BURNOUT IN THE ARMED FORCES:
COMMUNICATION, SATISFACTION, AND COMMITMENT

by

KEVIN VINCENT ARATA

Captain, United States Army

B.S., United States Military Academy, 1987

A Thesis Submitted to the Graduate Faculty

of The University of Georgia in Partial Fulfillment

of the

Requirements for the Degree

MASTER OF ARTS

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

19970606 099

ATHENS, GEORGIA

1996

DTIC QUALITY INSPECTED 1

BURNOUT IN THE ARMED FORCES:

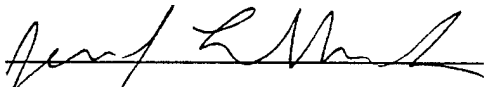
COMMUNICATION, SATISFACTION, AND COMMITMENT

by

KEVIN VINCENT ARATA

Captain, United States Army

Approved:

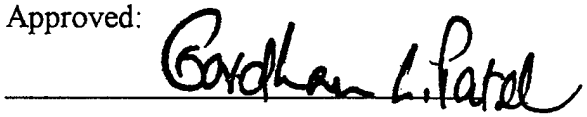


Major Professor

11-13-96

Date

Approved:



Dean of Graduate School

November 18, 1996

Date

DEDICATION

This thesis is dedicated to my wife, Mary Anne, and my son, Patrick, for their constant love, patience, understanding, and support, for without them, this thesis never would have come to fruition. Mary Anne, you have helped me in more ways than you can begin to imagine throughout the whole process of the pursuit of a Master's Degree. For my son, Patrick, who has not quite figured out why I lock him out of "the computer room" to work, or leave him at night to teach, thanks for bringing so much happiness into our lives this past year and a half - you have been a blessing to your mother and I since the day you arrived.

The time spent in completing the thesis, course work, teaching, and attending to other duties has been great, although the rewards for these tasks have been equally as great for me. This is one "tour of duty" that will not be forgotten. Our time here at The University of Georgia has been much enjoyed, and an eye-opening experience for me in more ways than I can begin to recount.

ACKNOWLEDGMENTS

Upon my decision to select this area of interest for my thesis, Dr. Jennifer Monahan agreed to take on the formidable task of training me in the rigors of how to properly write and defend a thesis. While this may sound like a somewhat unimpressive task, Jennifer spent more hours than I care to count, correcting repeated drafts of my thesis, providing me with the expertise that she is quite adept at giving, and, most important, training me on the sacred LISREL program. Without her guidance and support during throughout this process, which begin over a year ago, prompted by discussions from her Interpersonal Theory class, I never would have been able to begin or complete this thesis. Jennifer, thank you for your time, energy, knowledge, and, most of all, for having faith in this project which was undertaken so long ago.

A special thanks is owed to Dr. Gerald Hale and Dr. Edward Panetta, for agreeing to serve on my committee - your insights and abilities are much appreciated, as is your valuable input into the construction and successful completion of my thesis. Thanks also goes to Dr. Edward Fink, who supplied his expert advice concerning structural equation modeling and LISREL analysis.

Thanks also goes to LTC James Casey, commander of The University of Georgia's Reserve Officer Training Corps (ROTC) Detachment, as well as the members of the ROTC detachment that completed a pilot study for this thesis. Additionally, I would like to thank the 700 soldiers who responded to my survey in the data collection phase of this thesis - without whom this study would not have been possible.

Finally, to the Department of the Army, for allowing me this unique opportunity to attend graduate school. Were it not for the Army, who funded my schooling, as well as subsidizing this thesis, none of this would have been at all possible.

TABLE OF CONTENTS

Page

ACKNOWLEDGMENTS....iv

LIST OF TABLES....vii

LIST OF FIGURES....viii

CHAPTER

1 INTRODUCTION....1

Background....2

Rationale....4

Role of Communication in Burnout....5

Proposed Model....5

Precursors to Burnout....5

Three Indicators of Burnout....12

Final Predictors of Burnout....17

2 METHOD....21

Procedure....21

Participants....21

Instrumentation....22

Analysis....26

3 RESULTS....27

Preliminary Analysis....27

Explanation of Confirmatory Factor Analyses of Exogenous Measures....33

Explanation of Confirmatory Factor Analyses of Endogenous Measures....39

Test of Models....43
Hypothesized Model....45
Hypotheses....47
Model 2 (Derived Model)....48
Test of Derived Model....52
Model 3....56
4 DISCUSSION....61
Communication....62
Theory Building....63
Hypothesized versus Final Model....64
Original ECM versus Final Model....68
Effects on Commitment....70
Advice to Military Leaders....70
Measurement....74
Model Limitations....77
Future Research....78
Conclusion....78
APPENDICES
A CONSENT FORM....80
B SURVEY....82
C DEBRIEF....92
D LETTERS OF PERMISSION....94
REFERENCES....100

LIST OF TABLES

TABLES		Page
1	Local Assessment of Fit for Exogenous Measures	35
2	Global Assessment of Fit for Exogenous Measures	36
3	Local Assessment of Fit for Endogenous Measures	40
4	Global Assessment of Fit for Endogenous Measures	41
5	Covariance Matrix of Hypothesized Model	46
6	Covariance Matrix of Derived Model	54

LIST OF FIGURES

FIGURE		Page
1	Relationship Among Burnout Indicators	17
2	Hypothesized Model of Burnout and Commitment in the Armed Forces	20
3	Hypothesized Model of Burnout and Commitment Based on the Confirmatory Factor Analysis Results	44
4	Maximum Likelihood Indicators for Hypothesized Model of Burnout	49
5	Maximum Likelihood Indicators for Model 2 (Original Data Set)	53
6	Maximum Likelihood Indicators for Model 2 (Second Data Set)	55
7	Maximum Likelihood Indicators for Model 3 (Second Data Set)	57

CHAPTER 1

INTRODUCTION

Now, more than ever, the military faces problems maintaining an effective fighting force, primarily as a result of the dramatic reduction in force size and a significant increase in "real world" missions ("General Dennis Reimer," 1995; Maze, 1996a, b). As the armed forces becomes smaller and tries to "do more with less," units are kept deployed for greater lengths of time in order to keep their combat skills finely tuned, as well as training for new missions in previously untrained areas, such as the peacekeeping and humanitarian roles the armed forces has most recently assumed. The end result of these monumental changes is that soldiers of all ranks and services are increasingly susceptible to the dangers of burnout. The purpose of this paper is to construct and test a model that demonstrates how and why burnout occurs in a military setting.

According to Maslach and Jackson (1986), burnout is defined as a *compilation* of feelings of depersonalization, reduced personal accomplishment, and emotional exhaustion that occur in people who work directly with other people. Depersonalization results when a leader begins to develop a negative opinion of subordinates and may eventually end up disliking the subordinates. Reduced personal accomplishment occurs when a leader feels his or her ability to relate to subordinates is inadequate, thus increasing the leader's own sense of failure. Reduced personal accomplishment is classified as "a negative shift in response toward oneself" (Maslach & Jackson, 1986). Emotional exhaustion occurs when a person begins to feel unable to devote themselves to the services of others, accompanied by other indicators of fatigue. Additionally, Pines and Aronson (1988) further describe burnout as being attributable to numerous factors, such as physical exhaustion, despondency, and the evolvement of a negative image of self toward work-related issues, to include developing a negative image of people at work.

A caveat to the use of these three constructs: depersonalization, personal accomplishment, and emotional exhaustion, is that they may affect different organizations in different ways. Miller, Birkholt, Scott and Sage (1995) find that the *causal order* of the constructs contributing to burnout is not necessarily applicable across different occupational boundaries. As will be discussed in depth later, I expect to find that these three constructs will be applicable in a military setting but that their ordering may differ significantly from studies done on other organizations. In addition, this thesis examines communication and stress as predictors of these burnout indicators, as well as the effect of the burnout indicators on one's occupational commitment. While the interaction of the three burnout indicators is important in this thesis, the end result of burnout; commitment to one's organization, is also an important factor to consider. In essence, I am attempting to establish the important predictors of burnout, the relationship among the burnout indicators, and how these burnout indicators affect commitment to one's organization.

Background

The armed forces continues to reduce its strength to a level below that of our pre-Vietnam level of readiness. During the late 1980's the United States Army consisted of approximately 795,000 soldiers. Since that time the Berlin Wall has been dismantled, the Cold War has come to a close, and the fear of communism has virtually come to an end. In response to a reduced threat abroad, political leaders have begun a massive reduction-in-force of our armed forces. Since the conclusion of Operation Desert Storm in 1991, the Army has been reduced by over 200,000 soldiers (Tice, 1996a). Current Army strength stands at just over 500,000, with a projected end-state of 495,000 and further reductions are on the horizon (Tice, 1996a; Willis, 1996). As the number of soldiers continues to decline, mission requirements have remained the same or increased, thus increasing the work load for those remaining on active duty. Our sister services have faced force reductions of a similar magnitude and the thoughts of a hollow force have

again returned to the minds of many people who fought in World War II, Korea, and Vietnam.

While the rhetoric behind the idea that the armed forces always needs more equipment and more people has persisted for centuries, the urgency for increased equipment is especially crucial with the conclusion of drawdown on the horizon. As training requirements continue to increase, technological modernization of and an increase in equipment is needed to assist in lessening the blow of the reduction-in-force on soldiers in the armed forces. Concessions have been made concerning force structure, but the argument that now persists is that since our armed forces has been significantly reduced, units can not successfully perform their mission with the same amount of equipment. In fact, units now need more technically advanced equipment to make up for the loss in personnel in order to maintain the same standard of mission accomplishment enjoyed prior to the reduction-in-force.

Evidence abounds concerning an increase in the armed forces training and deployment requirements as the reduction-in-force continues to take its toll on soldiers. Commanders are trying to "protect their force structure by sending (troops) on continual deployments and exercises that prove their value," thus directly increasing unit training requirements (Hudson & Jowers, 1995, p. 3). This increase in training requirements likely places additional stress on soldiers (Peters, 1995). General Reimer, Chief of Staff of the Army, estimated that soldiers spend between 138 and 179 days deployed each year ("General Dennis Reimer," 1995).

In addition to lengthy deployments, leaders are continually redefining how the armed forces are to be utilized in the world today. One such use includes the use of the armed forces in peacekeeping roles throughout the world. We continue to see involvement in such places as Haiti, Somalia, and most recently, Bosnia. Other uses include efforts to aid in humanitarian disasters such as Hurricane Hugo and counter-drug operations across the nation. These missions keep the men and women of the armed

forces occupied with a multitude of commitments both on our homefront and abroad. It is the combination of these factors; increased training requirements, new roles for the armed forces, lengthy deployments, and the reduction-in-force, that continue to redefine the future of our armed forces and add to the probability of increased burnout of soldiers in the armed forces.

Rationale

While numerous studies have examined the effect of a myriad of variables on burnout in business and public organizations (Miller et al., 1995; Millet et al., 1988; Etzion, 1984), few studies have examined how burnout occurs in a military setting. Moreover, those studies that do examine burnout in the armed forces tend to examine **only** individual contributors to burnout without looking at the series of burnout predictors as a whole (Etzion & Westman, 1994; Barling & MacIntyre, 1993). In his doctoral dissertation, Aldinger states that "despite the great and growing need, research to date provides little data about the presence or levels of burnout experienced by military members" (1993, p. 6). Aldinger acknowledges that a need exists for additional study concerning burnout in a military setting.

The model hypothesized in this paper is designed to identify those factors that affect burnout in the armed forces. My goal is to provide a coherent model of burnout that is applicable to armed forces leaders, those individuals that most need to understand how to reduce the potential for burnout in their work environment. To compose this model I use the burnout model proposed by Miller et al. (1988), as well as existing studies completed in a military environment. It is hoped that identifying the ordering of the attributes most commonly associated with burnout will enable leaders at all levels to positively affect these factors in order to increase the productivity and effectiveness of their soldiers.

Role of Communication in Burnout

Miller et al. (1988) describe communication as being the "genesis of burnout" (p. 250). Because soldiers must continually rely on others to complete their mission, communication plays an extremely important role in reducing burnout in a military setting. While previous research concerning burnout in military organizations has neglected the role communication plays in alleviating or causing burnout, the current model assumes communication plays a *pivotal* role in affecting burnout. In my hypothesized model of burnout, communication is thought to be a key predictor of burnout.

Proposed Model

The hypothesized model is based upon the following constructs: communication, stress, depersonalization, reduced personal accomplishment, emotional exhaustion, and occupational commitment. Conceptual definitions of each construct will be presented as I discuss the three distinct sections of the model. The three distinct sections of the model proposed in this thesis are 1) the exogenous constructs of communication and stress that predict the burnout indicators (depersonalization, emotional exhaustion, and personal accomplishment), 2) the three endogenous burnout indicators that predict occupational commitment, and 3) the endogenous construct of occupational commitment, predicted by the burnout indicators, as well as by the exogenous constructs of communication and stress.

Precursors to Burnout

Communication. As previously stated, the construct of communication is a significant factor to be considered in the affectation of burnout. Of note, however, is that Miller et al. (1988) define communication as a measure of communicative responsiveness. It is my contention that there are several other communication variables that contribute to a causal model of burnout for the armed forces. Specifically, I have chosen to define communication not only as communicative responsiveness, but also as cohesion, social support, and work support. While the argument can be made that there are several ways

in which one can measure communication, these particular variables contribute much depth to defining communication. Communicative responsiveness, as measured in Miller et al.'s research (1988) measures the ability of a person to communicative with others, but measures the "give" part of the communication process; in other words, how well a person communicates *to* others, as opposed to cohesion, which essentially measures the ability of a person to receive communication *from* others. Cohesion serves as an additional measure of the lateral communication between people. These two variables together measure the give-and-take relationship in a lateral sense between people, while social and work support tend to measure the ability of a person to receive emotional support from others (friends and superiors). Additionally, work support is seen as a vertical measure of communication in the sense that this level of communication is from a superior to a subordinate. In sum, the compilation of these variables contributes to a more well-rounded definition of communication. Additional theoretical justification for the addition of these variables is provided through the examination of several studies.

Communicative responsiveness was included in the hypothesized burnout model as a result of the studies completed by Miller et al. (1995; 1988). Communicative responsiveness, as previously defined, is measured as one's ability to effectively communicate *to* others in a work environment. This construct includes such items as being able to know when to say the "right things" to others and responding appropriately to other's feeling and emotions (Miller et al., 1988).

Justification for the importance of cohesion is based on the idea that as a soldier's ability to interact and effectively communicate with others increases, so does the cohesiveness of a unit. Shaw (1981) has defined cohesion as the degree to which members are motivated to stay in a group, as well as the level of motivation of members in that group (p. 213). More specifically, cohesion in a military setting is seen to be identified as the closeness of soldiers in the work place, as measured by how they relate to each other on a day-to-day basis. In groups where cohesion is high, there will appear to

be a sense of bonding or solidarity. This may be demonstrated in many forms, to include spending time in an other-than-work environment, sharing sensitive or personal information with other soldiers, and relying on other soldiers to a greater degree than those groups that have low cohesion. If cohesion becomes a problem in a military setting, it can often lead to very undesirable consequences, the worst of which is the loss of one's life in a combat situation. Soldiers understand that they may have to depend upon other soldiers in battle, and that their own lives could be put in jeopardy if other soldiers do not properly perform their duties (Malone, 1983; Marshall, 1978).

Of additional note is the fact that there often times seems to be a dialectic nature to cohesion; that is, while it is important for a unit to be cohesive, inherent in that cohesiveness is the comparison against outside forces (other units) that seems to create that sense of cohesion. It becomes necessary for units to measure their performance against other units and to distance themselves from other units to validate the sense of one unit being better than another, thus increasing cohesion. Measurement in this model is designed to measure only the cohesion found *within* a unit and not that which may come from forces outside the unit.

The addition of social support as an element of communication that contributes to burnout is supported by Miller et al. (1988). Additionally, several other researchers have measured social support and its role in contributing to burnout (Etzion & Westman, 1994; Etzion, 1984) Social support is seen as coming primarily from family members and / or friends, and is defined as the emotional support received from people outside the work environment.

Finally, the inclusion of work support as an element of communication is more intuitive in nature, inferred because the majority of the questions used to measure social support are also used to measure work support. While work support can be measured across many boundaries in the work place, for several reasons I have chosen to measure support only from a supervisor perspective. First, House (1981) notes that supervisor

support, as opposed to support from others in the work place, is the support most likely to have a positive effect on performance in the work place. Second, supervisor support is designed to measure the vertical relationship between a person and their supervisor, whereas cohesion measures more of a lateral interaction between a person and their peer support group.

While this aggregation of variables has not been tested as an entity, each has been used individually in previous studies to assess burnout (Etzion & Westman, 1994; Leiter et al., 1994; Solis, 1991). Although choices for these variables may seem somewhat arbitrary, the decisions for their use are made based upon literature that supports the contention that these variables are important in organizational settings (Golembiewski , Aldinger, Munzenrider, & Lou, 1996; Leiter et al., 1994; Miller et al., 1988). As previously discussed, this aggregate provides a more well-rounded definition of communication, measuring communication across vertical and horizontal boundaries, as opposed to only measuring across one boundary.

In sum, it is hypothesized that soldiers who have strong communicative skills, belong to a cohesive unit, and experience a solid support network at home and in the work place will experience burnout to a lesser degree than those soldiers that possess minimal levels of these same variables. Specifically, communication is hypothesized to affect stress and personal accomplishment. The specific variables of communication thought to be linked to stress are social support and work support. House (1981) suggests that individuals who perceive they have little social and work support are more susceptible to stressors in the work place than are those with strong work and social support networks. Thus, as one's support network decreases, so does the ability to confide in others with one's problems and concerns. Therefore, having no outlet for emotions can lead to a rise in stress in the work place.

The personal accomplishment component of burnout is also affected by communication (cohesion, communicative responsiveness, work support, social support).

Leiter et al. (1994), for example, found that men in the Canadian armed forces who belonged to a highly cohesive group demonstrated an increase in their sense of personal accomplishment and achieving goals within their organization. Miller et al.'s (1988) revised model of burnout in the human service profession defined a positive relationship between communicative responsiveness and personal accomplishment. Work and social support have also been found to positively affect cohesion. Thus, an increase in communication (cohesion, communicative responsiveness, work support, social support) is hypothesized to lead to an increase in one's perceptions of personal accomplishment.

H1: As communication increases, perceptions of personal accomplishment increase.

In sum, communication (social support, work support) is hypothesized to attenuate a soldier's feelings of stress in the work place, while communication (cohesion, communicative responsiveness, social support, work support) is hypothesized to directly affect one's sense of personal accomplishment.

Stress. Stress is defined as a psychological factor that has a disruptive influence upon one's work performance. With a decrease in the force structure and no foreseeable reduction in work requirements, the soldier faces a likely increase in his or her work load, which has a bearing on the stress to which the soldier is subjected. As with the construct of communication, stress can also be measured across several boundaries. The boundaries chosen to be measured in this study concern those that contribute negatively to job performance. However, it must be remembered that stress can also contribute positively to one's job performance. For example, stress for many people serves to enhance job performance as one feels an increase in their stress level because it likely causes them to work harder to accomplish the mission, thus explaining the reason that many people claim that they work better under stress. While this may, in fact, may be true, stress as a

positive contributor to job performance is not measured in this study. Instead, only that stress which potentially contributes to negative job performance is measured in this study, as is done in similar studies (Etzion & Westman, 1994).

In previous studies with military populations, Etzion and Westman (1994) measured stress by assessing sense of control and job stress. Sense of control is defined as one's belief of the extent to which outcomes are controllable (Parks, 1989). In the study conducted by Etzion and Westman (1994) it was found that soldiers reporting a higher sense of control typically experienced less burnout than those reporting a lower sense of control. Job stress is defined as those factors that detract from one's ability to successfully complete his or her job and has been found to be linked positively to burnout (Etzion & Westman). Job stress measures such items as work overload, the inability to make sound decisions, and a feeling of being assigned too many duties that are either impossible to effectively accomplish or that directly conflict with other responsibilities (Etzion & Westman).

Additionally, Beehr, Walsh, and Taber (1976) concluded that role ambiguity and job satisfaction are also contributors to what they term "role stress" (p. 42.). Role ambiguity is defined as the sense a person gets when they do not fully understanding what duties are involved with completing their job to the standard expected by others in the work place. As ambiguity concerning one's role in any job increases, a person becomes unsure of what is expected of him or her. This sense of uncertainty can be seen to precipitate an increase in stress.

Job satisfaction is defined as being content with one's job to the extent that, if given the opportunity, one would choose to continue working in his or her current location or occupation, as opposed to working in a different location or occupation. From the job satisfaction perspective, the measure of satisfaction in being able to successfully accomplish a mission or task to the best of one's ability can be examined. Considering the increased training and deployment requirements that most units face in today's armed

forces, often times there are too many things happening at the same time. With multiple missions being conducted simultaneously, one can easily get the feeling that certain missions are not being completed effectively because there are "too many irons in the fire." This can cause a decrease in job satisfaction as soldiers are forced to prioritize tasks, giving less attention to jobs that warrant more work, subsequently not performing some jobs to the standard that is still necessary and expected.

Stress is hypothesized to affect the depersonalization and personal accomplishment components of burnout, which then affect occupational commitment. Several studies have found that stress is likely to affect how a person interacts with and treats others; hence the relationship with depersonalization (Maslach & Jackson, 1986; Cohen, Kamarck, & Mermelstein, 1983). The positive relationship between stress and depersonalization is readily apparent in most any human relation setting. A high level of stress could lead a soldier to treat others with an indifferent, uncaring attitude. Lower levels of stress could potentially have the opposite effect (Newton, Handy & Fineman, 1995). Furthermore, stress is hypothesized to negatively affect personal accomplishment to a similar degree. Westman and Eden (1992) found that as stress increases, one is likely to feel a decreased feeling of self-worth and a decrease in the perception of one's work contributions; hence the relationship between stress and personal accomplishment. In any environment, whether with soldiers or civilians, this can quite easily be imagined. As a soldier becomes subjected to increased levels of stress, he or she may begin to attribute that stressed feeling to poor performance at work, or something he or she has failed to do, which subsequently results in a lower feeling of self-worth and reduced personal accomplishment. In sum, stress is believed to increase the chances that a soldier will depersonalize others in an attempt to alleviate or compensate for increased feelings of stress, as well as feel a reduction in personal accomplishment due to a decrease in his or her level of performance. The following hypotheses are presented to explain the relationship between stress, depersonalization, and personal accomplishment:

H2: As stress increases, feelings of personal accomplishment decrease.

H3: As stress increases, depersonalization increases.

Three Indicators of Burnout

The second part of this model to be explained is the relationship between the three constructs of burnout: depersonalization, reduced personal accomplishment, and emotional exhaustion. Maslach and Jackson (1986) have defined these constructs as stand-alone indicators of burnout in organizations and subsequent factor analyses support this claim. Of most importance with respect to these constructs in this study will be the causal order that is hypothesized to contribute to burnout in a military setting, as opposed to a different ordering of these constructs in other organizations. For practical purposes in this model, these three constructs can be seen as a global measure of burnout, with the exogenous constructs of communication and stress acting as predictors of burnout.

Depersonalization. Depersonalization is defined as one's attitude toward relationships with people. Depersonalization causes a sense of increased callousness toward others, causes people to become thought of as "impersonal objects," and causes one to become emotionally hardened, developing a negative opinion of his or her subordinates, no longer concerned for the welfare of the subordinate (Maslach & Jackson, 1986).

This indicator of burnout is important in a military setting because the armed forces is often seen as a "large family." While many occupations do not get involved with or have control over what happens in a worker's personal life, soldiers are treated much differently. First, the chain of command is seen as an "extended family" in a loose sense of the term. Soldiers often rely on their chain of command to assist with personal aspects of their lives. This includes such instances as instituting family support networks during unit deployments, acting as mediators in marital disputes, and providing support when the

soldier encounters monetary or legal difficulties. Second, soldiers are subject to the Uniformed Code of Military Justice (UCMJ), which is a set of laws governing the conduct of its soldiers both on and off duty. The laws set forth in the UCMJ are often more stringent than those to which a person in a business organization would be subject. Some of these laws include forbidding illegal drug use, forbidding adultery, and the requirement to submit to urinalysis testing. Additionally, upon entering into service, soldiers subscribe to an oath which states, among other things, that they will "obey the orders of the officers appointed over me." Orders and laws that are violated are punishable under the UCMJ. In applying punishment under the UCMJ, the soldier's chain of command often dictates what punishment a soldier will receive. For some infractions a company commander may have jurisdiction over the committed crime. Crimes committed over which the commander does have jurisdiction allow the commander to administer punishment to the soldier, which can amount to restricting the soldier to the barracks, even if he or she is married and not living on a military installation, taking money out of the soldier's paycheck, and reducing the soldier's rank, which also amounts to a monetary loss. In short, with the involvement that occurs in a soldier's personal life, for both good and bad reasons, it is necessary for the soldier's chain of command to maintain a caring attitude toward its soldiers. If a leader becomes callous toward his or her subordinates, the risk arises of hurting not only the soldier, but the soldier's family as well. While others have argued that depersonalization is not applicable in settings other than the human services profession (Miller et al., 1988), I argue that because of the above reasons, soldiers are increasingly susceptible to depersonalization because of the potential effect that the chain of command can have on a soldier's personal life.

Personal accomplishment. Personal accomplishment is defined as a feeling of self-worth with regard to working with others toward the completion of a common goal (Maslach & Jackson, 1986). In reaching that goal, a soldier feels that his or her work is contributing significantly towards successful mission accomplishment. In sum, a feeling of

personal accomplishment stems from the ability of a soldier to feel a true sense of worth from both helping people and from successfully accomplishing a job. A reduction in personal accomplishment occurs when a soldier feels his or her ability to relate to others is inadequate, thus increasing the soldier's own sense of failure. This is classified as "a negative shift in responses toward oneself" (Miller et al., 1988, p. 251).

Personal accomplishment can be applied to a military setting, as it can be applied in most any organization. This can be seen most readily at the company level and below, where a great deal of interaction takes places between a soldier and his squad leader, the squad leader and his first sergeant, and the company commander and first sergeant and their junior leaders. On a day to day basis, in addition to dealing with the accomplishment of work-related problems, leaders at all levels constantly deal with such things as disciplinary actions, marital disputes, and monetary problems. The result of these day-to-day interactions with others comes to bear on a soldier's feeling of personal accomplishment in the work place.

Emotional exhaustion. Finally, the third indicator of burnout, emotional exhaustion, is defined as the psychological feeling of not being able to meaningfully contribute to the work setting (Maslach and Jackson, 1986). More specifically, emotional exhaustion is characterized by the onset of daily fatigue, feelings of extreme frustration in dealing with work-related issues, a sense of frustration in the work environment, a lack of desire to deal with people on a daily basis, and a feeling of working too hard on the job as a result of long hours with little or no compensation. The end result of emotional exhaustion is that, as stated earlier, less meaningful contributions are made to the work setting.

Emotional exhaustion is a construct that is very visible in many professions. When one considers the downsizing of any organization, thoughts invariably lead to those that remain on the job facing an increased work load with little or no compensation, either monetarily or in the form of additional help. Too often, with the downsizing of the armed

forces, the remaining soldiers are facing an increase in their work load because of less people available to accomplish the mission (Maze, 1996a). Soldiers may experience longer hours, increased levels of frustration dealing with people, and a feeling that there is no end in sight to the increased work load. These factors all contribute directly to affecting one's emotional exhaustion in a military setting.

While depersonalization, reduced personal accomplishment, and emotional exhaustion are indicators of burnout, there is disparity among researchers on exactly how these three components of burnout relate to each other, particularly in the armed forces (Golembiewski et al., 1996; Barling & MacIntyre, 1993; Westman & Eden, 1992; Rogers et al., 1987). Maslach and Jackson (1981) contend that emotional exhaustion is the most critical aspect of burnout. Barling and MacIntyre (1993) also assert that emotional exhaustion should be placed as the first of the three indicators in measuring burnout. Conversely, Golembiewski and Munzenrider (1988) propose depersonalization as the first step in burnout, which then initiates feelings of reduced personal accomplishment and emotional exhaustion. Miller et al. (1988) also suggest that depersonalization is the first stage of burnout. However, their revised model (see Figure 3, p. 261) suggests that feelings of personal accomplishment are also directly affected by communication variables. In other words, while depersonalization triggers feelings of reduced personal accomplishment, independent of the depersonalization construct, communicative responsiveness also has an effect on feelings of reduced personal accomplishment. Moreover, they note that the causal order of these variables is likely to change with different populations. In their studies of the Canadian military, Leiter et al. (1994) argue that the sub-component of depersonalization may be meaningful only for human service workers. Further, they note that attempts to extend the concept of burnout to people working outside of human service fields have been successful, except that the "distinction between depersonalization and emotional exhaustion subscales deteriorates with these populations" (1994, p. 65). Overall, Leiter suggests that both emotional exhaustion and

depersonalization assess the "social demands at work" whereas personal accomplishment assesses feelings of work-related self-efficacy. Burnout may be triggered by either or both of these factors.

Based on a review of the literature, the following relationships are proposed among the three sub-components of burnout. First, like Leiter et al. (1994), I question whether depersonalization or emotional exhaustion is "the" initial phase of burnout for members of the armed forces. Instead, I predict that a reduction in the feelings of personal accomplishment is likely to be the first stage of burnout in a military population. Similar to Miller et al., (1995; 1988), I predict that a reduction in feelings of personal accomplishment will lead to emotional exhaustion. As perceived performance level decreases, a soldier's feelings of frustration and hopelessness will increase:

H4: As personal accomplishment decreases, emotional exhaustion increases.

Second, Miller et al. (1995) found personal accomplishment to predict depersonalization in homeless shelter workers, while Starnaman and Miller (1992) found the opposite effect, with depersonalization predicting reduced personal accomplishment in teachers. In this case, I believe a soldier perceives his or her primary duty is to accomplish the unit mission. If that mission is not accomplished, the soldier feels a decrease in a sense of personal accomplishment. It is this decrease in sense of personal accomplishment that then leads to the depersonalization of other soldiers.

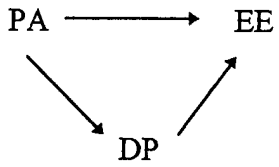
H5: As personal accomplishment decreases, depersonalization increases.

In their study of human service workers, Miller et al. (1988) found that emotional exhaustion is also affected by depersonalization. I predict that much the same relationship will hold true for soldiers. As a soldier feels less concern for his or her subordinates or

becomes more callous toward others, it is likely that this emotional separation from others will directly affect how much this emotional separation leads to feelings of emotional exhaustion or the inability to give of oneself at a psychological level.

H6: As depersonalization increases, emotional exhaustion increases.

In sum, this model of burnout assumes that the two predictors of burnout (communication and stress) will directly influence two sub-components of burnout: personal accomplishment and depersonalization. The interaction of the three measures of burnout is then hypothesized such that personal accomplishment (PA) affects emotional exhaustion (EE) and depersonalization (DP), while depersonalization affects emotional exhaustion. Emotional exhaustion is then the indicator that affects occupational commitment (see Figure 1).



Relationship Among Burnout Indicators

Figure 1

Final Predictors of Burnout

Occupational commitment. Occupational commitment is defined as a compilation of several factors, to include one's "desire to maintain membership in an organization, willingness to exert considerable effort on behalf of the organization, and a strong belief in and acceptance of the organization's goals and values" (Mowday, Steers, and Porter, 1979). It is further stated by these authors that there is a distinct difference between organizational commitment and job satisfaction; the main difference being that organizational commitment is more global in nature and accounts for one's feelings

toward the entire organization, whereas job satisfaction is concerned only with one's level of satisfaction with his or her job or certain aspects of that job (Mowday et al.).

As with the other constructs, occupational commitment plays an important role in a military setting. With the downsizing of the armed forces, a soldier's loyalty to his or her organization is continually being tested. Soldiers approaching critical time periods in their careers are having to decide whether to get out of the armed forces. This dilemma has caused an abyss in all ranks as soldiers struggle to decide their fate (Maze, 1996a; Tice, 1996b; Adelsberger, 1995).

Occupational commitment can be further considered to be that commitment which one feels directly towards his or her military *unit*, as well as a commitment felt to the larger organization, or Army (Malone, 1983, p. 83). Individuals may hold the Army accountable for global issues, thus causing a breakdown in commitment to the Army. For example, decisions concerning a soldier's pay, promotions, and assignments that are controlled by echelons higher than the unit may result in a decision to leave the Army. Most soldiers understand how the structured system within the armed forces operates and realize that the unit can not effect change at the Army level. However, daily decisions made at the unit level, such as frequency of deployments, work assignments, and variations in leadership may cause a soldier to feel disillusioned with the specific unit but not with the Army per se. Thus, I propose that individuals may (a) feel a decrease in the commitment to their unit with the end-state being a desire to leave their unit, b) feel a decrease in their commitment to the Army with the end-state being a desire to leave the armed forces, or c) feel a desire to leave both their unit and the armed forces.

Since occupational commitment is hypothesized as occurring at two separate levels, the hypothesized model takes into account an aggregate view of commitment. Data collection for this thesis involved two separate samples. In sample one, occupational commitment to one's unit was measured. In continuing to research the scope of occupational commitment, I discovered that there are often two types of commitment that

can be measured for organizations: commitment to one's local organization and commitment to one's global organization. For this reason, in the collection of data from the second sample I measured both the local and global measures of occupational commitment. Using the second sample I will be able to explore the predictors of commitment to one's larger organization, or Army. Additionally, the hypothesized model will be tested using data set one, while the revised model will be tested using data set two. With the definition of occupational commitment and its role in the armed forces presented, it is now necessary to discuss how occupational commitment is affected within the hypothesized model of burnout.

Emotional exhaustion and personal accomplishment are thought to have a significant effect upon occupational commitment (Miller et al., 1988). From an emotional exhaustion perspective, the more a person becomes unable to respond to the needs of the work place, in terms of a lack of desire to deal with people and becoming frustrated in the work environment, the more likely that person is to develop a negative attitude toward his or her organization (Maslach & Jackson, 1986; Mowday et al., 1979). As a result of emotional exhaustion, it is more likely that soldiers at all levels will feel less commitment towards their individual unit, seeing the unit as the cause of their problems. As these factors increase in magnitude, culminating in high levels of emotional exhaustion, the affection for one's occupation is likely to decrease dramatically, thus reducing one's level of commitment to their unit. From a personal accomplishment perspective, as a soldier becomes more frustrated by his or her job and feels a strain from the work being performed, it is likely that this strain will produce less tangible feelings of positive personal accomplishment in the work place, ultimately affecting commitment to one's unit. This is reinforced by Leiter et al. (1994), who speculated that men believe relationships with others in an organization are related to one's own level of productivity (as an outcome of increased cohesion). Leiter et al. believed that this increased level of productivity, coupled with increased cohesion, would lead to greater feelings of belonging within an

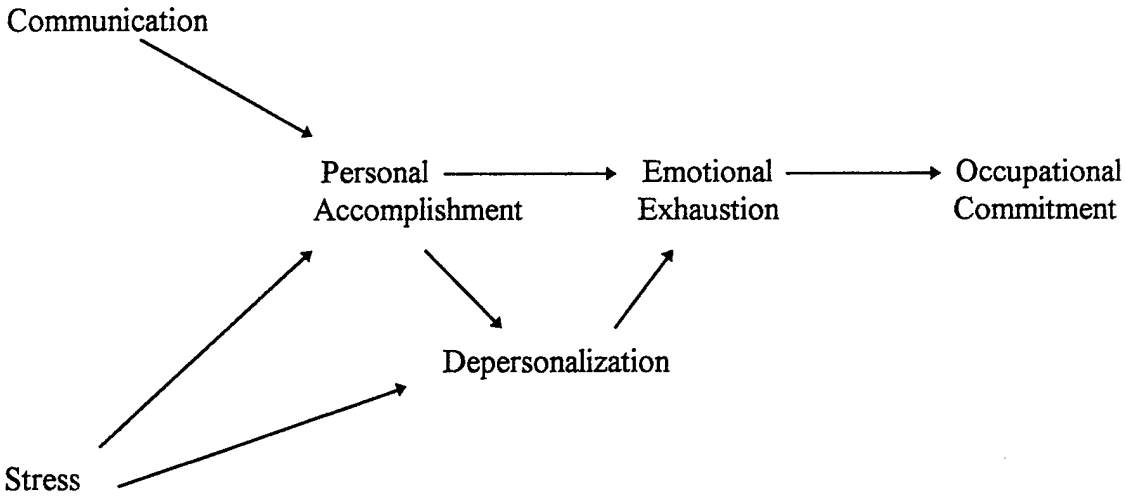
organization; hence, the increase in organizational commitment. Consequences of this problem include placing the blame for this lack of accomplishment on the unit or organization, which results in a decrease in one's commitment to the unit or Army. Depersonalization is believed to affect occupational commitment, but it does so indirectly through emotional exhaustion.

The following hypotheses are offered as a relationship between emotional exhaustion, personal accomplishment, and occupational commitment:

H7: As emotional exhaustion increases, occupational commitment decreases.

H8: As personal accomplishment decreases, occupational commitment decreases.

In sum, the hypothesized causal model of burnout in the armed forces is presented in Figure 2.



Hypothesized Model of Burnout and Commitment in the Armed Forces

Figure 2

CHAPTER 2

METHOD

Procedure

Surveys were distributed to 1100 soldiers at several Army posts in the Eastern United States. The units at these posts were chosen because of their proximity to the author and because the author had previously established relationships with soldiers at these posts, thus increasing the likelihood of participation in this study and subsequent completion of the surveys. A letter of permission was obtained from the commander of each participating unit (see Appendix D). The participants were given a packet that contained, in the following order, a cover letter explaining the general purpose of the study, the survey instrument, and a debriefing statement. The cover letter explained only that I was measuring the effects of a multitude of items on performance in Army units. Soldiers were also guaranteed anonymity and informed that a copy of the overall *results* of the study would be provided to their unit commander. Results of a pilot study revealed that it took approximately 15 to 30 minutes to complete the survey. The survey was administered as a "take home" instrument and soldiers were provided with an envelope to place their survey in upon its completion. Collection boxes were placed in each unit to gather all the completed surveys. Surveys were distributed to and collected from all units over a continuous three month time period. The response rate was 64%, with 700 of the 1100 distributed surveys being returned. Of these, 665 were complete enough to be used in analyses.

Participants

The soldiers completing this survey came from a variety of branches and military occupational specialties in the Army (infantry, military intelligence, quartermaster, and aviation / special operations). Participants in the study ranged in age from 18 to 51,

with the majority of the soldiers between 19 and 32 years of age. Soldier's ranks ranged from Private to Master Sergeant for enlisted soldiers and from Warrant Officer to Lieutenant Colonel for officers. More than 70% of the respondents were in the category that spanned from the rank of Private First Class (E-3) to the rank of Sergeant (E-5). Male respondents comprised 89% of the group, females 5%; the remainder did not respond. Fifty percent of those surveyed were married, 35% had never been married, and 8% reported being divorced. All soldiers had at least a high school degree, 43% reported taking some college classes, 8% held associate degrees, and 11% had obtained a four year college degree. Finally, 32% of the group reported being deployed from 0 to 2 months, 35% deployed from 3 to 4 months, and 20% deployed from 5 to 6 months, with the remainder being deployed from 7 to 12 months of the year.

Instrumentation

The proposed model hypothesizes that the following constructs contribute to burnout: communication (communicative responsiveness, cohesion, social support, work support), stress (job satisfaction, job stress, sense of control, role ambiguity), depersonalization, personal accomplishment, emotional exhaustion, and occupational commitment. Surveys were delivered to each of the solicited units. Soldiers were allowed to complete the surveys on their own time and return them to a central collection point within each unit. This method of administration and collection allowed the units greater latitude in completing the survey, as opposed to administration of the survey by the author, which would have required that all soldiers in a unit gather at one place and time to complete the survey. The survey was comprised of 125 questions. Constructs were measured using previously administered methods of measurement found to have a high reliability and validity for the construct they purported to measure. The cover letter, survey instrument, and debrief can be found in Appendices A, B, and C, respectively. Responses for the survey were measured using a Likert response format.

The first four constructs were hypothesized to contribute to communication. Thus, communication is defined as the measures of communicative responsiveness, cohesion, social support, and work support.

Communicative responsiveness. Communicative responsiveness was measured using a questionnaire from Miller et al. (1988), comprised of six items and scaled from 0 (never) to 6 (every day) (Miller et al., $\alpha = .73$). Miller et al.'s questions were derived from a five item questionnaire developed by Stiff (1984). Questions of this measure included such items as "I usually respond appropriately to the feelings and emotions of others." and "My ability to communicate well with others has often led to success in the work place."

Cohesion. Cohesion was measured using an eight item questionnaire and scores were scaled from 1 (strongly agree) to 6 (strongly disagree) (Dobbins & Zaccaro, 1986, $\alpha = .91$). This measure included such items as "The members of my company get along well together." and "I enjoy belonging to this company because I am friends with many soldiers."

Social support. Social support was measured using an seven item questionnaire and scores were scaled from 1 (not at all) to 4 (very much) (Burleson, Albrecht, & Sarason, 1994, with α ranges in the .80's and .90's, as cited in Pierce, Sarason, I.G., & Sarason, B. R., 1991). Questions from this measure included such items as "To what extent could you turn to this person for advice?" and "To what extent could you count on this person to give you honest feedback, even if you did not want hear it?"

Work support. Work support was measured using the same questionnaire that measured social support. The same scales and questions were used, asked from the perspective of how one's supervisor provided support.

Stress was hypothesized to be comprised of job satisfaction, job stress, sense of control, and role ambiguity. Thus, each of the four constructs contributed to the overall construct of stress.

Job satisfaction. Job satisfaction was measured using a fifteen item measure, developed by Warr, Cook, and Wall (1979). Warr et al. (1979) reported reliability ranging from .85 to .88 and Clegg and Wall (1981) reported a reliability of .92. Job satisfaction measured how one felt with regard to their current job and included such statements as "Your immediate boss." and "The way your company is managed.," scaled from 1 (extremely satisfied) to 6 (extremely dissatisfied).

Job stress. Job stress was measured using a seven item questionnaire developed by House and Rizzo (1972) (House & Rizzo, Kuder - Richardson internal reliability of .83). It was measured on a two point scale of 1 (true) and 2 (false) and included such questions as "I work under a great deal of tension." and "I often "take my job home with me" in the sense that I think about it when doing other things."

Sense of control. Sense of control was measured using a nine item variation of the fifteen item Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) used by Etzion and Westman (1994), that measured the sense of control in a person's life (Etzion & Westman, $\alpha = .73$ across the 7 items. This measure was tested on scale of 1 (not at all) to 7 (very much), and included items such as "To what extent do you feel you are able to control the important things in your life?" and "To what extent have you been able to control the way that you spend your time?"

Role ambiguity. Role ambiguity was measured using a seven item scale, taken from questions used by Beehr, Walsh, and Taber (1976, $\alpha = .71$) and Rizzo, House, and Lirtzman (1970, α ranges from .78 to .81). This measure was scaled from 1 (strongly agree) to 6 (strongly disagree), and included such questions as "My supervisor makes it clear how I should do my work." and "I am confident of how much authority I have."

Depersonalization. Depersonalization was measured using a five item questionnaire from Maslach's Burnout Inventory (Maslach & Jackson, 1986), a test used frequently in measuring burnout across many occupational fields (Golembiewski et al., 1996, $\alpha = .75$; Miller et al., 1988, $\alpha = .67$; Maslach and Jackson, 1986, $\alpha = .79$). Items

were scaled from 0 (never) to 6 (every day). This construct was designed to measure how one felt toward the physical and psychological support of others in a work environment and included such questions as "I feel I treat some soldiers as if they were impersonal objects." and "I don't really care what happens to some soldiers that I work with."

Personal Accomplishment. Personal accomplishment was measured using eight items, also taken from Maslach's Burnout Inventory (Maslach and Jackson, 1986). Personal accomplishment was designed to measure the degree to which one felt a sense of accomplishment in performing duties related to one's work. Items in this test were scored using a seven item response scale, ranging from 0 (never) to 6 (every day) (Golembiewski et al., 1996, $\alpha = .70$; Miller et al., 1988, $\alpha = .69$; Maslach & Jackson, 1986, $\alpha = .71$). This measure included such questions as "I deal very effectively with the problems of other soldiers that I work with." and "I have accomplished many worthwhile things in this job."

Emotional Exhaustion. Emotional exhaustion is the final construct of Maslach's Burnout Inventory (Maslach & Jackson, 1986). This construct was designed to measure the degree to which one feels emotionally overloaded as a result of work-related activities. It used a nine item questionnaire with the same response scale as personal accomplishment (Golembiewski et al., 1996, $\alpha = .88$; Miller et al., 1988, $\alpha = .83$; Maslach & Jackson, 1986, $\alpha = .90$). Questions in this category included such items as "I feel emotionally drained from my work." and "I feel frustrated by my job."

Occupational Commitment. Occupational commitment was measured from both a unit perspective and an Army perspective, using a variation of the fifteen item questionnaire constructed by Mowday et al. (1979). The first series of questions (thirteen items) measured how one felt about the unit to which they were currently assigned in terms of being committed to a long term relationship with their unit and how likely it was, if given the choice, they would remain with their unit. The items were scaled from 1

(strongly agree) to 6 (strongly disagree) (Mowday et al., 1979: α ranges from .82 to .93, with a median of .90, measured across more than 2500 employees in nine different organizations). Questions in this category included such items as "I feel very little loyalty to this unit." and "If I had the choice I would leave this unit in a heartbeat." The participants then answered a second series of questions (15 items), similar to those just discussed, but from an Army level perspective, this time substituting the word "Army" for the word "unit" as a measure of their commitment to the Army. Recall that the unit items were asked of all respondents, whereas the Army items were asked only of those respondents in the second data set.

Analysis

The purpose of this study was to propose and test a causal model of organizational burnout in a military setting. As a first step, confirmatory analyses were used to confirm the factor structure of all scales. The measurement models were assessed using LISREL VI (Joreskog & Sorbom, 1984) which provides unique estimates of the factors and loadings and permits straightforward statistical tests of the adequacy of the obtained factors.

Once the measurement model was assessed for overall fit, the hypothesized model (see Figure 2 on page 20) was analyzed using structural equation modeling. Structural equation modeling provides statistical tests to assess both the overall fit of the entire model as well as individual assessments of each hypothesized relationship between variables. Modification indices were examined to assess whether the overall fit of the model could be improved.

With regard to testing the models in this study, two separate data sets were used given the large size of the data set (N = 665). The first data set was comprised of three units (soldiers in infantry, military intelligence, and quartermaster units), while the second data set was comprised of two other units (soldiers in another infantry unit, as well as an aviation / special operations unit).

CHAPTER 3

RESULTS

This chapter is comprised of four major subsections. The first section describes the rationale behind how and why CFA's are performed on each of the constructs in the proposed model of burnout. The second section discusses the exogenous variables of stress and communication and how the individual items for each variable are analyzed for fit within each variable, accomplished through CFA. The third section explores the endogenous variables of personal accomplishment, depersonalization, emotional exhaustion, and occupational commitment and how the individual items for each variable are analyzed for fit with each variable, also examined through CFA. The fourth section discusses model testing.

Preliminary Analysis

The items used to measure the twelve constructs were examined using confirmatory factor analysis (CFA) in LISREL VI (Joreskog & Sorbom, 1984). The overarching goal of CFA is to successfully reduce a set of measures to a set of underlying factors fewer in number than the measures. In order to successfully reduce items that are hypothesized to load on one measure, one must set parameters at both a local and global level. CFA requires *a priori* specification, that is, one must have a theoretical base from which to operate in order to test each of the separate constructs. The use of this *a priori* specification allows for the deduction of one set of unique parameter estimates for each construct, and thus, to test the measurement model in a statistical sense. CFA is useful in this instance because it provides a standard basis for drawing inferences about a population on the basis of a sample (Fink & Monge, 1985, p. 168). In order to successfully conduct the CFA for each of the separate constructs, several pieces of information yielded from the CFA must be examined. According to Joreskog and

Sorbom (1989, p. 41), three levels of examination are necessary to successfully analyze a CFA; examination of the solution, examination of the measures of overall fit, and examination of the detailed assessment of fit. The first of these three measures, examination of the solution, is considered a local level of analysis, while the second and third measures, examination of the measures of overall fit and examination of the detailed assessment of fit, are considered more global levels of analysis. Examination of both the local and global measures are necessary to determine the best fit of the items within each measure in constructing the most accurate measurement instruments for each hypothesized construct.

Prior to discussing these three levels, one must understand the concept behind the term "referent indicator," the measurement method by which the items within measures are assessed. A referent indicator is classified as "an observed variable which represents the latent variable in the sense of being a valid and reliable measure of it" (Joreskog & Sorbom, 1989, p. 25). Much in the same way that statistical Z values standardize items for comparison, referent indicators allow one item within each construct to serve as a "benchmark" from which the other items are compared against with relation to each other. For example, if the referent indicator selected within a construct has a measurement of 3 on a scale of 1 to 6, then all other variables within that measurement tool are based on the 3 of that referent indicator. In this manner, similar to the statistical Z values, each item within the entire measure is compared to this benchmark. As is typical, I have chosen to set the referent indicator as the first item within each measure, except within the construct of stress, where the second measurement item was used. In the analysis of the output from LISREL, the effect of an item being set as a referent indicator is visible only in the t-values, where t-values for all referent indicators are computed as 0.00 or n/a. SMC's are still computed allowing an analysis of the item chosen as the referent indicator. Now that the process of setting the indicators is understood, the first of the three levels can be more easily explained.

The first area, at the local level of fit, is examination of the solution, where fit of each variable (item) within its construct is determined by examining several indicators of fit: t-values, squared multiple correlations (SMC), and coefficients of determination (COD). The examination of these indicators provides a comprehensive overview of the effectiveness of each item as a measurement of the overall construct. First, a t-value is defined as the ratio between the parameter estimates of an item and its standard error. Parameter estimates are those that serve as numeric descriptives for measures of a population, while the definition of the standard error for those measures is simply an item's deviation from the parameter estimates of the measure (Ott, 1993, p. 67). Accordingly, then, t-values greater than 2.0 are more likely to indicate that individual items will likely contribute significantly to each measure (Joreskog & Sorbom, 1989, p. 89). Second, SMC's, similar to *r* values in a multiple regression equation, are defined as a correlation of that item within its measure which shows how well an item serves as a measure of overall construct fit. Similar to the regression model, higher SMC values indicate a more linear relationship between each item and its measure. Thus, while no specific cut-off was used to determine poor linear fit, those items with low SMC's (e.g. < .25) become valid candidates for elimination from their measures. Finally, the COD, defined as a proportion of variability between the dependent variable (measure) and the independent variables (items), must be examined. The COD tells us how reliable the items have been gauged with respect to their measure, weighing all items to judge the reliability of the entire measure, as opposed to the SMC, which only weighs the potential effectiveness of each individual item within the measure. Higher COD's indicate a more appropriate fit for each measure. An attempt was made to achieve a COD of at least .80 for each measure.

Cronbach's α (α), similar to the COD, is also a frequently used reliability test. One of the most common definitions of α is related to the internal consistency of scales. In this case, α is presented as a measure of homogeneity of the items within each measure.

This interpretation yields a number that represents the frequency with which that measure can be considered a reliable measure (Kerlinger, 1980, p. 413). As with the COD, measures with α's of at least .80 are considered reliable measures. The primary difference between COD's and Cronbach's α is that the COD measures the reliability of items with respect to their measure, whereas the α's are more aligned with the measure of internal consistency of each item within its measure. Each of these reliability indices can be used to report overall reliability of items and measures, but the most frequently reported reliability measure is Cronbach's α.

In sum, there are several methods that can be used to weigh the effectiveness of items and the relationship to their measures at the local level. SMC's greater than .25 and t-values greater than 2.0 suggest the item is a good indicator, while COD's and Cronbach's α's greater than .80 suggest that the measurement model fits the data well.

The second area, at a global level of fit, is examination of measures of overall fit, where one becomes concerned with the fit of the individual items to their respective measures and ultimately the fit of the measures to the hypothesized model, or how well the measure fits the data. At this level four separate issues must be considered; chi squared (χ^2), goodness of fit index (GFI), adjusted goodness of fit (AGFI), and root mean square residuals (RMSR). The χ^2 test is a measure used to validate the items selected for use in the compilation of each measure. The lower the number obtained for χ^2, the more likely that the measure in question is a good fit of the data being tested (Joreskog & Sorbom, 1989, p. 43). In essence, an attempt is made to accept the null hypothesis (measure is adequate), which is contrary to the normal statistical tests where one would attempt to reject the null hypothesis in favor of the research (or alternate) hypothesis.

In order to accept the null hypothesis that the model provides an adequate fit for the data, several assumptions must be met, the most critical of which are 1) independence of trials, 2) constant cell probabilities, and 3) that N is sufficiently large (Ott, 1993, p. 360; Joreskog & Sorbom, 1989, p. 43). Assumption one refers to collecting data from only

one population, which may bias certain items or measures. For example, if only one Army unit was surveyed and it had a particularly harsh, unyielding chain of command, questions concerning leadership, personal accomplishment, and role ambiguity might be answered much differently than an Army unit with a more sympathetic chain of command. Similarly, Army units with a high percentage of deployments might be under more duress and answer questions much differently than an Army unit that only deploys two weeks out of every year. In this thesis, samples have been taken from various companies, battalions, and brigades, across three different Army installations, thus serving as a safeguard against taking the sample from too restricted of a population. Assumption two refers to the manner in which a sample is drawn. If, for instance, results had been drawn from units across different time periods in the Army's tumultuous history, say over a period of several years, this assumption would have been violated. However, the samples have been drawn from each of the units over a continuous span of less than three months, thus ensuring that the study was conducted over a sufficiently restricted period of time. Assumption three necessitates a large sample size, $N > 200$, to reduce the possibility of error. In this case, $N = 657$. Therefore, each of the three assumptions has been met that allows the use of the χ^2 test as a goodness of fit indicator.

In attempting to accept the null hypothesis, we desire to achieve the lowest possible value for χ^2, along with the lowest possible degrees of freedom, k (number of items) (Ott, 1993, p. 361). The test statistic for the χ^2 goodness of fit test is directly related to the number of items, k, thus, the lower the degrees of freedom and the lower the χ^2 term, the more likely it is that the null hypothesis (measure is adequate) can be accepted. Of additional concern with the χ^2 test is the potential to commit a Type II error, which occurs if N is small or k is too high. The end result with the χ^2 test is that a lower test statistic, coupled with lower degrees of freedom, makes the null hypothesis more likely to be accepted (measure is adequate). The key point to remember here is that the χ^2 test is a

"goodness of fit" indicator, where large values indicate bad fit of the measure and small values indicate good fit of the measure (Joreskog & Sorbom, 1989, p. 43).

GFI and AGFI must also be examined as part of this global area of examination. GFI is defined as {1 - ("after" fit of measure / "before" fit of measure)}, where the numerator of the ratio is "the minimum of the fit function after the measure has been fitted; the denominator is the fit function before any measure has been fitted" (Joreskog & Sorbom, 1989, p. 44). This equation yields a number between 0 and 1, with results closer to 1 indicating adequacy in terms of measure "fit." The AGFI is a variation of that same equation, taking into account the degrees of freedom of the measure in question. Both numbers are invariably positive, but if the numbers do come up negative "it means that the (measure) fits worse than any (measure) at all" (Joreskog and Sorbom, 1989, p. 44). Put more simply, the GFI is an indicator of measure effectiveness before any analysis is conducted to fit the measure, while the AGFI is an indicator of how the measure fits after it has been analyzed. These two indicators are particularly important because they tell us how the measure in question fits the data, both before and after the analysis has been conducted. The closer the AGFI is to the GFI, the more accurate the measure appears to be because there is less overall difference between the before analysis and the after analysis results. A rule of thumb is that GFI should generally be quite high, around .98 or .99. Similarly, AGFI's should correspond to the GFI's with the expectation that the adjusted values will be slightly lower than the GFI's. So, the desired end-state is for GFI's to have a value above .98, and AGFI's with a value very close to the GFI, preferably at .95 or higher.

The final global measure to examine under the second global area of examination is the RMSR, which is a measure of the average of the fitted residuals (Joreskog & Sorbom, 1989, p. 44). This measure is determined by manipulating the residuals for the variances of each item within a measure; larger variances among the items within each measure will result in larger RMSR's for that measure. Therefore, higher RMSR values indicate a

poorer fitting model. Generally, Joreskog and Sorbom (1989) claim that any value over .05 indicates a problem with residuals, which translates to poor measure fit.

The third and final level of examination, also a global level of examination, concerns detailed assessment of fit. Here, standardized residuals (SR) must be examined and are computed between items within a measure. Problems arise when these values become unnecessarily large (> +/- 2.50). In attempting to determine a measure of best fit, one is able to refer to the SR's to determine where problems may be occurring in attempting to reduce the measure to its most beneficial end-state. Items with large SR's should be subsequently removed from consideration in an attempt to better fit the items to the measure under examination.

In considering all of these factors, each of the above parameters must be examined somewhat simultaneously. The goal is to reduce χ^2 so that it is not significant, while increasing the GFI and AGFI. The tools used to accomplish this task are the t-values, SMC's and RMSR's. While the above-stated criteria for each of the individual parameters is preferred, that does not always occur. Reality dictates that the best possible results for each individual construct be achieved in order to best prepare the compilation of the constructs for a test of the overall fit of the hypothesized model. Further explanation of the CFA and how it relates to overall model construction is explained later in this section. Finally, for all constructs, items were recoded such that larger numbers indicate more negative effects (e.g., more stress, reduced personal accomplishment, less commitment, less cohesion). For the sake of brevity, the confirmatory factor analyses were run on the combined data sets (e.g., combining data set one and two).

Explanation of Confirmatory Factor Analyses of Exogenous Measures

Communication. Communication was originally hypothesized to be comprised of four measures; work support, social support, cohesion, and communicative responsiveness. An initial CFA was conducted using the 28 items for the four measures. Results of the initial CFA suggested that work support and social support had very little

co-variance with the other two hypothesized measures of communication of cohesion and communicative responsiveness.[1] As a result, cohesion and communicative responsiveness became the primary measures of communication, while work support and social support were removed as measures of communication.

Next, a second CFA of cohesion and communicative responsiveness was conducted in order to assess if the 14 items for the two measures shared sufficient variance to be considered as one measure of communication. Results of this CFA yielded a poor model fit to the data: χ^2 (20) = 777.39, $p < .001$, GFI = .710, AGFI = .478, RMSR = .34, COD = .82, SMC's as low as .11, and 26 residuals, ranging from -7.56 to 13.56. It was determined through CFA that the 14 items could not be simultaneously reduced to yield one effective measure of communication. A separate CFA was conducted for each measure, thus, cohesion and communicative responsiveness both became candidates for an effective measure of communication as two separate measures.

A CFA of cohesion with its original 8 items of measurement demonstrated that using all items produced a measure of poor fit: $\chi^2(20) = 93.57$, $p < .001$, GFI = .968, AGFI = .942, RMSR = .07, COD = .90, and a total of 7 residuals, ranging from -3.88 to 3.98. The χ^2 test and residual analysis suggested that the model needed much improvement. The first CFA indicated that several items were of a particularly poor fit. The starting point for reduction was chosen based upon the items that caused the largest residuals. In addition to large residuals, SMC's were simultaneously taken into consideration to determine which items needed to be removed from the current composition of the construct. The two items with the lowest SMC's (.272 and .304), coupled with most frequent residuals, were removed from the model. These same items also had the lowest t-values, further indicating a need for their removal from the model in an attempt to obtain a model of best fit. The two items were removed from the construct composition and a CFA was again run on the remaining items. A better fit was obtained but there were still residuals that caused a poor fit for the construct: χ^2 (9) = 37.85,

Table 1

Local Assessment of Fit for Exogenous Measures

Construct	ML indicators	SMC's	t-values[a]
Cohesion			
Company members readily defend each other	1.000	.48	n/a
Look forward to being with members of my company each day	1.076	.58	16.30
Enjoy belonging to company because I am friends with many members	.843	.41	14.32
Company to which I belong is close	1.107	.61	16.52
Communicative Responsiveness			
Have a knack for saying the right things to make people feel better (R)	1.000	.46	n/a
Others see me as understanding person (R)	1.108	.58	16.12
I can say right thing at right time (R)	1.068	.61	16.29
Others come to me for help with problems (R)	1.107	.47	14.99
Stress			
Job stress	.127	.19	9.93
Physical work conditions	.645	.28	11.93
Freedom to chose own method of work	1.142	.61	16.18
Recognition for good work	1.023	.49	15.29
Opportunity to use abilities	1.000	.50	n/a

Note. (R) indicates reverse code item. "ML" stands for maximum likelihood. "SMC" stands for squared multiple correlation. t-values indicating "n/a" indicate that the particular item was used as a referent indicator and thus set equal to 1.

[a] All t-values are significant at $p < .05$.

Table 2

Global Assessment of Fit for Exogenous Measures

Construct	χ^2	GFI	AGFI	RMSR	COD	α
Cohesion	.06 (2)	.999	.999	.003	.82	.81
Communicative Responsiveness	2.29 (2)	.998	.992	.02	.83	.82
Stress	6.11 (5)	.997	.990	.02	.81	.75

Note. All χ^2 values are not significant. Degrees of freedom are presented in parentheses under the χ^2 value. "GFI" stands for goodness of fit. "AGFI" stands for adjusted goodness of fit. "RMSR" stands for root mean square residual. "COD" stands for coefficient of determination. α represents Cronbach's α.

$p < .001$, GFI = .981, AGFI = .957, RMSR = .05, COD = .89, and five residuals, ranging from -3.07 to 5.11. Two additional items were then removed from the construct measurement, based upon what appeared to be causing the largest residuals, low SMC's, a border-line RMSR, and $p < .001$. A final CFA of cohesion yielded a χ^2 that was not significant, as well as more closely aligned GFI/AGFI scores and a more accurate RMSR. The final measure of cohesion with 4 items provided a good fit for the data as indicated in Table 1 and Table 2.

Communicative responsiveness, originally a 6 item measure, was also subjected to CFA. Preliminary analysis yielded a poor fit: $\chi^2(9) = 108.64$, $p < .001$, GFI = .947, AGFI = .876, RMSR = .09, COD = .88, and 5 residuals, ranging from -5.20 to 7.95. Items were chosen for elimination from the measure based in part on the usual three items; residuals, SMC's, and t-values. Of particular interest was the large residuals being caused by one of the items within the construct; this item created residuals with three of the six items in the measurement. A check of the item's t-value (15.82) and SMC (.454) also confirmed that this particular item seemed to be causing the largest problem in obtaining the best model fit for the construct. The item was removed for the subsequent CFA, and a CFA was performed with the 5 remaining items that proported to measure the construct. This iteration of the CFA proved to be equally informative in that it calculated large residuals for yet another item, this time causing two of three residuals for the CFA. This second item was removed from the CFA process and a final CFA was run using the remaining 4 items, with the final CFA model reducing the original 6 item measure of communicative responsiveness to a 4 item measure, as evident in Table 1 and Table 2, with these 4 items providing a very good fit.

Consequently, while 4 measures were originally hypothesized to effectively measure the construct of communication, only two measures were retained after the CFA analyses; cohesion and communicative responsiveness. However, counter to prediction,

these items did not form a single measure of communication. Thus, when testing the hypothesized model I use two separate measures for communication.

Stress. Stress was also originally hypothesized to be comprised of 4 measures; role ambiguity, sense of control, job satisfaction, and job stress. An initial CFA on the 38 combined measures indicated that role ambiguity and sense of control were very much separate measures from job satisfaction and job stress and yielded a poor model fit to the data: χ^2 (65) = 1323.62 , $p < .001$, GFI = .694, AGFI = .572, RMSR = .27, COD = .84, SMC's as low as .17, and 34 residuals, ranging from -5.87 to 14.45.[2] Based on subsequent analyses, two items; role ambiguity and sense of control, were removed from further model construct analysis.

Subsequent CFA's on the remaining measures of stress; job satisfaction and job stress, began with analyzing the full number of items in both measures. The measure of job stress was a single item measure (summation of 7 items thus forming a 0 to 7 scale). The initial CFA of stress (15 items for job satisfaction and 1 item for job stress) yielded a poor fit in terms of virtually every indicator: $\chi^2(104) = 518.73$, $p < .001$, GFI = .910, AGFI = .882, RMSR = .10, COD = .92, SMC's of .11 and higher, and more than 25 residuals, ranging from -5.60 to 6.95. Taking into account the criteria mentioned previously, and beginning primarily with reducing the number of residuals, several items were removed from the measure of stress. In this instance, residuals provided the major impetus for item selection and removal, with SMC's and t-values serving as confirmation that items were indeed adequate items which needed to be removed from the measure. Items were reduced from this composite measure until a level of non-significance was achieved. Stress was finally reduced to 5 items, measured through the constructs of job satisfaction (4 items) and job stress (1 item) (see Table 1 and Table 2).

Of additional note with the construct of stress is the difference between the values for COD and Cronbach's α. While all other variables have COD's and α's that are fairly close to each other, the α for stress is low. This can be explained by the fact that LISREL

appropriately weights each of the items that make up the construct of stress. In this case, Cronbach's α underestimates the reliability of stress because the factor loadings for stress are very diverse. In particular, the factor loading for one of the items comprising stress is less than .15, while all others that comprise the construct are approximately 1.0. Marsh and Hocevar (1988, p. 110) claim that it is this difference in factor loadings that accounts for the difference between COD and Cronbach's α, and thus, in this case determining α to be a less reliable measure for the construct of stress (as referenced in McDonald, 1985; Kenny, 1979).

Explanation of Confirmatory Factor Analyses of Endogenous Measures

Personal accomplishment. Personal accomplishment was originally comprised of 8 items. Initial CFA results suggested a poor fit: $\chi^2(20) = 120.75$, $p < .001$, GFI = .959, AGFI = .927, RMSR = .11, COD = .84, SMC's from .06 to .56, and 9 residuals, ranging from -5.21 to 4.88. While the GFI and AGFI were at almost acceptable levels, the χ^2 and RMSR values were not adequate. Additionally, at least one SMC was exceedingly low for the overall measure. Based on these issues, reduction of the measure was pursued by removing the most poorly fit items in subsequent CFA's. A final CFA demonstrated a significant improvement over the initial measure, resulting in personal accomplishment being effectively measured by 5 items (see Table 3 and Table 4).

Depersonalization. Depersonalization was originally comprised of 5 items with initial CFA results yielding a poor model fit: $\chi^2(5) = 50.95$, $p < .001$, GFI = .972, AGFI = .917, RMSR = .14, COD = .80, SMC's as low as .24, and 5 residuals, ranging from -5.60 to 5.23. While the GFI, AGFI, and COD were acceptable, residual and RMSR values were not adequate. However, only one item needed to be removed to yield the best fitting measure of depersonalization, as illustrated in Table 3 and Table 4.

Emotional exhaustion. Emotional exhaustion was originally comprised of 9 items, with initial CFA results suggesting a poor model fit: $\chi^2(27) = 413.18$, $p < .001$, GFI = .877, AGFI = .796, RMSR = .179, COD = .91, and 16 residuals, ranging from -5.38 to

Table 3

Local Assessment of Fit for Endogenous Measures

Construct	ML indicators	SMC's	t-values[a]
Personal Accomplishment			
Feel I'm positively influencing other people's lives through my work (R)	1.000	.47	n/a
Feel very energetic (R)	.816	.36	13.22
Can easily create a relaxed atmosphere with soldiers I work with (R)	.770	.37	13.34
Feel good after working closely with others (R)	1.020	.62	15.68
I deal with emotional problems calmly at work (R)	.710	.29	11.96
Depersonalization			
Treat others as impersonal objects	1.000	.52	n/a
Have become more callous since taking job	.978	.46	12.54
Don't care what happens to others at work	1.011	.37	12.00
Soldiers blame me for their problems	.687	.24	10.18
Emotional Exhaustion			
Feel fatigued getting up in the morning and facing another day of work	1.000	.53	n/a
Working with people all day is a strain	.656	.31	14.06
Feel burned out from my work	1.192	.79	22.06
Feel frustrated by my job	1.035	.59	19.45
Feel I'm working too hard on job	.839	.44	16.73
Feel like I'm at the end of my rope	1.010	.49	17.74
Occupational Commitment (Unit)			
Talk up unit as a great place to work	1.000	.65	n/a
Feel very little loyalty to my unit (R)	.600	.22	11.96
Tell others I am proud of my unit	1.038	.68	23.14
Unit inspires best in me for job performance	.954	.67	22.93
Really care about the fate of my unit	.917	.54	20.15
Occupational Commitment (Army)			
Army is a great place to work	1.000	.67	n/a
My values and Army's values are similar	.949	.64	19.94
Army inspires best in me in job performance	.923	.63	19.73
Would leave Army in a heartbeat if I had choice (R)	.907	.47	16.31
Really care about fate of Army	.800	.45	16.03
Glad I chose the Army over other organizations	.998	.65	20.11

Note. (R) indicates reverse code item. "ML" stands for maximum likelihood. "SMC" stands for squared multiple correlation. t-values indicating "n/a" indicate that the particular item was used as a referent indicator and thus set equal to 1.

[a] All t-values are significant at $p < .05$.

Table 4

Global Assessment of Fit for Endogenous Measures

Construct	χ^2	GFI	AGFI	RMSR	COD	α
Personal Accomplishment	2.91 (5)	.998	.995	.02	.80	.78
Depersonalization	4.57 (2)	.997	.983	.06	.74	.72
Emotional Exhaustion	16.99 (9)	.992	.981	.05	.89	.87
Occupational Commitment (Unit)	3.51 (5)	.998	.994	.03	.88	.85
Occupational Commitment (Army)	15.75 (9)	.990	.976	.04	.90	.89

Note. All χ^2 values are not significant. Degrees of freedom are presented in parentheses under the χ^2 value. "GFI" stands for goodness of fit. "AGFI" stands for adjusted goodness of fit. "RMSR" stands for root mean square residual. "COD" stands for coefficient of determination. α represents Cronbach's α.

13.24. All gauges of this measure were poor using the full measure of 9 items. Subsequent removal of items based upon the previous criteria yielded significantly better results, within the final measure being compromised of 6 items (see Table 3 and Table 4).

Occupational commitment. Finally, as previously discussed from a theoretical standpoint, occupational commitment can be measured as both commitment to one's unit and overall commitment to one's larger organization, or Army. I desired to see if these two measures could be combined into an aggregate measure of commitment, or if they should be considered separate measures. Unit commitment was initially measured using 13 items, while Army commitment was initially measured using 15 items. Results of the subsequent CFA determined that commitment could *not* be measured singularly by both types of commitment. In attempting to use the two commitment measures to measure one type of commitment, I found that the items would not reduce to one factor without systematically eliminating all of the occupational commitment to unit items or all of the occupational commitment to Army items. Theses results suggest that the items measuring commitment to the unit and to the Army are measuring distinct types of commitment.

A CFA of occupational commitment to the unit, originally a 13 item measure, suggested a poor model fit: $\chi^2(65) = 322.36$, $p < .001$, GFI = .926, AGFI = .896, RMSR = .11, COD = .93, SMC's from .003 to .68, and 21 residuals, ranging from -4.9 to 5.2. The worst of these indicators were residuals, RMSR, and AGFI. Subsequent CFA's were conducted with systematic removal of problem items until the criteria reached a level of non-significance, most notable of which were the values for GFI (.990) and AGFI (.976). This measure was finally reduced to 5 items and found to be a good fit of the data (see Table 3 and Table 4).

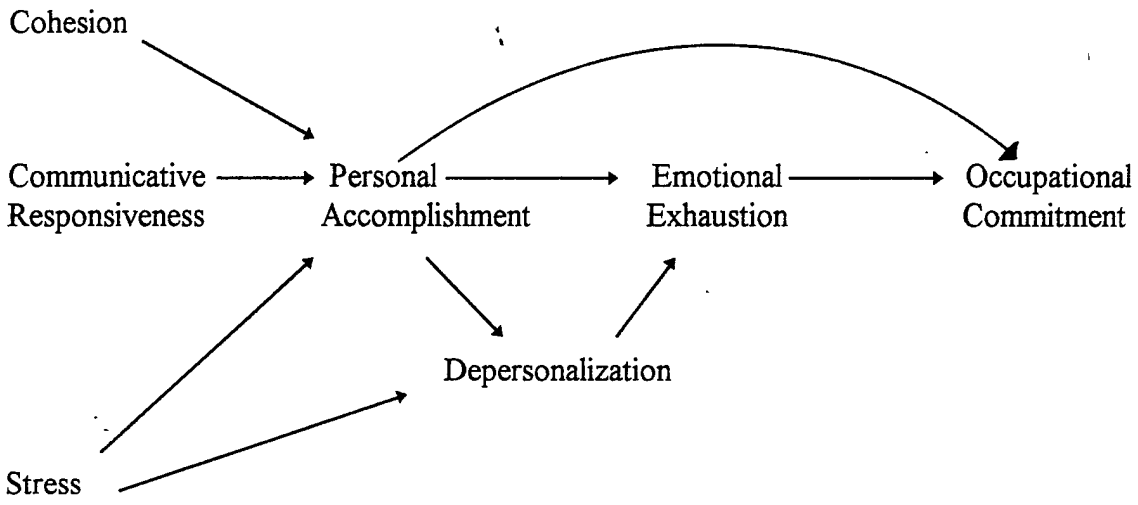
A CFA of occupational commitment to the Army, originally a 15 item measure, also suggested poor model fit: $\chi^2(90) = 495.68$, $p < .001$, GFI = .870, AGFI = .826, RMSR = .13, COD = .94, SMC's ranging from .02 to .68, and 39 residuals, ranging from -4.18 to 7.26. In particular, the number of residuals, RMSR, and several extremely low

SMC's suggested poor measurement. A subsequent CFA was conducted with systematic removal of problem items until the indictors reached a level of non-significance, as seen in Table 3. The end result of the CFA of occupational commitment to the Army resulted in 6 appropriate items for that measure (see Table 3 and Table 4).[3]

In sum, the independent variables (communicative responsiveness, cohesion, and stress) and the dependent variables (depersonalization, emotional exhaustion, personal accomplishment, occupational commitment to one's unit, and occupational commitment to the Army) have been effectively reduced to provide a very good fit for each construct. Significant changes from the hypothesized model have been incorporated to produce the final measurement model. The most significant of these changes include 1) two separate measurements of communication, 2) a reduction from the four proposed measures of stress to two measures that accurately measure stress, and 3) two separate measurements of occupational commitment. Given the results of the measurement analyses, the hypothesized model had to be revised to account for two types of communication. The model (with two separate measures of communication--Cohesion and Communication Responsiveness) is presented in Figure 3 on the following page. This model will be tested in the next section.

Test of Models

Model testing was begun upon completion of the confirmatory factor analyses. To better understand the process by which the hypothesized model was tested and subsequent models were constructed, the overall model-building process will be outlined. The hypothesized model was tested as originally hypothesized with a subset of the original data set. In addition, also using the first data set, I made improvements to the hypothesized model. The new derived model was subsequently tested using the second data set. Finally, a third model (incorporating both commitment to unit and commitment to the Army) was also tested using the second data set.



Hypothesized Model of Burnout and Commitment

Based on the Confirmatory Factor Analysis Results

Figure 3

Hypothesized Model

The hypothesized model was tested using data collected from the first data set (N = 253) (see Figure 3). This group was comprised of three different Army units, each with a different type of mission within the Army. Each of these units were rapid deployment combat units, capable of deploying anywhere in the world in 18 hours. The first group of soldiers were from an infantry battalion. Their primary duty is to serve as combat soldiers in a theater of war. These soldiers actually fight the battles on the ground during a conflict. The second group of soldiers were from a military intelligence battalion. Their primary duties include collecting battlefield intelligence, providing psychological warfare support, and providing linguists in non-English speaking countries. The third group of soldiers were from a quartermaster unit. Soldiers in this type of unit supply other Army units with logistical support both in peace-time and in war. These soldiers provide support to units like those in the infantry and military intelligence fields. The composition of this data set provided a reasonable representation of combat-ready units. After the factor structure of the measurement model was examined, a covariance matrix was computed in SPSS-PC. These covariances (presented in Table 5) were corrected for attenuation due to measurement error and served as the input data for the structural equation model.

Results of the LISREL output indicated that this model was a poor fit for the data: χ^2 (9) = 120.38, $p < .001$, GFI = .895, AGFI = .673, RMSR = .12, and COD = .41. Of most concern with model fit to the data in the first iteration of the hypothesized model was the significance of the χ^2 value, a high χ^2 value, and a high AGFI, RMSR, and a low COD. Additionally, residuals were high and modification indices indicated that several changes were in order to make this a better fit model. As with all χ^2 tests, lower significance indicates a higher likelihood of rejecting the null hypothesis (accept model). Since $p < .001$, we can assume that we can not accept the model being tested. While the Chi-square test is of importance in model acceptance, other indicators further confirm this

Table 5

Covariance Matrix of Hypothesized Model

	1	2	3	4	5	6	7
1	.881						
2	.350	.910					
3	.444	.394	.873				
4	.389	.431	.492	.906			
5	.274	.339	.317	.545	.993		
6	.228	.500	.110	.190	.181	1.079	
7	.281	.367	.493	.536	.530	.040	1.013

Note: 1 - depersonalization; 2 - personal accomplishment; 3 - emotional exhaustion; 4 - occupational commitment (unit); 5 - cohesion; 6 - communicative responsiveness; 7 - stress

notion of rejecting the theoretical model. Second, while the GFI was an acceptable value, the AGFI was not reflective of good model fit. Higher AGFI values (and closer to the GFI values) indicate that the model, as adjusted for fit to the data, is most indicative of acceptable model fit. In this case, there was a large amount of variance between the GFI and the AGFI, as well as the AGFI being too low to indicate good fit to the data. The third indicator of poor fit was the RMSR value, which reflected a large amount of variance between the residuals. As previously discussed, an acceptable RMSR is below .05. A method of confirming poor RMSR is to examine the standardized residuals for the tested model. In this case, SR's are as high as 7.6, which is above the acceptance level for residuals. This further indicates that the variance between items within a measure is too large for the model in question and serves to confirm that the RMSR is also too high. While the test of the hypothesized model indicated it was a poor fit for the data, this model does serve as a starting point in building a best fit model, as well as providing sufficient output for testing the original hypotheses.

Hypotheses

Figure 4 presents the maximum likelihood indicators for the tests of the hypotheses.

Hypothesis 1. H1 states that as communication increases, personal accomplishment increases. As previously discussed, communication is defined as two constructs: cohesion and communicative responsiveness. The first part of this hypothesis; as cohesion increases, personal accomplishment increases ($t = 1.98$), was supported, although the t-value is small. The second portion of this hypothesis; as soldiers' communicative responsiveness increases, personal accomplishment increases ($t = 9.38$), was supported. Thus, H1 was supported.

Hypothesis 2. H2 states that as stress increases, feelings of personal accomplishment decrease ($t = 5.20$). This hypothesis was supported.

Hypothesis 3. H3 states that as stress increases, depersonalization increases (t = 2.78). This hypothesis was supported.

Hypothesis 4. H4 states that as personal accomplishment decreases, emotional exhaustion increases (t = 5.07). This hypothesis was supported.

Hypothesis 5. H5 states that as personal accomplishment decreases, depersonalization increases (t = 5.18). This hypothesis was supported.

Hypothesis 6. H6 states that as depersonalization increases, emotional exhaustion increases (t = 6.91). This hypothesis was supported.

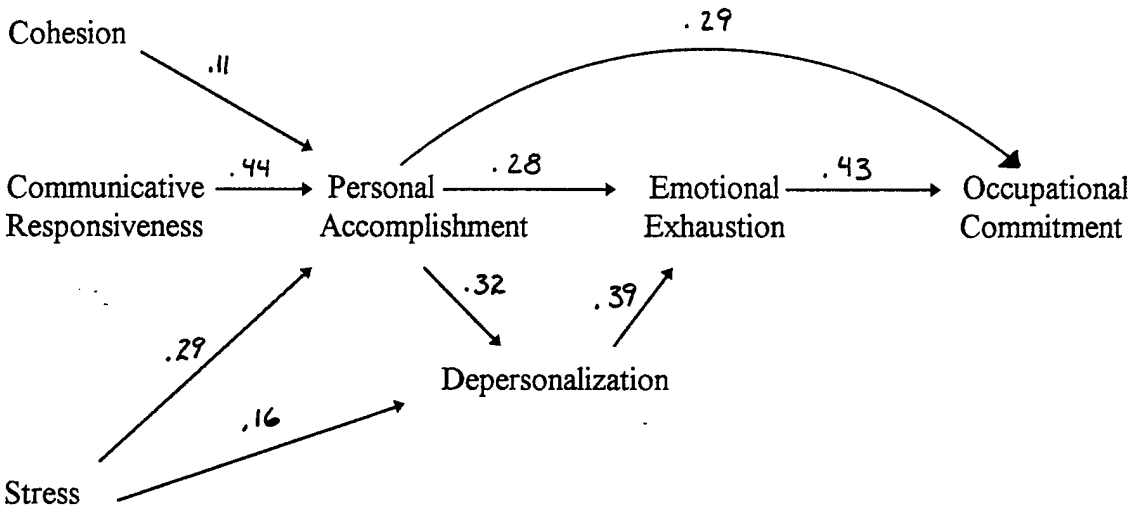
Hypothesis 7. H7 states that as emotional exhaustion increases, occupational commitment decreases (t = 7.57). This hypothesis was supported.

Hypothesis 8. H8 states that as personal accomplishment decreases, occupational commitment decreases (t = 5.08). This hypothesis was supported.

In sum, all hypotheses (H1 through H8) were fully supported, as proposed in the originally hypothesized model.

Model 2 (Derived Model)

Although all hypotheses were supported, the hypothesized model did not provide an acceptable fit for the data. Based on the results generated by the hypothesized model, a second model was constructed and model fit was examined using the data in data subset 1. Modification indices were used to decide the most beneficial changes to the hypothesized model. Modification indices for the hypothesized model were as follows: cohesion to commitment (48.12), stress to emotional exhaustion (38.89), and stress to commitment (23.73). Initial changes were instituted based upon these modification indices, with subsequent iterations using similar criteria to achieve a model of best fit. Once the best fit model was constructed, a second, unrelated data set was used to confirm the results of the derived model and confirm more effectively that the fitted model was applicable across more than one sample population. As previously stated, the purpose behind using two different data sets was to insure that the final best fit model was not tested using the same



Maximum Likelihood Indicators

for

Hypothesized Model of Burnout

Figure 4

soldiers with which the model was derived. This helped insure that the model was indeed applicable across more than one sample population.

One issue that came up in iterative model building was the applicability of depersonalization to this population. First, the squared multiple correlation for depersonalization is only .18, suggesting that the predictors of depersonalization (personal accomplishment and stress) do not account for much variance in the depersonalization scores. Second, in several model iterations, the predictors of depersonalization proved quite unstable. For example, in one iteration stress proved a significant predictor of depersonalization whereas in the next iteration stress was not a significant predictor of depersonalization. Moreover, I found that when depersonalization was removed from the model, model fit improved significantly with no appreciable reduction in the coefficient of determination nor in the SMC values for endogenous variables for which depersonalization serves as a predictor. Overall, I found an improved model fit with no reduction in the amount of variance accounted for by the model. These results parallel Leiter's claim that depersonalization is most likely to occur only with human service professionals (Leiter, 1991; see also Evans, 1989 and Hillier, 1989 for similar arguments). Miller et al. (1988) also argue that "the depersonalization dimension of burnout has little meaning for individuals who are not in regular contact with patients, students, or other service recipients (p. 252). Thus, based on the relatively small contribution that depersonalization makes to predicting occupational commitment and the theoretical developments offered by other researchers, depersonalization was eliminated from the current model.

Changes made (see Figure 3) in progressing from the hypothesized model to Model 2, include:

a) elimination of Depersonalization

b) addition of a link from Cohesion to Occupational Commitment to Unit

c) addition of a link from Stress to Emotional Exhaustion

d) addition of a link from Stress to Commitment to Unit.

The link from cohesion directly to commitment to unit suggests that the cohesion--occupational commitment relationship is not necessarily mediated by burnout. The second addition to the model, also prompted by modification indices, indicated the need for a positive relationship between stress and emotional exhaustion. Further support to justify the addition of this link can be found in a study conducted by Barling and MacIntyre (1993). In this study of the Canadian Armed Forces, these authors derive a model in which a form of stress was a predictor of emotional exhaustion. The third addition to the model was a positive link between stress and occupational commitment to one's unit. As a soldier felt a decrease in job satisfaction and a decrease in the ability to successfully accomplish his or her duties in the work place, it was likely that the soldier would also feel a decrease in commitment to his or her unit. While no support from previous studies has been found to support a direct link between these two constructs, some work has been done with stress. Etzion (1984) conducted a study concerning the effect of social support as a moderator between work stress and burnout. Another study examined the relationship between stress and work performance (perceived and actual) (Westman & Eden, 1992).

In sum, these changes were made based on existing empirical studies, theory offered by other researchers and upon the standards previously discussed concerning the CFA of the individual constructs. As shown in Figure 5, the derived model provided a very good fit for the data: $\chi^2(3) = 1.32$, $p = .723$, GFI = .998, AGFI = .988, RMSR = .01, and COD = .63. The Chi square test was not significant suggesting that the tested model was an adequate fit to the data. The goodness of fit indicator (GFI) and adjusted goodness of fit indicator (AGFI) were very high, indicating that the tested model (both before and after model has been "fitted") was an extremely good indicator of model adequacy. In addition, the root mean square residual (RMSR) was very low with no large

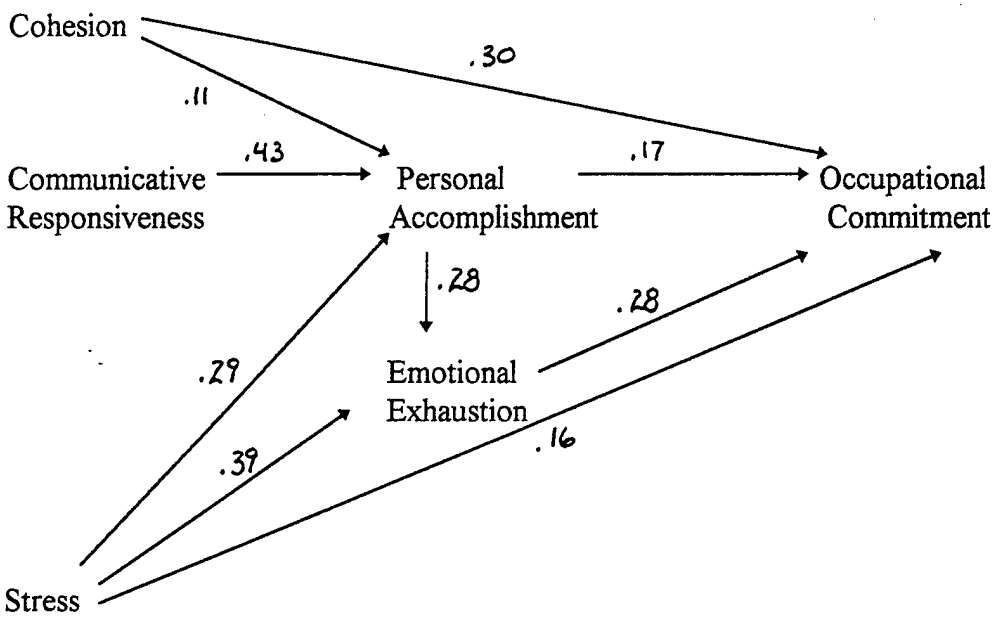
residuals. Finally, as illustrated in Figure 5, the hypothesized links were all significant ($p < .05$, using t-tests).

Test of Derived Model

The second data set was comprised of soldiers from two different units (N = 412). As with the first data set, both of these units were rapid deployment units. The first group of soldiers were from an infantry brigade, with a mission equal to that of the infantry soldiers previously mentioned. The second group of soldiers came from an aviation battalion, also considered a combat unit. Soldiers' duty descriptions in this unit varied from helicopter repair persons to attack helicopter pilots. These soldiers have the mission to provide logistical airlift support to all types of Army units, as well as to provide attack helicopter assets and long range surveillance and reconnaissance support. A covariance matrix was computed in SPSS-PC using these data. These covariances were corrected for attenuation due to measurement error (using the factor scores) and were then used as the data for the structural equation model. See Table 6 for the covariances.

The test of Model 2 using the second data set confirmed the results of data set 1. As shown in Figure 6, this model was an extremely good fit for the data: $\chi^2(3) = 3.95$, $p = .267$, GFI = .997, AGFI = .978, RMSR = .01, and COD = .61. The Chi square test was not significant, suggesting that the tested model was an adequate fit to the data. The GFI and AGFI were again extremely high, indicating that tested model (both before and after model has been "fitted") was a very good indicator of model adequacy. In addition, the RMSR was very low with no large residuals, similar in magnitude to the derived model. Finally, each of the links shown in Figure 6 are significant (t -values range from 2.9 to 11.23). In sum, the revised model is an extremely good fit for both data sets.

The squared multiple correlations (SMC) provide an important indication of the fit of the model in terms of accounting for how much of each variable is predicted by the current model configuration. The SMC for personal accomplishment (.34)



Maximum Likelihood Indicators for Model 2

(Original Data Set)

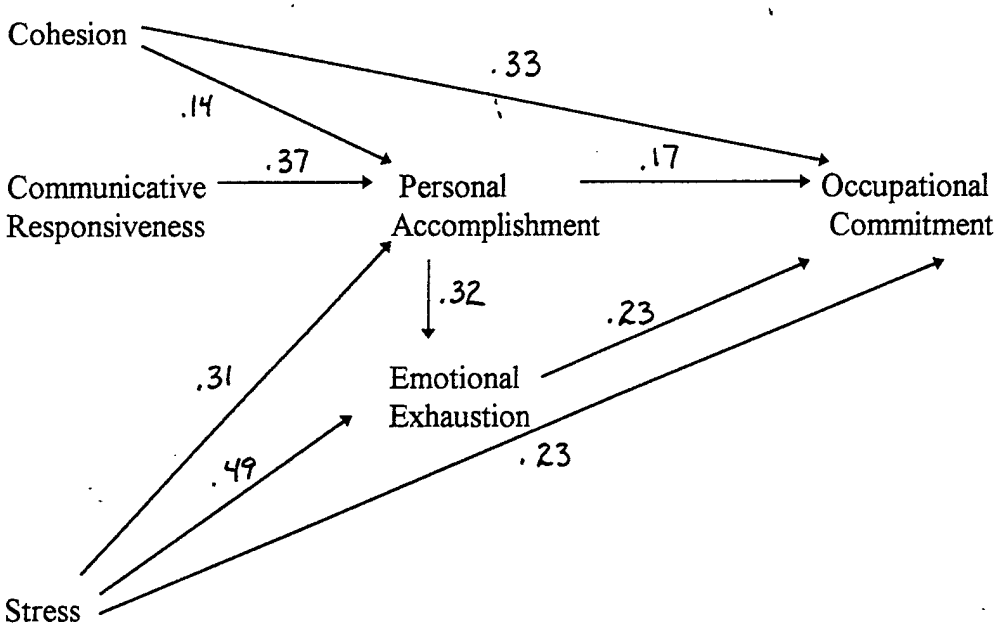
Figure 5

Table 6

Covariance Matrix of Derived Model

	1	2	3	4	5	6
1	1.010					
2	.518	1.059				
3	.506	.580	1.058			
4	.372	.334	.561	1.002		
5	.445	.174	.242	.314	.942	
6	.411	.595	.558	.395	.177	.958

Note: 1 - personal accomplishment; 2 - emotional exhaustion; 3 - occupational commitment (unit); 4 - cohesion; 5 - communicative responsiveness; 6 - stress



Maximum Likelihood Indicators for Model 2

(Second Data Set)

Figure 6

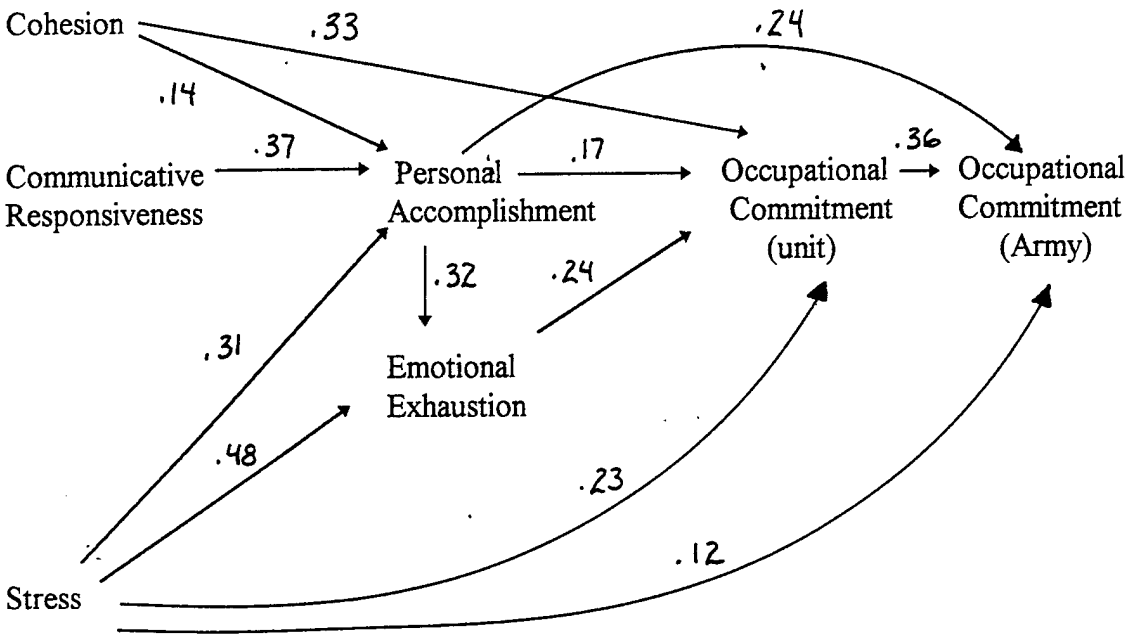
demonstrated that the links related to personal accomplishment (cohesion, communicative responsiveness, and stress) accounted for a significant amount of variance associated with that particular variable. The SMC for emotional exhaustion (.43) was similar in that it accounted for a significant amount of variance and was therefore predicted sufficiently by the variables of stress and personal accomplishment. Finally, the SMC for occupational commitment to one's unit (.50) accounted for the largest amount of variance, and was predicted by cohesion, personal accomplishment, emotional exhaustion, and stress.

Model 3

The revised model provided a very good fit for the data in both data sets. However, this model only accounts for occupational commitment toward the unit, not toward the Army. Since the second sample of respondents completed measures of commitment to both the Army and to the unit, it is possible to modify Model 2 to account for both unit and Army levels of occupational commitment.

Based on the literature review provided in the theory section, the following links were added to the revised model to account for occupational commitment to the Army. First, feelings of commitment to unit should also predict how a soldier feels about the Army. In general, I predicted that soldiers happy with their unit should also feel more positively toward the Army. Second, based on Leiter's research, I predicted that feelings of personal accomplishment should have a direct affect on commitment to the Army as well as indirectly affecting feelings toward the Army -- mediated by commitment to the unit. Finally, based on Etzion and Westman's (1994) research, I predicted that feelings of stress would directly effect feelings of commitment to the Army as well as indirectly effect commitment to the Army--mediated by commitment to the unit. Thus, to modify Model 2 to account for feelings of occupational commitment to the Army, three links were added;

a) Stress to Commitment to Army



Maximum Likelihood Indicators for Model 3

(Second Data Set)

Figure 7

b) Personal Accomplishment to Commitment to Army

c) Commitment to Unit to Commitment to Army.

This final model, shown in Figure 7, was tested using the second data set as a means of testing final model fit against the results obtained from the first data set. As shown in Figure 7, Model 3 was an extremely good fit for the data: $\chi^2(6) = 9.18$, $p < .16$, GFI = .994, AGFI = .972, RMSR = .02, and COD = .61. The Chi square test was not significant, suggesting that the tested model was an adequate fit to the data. The GFI and AGFI were extremely high, indicating that tested model (both before and after model has been "fitted") was a very good indicator of model adequacy. In addition, the RMSR was very low with no large residuals. Further analyses were not conducted to improve the model because Model 3 was being tested for its fit to the data as a final measure of its effectiveness, unlike the hypothesized model, where analysis was examined to see how the model could be subsequently improved. Therefore, Model 3, shown with the additional construct of commitment to the Army added to the model, is presented in Figure 7 as the final model of burnout. While the global measures from Model 3 were indicative of a model of good fit, the local measures must also be examined. All maximum likelihood indicators were significant (t-values ranged from 2.58 to 8.27, $p < .05$). SMC's for the dependent variables are also significant; personal accomplishment (.34), emotional exhaustion (.48), occupational commitment to one's unit (.51), and occupational commitment to the Army (.40).

SMC's provide an important indication of fit of the model in terms of accounting for how much of the variance in the endogenous variable is accounted by the current model configuration. The SMC for personal accomplishment (.34) demonstrated that the links currently related to personal accomplishment (cohesion, communicative responsiveness, and stress) account for a significant amount of variance associated with that particular variable. The SMC for emotional exhaustion (.48) was similar in that it accounted for a significant amount of variance and was therefore predicted sufficiently by

the variables of stress and personal accomplishment. The SMC for occupational commitment to one's unit (.51) was also significant, and predicted by cohesion, personal accomplishment, emotional exhaustion, and stress. Finally, the SMC for occupational commitment to the Army (.40) was also significant and predicted by personal accomplishment, stress, and occupational commitment to one's unit. It is interesting to note that the model accounts for more variation in the commitment to unit than it does in commitment to the Army. This may be a function of the number of predictor variables.

While links between constructs have been added and removed from the model since the first tested hypothesized model, it should be noted that all links added during the model building process are significant. In examining the overall model fit, progressing from the hypothesized model to the second and third models, one can see that both the second and third models provide a very good fit for the data. However, the third model takes into account the unique aspect of occupational commitment by measuring the construct at a local and a global level, while still accounting for a large amount of variance throughout the rest of the model. Since the addition of this additional construct does not diminish the effectiveness of the model, while explaining an additional aspect of a construct, I have elected to choose Model 3 as the model that best represents the causal process of burnout in the armed forces.

ENDNOTES

[1] In addition, I used work support and spouse support as separate predictors in the final LISREL model when testing the theoretical model. Neither item proved to be a significant predictor of occupational commitment to one's unit or to the Army.

[2] In addition, I used role ambiguity and sense of control as predictors in the final LISREL model when testing the theorized model. Neither item proved to be a significant predictor of occupational commitment to one's unit or to the Army.

[3]I reran the confirmatory factor analyses for communication, stress, and commitment several times. Each time I reduced a construct (e.g., communication responsiveness) down to the most appropriate (best fit) number of indicators, I reanalyzed the factor structure (e.g., to see if communication responsiveness and cohesion would form a single factor). I found no difference between the various factor structures (e.g. original versus final best fit factor structure for each construct). In sum, I tried several ways to get the four measures for communication, the four measures of stress and the two measures of commitment to each load on one dimension. None of the constructs (communication, stress, and commitment) would load on one dimension after further CFA of each construct. Thus, the result of reducing each of the previously mentioned constructs down to their best fit measures did not allow them to load on one dimension. For this reason, the constructs remained as separate measures (e.g. communication was measured as four separate constructs of communicative responsiveness, cohesion, social support, and work support).

CHAPTER 4

DISCUSSION

Few studies have been done on burnout in the armed forces, especially with regard to 1) targeting communication as a central role in precipitating burnout, and 2) formulating and testing a model of burnout for soldiers. The culmination of the present study produces a causal model of burnout for the armed forces, derived and tested on separate data sets to show that the final model is applicable across more than one military population. The importance of this model is its applicability across more than just a military setting. I would hypothesize that this model is applicable across a multitude of organizations that are structured in a similar hierarchical manner, such as in law enforcement agencies, emergency response units, fire-fighting units, and athletic teams. While the content of the model would likely remain the same, the causal ordering of the constructs across different professions is likely to change (Miller et al., 1995).

Overall, results of the analysis from the hypothesized model of burnout indicated that of the original eight hypotheses, all were fully supported. Of most significance, however, in comparing the original hypotheses against the hypothesized model, is that in progressing from a hypothesized model of burnout to a revised model of burnout, depersonalization was removed from the model and only three additional links were added. Additionally, although I obtained very good fit for the revised model with the first data set, even more important is the fact that the final model produced an equally impressive fit to the data for the second data set. This is critical because testing the final model on a new data set suggests that the model is indeed applicable across more than one population.

Communication

Probably the most important finding from this study is the central role that communication plays in predicting burnout. While Miller et al.'s studies (1995; 1988) found similar results for the importance of communicative responsiveness in assessing burnout from the human service worker's and homeless shelter worker's perspective, and Leiter and his colleagues (1994) have examined cohesion as it relates to burnout, this study takes the role of communication one step further in that it includes both communicative responsiveness and cohesion as measures of communication. The two measures were similar in that both affected feelings of personal accomplishment, although communicative responsiveness is clearly the stronger predictor of feelings of personal accomplishment. However, the two measures of communication are distinct in that only cohesion attenuates feelings of commitment to one's unit.

It is likely that of the two constructs of communication; cohesion and communicative responsiveness, only cohesion is responsible for affecting commitment because if soldiers in a unit feel more enthusiastic toward their fellow soldiers, they are likely to feel more enthusiastic toward their unit (Leiter et al., 1994). On the other hand, communicative responsiveness serves more as a measure of how well soldiers feel they communicate with fellow soldiers and does not necessarily affect commitment to one's unit. Soldiers may communicate well with others in their unit, however, this does not mean that they feel any different with regard to the amount of recognition that they receive for doing their job well, nor would it necessarily affect their physical work conditions or the amount of tension they feel in the work place.

While there are differences in the effect that each construct of communication (communicative responsiveness and cohesion) has in the final model of burnout, of most significance is the fact that cohesion has a direct effect upon both burnout (through personal accomplishment) and commitment to one's unit, while communicative responsiveness has a direct effect only upon burnout (through personal accomplishment),

resulting in an indirect effect upon commitment to one's unit. Thus, we see that burnout is affected from both the soldier's perspective in terms of effective communicative abilities, and from the unit's perspective, in terms of the measure of cohesion present in the unit. It is the combination of these factors that makes the role of communication such an important role in its contribution to burnout in a military setting. These constructs, if attended to properly, can greatly influence the level of burnout in a unit, as well as influencing the level of commitment that a soldier feels to his or her organization.

Further attention is also warranted with regard to the unique relationship between communication (cohesion) and commitment. Interestingly, cohesion is seen to directly predict commitment to one's unit, but not commitment to one's organization. As soldiers feel an increase in the bonding and solidarity with others in the work place, they will likely attribute that increased cohesion to a more committed attitude toward their unit. In attempting to extend this to occupational commitment to the Army, it is not feasible to expect a soldier to question the "cohesion" of the Army because it is less tangible. At the unit level, commitment increases because a soldier sees cohesion as a factor that increases unit attractiveness, but on a larger scale, this increased cohesion does not seem to contribute to an increase in commitment to the Army. At the Army level it becomes somewhat of a proximity issue - this level of commitment is too high to be affected by personal relationships within a unit, but not too high to forgo the link between cohesiveness and commitment to the unit. Again, we see that communication (cohesion) has an important effect upon the final indicator of burnout; commitment to one's unit.

Theory Building

While the causal model of burnout, as shown in Figure 7, is not parsimonious when compared to other models of burnout, one need only look at causal models proposed for other organizations to see that many of them are inherently complex. This is because each construct causes and affects the other, in contrast with a linear model, where one construct leads directly to another. Linear models are, by nature, much more

parsimonious but they have a tendency to lack the predictive power of a causal model because they imply that there is no interaction among constructs. Models with multiple dependent variables, on the other hand, allow constructs to play less or more influential roles with each other, dependent upon the structural equations that predict each construct. For example, in Model 3, stress may influence every construct, but that is not to say that this influence is equally spread among each construct - stress affects each construct in a weighted fashion. From an explanatory approach, the power of the final model is equally impressive. The number of links provided in the final model, while not parsimonious, certainly expands the range of options in providing possible explanations for how burnout occurs.

Hypothesized versus Final Model

The hypothesized and final models differ significantly in four areas. The first significant difference between the models is the role of depersonalization and its contribution to burnout. While depersonalization served as one of the three burnout indicators for Miller et al. (1995; 1988), this study found no significant contribution of depersonalization to the final model of burnout in the armed forces. Therefore, depersonalization was removed from further model testing. Three reasons for depersonalization's lack of contribution to the final model of burnout are offered: 1) that while depersonalization is important to those workers in the human service field as a result of the way in which services are offered to clients, it is less important in a military setting because of how soldiers accomplish their duties, 2) that the measure of depersonalization taken from Maslach's Burnout Inventory (Maslach & Jackson, 1986) may indeed be applicable only in the human service setting, and 3) that depersonalization could be more effectively measured from two perspectives; a peace-time perspective and a combat perspective.

First, depersonalization in a humans services setting seems to be important because humans service workers work directly with clients to accomplish their work goals. If the

clients in the humans service setting are depersonalized, the work goal of helping clients is not met. Therefore, any depersonalization by human services workers may lead to lack of accomplishment in the work place, making depersonalization a critical aspect of work accomplishment in the human services setting. Conversely, soldiers do not work primarily to help other soldiers. Their work is more oriented toward the accomplishment of a unit's mission. As a result, if they tend to depersonalize other soldiers in the work place, accomplishment of the unit's mission may still be effectively accomplished. This difference in goals between human service workers and soldiers may provide a plausible explanation as to why depersonalization seems to lack the importance in a military setting that is often found in the human services setting.

Second, the depersonalization measures taken from Maslach's Burnout Inventory (Maslach & Jackson, 1986) and used in the present survey were intended for human service workers, which may explain why the measure of depersonalization used in the present study has not been found to be an important contributor to burnout in a military setting. Miller et al. (1988) may have been correct in their claim that this measure is applicable only in the human service field.

Third, while the measures in this survey gauged depersonalization from a peace-time perspective, it is possible that in a combat situation, soldiers may feel the need to depersonalize enemy soldiers in an effort to accomplish their mission: that is, in order to accomplish their mission, soldiers may be required to carry out aggressive actions against the enemy and may feel the need to depersonalize the enemy in order to feel less remorse in carrying out orders and accomplishing their mission. This possibility directly contradicts the conceptualization of depersonalization in the present survey in that normally, increased depersonalization of other soldiers leads to a decrease in mission accomplishment and a subsequent *increase* in burnout. However, if soldiers feel the need to depersonalize the enemy in order to carry out their mission, this would have a tendency to *decrease* burnout in that mission accomplishment would be more likely as

depersonalization of the enemy increased. Since the questions in the present study only measure depersonalization from a peace-time perspective, it is possible that the survey did not account for the entire amount of depersonalization present in a military setting, in terms of both peace-time operations and combat situations.

I would hypothesize that if depersonalization were measured in a more applicable manner for soldiers, with an additional measure added for how one feels about their enemy, in addition to attitude toward fellow soldiers, that it may serve as more accurate indicator of commitment. The measure of depersonalization from the fellow soldier perspective would likely have a negative impact on personal accomplishment, as well as a negative impact on commitment to one's unit; as one's level of depersonalization increased, they would be more likely to feel a decrease in personal accomplishment, as well as a decrease in commitment to their unit, whereas the measure of depersonalization from the enemy perspective would likely have a positive impact on personal accomplishment; as one's level of enemy depersonalization increased, soldier's feelings of personal accomplishment would also be likely to increase. Stress would likely be a predictor of one's level of depersonalization in that as one became more stressed in their job, they would increase their depersonalization toward both fellow soldiers and the enemy.

A second difference between the hypothesized and final models is that the hypothesized model only conceptualizes occupational commitment from a unit perspective. However, it was found that two types of commitment, at both the unit and Army level, are empirically separate constructs to be considered in the causal model building of burnout. I found that commitment to one's unit most affects commitment to the Army. This can be explained most easily by considering that a soldier "sees" things happen at his or her job on a daily basis, of which the decisions and outcomes are most directly attributable to the soldiers within the unit. It is perceptions of the unit that then affect perceptions and commitment to the Army. While the reverse can be argued

(commitment to Army affects commitment to unit), the argument is not as effective. In this case, a soldier would attribute his perceptions of the Army based upon occurrences out of his or her unit's control. Thus, it is *not* as likely that if a soldier feels less commitment to the Army, that soldier will then develop less feelings of commitment to his or her unit, but it is possible. In much the same way, expectations are similar for other organizations. For example, a person that works for Coca-Cola as a product engineer may feel a decreased level of commitment to his or her particular office, resulting from poor communication among others or a sense of low cohesiveness. However, that employee may feel increased commitment to the "organization" of the entire Coca-Cola corporation because he or she sees a high level of involvement and concern for the workers from a corporate standpoint. Conversely, in a company such as IBM, a person may feel a commitment to his or her individual office due to work settings or job satisfaction, but feel a decrease in commitment to the entire organization because of apparent lack of concern for the welfare of its workers, induced by corporate-wide layoffs. Future studies should examine this link more closely.

The third difference found between the two models, as previously discussed, concerns the addition of the link between cohesion and occupational commitment to one's unit. Cohesion appears to directly affect only commitment to one's unit, and does not directly affect one's commitment to the Army.

The fourth difference between the two models is the effect of stress on the other endogenous variables within the model. The hypothesized model predicted stress would impact personal accomplishment, while the final model predicted that, in addition, stress would also affect emotional exhaustion, occupational commitment to one's unit, and occupational commitment to the Army. Previous research demonstrated that stress was only tested in a linear fashion in determining burnout. However, my final model is unique in that it suggests a causal relationship between stress and all of the endogenous constructs. The additional links that are created in the final model (stress to emotional

exhaustion, stress to commitment to one's unit and stress to commitment to the Army) add to the explanatory power of the final model because more ways in which burnout can be reached are demonstrated.

Of note with regard to stress, as previously mentioned in the introduction, is the fact that stress in this study is only measured with regard to the debilitative effective that it has upon the performance of one's job. Stress can, to a certain extent, also enhance job performance by creating pressure that causes a soldier to perform his or her duties in a more mindful manner, or to meet certain timelines, thus creating a sense of urgency in mission accomplishment.

The final difference between the hypothesized and final models is the effect of personal accomplishment upon occupational commitment to one's unit and occupational commitment to the Army. While the hypothesized model indicated a relationship between personal accomplishment and occupational commitment to one's unit, the final model indicates a direct relationship between the same variables, but adds the relationship between personal accomplishment and occupational commitment to the Army. In previous studies, one's level of personal accomplishment could be seen to directly affect emotional exhaustion, which then affected occupational commitment. However, it is possible that as feelings of self-worth with regard to working with others increases, a soldier is not likely to think of others in a callous, impersonal manner and he or she may simply feel an increase in the sense of pride or inspiration in the unit or in the Army, thus bypassing the effects felt concerning work relationships; hence the reasoning for personal accomplishment directly affecting occupational commitment to one's unit and the Army.

Original ECM versus Final Model

There are several similarities and differences between the original ECM proposed by Miller et al. (1988) and the final model in this study. The first and second similarities, as previously discussed, concern the relationship between emotional exhaustion and occupational commitment and the relationship between communicative responsiveness and

personal accomplishment. The third similarity between the two models is the relationship between personal accomplishment and emotional exhaustion. Similar in nature to the self-fulfilling prophecy, soldiers may feel an increase in their abilities to successfully contribute to the work setting subsequently affects their contribution to the work setting and the ability to work with others.

While there are several similarities, there are also differences between the original ECM and the final model of burnout for the armed forces. The four differences, as previously discussed, are 1) the addition of a second communication variable (cohesion), 2) the addition of stress to the final model, 3) the addition of a second measurement of occupational commitment as a final outcome construct of burnout, and 4) the removal of depersonalization from the final model.

Leiter et al. (1994) made an interesting observation related to the fourth difference; removal of depersonalization from the model, in their analysis of the relationship between the three burnout indicators. These researchers speculated that the burnout indicators of emotional exhaustion and depersonalization were more aligned with the social perspective of burnout, while personal accomplishment was more aligned with a work-related self-efficacy. They claimed that the work-related self-efficacy indicator affected the social perspective indicators. This partially supports the final model of burnout in the armed forces in the sense that personal accomplishment serves as a predictor of emotional exhaustion within the interaction of the burnout indicators. Personal accomplishment is likely the most important of the three burnout indicators in a military setting, resulting from the importance placed upon mission accomplishment in a soldier's unit. Thus, in a military setting, the work-related self-efficacy indicator (personal accomplishment) is seen to predict the social perspective indicator (emotional exhaustion). Conversely, in Miller et al.'s work (1988), depersonalization shares the predictor role with personal accomplishment, with both of these variables affecting emotional exhaustion. This difference is likely due to the inherent differences in the two organizations. As previously

discussed, in a military setting, mission accomplishment is the primary goal of the organization, while in a human service setting, working with others is the means by which mission accomplishment is obtained. Therefore, one's level of depersonalization serves as a precursor to the other burnout indicators in health service organizations, whereas in a military setting, personal accomplishment serves as the precursor to emotional exhaustion.

Effects on Commitment

An important factor for leaders to consider in examining the final model of burnout is that soldiers may not have to reach burnout in order for commitment to their unit or the Army to be affected. As the final model indicates, if a soldier feels less satisfied in his or her job or feels an increase in his or her workload (job stress), this does not necessarily mean that the soldier will be "burned out." Interestingly, a soldier may actually experience a direct decrease in the commitment level to his or her unit or the Army as a result of job stress. Similarly, the same can be said for the effect of cohesion on one's commitment to the unit. This indicates that although burnout is indeed a critical issue to consider in any organization today, it is important to note that soldiers may actually choose to leave a unit or leave the Army for reasons other than being "burned out." For example, a soldier may come to dislike the regimented way of life in the armed forces, thus the decrease in job satisfaction. This dislike may simply foster a decrease in commitment to the organization, rather than be predicated by any of the three burnout indicators. A second example involves a soldier that can not effectively work with others (less cohesion), which may lead directly to a decease in commitment to one's unit while not filtering through any of the burnout indicators to reach that decrease in commitment.

Advice to Military Leaders

The implications of this model for burnout suggest that there are many important factors for leaders to consider in attempting to thwart the level of burnout in their unit. However, it seems that most important among these in reducing burnout is 1) increasing soldier's communicative responsiveness, 2) increasing unit cohesion, and 3) decreasing a

soldier's level of stress. Additionally, one must consider that the reduction-in-force that has reduced the armed forces to its current force size has had an effect upon how and why soldiers reach burnout.

Increasing a soldier's ability to communicate can be a monumental task, but one that, if dealt with appropriately, can have many direct and indirect benefits because it affects each of the burnout indicators, as well as commitment to one's unit and organization. Probably the most beneficial solution is to conduct classes on interpersonal communication skills (Miller et al., 1988). Two examples of how to institute this learning process are the formation of "T-groups" and of structured learning groups, both examples of learning approaches to interpersonal skills (Forsyth, 1990, p. 468). These approaches could be fashioned to focus on how to better relate to other soldiers, as well as on communicative apprehension. Approaches of this nature are already being used at Army installations.

Inherent in the missions of many units throughout the Army is the idea of working with others to accomplish a mission, whether it be one of a routine nature in daily sustaining operations in the "garrison" environment, or one related to a combat-oriented task, such as a platoon of infantry soldiers coordinating an attack against an enemy position. By improving cohesion we can foresee an increase in mission accomplishment. Specifics on this aspect of improvement are too numerous to list, given the multitude of occupational specialties throughout the armed forces, but the bottom line is that by continually working with others in team-oriented exercises toward the completion of a common goal, we would expect to see an increase in the cohesion of that unit. This increase in cohesion could then be expected to reduce the potential for burnout, as well as affecting commitment to one's unit and the Army, affecting how soldiers treat others and affecting how soldiers view their accomplishments.

Reducing stress is also a critical factor for leaders to consider. Stress, measured as job satisfaction and job stress, is highly applicable in the armed forces, due in part to the

high turnover rate in job assignments, frequent deployments, and force reductions. In attempting to improve upon this area, a leader needs to consider, first and foremost, what effect they can have on the changes that need to be made. While a squad leader, typically in charge of five to ten soldiers, has the ability to influence less than, say, a battalion commander, typically in charge of 700 or more soldiers, each level of leadership can effect changes that will have positive effects. In considering what changes can be made to lower one's level of stress, one needs to consider that reducing uncertainty in a soldier's life through regular work hours, advance notice of guard duty, compensation for excessive deployments, an opportunity to spend time with one's family, and a requisite amount of work commensurate with the soldier's rank and duty position are just a few of the suggestions that can be considered in reducing stress.

It is important to note that many of these examples have already been instituted by senior leaders at a multitude of Army installations over the past several years in response to the needs of the soldiers. Among some of the more recognizable changes that have recently occurred are increased compensation time for deployments, an increased focus on "family time," more latitude given to the junior leaders for training their soldiers, and an increase in the attention to services offered for families on Army installations. It is in the leadership of the armed forces' best interest to continue to realize the importance of the ramifications that the effects of a soldier's communicative abilities, cohesion, and stress can have on the readiness of our fighting force. The implications for paying proper attention to these areas are that we could expect to see a more productive soldier, a more rewarding atmosphere, increased commitment to one's unit, and a more committed attitude by soldiers toward the Army.

Finally, the reason that I felt the topic of burnout in the armed forces was applicable to today's military was because of the reduction-in-force of the military. While this factor was the impetus for the study, it was in no way directly measured with regard to previous feelings of burnout that may have occurred prior to the armed forces

reduction. However, one can infer from the final model of burnout that several factors related to the reduction-in-force may be attributed to a change in the feelings of being burned out in the armed forces, acting as a contributing factor in both increasing and decreasing burnout in the armed forces. From the standpoint that burnout is actually decreased as a result of the reduction-in-force, cohesion is likely to play an important part in reducing burnout in today's military. While the force size is reduced, it is likely that the smaller force size will inherently cause soldiers to become a more tight-knit group, thus as the force becomes smaller, the cohesion level of the remaining soldiers actually increases, consequently contributing to a reduction in the feeling of burnout.

From the standpoint that burnout is actually increased as a result of the reduction-in-force, several factors will likely contribute to an increased feeling of burnout in soldiers. First, stress, measured in terms of how satisfied soldiers are with their current job, and how stressed they feel in their current job, is likely to increase a soldier's feeling of being burned out. As the force becomes smaller, there are less soldiers available to accomplish unit missions. This likely causes an increase in the amount of stress that soldiers are feeling, thus contributing positively to an increase in burnout. Job satisfaction is also likely to decrease as soldiers are placed in situations that require them to perform a multitude of tasks that were once performed by other soldiers. As the reduction-in-force continues, soldiers are being required to perform other duties that were normally accomplished by many soldiers. The reduction-in-force may cause soldiers to feel less satisfied with their jobs because they are now required to perform a multitude of tasks that were once not required in previous years, causing an increase in the feeling of burnout. Second, personal accomplishment is likely to decrease as more soldiers are being asked to perform a multitude of duties, with less attention to detail paid to each of their various missions because of the increase in the work load, thus causing an increase in burnout. Third, as the force size is reduced, the increased work load could cause soldiers to feel an increase the pressure to accomplish a mission, with the increased pressure leading to a

negative effect upon soldiers' feeling towards other, thus leading to a greater amount of emotional exhaustion, again indirectly contributing to an increase in burnout. Finally, a smaller force size, as previously discussed, necessitates a larger work load as compared to previous work loads experienced by soldiers. As the work load increases, a soldier's feelings toward the increase may lead them to feel less of a sense of commitment to either the unit or the Army because the soldiers are being asked to perform more work with fewer resources. It may be perceived that this increase in work load is resulting in soldiers feeling that they can change units or profession in order to ameliorate the situation, thus the reduction in commitment to the unit or organization. All of these factors, directly attributed to the reduction-in-force, can have either a positive or negative effect upon feelings of burnout in the armed forces.

Measurement

As previously discussed, depersonalization was removed from the final model, as were measurement indicators from communication and stress. In the final model, variables from the communication construct (work support and social support) and the stress construct (sense of control and role ambiguity) were removed . While these variables have played an important role in previous burnout research (Etzion & Westman, 1994; Leiter et al., 1994; Barling and MacIntyre, 1993; Etzion, 1984), the final model in this study found no evidence to support its applicability to a military setting. It was determined early in the model building process that these variables did little to improve model fit. However, as a final verification, each of these variables were placed in the final model to again measure their usefulness in model construction, but none of them proved to be effective contributors to the final model of burnout. This is not to suggest that these variables do not have a relationship with burnout, rather, it suggests that in measuring burnout in the armed forces from a causal approach, communication is better predicted solely by cohesion and communicative responsiveness and stress is better predicted solely by job satisfaction and job stress. This is likely attributed to the military environment, where

cohesion and communicative responsiveness are seen to be the most effective indicators of communication and job satisfaction and job stress are seen as the most effective predictors of stress.

Justification for the removal of social and work support can be found in research by Stiff, Dillard, Somera, Kim, and Sleight (1988). Their work describes communicative responsiveness as " the perceived ability to listen to and respond to another in distress," which indicates that work and social support are measuring much the same thing, thus justifying the removal of the variables from the constructs since communicative responsiveness already measures much the same thing. Sense of control and role ambiguity can be justifiably removed from the model building process because in a military setting, one is always told what to do by superiors at some level. Additionally, leaders provide guidance to their soldiers in terms of what to accomplishment on a daily basis. The guidance provided by leaders to their soldiers leaves no room for sense of control or role ambiguity. Soldiers are told what to do, as well as how to do it, which means that there is little questioning of one's sense of self control, or questioning of the roles one should be performing.

Future research should be addressed toward stress and its associated variables, as well as toward occupational commitment and its components. While this study recognized job stress and job satisfaction as the two most applicable variables of stress, other studies have shown different variables to be just as important in their contribution to burnout (Etzion & Westman, 1994; Barling & MacIntyre, 1993; Solis, 1991; Rogers et al., 1987; Etzion, 1984). Additionally, occupational commitment in this study has been conceptualized as two empirically distinct constructs, involving both a local and global level of commitment. Other researchers have indicated differences in their approach to commitment and future research could provide new insights as to how different types of commitment are interrelated (Miller et al., 1995; Starnaman & Miller, 1995; Leiter et al., 1994; Miller et al., 1988).

Finally, items for each of the measurement tools were reduced as previously discussed using CFA, thus eliminating certain items found to be inappropriate for a particular measure. While some may argue the validity and reliability of the resulting measures, there are justifiable reasons for such an analysis. First, as cited in Hunter and Gerbig (1982, p. 276), reducing scales to include less than the original number of items is valid, as long as there is " *a priori* specification of the item content." This was done in a study by Starnaman and Miller (1995) to increase the reliability of their measures. In the present study, the items used for each measure had been previously constructed and were specially chosen for their high reliability and validity. Thus, *a priori* methodology was used in a sense that the items for each measure had been previously gauged to effectively measure each particular construct, so items that were eliminated were already found reliable and valid; those that were remaining were simply the most reliable and valid across that measure. Second, the reduction of items within a measure permits more accurate measurement of each construct because of the resulting higher reliability. While some measures were initially quite low with regard to reliability, the item reduction of the measures improved the reliability of some measures by a large amount. Reduction of the items within measures thus increases the accuracy of each measure as an individual contributor to the burnout model. I was also able to achieve a much better fit for the final model as a result of reducing each measure. Third, while the reduction of items within a measure prevents exact comparison of this model with another in future studies, the likelihood that this exact model will be used effectively in other settings is not high. While the same items and constructs may be used, if this model is applied outside of the armed forces, in say, a law enforcement agency, then items will need to be re-worded for their applicability in that context. While this is only a semantic change, it still would prevent an exact comparison of the burnout results across occupational boundaries. In sum, the reduction of the items within each measure are justifiable because I have *a priori* specification for each of the measures, I can achieve a better reliability index for each

measurement, I can obtain a better final model fit, and there is not a high likelihood of exact comparisons of this model with others in settings outside of the armed forces.

Model Limitations

One limitation of this model is similar to that discovered in previous research; the causal ordering and importance of the variables and how they contribute to burnout vary among different organizations (Miller et al., 1995; Miller et al., 1988). For example, it is likely that cohesion in my present model may not be as important of a factor for those who work in the human services field, teachers, salespersons, and other jobs that do not require a sense of team work or cooperation among peers for successful mission accomplishment. Those whose work functions include primarily dyadic interactions, such as health services persons, may not perceive cohesion to be an important factor in their line of work. However, this aspect of communication is extremely important in such organizations as the armed forces, where team work and mission accomplishment are paramount to a successful fighting unit. These results would likely be found in similar organizations requiring cohesion and team work, such as with police officers, fire fighters, and professional athletic teams.

A second limitation to the final causal model of burnout concerns differences between cultures. Certainly, communicative needs and methods of communicative interaction change as we move across cultural boundaries. It is possible that some of the variables examined here would not be significant contributors to burnout in other nations' armed forces. According to an extensive literature review, as with our own armed forces, this type of causal model has not been studied with regard to other nations' armed forces. I would hypothesize that the contribution of cohesion and communicative responsiveness to burnout would certainly differ in such places as China, considered to be a collectivist culture, and in the Arab culture, considered to be a high context culture (DeVito, 1995). In a collectivist culture, it is likely that cohesion would play an even more important role in its effect upon burnout because there is much more emphasis on work relationships

between people. In a high context culture it is likely that communicative responsiveness would also be more important than in the present study because more emphasis is placed on personal relationships and oral agreements, whereas in an individualistic culture such as our own, there is less emphasis on personal relationships.

Future Research

One direction for future research in this area should be directed toward measuring this type of model across cultural boundaries. A second possibility for future research is to measure this type of model across gender to see how burnout differs between men and women within the armed forces. This type of study has been done before but not in a causal sense of approaching burnout (Golembiewski et al., 1996; Leiter et al, 1994). Additionally, demographic limitations of the current study are most critical as the majority of those participating were younger, lower enlisted soldiers. It would be interesting to see if the applicability of this model spanned the ranks of lower enlisted soldiers, senior enlisted soldiers, and lower and higher grade officers. I would venture to say that some distinct differences in causal modeling would occur. Another possibility for future research includes comparing and modeling more diverse types of units, such as comparing a combat unit to one in which people are serving in the armed forces in a more individualized sense, as with soldiers who work as such places as the Pentagon. It may be, in fact, that cohesion does not play as significant a role in contributing to burnout in military organizations that are less teamwork oriented. Finally, as mentioned earlier in the discussion, I would encourage research with this model in other organizations with similar hierarchical structures.

Conclusion

In sum, the final model for the armed forces (see Figure 7) is seen to be a model that is capable of explaining the intricate nature of burnout from a causal perspective. While there are some similarities to the study conducted by Miller et al. (1995; 1988), there are new variables introduced that better explain how soldiers reach burnout, as seen

through the addition of cohesion, stress, and occupational commitment to one's unit and the larger organization. It is hoped that this model will be an effective tool for leaders at all levels in the armed forces in helping to reduce burnout in today's smaller, increasingly tasked armed forces.

APPENDIX A

CONSENT FORM

DEPARTMENT OF SPEECH COMMUNICATION
THE UNIVERSITY OF GEORGIA
ATHENS, GA 30602-1725
706-542-4983

Why is this study being done?

I am an active duty Army officer attending graduate school at the University of Georgia. As part of my studies, my headquarters has asked that I do some type of research that will benefit the Army. The survey which you are about to complete is part of that study. I will compile your results with hundreds of others from at least three divisions across the Eastern United States.

What will this study do for you and for the Army?

As a result of the downsizing of our force, increased deployments, and budget cuts, we are continually being asked to "do more with less." Soldiers at all levels are subject to a different environment than that which existed in the Army even 10 years ago. It is the goal of this study to determine exactly how these factors come to bear on our performance in a work environment. The results of this study will determine how soldiers at all levels can improve their work performance through applying the knowledge gained from this study to their work environment. Your commander will be provided with a completed copy of the *entire* study, but *not* with your individual answers. Individual answers to these questions *can not* be identified.

Who will see your answers?

Only I will see your answers. Your answers to these questions will be *completely* anonymous. That means that your answers *can in no way* be traced back to you. There is no way for me to know who you are or what unit you are attached to. As a graduate student at the University of Georgia, I am under strict guidelines from a University review board that monitors studies such as this. Please be as honest as you can. Your responses will contribute to furthering an understanding of how we perform and how we can improve our performance in today's Army.

What to do when you are finished with the survey

Place the completed survey in the envelope and seal the envelope. Place the envelope in the designated collection box in your unit.

RESEARCH CONSENT FORM

By completing and returning this survey, I agree to participate in the research titled MEASUREMENT OF COMMUNICATION AND STRESS IN THE ARMED FORCES, which is being conducted by CPT Kevin V. Arata (office phone number (706) 542-3270). I understand that this participation is entirely voluntary; I can withdraw my consent at any time without penalty by not returning this survey to the unit collection box.

I understand the following points:

1. My actual time commitment for this study will be 30 minutes or less.
2. There are no discomforts or stresses associated with this research.
3. There are no foreseen psychological or physical risks associated with my participation in this research.
4. The results of my participation in this study will remain anonymous. No data can be associated with me individually.
5. The investigator will answer further questions about the research in the form of a debrief that is attached to the end of this survey. The investigator can also be reached at the above stated phone number or at the address listed on the debriefing statement at the end of this survey.

Kevin V. Arata
Captain, Infantry

10 Apr 96
date

Research at The University of Georgia which involves human participants is overseen by the Institutional Review Board. Questions or problems regarding your rights as a participant should be addressed to Dr. Heidi L. Roof; Institutional Review Board; Office of V.P. for Research; The University of Georgia; 606A Graduate Studies Research Center; Athens, GA 30602-7411; Telephone (706) 542-6514.

APPENDIX B

SURVEY

Questions 1 through 22 are not included in this survey because of copyright restrictions. Contact the author for the exact wording of the questions that measure depersonalization, personal accomplishment, and emotional exhaustion, as adapted from Maslach and Jackson (1986).

How often do you feel that . . .

0 1 2 3 4 5 6
Never Sometimes Every Day

	never						*every day*
23. I usually have a knack for saying the right thing to make people feel better when they are upset.	0	1	2	3	4	5	6
24. I usually respond appropriately to the feelings and emotions of others.	0	1	2	3	4	5	6
25. Others think of me as a very understanding person.	0	1	2	3	4	5	6
26. I am the type of person who can say the right thing at the right time.	0	1	2	3	4	5	6
27. Others often come to me for help with their problems.	0	1	2	3	4	5	6
28. My ability to communicate well with others has often led to success in the work place.	0	1	2	3	4	5	6

The following questions deal with your feelings about your **unit**.

1	2	3	4	5	6
strongly agree	agree	somewhat agree	somewhat disagree	disagree	strongly disagree

	strongly agree					*strongly disagree*
29. I am willing to put a great deal of effort beyond that normally expected in order to help this unit be successful.	1	2	3	4	5	6
30. I talk up this unit to my friends as a great place to work.	1	2	3	4	5	6
31. I feel very little loyalty to this unit.	1	2	3	4	5	6
32. I would accept almost any type of job assignment in order to keep working for this unit.	1	2	3	4	5	6
33. I find that my values and the unit's values are very similar.	1	2	3	4	5	6
34. I am proud to tell others that I am part of this unit.	1	2	3	4	5	6
35. I could just as well be working for a different unit as long as the type of work was similar.	1	2	3	4	5	6
36. This unit really inspires the very best in me in the way of job performance.	1	2	3	4	5	6
37. If I had the choice, I would leave this unit in a heartbeat.	1	2	3	4	5	6
38. For me this is the best of all possible units for which to work.	1	2	3	4	5	6
39. There's *not* much to be gained by sticking with this unit indefinitely.	1	2	3	4	5	6
40. Often, I find it difficult to agree with this unit's policies on important matters relating to its soldiers.	1	2	3	4	5	6
41. I really care about the fate of this unit.	1	2	3	4	5	6

Please answer this page of questions with regard to the **Army**:

1	2	3	4	5	6
strongly agree	agree	somewhat agree	somewhat disagree	disagree	strongly disagree

	strongly agree					*strongly disagree*
42. I am willing to put a great deal of effort beyond that normally expected in order to help the **Army** be successful.	1	2	3	4	5	6
43. I talk up the **Army** to my friends as a great place to work.	1	2	3	4	5	6
44. I feel very little loyalty to the Army.	1	2	3	4	5	6
45. I would accept almost any type of job assignment in order to keep working for the Army.	1	2	3	4	5	6
46. I find that my values and the Army's values are very similar.	1	2	3	4	5	6
47. I am proud to tell others that I am part of the Army.	1	2	3	4	5	6
48. I could just as well be working for a different organization other than the Army as long as the type of work was similar.	1	2	3	4	5	6
49. The Army really inspires the very best in me in the way of job performance.	1	2	3	4	5	6
50. If I had the choice, I would leave the Army in a heartbeat.	1	2	3	4	5	6
51. For me the Army is the best of all possible organizations for which to work.	1	2	3	4	5	6
52. There's *not* much to be gained by sticking with the Army indefinitely.	1	2	3	4	5	6
53. Often, I find it difficult to agree with the Army's policies on important matters relating to its soldiers.	1	2	3	4	5	6
54. I really care about the fate of the Army.	1	2	3	4	5	6
55. I am extremely glad that I chose the Army to work for over other organizations.	1	2	3	4	5	6
56. Deciding to work for the Army was a definite mistake on my part.	1	2	3	4	5	6

Job requirements / conditions:

1	2	3	4	5	6
strongly agree	agree	somewhat agree	somewhat disagree	disagree	strongly disagree

	strongly agree					*strongly disagree*
57. My supervisor makes sure his people have clear goals to achieve.	1	2	3	4	5	6
58. My supervisor makes it clear how I should do my work.	1	2	3	4	5	6
59. I *don't* know what performance standards are expected of me.	1	2	3	4	5	6
60. It is clear what is expected of me on my job.	1	2	3	4	5	6
61. I always know what jobs are most important in priority.	1	2	3	4	5	6
62. I am confident of how much authority I have.	1	2	3	4	5	6
63. I understand what needs to be accomplished in my daily duties.	1	2	3	4	5	6
64. If given the chance, I would choose to leave my company and join another.	1	2	3	4	5	6
65. The members of my company get along well together.	1	2	3	4	5	6
66. The members of my company will readily defend each other from criticism by outsiders.	1	2	3	4	5	6
67. I feel that I am really a part of my company.	1	2	3	4	5	6
68. I look forward to being with the members of my company each day.	1	2	3	4	5	6
69. I find that I generally do *not* get along with the other members of my company.	1	2	3	4	5	6
70. I enjoy belonging to this company because I am friends with many soldiers.	1	2	3	4	5	6
71. The company which I belong to is a close one.	1	2	3	4	5	6

Answer the following questions with regard to how satisfied you are with the job you currently hold:

1	2	3	4	5	6
extremely satisfied	very satisfied	moderately satisfied	moderately dissatisfied	very dissatisfied	extremely dissatisfied

	extremely satisfied					*extremely dissatisfied*
72. The physical work conditions.	1	2	3	4	5	6
73. The freedom to chose your own method of working.	1	2	3	4	5	6
74. Your fellow workers.	1	2	3	4	5	6
75. The recognition you get for good work.	1	2	3	4	5	6
76. Your immediate boss.	1	2	3	4	5	6
77. The amount of responsibility you are given.	1	2	3	4	5	6
78. Your rate of pay.	1	2	3	4	5	6
79. Your opportunity to use your abilities.	1	2	3	4	5	6
80. Relations between leaders and soldiers in your company.	1	2	3	4	5	6
81. Your chance of promotion.	1	2	3	4	5	6
82. The way your company is managed.	1	2	3	4	5	6
83. The attention paid to suggestions you make.	1	2	3	4	5	6
84. Your hours of work.	1	2	3	4	5	6
85. The amount of variety in your job.	1	2	3	4	5	6
86. Your job security.	1	2	3	4	5	6

How does your job affect you?

1 True 2 False

	True	*False*
87. My job tends to directly affect my health.	1	2
88. I work under a great deal of tension.	1	2
89. I have felt fidgety or nervous as a result of my job.	1	2
90. If I had a different job, my health would probably improve.	1	2
91. Problems associated with my job have kept me awake at night.	1	2
92. I have felt nervous before attending meetings in the company.	1	2
93. I often "take my job home with me" in the sense that I think about it when doing other things.	1	2

Please use the scale below to answer the following questions regarding your relationship with either your spouse, significant other, or closest friend.

If you are married, answer this question with regard to your spouse. If you have a significant other, answer this question with regard to your significant other. If you are not married and do not have a significant other, answer this question with regard to your closest friend.

I am answering this question with regard to my: spouse significant other closest friend (circle one)

1 not at all 2 a little 3 quite a bit 4 very much

	not at all			*very n*
94. To what extent could you turn to this person for advice about problems?	1	2	3	4
95. To what extent could you count on this person for help with a problem?	1	2	3	4
96. To what extent can you count on this person to give you honest feedback, even if you might not want to hear it?	1	2	3	4

	not at all			*very much*
97. To what extent can you count on this person to help you if a family member very close to you died?	1	2	3	4
98. If you wanted to go out and do something this evening, how confident are you that this person would be willing to do something with you?	1	2	3	4
99. To what extent can you count on this person to listen to you when you are very angry at someone else?	1	2	3	4
100. To what extent can you really count on this person to distract you from your worries when you feel under stress?	1	2	3	4

Please use the scale below to answer the following questions regarding your relationship with your <u>immediate supervisor.</u>

1	2	3	4
not at all	a little	quite a bit	very much

Again, this series of questions is to be answered with regard to your <u>immediate supervisor.</u>

	not at all			*very much*
101. To what extent could you turn to **your supervisor** for advice about problems?	1	2	3	4
102. To what extent could you count on **your supervisor** for help with a problem?	1	2	3	4
103. To what extent can you count on your supervisor to give you honest feedback, even if you might not want to hear it?	1	2	3	4
104. To what extent can you count on your supervisor to help you if a family member very close to you died?	1	2	3	4
105. To what extent can you count on your supervisor to listen to you when you are very angry at someone else?	1	2	3	4
106. To what extent can you really count on your supervisor to distract you from your worries when you feel under stress?	1	2	3	4

To what extent are you able to control your environment?

1 2 3 4 5 6 7
not at all very much

	not at all						*very much*
107. To what extent do you feel you are able to control the important things in your life?	1	2	3	4	5	6	7
108. To what extent do you feel that you effectively cope with important changes that occur in your life?	1	2	3	4	5	6	7
109. To what extent do you feel confident about your ability to handle your personal problems?	1	2	3	4	5	6	7
110. To what extent do you feel able to control irritations in your life?	1	2	3	4	5	6	7
111. To what extent do you feel that you are on top of things?	1	2	3	4	5	6	7
112. To what extent do you become angered because of things that happened that were outside your control?	1	2	3	4	5	6	7
113. To what extent have you been able to control the way you spend your time?	1	2	3	4	5	6	7
114. To what extent have you been upset because of something that happened unexpectedly?	1	2	3	4	5	6	7
115. To what extent have you felt that things were going your way?	1	2	3	4	5	6	7

What are your general characteristics? (Remember, this information will be released to no one!)

116. Sex: Male Female

117. Your age today: _____

118. Your present grade: _____

119. Years in present grade: _____

120. Present duty title: _____

121. Number of people you personally supervise: _____

122. How many months have you been deployed in the last twelve months (field time and/or off-post deployments)? (circle one)

1 0 to 2 months | 2 3 to 4 months | 3 5 to 6 months

4 7 to 8 months | 5 9 to 10 months | 6 11 to 12 months

123. Your long term goals for the armed forces: (circle one)

1 Stay until retirement | 2 Leave before retirement | 3 Not Sure

124. Marital Status: (circle one)

1 Never Married | 2 Single, living with partner | 3 Married | 4 Widowed | 5 Divorced

125. Number of years of highest civilian education completed: (circle the one closest to your situation)

1 High School | 2 Some College (less than 2 years) | 3 College (associate's degree)

4 College (4 year degree) | 5 Graduate Degree

APPENDIX C

DEBRIEF

DEBRIEFING STATEMENT

Thank you for your participation in this research project. Now that you have completed your survey, I'd like you to know a little more about the purpose and significance of this study. As you may or may not be aware, there are many different factors that lead to burnout in various organizations. Burnout is a feeling of decreased work performance that might occur from long hours, little support at home or work, or a frequent number of deployments each year. There has been little research to date on how and why burnout occurs in a military setting. Because I am familiar with how a unit such as yours operates, I believed that this would be an ideal place to measure how and why burnout occurs in the Army.

Specifically, I am looking to see how different factors affect a soldier's work performance. Some of these factors include the support that you receive in your home or from your friends, the support that you receive from your superiors, and the amount of satisfaction you have from your job.

The bottom line for all of these contributing factors is that we know they all contribute to burnout to some degree. However, by having you answer these questions, I am able to do a mathematical analysis of your answers to determine in what order these factors occur and how they contribute to burnout in the Army.

How could this help you? As soldiers or leaders in the armed forces, if you know that lack of work support contributes more to causing burnout than a cohesion problem in your unit, then when you believe that burnout exists in your unit, you would know that increasing a soldier's work support could very well help reduce burnout, more so than trying to correct a cohesion problem. By determining the order in which these problems affect burnout, you, as soldiers and leaders, may be able to prevent many problems typically associated with a high stress environment.

This study will be completed by the Fall of this year. When the results are complete, I will forward a copy to your battalion commander. Hopefully, the results will help you to make more informed decisions about how to help soldiers at all levels reduce the potential for burnout in a military setting.

Thanks again for your help with this study. If you wish to contact me about this study, I can be reached at the following address:

Captain Kevin V. Arata
Terrell Hall, Department of Speech Communication
University of Georgia
Athens, GA 30602-1725

APPENDIX D

LETTERS OF PERMISSION

Headquarters
3rd Brigade
101st Airborne Division (Air Assault)
Fort Campbell, Kentucky 42223-5000

April 8, 1996

Captain Arata:

This letter serves as a letter of permission for conducting surveys within my Brigade to aid in the development of your thesis on "Burnout in the Armed Forces."

I understand that the surveys will be completely anonymous and that I will receive a copy of the study once it is complete, but will not be able to identify individual soldier responses to the survey. As we previously discussed, the five hundred surveys will be distributed throughout the Brigade.

William J. Martinez
Colonel, Infantry
Commanding

Headquarters
3rd Battalion, 502nd Infantry
101st Airborne Division (Air Assault)
Fort Campbell, Kentucky 42223-5000

April 8, 1996

Captain Arata:

This letter serves as a letter of permission for conducting surveys with the 3rd Battalion, 502nd Infantry to aid in the development of your thesis on "Burnout in the Armed Forces."

I understand that the surveys will be completely anonymous and that I will receive a copy of the study once it is complete, but will not be able to identify individual soldier responses to the survey. As we previously discussed, the one hundred and fifty surveys will be distributed throughout the battalion.

Robert J. Domitrovich, Jr.
Major, Infantry
Operations Officer
Acting Commander

Headquarters
311th Military Intelligence Battalion
101st Airborne Division (Air Assault)
Fort Campbell, Kentucky 42223-5000

April 8, 1996

Captain Arata:

This letter serves as a letter of permission for conducting surveys with the 311th Military Intelligence Battalion to aid in the development of your thesis on "Burnout in the Armed Forces."

I understand that the surveys will be completely anonymous and that I will receive a copy of the study once it is complete, but will not be able to identify individual soldier responses to the survey. As we previously discussed, the one hundred and fifty surveys will be distributed throughout the battalion.

Steven M. Loving
Lieutenant Colonel, Military Intelligence
Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS, 548TH SUPPORT BATTALION (CORPS)
FORT DRUM, NEW YORK 13602

REPLY TO
ATTENTION OF

July 23, 1996

Captain Arata:

This letter serves as a letter of permission for conducting surveys within my battalion to aid in the development of your thesis on "Burnout in the Armed Forces."

I understand that the surveys will be completely anonymous and that I will receive a copy of the study once it is complete, but will not be able to identiify individual soldier responses to the survey.

RUBEN BECERRA
LTC, TC
Commanding

DEPARTMENT OF THE ARMY
Headquarters, Aviation Brigade
3rd Infantry Division (Mechanized)
Hunter Army Airfield, Georgia 31409

June 7, 1996

Captain Arata:

This letter serves as a letter of permission for conducting surveys with the Aviation Brigade from Hunter Army Airfield to aid in the development of your thesis on "Burnout in the Armed Forces."

I understand that the surveys will be completely anonymous and that I will receive a copy of the study once it is complete, but will not be able to identify individual soldier responses to the survey. As we previously discussed, the one hundred and fifty surveys will be distributed throughout the battalion.

Wade B. Becnel
Lieutenant Colonel, Aviation
Operations Officer

REFERENCES

Adelsberger, B. (1995, October 16). Drawdown door open for warrants. Army Times, p. 8.

Aldinger, R. T. (1993). Burnout in the Air Force. Doctoral dissertation, University of Georgia, Athens, Georgia.

Barling, J., & MacIntyre, A. T. (1993). Daily work role stressors, mood and emotional exhaustion. Work and Stress, 7, 315-325.

Beehr, T., Walsh, J., & Taber, T. (1976). Relationship of stress to individually and organizationally valued states: higher order needs as a moderator. Journal of Applied Psychology, 61, 1, 41-47.

Clegg, C., & Wall, T. (1981). Note on some new scales for measuring aspects of psychological well-being. Journal of Occupational Psychology, 52, 221-225.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. Journal of Health and Social Behavior, 24, 385-396.

DeVito, J. A. (1995). The Interpersonal Communication Book. New York: Harper Collins College Publishers.

Dobbins, G. H., & Zaccaro, S. J. (1986). The effects of group cohesion and leader behavior on subordinate satisfaction. Group and Organization Studies, 11 (3), 203-219.

Etzion, D. (1984). Moderating the effect of social support on the stress-burnout relationship. Journal of Applied Psychology, 69, 615-622.

Etzion, D., & Westman, M. (1994). Social support and sense of control as moderators of the stress-burnout relationship in military careers. Journal of Social Behavior and Personality, 9, 639-656.

Fink, E. L. & Monge P. R. (1985). An exploration of confirmatory factor analysis. In B. Dervin & M. J. Voigt (Eds.), Progress in Communication Sciences, 6, p. 167-197, Norwood, NJ: Ablex.

Forsyth, D. R. (1990). Group Dynamics. Belmont, CA: Wadsworth Publishing Company.

General Dennis Reimer. (1995, October 30). Army Times, p. 3.

Golembiewski, R. T., Aldinger, R. T., Munzenrider, R. F., & Luo, H. (1996). Burnout and Mental Health in a Military Population. Military Psychology. (submitted for review).

Golembiewski, R. T., & Munzenrider. (1988). Phases of burnout: Developments in Concepts and Applications. New York: Praeger.

House, J. (1981). Work stress and social support. Reading, MA: Addison-Wesley.

House, R. J., & Rizzo, J. R. (1972). Role conflict and ambiguity as critical variables in a model of organizational behavior. Organizational Behavior and Human Performance, 7, 467-505.

Hudson, N. & Jowers, K. (1995, December 4). Housing tops quality of life agenda. Army Times, p. 4.

Hunter, J. E. & Gerbing, D. W. (1982). Unidimensional measurement, second order factor analysis, and causal models. Research in Organizational Behavior, 4, 267-320.

Joreskog, K. G. (1984). Lisrel VI. Mooresville, IN: Scientific Software, Inc.

Joreskog, K. G. & Sorbom, D. (1989). Lisrel VI: A guide to the program and applications. (2nd edition). Chicago: SPSS Inc.

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

Kerlinger, F. N. (1980). Analysis of covariance structure tests of a criterion-referenced theory of attitudes. Multivariate Behavioral Research, 15, p. 403-422.

Leiter, M. P. (1989). Conceptual implications of two models of burnout: A response to Golembiewski. Group and Organization Studies, 14 (1), 19-22.

Leiter, M. P., Clark, D., & Durup, J. (1994). Distinct models of burnout and commitment among men and women in the military. Journal of Applied Behavioral Science, 30, 63-82.

Malone, M. M. (1983). Small unit leadership: A commonsense approach. Novato, CA: Presido Press.

Marsh, H.W. & Hocevar, D. (1988). A new, more powerful approach to multitrait-multimethod analyses: Application of second-order confirmatory factor analysis. Journal of Applied Psychology, 73 (1), 107-117.

Marshall, S. L. A. (1978). Men against fire: The problem of battle command in future war. Gloucester, MA: Peter Smith.

Maslach, C. (1982). Burnout: The cost of caring. Englewood, NJ: Prentice-Hall.

Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. Journal of Occupational Behavior, 2, 99-113.

Maslach, C. & Jackson, S. E. (1986). Maslach Burnout Inventory (2nd ed.). Palo Alto, CA: Consulting Psychologist Press.

Maze, R. (1996a, March 11). Drawdown legacy: stress. Army Times, p. 12.

Maze, R. (1996b, March 11). Dorn declares drawdown a success. Army Times, p. 14.

McDonald, R. P. (1985). Factor analysis and related methods. Hillsdale, NJ: Erlbaum.

Miller, K. I., Birkholt, M., Scott, C., & Stage, C. (1995). Empathy and burnout in human service work: An extension of a communication model. Communication Research, 22, 123-147.

Miller, K. I. , Stiff, J. B., & Ellis, B. H. (1988). Communication and empathy as precursors to burnout among human service workers. Communication Monographs, 55, 250-265.

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

Newton, T., Handy, J., & Fineman, S. (1995). Managing stress; emotion and power at work. London: Sage Publications.

Ott, R. L. (1993). An introduction to statistical method and analysis. Belmont, CA: Wadsworth Publishing Company.

Parks, K. (1989). Personal control in an occupational context. In A. Steptoe & A. Apples (Eds.), Stress, personal control and health (pp. 21-47). New York: Wiley.

Peters, K. M. (1995, December 18). Doing less with less - and it shows. Army Times, p. 12.

Pierce, G. R., Sarason, B. R. , & Sarason, I. G. (1991). General and relationship-based perceptions of social support: Are two constructs better than one? Journal of Personality and Social Psychology, 61, 1028-1039.

Pines, A., & Aronson, E. (1988). Career burnout. London: Collier Macmillan Publishers.

Rogers, R. E., Li, E. Y., & Shani, A. B. (1987). Perceptions of organizational stress among U.S. military officers in Germany: An exploratory study. Group and Organization Studies, 12, 189-207.

Shaw, M. E. (1981). Group dynamics: the psychology of small group behavior. (3rd edition). New York: McGraw-Hill Book Company.

Solis, S. (1991). Psychological stress in Marine Corps officers. Military Medicine, 156, 223-227.

Starnaman, M. & Miller, K. I. (1992). A test of a causal model of communication and burnout in the teaching profession. Communication education (41), 40-53.

Stiff, J. B. (1984). Construct validity of two measures of empathy. Unpublished manuscript, Department of Communication, Michigan State University. (abstract).

Stiff, J. B., Dillard, J. P., Somera, L., Kim, H., and Sleight, C. (1988). Empathy, communication, and prosocial behavior. Communication monographs (55). 198-213.

Tice, J. (1996a, January 1). After five years, the drawdown nears a wrap. Army Times, p. 19.

Tice, J. (1996b, January 1). Hastened drawdown efforts successful. Army Times, p. 18.

Warr, P. B., Cook, J., & Wall, T. D. (1979). Scales for the measurement of some work attitudes and aspects of psychological well-being. Journal of Occupational Psychology, 52, 129-148.

Westman, M., & Eden, D. (1992). Excessive role demand and subsequent performance. Journal of Organization Behavior, 13, 519-529.

Willis, G. (1996, March 18). Another 20,000? Army Times, p. 14.