

POSTCOMBAT MILITARY JOB-SATISFACTION AMONG
VIETNAM WAR HELICOPTER AVIATORS

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This project investigated the relations between recalled job-satisfaction, ability, and task demands in Vietnam era helicopter aviators. It attempted to detect and describe factors present in a dangerous combat environment which may influence some individuals to enjoy and take satisfaction at being exposed to, creating, and participating in the dangerous and life threatening violence involved in helicopter combat. Participants were 30 pilots and crew members retired from the 335th Assault Helicopter Company who were all actively involved in combat in Vietnam from 1968 to 1970. This study found that developing a love of war is correlated with anger during combat. The love of war is not correlated with PTSD processes nor is it correlated with specific personality dimensions. The love of war research is a new area. The questions were used to operationalize the love of war represent a significant limitation. This method of operationalizing the love of war concept does not make fine discriminations has questionable content validity. To facilitate accuracy in discriminating between participants when conducting future research in the area, researchers could benefit from constructing a measure with greater content validity.

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INTRODUCTION

Love of War Concept

Exposure of individuals to combat conditions commonly found in warfare has been found to be related to a variety of psychological problems. Among these problems are posttraumatic stress disorder (PTSD), anxiety, depression, and acute anxiety disorder. These disorders and their relations to combat are much studied in the psychological literature. Another phenomenon that is not well studied is the development in some individuals of an enjoyment and an attraction to the violence related to combat.

Personal observations and discussions with veterans in V.A. Medical Center treatment programs has led me to conclude that a small number of individuals thrive under combat conditions whereas others are horrified by it. Personal conversations with Veteran's Administration psychologists reflected that the conventional psychological lore about individuals who were traumatized but enjoyed their combat experience is these individuals are thought to have had low self-estimations of self-worth before combat. During combat, they performed at a particularly outstanding level which boosted their self-esteem. When their military careers were over, they were unable to continue their esteem boosting, high performance combat activity. As a result, they were impacted by a resulting loss of esteem.

Why is it that some individuals actually develop a love of warfare under combat conditions? If they enjoyed their combat experience, why would these

individuals develop PTSD, anxiety disorders or other psychological problems just as other combat exposed veterans do? Can a love of war be construed as a negative or reversed symptom pattern of PTSD? Deriving enjoyment and satisfaction from being exposed to and participating in such dangerous and socially abhorrent activity is an extreme behavior potentially related to intense trauma.

It was not possible locate literature related to the development of a love of combat. It appears to be an unstudied area of psychology. In an attempt to gain insight into what factors may work to create a love of war, an examination of the psychological literature as it relates to sports performances and job satisfaction may help to understand this phenomenon. The present study utilized constructs taken from this literature that may be involved in shaping a love of combat in individuals who are exposed to combat trauma.

Prevalence of PTSD in Combat Veterans

PTSD is common in military combat veterans. More than 500,000 Vietnam veterans may currently have PTSD; Foy, Sippelle, Rueger, & Carroll, 1984). Fifteen years after Vietnam service 27.9% of American Hispanics, 20.6% of African Americans, and 13.7% of combined Caucasian and other ethnicities who participated in the war met the criteria for PTSD in 1992 (Schlenger, Kukla, Fairbank, & Hough 1992). I was not able to find prevalence literature which quantifies traumatized veterans with PTSD symptoms who experienced an attraction to combat. Symptomatology of PTSD

The *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR*; American Psychiatric Association, 1994) lists the criteria for the diagnosis of PTSD. There are 17 items that comprise the range of symptoms that are exhibited in varying patterns in those with PTSD. These 17 symptoms are divided into three groups comprised of symptoms related to re-experiencing the trauma, symptoms related to avoidance and emotional numbing to stimuli that are associated with the original traumatic event, and symptoms related to increased arousal.

Re-experiencing symptoms consist of recurrent intrusive and disturbing thoughts or memories related to the traumatic event. Avoidance and numbing symptoms manifest as social and mental withdrawal, avoiding people and places as well as smells and sounds or other environmental cues associated with the traumatic event. This can include efforts to stop intrusive thoughts or memories. These efforts are often accompanied by a sense of fear or foreboding about the future and an inability to recall specific items or circumstances related to the trauma. Finally, increased arousal can involve sleeplessness and nightmares, hypervigilance, irritability, memory and concentration problems, as well as an exaggerated startle response.

A diagnosis of PTSD. *DSM-IV-TR* criteria requires an individual to have experienced a traumatic event that was life threatening or threatened serious physical injury. In response to this exposure, the individual must have felt

intense fear, horror or helplessness. The *DSM-IV-TR* does not mention traumatized individuals who experienced a strong attraction to their trauma.

Factors Which Influence Satisfaction With an Experience

The literature contains factors which may influence levels of satisfaction with a job or experiences. These include but are not limited to performance, competence, job complexity, self-esteem, values, personality, and reward. How these factors may influence satisfaction with an experience is covered in more detail.

Performance and Job-Satisfaction

The work and job literature contains research which indicates that it is likely that levels of performance are positively correlated with enjoyment of the job at hand. In a study involving 295 workers Spencer and Steers (1981) found that performance was weakly but significantly correlated with job satisfaction ($r = .17, p = < .01$). It was found that the higher the performance level at a specific task, the more satisfaction was derived from performing that task.

Kesselman, Wood, and Hagen (1974) studied the relationship between performance level and job satisfaction in 76 workers. These workers were toll operators and draftspersons. Kesselman et al. (1974) found that level of performance was significantly correlated with job satisfaction ($r = .58, p = < .01$).

Wanous (1974) examined 80 newly hired telephone employees. He found conflicting evidence for the relations between level of performance and job

satisfaction both in correlation and direction of influence. He explained this difference by offering the possibility that by manipulating the particular nature of the reward system one can obtain data to support any causal model explaining the relations between job satisfaction and level of performance.

There seem to be conflicting findings regarding the relations between levels of performance and job satisfaction. It is possible that this can be explained by the moderating effects of third or other variables. An example of this would be a high level of performance at a noncomplex task. Intuitively one would reason that over time, boredom would moderate the effect of high performance, leading to a lack of satisfaction in the task. How an individual's traumatic combat experience is perceived may be related to the individual's performance and the complexity of his task.

Sense of Competence, Job Complexity, and Job Satisfaction

Tharenou and Harker (1984) examined factors that influence levels of job satisfaction in 166 male electrician apprentices. The factor that had the highest correlation with job satisfaction was having a sense of competence regarding personal ability. Job satisfaction and having a sense of competence were correlated at $r = .52, p < .01$. Another factor that moderated job satisfaction was self-rated performance. Individuals who rated their performance at a job highly had a corresponding increase in job satisfaction ($r = .31, p < .01$). A third factor that was significantly correlated with job-satisfaction was job complexity ($r = .30, p < .01$). Satisfaction increased with the complexity of the job. The results

of Tharenou and Harker (1984) are similar to the findings of Gibbons and Weingart (2001) in that performance and personal interpretation of those abilities influence how individuals feel about the work they are performing.

Gibbons and Weingart (2001) studied 87 management undergraduate students. They examined factors which interact to produce performance. Ability, self-efficacy (personal appraisal of ones abilities), domain efficacy (personal belief in ones ability to perform activities related to a specific category), general efficacy (beliefs of ones abilities across domains), personal goals, and assigned goals all work together to produce a level of performance. Personal goals are self-aspirations for personal performance and regulate the amount of effort that is allocated to a particular task. Task-specific self-efficacy and personal goals are thought to be the immediate determinants of an individual performance. Additionally, self-efficacy influences performance through a positive effect on personal goals.

Another factor that predicts performance is domain efficacy (how skilled an individual believes they are in a specific area). How an individual feels about personal ability in a specific area can influence self-efficacy and personal goals. The amount of domain efficacy one has in a specific domain may be the result of previous training in that area or efficacy resulting from previous learning through personal experience.

Judge, Thoreson, Bono, and Patton (2001) compiled a meta-analysis investigating the relations between job satisfaction and job performance. They

found that higher job performance is positively correlated with high job satisfaction. They also found that job satisfaction and job performance were moderated by estimates of personal performance and complexity of the task. Job satisfaction was found to be significantly correlated with task difficulty in low, medium, and high complexity tasks. However, high complexity jobs had the strongest correlation with satisfaction. Success at performing a specific job builds a feeling of self-efficacy. People who believe in their personal competence and ability to perform a job will experience more satisfaction in the performance of the job (Judge, Bono, Thorenson, & Patton, 2001).

Cherrington, Reitz, and Scott (1971) examined performance and job satisfaction in a study of reward and performance. In contrast to Tharenou and Harker (1984) and Gibbons and Weingart (2001), Cherrington et al. (1971) did not find that high performance was correlated with job satisfaction.

Because job satisfaction is influenced by performance, factors that affect performance would likely be related to creating satisfaction or enjoyment in regard to an individual's combat role.

Self-Esteem, Job-Satisfaction, and Performance

In their study of electrician apprentices described earlier, Tharenou and Harker (1984) found that self-esteem had a nonsignificant effect on job satisfaction and performance. Regarding self-esteem, they concluded "it may be of little practical consequence" as a moderator between job-satisfaction and performance (p. 631). In a study of 93 male manual workers holding jobs

classified as skilled and unskilled, Inkson (1998) examined self-esteem as a moderator between job performance and job satisfaction. Inkson hypothesized that self-esteem was correlated with job performance. He was not able to confirm his hypothesis and found that levels of self-esteem had little effect on performance.

Considering the findings of Tharenou and Harker (1984) and Inkson (1998), self-esteem may not be a factor in the development of a love of combat.

Performance and Congruence of Values

Workers who share values related to the task at hand obtain a higher job performance rating. Adkins, Ravlin, and Megling (1996) examined job performances in 191 production workers and 17 of their supervisors. Workers were assessed for congruence in values as well as job satisfaction. Supervisors provided the investigators with worker job performance ratings. They found that congruence in work related values among workers was related to higher performance ratings and higher job satisfaction in a job that requires working interdependently with others. The investigators found workers who had congruent work related values had better attendance records than workers who did not.

It is likely that small combat units that often require closeness and interdependence between members may foster congruence in values related to expectations of a high performance. This would be especially true when a poor performance could result in deadly consequences for the members.

Reward, Performance, and Job Satisfaction

Intuitively it would seem that rewards given for performance would increase job satisfaction. Cherrington, et al. (1971) studied 90 college undergraduates, comparing the effects of 3 reward systems on job performance and satisfaction. They compared random rewards, positively contingent rewards based directly on performance and negatively contingent rewards inversely based on performance.

Cherrington et al. (1971) found that both positively and negatively contingent rewards were positively correlated with performances subsequent to the rewards. They also reported that job satisfaction increased by contingent reinforcement.

Personal observation indicates it is likely that combat aviators were exposed to all three types of reward systems. The participants were rewarded with military pay regardless of their performance. These individuals were also subjected to a positively contingent reward system which rewarded them for high levels of performance. High performance was related to an expectancy of survival, as well as rewarded with military decorations. There were no random rewards unless it is argued that military decorations were often random rewards. Negatively contingent rewards were related to peer pressure given for low performances.

Personality, Motivation and Job Satisfaction

It would seem reasonable to assume that the unique personal traits an individual brings to a task would influence performance as well as job satisfaction. In a meta-analysis, Judge and Ilies (2002) used Costa and McCrae's (1985) five-factor model of personality to examine the relations between personality and performance motivation. They examined 150 correlations obtained in 78 independent samples as reported in 65 studies and included four new data sets in their analysis.

Costa and McCrae (1985) described the five personality factors as: Neuroticism which is a tendency to show poor emotional adjustment in the form of stress, anxiety and depression. Extraversion is a tendency to be positive, dominant and sociable. Openness to Experience describes individuals who are creative, flexible, and curious. Agreeableness is a tendency to be kind warm trustworthy, gentle and trusting. Conscientiousness is a tendency to be achievement orientated, orderly and deliberate.

Judge and Ilies' (2002) performance motivational criteria were goal setting, expectancy (outcome expectation) and self-efficacy. Neuroticism was negatively correlated with all three motivational criteria. Extraversion was correlated with self-efficacy. Openness to experience was correlated with goal-setting and self-efficacy. Agreeableness was negatively correlated with goal-setting. Conscientiousness was correlated with goal-setting and self-efficacy. High scores in neuroticism and conscientiousness were found to be the best

indicators of performance motivational type. Neuroticism was negatively correlated with goal setting motivation, whereas conscientiousness was positively correlated with goal setting motivation. Thus personality traits and their correlations with performance motivational factors could influence job performance as well as job satisfaction. Not surprisingly, conscientiousness had the highest correlation with overall job performance.

In another study, Piedmont, Hill, and Blanco (1997) used the 5 factor model of personality to predict athletic performance in 79 athletes. They found that conscientiousness was associated with higher athletic performances and neuroticism was associated with lower athletic performance. It is possible that these personality traits may be associated with performance in combat as well. This may affect how an individual experiences the trauma encountered in combat.

Personality and Risk

Is the enjoyment of combat a result of exposing an individual with a specific personality type to combat conditions? Are only persons of a specific personality type likely to develop an enjoyment of combat related violence, or do several factors influence the enjoyment of performing in combat? Williams (1965) looked at correlates of risk taking behavior. He examined job satisfaction of 567 individuals who worked for a utility company. He found that some individuals who performed dangerous work reported high levels of job satisfaction. Those individuals who had a high personal orientation to engage in

risk taking behavior often reported high satisfaction with a dangerous job. These individuals also reported that they preferred to do work involving things they were good at. Williams (1965) relates risk taking behavior with gambling. A gambler who has some influence over chance derives much personal satisfaction from the risk. It is thought that through this mechanism risk taking behavior on the job may result in job interest and satisfaction Williams (1965).

Freixanet (1991) studied 374 participants' risk taking and sensation seeking behaviors and examined their personalities for characteristics these individuals may share. He found that extraversion, emotional stability, and conformity to social norms are associated with thrill seeking behavior.

Thrill-Seeking Behavior and Personal Skills

In a study of 20 members of a university mountain climbing club and 21 controls, Cronin (1990) found that the mountain climbers scored significantly higher on measures of thrill seeking and adventure seeking. Although mountain climbing is not the same as combat, it is a sport that exposes individuals to the possibility of injury and death. Mountain climbers rely on personal skills to survive just as soldiers do. It is likely that this thrill seeking behavior may allow mountain climbers to experience danger in a way differently than individuals who do not engage in arousal seeking behavior. Perhaps arousal-seeking behavior affects how soldiers in combat experience trauma. It may be that arousal or thrill-seeking behavior acts as a buffer when individuals are exposed to trauma.

Kerr (1990) found that individuals who seek arousal participate in high risk sporting activities like glider flying, motorcycling, and parachuting. It would seem likely that many soldiers who participated in helicopter combat may also be arousal seekers. Flying was a voluntary activity for most aviators. Under-Arousal and Risk Seeking Brennan et al., (1997) divided 94 male subjects into four groups. Criminals with criminal fathers, non-criminals with criminal fathers, criminals with non-criminal fathers and non-criminals with non-criminal fathers. Brennan et al. (1997) reported that heart rate and skin conductance responses were significantly higher in the non-criminals with criminal fathers group than the other three groups. The response of this group showed higher autonomic nervous system responsiveness than the non-criminal with non-criminal fathers group. Brennan et al. (1997) theorized that this arousal was protective and may be the result of greater attention or emotional processing. Raine and Mednick (1997) who worked with Brennan conducted other research with children three to eleven. They found that three-year-olds with lower resting heart rates were predisposed to violence at age 11. Raine and Mednick (1997) believe that the lower autonomic arousal found by Brennan et al. (1997) and in their own research indicates a propensity to seek out stimulating, dangerous and violent activities in these individuals. It is possible that under arousal is a factor in individuals who experience a love of war.

Fear Reduction and Performance

Fear, like anxiety, has a negative impact on performance in military groups. McMillan and Rachman (1988) conducted a within group study of 105 British paratroopers in training. Those who endorsed less fearfulness expressed higher self-efficacy and were rated higher in performance after being exposed to the danger of a parachute jump. McMillan and Rachman (1987) compared paratrooper veterans of the Falkland War with bomb removal and demolition soldiers. They found that both groups endorsed low levels of stress when exposed to danger. In fact they had low physical symptoms of fear before a stress test and during an unavoidable shock. This included a relative lack of cardiac response to the stimulus. They proposed that training and repeated exposures to danger may lead to a lower cardiac response to danger as well as a more fearless attitude.

This study found that paratroopers experienced less fear than the bomb demolition soldiers. They proposed that frequent exposure to danger and more intense and frequent training the paratroopers received. If repeated exposure to danger can alleviate fear reactions in some cases, fear may be reduced in individuals who are exposed to combat conditions on a daily basis. A reduction in fear would be consistent with an increased possibility of developing job satisfaction under conditions that might normally be terrifying.

Patrick, Cuthbert, and Lang (1994) examined 54 male prisoners. The prisoners were divided into higher and lower psychopathology groups using a

psychopathology checklist. They recorded their skin, cardiac and facial responses to fear imagery sentences. These sentences are designed to provoke a response in normal individuals. They found that the prisoners assigned to the high psychopathology group exhibited smaller overall responses to the fear imagery sentences than did the lower pathology group. While soldiers are not usually psychopaths could individuals who are less affected by fear go on to develop a love of war?

Anxiety, Self-efficacy, Task Absorption and Performance

Cury, Elliot, Sarrazin, Da Fonseca, and Rufo (2002) looked at factors that affected performance in 45 physical education students. They found anxiety was negatively correlated with performance. They found that individuals who had a high valuation of their personal competence were less affected by anxiety. It would seem likely that a high state of anxiety would be experienced by most people in combat and that it would negatively impact performance. Perhaps values of personal competence work as a mediator of this effect in combat as they did in the Cury et al. (2002) study. Task absorption was also correlated with performance. Those individuals who reported higher rates of being absorbed in completing the task had a higher rating of performance. Many individuals in combat may be highly absorbed in performing their task as completion of the task would be conducive to survival.

Adrenaline and Performance

Much of the literature related to adrenaline and performance comes from animal research. Haller and Makara (1998) performed research with rats and they determined that adrenaline and noreadrenaline prepares an animal for flight. They also found these hormones provide a protective effect to the consequences of a fight. The presence of stress hormones could provide a buffer for the way a trauma is experienced and perceived by humans as well.

Adrenaline also impacts performance. McMorris and Graydon (2000) examined cognitive performances and the effects of adrenaline. They found that performances in complex tasks were enhanced by adrenaline which is produced by exercise. This is an indication that adrenaline produced by fear or physical demands of combat may affect the performance of the combatants.

Research by Liberzon (1999) into individuals with combat PTSD indicates that there may be alterations in structure or brain function in these individuals.

Liberzon (1999) did brain activation imaging to localize and compare the activation of the brains of traumatized veterans and the brains of non traumatized veterans. He found that sounds caused activation in the amygdala and hippocampal areas of traumatized veterans where non traumatized veterans did not show this activation. Liberzon (1999) theorized that corticotrophin-releasing factor and norepinephrine produced in larger quantities by the brains of traumatized individuals may be related to changes in the hippocampus and amygdala areas of the brain. This raises the question as to whether adrenaline

exposure and tolerance (i.e., addiction) may be involved in a love of war in some individuals.

Mood and Risk Seeking

Mood appears to be correlated with risk seeking behavior. Lerner and Keltner (2001) found that individuals experiencing fear were less likely to engage in risk seeking behaviors. Individuals who were either angry or happy were equally likely to engage in risk seeking behaviors. Perhaps happiness and/or anger lessen the fear experienced by aviators. In this way, some mood states may help to explain a desire to engage in combat related activities which is a risky behavior. While under enemy fire or while in a dangerous location, individuals who are not exceedingly fearful may experience a significant level of anger. According to Keltner's model, anger is correlated with risk seeking behavior that could influence a desire to participate in combat related activities.

Mood, Personality and Job Satisfaction

Judge and Ilies (2002) looked at overall daily mood and personality and their relations with job satisfaction. Again personality type was correlated with job satisfaction. Judge and Ilies (2002) also investigated the relations between personality and mood and how they may jointly impact job satisfaction.

Correlations in this area were not statistically significant; however they still asserted that such an effect may exist.

Mood was found to be correlated with job satisfaction. Experiencing a stable and elevated mood while performing a task is thought to create pleasant memories

(Judge & Ilies, 2002). When exposed to the job again, these memories are thought to recreate a mood that is congruent with the memories.

How might mood contribute to the development of a love of combat? Individuals may experience an elevated mood supported by company and camaraderie between periods of combat. Perhaps these periods of elevated mood are significant in the development of a love of combat.

Group Membership and Performance

Performance is influenced by membership in a group. Members of a group are often encouraged to adopt group norms (Gibbons & Weingart, 2001). Membership in a group whose members possess high ability and self-efficacy encourage new members to obtain the same high personal abilities and foster increased performance. Groups are often thought of as teams. Other factors are the idea of a winning team, team players, and elite teams which emerge in tight-knit groups. Indeed military units are often characterized as teams or as elite teams. This is done to foster personal estimates of self-efficacy and thereby boost performance.

In his book *The Psychology of War* Leshan (2002) described self-destructive behaviors men engage in to meet their psychological needs. He describes some individuals as "Those who seek death and damage as a way of drawing others into closer psychological contact with them." (Leshan, 2002, pg 132) This is another way of examining group membership. Leshan lists death and damages as ways individuals change themselves to be able to relate more

closely with others and to solve the problem of psychological isolation. It would be reasonable to assume that individuals who experience improved psychological functioning through death and destruction might be drawn to it for the relief of psychological problems they are able to obtain from it. Leshan explains that there are 4 psychological motivations or psychological pressures that individuals experience in military group membership (Leshan, 2002, pg. 95). The first is that individuals need to make themselves more interesting, exciting, and meaningful to acquire greater acceptance into the group. This may be through displays of great bravery or prowess in combat.

Another motivation is a desire to make ones life more intense, felt and meaningful. Leshan explains that having an evil enemy to prevail against adds this meaning. A third motivation is war offers us a handy target to project the tensions, angers, and frustrations of life onto others. When colleagues and friends encourage this channeling of tensions to the enemy, it fosters increased group closeness. Finally, war is an avenue for individuals to relieve the stress within themselves. What is most disliked about the self that causes individuals pain or depression can also be directed at the enemy. Self-doubt and criticism is redirected outward allowing ones emotional life to become simpler.

Autonomy and Job Performance

Autonomy on the job can be a moderator between personality dimensions and job performance. Barrick and Mount (1993) examined 154 participants in a U.S. Army management training program. They found that on the job autonomy

was a moderator between three of the five personality traits. Autonomy had a significant although small moderating effect between conscientiousness, extraversion and agreeableness with job performance ($R^2 = .03$, $p = .025$). The relations between emotional stability and openness to experience with job performance were not significantly moderated by autonomy. Barrick and Mount (1993) state that the 5 factor personality model is a useful framework for examining relations between personality constructs and job performance in different occupations.

Trauma Addiction

Violanti, (1997) investigated trauma addiction as a result of physiological and psychological processes when individuals are exposed to chronic repeated traumatic events. He explained that officers are exposed to violence and death just as military combatants are but often for twenty years or more. He theorizes that policemen learn reactive patterns to the life threatening events and become addicted to the psychological and physical arousal.

Solursh, (1988) theorizes that the excitatory states created by multiple combat experiences are reinforcing. He also stated that the recurring excited recall of these events is further reinforcing. These reinforcing experiences cause individuals to seek out similar trauma to experience the associated "rush" Solursh, (1989).

The Present Study

Much of the information gathered in this study was retrospective, personal, subjective information about how participants rate their abilities in combat and about task demands that were placed upon them in combat. This study represents an area of psychology that has been little studied. It is difficult to anticipate what factors may operate to create a love of combat. Because there is little research in this area to build on, this study borrows concepts from other parts of the literature that might be useful in researching factors that may lead to a love of combat.

Special Terminology

To better understand the population being sampled here, it is necessary and desirable to provide a brief explanation and definition of terms used. For the purposes of this research the term job satisfaction will refer to a "love and enjoyment of combat". The terms "helicopter gunship" and "gunship" refer to a specialized "B" model "Huey" helicopter built by Bell Helicopter in the 1960's. Gunships were armed helicopters distinguished by the presence of either two small rocket pods and two mini-guns affixed to the sides of the helicopter or the presence of 2 large rocket pods affixed to the sides of the helicopter. These helicopters were used primarily as an aerial artillery and machine gun platform to deliver air strikes, close combat support, or search and destroy operations. The term "slicks" refers to "D" and "H" model "Huey" helicopters made by Bell Helicopter in the 1960's. These helicopters were usually not armed with mini-

guns or rocket pods and were used primarily to transport infantry personnel to and from combat operations. Both slicks and gunships had crews consisting of 2 pilots and 2 crew members. The gunship pilots operated the rocket-pods and mini-guns while the crew members on both slicks and gunships were armed with 7.62 mm M-60 machine guns providing both offensive and defensive fire support.

Hypotheses

The present study was based on the assumption that task demands and an individual's personal abilities and perceptions can interact with personality and coping styles to produce a love of combat. I theorized that personal abilities, perceptions and task demands can work with many personality types to produce this effect. It was expected that individuals who rated their abilities as high and the task demands they experienced in combat as slightly higher would report having enjoyed combat. This study investigated one research question and four individual hypotheses.

Research Question

What proportion of the sample will report having enjoyed combat?

Although the individuals reporting a love of combat are rare in the general population of traumatized veterans, this particular sample may have a large proportion due to the chronic daily exposure to combat members of this sample experienced. Experiencing more combat would result in more exposure to effects

of the constructs that may influence a love of war and result in a higher proportion of participants reporting an enjoyment of combat.

Hypothesis 1

The participants who report experiencing a love of combat will indicate the presence of PTSD coping behaviors with approximately the same severity as participants who have a diagnosis of PTSD but do not report experiencing a love of combat. This is because a love of combat should not function as a buffer to traumatization but be an effect of being traumatized.

Hypothesis 2

Participants who experienced a love of war will be higher on the conscientious personality dimension than other veterans in the study. Conscientiousness is the personality dimension most positively correlated with performance factors of goal setting and self efficacy (Costa & McCrae, 1985). The conscientiousness personality dimension is constructed of items that reflect competence, order, dutifulness, achievement striving, self-discipline and deliberation (Costa & McCrae, 1985).

Hypothesis 3

Because gunship crewmembers and pilots experienced more autonomy and more time under actual combat conditions which could expose them to more shaping constructs, it was hypothesized that significantly greater numbers of participants who experienced a love of war will be pilots or crew members with gunship experience.

Hypothesis 4

Participants who experienced a love of war will report greater evidence of individual shaping constructs. This will be reflected by higher scores on the Attitudes Questionnaire shaping constructs (as reviewed above) than the veterans who did not experience a love of war.

Retrospective Analysis

The present study attempted to determine what constructs may have affected the participants' combat experience. The measures obtained retrospective information from a point in time long after the actual experiences. It is likely that a longitudinal study would have been more revealing; but such a study is not possible. Because of the time that has passed since participants were in combat, the participants were not asked to make fine discriminations, but merely to reflect and answer questions which indicate whether a construct was present for them or not.

IQ is not completely stable over time. Crystallized intelligence has a tendency to increase over time and decline in older age if there is no organic insult to the brain (Kaufman, 1990). The IQs computed in this sample are adjusted for age using tables from Appendix D in the Shipley Institute For Living Manual (Shipley) (SILS©). (Western Psychological Services of Los Angeles, California, www.wpspublish.com). According to Kaufman (1990), there is an average of a 3 point drop in crystal intelligence between the ages of 22 and 60. This difference is small and should not be a factor in this research.

The personality measure used here is the NEO Five Factor Inventory Form R (NEO FFI-R) created by Costa and McCrae (2003). The NEO FFI-R© is Derived from the Neo Five Factor Inventory Form (NEO-FFI©) assessment tool (Psychological Assessment Resources, Odessa, Florida, www.parinc.com). The personality traits measured by the NEO FFI-R are very stable in adulthood (Costa & McCrae, 1992).

METHODS

Participants

Participants were 30 pilots and crew members retired from the 335th Assault Helicopter Company. The sample consisted of 28 Caucasians and 2 African-Americans, age 51 to 79 in June 2003. All of the participants were aviators. All were male as no females were in this unit. There were few minority members in this sample due to the small number of minority members in this unit's flight platoons. This sample contained enlisted personnel, warrant officers, and commissioned officers. All of the participants in this study experienced combat during the period stretching from 1968-1970 on a near daily frequency. This convenience sample was selected in an attempt to control for the effects of different experiences that likely occur between members of different units, in different locations, and in different time periods. The individuals in this sample were often involved in combat in the same places and at the same times. Informed consent was obtained via the consent form (Appendix D).

Instruments

Northampton PTSD Coping Inventory

The Northampton PTSD Coping Inventory (NPCI) is a nonpublished assessment tool used with permission of Richard Pearlstein Ph.D., Northampton Veteran's Medical Center. The NPCI is a 3 scale posttraumatic stress disorder (PTSD) measure which includes a total of 49 self-report questions. The three scales are the 22-item managing affect scale, the 17-item positive self-direction

scale, and the 11-item social reconnection scale. It was created by Pearlstein and Hunt (1999). Questions assess PTSD through measurement of coping behaviors rather than *DSM-IV* PTSD symptoms. The NPCI items assess coping behaviors that individuals might use to cope with specific DSM-IV symptoms.

Normative data on the NPCI was obtained on 132 combat veterans previously diagnosed with PTSD and currently in treatment at the Veterans Administration Medical Center in Northampton, Massachusetts (Pearlstein & Hunt, 1999). These male participants ranged in age from 46-67 with a mean education level of 12.60 (SD = 2.56). This normative sample has characteristics that are very similar to the participants of the present study.

Sub-scale reliabilities for the NPCI with the group of 132 combat veterans are as follows. The managing affect scale has an alpha coefficient of .84, the positive self-direction scale has an alpha coefficient of .80, and the social reconnection scale has an alpha coefficient of .77. The test-retest reliability over a 2 week period for the NPCI was .92. Pearlstein and Hunt (1999) state the content validity of their scales is excellent because of the way items were selected for inclusion. First, symptoms were obtained from the DSM-IV. Then coping behaviors taught at the Northampton VAMC's 16-year old PTSD treatment program were matched to the symptoms. On the 3 subscales, items that did not correlate with other items at .20 were rejected, resulting in a scale which the authors argue reflect the typical coping behaviors related to PTSD symptoms.

Revised NEO Personality Inventory

The NEO Five Factor Personality Inventory and NEO Five-Factor Inventory Form R. (NEO-FFI-R). The NEO FFI-R is a five factor personality inventory. It assesses personality across the following dimensions; neuroticism, extraversion, openness, agreeableness, and conscientiousness. The form R is the protocol designed for administration to adult males. The NEO-FFI-R consists of 60 individual questions written at a 6th grade level. It is designed to be administered by an examiner. By changing the pronouns in the questions the NEO-FFI-R can be easily self-administered. The NEO-FFI-R is designed to be hand scored. There are 3 items on the answer sheet, A, B, and C which provide a simple response validity check to ensure the respondent has reported information completely and accurately. This measure was created by Costa and McCrae (1985). It was revised in 1989 (Costa & McCrae, 1989), in 1992 (Costa & McCrae, 1992) and the present form was revised in 2003 (Costa & McCrae, 2003).

The NEO-FFI-R is based on three normative samples. The first sample consisted of 405 men and women in the Augmented Baltimore Longitudinal Study of Aging (ABLSA) in 1989. The second normative sample was 329 men and women who were also participants in the ABLSA between 1989 and 1991. The third normative group was 1,539 men and women who participated in a national study of job performance. Scores between the different samples were comparable. Then, 500 men and 500 women were selected from these groups on the basis of their test results screened for response validity and random

responding and their match to 1995 Census projections. The mean education of these individuals was 15.7 years for men and 13.6 years for women. Age ranged from 21 to 96. The NEO-FFI is intended to measure personality traits that remain relatively stable throughout the lifespan from young adulthood (Costa & McCrae, 1992).

Individual items on the NEO have been found to be highly correlated with other items that comprise their domain scales. Alphas obtained on a sample of 1,539 men and women for the NEO-FFI's five personality dimensions ranged from $r = .73$ to $r = .86$. The abbreviated scales of the NEO-FFI are correlated with the longer NEO PI-R with correlations that range from $r = .75$ to $r = .89$ (Costa & McCrae, 1992). Costa and McCrae (1992) explain that the NEO-PI-R is a valid measure of personality traits because the five scales correlate with scales on other measures of personality (reviewed below).

Minnesota Multiphasic Personality Inventory

The Minnesota Multiphasic Personality Inventory (MMPI-2) The MMPI-2™ assessment tool (NCS Pearson, Inc., Minneapolis, Minnesota, www.pearsonnncs.com) is correlated with the NEO-PI-R the on the following scales. The MMPI scales which assess compulsive, borderline, dependent, and avoidant traits are correlated with the NEO-PI-R neuroticism scale facets (sub-scales) of anxiety, angry hostility, depression, and self-consciousness at .51, .47, .52 and .58 respectively. The MMPI scales which assess schizoid and antisocial traits are correlated with the NEO-PI-R extraversion scale facets of

gregariousness and excitement-seeking at -.66 and .40 respectively. The MMPI scales which assess borderline and histrionic traits are correlated with the NEO-PI-R openness scale facets of fantasy and actions at .34 and .37 respectively. The MMPI scale which assesses antisocial traits is correlated with the NEO-PI-R agreeableness scale facet of straightforwardness at -.44. The MMPI scales which assess passive-aggressive and antisocial traits are correlated with the NEO-PI-R conscientiousness scale facets self-discipline and dutifulness at -.44 and -.41 respectively.

The Meyers Briggs Type Indicator (MBTI®) assessment tool (CCP, Inc. Palo Alto, California. www.cpp.com). The introversion scale is correlated with the NEO-PI-R's extraversion scale facets for warmth, gregariousness, assertiveness, activity, and positive emotions at -.61, -.59, -.59, -.42, and -.51 respectively. The MBTI scales which assess perception and feeling traits are correlated with the NEO-PI-R openness scale facets of fantasy and feelings are correlated at .43 and .33 respectively. The MBTI scale which assesses feeling is correlated with the NEO-PI-R agreeableness scale facet tender-mindedness at .39. The MBTI scale which assesses perception is correlated with the NEO-PI-R conscientiousness scale facets of order and deliberation at -.44 and -.39 respectively.

The Personality Research Form (PRF©) (Sigma Assessment Systems Inc., Port Huron, Michigan, www.sigmaassessmentsystems.com) scale which assesses aggression is correlated with the NEO-PI-R neuroticism scale facet of angry

hostility at .62. The PRF scales which assess dominance, harm-avoidance, and play are correlated with the NEO-PI-R extraversion scale facets of assertiveness, excitement seeking and positive emotions at .64, -.46, and .50 respectively. The PRF scale which assesses change is correlated with the NEO-PI-R openness scale facet of actions at .56. The PRF scales which assess exhibition and nurturance are correlated with the NEO-PI-R agreeableness scale facets of modest and tender-mindedness at -.35 and .35 respectively. The PRF scales which assess achievement, endurance, and cognitive-structure are correlated with the NEO-PI-R conscientious scale facets of dutifulness, achievement-striving, and deliberation at .37, .59 and .43 respectively.

Attitudes Questionnaire

The Attitudes Questionnaire (Appendix A) is a 14 question self-report questionnaire. It was created by this investigator and evaluated and improved by a group of supervised graduate students from the University of North Texas during a research team meeting. The measure assesses for the retrospective presence of certain constructs which may have shaped individual combat experiences of the participants. It also operationalized the love of war concept.

The individual questions contain three alternative forced choice answers. This measure assessed each participant's self-perception of the involvement of 12 constructs, which may be applicable to the creation of a love of war when exposed to combat. The 12 constructs are as follows: problem solving style; personal perception of task difficulty; effect of mood; personal perception of

concentration needed to perform task; personal perception of self-efficacy; personal perception of combat job satisfaction (2 questions); performing combat assignment in a mood-altered state called the “zone”; perception of support; perception of level of unit eliteness; experiencing of an adrenaline rush; and the type of music participants listened to on their helmet headsets during combat. The two satisfaction questions (numbers six and nine) allowed the sorting of the experimental group from the control group. To be included in the experimental or love of war group the participants must have endorsed a specific answer on both questions. These questions are 3 answer forced choice questions. Question 6 was “How did you feel performing your combat helicopter role?” The experimental group answer was “I found it exciting and enjoyable.” Question 9 was “When I reflect back on my helicopter combat experience.” The experimental group answer was “I would not trade these experiences for anything”. An additional question allowed the participants to be sorted into the following 4 categories to make comparisons among the effects of job assignments: slick pilot; slick crew member; gunship pilot; gunship crew member.

Shipley Institute of Living Scale

The Shipley Institute of Living Scale (Shipley) (SILS©) was constructed to be a measure of intellectual impairment. It is most often used as a brief measure of intellectual functioning. The Shipley, which is closely correlated with the Wechsler Adult Intelligence Scale Revised™ (WAIS™ and WAIS-R™) Harcourt

Assessment, Psychological Association, San Antonio, Texas, www.hbtechsupport.com), was used to obtain an estimated IQ for each participant.

The Shipley consists of 60 questions. Twenty of the questions involve filling in the blank space provided to complete a sequence composed of numbers, letters or words. Forty of the questions are word definitions; a stimulus word is provided and four definition word choices are listed as A B C, and D. The participant must select the correct definition for the stimulus word.

A group of 11 studies found WAIS Full Scale IQ scores and Shipley Total scores to be correlated in a range from .73 to .90 with a median correlation of .79 (Zachary, 1987). In a within-subjects design, Hays, Emmons, Wagner, and Stallings (1997) compared mean WAIS-R IQ score with Shipley mean IQ score and found no significant difference.

Appendix D of the Shipley Institute for Living Manual lists a table for converting age-based Shipley Total scores to WAIS IQ scores. For most purposes this table is accurate. In some cases stratification by age in these tables can throw off IQ estimates by 13 points or more between individuals differing in age by only a few months (Zachary, Paulson & Gorsuch, 1985). The tables also predict actual IQ's instead of scaled scores. Scaled scores are thought to generalize more readily to differing populations because they are more independent of the population they are derived from than IQ scores. (Zachary, Paulson, & Gorsuch, 1985). To correct this problem and increase accuracy of

estimated WAIS-R IQ's, the mathematical procedure from Table 11 of the Shipley manual was utilized. This provided the most accurate estimate of WAIS-R IQ scores using the Shipley Total scores. (Zachary, Paulson, & Gorsuch, 1985).

Demographics Information Questionnaire

A Demographics Information Questionnaire (Appendix B) was created by this writer and graduate students at the University of North Texas. It was completed by each participant. This questionnaire consisted of 19 questions related to the participant's combat and military experience. The questionnaire also includes personal information related to age, occupation, diagnosed PTSD, education, marital status, ethnicity, highest rank achieved, hospitalization for injury, and length of combat military service information.

Procedures

A request was submitted to and approved by the Institutional Review Board at the University of North Texas to conduct this research.

Participants in this study were contacted in three ways. Participants were contacted at a reunion which was conducted by this unit in June 2003, by telephone, and via the U.S. Postal Service.

Participants were provided with the instruments used in the study in the form of a packet. All of the measures were self-administered and came complete with easy to read instructions. Each packet contained an explanation of the study, a consent sheet, the measures used in the study, and a large envelope complete with postage for the return of the completed study materials. There

was also a space provided for participants to ask questions or make statements about their feelings in relation to their participation in the study. A telephone number of the primary researcher was provided to the participants in case of questions or difficulty regarding the completion of the studies materials.

First the participants were asked to read the explanatory letter that gives information about the study (Appendix C) and any benefits participants may get from their cooperation in the study. Next the participants completed and signed the consent form (Appendix D). After the consent form an instruction sheet provided information related to completing the measures in the packet as well as the order in which measures were to be completed. Next the participants completed the demographic questionnaire.

The participants next completed the Shipley Institute of Living Scale, the NEO-FFI-R Personality Inventory, the Northampton PTSD Coping Inventory, and the Attitudes Questionnaire.

Results of the Attitudes Questionnaire were used to divide the participants into the experimental and control groups as described on page 30 and 31.

RESULTS

Descriptive statistics were obtained for the continuous variables in the study. Table 1 contains minimum scores, maximum scores, means, and standard deviations, for these variables. It is interesting to note that the mean age of the participants in 1970 was 24. The average length of combat exposure was 17.4 months; the participants averaged 14.1 years of education and have an average estimated Wechsler Adult Intelligence Scale Revised (WAIS-R) IQ of 112.8.

Table 1

Descriptive Statistics

	<i>N</i>	Min	Max	Mean	Std. Deviation
AGE	30	51.00	79.00	57.10	6.00
EDUC	30	11.00	18.00	14.10	2.00
WAISRIQ	30	88.00	127.00	112.80	10.70
MOSINMI	30	20.00	336.00	78.90	92.23
MOVIET	30	9.00	40.00	17.40	9.00
AQMOOD	30	1.00	3.00	2.43	.60
AQCONC	30	1.00	3.00	2.63	.60
AQSKIL	30	2.00	3.00	2.90	.31
AQFEEL	30	1.00	3.00	2.60	.62
AQZONE	30	1.00	3.00	2.43	.70
AQRATE	30	1.00	3.00	2.70	.53
AQSUP	30	1.00	3.00	2.20	.85
AQELIT	30	1.00	3.00	2.63	.67
AQRUSH	30	2.00	3.00	2.60	.50
AQANGER	30	1.00	3.00	2.00	.70
NEONER	30	4.00	37.00	21.33	9.00
NEOEXTR	30	7.00	37.00	25.30	8.25
NEOOPEN	30	15.00	34.00	24.73	5.00
NEOAGRE	30	6.00	37.00	26.10	7.00
NEOCONS	30	22.00	55.00	31.90	6.32
NHAFFECT	30	40.00	92.00	70.93	13.05
NHPOSSD	30	44.00	81.00	61.71	8.05
NHSOCREC	30	23.00	49.00	35.60	6.10

Variables: AGE Participant's age, EDUC years of education, WAISR IQ estimated WAIS-R IQ, MOSINMI number of months spent in military, MOVET number of months spent in Vietnam, AQMOOD usual daily mood AQCONC rating of concentration needed to perform combat job, AQSKIL rating of self skill, feeling about his combat job, AQZONE time spent in mood-state called the zone, AQRATE self rating of combat job's desirability, AQSUP rating of perceived support by military superiors, AQELIT rating of eliteness of participant's unit, AQRUSH how often participant experienced a rush, AQANGER how often did participant experience anger, NEONER NEO neuroticism scale, NEOEXTR NEO extroversion scale, NEOOPEN NEO openness scale, NEOAGRE NEO agreeableness scale, NEOCONS conscientiousness scale, NHAFFECT Northampton affect scale, NHPOSSD Northampton positive self direction scale, NHSOCEC Northampton social reconnection scale.

Hypotheses and Research Question

The research question is what proportion of the participants in the study endorsed the 3 point answers to both question 6 and 9 in the Attitudes Questionnaire. Of the 30 participants in the study, 46.7 percent (control group, $n = 14$) did not and 54.3 percent (love of combat group, $n = 16$) of the participants did endorse the 3 point answers for both question 6 and 9.

Hypothesis 1

Hypothesis one proposed that members of the love of war group would endorse items on the North Hampton PTSD Coping Inventory (NPCI) at approximately the same level as the control group. This hypothesis was supported. A t-test was conducted on the means of the 2 groups. In the NPCI total score the mean for the love of war group was 172.94 with a standard deviation of 27.10. The control group mean was 163.29 with a standard deviation of 18.86. The assumptions for Levene's Test for Equal Variance were met ($F = .91, p = .35$). Assuming equal variances, the groups were not significantly different ($t(28) = -1.12, p = .28$ (sig. 2-tailed)).

A t-test was then conducted on the NPCI managing affect category. The mean for the love of war group was 73.00 with a standard deviation of 14.96. The control group mean was 68.57 with a standard deviation of 10.52. The assumptions for Levene's Test for Equal Variance were met ($F = 2.12, p = .15$). Assuming equal variances, the groups again did not differ ($t(28) = .92, p = .36$ (sig. 2-tailed)).

Likewise, NPCI positive self direction was tested between the two groups. The mean for the love of war group was 63.43 with a standard deviation of 8.79. The control group mean was 59.64 with a standard deviation of 6.86. The assumptions for Levene's Test for Equal Variance were met ($F = .97, p = .33$). Assuming equal variances, the groups were not significantly different ($t(28) = 1.30, p = .20$ (sig. 2-tailed)).

Finally the NPCI social reconnection category was tested. The mean for the love of war group was 35.87 with a standard deviation of 6.95. The control group mean was 59.6 with a standard deviation of 6.9. The assumptions for Levene's Test for Equal Variance were met ($F = .67, p = .41$). Assuming equal variances, the two groups did not differ ($t(28) = .35, p = .8$ (sig. 2-tailed)).

Hypothesis 2

Hypothesis 2 proposed that participants in the love of war group would have higher scores in the conscientious personality dimension as measured by the NEO Five-Factor Inventory Form R (NEO-FFI-R). This hypothesis was not supported. A t-test was used to compare the mean scores of the 2 groups for the NEO-FFI-R conscientious personality dimension, the mean score for the love of war group was 31.87 with a standard deviation of 5.05. The mean score for the control group was 31.85 with a standard deviation of 7.71. The assumptions for Levene's Test for Equal Variance were met ($F = .07, p = .78$). Assuming equal variances, the groups were not different ($t(28) = <.01, p = .5$ (sig. 1 tailed)).

Hypothesis 3

Hypothesis 3 predicted that gunship crew members and pilots would have greater numbers in the love of war group. This hypothesis was not supported. The categorical data of gunship crew members and pilots experiencing a love of war was compared to the slick pilots and crew members experiencing a love of war using the two-way Chi Squared procedure. A Pearson's Chi-Squared was obtained. Frequency counts for all cells were not even as shown in Table 2. The

proportions of each job type represented in the love of war group were nearly identical ($\chi^2(1) = .07, p = .4$ (sig. 1 tailed)).

Table 2

Job Assignment

		No	Yes	
		1.00	2.00	
GOR	1.00	5	5	10
S	2.00	9	11	20
Total		14	16	30

GORS is gunship or slick job assignment. 1 = gunships, 2 = slicks. Yes and no refer to whether the participant meets the criteria for entry in the love of war group.

Hypothesis 4

Hypothesis 4 proposed that participants in the love of war group would report more of the individual shaping constructs on the Attitudes questionnaire. An independent samples t-test was performed to see if the mean scores between the love of war group and the control group were significantly different. The mean of the love of war group $n = 16$ was 24.75 and the *S.D.* was 2.35. The mean of the control group $n = 14$ was 25.43 and the *S.D.* was 2.21. The assumptions for Levene's Test for Equal Variance were met ($F = < .01, p = .98$). Assuming equal variances, the groups did not significantly differ ($t(28) = .81, p = .21$ (sig. 1 tailed)).

To determine if certain individual shaping constructs from the Attitudes Questionnaire were reported at a higher rate by the love of war group in comparison to the control group a chi square procedure was run with each shaping construct. Findings for all but one shaping construct were nonsignificant.

Participants experiencing a love of war were more likely to report experiencing anger than the control group ($\chi^2(1) = 7.01, p=.03$ (sig. 1 tailed)). Two cells had an expected count of less than five. The minimum expected count was 3.

Table 3

Love of War and Anger During Combat

		AQANGER			Total
		1.00	2.00	3.00	
YN	1.00	2	11	1	14
	2.00	5	5	6	16
Total		7	16	7	30

Anger 1= seldom, 2= occasional, 3= often; YN 1= no love of war, YN 2 = love of war.

The result for the shaping construct related to problem solving style was not significant ($\chi^2(1) = .07, p=.4$ (sig. 1 tailed)). All cells had expected counts. The result for the shaping construct related to perceived task demands was not significant ($\chi^2(1) = .536, p=.23$ (sig. 1 tailed)). Two cells had a cell count of less than five. The minimum expected count was 2.

The result for the shaping construct related to daily mood was not significant ($\chi^2(1) = .117, p=.36$ (sig. 1 tailed)). Two cells had a cell count of less than five. The minimum expected count was 6.53.

The result for the shaping construct related to reported level of concentration necessary to perform the combat job was not significant ($\chi^2(1) = .268, p=.3$ (sig. 1 tailed)). Two cells had a cell count of less than five. The minimum expected count was 4.

The result for the shaping construct related to reported level of skill necessary to perform the combat job was not significant ($\chi^2(1) = .54, p = .23$ (sig. 1 tailed)). Two cells had a cell count of less than five. The minimum expected count was 1.40.

The result for the shaping construct related to being in the zone during combat was not significant ($\chi^2(1) = 1.158, p = .14$ (sig. 1 tailed)). Two cells had a cell count of less than five. The minimum expected count was 4.67. The result for the shaping construct related to perceptions of adequate support from the army and superiors was not significant ($\chi^2(1) = 1.158, p = .14$ (sig. 1 tailed)). Two cells had a cell count of less than five. The minimum expected count was 6.

The result for the shaping construct related to the perception of being a member of an elite unit was not significant ($\chi^2(1) = .37, p = .27$ (sig. 1 tailed)). Two cells had a cell count of less than five. The minimum expected count was 3.

The result for the shaping construct related to experiencing a rush of adrenaline in combat was not significant ($\chi^2(1) = .09, p = .38$ (sig. 1 tailed)). Two cells had a cell count of less than five. The minimum expected count was 5.

Because only one shaping construct was related to the love of war concept, no regressions were run with these variables as originally planned.

Exploratory Results

Demographic Correlations

Pearson correlations were computed using the ordinal and ratio demographic variables and the scores on the Attitudes Questionnaire job

satisfaction questions six and nine. These questions were not correlated with any of the continuous demographic variables. Categorical and nominal demographic variables were compared to the answers of “yes” or “no” to question 6 and 9 from the Attitudes Questionnaire using the Chi Square procedure. Responses to questions 6 and 9 were not related to any of the categorized demographic variables.

Northhampton PTSD Coping Inventory Correlations

There were no overall differences on the NPCI between the love of war group and the control group. To investigate whether the love of war group endorsed any specific questions on the NPCI differently than the control group, correlations were completed. These correlations were performed by first comparing the NPCI total score and the three scale totals, and then by comparing the individual questions on the Northhampton PTSD Coping Inventory with the scores on questions six and nine totaled. The correlation between the total score on questions six and nine and the NPCI total score was $r = .11$, $p = .29$. The correlations between the managing affect, positive self-direction and social reconnection scales and questions six and nine totals were not significant (managing affect $r = .116$, $p = .30$; positive self direction $r = .13$, $p = .25$; social reconnection $r = -.03$, $p = .40$). These results support the t tests performed to analyze hypothesis 1.

Three individual items from the NPCI were significantly correlated with the total score of questions six and nine. Question 19 from the NPCI is “When I get

angry it bothers me for hours.” This is correlated with the total score on question six and nine at $r = .34, p = .03$. Question 26 from the NPCI is “I let little things bother me too much.” This is correlated with the total score on question six and nine at $r = .30, p = .05$. Question 39 from the NPCI is “I think I have PTSD because I am weak in some way.” This is correlated with the total score on question six and nine at $r = .36, p = .03$.

To investigate the contribution each NEO personality factor made in predicting whether a participant meets the love of war criteria, the NEO personality factors were entered into a multiple regression. Taken together, they accounted for .08 % of the variance in the grouping ($F = .41, (5) p = .84$). None of the individual personality factors were significant unique predictors (see table 4).

Table 4

Multiple Regression with the 5 NEO Personality Dimensions

Variable	Unstandardized Coefficients	Standardized Coefficient	<i>t</i>	Sig.
	<i>B</i>	Beta		
Neuroticism	.00	-.03	-.12	.91
Extraversion	.01	-.12	-.37	.72
Openness	.02	-.22	-1.08	.30
Agreeableness	.02	-.21	.67	.51
Conscientiousness	9.739E-05	.00	.01	1.00

Dependent Variable: Love of war criteria yes or no.

The five NEO-FFI-R personality types were compared with the total score on questions six and nine. None of the five personality types were significantly correlated with the answers to question six and nine (Neuroticism $r = -.17$, $p = .18$; extraversion $r = -.07$, $p = .36$; openness $r = -.14$, $p = .24$; agreeableness $r = .02$, $p = .47$; and conscientiousness $r = -.08$, $p = .33$).

The sixty individual questions on the NEO-FFI-R were compared to the total score on question six and nine. When correlated with questions six and nine, a few questions differed. Question 14 "Some people think I am selfish and egotistical" was correlated at $r = .40$, $p = .02$. Question 25 "I have a clear set of goals and work towards them in an orderly fashion" was negatively correlated at $r = -.35$, $p = .03$. Question 39 "Some people think of me as coldly calculating" was correlated at $r = .40$, $p = .02$. A few other questions showed marginal trends. Question 10 was "I am pretty good at pacing myself so as to get things done on time" and showed a trend toward correlation at $r = .30$, $p = .06$. Question 15 was "I am not a very methodical person" and had a correlation of $r = .30$, $p = .07$. All of these findings are treated with extreme caution given the large number of correlations computed.

Attitudes questionnaire Differences

To examine differences in how the shaping constructs on the Attitudes questionnaire may have been experienced the participants were divided into the four job classifications of gunship pilot, gunship crewmember, slick pilot, and slick crewmember. A one-way ANOVA using a Tukey HSD was performed to test

the differences in mean total scores on the Attitude questionnaire. The mean for the slick pilots was 24.20 with a *S.D.* of 1.50. The mean for the slick crewmembers was 24.40 with a *S.D.* of 2.30. The mean for the gunship pilots was 23.60 with a *S.D.* of 3.80 and the mean score for the gunship crew members was 26.06 with a *S.D.* of 1.50. The assumptions for Levene's Test for Equal Variance were not met ($F(3) = 4.63, p = .01$) so results must be interpreted with caution. There was not a significant difference in the mean scores on the Attitudes questionnaire between the groups ($F(3) = 2.33, p = .10$).

The Chi Square procedure was used to determine which individual shaping constructs from the Attitudes Questionnaire were endorsed at a significantly higher rate by job classification. It was found that the gunship crew members endorsed anger at a significantly higher rate than the other three categories together ($\chi^2(1) = 4.70, p = .04$ (sig. 1 tailed)). Gunship crew members also endorsed experiencing a strong rush in combat significantly more often than the other three job categories combined ($\chi^2(1) = 8.90, p > .01$ (sig. 1 tailed)).

Logistic Regression

The shaping characteristic of anger and the job classification gunship crew member were both related to the love of war concept as described above. To examine this further a three-way hierarchical log linear regression analysis was performed to determine whether significant associations and interactions existed between the love of war concept, anger while in combat, and the job

classification of gunship crew member. One-way effects were found to be significant (likelihood ratio $\chi^2(3) = 9.13$, $p = .03$ (sig. 1 tailed)). Two-way effects were found to be significant (likelihood ratio of $\chi^2(3) = 10.06$, $p = .02$ (sig. 1 tailed)). The three-way effects were also found to be significant (likelihood ratio of $\chi^2(1) = 7.79$, $p < .01$ (sig. 1 tailed)). Those participants who endorsed anger were most likely to also be gunship crew members and likely to have endorsed a love of war.

Why would the experiences of the gunship pilots and the gunship crew members be so different? Exploratory analyses investigated characteristics which might affect differences in perception between the gunship pilots and the gunship crew members. The gunship pilots in this sample had a mean age of 64.80 (*S.D.* of 9.09), a WAIS-R IQ of 116.20 (*S.D.* of 14.50) compared to the crew member mean age of 54.73 (*S.D.* of 4.04) and WAIS-R IQ of 109.80 (*S.D.* of 11.80). The gunship crewmembers ($n = 15$) were significantly younger than the gunship pilots ($n = 5$) ($t(18) = 3.50$, $p = .01$ (sig. 1 tailed)). Their IQ's were not significantly different ($t(18) = 1.00$, $p = .332$ (sig. 1 tailed)).

The gunship pilots were significantly higher on the agreeableness dimension of the NEO-FI-R ($t(18) = 2.32$, $p = .03$ (2 tailed)). The mean score for the pilots was 30.40 (*S.D.* of 3.70). The gunship crew members had a mean score of 23.00 (*S.D.* of 7.00).

The NEO-FI-R was examined to determine whether mean scores on the five personality dimensions might be different in participants who developed

PTSD and those participants who did not develop PTSD. The group with PTSD had an $n=16$ while the group without PTSD was $n=14$. Openness and conscientiousness scores were not correlated with participants developing PTSD.

On the neuroticism dimension, those participants with PTSD had a mean score of 26.00 and a *S.D.* of 6.10 whereas the participants without PTSD had a mean score of 16.00 and a *S.D.* of 8.20. The assumptions for Levene's Test for Equal Variance were met ($F(1) = .533, p = .47$). Assuming equal variances, those with higher scores in neuroticism were significantly more likely to have PTSD ($t(28) = 3.84, p < .01$ (2 tailed)).

On the extraversion dimension those participants with PTSD had a mean score of 21.13 and a *S.D.* of 7.70 where as the participants without PTSD had a mean score of 30.07 and a *S.D.* of 6.16. The assumptions for Levene's Test for Equal Variance were met ($F(1) = .40, p = .60$). Assuming equal variances, those with lower scores in extraversion were significantly more likely to have PTSD ($t(28) = -3.50, p < .01$ (2 tailed)).

On the agreeableness dimension those participants with PTSD had a mean score of 23.63 and a *S.D.* of 6.90 while the participants without PTSD had a mean score of 28.92 and a *S.D.* of 6.10. The assumptions for Levene's Test for Equal Variance were met ($F(1) = .20, p = .70$). Assuming equal variances, those with lower scores in agreeableness were more likely to have PTSD ($t(28) = -2.21, p = .04$ (2 tailed)).

DISCUSSION

Very few salient findings “jump out” of these data that help explain the development of a love of war. A great number of ideas and possible correlations have been examined. It is likely that the love of war concept cannot be explained by a few factors and that developing a love of war is the result of the small contributions of a great number of variables.

Love of war is similar to post traumatic stress disorder (PTSD) in that they are both the result of the combat experience. There are many things that predict the onset of PTSD symptoms in traumatized individuals. Education and rank obtained are predictors, according to Sutker and Allain (1995). Ullman and Siegel (1994) found that age, education, life events, and psychiatric history were all predictors of PTSD. Foy, Sipprelle, Rueger and Carroll, (1984) found that the length and intensity of exposure to combat were predictors of PTSD. The findings in this research indicate that the love of war is not a predictor of PTSD, however in this study the love of war concept is thought of as a result of the combat experience just as PTSD is.

North Hampton PTSD Coping Inventory (NPCI) Findings

There was no overall difference in the PTSD symptoms endorsed on the NPCI between the love of war group and the control group. This would indicate that the love of war is not related to experiencing or coping with PTSD symptoms. These results would indicate that the love of war is a different concept rather than a rare symptom of PTSD. It would also indicate that

experiencing a love of war does not prevent or moderate the effects of PTSD in individuals.

On the individual NPCI questions, two questions related to anger were significantly correlated with the love of war criteria. Question 19, "When I get angry it bothers me for hours." and question 26, "I let little things bother me too much." Men who develop a love of war may experience more anger in their lives and hold onto anger for longer periods of time. Those in the love of war group may be quick to anger over smaller things than others. Anger could be either the result of, or a predictor of, developing a love of war in an individual. This will be addressed later in the discussion.

Question 39 from the NPCI is "I think I have PTSD because I am weak in some way." This may be an indicator that members of the love of war group have a lower appraisal of their coping skills or a more negative opinion of themselves than others. This would be supportive of the position held by Leshawn (2002). Leshawn (2002) believed that two of the reasons men are attracted to war are "the need to reduce inner tensions" and "the need to increase one's sense of self" (p. 118). This would be different than the findings of Tharneau and Harker (1984) and Inkson (1998) who found that self esteem was not related to job satisfaction.

Personality Dimensions and the Love of War Concept

The prediction that the conscientiousness dimension of personality would be correlated with the criteria for the love of war was not supported. It appears

that there is no specific personality factor (as measured by the NEO-PI-R) which is associated with developing a love of war. The five personality factors of agreeableness, conscientiousness, neuroticism, extraversion and openness were not significantly correlated with the love of war criteria. It would appear that these personality factors are unrelated to the development of a love of war much like developing PTSD is not related to a specific personality type.

Those who endorsed the love of war concept tended to score nearly the same on the conscientiousness dimension of the NEO-PI-R as the control group. Conscientiousness is thought to be correlated with academic and occupational achievement, carrying out tasks, organization and success (Costa, McCrae, pg. 16, 1992). Helicopter crews are able to achieve, carry out tasks, and be successful. Low scores in conscientiousness are also indicative of poor planning and organization in carrying out tasks (Costa, McCrae, pg. 16, 1992). Helicopter crews must be highly organized and carry out tasks effectively. The best explanation for this pattern of findings (i.e., both groups scored very nearly the same in the conscientiousness dimension) is that all members of this study were highly trained and well organized in their combat roles.

Length of Combat Exposure

It was hypothesized that because the gunship crew members and pilots spent a great deal more time in actual combat that they would have a greater length and intensity of exposure to the shaping constructs. This would lead them to endorse the love of war criteria in greater numbers than the slick pilots and

crew members. This was not the case. It is possible that other unknown constructs that were not considered may have higher correlations to the love of war criteria. It is also possible that the constructs correlated with the love of war criteria are influenced by unknown mediators and moderators. An example of a possible mediator might be perceived locus of control.

Solomon, Mikulincer, and Benbenisty (1989) analyzed the relations between locus of control, battle intensity, threat appraisal, and coping. They examined 104 Israeli soldiers who fought in the Lebanon war. They found that internal locus of control was inversely related to threat appraisal. At lower threat appraisal levels, internal locus of control correlated with better coping and fewer psychological problems. However, as the battle intensity increased, the moderating effect of internal locus of control became less effective and threat appraisal went up. This led to less effective coping and an increase in the number and intensity of psychological problems.

Intuitively the slick pilots and crew members might have a lower internal locus of control because they are not armed nearly as heavily as the gunship pilots and crews. If this is the case even though they were exposed to less actual combat, their threat appraisals would be higher and lead to less effective coping and more psychological problems. This could affect the combat experience of slick crew members and pilots and possibly lead them to endorse the love of war criteria at a higher rate than expected.

Intuitively the gunship crew members and pilots would have a different experience than the participants in the slicks. The higher internal locus of control may be affected by the greater length and intensity of combat as described by Solomon, Mikulincer, and Benbenishty (1989). This would mean that their threat appraisal would be high, negating the protective effects of internal locus of control. This may affect the gunship crew member's rate of endorsing the love of war criteria.

Bartone (1999) researched a concept he termed 'hardiness'. He described hardiness as having a high sense of life, commitment and a greater feeling of control. He examined the hardiness of 787 Gulf War veterans and compared their levels of distress to what he called combat stress exposure. The closer a soldier was to combat the higher his combat stress exposure. He found that hardiness was partially comprised of a greater perception of control, moderating the distress felt by individuals subjected to combat stress exposure.

Attitudes Questionnaire Findings

The love of war group was expected to have higher scores on the Attitudes questionnaire to reflect the putative developmental influence of the love of war. This was not supported. The exception to this was that those who reported higher levels of anger were likely to endorse the love of war criteria. Of the 7 participants who endorsed being angry in combat often, 6 of them endorsed the love of war criteria. Given that 16 participants endorsed the love of war criteria, anger was not sufficient to explain the endorsement of the love of

war criteria. This finding is supported by the fact that participants who met the love of war criteria endorsed Question 19, "When I get angry it bothers me for hours." and question 26, "I let little things bother me too much." at a significantly higher rate than the control group.

To find out why the anger is associated with the love of war concept I examined the literature concerning anger and combat closely. Lerner and Keltner (2001) found that individuals experiencing fear were less likely to engage in risk seeking behaviors than individuals who were angry. Parrot, Zeichner, and Evces (2005) examined fear and anger in 236 undergraduate students from a urban Northeastern university. He found that fear motivated protective behaviors and anger motivated retributinal behaviors. In combat protective behaviors such as seeking cover and withdrawal are often not possible and would not be effective. Retributinal behaviors such as returning fire, and counter attacking are more effective and permitted in combat. Parrot, Zeichner, and Evces (2005) also found that anger allowed deeper processing of information than fear. The evaluation of ones personal situation and risk in combat is important information. Thus it would seem that anger is more adaptive to combat than fear.

From the results of the items endorsed regarding anger on the NPIC it is likely that the anger described by the participants is not just a situational anger but trait anger. Deffenbacher, Oetting, Thwaites, Lynch, Baker, and Stark (1996) define trait anger as "an enduring disposition to experience anger more frequently, more intensely, and for longer periods of time". Those soldiers having

trait anger may be more adapted to combat and hence more likely to endorse the love of war concept.

Di Giuseppe and Froh (2000) examined anger in 236 New York residents. They found the strongest predictor of anger to be cognitions related to revenge. As a group, helicopter crew members were shot and killed regularly. This would certainly facilitate cognitions of revenge and predispose them to anger. It is interesting to note Di Giuseppe and Froh (2000) found that self-efficacy defined as self-esteem had a moderating effect on anger. Those with lower self-efficacy had lower levels of anger. Participants in this study were not asked directly about self-esteem; however on the Attitudes Questionnaire they were asked to rate their skill level and rate their eliteness. Few participants rated their skills as average or their eliteness as average. This would indicate that few participants would have had their anger alleviated by job related low esteem.

Different Experiences for Pilots and Crewmembers on Same Helicopters

It was conjectured that the more time participants spent in combat the more they would experience the constructs on the Attitudes Questionnaire. Participants who experienced more time in combat were also expected to score higher on the Attitudes Questionnaire. This appears to be the case for gunship crew members but not gunship pilots. Anger and the job of gunship crew member were also significantly correlated. Among the seven participants endorsing frequent anger during combat six also endorsed the love of war concept. Of the seven participants endorsing frequent anger, six were also

gunship crew members. Given that anger is correlated with endorsing the love of war concept it would seem that being a gunship crew member would be correlated with endorsing the love of war concept. This was not the case. The gunship crew members comprised half of the sample. They also comprised half on the participants who endorsed the love of war concept.

Out of 15 gunship crew members, 12 endorsed experiencing a strong rush during combat. Just as being a gunship crew member is not correlated with endorsing the love of war concept, experiencing a strong rush is not correlated with the love of war concept.

Mean scores on the Attitudes Questionnaire for the gunship pilots was significantly lower than the mean scores for the gunship crew members. The reason for this difference is readily apparent when examining the individual scoring on the Attitudes Questionnaire items. Only one gunship pilot endorsed experiencing a rush and no gunship pilots endorsed anger while in combat. Why would the experiences of crew members and pilots on the same aircraft facing the same dangers be so different? It would be useful to understand why the pilots and crew members in the same helicopters in the same combat actions experience events so differently. Possible explanations are considered below.

The gunship pilots were an average of ten years older than the gunship crew members. In 1969 the gunship pilots averaged twenty eight years old whereas the gunship crew members averaged only eighteen years of age. This would mean that the gunship pilots were considerably more mature than the

gunship crew members when they experienced combat. The differences in Wechsler Adult Intelligence Scale (WAIS) IQ intelligence were not significant. The crew members did score considerably lower in the NEO Five-Factor Inventory Form R (NEO-FFI-R) personality dimension of agreeableness. According to Costa and McCrae, (1992), low scorers on agreeableness tend to be less trusting of others; guarded in expressing their personal thoughts; somewhat self-centered; they tend not to inhibit aggressive behavior, they may be considered arrogant or conceited by others; and they are hardheaded and unmoved by appeals for pity. They are likely to consider themselves realists who make rational decisions based on cold logic. Differences in maturity and personality type would certainly affect how the environment is experienced and interpreted. It is likely that the two jobs selected for individuals based on the job criteria. Pilots were older and more mature and were selected for these features before training. The gunship crew members were selected from slick gunners who were aggressive and hard headed with the enemy as well as themselves when they had to put in long hours maintaining guns and helicopters. They also needed to be able to make split second logical decisions, act on them instantly, and not make mistakes.

According to Solomon, Mikulincer and Avitzur (1988), another factor which may have influenced how combat events were experienced is the internal locus of control. Pilots had the controls of the helicopter in their hands. They controlled where the helicopter went and how long it stayed there. They often made the

decisions on whom or what was engaged. The pilots had the rockets and the electric mini-guns at their disposal. The pilots also sat in a heavily armored seat and could look directly where the helicopter was going while directing it. The crew members were along for the ride, so to speak. They did not share in directing the helicopter. They had no control over the heavy weapons on board the helicopter. And they did not sit in an armored seat. They focused their attention more to the sides, below, and behind the helicopter rather than toward the front in the direction of travel.

Solomon, Mikulincer and Avitzur (1988) examined 262 Israeli Defense Forces soldiers who experienced combat in Lebanon. They found that soldiers who perceived themselves to have an internal locus of control coped with combat stress more effectively than soldiers who perceived themselves to have an external locus of control. The more a soldier's perception of locus of control was internal, the more likely they were to use emotion focused coping. The more external locus of control the soldiers had, the more likely they were to engage in less task relevant self-preoccupation. Thus gunship crew members having a more external locus of control would engage in less task relevant self-preoccupation. This would mean that their threat appraisal would be higher and their coping method less effective. It seems possible that gunship crew member's cognitions and perceptions of events would be very different from that of the pilots.

Personality Factors and PTSD

Conscientiousness and openness were not correlated with PTSD in the present study. Neuroticism, extraversion and agreeableness were associated with PTSD. Why would the distribution of specific personality traits be different among those participants with PTSD and without PTSD? Costa and McCrae (1992, p. 14) specifically stated that the Neuroticism Domain in their personality model is not a measure of psychopathology. It is a measure of normal personality. According to Costa and McCrae (1992) high scores in this dimension are indicative of a less developed ability to cope with stress. This would be a reasonable explanation for the high correlation between Neuroticism and PTSD in this sample. According to Costa and McCrae (1992), individuals who score low in extraversion are generally less upbeat, optimistic and energetic. These individuals are generally lower in spirits than high scorers. This may indicate individuals with fewer resources to deal with stress. Costa and McCrae (1992) describe individuals who are low in Agreeableness as ready to fight for their interests, antagonistic, less cooperative, skeptical of others and competitive. Costa and McCrae (1992, p. 15) state that it is tempting to see the agreeable side of this domain as both socially preferable and psychologically healthier. They go on to provide instances where being less agreeable is more adaptive in the sciences and self-defense. It is difficult to see how being antagonistic, skeptical and less cooperative would be protective if one is exposed to traumatic stress.

Music

The final question on the Attitudes Questionnaire was a 2 part question. Members listened to music over the same system which provided helicopter to helicopter communications. Question 14 was "What type of music do you remember listening to in the hot landing zones. Do you remember an individual song?" The answers were as follows. For type of music, Doors, Hendrix, Rolling Stones, Steppin Wolf, Elvis, Beach Boys, Country and Polka were listed. However, the number one answer was Rock and Roll. The answers for an individual song included Magic Carpet Ride, InaGodadavida, Okie From Muskogee, Purple Haze, Walk on By, Please Please Please, You're so Fine, War, San Francisco, Help, California Dreamin', and The Age Of Aquarius. The number one answer for a specific song title was not surprising considering the events. It was We Gotta Get Outta This Place by Eric Burdon and the Animals, MGM Records September 1965. Most soldiers from this conflict were hardly more than boys just out of high school. They grew up with rock and roll. Many of them were being killed and wounded in a strange and far away place. A rock and roll song with a chorus that repeats "We gotta get out of this place, if it's the last thing we ever do" was bound to be a favorite.

Clinical Implications

The results here are difficult to generalize beyond the specific types of combat soldiers sampled. The intent of this study was to look for fine differences in a very select group of participants. This study does not reveal causal

information. The results in this study have been carefully examined and linked to the literature where possible. These results are compatible with the hypothesis that the love of war is the result of a complex group of factors rather than the results of a few variables. It is possible that these results would have utility in treating veterans who experience both PTSD and the love of war phenomena.

From this research it appears that coping with trauma by using intense anger is related to developing a love of war. If this was borne out by later research it may be useful to treat these individuals post combat by teaching them to respond to stress and trauma using a broader spectrum of appropriate emotions. "Many therapists tailor their therapeutic approach to their client's needs" (Halonen & Santrock, 1996, 617). Knowing that anger may have been a factor in the development of a veteran's psychological problems may aide the clinician in designing a therapeutic approach to the problem. Intuitively, narrowly focused treatments that target individual problems would likely be more cost effective and of shorter duration. In this era of managed care the emphasis is on costs "favoring short-term over long-term therapy" (Halonen & Santrock, 1996, 619).

Psychological First Aid

The concepts considered in this research may be useful in cases of psychological first aid. Many soldiers suffer combat related psychological problems. Examples of these are PTSD, Anxiety, Panic Attacks, Depression and Acute Stress Disorder. It may be possible to provide psychological first aid by

increasing the soldier's internal locus of control and lowering the soldier's threat appraisal.

Currently soldiers experiencing psychological problems are pulled from combat assignments and given rest and then returned to combat. A more effective way of preparing these soldiers to return to combat may be to encourage them to experience anger in combat situations. If Parrot, Zeichner and Evces (2005) are correct, this would better prepare them to withstand the psychological pressures of combat and to perform more effectively in combat. Soldiers thus treated may stand a greater chance of survival through the increased effective combat behaviors and more efficient processing of sensory battlefield information.

Clinical Implications for Military Training

Military training does teach a certain amount of anger directed against the enemy. If this training included conditioning which facilitated a certain level of controlled anger it may enable individual soldiers perform better during combat and improve their survivability. It would seem possible that anger may also work as a buffer against PTSD. Koopman, Classen, and Spiegel (1994) investigated emotional responses during trauma among survivors of the Oakland/Berkley, California, firestorm. They found that those who experienced intense fear resulting in dissociation during or immediately after the trauma were more likely to develop PTSD. It is likely that those soldiers experiencing anger rather than fear would have a lower threat appraisal. According to Solomon, Mikulincer and

Benbenishty (1989) the lower threat appraisal results in fewer cases of PTSD. It is possible that anger during a trauma may increase psychological survivability of a trauma. The literature examined in this study supports the idea that trait anger is adaptive in combat. Not only does it improve the chances of winning a conflict but it is an adaptive behavior in combat. It also allows the individual soldier to better process battlefield information than fear allows.

In addition to trait anger, this research examined personality constellations and their perceptions of stress. This may be useful in defining selection criteria for soldiers. Particularly those soldiers who may be exposed to chronic trauma. Knowing how different personality types may cope with traumatic stressors and how individuals with trait anger may react might allow the recruitment of individuals with more adaptive methods of coping in combat. Another thing the military tries to instill is a sense of competence in each soldier. If this competence was trained with an internal locus of control it would be more protective for a soldier in combat. This would lower the soldier's threat appraisal and inspire less fear.

Directions for Further Research

The love of war is an interesting concept. However, it is difficult to locate large enough sample sizes for robust research. If a sufficient population of these individuals could be studied in greater depth, it may be useful to further examine how anger affects their perceptual experience of combat trauma. A study which

examined anger, perceptual experience, and their relationship to internal locus of control could provide a better understanding of the love of war concept.

Another way of examining this phenomenon may be through comparing different measures of personality such as traits, coping styles or perceptual styles to the love of war concept. This path of research might find individual factors that predispose individuals to develop a love of war.

A third way of examining this phenomenon may be through neuro-imaging or neuro-hormonal studies. The individuals who develop a love of war may produce different levels of cortico-steroids. Different areas of their brains may be activated when exposed to combat. This would be very expensive and may even be impossible to do retroactively.

A reasonable and interesting next study might be to examine a similar group of helicopter aviators and crew members. The two most similar groups to the participants in this study would be the 135th Assault Helicopter Company Emus and their Taipan gunship team or the 240th Assault Helicopter Company Greyhounds with the Mad Dog gunship team. Both of these units were based in Bear Cat, Vietnam at the same time, used similar equipment, did the same type of work, and flew missions in the same general areas as the participants in the present study. Both of these units now have reunion groups that meet at intervals in designated locations around the country. These reunion groups can be located and contacted via the internet. The main expenses for this study would be for travel to the reunion site, lodging and providing the measures to

the participants. A moderate cash incentive might generate high participation from these units.

When conducting this next study it would be useful to include the same measures as used in this study. This would increase the sample size as well as the sensitivity to determine significance. It would also increase the generalizability of the information generated. Adding measures for locus of control, personality traits, coping styles and anger would provide broader information and may provide criteria for predicting development of the love war in individuals exposed to combat. The next study should also seek to refine the questions used to select the love of war participants.

Limitations

The results of this study should be interpreted with reservation. The sample in this study was an extreme sample selected for its similar experiences in combat. The sample contains soldiers from only one unit who were in combat during a similar time period and saw much the same action in the same locations. The generality of the findings are limited the small sample size. This sample is also limited by the small number of minority soldiers in the sample. This could not be controlled as this unit (like most others) contained very few minority individuals in the flight platoons. The sample contains no females. There were no females in this aviation company. This sample is not representative of all Vietnam veterans.

It is likely the two questions used to operationalize the love of war concept do not always make an accurate discrimination. Although the questions used in this study seemed to generate a meaningful distinction, refinement might provide greater sensitivity and yield more interpretable results. It is possible that research non-findings in some cases may be attributable to errors contained in this operationalization. The construction of a measure with high content validity would greatly reduce error and provide greater sensitivity and more interpretable results.

This research is retrospective and was conducted 33 years post combat. Memories can change and recalling emotions and events in the context of a reunion with friends is likely different than doing so while in-combat or just after combat. To properly research this area, prospective studies would clarify and eliminate many potential errors. It would also provide greater sensitivity and more interpretable results.

Prospective research would allow the collection of real time, in combat physiological data. This is not possible in retrospective research. With modern equipment it would be easily possible to provide pilots and crew members with sensors that could relay physiological data to an onboard computer for storage. Such data would be valuable in determining physiological factors which might be correlated with the love of war concept.

APPENDIX A
ATTITUDES QUESTIONNAIRE

1. Please check the item that best describes your problem solving style.
 - ☐ The best way to solve a major problem is to fix the problem yourself.
 - ☐ The best way to solve a major problem is to get help with it.
 - ☐ The best way to solve a major problem is to wait for it to work itself out.
2. Please check the item that best describes your experience in combat.
 - ☐ The task demands of helicopter combat were overwhelming and nearly impossible to deal with.
 - ☐ The task demands of helicopter combat were very difficult but I was able to perform them
 - ☐ The task demands of helicopter combat were not all that difficult and I found them easy to perform.
3. As I recall my general day to day mood during my tour in Vietnam:
 - ☐ My mood was usually cheerful and happy.
 - ☐ My mood was usually fluctuated with some ups and downs.
 - ☐ My mood was usually bad, angry or unhappy.
4. How much concentration did it take to perform your helicopter combat job?
 - ☐ I had to concentrate totally on the job at hand.
 - ☐ I concentrated only as much as I needed to perform my job.
 - ☐ It took little concentration to perform my job.
5. How would you evaluate your personal skills and abilities to perform your helicopter combat job.
 - ☐ My skills and abilities level was high.
 - ☐ My skills and abilities were medium.
 - ☐ My skills and abilities were low.
6. How did you feel about performing your combat helicopter role?
 - ☐ I found it often terrifying and wished I could have been anywhere else.
 - ☐ I found it just another job with its ups and downs.
 - ☐ I found it exciting and enjoyable.
7. Please describe your combat helicopter job. (check all that apply)
 - ☐ I was a gunship crew member.
 - ☐ I was a slick crew member.
 - ☐ I was a gunship pilot.
 - ☐ I was a slick pilot.

8. Many athletes describe being in the "zone" during an exceptional performance. During combat did you ever feel as if you were in the "zone"?
- ☐ I was never in the "zone" during combat.
 - ☐ I felt I was in the "zone" at times during combat.
 - ☐ I was usually in the "zone" during combat.
9. When I reflect back on my helicopter combat experience.
- ☐ I wish I had never been put in that position.
 - ☐ I consider my experience as my duty.
 - ☐ I would not trade these experiences for anything.
10. How supportive do you feel your superiors and the army as a whole were to you?
- ☐ The army and my superiors provided me with little support other than friends and co-workers.
 - ☐ The army and my superiors provided me with only minimal support.
 - ☐ The army and my superiors were very supportive.
- 11: How would you best describe the army aviation unit you were assigned to in combat.
- ☐ A general army aviation unit.
 - ☐ A specialized army aviation unit.
 - ☐ An elite army aviation unit.
- 12: During combat did you ever feel an adrenaline rush?
- ☐ I never felt pumped during combat.
 - ☐ I sometimes felt pumped during combat.
 - ☐ I always got a strong rush during combat.
- 13: During combat did you become angry?
- ☐ Seldom I became angry during combat.
 - ☐ On occasion I was angry during combat.
 - ☐ Often I was angry during combat.
- 14: What type of music do you remember listening to in the hot LZ's? (short answer)
- Do you remember an individual song?

APPENDIX B
DEMOGRAPHIC INFORMATION

Please fill in the answer.

- _____ 1. Date of birth.
- _____ 2. Education level (High school, GED, Some College, College graduate, graduate degree.)
- _____ 3. Most recent occupation.
- _____ 4. Marital status.
- _____ 5. Months of active military service.
- _____ 6. Months in Vietnam. From _____ to _____.
- _____ 7. Number of tours.
- _____ 8. Highest rank achieved.
- _____ 9. Number of times wounded or hospitalized in Vietnam.
- _____ 10. Have you ever been diagnosed with PTSD?
- _____ 11. Do you currently have a PTSD diagnoses.

APPENDIX C
RESEARCH CONSENT FORMS

This study looks at the relations between personality types, situational demands of combat and coping behaviors. It attempts to isolate factors that may influence how traumatic events are experienced by individuals. No two individuals react to traumatic events in exactly the same way. Please complete the following forms. To be able to use your information all of the questions on each form must be answered. If a question is not relevant to your experience please choose the best answer available. If you have any questions I can be reached at (XXX) XXX-XXXX or (XXX) XXX-XXXX. Please don't hesitate to call me. If our discussion appears to take longer than a minute or two I will call you back and we can discuss it on my dime. If you would rather I call you, I can be reached by email at XXXXXXXX@unt.edu or at XXXXXXXX@yahoo.com . When you complete the forms please place them and the consent form in the prepaid mailer provided and mail them to me. Thank you for your help.....Bill Crisp

You may list any comments you have about your participation in this study below.

UNIVERSITY OF NORTH TEXAS
COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS
RESEARCH CONSENT FORM

Page 1 of 2

Subject Name: _____ Date: _____

Title of Study: Post-Combat Military Job Satisfaction Among Vietnam War
Helicopter Aviators

Principal Investigator: William Crisp

Co-Investigators: Kenneth Sewell Ph.D.

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the proposed procedures. It describes the procedures, benefits, risks, discomforts of the study. It also describes the alternative treatments that are available to you and your right to withdraw from the study at any time. It is important for you to understand that no guarantees or assurances can be made as to the results of the study.

PURPOSE OF THE STUDY AND HOW LONG IT WILL LAST:

The purpose of this study is to identify factors that influence different psychological reactions to incidents of traumatic stress. The study will also evaluate Posttraumatic Stress Disorder (PTSD) related coping behaviors and their relations with individual personality styles. Your participation in this study will require approximately one hour.

DESCRIPTION OF THE STUDY INCLUDING THE PROCEDURES TO BE USED:

This study will be conducted by mail. Each participant will receive a research packet which contains instructions, a consent form, the self-report research measures, and a return mailer with postage. The participant will sign the consent form and complete the research measures. The packet is then returned to the principal investigator by mail.

DESCRIPTION OF PROCEDURES/ELEMENTS THAT MAY RESULT IN DISCOMFORT OR INCONVENIENCE:

There are no known risks or elements that may result in discomfort or inconvenience. The research does not ask participants to describe or recall traumatic events or to reveal personal feelings about these incidents. Since this study only involves assessment and not treatment, there are no alternative treatments available.

DESCRIPTION OF THE PROCEDURES/ELEMENTS THAT ARE ASSOCIATED WITH FORESEEABLE RISKS:

None. Participants are free to discontinue their participation at any time should any undesirable discomfort arise.

BENEFITS TO THE SUBJECTS OR OTHERS:

There are no direct benefits to the participants in this research. The information gathered in this research project will be made available through publication to health-care providers, such as social workers, psychologists and psychiatrists. This may result in a more informed community of health-care providers that is better prepared to provide services to individuals affected by traumatic stress.

UNIVERSITY OF NORTH TEXAS
COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS
RESEARCH CONSENT FORM

Page 2 of 2

Subject Name: _____ Date: _____

Title of Study: Post-Combat Military Job Satisfaction Among Vietnam War
Helicopter Aviators

Principal Investigator: William Crisp

Co-Investigators: Kenneth Sewell Ph.D.

CONFIDENTIALITY OF RESEARCH RECORDS:

The investigators will maintain confidentiality of the research records in the same way medical records are kept confidential. No one will have access to these records except as required by law. Names of participants will not be included in any publication prepared as a result of this study.

REVIEW FOR PROTECTION OF PARTICIPANTS:

This research study has been reviewed and approved by the UNT Committee for the Protection of Human Subjects (940) 565-3940.

RESEARCH SUBJECTS' RIGHTS: I have read or have had read to me all of the above.

I have been informed that William Crisp is available by telephone to further explained the study to me and answer all of my questions. This form has informed me of the risks or discomforts and possible benefits of the study.

I understand that I do not have to take part in this study, and my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw at any time without penalty or loss of benefits to which I am entitled. The study investigators may not include my research materials in the study if it is discovered that I do not meet the study requirements, or if the study is canceled.

In case there are problems or questions, I have been told I can call William Crisp at telephone number (XXX) XXX-XXXX or Dr. Kenneth Sewell at the University of North Texas Clinical Psychology Department at (XXX) XXX-XXXX.

I understand my rights as a research subject, and I voluntarily consent to participate in this study. I understand what the study is about and how and why it is being done. I may copy and keep a signed copy of this consent form.

I

Subject's Signature Date

Signature of Witness Date

For the Investigator or Designee:

I certify that I have reviewed the contents of this form and it explains the known benefits and risks of the research.

Principal Investigator's Signature Date

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