), organizational structure

(.37), organizational rewards (.41), and organizational
identity (.42). The apparently conflicting nature of
these organizational climate and psychological climate
perceptions seems to describe a stressful situation in
which individuals perceive the existence of organizational
rewards, but they are unable or unsure how to obtain them
(cf., Spector, 1978). This interpretation is consistent
with the negative relationship of this dimension with need
for achievement (-.64), veteran status (-.69) and
scholarship status (-.40) from the predictor set. Thus,
this LSp dimension seems to describe a state of
frustration stemming from perceptions of interference with
goal attainment or goal oriented activity (Spector, 1978).

Composite scores were computed for each LSp dimension
using the regression method and the rotated structure
matrix loadings (Horn, 1965). The regression method
develops standardized composite score estimates of the
underlying dimensions with a demonstrated high degree of
validity (Susmilch & Johnson, 1975).

<u>Causal Models</u>

The analyses presented above have identified the
dimensions of the life space (LSp) component in Lewin's
B=f(LSp) formula of individuals' behavior. A causal model
is developed in this section which links the LSp
dimensions with behavior and represents the function (f)
component of Lewin's formula. Cadets' performance is the

form of behavior considered here, and is assessed with
both self and supervisor ratings. Because the Army and
Navy cadets were rated on different performance measures,
the two subpopulations were separated at this stage of
analysis. This also permits the testing and refinement of
the causal model(s) on an initial sample (Army), and an
evaluation of the generalizability of the revised model
with a second sample (Navy). It should also be recognized
that the data analysis shifts here from primarily an
exploratory (i.e., the specification of LSp dimensions) to
a confirmatory mode (i.e., proposed f).

Conditions for Confirmatory Analysis

James et al. (1982) delineated 10 conditions for
confirmatory analysis and causal inference. Two of these
conditions: 1) the specification of causal order, and 2)
the specification of causal direction among variables were
discussed earlier and are depicted in Figure 2. The more
specific third and fourth conditions for confirmatory
causal modeling are a formal statement of theory in terms
of a structural model, and a theoretical rationale for
each causal hypothesis (James et al., 1982). The proposed
model of behavior is depicted in Figure 3 and the specific
hypothesized linkages are listed in Table 11. The
theoretical rationale for each hypothesized linkage
(denoted within parentheses) is discussed below. As is
customary with path analytic designs, the following
discussion first considers the relationships of the

Figure 3

Hypothesized Causal Model
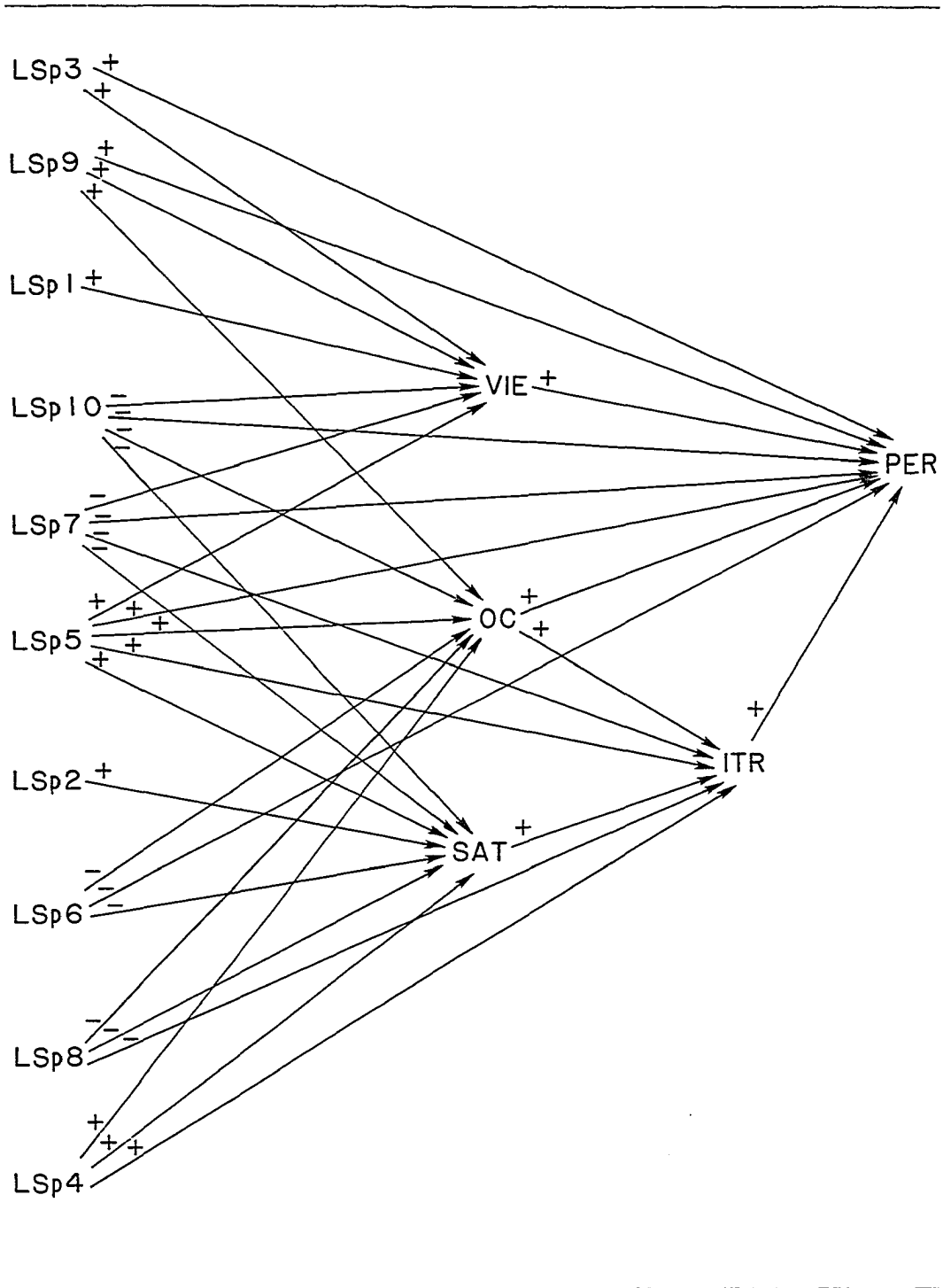
Table 11

Hypothesized Structural Parameters for Army

ROTC Cadets Causal Models

Exogenous Variables	Endogenous Variables				
	VIE x11	OC x12	SAT x13	ITR x14	Performance y1
1. (x1) LSp1	+				
2. (x2) LSp2			+		
3. (x3) LSp3	+				+
4. (x4) LSp4		+	+	+	
5. (x5) LSp5	+	+	+	+	+
6. (x6) LSp6		-	-		-
7. (x7) LSp7	-		-	-	-
8. (x8) LSp8		-	-	-	
9. (x9) LSp9	+	+			+
10. (x10) LSp10	-	-	-		-
11. (x11) VIE					+
12. (x12) OC				+	+
13. (x13) SAT				+	
14. (x14) ITR					+

Abbreviations. LSp1, Organizational formalization; LSp2, Esprit de corps; LSp3, Team performance orientation; LSp4, Peer relations; LSp5, Friendly and enriched training; LSp6, Alienation; LSp7, Inequitable rewards; LSp8, Individualism; LSp9, Individual performance orientation; LSp10, Frustration, VIE, Motivation composite, OC, Organizational Commitment, SAT, Satisfaction, and ITR, Intention to Remain.

exogenous (i.e., predictor) variables closest to the
endogenous (i.e., dependent) variable, and then moves
right to left across Figure 3 to address the remaining
influences of more distant exogenous variables.

Theoretical Rationale for Causal Hypotheses. The
relationship between performance and turnover (intention
to remain) has received limited attention in previous
research. Marsh and Mannari (1977), and Spencer and
Steers (1981) have found low positive correlations between
actual turnover and performance, while Martin, Price and
Mueller (1981) found no significant relationship. Keller
(1984) has found a negative relationship between
performance and actual turnover. Dreher (1982), and
Keller (1984) suggested that these inconsistent findings
may be reconciled by considering the nature of the
organizational reward system. They proposed that when an
organization's reward system is designed to be linked with
individuals' performance, a negative relationship between
performance and turnover should occur. Alternatively,
when individuals' derive performance rewards from sources
that are external to the organization, a positive
relationship between performance and turnover should
follow.

ROTC cadets may receive financial rewards (i.e.,
scholarship awards) and valued enhanced opportunities to
become commissioned as military officers, by performing

well in ROTC. Therefore, organizational rewards are related to individuals' performance and a low positive correlation between (pylx14) performance and intention to remain was hypothesized. Addtionally, self attribution theory suggests that individuals' tend to perceive consistency between their own attitudes and behavior (Schneider, Hastori & Ellsworth, 1979). Thus, the positive influence of intention to remain was hypothesized to be greater when predicting self as compared to supervisor performance ratings. While it would theoretically follow that performance and actual turnover would be related reciprocally, intention to remain is here considered as an influence on performance. This causal ordering follows from Fishbein and Ajzen's Theory of Reasoned Action discussed earlier.

Previous studies have found only a low, positive relationship between commitment and performance (cf., Porter, Crampon & Smith, 1976; Steers, 1977). However, a strong positive relationship (pylx12) between commitment and performance was hypothesized for this study. This hypothesis stems from the fact that involvement and identification with the organization is considered as an important component of performance in ROTC training. This effect is accentuated by the fact that few objectively quantifiable performance measures exist for ROTC cadets. Self ratings of performance were anticipated to be influenced more by commitment than by supervisor ratings,

following the attributional biases discussed earlier.

The VIE formulation used in this study represents, technically, an "effort" as opposed to a "performance" model of motivation (Mitchell, 1974). Performance is considered to result from the influence of several factors besides the VIE force component (Mitchell, 1974; Vroom, 1964). However, increased effort resulting from heightened VIE cognitions was hypothesized to increase (pylx11) cadets' performance. This relationship was also anticipated to be higher for self as compared to supervisor performance ratings (Schwab, Olian-Gottlieb, Heneman, 1979).

A low negative relationship between job satisfaction and turnover is one of the most consistent findings in the turnover literature (Mowday et al., 1982). More recently, organizational commitment has been considered to be as strong as, or better than job satisfaction, as a predictor of retention. Investigations which have simultaneously examined the influence of commitment and satisfaction on turnover have found both to exhibit significant negative relationships, with organizational commitment exerting a bit stronger influence (Arnold & Feldman, 1982; Hom et al., 1979; Michaels & Spector, 1982; Peters, Bhagat & O'Conner, 1981). Accordingly, it was hypothesized that both (px14x12) organizational commitment and (px14x13) satisfaction would be positively related to intention to

remain, and that the influence of commitment would predominate.

The hypothesized influence of LSp dimensions on cadets' affective responses, intention to remain, and performance are also depicted in Figure 3 and listed in Table 11. Organizational formalization was hypothesized to heighten (px11x1) VIE cognitions by clarifying effort-performance, and performance-outcome relationships (Gavin & Howe, 1975; James et al., 1977). Esprit de corps was hypothesized to increase cadets' (px13x2) satisfaction (Gavin & Howe, 1975; Hackman, 1976; McDonald & Gunderson, 1973). Team performance orientation was hypothesized to influence directly both (px11x3) VIE cognitions and (py1x3) performance. Alternatively, peer relations was considered to represent a more interpersonal construct and to influence positively (px12x4) organizational commitment (Buchanan, 1974), (px13x4) satisfaction (Hackman, 1976; Shaw, 1976), and (px14x4) intention to remain (Kraut, 1975).

The friendly and enriched training LSp dimension as comprised of personality needs (cf., Weiss & Adler, 1984) and task dimension perceptions (Hackman & Lawler, 1971; Sims & Szilagyi, 1976) was considered to be a generalized positive state and to increase (px11x5) VIE motivation, (px12x5) commitment, (px13x5) satisfaction, (px14x5) intention to remain, and (py1x5) performance. Alienation

was hypothesized to decrease (px12x7) commitment, (px13x7) satisfaction, and (py1x7) performance (Kanungo, 1979). Inequitable rewards was hypothesized to represent a generalized negative state and to decrease (px11x8) VIE motivation, (px13x8) satisfaction, (px14x8) intention to remain, and performance (py1x8). Individualism was hypothesized to lead to decreased (px12x8) commitment, (px13x8) satisfaction, and (px14x8) intention to remain, since, the design of ROTC and the military are based on a group or team framework.

Individual performance orientation was hypothesized to increase (px11x9) VIE motivation, (px12x9) commitment, and (py1x9) performance since ROTC constantly presents cadets with performance challenges. Finally, frustration was hypothesized to decrease (px11x10) VIE motivation, (px12x10) commitment, (px13x10) satisfaction, and (py1x10) performance (cf., Spector, 1978).

Self-Contained Functional Equations. A fifth condition for the use of confirmatory analysis discussed by James et al. (1982) is that the parameters of the model must represent self-contained functional equations. This issue is referred to elsewhere as nonspuriousness (Kenny, 1979), covariation among disturbance terms (Namboodri, Carter & Blalock, 1975), and the unmeasured variables problem (James, 1980). In brief, the self containment condition is satisfied if the causes included

explicitly in a functional equation for each predicted variable (i.e., endogenous) in the model are unrelated to the disturbance term of that equation. The equations outlined above for organizational commitment, satisfaction, and the VIE motivation composite are considered to include all relevant causes for this population. However, intention to remain with an organization is also influenced by alternative job opportunities (Hom et al., 1979; Mobley, 1977; Mobley, Griffeth, Hand & Meglino, 1979), and performance is effected by individuals' ability (Campbell & Pritchard, 1976; Heider, 1958; Vroom, 1964). James (1980) proposed a set of decision steps for determining the seriousness of an unmeasured variables problem.

In order for an unmeasured cause to bias a model's structural parameters it must be correlated with one or more of the measured causes. Since dissatisfaction leads to a search for and evaluation of alternatives (Mobley, 1977), satisfaction could be correlated with alternative job opportunities. However, such a relationship is quite removed from the processes examined here, and operates at a more micro level of analysis. Moreover, participation in ROTC is a relatively short-term engagement accompanied by several "side bets" (e.g., scholarships) that tend to reduce the likelihood of alternative search behaviors stemming from dissatisfaction. Thus, the exclusion of alternative job opportunities may reduce the explanatory

power of the model, but should not bias the estimates of the structural parameters. The effects of ability on performance are considered to operate in a similar fashion.

Arvey (1972) found ability and a VIE composite both to exert independent effects on performance. While expectancy theory suggests that ability and effort are related multiplicatively to performance (Vroom, 1964; Mitchell, 1974), empirical evidence of such a relationship is lacking (cf., Mitchell & Nebeker, 1973; Woods, 1984). Thus, the self containment condition is not considered to be violated seriously in the proposed causal model, although the explanatory power of the model may be attenuated because some potential influences are excluded.

Boundaries and Stability of the Structural Model. James et al.'s (1982) sixth and seventh conditions pertain to the boundaries and stability of the causal model. As noted earlier, the present model contains several predicted relationships which are specific to the ROTC populations (e.g., the positive influence of intention to remain on performance, the influence of scholarships). Thus, the generalizability of the present model is limited to ROTC populations and perhaps to other part-time military settings (e.g., National Guard Units; Military Reserve Units). The predicted relationships are also considered to have reached an equilibrium-type state

(i.e., have had sufficient time to develop fully), and to be reasonably stable across time.

Operationalization of Variables. Condition eight identifies several statistical properties which must also be met in order to justify the use of causal modeling techniques. These include the assumptions that the relations among variables in the model are linear and additive, and that the variables are measured on interval scales without error (Kenny, 1979; Namboodiri et al., 1975). Since the measures employed in this research were adapted from well developed instruments, and no indications of nonlinearity were found, the first two above conditions were considered to be met adequately. The "perfect measurement reliability" condition is generally relaxed somewhat, and "high reliability" is considered to be sufficient for satisfaction of this condition (Duncan, 1975). The variables included in the causal model(s) were considered to be sufficiently reliable (all exceeded .70 except LSp9 - individual performance orientation= .64). The final two conditions discussed by James et al. (1982) pertain to the empirical confirmation of the functional equations, and the fit between the theoretical model and empirical data. These conditions are discussed below in conjuction with the tests and refinement of the causal model(s).

Standardized vs. Unstandardized Coefficients. A
long standing debate exists regarding the relative merits
of using standardized vs. unstandardized coefficients in
causal models (cf., Duncan, 1975; Hargens, 1976; Heise,
1975; Kim & Mueller, 1976; Tukey, 1964; Wiley & Wiley,
1971). The use of ordinary least squares regression
techniques (OLS) and standardized variables yields path
coefficients as model parameters. Path coefficients have
the advantages that they are more easily computed and
interpretable than unstandardized coefficients because all
variables are based on the same metric (James et al.,
1982; Tukey, 1964). The use of path coefficients also
permits direct comparisons of the magnitude of effects of
different variables on an endogenous variable.

Alternatively, standardizing variables on the basis
of sample distributions renders the resulting path
coefficients noncomparable across populations because they
are affected by sample specific idiosyncrasies in the
variances of variables. Therefore, the use of OLS and
unstandardized variables, which yield path-regression
coefficients, has been advocated for comparing causal
effects across populations, or for comparing causal
effects in the same population over time (James et al.,
1982; Wiley & Wiley, 1971). If one desires to compare
simultaneously both the relative magnitude of different
variables' effects on an endogenous variable, and such
effects across populations, than one is forced to

subordinate one aim to the other, or to report both path coefficients and path-regression coefficients for each population.

Hotchkiss (1976) proposed an alternative solution for instances where both types of comparisons are desired simultaneously. Hotchkiss (1976, p. 53) suggested that "data [i.e., variables] be converted to standard scores over all subgroups and that subgroup specific unstandardized coefficients be calculated on the transformed scores". He refers to the resulting coefficients as standardized path-regression coefficients. Since the causal model depicted in Figure 3 is tested and revised with the Army sample, and the generalizability of the revised model is evaluated with the Navy sample, both types of comparisons are desired here. Therefore, standard scores for the LSp dimensions, affective responses, and intention to remain were computed on the basis of the total Army and Navy combined sample.

Kolmogorov-Smirnov (two sample) tests were computed to assess the comparability of the Army and Navy performance measures because each rated different factors. These tests showed that the Army and Navy performance distributions differed significantly for both self (z= 2.734, p<.001), and supervisor (z= 5.009, p<.001) ratings. Thus, in order to achieve the maximum comparability between causal models which contain these two measures,

the Army and Navy performance ratings were standardized within each subsample. However, "it is important to emphasize that two variables that are not defined by the same operational procedures [i.e., the different Army and Navy performance appraisal ratings] cannot be perfectly comparable; regardless of the standardization applied, only approximate comparibility is achieved " (Hotchkiss, 1976, p. 71). In sum, the causal models presented below represent mixed models, with the LSp dimensions, affective responses, and intention to remain being standardized on the basis of the total population, and the performance criterion measures being standardized within each subpopulation (cf., Hargens, 1976; Felson, 1975). Standardized path-regression coefficients are presented in all tables and figures for linkages which predict intention to remain, VIE motivation, commitment, and satisfaction. Path coefficients are presented for linkages predicting performance. The correlation matrix, means, and standard deviations for variables included in the causal model(s) are presented in Table 12 for each subpopulation.

Army Model Tests

James et al.'s (1982) final two conditions for the use of confirmatory analysis and causal inference pertain to the formal test of the hypothesized model. Two related types of tests are involved. First, a model is not rejected if the structural parameters hypothesized to be

Table 12

Means, Standard Deviations, Internal Reliabilities, and Intercorrelations of Variables Included in Army and Navy Causal Models

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Organizational Formalization	----	-.12	-.18	-.27	-.21	.38	.06	-.09	.01	-.09	-.21	-.22	-.10	-.22	-.28	-.26
2. Esprit de Corps	-.12	----	.17	.03	.37	-.04	.02	-.01	.04	.13	.26	.19	.22	.05	.09	.02
3. Team Performance Orien.	-.34	.29	----	.32	.12	-.03	-.01	-.01	-.14	-.04	.04	.04	-.04	.18	.10	.09
4. Peer Relations	-.17	-.34	.10	----	.06	-.13	-.07	.02	-.07	-.14	.21	.17	.05	.24	.12	-.09
5. Friendly/Enriched Training	-.26	.11	-.07	.45	----	-.24	.06	.15	.20	-.14	.42	.48	.53	.26	.25	.22
6. Alienation	.02	-.35	.69	.03	-.23	----	-.02	-.01	-.14	-.05	-.17	-.29	-.21	-.14	-.30	-.30
7. Inequitable Rewards	-.58	-.06	.32	.10	.00	.15	----	-.08	-.08	-.06	.03	-.05	.03	-.06	.04	.18
8. Individualism	-.24	.10	.00	.11	.16	-.02	.02	----	-.02	.04	.01	-.04	.11	.01	.12	-.02
9. Individual Performance Orien.	-.29	.37	.34	.11	.02	-.08	.17	.12	----	-.34	.35	.39	.43	.15	.18	.03
10. Frustration	.31	.28	-.00	.27	-.27	-.26	-.03	-.03	.12	----	-.20	-.28	-.27	-.20	-.12	-.12
11. VIE Motivation	.01	.13	-.14	.13	.40	-.25	-.08	.01	.21	-.03	----	.50	.50	.18	.20	.17
12. Organizational Commitment	-.21	.21	.07	.23	.53	-.16	-.05	.07	.36	-.17	.46	----	.66	.53	.25	.21
13. Satisfaction	-.20	.10	-.19	.13	.40	-.35	.03	.05	.32	-.13	.48	.60	----	.30	.29	.12
14. Intention to Remain	-.02	.22	-.07	.00	.25	-.22	-.24	.01	.36	-.03	.31	.58	.38	----	.24	.12
15. Performance (Self Rated)	-.23	.09	.12	.15	.40	.02	-.00	.17	.25	-.30	.28	.40	.34	.31	----	.32
16. Performance (Supervisor Rated)	-.11	-.09	.15	.02	.12	.19	-.06	-.12	.04	-.22	.07	.26	.20	.24	.41	----
Army X̄	.32	.13	.08	.09	.03	-.28	.02	.04	.13	.21	.02	-.02	.04	-.05	.00	.00
N= 456. SD	.93	1.11	1.13	1.11	1.13	1.04	1.08	1.28	1.10	1.08	1.01	.97	1.03	1.00	1.00	1.00
∝	.78	.79	.81	.79	.79	.78	.75	.80	.64	.79	---	.84	.89	.81	.82	.92
Navy X̄	-1.10	-.43	-.26	-.29	-.12	.97	-.07	-.14	-.46	-.73	-.05	.07	-.13	.15	.00	.00
N= 132. SD	.33	.70	.58	.83	1.21	.92	1.47	1.09	1.46	1.55	.95	1.09	.90	.97	1.00	1.00
∝	.78	.79	.81	.79	.79	.78	.75	.80	.64	.79	---	.89	.87	.84	.72	.91

Note. Army sample intercorrelations appear in upper right triangle. Navy sample intercorrelations appear in lower left triangle.

Significance levels: Army |.09| p<.05, |.12| p<.01; Navy |.17| p <.05, |.23| p<.01 (two sides).

nonzero are significantly different from zero in the predicted direction. The second test of the model concerns whether or not the structural parameters hypothesized to be zero exhibit any significant influences.

The functional equations of the model must be overidentified in order to conduct the latter test (James et al., 1982; Pedhazur, 1982). That is, formal tests of the hypothesized structural parameters for each endogenous variable predicted in a recursive model with manifest variables may only be conducted if at least one path between the exogenous variables (i.e., the variables which precede the endogenous variable in the model) and the endogenous variable is hypothesized to be zero (Kenny, 1979). Inspection of Figure 3 and Table 11 indicates each functional equation of the model is overidentified.

Ordinary least squares regression analysis and omitted parameters tests are normally applied to each functional equation in the model to test conditions 9 and 10 (James et al., 1982). However, that strategy evaluates each functional equation independently. A greater concern is the evaluation of the goodness of fit of the entire model to the observed correlations.

Specht (1975) proposed the use of a generalized multiple correlation coefficient (Q) for assessing the overall fit of a hypothesized model. The Q test compares

the total potential variance of the overidentified endogenous variables predicted in the model (i.e. the saturated model) to the variance in the endogenous variables accounted for by the predicted paths (Pedhazur, 1982; Specht, 1975). The Q value may vary from 0.0 to 1.0. As Q approaches 1.0 the fit between the hypothesized model and the observed correlations becomes maximal. For large samples, the Q statistic can be tested for statistical significance with an approximate Chi-square distribution and d degrees of freedom (where d= the number of model paths hypothesized to be zero; see Pedhazur, 1982, pp. 617-620, and Specht, 1975 for further details and computational formulas).

Table 13 presents the results of the OLS estimates of the hypothesized structural parameters with the Army sample. Only 50% (17 of 34) hypothesized paths received empirical confirmation ($p < .05$) for both the model which contained self ratings of performance, and the model which contained supervisor performance ratings. One of the significant paths (pxllxl) between organizational formalization and the VIE composite was in the direction opposite to that hypothesized. The Q values and the model goodness of fit tests were .514 ($\chi^2(23)= 288.011$, $p < .001$) and .466 ($\chi^2(23)= 331.077$, $p < .001$) for the self rated performance and supervisor rated performance models, respectively.

Page 88

Table 13

Estimated Structural Parameters for Hypothesized

Army ROTC Cadets Causal Models

Exogenous Variables	VIE x11	OC x12	SAT x13	ITR x14	Performance Self	Supr
1. (x1) LSp1	−16**					
2 (x2) LSp2			Ø9*			
3 (x3) LSp3	Ø1				Ø7	Ø5
4. (x4) LSp4		11**	−Ø2	13**		
5. (x5) LSp5	29**	32**	38**	Ø3	11	Ø9
6. (x6) LSp6		−14**	−12**		−24**	−26**
7. (x7) LSp7	Ø4		−Ø1	−Ø2	Ø4	16**
8. (x8) LSp8		−Ø7*	−Ø4	Ø3		
9. (x9) LSp9	24	22**			Ø9	−Ø8
1Ø. (x1Ø) LSp1Ø	−Ø7	−11**	−22**		−Ø5	−1Ø
11. (x11) VIE					Ø6	Ø5
12. (x12) OC				57**	−Ø3	Ø8
13. (x13) SAT				−Ø9		
14. (x14) ITR					16**	Ø1
F − Value	26.51**	44.94**	31.54**	31.72**	9.36**	8.56**
R^2	.27	.38	.34	.31	.17	.17

Note. Decimals are eliminated from upper table entries.

N=456. *p<.Ø5. **p<.Ø1.

Normally the results above would be considered as disconfirmatory evidence of the hypothesized models. However, Bentler and Bonett (1980) and Joreskog (1978) have warned against strict adherence to the Chi-square significance test because it is very powerful with large sample sizes and will reject virtually any model. Schmitt and Bedeian (1982) have suggested that a χ^2/df ratio of 5:1 or 10:1 represents a reasonable criterion for the fit of a hypothesized model. Both of the present hypothesized models fail to satisfy even this more liberal criterion (self= 12.5:1; supervisor= 14.4:1).

Revision of Army Models

The abundance of nonsignificant paths and the rejection of the goodness of-fit-tests indicates clearly that the hypothesized models require revision. A two stage procedure was used to revise the models. First, nonsignificant paths were trimmed (i.e., deleted) from the hypothesized functional equations. Second, an omitted parameters test was conducted on the resulting equations to identify any remaining significant influences on each endogenous variable (see Note 4 for further details). It must be emphasized that the model revision represents an exploratory, and not a confirmatory analysis.

The revised functional equations and structural parameters are presented in Table 14. The revised model which contains self ratings of performance is presented in

Table 14

Revised Structural Parameters for Army

ROTC Cadets Causal Models

| | | Endogenous Variables | | | | | |
Exogenous Variables	VIE x11	OC x12	SAT x13	ITR x14	Performance Self	Supr
1. (x1) LSp1	-09**	-09*			-16**	-22**
2. (x2) LSp2	11**		08*			
3. (x3) LSp3			-07*	11**		11*
4. (x4) LSp4	17**	10**		12**		-24*
5. (x5) LSp5	26**	31**	37**			
6. (x6) LSp6		-12**	-08*		-18**	-21**
7. (x7) LSp7						17**
8. (x8) LSp8		-07*				
9. (x9) LSp9	27**	22**	27**			
10. (x10) LSp10		-12**	-13**			-14**
11. (x11) VIE				-14**		
12. (x12) OC				59**		11*
13. (x13) SAT					20**	
14. (x14) ITR					12*	
F - Value	38.37**	39.41**	50.91**	51.46**	23.82**	16.43**
R^2	.31	.39	.41	.33	.19	.22

Note. Decimals are eliminated from upper table entries.

N=456. *$p<.05$. **$p<.01$.

Figure 4

Revised Causal Model of Self Rated Performance

Based on the Army Sample
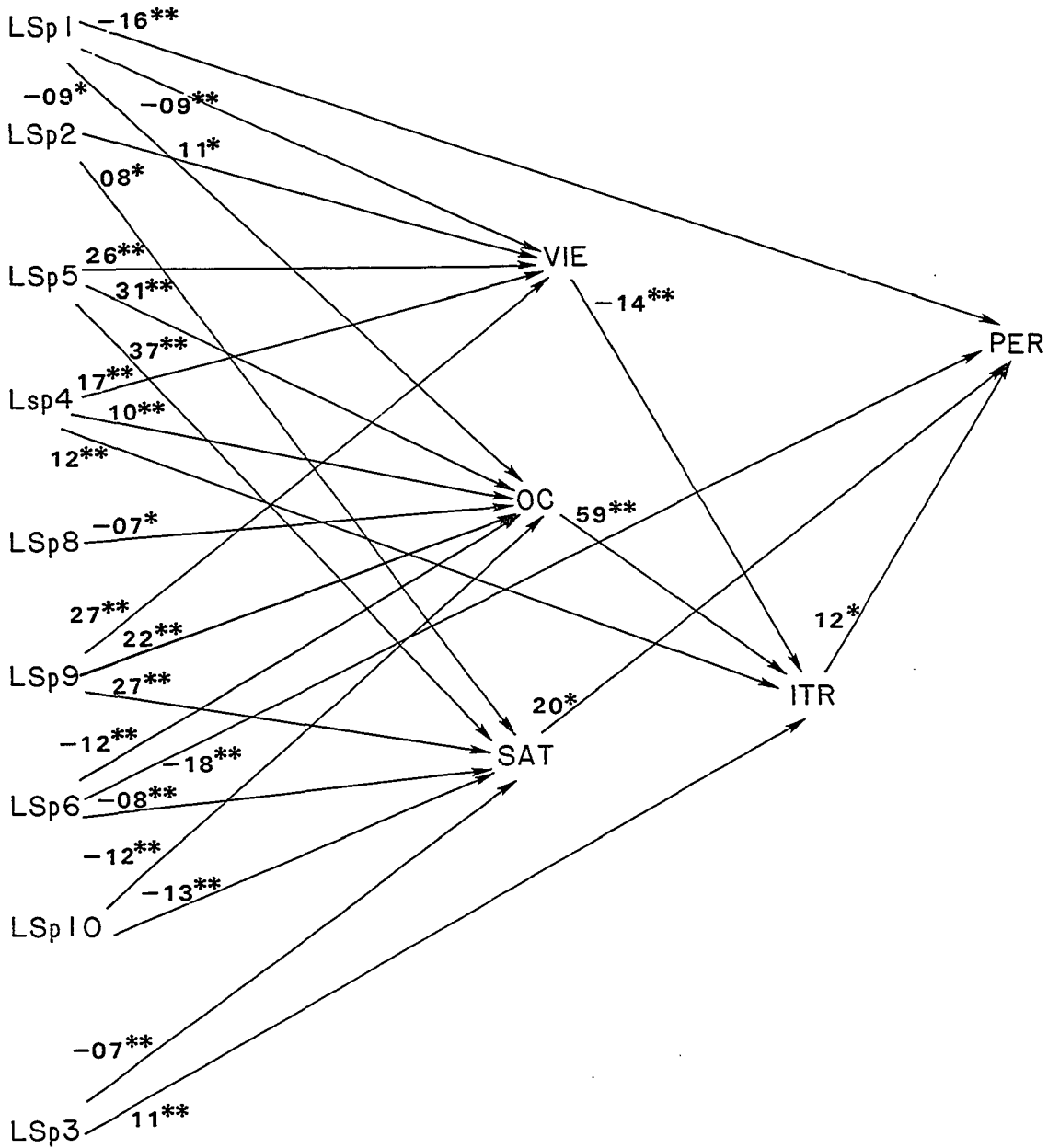
Figure 4. The $\underline{Q}$ value for the revised self rated performance model was .826 ($\chi^2(31)= 80.993$, $\underline{p}<.001$). Although the Chi-square test rejects the revised model, the $\underline{Q}$ value and the χ^2/df criterion (2.6:1) indicated a rather good fit between the observed correlations and the revised model (see Note 5). It should be reemphasized that the test of the revised model is <u>not</u> a confirmatory analysis, rather, it merely suggests that the revised model adequately represents the observed correlations. More importantly, the $\underline{Q}$ test may be used to assess the significance of the difference between two competing overidentified models (Specht, 1975). The revised self rated performance model accounts for significantly more variance ($\chi^2(8)= 91.698$, $\underline{p}<.001$; 11.5:1 ratio) than the hypothesized model (see Note 6).

The functional equation predicting supervisor rated performance was also revised in the fashion described earlier and the revised model is presented in Figure 5. The $\underline{Q}$ value for the revised model was .831 ($\chi^2(27)= 79.458$, $\underline{p}<.001$; 2.94:1 ratio) and was considered to indicate a good fit with the data. The revised supervisor rated model also represents a significant ($\chi^2(4)= 83.717$, $\underline{p}<.001$; 20.9:1 ratio) improvement over the hypothesized model.

Figure 5

Revised Causal Model of Supervisor Rated

Performance Based on the Army Sample
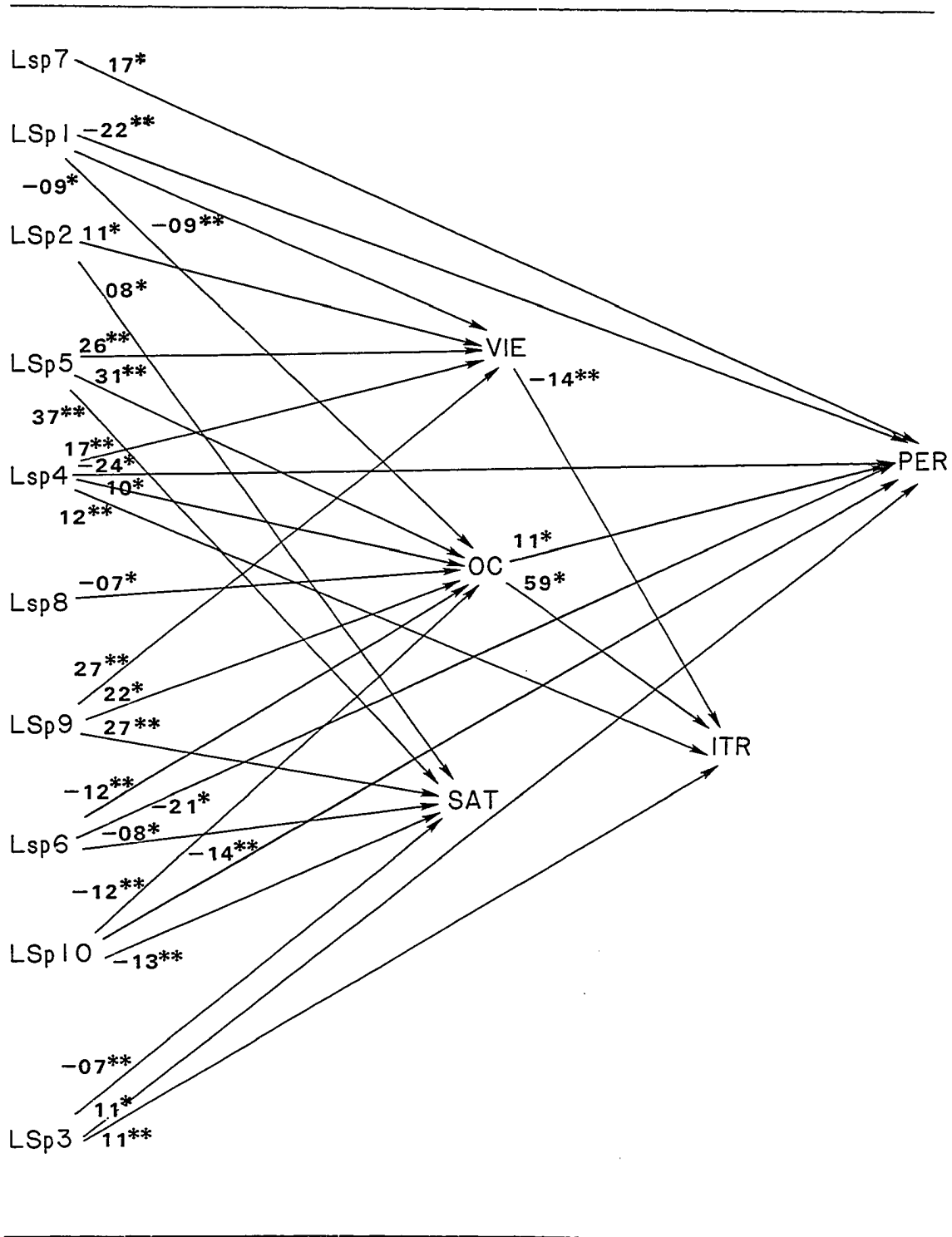
Table 15

Estimated Structural Parameters for Revised Army

Models with Navy Sample

Exogenous Variables		VIE x11	OC x12	SAT x13	ITR x14	Performance Self	Supr
1.	(x1) LSp1	59*	17			-18**	-23
2.	(x2) LSp2	-Ø5		-11*			
3.	(x3) LSp3			-18	-16		-14
4.	(x4) LSp4	-12	ØØ		-16		-Ø7
5.	(x5) LSp5	39**	46**	23**			
6.	(x6) LSp6		-Ø4	-22		17*	37*
7.	(x7) LSp7						-18
8.	(x8) LSp8		-Ø4				
9.	(x9) LSp9	18**	28**	28**			
1Ø.	(x1Ø) LSp1Ø		-Ø7	-Ø7			-Ø1
11.	(x11) VIE				Ø5		
12.	(x12) OC				58**		29**
13.	(x13) SAT					27**	
14.	(x14) ITR					24*	
F - Value		7.87**	12.56**	11.28**	17.99**	8.56**	2.93**
R^2		.24	.41	.35	.36	.21	.16

Note. Decimals are eliminated from upper table entries.

N=132. *$p < .\emptyset 5$. **$p < .\emptyset 1$.

Navy Model Tests

The generalizability of the revised Army model was tested with the Navy sample. The estimated structural parameters for the functional equations are presented in Table 15. Significant effects were found for 46% (12 of 26) of the paths for the self rated performance model and 34% (10 of 29) of the paths for the supervisor rated performance model. It should be noted that the Navy sample was 29% as large as the the Army sample, which could account for the reduction in statistical significance levels. Two paths reversed direction between the Army and Navy models: (pxllxl) organizational formalization-VIE (from negative to positive as hypothesized); and (pylx6) alienation-performance in both the self and supervisor rated performance models (from negative to positive, contrary to the hypothesized direction).

The Q values for the models were .421 ($\chi^2(31)=$ 87.354, $p<.001$; 2.82:1 ratio) for the self rated performance model, and .602 ($\chi^2(27)=$ 53.363, $p<.001$; 1.98:1 ratio) for the supervisor rated performance model. The Chi-square significance tests should again be interpreted with caution, but for the opposite reason as before. Since the Chi-square statistic is a direct function of sample size, the probability of rejecting any model decreases as N decreases (Bentler & Bonett, 1980).

The magnitudes of the $\underline{Q}$ values indicate less than ideal fits between the revised models and the observed correlations with the Navy sample. A summary of the causal model tests for the hypothesized and Army sample revised models is presented in Table 16.

Bentler and Bonett (1980) suggested that the Chi-square test is most useful for comparing the fit between competing models. Accordingly, the relative fits between the structural parameters of the originally hypothesized model (Figure 3) and the structural parameters of the revised models from the Army sample (Figures 4 and 5) were tested with the Navy sample. The test between the two models using self rated performance was nonsignificant ($\chi^2(8)= 12.000$, $\underline{p}>.10$). The Army revised model predicting supervisor rated performance reproduced the observed correlations in the Navy sample significantly better than the originally hypothesized model ($\chi^2(4)= 43.18$, $\underline{p}<.001$).

The comparisons between the relative fits of the models indicate that the original model and the Army revised model are equally plausible representations of the processes which account for self rated performance, and that the revised model provides a better representation of the processes related to supervisor rated performance with Navy cadets. A question that remains is whether or not the best fitting model has been obtained for each form of

Table 16

Summary of the Causal Model Tests for Hypothesized

and Army Sample Revised Models

Causal Models and Samples	Percentage of Significant Paths	$\underline{Q}$	χ^2	χ^2/df
Hypothesized Model				
1. Army (self)	50%	.514	288.01 ***	12.5:1
2. Army (supervisor)	50%	.466	331.08 ***	14.4:1
3. Navy (self)	20%	.464	83.81 ***	3.1:1
4. Navy (supervisor)	23%	.429	92.17 ***	4.0:1
Army Sample Revised Models				
1. Army (self)	100%	.826	80.99 ***	2.6:1
2. Army (supervisor)	100%	.831	79.46 **	2.9:1
3. Navy (self)	46%	.421	87.35 ***	2.8:1
4. Navy (supervisor)	34%	.602	53.36 ***	2.0:1

Note. Army N= 456. Navy N= 132.

** $p<.01$. *** $p<.001$.

performance ratings for Navy cadets.

The two Navy models were revised using the two stage procedure described earlier in order to establish the best fitting model for the Navy sample from the observed correlations. The functional equations and structural parameters for the Navy revised models are presented in Table 17. The revised Navy model for supervisor rated performance obtained a $\underline{Q}$ value of .501 ($\chi^2(44)=$ 60.769, $\underline{p}<.05$; 1.38:1 ratio), but did not differ significantly from the Army revised model ($\chi^2(17)=$ 20.96, $\underline{p}>.05$), nor the originally hypothesized model ($\chi^2(21)=$ 17.208, $\underline{p}>.05$).

Figure 6 presents the Navy revised model for self rated performance which exhibited a $\underline{Q}$ value of .528 ($\chi^2(42)=$ 57.457, $\underline{p}<.05$, 1.37:1 ratio) which represents a reasonable fit as compared to the saturated model. The Navy revised model fit the data significantly better than the Army revised model ($\chi^2(11)=$ 27.50, $\underline{p}<.001$), but was not significantly better than the originally hypothesized model ($\chi^2(19)=$ 14.748, $\underline{p}>.05$). These results suggest that the originally hypothesized model, and the two revised models reproduce the observed correlations for supervisor rated performance in the the Navy sample equally well. Alternatively, the model revised on the Navy sample and the originally hypothesized model fit the Navy data equally well and better than the model revised on the Army sample for the self rated performance model.

Table 17

Revised Structural Parameters for Navy

ROTC Cadets Causal Models

		Endogenous Variables					
Exogenous	VIE	OC	SAT	ITR	Performance	
Variables	x11	x12	x13	x14	Self	Supr
1. (x1) LSp1	60*					
2. (x2) LSp2						
3. (x3) LSp3			−47*			
4. (x4) LSp4						
5. (x5) LSp5	35**	47**	28**		31**	
6. (x6) LSp6					21*	24**
7. (x7) LSp7				−17**		
8. (x8) LSp8						
9. (x9) LSp9	17**	26**	26**	15**		
10. (x10) LSp10						
11. (x11) VIE						
12. (x12) OC				43**		29**
13. (x13) SAT					21*	
14. (x14) ITR					20*	
F − Value	12.86**	43.83**	21.69**	31.12**	11.16**	7.93*
R^2	.23	.40	.34	.42	.26	.12

Note. Decimals are eliminated from upper table entries.

N=132. *$p < .05$. **$p < .01$.

Figure 6

Revised Causal Model of Self Rated Performance Based on the Navy Sample
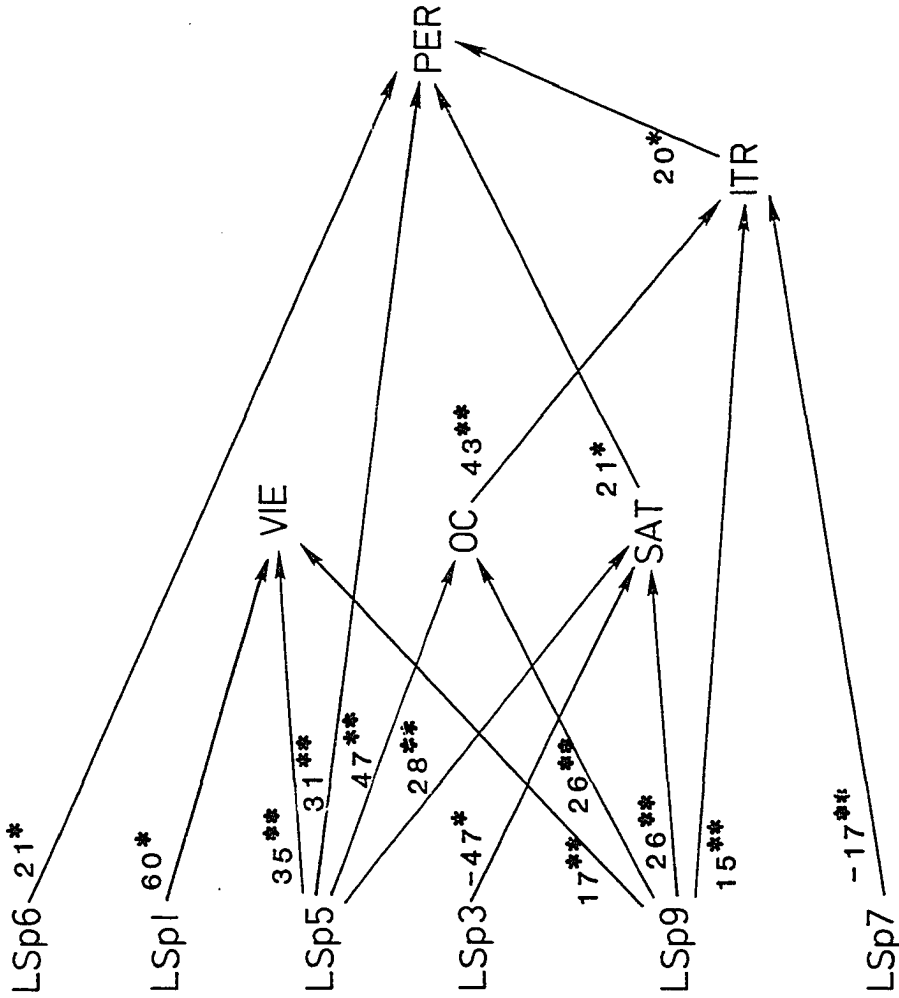
Interpretation of Causal Models

The results of the tests of the causal models predicting self and supervisor ratings of performance offer little support for the originally hypothesized model. Analyses with the Army sample provided guidance for the revision of the hypothesized model and evidence that the influences on self rated performance differed from the influences on supervisor rated performance.

The use of two samples permitted an empirical test of the generalizability of the revised causal model. The revised model predicting supervisor rated performance presented in Figure 5 was found to hold reasonably well with the Navy sample. Tests with the Navy sample found the model revised on the basis of the Army sample was superior to the originally hypothesized model. Attempts to revise the model on the basis of the observed correlations in the Navy sample failed to indicate a superior model to exist.

Inspection of the magnitude of effects presented in Tables 14 and 15 indicates that the lower percentage of statistically significant paths in the Navy sample is more attributable to less statistical power than to lower degrees of relationship. However, several other important differences between the Army and Navy samples should not be overlooked. For instance, the Army samples included cadets from all four years in the program while the Navy

samples had only cadets in the first three years. Further, the Navy ROTC detachments were established recently, whereas the Army detachments had existed for quite some time. The nature of the performance criteria measures used by the Army and Navy also differ substantially. Nonetheless, several differences between the Army and the Navy supervisor rated performance models are worthy of elaboration.

The relationship between (py1x6) alienation and supervisor rated performance was negative (-.21) in the Army sample and positive (.37) in the Navy sample. The positive paths from (py1x3) team performance orientation (.11) and from (py1x7) inequitable rewards (.17) to supervisor rated performance in the Army sample were negative in the Navy sample (-.14 and -.18 respectively). The most consistent relationships were the negative influence of (py1x1) organizational formalization (Army= -.22; Navy= -.23) and the positive influence of (py1x12) organizational commitment (Army= .11; Navy= .29) on performance.

The Army revised self rated performance model paths were statistically significant in the Navy sample. However, the effect of (py1x6) alienation on performance reversed direction from negative (-.18) in the Army sample to positive (.17) in the Navy sample. Revision on the basis of the observed correlations in the Navy sample

suggested the replacement of the path from (py1x1) organizational formalization with one from (py1x5) friendly and enriched training. Satisfaction and intention to remain were found to be positive influences on self rated performance in both samples.

Further inspection of the results presented in Tables 14 and 15 reveals two general patterns to exist. First, the friendly and enriched training LSp and the individual performance orientation LSp had positive influences on VIE motivation, organizational commitment, and satisfaction. These relationships were consistent and statistically significant in both subpopulations. The second general pattern was the negative influences of the team performance orientation LSp and the peer relations LSp on affective responses, intention to remain, and performance with Navy cadets. The negative relationship between (py1x4) peer relations and supervisor rated performance, and between (px13x3) team performance orientation and satisfaction were consistent with the Army sample. However, the remaining influences of the two LSp dimensions were positive in the Army sample.

In sum, there were several similarities and distinctions between the two subpopulations. In terms of similarities, the LSp dimensions of friendly and enriched training, and individual performance orientation exert positive influences on affective responses in both

samples. Both Army and Navy supervisors rated cadets with high peer relations as lower performers. Organizational commitment related positively to supervisor rated performance while organizational formalization was a negative influence on both self and supervisor rated performance. The negative influence of organizational formalization is most likely attributable to the fact that inexperienced Basic course cadets' training is the most formalized. It is natural to expect their performance to be lower than more experienced Advanced course cadets. Therefore, the present findings regarding organizational formalization are less likely to be generalizable beyond the ROTC context. Organizational commitment was also found to relate in a consistent positive fashion to intention to remain. Intention to remain and satisfaction were positive influences on self rated performance in both subpopulations. VIE motivation had no influence on performance in either subpopulations.

One of the primary distinctions between the two subpopulations involved the influence of peer relations on affective responses, and the influence of alienation on performance. These differences seem to underscore a fundamental difference between Army and Navy ROTC training. Army ROTC appears to be more team oriented whereas Navy ROTC seems to be more individual oriented. A negative relationship (px13x3) between team performance orientation and satisfaction existed in both

subpopulations. This is perhaps most attributable to the greater pressure experienced by third and fourth year cadets who loaded highly on this dimension. The peer relations LSp dimension enhanced Army but not Navy cadets' affective responses and intention to remain.

The findings regarding alienation (LSp6) are understood best by reexamining the composition of this LSp dimension. Recall that earlier alienation was found in the third year of training, and veteran status exhibited a positive loading. One interpretation for the negative influence of alienation on performance in the Army sample, and the reverse relationship in the Navy sample, is that veterans' performance is rated higher than nonveterans' performance in Navy ROTC detachments but not in Army ROTC detachments.

Examination of the rated performance levels for veterans and nonveterans in each subpoplation supported this interpretation. Veteran Navy cadets' performance was significantly higher than nonveterans' using self ratings ($t(128) = 3.29$, $p < .001$) and supervisor ratings ($t(128) = 3.82$, $p < .001$). No significant difference was found between veteran and nonveteran Army cadets' performance using self ($t(454) = .45$, $p > .05$) or supervisor ($t(454) = .30$, $p > .05$) ratings. Therefore the nature of alienation may be one of detachment in the Army subpopulation and one of perceived superiority in the Navy subpopulation. That

is, Army cadets may become alienated from ROTC because
they perceive that they do not fit in because "they do not
have what it takes", whereas Navy cadets may become
alienated from ROTC because they perceive that they do not
fit in because "they already have what it takes".

Other differences between the two subpopulations
could be elaborated. However, some generalizations do
seem warranted from the present findings. First, the
supervisor rated performance model revised on the basis of
the Army sample (Figure 5) presents a plausible model for
ROTC cadets' performance. Caution should be exercised
when drawing inferences regarding the specific
relationships involving the LSp dimensions of
organizational formalization, peer relations, and
aleination, since, they differ across the two populations.

The findings involving self rated performance are
less generalizable across the two subpopulations. The
models revised on the basis of the Army (Figure 4) and
Navy (Figure 6) samples differ substantially. Each
revised model fits its respective subpopulation better
than the alternative which indicates the existence of
sample specific influences on self rated performance.
Further research will be needed in order to clarify the
reasons for this discrepancy.

CHAPTER 4

Discussion

The purpose of this study was to develop an integrative theoretical approach to the study of individual behavior in organizations, and to present an application of the approach to understanding the behavior of ROTC cadets. A Lewinian framework was adopted which proposed that behavior (B) is a function (f) of life space dimensions (LSp), i.e., $B=f(LSp)$. LSp dimensions were proposed to result from the simultaneous influence of individual needs and characteristics, and objective situational characteristics, on perceptions of the environment. Additionally, perceptions of the environment were proposed to exist at three levels of analysis: 1) psychological climate (i.e., individual); 2) group climate; and 3) organizational climate. Affective responses in the forms of motivation, organizational commitment, and satisfaction, and intention to remain in the organization were considered as intervening variables in a causal model which linked LSp dimensions with behavior.

The results showed that group and organizational climate measures could be reliably identified at aggregate levels of analysis. A cross-level theory was applied which associated individual needs and characteristics and objective situational characteristics with climate

perceptions operationalized at the three levels of analysis. Ten LSp dimensions were identified and used as exogenous variables in a causal model of ROTC cadets' affective responses, intention to remain, and performance.

Two causal models were tested with the Army subpopulation. One contained self ratings of performance, the other contained supervisor ratings of performance. The results offered little support for the hypothesized model. The two causal models were revised on the basis of the observed correlations among variables in the Army sample. The revised models were tested with the Navy subpopulation which indicated a reasonable fit for the Army revised model of supervisor rated performance, yet not for the self rated performance model. Several of the causal paths in the supervisor rated performance model were found to reverse direction between the two subpopulations.

This study does provide four general conclusions regarding the processes related to affective responses and behavior in ROTC populations. First, cadets with an individual performance orientation respond positively to ROTC training in the form of higher VIE motivation, organizational commitment, and satisfaction. Cadets with an individual performance orientation perceive their training as challenging and rewarding, yet not as overloading. They perceive feedback to exist and their

role in ROTC to be clear. This finding, combined with the fact that scholarship awards had a negative influence on cadets' individual performance orientation generates several suggestions for the recruitment and selection of new cadets. First, efforts should be directed toward identifying and attracting individuals with high personal needs for achievement and dominance. The use of financial incentives is not likely to enhance, and my even hinder, such an effort. Alternatively, selection tests and work samples could be designed to distinguish those individuals who possess the personality orientation described above. This combination of personality needs has also been found to be associated with leader effectiveness in more traditional work settings (Andrews, 1967; McClelland, 1976). The use of realistic job previews could be added to the selection process in order to permit individuals to "self-select" themselves in to, or out of, ROTC. To the extent that recruitment is based solely, or primarily, on the financial renumeration available from ROTC participation, the Army and Navy can anticipate shorter enlistment terms from ROTC officers (Korman, Glickman, & Frey, 1981).

The second general conclusion regarding the ROTC organizations is that the perception of a friendly and enriched training environment leads to positive affective responses. To the extent that ROTC training provides for opportunities to deal with others and to develop

friendships, presents challenge and feedback in a variety of clearly defined situations, cadets' respond positively. The pattern of personality needs which describes cadets who respond best to this design is one of high needs for dominance, achievement, and affiliation.

The job redesign interventions proposed by the Job Characteristics Model theorists (e.g., Hackman & Lawler, 1971) appear to offer one avenue for improving ROTC training. The present study did not employ objective measures of the task dimensions involved in ROTC training. Thus, the origin of the task dimension perceptions cannot be identified unequivocally. Additional research is needed to clarify whether this finding is attributable to the actual aspects of ROTC training, or to social forces which act to shape cadets' perceptions (Griffin, 1983). Following this initial diagnostic step, the optimal strategy for developmental interventions should become evident.

A third general conclusion to be drawn is that the development of organizational commitment offers the greatest potential for enhancing the performance and intention to remain among ROTC cadets. The positive influence of commitment on intention to remain was the strongest relationship between variables observed in both subpopulations in this study. This relationship was

hypothesized and replicates findings from numerous previous studies (Mowday et al., 1982).

The observed positive influence of commitment on supervisor rated performance has received less support in previous research (Porter et al., 1976; Steers, 1977). The present finding was hypothesized and is believed to stem from the fact that commitment (i.e., dedication) is a highly valued attribute in a military officer. However, the generalizability of this particular finding to other populations requires further research.

The only two antecedents of commitment that generalized across the two subpopulations in this study were the positive influence of a friendly and enriched training environment, and an individual performance orientation. The results from the Army sample suggest that commitment may be increased by heightened peer relationships and lower: alienation, frustration, individualism, and organizational formalization. Since organizational formalization existed mostly in the first two years of ROTC training, the last relationship might alternatively be interpreted as a positive influence of seniority (Mowday et al., 1982). Clarification of this issue awaits not only additional research, but longitudinal studies designed to disentangle the antecedents of commitment over time.

The final general conclusion to be drawn from the present results is that satisfaction and intention to remain relate to self ratings of performance positively in both subpopulations. The relationship between satisfaction and performance is, perhaps, the most widely debated issue in applied psychology and dates back to the Hawthorne studies (Roethlisberger & Dickson, 1939). The question of whether satisfaction causes performance or vice versa has yet to be resolved unequivocally. Thus, the present specification of satisfaction as an antecedent of performance is somewhat suspect.

The theory developed here and Fishbein and Ajzen's theory of reasoned action states explicitly that attitudes precede behavior. However, it is not clear whether self rated performance represents an accurate measure of actual performance, or an attribution of performance (Heider, 1958; Schneider et al., 1979). To the extent that self rated performance reflects attributional processes, cognitive consistency biases will exist and the causal ordering depicted in Figures 4 and 6 becomes questionable. A viable alternative model might predict a simultaneous reciprocal relationship between satisfaction and self rated performance. Naturally, the same arguments would apply to the obtained influence of intention to remain on self rated performance. The causal ordering of effects depicted in Figure 2 can be supported on theoretical grounds for the use of supervisor performance ratings, but

its validity with self rated performance awaits tests of the direction(s) of causation in longitudinal studies. Such tests can compare models predicting simultaneous reciprocal causation with cyclical recursive models directly (James et al., 1982, p. 43).

Some additional, more general, conclusions seem warranted from this study. First, several relationships were noteworthy by their absence. While the zero order VIE motivation-performance correlations were in the range of the magnitudes observed in previous reviews (Mitchell, 1974; Schwab et al., 1979), no significant paths from VIE to performance were found in the causal models. This finding may have resulted from the relatively high correlations between the VIE composite and organizational commitment in both populations (Army $r=.499$, $p<.001$; Navy $r=.456$, $p<.001$).

In general, group and organizational constructs had less influence on cadets' affective responses, intention to remain, and performance than did individual centered constructs. The two LSp dimensions which exhibited the greatest effects (i.e., friendly and enriched training, and individual performance orientation) were defined almost entirely by individual needs and characteristics, and by psychological climate perceptions. Undoubtably, the influence of objective group and organizational variables, and the influence of group and organizational

climate perceptions would have been greater had aggregate criterion variables (e.g., unit performance) been employed.

In general, the present attempt to operationalize Lewin's B=f(P,E) formulation produced mixed results. The method developed to identify the dimensions of life space as an interdependent interaction of person and environmental influences that produced support for the hypotheses, is unique to this study, and represents the major contribution of this work. The causal models proposed to link LSp dimensions with behavior were supported much less by the empirical results. Several potential explanations for the latter findings were advanced, including study sample differences, noncomparable performance criteria, and model specification errors. Clearly, more work needs to be done in order to specify the function (f) which links LSp dimensions to behavior. The methodology developed here provides one avenue for future research directed toward this effort.

Study Limitations and Future Research

The population sample used in this study may limit the generalizability of these findings. ROTC is a part-time activity on campus. Full-time work organizations contain several additional influences on individuals' behavior. Variables of concern in more

traditional work settings would include salary issues, promotional opportunities, alternative job options, working conditions, shift, union presence, technology, etc. It would follow that the processes found here could be generalized most to other part-time military settings (e.g., National Guard units, Military Reserve units). The extent to which they apply to other settings awaits further investigations.

The objective measures of situational characteristics used in this study were rather crude. Berger and Cummings (1979) and Porter and Lawler (1965) discussed level of hierarchy, group size, and organizational size as measures of organizational structure. Others (e.g., James & Jones, 1976; Oldham & Hackman, 1981; Rousseau, 1978) have discussed the use of more specific dimensions of organizational structure (e.g., centralization, formalization, specialization). Future research should employ measures of the more specific aspects of the objective environment in order to identify which variables in the situation influence individuals' climate perceptions. Furthermore, these measures should be operationalized at the level of analysis which corresponds to the focal units of the climate measures used in the study. The following agenda is, therefore, proposed for future research.

Individual characteristics should be obtained from personnel records or measured directly. Relevant objective situational characteristics should be assessed by job analysis methods, group process analysis, and measures of the anatomical organizational structure (see Lawler, Nadler & Cammann, 1980 for a discussion of various assessment methods). Perceived climate measures can then be obtained by questionnaire or interview methods and related to individual and situational characteristics with the analytic techniques used here. The resulting LSp dimensions can be associated with affective responses and behavioral criteria. Naturally, it is desirable to minimize common method bias by using multiple sources of measurement. In addition, care must be exercised to maintain the appropriate focal unit (e.g., question referent) for measures of constructs at different levels of analysis. The above strategy would permit the further development of cross-level theories of the influences on individuals' behavior in organizations (Mossholder & Bedeian, 1983; Rousseau, 1985).

A comment is in order regarding the use of canonical correlation analysis and the rotation of the structure matrix to identify LSp dimensions. Canonical correlation analysis is a double maximization technique which capitalizes on any sample specific idiosyncrasies among variables. That is, it develops linear combinations of two sets of variables which are maximally correlated with

one another. Therefore, the stability of the underlying structure obtained between the two sets of variables must be examined. Rotation of the structure matrix may reduce the generalizability of the findings even further. At issue, then, is the extent to which LSp dimensions found in this study are applicable to other settings. A related issue is the fact that the structure matrix yielded by a canonical correlation analysis is very susceptible to the addition or deletion of predictor or criterion variables. Thus, two recommendations for future investigations of LSp dimensions seem evident.

First, there is a need to examine the extent to which LSp dimensions can be replicated across studies using similar populations and the same predictor and criterion variables. Applications of the canonical correlation techniques employed here and factor comparison methods with the structure matrices (Levine, 1977) would permit an empirical assessment of the stability of LSp dimensions across similar populations.

A second area for future research is the development of taxonomies of LSp dimensions. To the extent that different individual needs and characteristics (i.e., person variables) or objective situational characteristics (i.e., environmental variables) are relevant to different criteria (i.e., behaviors), it would be expected that the structure of LSp dimensions would differ from setting to

setting. A long-term goal for future research, then, becomes one of identifying which LSp dimensions are important in what types of settings. Such an endeavor will not be an easy nor a quick development. However, a taxonomic approach will bring us closer to an understanding of the interdependance of person and situation variables as related to individuals' behavior in organizations. Many theorists have called for such an integrative approach (e.g., James, 1973; James & Jones, 1976; Schneider, 1983; Weiss & Adler, 1984), yet empirical applications are wanting. The theory developed here proposes a method of studying interactional relationships. In this way it resembles field theory as discussed by Lewin (1943, p. 295):

> Field theory is probably best characterized as a method: namely, a method of analyzing causal relations and of building scientific constructs [italics in the original].

Perhaps through future applications of the techniques described here we can begin to develop representations of life space as an interdependent interaction of person and situational variables, and the development of causal models to specify the function which links life space dimensions to behavior.

References

Abdel-Halim, A. A. (1978). Employee affective responses to organizational stress: Moderating effects of job characteristics. Personnel Psychology, 31, 561-579.

Ajzen, I. & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs,NJ: Prentice-Hall.

Andrews, J. D. (1967). The achievement motive and advancement in two types of organizations. Journal of Personality and Social Psychology, 6, 163-168.

Arnold, H. J. & Feldman, D. C. (1982). A multivariate analysis of the determinates of job turnover. Journal of Applied Psychology, 67, 350-360.

Arnold, H. J. & House, R. J. (1980). Methodological and substantive extensions to the job characteristics model. Organizational Behavior and Human Performance, 25, 161-183.

Arvey, R. D. (1972). Task performance as a function of perceived effort-performance and perceived performance-reward contingencies. Organizational Behavior and Human Performance, 8, 423-433.

Bentler, P. M. & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. Psychological Bulletin, 88, 588-606.

Berger, J. & Cummings, L. L. (1979). Organizational structure, attitudes, and behaviors. In B. M. Staw

(Ed.). Research in Organizational Behavior., 1, 1699-208.

Brief, A. P. & Aldag, R. J. (1978). The job characteristics inventory: An examination. Academy of Management Journal, 21, 659-670.

Brunswik, E. (1943). Organismic achievement and environmental probability. Psychological Review, 50, 255-272.

Buchanan, B. (1974). Building organizational commitment: The socialization of managers in work organizations. Adminstrative Science Quarterly, 19, 533-546.

Campbell, J. P. & Pritchard, R. D. (1976). Motivation theory in industrial and organizational psychology. In M. D. Dunnette (Ed.). Handbook of industrial and organizational psychology. Chicago: Rand McNally.

Card, J. J. (1978). Career commitment processes in the young adult years: An illustration from the ROTC/ARMY career path. Journal of Vocational Behavior, 12, 53-75.

Cohen, J. & Cohen, P. (1975). Applied multiple regression/correlation analysis for the behavioral sciences. New Jersey: Lawrence Erlbaum Associates.

Cook, T. D. & Campbell, D. T. (1979). Quasi-experimentation: Design and analysis issues for field settings. Boston: Houghton Mifflin.

Cooley, W. W. & Lohnes, P. R. (1971). Multivariate data analysis. New York: Wiley.

Cronbach, L. J. (1970). Essentials of psychological testing. (3rd Ed.). New York: Harper & Row.

Cummings, L. L. (1982). Organizational behavior. Annual Review of Psychology, 33, 541-579.

Darlington, R. B., Weinberg, S. L. & Walberg, H.J. (1973). Canonical variate analysis and related techniques. Review of Educational Research, 43, 433-454.

Dreher, G. F. (1982). The role of performance in the turnover process. Academy of Management Journal, 25, 137-147.

Dreher, G. F. & Mai-Dalton, R. R. (1983). A note on the internal consistency of the Manifest Needs Questionnaire. Journal of Applied Psychology, 68, 194-196.

Duncan, O. D. (1975). Introduction to structural equation models. New York: Academic Press.

Feather, N. T. (1982). Expectations and actions: Expectancy-value models in psychology. Hillsdale, NJ: Lawrence Erlbaum.

Felson, M. (1974). Standardization of scales in social science research: Breaking the routine. Social Science Research, 3, 261-265.

Ferris, G. R. & Aranya, N. (1983). A comparison of two organizational commitment scales. Personnel Psychology, 36, 87-98.

Fiedler, F. E. (1967). A theory of leader

effectiveness. New York: McGraw-Hill.

Fishbein, M. & Ajzen, I. (1975). Belief, attitude, intention and behavior: An introduction to theory and research. Reading, Mass.: Addison-Wesley.

Gavin, J. F. & Howe, J. G. (1975). Psychological climate: Some theoretical and empirical comsiderations. Behavioral Science, 20, 228-240.

Gorsuch, R. L. (1983). Factor analysis. (2nd Ed.), Hillsdale, NJ: Lawrence Erlbaum.

Graen, G. (1976). Role making processes within complex organizations. In M. D. Dunnette (Ed.), Handbook of industrial and organizational psychology, Chicago: Rand McNally & Company.

Griffin, R. W. (1983). Objective and social sources of information in task redesign: A field experiment. Administrative Science Quarterly, 28, 184-200.

Griffin, R. W., Moorhead, G., Johnson, B. H. & Chonko, L. B. (1980). The empirical dimensionality of the job characteristic inventory. Academy of Management Journal, 23, 772-777.

Guion, R. M. (1973). A note on organizational climate. Organizational Behavior and Human Performance, 9, 120-125.

Hackman, J. R. (1976). Group influences on individuals. In M. D. Dunnette (Ed.). Handbook of industrial and organizational psychology. Chicago: Rand McNally.

Hackman, J. R. & Lawler, E. E. (1971). Employee

reactions to job characteristics. Journal of Applied
Psychology, 55, 259-286.

Hackman, J. R. & Morris, C. G. (1975). Group tasks,
group interaction process, and group performance
effectiveness: A review and proposed integration. In
L. Berkowitz (Ed.), Advances in experimental social
psychology. New York: Academic Press.

Hargens, L. L. (1976). A note on standardized
coefficients as structural parameters. Sociological
Methods & Research, 5, 247-256.

Heider, F. (1958). The psychology of interpersonal
relations. New York: Wiley.

Heise, D. R. (1975). Causal analysis. New York:
Wiley.

Heise, D. R. & Bohrnstedt, G. W. (1971). Validity,
invalidity, and reliability. In E. F. Borgatta (Ed.)
Sociological Methodology. San Francisco: Jossey-Bass.

Herman, J. B., Dunham, R. B. & Hulin, C. L. (1975).
Organizational structure, demographic characteristics,
and employee responses. Organizational Behavior and
Human Performance, 13, 206-232.

Herman, J. B. & Hulin, C. L. (1972). Studing
organizational attitudes from individual and
organizational frames of reference. Organizational
Behavior and Human Performance, 8, 84 - 108.

Hom, P. W. & Hulin, C. L. (1981). A competitive test
of the prediction of reenlistment by several models.

Journal *of* *Applied* *Psychology*, 66, 23-39.

Hom, P. W., Katerberg, R. & Hulin, C. L. (1979).
Comparative examination of three approaches to the
prediction of turnover. *Journal* *of* *Applied* *Psychology*,
64, 280-290.

Horn, J. L. (1965). An empirical comparison of methods
for estimating factor scores. *Educational* *and*
Psychological *Measurement*, 25, 313-322.

Hotchkiss, L. (1976). A technique for comparing path
models between subgroups: Standardized path-regression
coefficients. *Sociological* *Methods* & *Research*, 5,
53-76.

House, R. J. (1971). A path-goal theory of leader
effectiveness. *Administrative* *Science* *Quarterly*, 16,
321-338.

House, R. J. & Dessler, G. (1974). The path-goal
theory of leadership: Some post hoc and a priori
tests. In J. G. Hunt & L. L. Larson (Eds.).
Contingency *approaches* *to* *leadership*. Southern Ilinois
University Press, Carbondale, Il.

House, R. J., Schuler, R. S. & Levanoni, E. (1983).
Role conflict and ambiguity scales: Reality or
artifacts? *Journal* *of* *Applied* *Psychology*, 68, 334-337.

Howe, J. G. (1977). Group climate: An exploratory
analysis of construct validity. *Organizational*
Behavior *and* *Human* *Performance*, 19, 106-125.

James, L. R. (1973). Criterion models and construct

validity for criteria. Psychological Bulletin, 8Ø, 75-83.

James, L. R. (198Ø). The unmeasured variables problem in path-analysis. Journal of Applied Psychology, 65, 415-421.

James, L. R. (1982). Aggregation bias in estimates of perceptual agreement. Journal of Applied Psychology, 67, 219-229.

James, L. R., Gent, M. J, Hater, J. J. & Coray, K. E. (1979). Correlates of psychological influence: An illustration of the psychological climate approach to work environment perception. Personnel Psychology, 32, 563 - 588.

James, L. R., Hartman, A., Stebbins, M. W. & Jones, A. P. (1977). Relationships between psychological climate and a VIE model of work motivation. Personnel Psychology, 3Ø, 229-254.

James, L. R., Hater, J. J., Gent, M. J., and Bruni, J. R. Psychological climate: Implications from cognitive social learning theory and interactional psychology. (1978). Personnel Psychology, 31, 781-813.

James, L. R. & Jones, A. P. (1974). Organizational climate: A review of theory and research. Psychological Bulletin, 81, 1Ø96-1112.

James, L. R. & Jones, A. P. (1976). Organizational structure: A review of structural dimensions and their conceptual relationships with individual attitudes and

behavior. Organizational Behavior and Human Performance, 16, 74-113.

James, L. R. & Jones, A. P. (1980). Perceived job characteristics and job satisfaction: An examination of reciprocal causation. Personnel Psychology, 33, 97-135.

James, L. R., Mulaik, S. A. & Brett, J. M. (1982). Causal analysis: Assumptions, models and data. Beverly Hills, CA: Sage.

Johannesson, R. E. (1973). Some problems in the measurement of organizational climate. Organizational Behavior and Human Performance, 10, 118-144.

Joiner, C. (1982). A note on reliability coefficients of the Manifest Needs Questionnaire. Journal of Occupational Psychology, 55, 149-150.

Jones, A. P. & James, L. R. (1979). Psychological climate: Dimensions and relationships of individual and aggregated work environment perceptions. Organizational Behavior and Human Performance, 23, 201-250.

Jones, A. P., James, L. R., Bruni, J. R., Hornich, C. W. & Sells, S. B. (1975). Psychological Climate: Dimensions and Relationships. Office of Naval Research, IBR Technical Report #75-3.

Joreskog, K. G. (1978). Structural analysis of covariance and correlation matrices. Psychometrika, 43, 443-477.

Joyce, W. F. & Slocum, J. W. (1979). Climates in organizations. In S. Kerr (Ed.). Organizational behavior. Columbus, OH: Grip.

Joyce, W. F. & Slocum, J. W. (1984). Collective climate: Agreement as a basis for defining aggregate climates in organizations. Academy of Management Journal, 27, 721-742.

Kahn, R., Wolfe, D., Quinn, R., Snoek, J. & Rosenthal, R. (1964). Organizational stress: Studies in role conflict and ambiguity. New York: Wiley.

Kanungo, R. N. (1979). The concepts of alienation and involvement revisted. Psychological Bulletin, 86, 119-138.

Keller, R. T. (1984). The role of performance and absenteeism in the prediction of turnover. Academy of Management Journal, 27, 176-183.

Kenny, D. A. (1979). Correlation and causality. New York: Wiley.

Kim, J. O. & Mueller, C. W. (1976). Standardized and unstandardized coefficients in causal analysis: An expository note. Sociological Methods & Research, 4, 423-439.

Korman, A. K., Glickman, A. S. & Frey, R. L. (1981). "More is not better": Two failures of incentive theory. Journal of Applied Psychology, 66, 255-259.

Kraut, A. I. (1975). Predicting turnover of employees from measured job attitudes. Organizational Behavior

and <u>Human Performance</u>, <u>13</u>, 233-243.

Krus, D. J., Reynolds, T. J., & Krus, P. (1976). Rotation in canonical Variate Analysis. <u>Educational and Psychological Measurement</u>, <u>36</u>, 724-730.

LaFollette, W. R. & Sims, H. P. (1975). Is satisfaction redundant with organizational climate? <u>Organizational Behavior and Human Performance</u>, <u>13</u>, 257-278.

Lawler, E. E., Nadler, D. A. & Cammann, C. (1980). <u>Organizational assessment</u>. New York: Wiley.

Lawler, E. E. & Suttle, J. L. (1973). Expectancy theory and job behavior. <u>Organizational Behavior and Human Performance</u>, <u>9</u>, 482-503.

Leon, F. R. (1981). The role of positive and negative outcomes in the causation of motivational forces. <u>Journal of Applied Psychology</u>, <u>66</u>, 45-53.

Levine, M. S. (1977). <u>Canonical analysis and factor comparison</u>. Beverly Hills, CA: Sage.

Lewin, K. (1936). <u>Principles of topological psychology</u>. New York: McGraw-Hill.

Lewin, K. (1938). <u>The conceptual representation and the measurement of psychological forces</u>. Durham, N. C.: Duke University Press.

Lewin, K. (1943). Defining the "field at a given time". <u>Psychological Review</u>, <u>50</u>, 292-310.

Lewin, K. (1951). Behavior and development as a function of the total situation. In D. Cartwright (Ed.).

Field theory in social science. New York: Harper.

Litwin, G. H. & Stringer, R. A. (1968). Motivation and organizational climate. Boston: Harvard Business School, Division of Research.

Locke, E. A. (1976). The nature and causes of job satisfaction. In M. D. Dunnette (Ed.) Handbook of industrial and organizational psychology. Chicago: Rand McNally.

Marsh, R. M. & Mannari, H. (1977). Organizational commitment and turnover: A prediction study. Administrative Science Quarterly, 22, 57-75.

Martin, T., Price, J. & Mueller, C. (1981). Job performance and turnover. Journal of Applied Psychology, 66, 116-119.

Mathieu, J. E. (1984). An integrative process approach to the study of organizational commitment. Paper presented at the meeting of the Southeastern Psychological Association, New Orleans, Lo.

Mathieu, J. E., Cauthorne, C. V., Glickman, A. S. & Woods, S. B. (1983). A process model of cadet commitment to ROTC. Unpublished manuscript.

McClelland, D. C. (1976). Power is the great motivation. Harvard Business Review, 54, 100-110.

McDonald, B. W. & Gunderson, E. K. (1973). Correlates of job satisfaction in naval environments. Journal of Applied Psychology, 59, 371-373.

Michaels, C. E. & Spector, P. E. (1982). Causes of

employee turnover: A test of the Mobley, Griffeth, Hand, and Meglino model. Journal of Applied Psychology, 67, 53-59.

Mitchell, T. R. (1974). Expectancy models of job satisfaction, occupational preference and effort: A theoretical, methodological, and empirical appraisal. Psychological Bulletin, 81, 1053-1077.

Mitchell, T. R. (1979). Organizational behavior. Annual Review of Psychology, 30, 243-282.

Mitchell, T. R. (1982). Expectancy-value models in organizational psychology. In N. T. Feather (Ed.). Expectations and actions: Expectancy-value models in psychology. Hillsdale, NJ: Lawrence Erlbaum.

Mitchell, T. R. & Nebeker, D. M. (1973). Expectancy theory predictions of academic effort and performance. Journal of Applied Psychology, 57, 61-67.

Mobley, W. (1977). Intermediate linkages in the relationship between job satisfaction and employee turnover. Journal of Applied Psychology, 62, 237-240.

Mobley, W., Griffeth, R. W., Hand, H. & Meglino, B. M. (1979). Review and conceptual analysis of the employee turnover process. Psychological Bulletin, 86, 493-522.

Moos, R. H. (1981). Group environment scale. Palto Alto, CA: Consulting Psychologists Press.

Mossholder, K. W. & Bedeian, A. G. (1983). Cross-level inference and organizational research: Perspectives on interpretationand application. Academy

of Management Review, 8, 547-558.

Mowday, R. T., Koberg, C. S. & McArthur, A. W. (1984). The psychology of the withdrawal process: A cross-validation test of Mobley's intermediate linkages model of turnover in two samples. Academy of Management Journal, 27, 79-94.

Mowday, R. T., Porter, L. W., & Steers, R. M. (1982). Employee-organization linkages. New York: Academic Press.

Mowday, R. T., Steers, R. & Porter, L. (1979). The measurement of organizational commitment. Journal of vocational Behavior, 14, 224-247.

Muchinsky, P. M. (1976). An assessment of the Litwin and Stringer organizational climate questionnaire: An empirical and theoretical extension of the Sims and Lafollette study. Personnel Psychology, 29, 371-392.

Murray, H. A. (1938). Explorations in personality. New York: Oxford University Press.

Namboodiri, Carter, L. E. & Blalock, H. M. (1975). Applied multivariate analysis and experimental designs. New York: McGraw-Hill.

Naylor, J. L., Pritchard, R. D. & Ilgen, D. R. (1980). A theory of behavior in organizations. New York: Academic Press.

Newman, J. E. (1975). Understanding the organizational structure-job attitude relationship through perceptions of the work environment. Organizational Behavior and

Human Performance, 14, 371-397.

Newman, J. E. Development of a measure of perceived work environment (PWE). Academy of Management Journal, 1977, 20, 520 - 534.

Oldham, G. R. & Hackman, J. R. (1981). Relationships between organizational structure and employee reactions: Comparing alternative frameworks. Administrative Science Quarterly, 26, 66-83.

O'Reilly, C. A., Parlette, G. N. & Bloom, J. R. (1980). Perceptual measures of task characteristics: The biasing effect of differing frames of reference and job attitudes. Academy of Management Journal, 23, 118-131.

Parker, D. F. & Dyer, L. (1976). Expectancy theory as a within-person behavioral choice model: An empirical test of some conceptual and methodological refinements. Organizational Behavior and Human Performance, 17, 97-117.

Pedhazur, E. J. (1982). Multiple regression in behavioral research. New York: Holt, Rinehart, & Winston Inc.

Pervin, L. A. & Lewis, M. (1978). Perspectives in interational psychology. New York: Plenum.

Peters, L. H., Bhagat, R. S. & O'Connor, E. J. (1981). An examination of the independent and joint contributions of organizational commitment and job satisfaction on employee intentions to quit. Group &

Organizational Studies, 6, 73-82.

Pierce, J. L. & Dunham, R. B. (1978). The measurement
of perceived job characteristics: The Job Diagnostic
Survey versus the Job Characteristics Inventory.
Academy of Management Journal, 21, 123-128.

Porter, L. W., Crampon, W. J. & Smith, f. J. (1976).
Organizational commitment and managerial turnover: A
longitudinal study. Organizational Behavior and Human
Performance, 15, 87-98.

Porter, L. W. & Lawler, E. E. (1965). Properties of
organization structure in relation to job attitudes and
job behavior. Psychological Bulletin, 64, 23-51.

Porter, L. W., Steers, R. M., Mowday, R. T. & Boulian,
P. V. (1974). Organizatinal commitment, job
satisfaction, and turnover among psychiatric
technicians. Journal of Applied Psychology, 59,
603-609.

Powell, G. N. & Butterfield, D. A. (1978). The case
for subsystem climates in organizations. Academy of
Managment Review, 3, 151-157.

Price, J. L. (1977). The study of turnover. Ames:
Iowa State University Press.

Reynolds, T. J. & Jackosfsky, E. F. (1981).
Interpreting canononical analysis: The use of
orthogonal transformations. Educational and
Psychological Measurement, 41, 661-676.

Rizzo, J. R., House, R. J. & Lirtzman, S. I. (1970).

Role conflict and ambiguity in complex organizations. Administrative Science Quarterly, 15, 150-163.

Roberts, K. H. & Glick, W. (1981). The job characteristics approach to task design: A critical review. Journal of Applied Psychology, 66, 193-217.

Roberts, K. H, Hulin, E. L., & Rosseau, D. M. (1978). Developing an interdisciplinary science of organizations. San Francisco: Jossey-Bass.

Roethlisberger, F. J. & Dickson, W. J. (1939). Management and the worker. Cambridge, Ma: Havard.

Rousseau, D. M. (1978). Characteristics of departments, postions, and individuals: Context for attitudes and behavior. Administrative Science Quarterly, 23, 521-540.

Rousseau, D. M. (1985, in press). Issues of level in organizational research: Multi-level and cross-level perspectives. In L. L. Cummings and B. M. Staw (Eds.), Research on Organizational Behavior, 7, Greenwich, Ct: JAI Press.

Schmitt, N. & Bedeian, A. G. (1982). A comparison of LISREL and two stage least squares analysis of a hypothesized life-job satisfaction reciprocal relationship. Journal of Applied Psychology, 67, 806-817.

Schnake, M. E. (1983). An empirical assessment of the effects of affective response in the measurement of organizational climate. Personnel Psychology, 36,

791-807.

Schneider, B. (1981). Work Climates: An

Interactionalist Perspective. (Research Report #81-2).

East Lansing: Michigan State University, Department of

Psychology.

Schneider, B. (1983). Interactional psychology and

organizational behavior. In L. L. Cummings & B. M.

Staw (Eds.). Research in Organizational Behavior, 5,

1-31.

Schneider, B. & Reichers, A. E. (1983). On the

etiology of climates. Personnel Psychology, 36, 19-39.

Schneider, D. J., Hastorf, A. H. & Ellsworth, P. C.

(1979). Person perception. Reading, Ma:

Addison-wesley.

Schuler, R. S., Aldag, R. J. & Brief, A. P. (1977).

Role conflict and ambiguity: A scale analysis.

Organizational Behavior and Human Performance, 20,

111-128.

Schwab, D. P., Olian-Gottlieb, J. D. & Heneman , H. G.

(1979). Between-subjects expectancy theory research:

A statistical review of studies predicting effort and

performance. Psychological Bulletin, 86, 139-147.

Shaw, M. E. (1976). Group dynamics: The psychology of

small group behavior. McGraw-Hill, New York.

Shrout, A. E. & Fleiss, J. L. (1979). Intraclass

correlations: Uses in assessing rater reliability.

Psychological Bulletin, 86, 420-428.

Sims, H. P. & LaFollette, W. (1975). An assessment of the Litwin and Stringer organizational climate questionnaire. Personnel Psychology, 28, 19-38.

Sims, H. P., Szilagyi, A. W. & Keller, R. T. (1976). The measurement of job characteristics. Academy of Management Journal, 19, 195-212.

Sims, H. P. & Szilagyi, A. D. (1976). Job characteristic relationships: Individual and structural moderators. Organizational Behavior and Human Performance, 17, 211-230.

Specht, D. A. (1975). On the evaluation of causal models. Social Science Research, 4, 113-133.

Spector, P. E. (1978). Organizational frustration: A model and review of the literature. Personnel Psychology, 31, 815-829.

Spencer, D. G. & Steers, R. M. (1981). Performance as a moderator of the job satisfaction-turnover relationship. Journal of Applied Psychology, 66, 511-514.

Staw, B. M. (1976). Intrinsic and extrinsic motivation. Morristown, N.J.: General Learning Press.

Staw, B. M. (1984). Organizational behavior: A review and reformulation of the field's outcome variables. Annual Review of Psychology, 35, 627-666.

Steers, R. M. (1977). Antecedents and outcomes of organizational commitment. Administrative Science Quarterly, 22, 46-56.

Steers, R. M. & Braunstein, D. N. (1976). A behaviorally-based measure of manifest needs in work settings. _Journal of Vocational Behavior, 9,_ 251-266.

Stogdill, R. M. & Coons, A. E. (1957). _Leader behavior: Its description and measurement._ Columbus: Ohio State University, Bureau of Business Research.

Susmilch, C. E. & Johnson, W. T. (1975). Factor scores for constructing linear composites: Do different techniques make a difference? _Sociological Methods & Research, 4,_ 166-188.

Taylor, F. W. (1923). _The principles of scientific management._ New York: Harper.

Tracy, L. & Johnson, . W. (1981). What do role conflict and role ambiguity scales measure? _Journal of Applied Psychology, 66,_ 464-469.

Tukey, J. W. (1964). Causation, regression, and path analysis. In O. Kempthorne, T. A. Bancroft, J. W. Gowen & J. L. Lush (Eds.), _Statistics and mathematics in biology._ New York: Hofner.

Vroom, V. H. (1964). _Work and motivation._ New York: Wiley.

Wahba, M. A. & House, R. J. (1974). Expectancy theory in work and motivation: Some logical and methodological issues. _Human Relations, 27,_ 121-147.

Waters, L. K. & Roach, D. (1979). Job satisfaction, behavioral intention, and absenteeism as predictors of turnover. _Personnel Psychology, 32,_ 393-397.

Weber, M. (1947). The theory of social and economic organization. New York: Free Press.

Weiss, D. J., Dawes, R. V., England, G. W. & Lofquist, L. H. (1967). Manual for the Minnesota satisfaction questionnaire. Minneapolis: University of Minnesota, Industrial Relations Center.

Weiss, H. M. & Adler, S. (1984). Personality and organizational behavior. In B. Staw and L. Cummings (Eds.). Research in Organizational Behavior, 6, 1-50.

Wiley, D. E. & Wiley, J. A. (1971). The estimation of measurement error in panel data. In H. M. Blalock (Ed.), Causal models in the social sciences. Chigaco: Aldineatherton.

Williams, A. P. & Woodward, S. (1980). A note on Steers & Braustein's behaviorally based measure of manifest needs. Journal of Occupational Psychology, 53, 219-221.

Woodman, R. W. & King, D. C. (1978). Organizational climate: Science or folklore? Academy of Management Journal Review, 3, 816 - 826.

Woods, S. B. (1984). A comparison and integration of expectancy theory and task dimensions with ROTC cadets. Unpublished Masters Thesis, Old Dominion University.

Woods, S. B. & Mathieu, J. E. (1984). Methodological refinements of Expectancy Theory predictions of performance. Paper presented at the meeting of the Eastern Psychological Association, Baltimore, Maryland.

NOTES

1. Students enrolled in Navy ROTC are referred to formally as
   midshipmen. The term "cadets" will be used for both Army
   and Navy ROTC students throughout this manuscript for ease
   of presentation.

2. Pervin and Lewis (1978) described a fifth form of
   interaction as reciprocal action-interaction which
   extended the interdependent interaction definition
   utilized here, and incorporated the concepts of time and
   the notion that a causative variables may also be affected
   by the very process of having an effect. The reciprocal
   form of the interaction best captures the essence of the
   development of life space presently advanced, but becomes
   analytically unwieldly with a single data panel and the
   lack of specific confirmatory hypotheses.

3. Supervisors in this setting refers to cadets' officer
   instructor/advisor. The supervisors are commisioned Army
   and Navy officers who provide formal classroom
   instruction, lead and/or supervise drill training, and
   provide informal guidance regarding cadets' progress in
   ROTC.

4. The reader may have noticed the curious finding that the
   combined predictor set of individual resource variables
   and objective situational characteristics accounted for
   27.9% of criterion variance, 2.6% more than the sum of the
   two separate analyses (25.3%= 9.20% + 16.1%). This

finding stems from the fact that the objective situational characteristics analysis was limited by the number of predictor variables to five canonical correlations. The added degrees of freedom available in the combined analysis permitted the objective situational characteristics variable set to account for variance beyond that which it could in the separate analysis.

4. Previous discussions of trimming procedures and omitted parameters tests are rather vague. As a general rule, theory trimming is described as the deletion of nonsignificant and/or meaningless paths from the causal model. The omitted parameter test is described as testing the significance of paths hypothesized to be zero (Duncan, 1975; James et al., 1982; Kenny, 1979; Namboodiri et al., 1975; Pedhazur, 1982). However, little guidance has been provided for how such significance tests should be conducted.

The strategy employed here was designed to preserve the theoretical integrity of the general theory presented in Figure 2 while simultaneously identifying model specification errors. A hierarchy of influences was established with LSp dimensions (set 1) as strictly exogenous, affective responses (set 2) as second in the causal sequence, intention to remain (set 3) as third, and performance (set 4) as strictly endogenous.

Backward elimination regression analysis (Pedhazur, 1982, p. 158-160) was used to trim nonsignificant ($p>.05$) paths from the functional equations in a hierarchical framework starting with the lowest ordered set of predictor variables to the highest order set of predictor variables included in each equation. Variables were eliminated in a stepwise fashion from within each set. This strategy is analogous to hierarchical stagewise regression with incidental inclusion within stages (i.e., variable sets, see Cohen & Cohen, 1975, p. 103).

Following the trimming procedure an omitted parameter test was conducted in the reverse direction to identify additional significant nonhypothesized paths. That is, each endogenous variable was first regressed onto the structural parameters in the equation which remained from the trimming procedure, and then onto sets of variables (from higher to lower ordered sets) in a hierarchical stagewise fashion with incidental inclusion within stages.

For example, the self rated peformance equation was first trimmed to eliminate LSp3, LSp5, LSp7, LSp9 and LSp10 from set 1, VIE motivation and organizational commitment from set 2. LSp6 (from set 1) and intention to remain (set 3) remained in the equation for the second stage of revision. Then, self rated performance was regressed first onto LSp6 and intention to remain, then onto the affective response variables (set 2) and

satisfaction was included, and finally onto the LSp

dimensions (set 1) and LSpl was included.

The strategy outlined above maintains the causal

ordering of influences proposed in Figure 2 and represents

a more theoretically based search for specification errors

than would more haphazard approaches (e.g.,

nonhierarchical stepwise regression). Nevertheless, the

resulting revised model(s) remain exploratory.

5. Evidence of the powerfulness of the Chi-square test is

found from the fact that the revised model which contained

all statistically significant paths is still rejected by

the overall test. Nonsignificant paths would have to be

added to the model in order to eliminate the significance

of the Chi-square, and thus, James et al.'s (1982) 9th and

10th conditions for causal inference could not be met

simultaneously. Using the χ^2/df rule of thumb appears to

be warranted in this case.

6. Specht (1975) suggested difference tests may be conducted

to compare two competing overidentified models. Bentler

and Bonnett (1980, p. 593) suggested that the Chi-square

difference tests are typically limited to situations where

one model is <u>nested</u> within another. A model is said to be

nested within another one if it is obtained by

constraining some of the parameters of the latter (Bentler

& Bonett, 1980). The difference tests presented here

should be interpreted with caution since the nesting

condition does not hold in all comparisons. The $\underline{Q}$ values

obtained between the saturated model and the hypothesized and the revised models may be compared directly which provided support for the conclusions drawn from the Chi-square difference tests.

APPENDICES

A. Survey Questionnaire

B. Scale Item Listings

C. Army Performance Appraisal Instrument

D. Navy Performance Appraisal Instrument

E. Complete Unrotated Structure Matrix

APPENDIX A

ROTC Survey

The Center for Applied Psychological Studies, in conjunction with the Army is conducting this study to learn more about how cadets view their training. This questionnaire provides you with an opportunity to make your feelings known candidly, yet anonymously. You will be asked about your personal attitudes, interactions with others related to ROTC (including your peers and class advisor), and your reactions to ROTC training in general. This information may be used to improve training procedures and, at the same time, enable us to obtain a better understanding of the effectiveness of our programs.

While we are requesting you to report your social security number, this is only being done to aid data processing. This also allows the possibility of relating this information to other types that may be obtained at a later date. None of your responses will ever be seen by anyone in ROTC. The results of this survey will be made available to individuals affiliated with ROTC. However, information will be provided strictly in group form. No individual cadet will be associated with any set of responses. There are no right or wrong answers to any of the questions, nor do we expect everyone to agree. "Tell it like it is"--like you see it. Since we are looking for ways that ROTC training can be improved, we need to know how cadets and officers alike view things around here. Your honest responses to the following questions will make the results of this survey meaningful.

INSTRUCTIONS

All of your answers should apply to your experience in ROTC. All responses to this questionnaire should be made on the answer sheet provided. No name need appear on either form. Please locate side 1 of your answer sheet. Fill in your <u>Social Security number</u> and <u>Age</u> in the spaces provided. Write the <u>name of your university or college</u> in the blank following the word "school" on your answer sheet. Circle your <u>current ROTC Classification</u> and your <u>Gender</u>.

Read each item carefully. Select <u>one answer</u> for each question. Please answer all items. If you feel a question does not completely apply to you, try to select the closest or best answer from the alternatives given. If you have any thoughts on a topic included or not on this survey, feel free to express your comments in the space provided on the back side of the answer sheet.

PART A

Listed below are a number of questions about your personal attitudes, or preferences regarding ROTC training. For each question, decide which of the answers best represents the way you feel about your training. Place the numbers for your answers in the spaces provided on your answer sheet that correspond to the questions in PART A. Use the following set of answers for questions in PART A.

Never	Seldom	Sometimes	Usually	Always
1	2	3	4	5

1. I try my best to work alone.

2. I take moderate risks and stick my neck out to get ahead on my assignments.

3. I make a special effort to get along with other cadets in my class.

4. I avoid trying to convince other cadets in my class to see things my way.

5. I become stubborn and resistent when others attempt to coerce me.

6. I attend ROTC social activities rather than stay at home alone.

7. I strive for independance and liberty over my actions.

8. I enjoy working hard as much as relaxation.

9. I am unable to do my best work when I must work under another's guidance.

10. I strive to gain more control over events related to my ROTC training.

11. When I have a choice, I try to work in a group instead of by myself.

12. I am usually the one to make the necessary decisions when I am in a group.

13. I make friends rather quickly and feel at ease in a few minutes.

14. I do my best work when my assignments are fairly difficult.

15. I disregard rules and regulations that hamper my personal freedom.

16. I try to avoid getting any added responsibilities on my assignments.

17. I find myself organizing and directing the activities of other cadets in my class.

18. I set difficult goals for myself which I attempt to accomplish.

19. I prefer to do my own work and let others do theirs.

Never	Seldom	Sometimes	Usually	Always
1	2	3	4	5

20. I try to perform better than the other cadets in my class.

21. I try to be my own boss regarding how my duties and assignments are completed.

22. I often find myself talking to other cadets about non-ROTC related matters.

23. I pay a good deal of attention to the feelings of other cadets during training drills.

24. I feel the spirit of competition in most of my ROTC activites.

25. I consider myself a "team player" when it comes to ROTC activities.

26. I usually influence others more than they influence me.

27. I do things my own way, regardless of the opinions of other cadets.

28. I find it rather easy to lead others and maintain discipline.

29. I strive to be "in command" when I am working in a group.

30. I try very hard to improve on my previous ROTC performances.

31. I seek an active role in the leadership of a group.

32. I am quick to express my disagreements with other cadets.

PART B

Listed below are a number of questions which ask you to describe your ROTC training. Please do not use this part of the questionnaire to show how much you like or dislike ROTC. Instead, try to make your descriptions as accurate and as objective as you possibly can. Place your answers to questions in this part in the corresponding blanks in PART B of your answer sheet. Use the following responses for the questions in this section.

Not at All	To a small Extent	To some Extent	To a great Extent	To a very great Extent
1	2	3	4	5

1. To what extent is there variety in your duties and assignments?

2. To what extent do you find out how well you are doing as a member of ROTC?

3. To what extent is your drill performance dependent on how hard you work?

4. To what extent do your assignments depend on upon your ability to work with others?

5. To what extent do you have the opportunity to talk informally with other cadets?

6. To what extent is dealing with other people a part of your ROTC training?

7. To what extent do your assignments involve difficult and challenging problems?

8. To what extent is the development of your leadership skills the result of your working hard?

9. To what extent are you able to do your work independently of others?

10. To what extent is your training repetitious?

11. To what extent do you receive information from your advisor on your performance?

12. To what extent are you able to act independently of your advisor in completing your assignments and duties?

13. To what extent is your performance as an ROTC Cadet dependent on how hard you work?

14. To what extent does participation in ROTC provide opportunities to meet individuals whom you would like to develop friendships with?

15. To what extent do your assignments challenge your abilities?

16. To what extent are the tasks you perform as a member of ROTC similar to one another?

17. To what extent is it up to you to decide how your assignments should be done?

For each of the questions below in PART B, use the following answers:

Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
1	2	3	4	5

18. My responsibilities are clearly defined.

19. I have to "buck" a rule or policy in order to carry out some assignments.

20. I have clear, planned goals and objectives for my duties.

21. I work with two or more people who work quite differently.

22. I feel that the amount of work I have to do will interfere with how well it gets done.

23. It seems like I have too much work for one person to do.

24. My ROTC performance ratings have little to do with how hard I work.

25. I receive assignments without the means to complete them.

26. My advisor makes it clear how he will evaluate my performance.

27. I receive incompatible requests from two or more people.

28. I often get myself involved in situations where there are conflicting requirements.

29. I am often asked to do things that are against my better judgment.

30. There are unreasonable pressures for better performance.

31. Explanations are clear of what has to be done.

32. I work on unnecessary things.

33. I don't know what is expected of me.

34. I work under unclear policies and guidelines.

35. I feel certain about how much authority I have.

36. I don't know how to improve my ROTC performance.

37. I feel that I have so much work that I can't possibly finish in the time allotted me.

38. I am not given enough time to finish what is expected of me.

For each of the following questions in <u>PART B</u>, decide to what degree each characteristic exists in your ROTC training. Select an answer from the set placed below which best describes that amount. Once again, please try to be as objective as possible, and do not use your answers to describe how much you like or dislike ROTC.

A minimum Amount	A small Amount	A moderate Amount	A large Amount	A maximum Amount
1	2	3	4	5

39. The opportunity for independent thought and actions with my assignments.

40. The amount of variety in my training.

41. Friendship with my fellow cadets.

42. The opportunity to talk with others as part of my training.

43. The range of skills that my duties require.

44. The feeling that I know whether I am performing well or poorly on my assignments.

45. The control I have over the pace of my work.

46. The opportunity to find out how well I am performing as an ROTC cadet.

47. The opportunity during ROTC related activities to get to know other people.

48. The opportunity to do a number of different things.

49. The opportunity to develop close relationships as a part of my training.

50. The feedback from my advisor on how well I am doing.

51. The amount of skill and effort required in ROTC training to perform well.

52. Meeting with other people in my work.

53. The freedom to do pretty much what I want in my training.

54. The amount of feedback you receive from individuals other than your advisor.

PART C

This part lists a number of statements describing your class as a whole;
the types of attitudes and behaviors common to the class of cadets to which
you belong (MS I, MS II, MS III or MS IV). Read each statement carefully.
Decide how much you agree with whether or not that statement accurately
describes your class. Choose your response from the set of answers placed
below. Place your answers in the corresponding blanks in PART C of your answer
sheet.

Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	2	3	4	5

1. My class fails to perform well under pressure or in emergency situations.

2. The cadets in my class are a friendly and close-knit group.

3. My class is successful at achieving its goals.

4. My class is a rather apathetic group.

5. The members of my class reflect ROTC standards of military courtesy,
    appearance, and grooming.

6. There is a feeling of unity and cohesion in my class.

7. Cadets in my class try their best to make ROTC successful.

8. Cadets in my class put a lot of energy into group activities.

9. My class has been adequately trained to handle emergency situations.

10. Cadets in my class feel close to each other.

11. Cadets in my class speak highly of ROTC.

12. My class can meet day-to-day activity requirements well.

13. I feel that the ROTC standards of order and discipline are maintained
    with in my class.

14. No one in my class seems to care about the mission of ROTC.

15. A lot of cadets in my class just seem to be passing time.

16. Cadets in my class know what their duties are and know how to do them
    well.

17. My class is able to respond to unusual work demands.

18. There is very little group spirit among cadets in my class.

19. Cadets in my class are very proud of ROTC.

20. There is a strong feeling of belongingness in my class.

21. There is little loyalty to ROTC in my class.

PART D

The questions in this part refer to the type of instruction and training style practiced by your class advisor. Your class advisor refers to the officer who is assigned to your class. The officer with whom you have the most contact. Place your answers to questions in this part in the corresponding blanks in <u>PART D</u> of your answer sheet. Remember, all of your responses will remain <u>strictly confidential</u>. Use the following set of answers for questions in PART D.

<u>Never</u>	<u>Seldom</u>	<u>Occasionally</u>	<u>Often</u>	<u>Always</u>
1	2	3	4	5

1. He is successful in obtaining recognition of the successes of his cadets.

2. He encourages the use of uniform procedures.

3. He encourages his cadets to work as a team.

4. He keeps his cadets in good standing within the program.

5. He assigns class members to particular tasks.

6. He encourages the class to organize social activities.

7. He is friendly and approachable.

8. He gives advance notice of changes.

9. He asks that cadets follow standard rules and regulations.

10. He is willing to listen to your problems.

11. He is very successful in getting "good deals" for his cadets.

12. He looks out for the personal welfare of his cadets.

13. He is usually successful in dealing with his superiors.

14. He asks for sacrifices from individuals for the good of the class.

15. He puts class welfare above the welfare of any individual cadet.

16. He schedules the work to be done.

17. He helps cadets settle their conflicts.

18. He is willing to make changes.

19. He maintains definite standards of performance.

20. He stresses the importance of high morale in the class.

Never	Seldom	Occasionally	Often	Always
1	2	3	4	5

21. He does little things to make it pleasant to be a member of ROTC.

22. He makes sure his cadets are treated fairly.

23. He lets his cadets know what is expected of them.

24. He refuses to explain his actions.

25. He encourages the understanding of points of view of other cadets.

26. He decides what shall be done and how it shall be done.

PART E

The questions in this part refer to the type of training practiced at your detachment in general. Place your answers to questions in this part in the corresponding blanks in PART E of your answer sheet. Use the following set of answers for questions in this part.

Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
1	2	3	4	5

1. There is not enough reward and recognition given in this detachment for doing good work.

2. In this detachment cadets are rewarded in proportion to the excellence of their performance.

3. In this detachment the praise and encouragement you get usually outweigh the threats and the criticism.

4. It's hard to get to know people in this detachment.

5. People are proud of belonging to this detachment.

6. In this detachment it is sometimes unclear who has the formal authority to make a decision.

7. People in this detachment don't really trust each other enough.

8. People in this detachment tend to be cool and aloof toward each other.

9. If you make a mistake in this detachment you will be punished.

10. The training requirements in this detachment are clearly defined and logically structured.

11. The cadre makes an effort to talk to you about your career aspirations within the Army.

12. You don't get much sympathy from higher-ups in this detachment if you make a mistake.

13. There is a great deal of criticism in this detachment.

14. We have a reward system here that helps the best cadet to rise to the top of his or her class.

15. The policies and organizational structure of this detachment have been clearly explained.

16. When I have a difficult task or assignment, I can usually count on getting assistance from my advisor and other cadets.

17. This detachment is characterized by a relaxed, easy-going training climate.

Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
1	2	3	4	5

18. In this detachment people pretty much look out for their own interests.

19. Our class activities are not sensibly organized.

20. As far as I can see, there isn't very much personal loyalty to the Army in this detachment.

21. There is a lot of warmth in the relationships between officers and cadets in this detachment.

22. Our activities sometime suffer from a lack of organization and planning.

23. I feel that I am a member of a well functioning detachment.

24. This detachment has no clear-cut, reasonable goals and objectives that contribute to its mission.

25. A friendly atmosphere prevails among the people in this detachment.

26. The philosophy of this detachment emphasizes the human factor, how cadets feel, etc.

PART F

Listed below are several outcomes or consequences which may occur as a result of you performing well in ROTC. We would like you to rate each event in two fashions. First, assign a value from the "A Scale" placed below which indicates the likelihood that each event will occur as a result of you performing well in ROTC. Place these scores in the column marked "A Scale" in PART F of your answer sheet.

A Scale

1 - Performing well in ROTC greatly decreases the likelihood that this event will occur.

2 - Performing well in ROTC slightly decreases the likelihood that this event will occur.

3 - Performing well in ROTC has no influence on whether or not this event will occur.

4 - Performing well in ROTC slightly increases the likelihood that this event will occur.

5 - Performing well in ROTC greatly increases the likelihood that this event will occur.

Second, we would like you to rate the attractiveness of each event. Choose the value from the "B Scale" placed below which reflects how attractive or unattractive each event is to you. Place these scores in the column marked "B Scale" of your answer sheet.

B Scale

1. very unattractive

2. slightly unattractive

3. neither unattractive or attractive

4. slightly attractive

5. very attractive

For example, if you thought performing well in ROTC greatly increases the likelihood of developing friendships, and having friends is a slightly attractive event for you, you would place a value of "5" (greatly increases) in the corresponding blank in the A column, and a value of "4" (slightly attractive) in the corresponding blank in the B column of your answer sheet. Alternatively, if you thought that performing well in ROTC slightly decreases the liklihood of developing friendships, but friendships are neither an attractive or unattractive event for you, you would place a "2" and a "3" in the A and B column blanks respectively. Remember, each event will be assigned two scores, one from the A Scale and one from the B Scale.

<u>EVENTS</u>

1. The development of leadership skills.

2. Obtaining financial assistance while in school.

3. Future travel opportunities.

4. Being assigned additional responsibilities.

5. Stress and mental pressure.

6. An opportunity to obtain Army benefits (e.g., medical insurance, commissary privileges, etc.)

7. A job upon graduation.

8. Making an early career commitment.

9. A feeling of pride and accomplishment.

10. Lower overall academic performance.

11. The amount of free time you have.

12. Future job security.

13. Dealing with military discipline and orders.

14. The prestige associated with excelling in ROTC.

15. The development of self discipline.

16. Your choice of future job locations.

17. Gaining job-related experience.

PART G

This part asks a number of questions about your reactions to ROTC training, how you feel about the training you receive. Use the following set of answers for questions in PART G. Place your answers in the corresponding blanks in PART G of your answer sheet.

Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
1	2	3	4	5

1. I am proud to tell others that I am part of ROTC.

2. ROTC really inspires the very best in me in the way of personal achievement.

3. It would take very little change in my personal circumstances to cause me to drop out of ROTC.

4. I am extremely glad that I chose to join ROTC.

5. There's not much to be gained by sticking with ROTC.

6. I do not intend to make a career of the Army.

7. I am willing to put in a great deal of effort beyond that normally expected to help ROTC be successful.

8. I talk up ROTC to my friends as a great place to learn.

9. I feel very little loyalty to ROTC.

10. I would accept almost any type of assignment in order to remain a member of ROTC.

11. I find that my values and the ROTC values are very similar.

12. I often find it difficult to agree with this detachment's policies on important matters relating to cadets.

13. I really care about the mission of ROTC.

14. For me this is the best of all possible ways to pursue my career goals.

15. Deciding to join ROTC was a definite mistake on my part.

16. I intend to stay with the Army until I retire from work.

17. I could just as well be preparing for a different branch of the service as long as my training for future work was similar.

PART H

The purpose of this section is to give you the chance to tell how you feel about ROTC, what things you are satisfied with and what things you are not satisfied with. Read each statement carefully, then chose one answer from the following set which best represents how satisfied you are with that aspect of your training. Place your answers in the appropriate blanks in PART H of your answer sheet.

Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied
1	2	3	4	5

With regards to my ROTC training, this is how I feel about...

1. Being able to keep busy all the time.

2. The chance to work alone on my assignments.

3. The freedom to do different things from time to time.

4. The chance to be "somebody" in the community.

5. The way my advisor handles his cadets.

6. The competence of my advisor in making decisions.

7. Being able to do things that don't go against my conscious.

8. The way my training provides for future job security.

9. The chance to do things for other people.

10. The opportunity to tell people what to do.

11. The opportunity to do something that makes use of my abilities.

12. The way ROTC policies are put into practice.

13. The opportunity to obtain a financial assistance while in school.

14. The opportunity to be commissioned as an Army officer.

15. The freedom to use my own judgment.

16. The chance to try my own methods of doing my work.

17. The way cadets in my class get along with each other.

18. The working conditions.

19. The praise I get for doing good work.

20. The feeling of accomplishment I get from my training.

PART I

The Army considers five different aspects of performance when rating the training of cadets. Definitions for each of the five aspects of performance are presented below. Please read each definition carefully.

Oral Communication Skills   (Oral)
    The ability to express oneself effectively in individual or group situations; includes gestures and other nonverbal communication.

Initiative   (Init)
    The discipline that requires attempting to influence events to achieve goals beyond those called for; originating action; self-starting rather than passive acceptance.

Influence   (Infl)
    The art of using appropriate interpersonal styles and methods in guiding subordinates, peers, supervisors or groups toward task accomplishment.

Planning and Organizing   (P & O)
    The ability to establish a course of action for self or others to accomplish a specific goal; planning proper assignments of personnel and appropriate allocation of resources.

Judgment   (Judg)
    The ability to develop alternative courses of action and make decisions based on logical assumptions that reflect factual information.

We would like you to rate your performance as a ROTC cadet on the five aspects of performance defined above. Place your ratings in the corresponding blanks in PART I of your answer sheet. Use the following set of answers for your ratings. Try to be as accurate and honest as possible.

Much less than Acceptable	Less than Acceptable	Acceptable	More than Acceptable	Much more than Acceptable
1	2	3	4	5

    We would also like you to estimate your overall ROTC performance-where you stand in comparison to other cadets in your class. Select a value from the scale placed below which best represents your relative standing in your class. Higher percentages indicate better performance. Again, try to be as accurate and honest as possible. Place this value in the blank beneath "Overall" in PART I of your answer sheet.

0-20%	21-40%	41-60%	61-80%	81-100%
1	2	3	4	5

PART J

This section contains a few questions about your attitudes toward the Army and your general background. Place your answers to questions in this part in the corresponding blanks in PART J of your answer sheet. Use the following set of answers for questions 1 through 6.

Not at all	To a small Extent	To some Extent	To a great Extent	To a very Extent
1	2	3	4	5

1. To what extent are you likely to make a career out of the Army?

2. To what extent were there military families living in the neighborhood(s) in which you grew up?

3. To what extent did you spend time with people affiliated with the military when you were growing up?

4. To what extent do you intend to remain in ROTC through the end of your senior year?

5. To what extent does your college education depend on your participation in ROTC?

6. To what extent do you have non-military career opportunities?

Choose the appropriate value from the alternatives provided for questions 7 through 14.

7. How many years was your father in the military?

    0 = 0 - 5 years
    1 = 6 - 10 years
    2 = 11 - 15 years
    3 = 16 - 20 years
    4 = Greater than 20 years

8. How many years do you intend to serve in the Army?

    0 = 0 - 5 years
    1 = 6 - 10 years
    2 = 11 - 15 years
    3 = 16 - 20 years
    4 = Greater than 20 years

9. Would you have joined Navy ROTC if Army ROTC was not available on your campus?

    0 = No
    1 = Yes
    2 = Not sure

10. Are you a veteran?
    0= No   1= Yes

11. What type (if any) of scholarship do you receive?
    0= I do not receive a scholarship
    1= A one year scholarship
    2= A two year scholarship
    3= A three year scholarship
    4= A four year scholarship

12. In which of the following categories does your current overall grade
    point average fall?
    1= Less than 2.0
    2= 2.0-2.4
    3= 2.5-2.9
    4= 3.0-3.4
    5= 3.5-4.0

13. What is your major?
    1= A physical science
    2= A social science
    3= Nursing
    4= Mathematics and Engineering
    5= Other

14. What race do you consider yourself?
    1= White
    2= Black/Afro-American/Negro
    3= Chicano/Mexican-American/Spanish-American
    4= Oriental
    5= Other

Thank you very much for time and cooperation. Feel free to make any
additionnal comments you may like in the space provide on your answer sheet.

APPENDIX B

Scale Item Listings

Criterion
Performance. I1 - I5 [Army]; I1 - I4 [Navy]
Intention to Remain. J1,J4,J8,G6*,G16

Affective Responses
Commitment. G1,G2,G3*,G4,G5*,G7,G8,G9*,G10 -
G14,G15*,G17*
Satisfaction. H1 - H20
Motivation.
    Effort-Performance Expectancy. B3,B8,13
    Instrumentalities. F1 - F17 [A scale]
    Valences. F1 - F17 [B scale]

Individual Resource Variables
Demographics. Cover Sheet, J10 - J14
Need for Dominance. A10,A12,A17,A26,A28,A29,A31
Need for Achievement. A2,A8,A14,A16,A18,A20,A24,A30
Need for Autonomy. A1,A5,A7,A15*,A19,A21,A27,A32
Need for Affiliation. A3,A6,A11,A13,A23,A25
Early Military Socialization. J2,J3,J7

Role
Role Ambiguity. B18*,B20*,B26*,B31*,B33,B34,B35*,B36
Role Conflict. B19,B21,B25,B27,B28,B29,B30,B32
Role Overload. B23,B37,B38

Task
Autonomy. B9,B12,B17,B39,B45,B53
Variety. B1,B16*,B40,B48
Feedback. B2,B11,B44,B46,B50
Friendship Opportunities. B5,B14,B41,B42,B47,B49
Challenge. B7,B15,B43,B51

Group
Cohesiveness. C2,C4,C6,C8,C10,C15*,C18*,C20
Performance Readiness. C1*,C3,C5,C9,C12,C13,C16,C17
Attitudes toward ROTC. C7,C11,C14*,C19,C21*

Leadership
Supportive. D7,D8,D10,D12,D18,D21,D24*
Instrumental. D2,D5,D9,D16,D19,D23,D26
Team Orientation. D3,D6,D14,D15,D17,D20,D25
Upward Influence. D1,D4,D11,D13,D22

Organization
Structure. E6*,E10,E15,E19*,E22*,E24*
Rewards. E1*,E2,E3,E9*,E13*,E14
Identity. E5,E18*,E20*,E23
Warmth & Support. E4*,E7*,E8*,E16,E21,E25,E26

Note. * Indicates reverse scored prior to analysis.

APPENDIX C

Performance Ratings

Army ROTC considers five aspects of performance when rating the training of cadets. Definitions for each of these five aspects of performance are presented below. Please read each definition carefully.

Initiative (INIT): The discipline that requires attempting to influence events to achieve goals; self-starting rather than passive acceptance. Taking action to achieve goals beyond those called for; originating action.

Planning and Organization (P & O): The ability to establish a course of action for self or others to accomplish a specific goal; planning proper assignments of personnel and appropriate allocation of resources.

Influence (INFL): The art of using appropriate interpersonal styles and methods in guiding subordinates, peers, supervisors, or groups toward task accomplishment.

Judgment (JUDG): The ability to develop alternate courses of action and make decisions based on logical assumptions that reflect factual information.

Oral Communication Skill (ORAL): The ability to express oneself effectively in individual or group situations; includes gestures and other nonverbal communication.

We would like you to rate each cadet that you advise on the five aspects of performance defined above. Place your ratings of each cadet in the corresponding blanks on your answer sheet. Use the following set of answers for your ratings. Try to be as accurate and honest as possible.

Much less than Acceptable	Less than Acceptable	Acceptable	More than Acceptable	Much more than Acceptable
1	2	3	4	5

We would also like you to rate each cadet's overall ROTC performance. That is, where each cadet stands in comparison to other cadets in his/her class. Select a value from the scale placed below which best reflects each cadet's relative ranking in the class (higher percentages indicate better performance). Place this value in the blank beneath "overall" of your answer sheet.

0-20%	21-40%	41-60%	61-80%	81-100%
1	2	3	4	5

Performance Rating Answer Sheet

Social Security	INIT	P & O	INFL	JUDG	ORAL	OVERALL
1. _____	___	___	___	___	___	___
2. _____	___	___	___	___	___	___
3. _____	___	___	___	___	___	___
4. _____	___	___	___	___	___	___
5. _____	___	___	___	___	___	___
6. _____	___	___	___	___	___	___
7. _____	___	___	___	___	___	___
8. _____	___	___	___	___	___	___
9. _____	___	___	___	___	___	___
10. _____	___	___	___	___	___	___
11. _____	___	___	___	___	___	___
12. _____	___	___	___	___	___	___
13. _____	___	___	___	___	___	___
14. _____	___	___	___	___	___	___
15. _____	___	___	___	___	___	___
16. _____	___	___	___	___	___	___
17. _____	___	___	___	___	___	___
18. _____	___	___	___	___	___	___
19. _____	___	___	___	___	___	___
20. _____	___	___	___	___	___	___
21. _____	___	___	___	___	___	___
22. _____	___	___	___	___	___	___
23. _____	___	___	___	___	___	___
24. _____	___	___	___	___	___	___
25. _____	___	___	___	___	___	___
26. _____	___	___	___	___	___	___
27. _____	___	___	___	___	___	___

	Social Security	INIT	P & O	INFL	JUDG	ORAL	OVERALL
28.							
29.							
30.							
31.							
32.							
33.							
34.							
35.							
36.							
37.							
38.							
39.							
40.							
41.							
42.							
43.							
44.							
45.							
46.							
47.							
48.							
49.							
50.							

INSTRUCTIONS

1. Evaluate the midshipman on his observed performance.
2. Compare him with all other midshipmen of the same experience level.
3. Pick the phrase which best suits the midshipman in each trait and check the left or right box under it.
4. *Marks in these columns require counseling with the individual concerned before forwarding the report via the chain of command.

NAME		CLASS	TERM
COLLEGE/UNIVERSITY		UNIT/POSITION	

1. PROFESSIONAL PERFORMANCE: His skill and efficiency in performing assigned duties (except SUPERVISORY)

DUTIES	Extremely effective and reliable. Works well on his own.		Highly effective and reliable. Needs only limited supervision.		Effective and reliable. Needs occasional supervision.		Adequate, but needs routine supervision.		Inadequate. Needs constant supervision. *	
	4.0	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.0
Squad Leader										
Platoon CDR/BN XO										
Company CDR/BN CO										
Instructor										

2. MILITARY BEHAVIOR: How well he accepts authority and conforms to standards of military behavior.

DUTIES	Always acts in the highest traditions of the Navy.		Willingly follows commands and regulations.		Conforms to Navy standards.		Usually obeys commands and regulations. Occasionally lax.		Dislikes and flouts authority. Unseamanlike. *	
	4.0	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.0
Squad Leader										
Platoon CDR/BN XO										
Company CDR/BN CO										
Instructor										

3. LEADERSHIP AND SUPERVISORY ABILITY: His ability to plan and assign work to others and effectively direct their activities.

DUTIES	Gets the most out of his men.		Handles men very effectively.		Gets good results from his men.		Usually gets adequate results.		Poor supervisor. *	
	4.0	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.0
Squad Leader										
Platoon CDR/BN XO										
Company CDR/BN CO										
Instructor										

4. MILITARY APPEARANCE: His military appearance and neatness in person and dress.

DUTIES	Impressive. Wears Naval uniform with great pride.		Smart. Neat and correct in appearance.		Conforms to Navy standards of appearance.		Passable. Sometimes careless in appearance.		No credit to the Naval Service. *	
	4.0	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.0
Squad Leader										
Platoon CDR/BN XO										
Company CDR/BN CO										
Instructor										

5. OVERALL EVALUATION

DUTIES	OUTSTANDING		EXCELLENT		AVERAGE		BELOW AVERAGE		UNSATISFACTORY *	
	4.0	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.0
Squad Leader										
Platoon CDR/BN XO										
Company CDR/BN CO										
Instructor										

6. NROTC AND UNIVERSITY ACTIVITIES/ORGANIZATIONS

APPENDIX E

Complete Unrotated Structure Coefficient Matrix

Variables				Canonical Variates						
	1	2	3	4	5	6	7	8	9	10
Need Dominance	-12	-10	-10	-05	-45	-01	06	-35	27	-13
Need Achievement	-10	02	-12	-14	-64	00	14	-22	43	43
Need Autonomy	12	-01	03	14	36	-12	12	-61	51	-30
Need Affiliation	-18	-03	-18	-03	-82	-13	07	-37	-19	-10
Early Military$_1$ Soc	-09	-06	-03	-05	-04	04	-38	-22	19	01
Vetaran Status	-06	-13	-02	-03	21	-22	10	-31	02	68
Scholarship Status	-15	-13	10	-16	13	-13	37	-39	-53	29
Race$_2$	14	19	-01	11	10	-03	78	04	03	-03
Sex $_3$	14	10	00	06	-21	17	31	24	11	-03
Class Membership $_2$	27	45	84	98	00	32	00	06	00	01
Group Size	69	35	13	47	-03	-35	-02	13	01	-04
Org Size	72	61	-34	-03	-03	-05	-02	01	-03	-01
Autonomy	04	-10	-03	04	-25	02	25	-45	45	-20
Variety	-06	05	-27	-15	-66	-12	06	-09	-09	-08
Feedback	-08	10	-25	-04	-55	-22	13	-22	09	02
Friendship Opport	-15	-02	-11	-04	-78	-17	-06	-35	-05	-06
Dealing w/ Others	-08	-04	-15	-05	-75	05	12	-30	12	-11
Challenge	-02	06	-32	-17	-61	-05	16	11	18	-18
Role Ambiguity	-01	-09	19	07	65	03	-10	09	-23	-31
Role Conflict	-01	-06	-06	00	38	-29	01	-40	13	-23
Role Overload	-03	-03	-11	-10	40	-09	11	-30	-29	-37
Group Cohesiveness	-30	-10	-56	-38	-14	07	06	-08	-27	-30
Group Performance	-03	-27	-54	-37	-13	23	24	-12	-24	-19
Group Att ROTC	-22	-19	-55	-57	-13	11	-08	-03	-09	-28
Supportive Lead	-10	42	57	40	-12	12	-23	03	04	-27
Instrumental Lead	-19	32	-69	-13	-03	08	-05	09	06	-04
Team Oriented Lead	-25	24	-25	17	-18	-14	11	10	-08	-27
Lead Upward Influence	-15	41	-09	44	-15	11	-20	02	-06	-28
Org Structure	47	18	-32	-03	-19	19	04	15	14	-38
Org Rewards	44	09	-32	-15	-14	07	-52	15	15	-31
Org Identity	21	-12	-17	-01	-23	29	-09	07	09	-45
Org Warmth & Support	18	-12	-13	01	-21	26	-14	-07	-05	-32

Note. Decimals are deleated.
Abbreviations: Soc, Socialization; Org, Organization; Opport,
Opportunities; Att ROTC, Attitudes toward ROTC; Lead,
Leadership.
[1] Dummy coded: Nonveteran= 0; Veteran= 1.
[2] Dummy coded vector.
[3] Dummy coded: Males= 0; Females= 1.
N= 588.

BIOGRAPHY

The author was born on April 23, 1958 in Willimantic, Connecticut. He received a Bachelor of Arts degree from the University of Connecticut in 1980, and a Master of Science degree from Old Dominion University in 1982. During his doctoral training he held Research and Teaching Assistantship positions in the Department of Management and in the Department of Psychology. He has also taught as an Instructor at Christopher Newport College. He is a member of the American Psychological Association (Division 14) and the Academy of Management.