war stress and trauma: The Vietnam veteran experience

robert s. laufer
Brooklyn college/Graduate Center CUNY
and the Center for Policy Research

m. s. Gallops
Columbia university
and the Center for Policy Research

ellen Frey-Wouters
Brooklyn college/Graduate Center CUNY
and the Center for Policy Research


Previous studies of the effect of war on men’s life have focused primarily on the effects of combat exposure. However, reliance on combat exposure, defined in the traditional sense, as the sole indicator of war trauma ignores aspects of the phenomenon present in the Vietnam conflict. In this paper, we develop and test a model of war trauma that contains three elements: (1) combat experience, (2) witnessing abusive violence, and (3) participation in abusive violence. Using a sample of 350 Vietnam veterans, we apply a hierarchical regression analysis to scales of psychiatric symptomatology to test this model. The findings confirm that each of the three elements of war trauma affects postservice psychological states of veterans in significant and different ways. Furthermore, exposure to abusive violence is found to have significantly different effects for black and white veterans. Qualitative material from transcripts is used to explore the meaning of the different pattern of findings for these groups. The findings emphasize the importance of specifying what constitutes “the experience” when attempting to link traumatic experiences to subsequent psychological patterns.

The postservice adjustment of Vietnam veterans has been a major topic of study (Borus, 1973, 1974; Egendorf et al., 1981; Foy et al., in press, Harris, 1980; Helzer et al., 1979; Laufer et al., 1981; Robins, 1974; Robins et al., 1974; Wilson, 1977). This research has investigated the enduring effects of military service and combat on a broad range of psychological symptoms and behavioral problems. The pattern of the findings in these studies has gradually shifted our perspective on the postservice adjustment of Vietnam veterans. The findings from research conducted prior to 1975 seemed to indicate that Vietnam veterans had not been adversely affected by their war experience. Subsequent studies, for the most part conducted after 1976, show a broad pattern of adjustment problems related to service in Vietnam, especially for veterans who experienced combat.

The most comprehensive study of Vietnam veterans’ postservice adjustment patterns is described in Legacies of Vietnam (Egendorf et al., 1981). In Legacies of Vietnam Vol. 3: Post-War Trauma (Laufer et al., 1981), we examined effects of military service and combat exposure on psychological symptoms and behavioral problems. Our findings showed that...
the psychosocial adjustment of Vietnam veterans was strongly influenced by their combat experience.

Studies of the long-term effects of combat syndrome on veterans from World War II noted that the psychological effects of traumatic war experiences remained long after the precipitating event(s) (Archibald et al., 1962; Archibald and Tuddenham, 1965; Futterman and Pumplin-Mindlin, 1951). Two of these studies also noted the high association between the experience of war atrocities and persistent psychological symptomatology (Archibald et al., 1962; Futterman and Pumplin-Mindlin, 1951). While research on the effects of the war on Vietnam veterans has produced conflicting findings on whether combat has or has not had a long-term effect on postservice psychological health and behavior patterns, work by psychiatrists and clinicians suggests that both combat experience and exposure to atrocities have important negative consequences (DeFazio, 1975; Haley, 1974; Strange and Brown, 1970). This body of research in conjunction with a thorough reading of our transcript material suggests that combat exposure in itself only partially represents the traumatic experience of war for Vietnam veterans.

MEASUREMENT OF WAR STRESS

Studies of war and its effects on those participating in it owe a great deal to the multivolume study, The American Soldier, of Stouffer et al. (1949) on the American soldier in WW II. This was also the first study that carried out a quantitative analysis of combat exposure and its consequences. Volume 2, Combat and Its Aftermath, details the major war experiences believed to produce stress and psychological dysfunction.

Stouffer and his colleagues conceptualized war stress in terms of combat exposure. Exposure to combat involves many obvious experiences. Among the most important catalogued in this early study are: threat to life and limb; physical discomfort from exposure to the elements; disease and deprivation; loss of friends; exposure to the death and dying of others; the requirement to kill and harm others resulting in moral and value conflicts; and the feeling of helplessness in the face of forces beyond the individual's control (1949:77). This study emphasized that soldiers' subjective evaluation of stressful situations and comparative assessments of exposure to the stress of war were significant factors in the measurement of combat exposure. Combat exposure and the concomitant stress were most prevalent and intensive along the front of confrontation with the enemy and declined as individuals moved to rear areas. In situations of traditional warfare, high combat exposure and high war stress were logically tied to the proximity of troops to the front line.

Three problems appear in the more recent literature that has attempted to assess the effects of war stress on soldiers who served in Vietnam. First, much discussion on the effects of war has dealt simply with the tensions and problems produced by returning from the combat theater to a civilian society in which the war was not popular and in which veterans received little moral support for the sacrifices they had made for their country. This approach deals not with the effects of war trauma upon those exposed to it but with questions concerning the moral character of the war and the subtle forms of ostracism and moral questioning the veterans faced when they returned. Consequently, these discussions are less concerned with the impact of war experiences on veterans than with the effects of the popular response to the war upon them (Ayers, 1972; Castelli, 1972).

Second, a number of studies of war effects based their analysis only on the distinction between veterans who served in the Vietnam theater and those who did not (Borus, 1973, 1974; Enzie et al., 1973; Huffman, 1970; Panzarella et al., 1978; Worthington, 1976, 1978). Using this simple dichotomy as a measure of war exposure, many of these studies found that service in the combat theater had small or negligible effects upon the subsequent life of veterans. Exposure to war trauma is almost meaningless when operationalized in this way, since the effects of exposure to the actual events of war are attenuated by the process of averaging these effects across the entire population of those who served in the theater of operations. The assumption that everyone who served in Vietnam had an equivalent level of exposure to the trauma of war fails to address
what is important about the war as a stressful experience.

A third problem exists in the studies that more directly conceptualize war trauma as combat exposure, in the tradition established by Stouffer and his colleagues (1949). These studies defined war trauma and combat exposure as comprising a single dimension. War trauma may consist, however, of multiple dimensions. Combat was defined as a set of experiences in which the individual came into direct contact with the enemy, in the form of fighting by firing weapons and taking the life of an enemy soldier; had his life threatened by hostile action; and suffered the concomitant physical and moral discomfort. This definition of combat, and war trauma, is implicitly based on a traditional understanding of a conflict in which certain territorial areas are held by hostile troops and the proximity to those areas reflects the level of combat exposure of the veteran. Using indicators that to some degree measured the dual aspects of threat to life and armed confrontation, these studies developed measures of combat exposure that contain two, three, or four categories, running from low to high exposure (DeFazio, 1975; Figley, 1978; Robins, 1974; Robins and Helzer, 1975; Strayer and Ellenhorrn, 1975; Wilson, 1977). Also, some studies asked veterans to place themselves in categories of combat experience labeled “low,” “moderate,” or “heavy” exposure without attempting to establish the objective comparability of these evaluations across individuals (Strayer and Ellenhorn, 1975).

UNIQUE CHARACTER OF VIETNAM WAR

Previous research has failed to assess the character of war stress on the American soldier in Vietnam adequately because it has not taken into account the conflict’s unique, but commonly recognized, features. The relationship between the character of the Vietnam War and its consequences for Vietnam veterans requires us to describe the nature of the conflict as clearly as possible. Our approach to the analysis of postwar adjustment is directly related to what we see as the unique character of the Vietnam War. In dealing with the consequences of the most profound issues that servicemen face—killing and dying—we must try to understand how the demands of war lead men, especially young men, to experiences in which the limited constraints imposed on warfare disintegrate. The discussion that follows attempts, through narrative, to provide the reader with a substantive grasp of the social context of the Vietnam experience.

It has been widely noted that the Vietnam conflict was new to the American experience in at least two important ways. First, Vietnam was not primarily a war of confrontation, but a war of infiltration—a guerrilla war. It was not a war of fronts, but one in which the enemy was fluid, mobile, and, it often seemed, ubiquitous. Second, the scope and intensity of guerrilla activity placed the noncombatant status of all civilians in question. The duality of many South Vietnamese civilians and even of the ARVN—all by day and Vietcong by night—strained the relations between the U. S. serviceman and the population that he was defending and with whom he was nominally allied. These features of the Vietnam conflict had important implications for the experience of American servicemen. As shown by transcript material, American soldiers were concerned by three issues: identity, security, and support.

Identity of the Enemy. To Americans, it was not always clear who the enemy was. The guerrilla forces, or the Vietcong, moved fluidly between civilian and combatant roles. An Air Force officer described the situation in this way:

I got the impression that the Vietcong were right in our midst. We were attacked on several occasions. We were mortared (and) grenades were tossed into the quarters. Apparently the Vietcong were right nearby. That was at night. In the daytime there was never a problem . . . I do not know if the Vietcong were hiding or (if) they had dual identities working . . . on the military installations in the daytime. Nobody knew it, nobody was sure if they did.

Sense of Insecurity. A characteristic of service in Vietnam that was closely related to the ambiguous identity of the enemy was a pervasive feeling of insecurity. Not only could American servicemen not feel secure at the front, they could seldom feel secure in the rear. An army infantryman from Brooklyn graphically described this situation:
You really didn't know who they (the VC) were. Like, you might be going through what they would call a friendly village and, all of a sudden, all hell would break loose on you. You never did know who the Vietcong were. You had always to be on the alert.

Support from Vietnamese. The pervasive feeling among American soldiers was that they were fighting the war alone, without aid from the South Vietnamese troops (the ARVN) and without support from the Vietnamese population. Many Americans felt they were helping to provide the Vietnamese a better life, in addition to protecting them from communism, but the passive attitude of the peasantry, the mercenary and predatory traits of the population around American bases, and the perceived cowardice of the ARVN limited the bonds between American soldiers and their allies.¹ A veteran from Atlanta expressed his feelings about this situation:

I supported the war. But I was very negative about the Vietnamese: I hated them. It was just like it was all right if we did the fighting and the dying but they wanted no involvement. At first, a lot of us when we got there wanted to establish friendships, but soon you became very suspicious of them, you did not trust them.

Consequently, a sense of isolation and bad feelings developed between the American forces and their allies.

War Stress in a Guerrilla War

The stress of war in a guerrilla campaign differs from that experienced in conventional conflicts. Our narratives from veterans show that many of the strains placed on conventional forces in a guerrilla campaign stem from the inability of these forces to distinguish between noncombatants and the enemy. This problem is, for the most part, absent in a conventional conflict. Guerrilla warfare creates pressures that lead to and sanction acts of brutality against civilians and prisoners of war. American servicemen in Vietnam saw a significant number of such episodes by the North Vietnamese, Vietcong, South Vietnamese, and American forces. In our transcripts, we found three general types of episode described: actions against civilians, actions against prisoners of war, and the use of cruel weaponry. The following are descriptions, in the words of our respondents, of events of each type as they were carried out by the Vietcong, the ARVN, and U. S. forces.

Actions against Civilians. An army infantry sergeant from Atlanta talked about the killing of children that had been friendly to the American forces:

Two five-year-old boys were killed because they had associated with our units when we were guarding a bridge. They could both speak Vietnamese and English and while we were there they gave us a lot of information and then one night a Vietcong or NVA woman came into the village and killed both of them.

A marine from Westchester reported an episode involving the ARVN interrogation of the wife of a Vietcong:

The ARVN did the interrogating... they brought in a woman whose husband was a Viet Cong... they wanted to get information out of her. They stripped her to her waist and took a... generator... and they took one wire and put it to her left breast, the other wire and put it to her right breast and they started to crank it which could produce an electrical charge.

A veteran from Los Angeles reported the following episode involving American forces:

Our unit picked up five Vietnamese civilians that were supposedly giving information to the Vietcong. We took them into the helicopter. First they talked to one old man and he was yelling and crying. They asked him a question and he kept shaking his head and they booted him right out of the door. They did this right down the line until all five were gone.

Mistreatment of Prisoners of War. A veteran from Brooklyn who was in the U.S. Army witnessed torture of prisoners by his own unit:

The back deck of our vehicle was grated and hot air from the engine comes out and that back deck gets to be 600 degrees after a while. And you can not stand there. It will burn through your shoes. That is where we would put our prisoners. Rope them, tie them, just throw them down there like a piece of steer, piece of cattle.

A veteran from Bridgeport who was in the Air Force observed ARVN torture of POWs:
One, they just shot in cold blood, because he didn't give up information. Another one, they were using a couple of torture techniques... pulling a fingernail off... strap a man to a chair and take a pair of pliers and just pull his finger off and other things. Use a wire and loop it around his balls and slowly twist it... you know... they would continue until he passed out from shock or something... torture is to gradually break down a guy.

And a veteran from Westchester reported this treatment of American soldiers by the Vietcong:

They didn't believe in taking prisoners. They tortured our men, cut them up and hung them in trees.

*Use of Cruel Weapons.* In addition to booby traps placed in the field, the enemy used subterfuge to threaten American lives at moments when American soldiers were relaxing. By contrast, Americans reported the use of their technological arsenal in ways that indiscriminately killed civilians and the enemy.

A veteran from Los Angeles who served in the Navy reported his experience as follows:

We were told not to drink water in Vietnam, unless it was prepared in our base, with ice in it because the VC sympathizers would put ground glass in the ice. They were also selling zippo lighters, said "Made in USA" on it, and the second time you would strike it, it would blow up in your hand, right in front of your face.

And a sergeant in the Marines from Columbus made the following remarks about the use of cruel weaponry by U. S. forces:

Civilians suffered most from both sides... napalm I seen dropped in many villages and just burn everything to the ground. I seen villages where the Vietcong were. It would be only a handful and they'd come in and drop napalm and just burn everything.

We shall refer to all of these episodes as abusive violence.

The guerrilla character of the Vietnam War significantly contributed to the prevalence of abusive violence. It was indeed, as Lifton (1973) has recognized, an atrocity-producing situation, but as our quotations indicate, not only for Americans. Exposure to the brutality, as exemplified in these descriptions, constitutes, we believe, an important contribution to the trauma of war.

Direct participation in abusive violence by American forces often stemmed directly from the rage, fear, and/or anxiety of troops who were seeking some means of controlling their environment. A veteran from Westchester reported this type of action:

Like Lieutenant Calley, we went into a village like he did, and there was no North Vietnamese around. The point opened up the village gates and it exploded and he got killed and (it) wounded two other people... then two sniper rounds rang out and two more men dropped. So we backed out of the village and called in an air strike on it and then swept back through the village and just wiped (out) everything... anything that was alive... animals, trees, birds, plants, flowers.

This description portrays the most extreme instance of American use of abusive violence. Other acts were less terrible in their consequences, such as mistreatment of civilians or prisoners by physically harassing them. Abusive violence did not always involve the act of killing, though it did in many instances. Even more than exposure to abusive violence, we suspect, participation in committing these acts is traumatic.

The existing literature, with some notable exceptions (Foy et al., in press; Haley, 1974; Lifton, 1973; Shatan, 1978; Wilson, 1977) has inadequately conceptualized and measured the elements of war stress in Vietnam that significantly affected the lives of veterans, because it has not attempted to assess the effects of exposure to abusive violence. For the most part, the conceptualization of the effects of war stress has been based on the conventional notion that the centerpiece of the experience is exposure to death and killing among soldiers in battle. Our transcript data, general accounts of the war, and the results of clinical studies lead us to believe, however, that an approach to the phenomenon of war trauma that is multidimensional and includes the issues of abusive violence is necessary to understand the war experience of Vietnam veterans.

To understand and measure the effects of Vietnam service on American veterans, it is necessary to take into account three dimensions: (1) the level of combat exposure, with
heavy emphasis on events in which soldiers faced threat to life and limb; (2) a measure of exposure to the use of abusive violence; and (3) a measure of direct participation in episodes of abusive violence. We expect exposure to war trauma cumulatively to lead to greater stress response in the exposed segments of the population.

METHODS

Sample

Our sample consists of a group of Vietnam veterans (N = 350) taken from a larger stratified probability sample (N = 1,342) of the noninstitutionalized civilian population. The larger sample was drawn from ten sites and stratified on the basis of race, age, and veteran status. The ten sites from which the sample was drawn were chosen to represent four sections of the country on matched economic and demographic characteristics. Data were collected in two waves: in the Northeast in 1977 (Wave I) and in the South, Midwest, and West in 1979 (Wave II). The larger sample represents the general populations in the ten sampling units. The subset of Vietnam veterans that will be used here contains 226 whites, 100 blacks, and 24 chicanos.

Random digit dialing techniques were used in each of the ten locations to screen individuals and collect the sample. If a male who fit an unfiled cell's characteristics lived in the household, he was selected for interviewing. The refusal rate was 7.8 percent for the screening calls and 17.5 percent for the interviews. Sample selection by telephone screening continued until the required number in each site cell was obtained (Rothbart, 1981).

Due to the high cost of collecting a large sample of a relatively rare population, such as veterans of the Vietnam War, by random probability techniques, multiplicity sampling was used to increase the yield of veterans. If the household did not contain an eligible respondent, the screener asked if a brother, son, or nephew living in the sampling area was a veteran of the Vietnam War. In these cases, the kinship unit, not the household unit, was being sampled. If an eligible candidate was obtained by this process and fit the sample require-

ments, he was interviewed and information was obtained on his kinship network in the area. This allowed the estimation of his probability of being nominated, given the random method of selection in respect to those found by contacting households (Rothbart et al., 1982). The Wave II sample contained 136 Vietnam veterans obtained by contacting households and 139 Vietnam veterans obtained by kin nomination; 75 Vietnam veterans were obtained from the Northeast by household sampling in Wave I.

In the following analysis, all multiple regression analyses are carried out on the unweighted data. Multiple regression allows the statistical control of characteristics on which the sample was stratified. Previous work has shown that regression estimates are reliable and only marginally affected by changes in sampling variance produced by weighting (Rothbart, 1981:96). When summary characteristics, such as means, percentages, and correlations, are presented, however, they will be based on weighted data, adjusting for both the stratification design and the differential probability of selection in the multiplicity group, to make our sample comparable to the general site populations from which it was drawn.

Measures of War Stress

Combat. To measure the level of exposure to combat among Vietnam veterans, we constructed an additive scale of ten discrete events they experienced. Each element was a close-ended question for which the responses were only "yes" or "no." The questions concerned whether the soldier came in contact with enemy forces and whether they had other experiences where their personal safety was threatened. (The full contents of this scale and the method of its construction are presented in Appendix A.)

Although the Combat Scale included items such as "Were you ever involved in a firefight?," we did not include within it whether the veteran killed, or thought he had killed, an enemy soldier. This item was present in our interview but we chose to analyze it separately. Scholars of the behavior of soldiers in combat have noted that even when hard pressed, only a fraction actually use their
weapons against the enemy (Keegan, 1976). Still, killing the enemy is a central aspect of combat experience. In our sample, fully half (N = 169) of Vietnam veterans felt they had killed an enemy soldier.

Comparing the group who believed they had killed an enemy combatant to those who did not shows that for the former group, the average score on the Combat Scale was 8.0, while for the latter group, it was only 3.8. Overall, this indicator is highly correlated with our Combat Scale (r = .55), suggesting that killing someone is subsumed within a broader definition and operationalization of combat exposure. This conclusion was confirmed when its effect on psychosocial adjustment was examined with combat exposure controlled.

Abusive Violence. In measuring exposure to abusive violence, we used a set of open-ended questions in which the veteran was asked whether he experienced the dirty side of war and to describe the events in this category. We required that veterans had witnessed the event or had seen its consequences soon after its commission and had clearly known who had carried it out. To make the measure an indicator of objective experiences, we eliminated any event about which they had heard secondhand. In our sample, roughly a third (32 percent) reported they were directly exposed to at least one episode. These episodes varied in character, but the most often cited were: the torture of prisoners, including pushing them from helicopters; the physical mistreatment of civilians; the use of napalm, white phosphorous, or cluster bombs on villages; death or maiming by booby trap; and the mutilation of bodies. Of the men who reported episodes, most (82 percent) described cases in which U. S. regulars were involved; less than one-third (32 percent) mentioned cases in which the Vietcong or NV regulars were involved, and 15 percent reported cases involving the ARVN or Korean forces.3 (These three figures do not sum to 100 percent because over a third of those who reported episodes mentioned more than one.

Exposure to abusive violence is related to the level of combat exposure, but it is not so strongly tied to it that it would lead us to entertain the possibility that the two types of exposure reflect the same dimension of war stress. The Combat Scale and the measure of exposure are moderately correlated (r = .43). The mean level of combat for all those exposed is significantly higher than for veterans not exposed (8.4 vs. 4.7), but there is little difference on combat among those exposed between those who participated and those who merely witnessed these actions (8.5 vs. 8.4).

Measures of Adjustment

An important area of adjustment that has received sustained attention in the literature and in our previous work (Lauffer et al., 1981), is psychiatric symptomatology. The primary hypothesis that we tested is whether a model of war trauma consisting solely of combat or whether a multidimensional model containing the three elements discussed earlier is better able to identify and explain the psychological problems occurring among Vietnam veterans in their postservice civilian life.

A number of instruments have been used to assess patterns of psychiatric symptoms among Vietnam veterans. We utilized two in our study: (1) the Stress Scale (Boulanger et al., 1981), which is a single additive scale of stress symptoms often mentioned in the professional literature on posttraumatic stress disorders; and (2) the Psychiatric Epidemiology Research Instrument (PERI) (Dohrenwend and Shrout, 1980; Dohrenwend et al., in press), which consists of a number of scales tapping general psychiatric symptomatology. Components of these scales are described in Boulanger et al. (1981) and Lauffer et al. (1981). Both of these tools are nondiagnostic instruments for measuring psychopathology.

Each veteran was asked whether or not he had ever had any of the 21 symptoms (total symptoms) in the Stress Scale. The Stress Scale was then applied to four periods in the veteran's career: (1) We measured the number of symptoms that the veteran remembered as occurring in the year preceding the interview (current symptoms). We also measured the number of symptoms that the veteran remembered as beginning during his tour of duty (service symptoms), the number that began in the first 12 months after leaving the service (year after symptoms), and the number that began prior to entry into the military (before service). The scale ranged from 0 to 21 as a simple count of the experienced symptoms. The compo-
nents of the Stress Scale were included only in
the interview for Wave II of our sample (N = 275).

It is possible that the Stress Scales measuring
the etiology of reported symptoms, i.e., our
Before, Service, and Year After Scales, are
affected by retrospective bias. Retrospective
bias in these scales could influence symptom-
reporting in three ways: (1) memory decay, i.e.,
the failure to remember symptoms; (2) augmentation,
i.e., the overreporting of symptoms; and (3) the misspecification of
the time at which the symptoms began. It is possible
to provide a limited test of the effect of
memory decay by making the simplifying as-
sumption that the greater the distance between
the period of service and the time of the inter-
view, the greater the effect of memory decay,
i.e., the periods of service more distant from
the time of the interview should be associated
with the recall of fewer symptoms and lower
scale scores. We found no such relationship
exists between our Service and Year After
Scales and this factor.

Misspecification bias is a less likely source
of symptom-reporting error in our study. The
procedure used to elicit the symptom data used
the period of service as the key referent point
in the veteran's career. The traumatic and
dramatic qualities of service experiences, as
well as their contrast with prior and subsequent
life experiences, are likely to imprint power-
fully on the veteran's memory his symptom-
tomatological responses in and around this
period. This technique is commonly used in
cross-sectional surveys where recall bias is a
potential problem.

Augmentation bias is the most likely can-
didate for creating systematic differences be-
 tween groups distinguished by their war expe-
riences. We have no means of measuring the
degree to which augmentation affects
symptom-reporting. If it is present, however, it
is unlikely it will be unrelated to characteristics
that we use as controls in our analysis. These
controls may thus serve to limit this type of
bias. Still, we cannot rule out the possibility
this form of bias may have some effect on our
measures of stress etiology.

The other instrument consisted of a battery
of scales taken from the Psychiatric
Epidemiological Research Interview (PERI).
In this paper we will use the following five of
these scales, each ranging from (0) low to (100)
high: (1) feelings of demoralization (demoral),
(2) feelings of guilt (guilt), (3) feelings of anger
(angry feelings), (4) active expression of hos-
tility (active hostility), and (5) perceived hos-
tility of others (perceived hostility). It is im-
portant to note that these scales do not mea-
sure clinically defined problems; rather, they
tap general patterns of symptoms that indicate
the presence of psychological tensions of dif-
ferent types.

In our previous work (Laufer et al.,
1981:364–370), we found that combat exposure
substantially elevated reports of current stress
symptoms, as well as of symptoms that origi-
nated during service. However, when we
turned to the PERI Scales, we found that
scores on only the Angry Feelings Scale were
significantly higher for combat veterans. Thus,
reanalyzing the Stress and PERI Scales offers
an important test of the multidimensional war
trauma model.

Control Variables

To test whether the dimensions of war stress
outlined in the foregoing significantly affected
postservice adjustment problems, we carried
out a hierarchical regression analysis of our
adjustment measures on three sets of con-
trol variables and a set of service- and war-
related variables. The control variables in our
model are:

(1) Variables on which our sample was
 stratified. These variables include site of inter-
 view and age. The regression estimates of
 these variables will not be presented in the
 following tables because they are not concep-
tually meaningful.

(2) Background factors. Three background
 factors were used: (a) father's occupation
 (fathocc), measured in Duncan SEI scores; (b)
 father's level of education (fathed), a five-
category variable coded in terms of the highest
degree obtained; and (c) the respondent's race
 measured as two dummy variables, one for
 blacks (black) and one for chicanos
 (chicano).

(3) Predisspositional factors. Predispositional
effects have been identified in previous studies
as particularly important in predicting postser-
vice adjustment patterns (Helzer, 1980; Rob-
ins, 1974; Worthington, 1978). In light of this, we included four measures that suggest the individual may have experienced adjustment problems before he entered the service. These measures are: (a) a dummy variable for those who grew up in a single parent family (family); (b) a dummy variable for those who got into trouble as juveniles (juvenile), which included drinking, drug use, run-ins with police, or problems with school authorities; (c) a dummy variable for individuals who were often absent from school (truancy); and (d) a five-category variable measuring the highest degree the veteran obtained before he entered the service (early-educ).

After these three levels of controls were introduced into each equation, the effects of seven military- and war-related variables were estimated. The four military-related variables were: (1) a dummy variable for individuals who served in Vietnam during or after the 1968 Tet offensive (cohort); (2) a dummy variable for those drafted into the service (drafted); (3) a dummy variable for those who served in the army (army); and (4) a dummy variable for those who served in the Marine Corps (marines). For the latter two variables, those who served in the Navy and the Air Force provide the referent group. The three measures of war trauma were described earlier. They are a combat exposure scale (combat), a dummy variable for those exposed to episodes of abusive violence (exposure), and a dummy variable for those who participated in episodes of abusive violence (participate). In this model, those who participated were coded "1" on both exposure and participate. By contructing these variables in this fashion, we are measuring what effect participation in these episodes has above the effect of simple exposure to them. This operationalization assumes the effects of these two types of experience will be cumulative and in the same direction.

FINDINGS

Table 1 presents the estimates of the regression model on the five PERI Scales and the Stress Scale at two times (service and current). No variables within the war stress model perform well on the PERI Scales. The only significant effects are found among the background and predisposition control variables. In fact, by improving our set of controls relative to our earlier work, our previous finding of a positive effect of combat exposure on angry feelings has disappeared. None of the military or war stress variables add significantly to the explanatory power of the model.

The importance of the war stress variables do appear, however, in their application to the Stress Scales. In the scale measuring the number of stress symptoms beginning during the war (service symptoms), both exposure to combat and participation in abusive violence led veterans to report more stress symptoms beginning in this period. Veterans who participated in abusive violence reported on the average the onset of two more symptoms than those who did not (b = 1.97). Veterans also averaged roughly one more symptom for every seven points of combat exposure (b = .15).

Each of these factors contributed independently to greater incidence of stress. Exposure, on the other hand, had a slightly suppressive effect (b = -.03), though its magnitude is very close to zero. The other military-related experiences that significantly affected symptom levels during the war were service in the Marine Corps and induction status. Net of other effects, marines reported less stress symptoms beginning in this period than did veterans who served in other branches of the armed forces (b = -1.92); those who enlisted reported roughly one less symptom than those who were drafted (b = -1.17). Of the predispositional and background variables, only race was significantly related to reporting stress symptoms in this period. Blacks recalled experiencing more symptoms than did whites; on the average, blacks reported one more symptom (b = 1.1) than whites. Chicanos also reported an average of one more (b = 1.1) than did Whites, but the effect was not significant.

While the dimensions of war exposure that are outlined are significant in explaining the number of stress symptoms experienced during the war, the question posed in adjustment terms is: What effect did these experiences have on symptom levels after these men returned to civilian life? This question is answered by the regression on the Current Symptoms Scale. As seen in Table 1, the pattern of effects for the second measure is much the same. The effect of combat remains signifi-
TABLE 1. Determinants of PostService Psychological Symptoms

<table>
<thead>
<tr>
<th></th>
<th>Service Symptoms</th>
<th>Current Symptoms</th>
<th>Demoral</th>
<th>Guilt</th>
<th>Active Hostility</th>
<th>Perceived Hostility</th>
<th>Angry Feelings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Controls</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>1.10**</td>
<td>1.15</td>
<td>.90</td>
<td>-.20</td>
<td>-4.02**</td>
<td>6.38***</td>
<td>-.53</td>
</tr>
<tr>
<td></td>
<td>(.49)b</td>
<td>(.93)</td>
<td>(1.72)</td>
<td>(2.58)</td>
<td>(1.75)</td>
<td>(2.35)</td>
<td>(2.53)</td>
</tr>
<tr>
<td>Chicano</td>
<td>1.10</td>
<td>.88</td>
<td>.61</td>
<td>4.03</td>
<td>-6.65*</td>
<td>2.34</td>
<td>.78</td>
</tr>
<tr>
<td></td>
<td>(.83)</td>
<td>(1.22)</td>
<td>(3.38)</td>
<td>(5.08)</td>
<td>(3.45)</td>
<td>(4.62)</td>
<td>(4.98)</td>
</tr>
<tr>
<td>Fathored</td>
<td>-.32**</td>
<td>-.18</td>
<td>.18</td>
<td>.12</td>
<td>.15</td>
<td>.83</td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td>(.14)</td>
<td>(.20)</td>
<td>(.49)</td>
<td>(.73)</td>
<td>(.50)</td>
<td>(.67)</td>
<td>(.72)</td>
</tr>
<tr>
<td>Fathocc</td>
<td>-.002</td>
<td>-.01</td>
<td>-.03</td>
<td>-.04</td>
<td>-.04</td>
<td>-.08</td>
<td>.02</td>
</tr>
<tr>
<td></td>
<td>(.01)</td>
<td>(.01)</td>
<td>(.04)</td>
<td>(.05)</td>
<td>(.04)</td>
<td>(.05)</td>
<td>(.05)</td>
</tr>
<tr>
<td><strong>Predisposition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td>.57</td>
<td>-.09</td>
<td>.65</td>
<td>3.19</td>
<td>2.19</td>
<td>.14</td>
<td>1.24</td>
</tr>
<tr>
<td></td>
<td>(.45)</td>
<td>(.67)</td>
<td>(1.67)</td>
<td>(2.52)</td>
<td>(1.71)</td>
<td>(2.29)</td>
<td>(2.47)</td>
</tr>
<tr>
<td>Juvenile</td>
<td>-.07</td>
<td>-.15</td>
<td>.62</td>
<td>6.93**</td>
<td>2.47</td>
<td>-.53</td>
<td>.90</td>
</tr>
<tr>
<td></td>
<td>(.48)</td>
<td>(.71)</td>
<td>(1.83)</td>
<td>(2.75)</td>
<td>(1.87)</td>
<td>(2.51)</td>
<td>(2.70)</td>
</tr>
<tr>
<td>Truancy</td>
<td>-.46</td>
<td>-.56</td>
<td>2.15</td>
<td>2.00</td>
<td>4.09**</td>
<td>-.05</td>
<td>4.46*</td>
</tr>
<tr>
<td></td>
<td>(.46)</td>
<td>(.68)</td>
<td>(1.66)</td>
<td>(2.49)</td>
<td>(1.70)</td>
<td>(2.27)</td>
<td>(2.45)</td>
</tr>
<tr>
<td>Early-Educ</td>
<td>.12</td>
<td>.04</td>
<td>.07</td>
<td>-.35</td>
<td>.78</td>
<td>-.83</td>
<td>-.36</td>
</tr>
<tr>
<td></td>
<td>(.15)</td>
<td>(.22)</td>
<td>(.55)</td>
<td>(.83)</td>
<td>(.56)</td>
<td>(.76)</td>
<td>(.82)</td>
</tr>
<tr>
<td><strong>War Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohort</td>
<td>.42</td>
<td>.71</td>
<td>.08</td>
<td>2.63</td>
<td>.94</td>
<td>-.70</td>
<td>-.20</td>
</tr>
<tr>
<td></td>
<td>(.60)</td>
<td>(.88)</td>
<td>(2.21)</td>
<td>(3.31)</td>
<td>(2.25)</td>
<td>(3.02)</td>
<td>(3.25)</td>
</tr>
<tr>
<td>Drafted</td>
<td>-1.17**</td>
<td>-.75</td>
<td>-.36</td>
<td>1.45</td>
<td>1.64</td>
<td>.83</td>
<td>3.70</td>
</tr>
<tr>
<td></td>
<td>(.48)</td>
<td>(.71)</td>
<td>(1.79)</td>
<td>(2.69)</td>
<td>(1.83)</td>
<td>(2.45)</td>
<td>(2.64)</td>
</tr>
<tr>
<td>Army</td>
<td>-.08</td>
<td>.95</td>
<td>.18</td>
<td>-.86</td>
<td>1.98</td>
<td>2.70</td>
<td>.76</td>
</tr>
<tr>
<td></td>
<td>(.57)</td>
<td>(.83)</td>
<td>(2.04)</td>
<td>(3.07)</td>
<td>(2.08)</td>
<td>(2.79)</td>
<td>(3.00)</td>
</tr>
<tr>
<td>Marines</td>
<td>-1.92**</td>
<td>-.61</td>
<td>-1.90</td>
<td>.64</td>
<td>2.25</td>
<td>1.22</td>
<td>2.10</td>
</tr>
<tr>
<td></td>
<td>(.69)</td>
<td>(1.00)</td>
<td>(2.48)</td>
<td>(3.73)</td>
<td>(2.53)</td>
<td>(3.39)</td>
<td>(3.64)</td>
</tr>
<tr>
<td>Combat</td>
<td>.15***</td>
<td>.16**</td>
<td>.06</td>
<td>.05</td>
<td>.02</td>
<td>-.004</td>
<td>.10</td>
</tr>
<tr>
<td></td>
<td>(.05)</td>
<td>(.08)</td>
<td>(.20)</td>
<td>(.31)</td>
<td>(.21)</td>
<td>(.28)</td>
<td>(.30)</td>
</tr>
<tr>
<td>Exposure</td>
<td>-.03</td>
<td>.71</td>
<td>2.08</td>
<td>2.59</td>
<td>1.03</td>
<td>2.17</td>
<td>3.89</td>
</tr>
<tr>
<td></td>
<td>(.50)</td>
<td>(.73)</td>
<td>(1.80)</td>
<td>(2.69)</td>
<td>(1.83)</td>
<td>(2.44)</td>
<td>(2.63)</td>
</tr>
<tr>
<td>Participate</td>
<td>1.97**</td>
<td>1.42</td>
<td>-.11</td>
<td>-3.13</td>
<td>.53</td>
<td>3.09</td>
<td>-1.80</td>
</tr>
<tr>
<td></td>
<td>(.80)</td>
<td>(1.23)</td>
<td>(2.83)</td>
<td>(4.26)</td>
<td>(2.89)</td>
<td>(3.88)</td>
<td>(4.18)</td>
</tr>
<tr>
<td>Constant</td>
<td>1.19</td>
<td>4.09</td>
<td>16.15</td>
<td>15.67</td>
<td>49.71</td>
<td>20.56</td>
<td>31.39</td>
</tr>
<tr>
<td>R²</td>
<td>.17</td>
<td>.12</td>
<td>.02</td>
<td>.05</td>
<td>.06</td>
<td>.07</td>
<td>.04</td>
</tr>
<tr>
<td>Mean</td>
<td>1.61</td>
<td>4.21</td>
<td>8.69</td>
<td>19.71</td>
<td>41.13</td>
<td>21.88</td>
<td>34.74</td>
</tr>
<tr>
<td>(S.D.)</td>
<td>3.10</td>
<td>4.41</td>
<td>1.8</td>
<td>18.0</td>
<td>14.6</td>
<td>16.6</td>
<td>17.6</td>
</tr>
<tr>
<td>N</td>
<td>241c</td>
<td>241c</td>
<td>316</td>
<td>315</td>
<td>316</td>
<td>316</td>
<td></td>
</tr>
</tbody>
</table>

* a Unstandardized regression coefficient.
  b Standard error of the estimate.
  c Asked of Wave II only.
  * p ≤ .1.
  ** p ≤ .05.
  *** p ≤ .01.

...cant and the coefficient stays the same size (b = .16). The effect of participation (participate), however, declines and becomes non-significant; the effects of race decline as well to nonsignificant levels.

While this test suggests participation in abusive violence in Vietnam did not contribute to later stress symptoms, we believe such a conclusion is wrong. As can be seen in the last two columns in Table 1, the decline in the effect of participation (from b = 1.97 to b = 1.42) is accompanied by an increase in the effect of exposure (exposure) (from b = -.03 to b = .71). Due to the manner in which we constructed these two variables, the participation variable measures only changes that occur above those attributable to exposure. This formulation implies that these experiences result in a cumulative stress response. We reestimated the effects of exposure and participation on current symptoms when they are coded independently and found that while the effect of exposure...
stays the same (b = .71), that of participation increases to a significant size (b = 2.12, \( p = .05 \)). Thus the effect of participation is masked by the larger, but nonsignificant, effect of exposure on current symptoms.

In comparing the means of these stress scales, it can be seen that symptoms were far more prevalent at the time of the interview than during the period of service (4.2 symptoms vs. 1.6). In part, the marked contrast between the levels of these scales is due to the manner in which the questions tapping the number of symptoms in each period was asked. Service symptoms refers to the onset of particular responses, how many of the symptoms in the scale began during the period of military service. Current symptoms, on the other hand, is a count of the number of these symptoms that occurred in the 12 months preceding the interview. Still, as Table 2 shows, there appears to be a cumulative development in the number of current stress symptoms from those that began during service and those that developed in the first year after release from the military. This trend is strongest among black Vietnam veterans. The pattern for whites shows that there were relatively low levels of stress response during the period when the stress was occurring, while blacks reported higher levels. The latter reported a higher onset of symptoms while in the service, 3.1 vs. 1.1 symptoms. This difference from whites was maintained until the period of the interview, 6.0 vs. 3.8 symptoms, and is also reflected in the difference between the total number of symptoms recalled, 7.1 vs. 4.9. Despite this consistency, the only measure for which this race difference is significant is the Service Symptoms Scale.

This evidence suggests blacks responded more immediately to the stresses of their experience than did whites. Table 2 also shows that the differences noted are a product of the interaction between race and the experience of abusive violence. Blacks who were not exposed to abusive violence report that 32 percent of their symptoms began during the period of service, compared to 22 percent for the nonexposed whites, i.e., of the total symptoms recalled, blacks reported 50 percent more began during service than did whites. (These percentages are derived by dividing the mean of the number of symptoms beginning in the different periods by the mean of the number of total symptoms ever experienced.) Comparable figures for groups who did participate in or were exposed to abusive violence show that blacks were more than twice as likely as whites to report that their symptoms began during their military service, 73 percent vs. 37 percent and 39 percent vs. 17 percent, respectively.

If we look more closely at the reported etiology of stress symptoms, we find that participation in abusive violence is associated with the emergence of symptoms during the service period regardless of race—a finding that corresponds to the significant participation effect seen in column 2, Table 1. White Vietnam veterans who participated in abusive violence reported 37 percent of their symptoms began during the service, compared to only 17 percent reported by those who were only exposed to these actions. If we add the symptoms that began in the first year after leaving the military to those that began in the service, we have accounted for 72 percent of the total symptoms reported by those who participated in episodes of abusive violence. By contrast, only 50 per-

| TABLE 2. Mean Number of Stress Symptoms Beginning in Different Periods by Type of Exposure to Abusive Violence and Race, Vietnam Veterans (Wave II Only) |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                 | Before Service | During Service  | Year After Service | Year Before Interview | Ever Occurred |
| Blacks (N = 68) | .8             | 3.1             | 1.7               | 6.0               | 7.1            |
| Not Exposed (N = 50) | 1.0         | 1.8             | 1.1               | 3.9               | 5.5            |
| Witnessed Only (N = 13) | .2         | 3.5             | 2.7               | 8.2               | 9.0            |
| Participated (N = 5) | .0           | 11.7            | 4.2               | 14.3              | 16.0           |
| Whites (N = 180) | .9             | 1.1             | 1.7               | 3.8               | 4.9            |
| Not Exposed (N = 122) | 1.0         | 1.0             | 1.7               | 3.2               | 4.6            |
| Witnessed Only (N = 43) | .9           | 9.0             | 1.8               | 4.4               | 5.4            |
| Participated (N = 15) | .8           | 2.0             | 1.9               | 4.2               | 5.4            |

Note: The means are weighted.
percent of the total symptoms experienced by the exposed group occurred first in the period including military service and the first year after return to civilian life.

The above pattern is even stronger among blacks who participated in abusive violence. Among these men, 73 percent of all symptoms are reported to have begun during the years of military service. If we add the symptoms that began in the 12 months after return to civilian life, we can account for the origin of 99 percent of all symptoms in this group. For blacks exposed to abusive violence, only 39 percent of symptoms began in the service, while 30 percent began in the year after return to civilian life.4

The absence of effects of war exposure on the PERI Scales is surprising in light of their power in predicting variations in the level of stress symptoms. Given the differences in patterns of stress symptoms between blacks and whites, we tested whether the effects of war stress differed according to the veterans' race. The results obtained when the regressions were estimated separately for black and white veterans is presented in Table 3.

As seen in Table 3, the effects of stressful war experiences on psychological symptoms had two different dynamics, one for white veterans and one for black veterans. Among white veterans, exposure consistently contributed to higher levels of current psychological problems. This contribution is significant in three cases: feelings of demoralization (b = 3.99), perceived hostility (b = 6.04), and anger (b = 6.38). In the other two cases, the effect is positive and exceeds the standard error. The experience of participation is associated with lower levels of psychological problems among whites. Whites who participated in acts of abusive violence scored lower on feelings of demoralization (b = −7.51), guilt (b = −11.10), and anger (−9.17) than did those who were only exposed to these episodes. Once again,

<table>
<thead>
<tr>
<th>TABLE 3. Regressions on the PERI Scales Performed Separately for Each Racial Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blacks (N = 91)</td>
</tr>
<tr>
<td>Combat</td>
</tr>
<tr>
<td>Exposure</td>
</tr>
<tr>
<td>Participate</td>
</tr>
<tr>
<td>Constant</td>
</tr>
<tr>
<td>R²</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>(S.D.)</td>
</tr>
</tbody>
</table>

| Whites (N = 206) | Demoral | Guilt | Active Hostility | Perceived Hostility | Angry Feelings |
| Combat | .14 | .15 | −.20 | −.14 | .21 |
| Exposure | 3.99* | 4.81 | 3.88 | 6.04** | 6.38** |
| Participate | −7.51** | −11.10** | −5.60 | −5.38 | −9.17* |
| Constant | 15.5 | 19.1 | 47.6 | 18.7 | 29.6 |
| R² | .06 | .08 | .06 | .07 | .07 |
| Mean | 18.4 | 19.5 | 42.1 | 19.8 | 34.8 |
| (S.D.) | (11.9) | (18.1) | (14.3) | (14.9) | (17.6) |

*Note: The control, predisposition, and other service-related variables were included in the regression but their estimates are not presented here. The explained variance reported is that for the entire regression model, excluding site effects.

* Unstandardized regression coefficient.

b Standard error of the estimate.

* p < .1.

** p < .05.
the pattern of effects on the other two scales was negative though not significant.

The opposite pattern appears among black veterans. Exposure to abusive violence has a consistent negative effect on levels of psychological problems. The effects of exposure are not as strong as those found among whites. In no case are they significant, and only for active hostility and perceived hostility do they exceed their standard error. Participation in abusive violence, on the other hand, consistently increases psychological difficulties among blacks and does so significantly for feelings of demoralization ($b = 11.43$), guilt ($b = 11.47$) and active hostility ($b = 8.59$). In the other two cases, the coefficients are positive and exceed their standard error. While little can be made of the pattern of negative coefficients for exposure, the strong positive effects of participation show the importance of this experience among black veterans and indicate that the experience had a markedly different meaning for blacks and whites.

Among neither whites nor blacks does combat exposure emerge as a significant predictor of these psychological reactions. However, contact with abusive violence clearly has a long-term impact on the psychological well-being of veterans. The contrast in the impact of exposure to abusive violence on blacks and whites appears to be most pronounced on feelings of demoralization and guilt. Black participants are marked by high levels of both feelings, but the exposed white group have somewhat higher levels of these feelings. The group of white participants is distinguished from these two groups by having relatively lower levels of demoralization and guilt as a consequence of their exposure to war trauma.

This pattern is not only unexpected but surprising. It shows that the impacts of exposure to abusive violence are not always cumulative; they do not always run parallel to the effects of combat exposure; and they are not constant across the entire population of veterans. In evaluating this model of war stress, all of these findings are particularly important. Comparison of the results here to those in our analysis of the Stress Scales shows that different outcomes are associated with different elements of war stress. These elements of war trauma contribute cumulatively to stress responses only in some instances, thus supporting the position that no summary concept and measure can adequately encapsulate the variegated nature of war stress.

The contrast in the impact of war stressors on black and white veterans requires that the character of the experiences being measured be closely examined. These results provide support for earlier observations and arguments that race was an important factor in determining how Vietnam veterans responded to the war (Fiman et al., 1975; Gould, 1973; Leventman and Camacho, 1980; Moskos, 1973, 1975). The meaning of our findings will be further explored in the next section where the transcript material of those who were exposed to abusive violence is examined.

The Empathic Response to Abusive Violence

The primary hypothesis of this paper is that a multidimensional model of war trauma is the best approach for developing a causal model of the effects of war on the lives of Vietnam veterans. The findings support this hypothesis. There is another implicit assumption that influenced our approach to the problem of war-related psychological and behavioral outcomes. Researchers have generally assumed that greater individual exposure to various types of war trauma increases the likelihood the individual will subsequently exhibit symptomatology. Our findings have largely supported this hypothesis.

We expected there would be a cumulative effect of the three types of war stress on symptomatology in the exposed segments of the population. There is a cumulative effect of war stress on some measures, especially on the Stress Scales and behavioral outcomes (Yager et al., in press). However, we also find participation in abusive violence among whites leads to markedly reduced reports of symptoms on the PERI Scales compared to (1) blacks who participated and (2) whites who were exposed to abusive violence. Thus, we are led to conclude that the hypothesis of stress cumulation requires modification. There is a general cumulative pattern of war stress on some outcomes, but extreme forms of stress, such as participation in abusive violence, can lead to a limited reversal of the pattern of subsequent symptomatology. Given the general trend of
evidence on the cumulative effects of war stressors in the literature and our own data, we need to probe as far as we can into the explanation for this surprising finding.

Why do white Vietnam veterans who participated in abusive violence report fewer symptoms on the PERI Scales than blacks who participated in similar actions or than whites who were only exposed to abusive violence? For the answers to these anomalies, we turn to our attitudinal data on cultural tolerance, views of the war, and views of the use of abusive violence, as well as to our transcripts in which the veterans explain their reactions to their experiences in Vietnam.5

Three possible explanations for this pattern are possible. First, the simplest explanation would be that white participants in abusive violence are more likely to have sociopathic tendencies, have a history of delinquent behavior, enter the military, and engage in abusive violence. Second, situational/contextual factors may determine the likelihood of men becoming engaged in abusive violence and determine how the experience is psychologically incorporated at a later time. Finally, it may be that racism among white participants contributes to their acting out and limits their psychological and moral sensitivity to this behavior.

It should be noted both blacks and whites in our sample were equally exposed to abusive violence in Vietnam; 29 percent of blacks and 32 percent of whites were exposed to episodes of abusive violence; 14 percent of blacks and 8 percent of whites in our sample participated in these acts. In neither case is the difference significant. However, there were some general differences in the background characteristics of the group of men who participated. We find participants in abusive violence did report more involvement in preservice delinquent behavior (37 percent vs. 18 percent among all those who did not participate), and they had a higher rate of failure to complete high school before entering the service (41 percent vs. 19 percent). However, these relationships are found among both blacks and whites. Our data also show that participants in abusive violence were more likely to be enlistees than draftees (84 percent of participants were enlistees vs. 64 percent of all others). Although predispositional factors and selection preferences do play a small part in predicting participation in abusive violence, they do not indicate how or why psychological responses to these actions should differ by race.

Our findings show that white participants differ systematically from the white exposed group on a range of attitudes. Participants were: less likely to turn against the war due to their contact with abusive violence; more negative toward the Vietnamese; more likely to believe the Vietnamese were hostile to U. S. servicemen; more willing to accept the unrestricted use of weapons such as napalm, dum-dum bullets, and booby traps; and less willing to afford captured guerrillas protection under rules covering prisoners of war.

While white participants were more thoroughly aware of the destruction the war brought to Vietnamese society and its people, they felt little empathy for the victims. In addition, white participants generally believed that all groups of combatants used a broader range of abusive violence against the civilian population than was believed by those who were merely exposed to abusive violence.

Our transcript material also shows striking differences between these groups in their response to Vietnamese society and the victims of the violence. Whites who were only exposed generally acknowledged the suffering of the victims. These men related empathically to the pain experienced by the victims of the violence and reacted to it. Furthermore, veterans who were only exposed to abusive violence were more likely to acknowledge that their experiences were traumatizing and to articulate the revulsion they experienced at the time.

A white veteran from Brooklyn described his reaction to the killing of Vietnamese:

Well, there'd be times when they'd gather a bunch of villagers or suspected Vietcong and throw them into a ditch and line up and get ready to shoot (them). You'd have your option whether you wanted to shoot or go sit down and have a cigarette and I would always turn away. It just left me with a sick feeling. It was a very perverted thing to do.

A white veteran from Columbus cited his general reaction to the mistreatment of civilians and POWs.

Seeing people die...seeing people maimed...watching how other people were treated whether it be POW's or civilians. Watching
the land destroyed...crops...animals...villages and all the atrocities of war. And the children...just running around in rags...when I first got out of the service it happened frequently. I'd have dreams and think about it a lot.

Whites who participated in abusive violence articulated a distinctly different view of their encounter with abusive violence than did their peers who were only exposed. White participants felt distant from the condition of the Vietnamese population, alienated by their poverty and passivity, and upset by the parasitic attitude of those they met. They often reported an open hostility towards the Vietnamese, in some cases stating this in explicitly racial terms.

One white veteran who had taken part in physically harassing civilians reported these feelings toward the Vietnamese:

They were the sorriest race of people I ever run upon in my life...they just didn't fight...we were doing all their fighting...when they were around us they were happy and liked us and when they were around the Vietcong they were the same way with them, I'm sure.

Another veteran who reported shooting at civilians, killing their livestock, and physically harassing them described a similar impression of Vietnamese society:

The moral decay, the degeneracy of the little kids...mercenary, valueless thinking...it was almost pathetic and yet it wasn't because they were only gooks...even though I felt sorry for them I had a dislike for most of them. It was a prejudice in many respects...they were so backward, they were so far removed from any civilization, of any type of social structure I'd known before.

Even when white participants did not articulate such direct hostility to and alienation from the Vietnamese, they generally noted a well-advanced indifference to the value of life, especially Vietnamese life.

A veteran who said he had taken part in destroying a village stated:

I started to lose my respect for life...you could be eating dinner and get up and walk out and wipe out 60...80...90 people and go right back and sit down and eat.

A white veteran put it most simply:

To me, they were all the same...South Vietnamese or Vietcong, they were all the same.

The capacity of white veterans in this group to neutralize their feelings in regard to the abusive acts they were involved in suggests the presence of what has been commonly called the "gook syndrome" (Leventman and Camacho, 1980). It should be noted that only five of the 19 white veterans in our sample who participated explicitly used racial stereotyping in discussing their impressions of the Vietnamese. Still, the transcript material shows that whites in this group were in most cases alienated from the Vietnamese population and did not feel that noncombatants had the right to be protected from harm.

Furthermore, these men who participated in abusive violence actively denied the traumatic quality of their experience. Instead, as the following quote demonstrates, they numbed themselves to the toll of human misery they encountered:

I mean killing a gook was nothing really. It didn't bother me at all. I could have butchered them like nothing really. I really had no feelings.

An examination of the orientation of black participants shows they generally held attitudes similar to those of whites who were only exposed to abusive violence. The scores of black participants on the PERI Scales were also higher than those of the white exposed group. In addition, black participants were generally more sympathetic to the Vietnamese, held a less negative conception of them, were less supportive of the war, and were less supportive of unrestrained warfare than were white participants.

In the transcript material, we find that black participants were often severely traumatized by their experiences. These men generally reported sympathy for the Vietnamese. They tended to perceive the Vietnamese as victims of circumstance, as people trying to get by in a difficult situation. Consequently, when they took part in episodes of brutality, they felt severe internal conflicts and developed a deep sense of guilt for their behavior. Several reported that in brutalizing others, they were dehumanizing themselves; they feared they were becoming animals.
The capacity of white participants to dehumanize civilians and other noncombatants was not matched among the blacks. Where whites who were involved in abusive violence developed a number of mechanisms for estranging themselves from the immoral character of their acts, blacks found themselves confronted with a basic contradiction between their actions and their sympathy for the victims.

A black veteran’s reflections on his experiences in Vietnam illustrate the tension these men reported between the violent acts they committed and their affinity for the country and the people:

(I had) a difficult homecoming caused by my (participation) in killing and (my) feelings for the Vietnamese. I would go out on weekends . . . and stay in a village with a mamason and just relax . . . I felt they were part of me. I could see the suffering that they were going through, sickness, illness, and things like that. Poor country! Killing the Vietnamese . . . had a tremendous impact on me. A lot of things that were going on that I could not have any say over, but I was involved. I could not get used to the killing and I would have nightmares and dreams . . . the killing . . . mangled bodies . . . everything like that. Today, I am still struggling . . . I am just trying to survive.

The different ways that these veterans managed their experiences suggests that the whites who participated in abusive violence can generally be distinguished from other veterans by their disregard for the consequences of their actions and their inability to experience the suffering of their victims.

White participants and whites who witnessed abusive acts exhibited a consistency between attitudes and behavior. In the participant group, we find indifference to the fate of civilians, combined with a total war orientation. Among the white exposed veterans, we find a reversal of attitudes toward civilians and toward the scope of acceptable behavior. Only among the black participants do we find evidence of dissonance between attitudes and behavior.

Why is there a contrast between the behavior and the attitudes of black participants that is absent in the white groups? Due to the differences in attitudes and psychological responses between the exposed and participant groups we cannot claim that the cause is attributable to race. White veterans as a whole were not negatively disposed, unsympathetic, and hostile to the Vietnamese; only the white participants exhibited this orientation. Thus, it cannot be argued that value systems and attitudinal sets that distinguish whites and blacks are the operative force. An explanation that is consistent with the data is that a racist or dehumanizing orientation to the enemy and civilians emerged among white participants through a process of social conditioning.

Our transcripts suggest there are several contributing factors. First, we find that cases of abusive violence generally did not occur as isolated actions by individual soldiers. Acts of abusive violence involved the action of combat units or of subgroups within the unit. Thus, individuals may have had relatively little room for maneuver in trying to avoid participation in these episodes.

Second, subsequent to their actions, these groups apparently became cognitive minorities, providing mutual support and justification for these actions. This support, however, appears to be most effective for whites. Our data and transcripts indicate that blacks were oriented, not only to their unit, but also to the community of blacks in Vietnam. In combat, blacks and whites worked closely together, but at most other times, units and companies polarized into black and white groups (Gould, 1973; Moskos, 1980:78–80). Reflecting this, 60 percent of our sample said race relations were better in combat than in noncombat situations (Sloan and Phoenix, 1979). In the community of black veterans, attitudes sympathetic toward the Vietnamese were pronounced. Black participants were also more likely than their white counterparts to have social relationships with Vietnamese civilians. The contrast between values/attitudes and actions can plausibly be attributed to the two distinct spheres of experience, i.e., the combat unit and the social community of black veterans. The presence of such tensions is consistent with the high levels of demoralization, guilt, and angry feelings we find among black participants.

The pattern of the onset of stress symptoms presented in Table 2 adds further support to this interpretation. The higher rate of symptom development at the time of service among
black participants relative to other groups, including white participants, indicates that this group of men was less psychologically insulated from the stressful experiences to which they were exposed. The absence of this insulation, our data suggest, stemmed from the lack of peer support for their actions.

The contrast between the exposed and participant whites can be understood in a similar fashion. Exposure to abusive violence primarily occurred in situations that did not involve the individual and his immediate group. Witnesses generally reported actions of the VC/NVA, the ARVN or other American units, rather than action of their own units. These men were not socially invested in the groups committing the acts. Thus, there was no immediate social force to bring these acts into the realm of acceptable behavior. The shock of witnessing the inhumanity men were capable of could be acknowledged because of the social distance between the observers and the actors.

One other feature of the observed pattern should be noted. While the exposed white and black participants look remarkably similar in their responses, it is likely that their responses have quite different meanings. As individuals, white participants were not directly implicated in particular actions. Given the character of their experiences, the high levels of psychological demoralization and guilt among exposed whites probably represents a generalized response to the character of the Vietnam War. The higher absolute scores of black participants on the Demoralization and Guilt Scales suggests that black participants are more likely to be responding to feelings, which are deeply embedded in their psyche, of individual responsibility for personal acts.

In dealing with the characteristics of white participants, it must be kept in mind that we are dealing with a small proportion (9 percent) of the white Vietnam veteran population. Also, our findings show that white Vietnam veterans who were exposed to abusive violence react quite differently from participants in abusive violence. Racism, in our study, appears in a social context in which attitudes condoning abusive violence are prominent. The interpretation of the role of social support in this process is speculative at present, but this interpretation enhances our understanding of how psychological mechanisms rooted in the social environment are implicated in the experience of stress.

INTERPRETING THE FINDINGS

The traditional literature's preoccupation with combat experience as the sole war stressor has the kind of face validity that leads to a general acceptance of combat as the comprehensive cause of adjustment problems. The issue of exposure to abusive violence is to some degree a less obvious candidate for explaining postwar difficulties among veterans. Although other researchers (Foy et al., in press; Wilson, 1977; Wilson and Krauss, 1980) have shown interest in this area, they have not as yet fully incorporated these experiences into a model of war stress that also includes combat.

We embarked on the analysis of the effects of abusive violence because we had good reason to believe that, at least in Vietnam, this aspect of war trauma is central to understanding the long-term effects of war. In addition to clinical studies noting its importance, our interest in abusive violence is due to the emphasis on it found in our transcript material. Exposure to abusive violence against civilians and POWs was profoundly disillusioning; veterans reported reexperiencing these events in dreams, nightmares, and daydreams, as well as in conscious reflections on how the war had affected their lives. We also found exposure to and participation in abusive violence was related to attitudes toward U. S. involvement in Vietnam, views of the South Vietnamese, and attitudes toward the effect of the war on Vietnamese society.4

Our current analysis of the multidimensional war trauma model leads us to a substantial revision of our portrayal of the effects of war on the lives of Vietnam veterans in Legacies of Vietnam (Laufer et al., 1981). The earlier model of war trauma, consisting solely of a combat measure, led us to conclude that the central psychological issue in postwar adjustment was limited to posttraumatic stress disorder symptoms as measured by our Stress Scale. The war trauma model employed in this paper shows that, although combat effects are limited to the outcomes described in the 1981 study, the psychological effects of war are not
limited to posttraumatic stress disorder symptoms. Based on our multidimensional model of war trauma, we need to reformulate the picture of the long-term effects of war to include a broad range of psychological problems measured by such standard psychiatric instruments as the PERI Scales.

Our war trauma model indicates that the pattern of current symptomatology varies by race and by exposure to abusive violence. These findings underline the importance of specifying as precisely as possible the linkages between conceptually distinct types of war trauma, social characteristics such as race, contextual factors such as social support, and subsequent psychological and behavioral problems.

The data show, too, that assuming a simple cumulative model of stress response across the entire veteran population is inadequate. We found that war stress has different elements. These elements are qualitatively distinct and related to different sets of outcomes. We were led to reject the assumption that witnessing and participating in abusive violence are cumulative experiences additively reflecting the same type of stress. Combat and participation did exhibit a cumulative character on posttraumatic stress disorder symptomatology and on some behavioral problems (Yager et al., in press); however, the findings on the PERI Scales show that the effects of the dimensions of war stress are not cumulative across all areas of adjustment. The complex pattern of relations found on the measures of psychological adjustment that were examined indicate that war stress has at least three conceptually distinct elements. Each has important implications for postservice adjustment, and no summary indicator of war stress could adequately measure the effect of war stress on all outcomes.

Our findings demonstrate the importance of developing a well-specified model of war stress in order to determine its causal effects on life-course outcomes. If we hope to measure the effects of the traumatic experience on survivors over time, we need to specify as precisely as possible the component stressors in the trauma. Especially in an experience like war, there are different types of stress that must be differentiated. The analysis presented in this paper describes one set of effects of a model of war stress. Subsequent analyses should explore the influence of these dimensions of war experience on other aspects of the life of veterans. By specifying the salient elements of war experience, we improve our ability to understand how the life of veterans is influenced by their particular war.

NOTES

1. We found that Vietnam veterans had more regard for the enemy (VC or NVA) than for the ARVN. For the VC/NVA, there was a measure of respect, though generally mingled with fear. In a close-ended item, when Vietnam veterans were asked about their attitudes toward the VC/NVA, 24.4 percent said they had positive feelings; when asked the same question about the ARVN, only 8.4 percent gave a positive response.

2. The sites were: Brooklyn, NY; Southern Westchester County, NY; Bridgeport, CT; Atlanta, GA; Los Angeles, CA; Chicago, IL; South Bend IN; the two rural counties adjacent to South Bend: Columbus, GA; and the two rural counties adjacent to Columbus.

3. We tested a model that differentiated the effects of exposure to abusive violence by the perpetrator of the act. Our findings suggest that the traumatic aspect of the experience is the imagery associated with it; the issue of who initiated the action was not significant if the veteran was simply exposed to the event and did not participate in it personally.

4. While we cannot totally resolve the general issue of retrospective bias or the specific problem of augmentation in our data, the pattern of symptom response found in Table 2 does not readily lend itself to the possibility that the differences found stem from these sources of bias. The size of the differences in symptom etiology and their race-specific character, we believe, suggest that they reflect real differences between these groups and not simply a form of recall bias.

5. We examined variables tapping attitudes toward the war, the Vietnamese, Vietnamese' views of U. S. soldiers, the effects of the war on Vietnamese civilians and society, the use of abusive violence, the treatment of civilians in war, actions against civilians, the use of destructive weapons in urban areas, and the treatment of captured guerrillas.

APPENDIX A

Combat Scale

The elements of the Combat Scale used in our analysis are:

<table>
<thead>
<tr>
<th>Event</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>In an artillery unit that fired on the enemy</td>
<td>1</td>
</tr>
<tr>
<td>Flew in an aircraft over Vietnam</td>
<td>1</td>
</tr>
<tr>
<td>Stationed at a forward observation post</td>
<td>1</td>
</tr>
<tr>
<td>Received incoming fire</td>
<td>1</td>
</tr>
<tr>
<td>Encountered mines and boobytraps</td>
<td>1</td>
</tr>
<tr>
<td>Received sniper or sapper fire</td>
<td>1</td>
</tr>
<tr>
<td>Unit patrol was ambushed</td>
<td>2</td>
</tr>
<tr>
<td>Engaged VC in a firefight, and/or engaged NVA in a firefight</td>
<td>2</td>
</tr>
<tr>
<td>Saw Americans killed, and/or saw Vietnamese killed</td>
<td>2</td>
</tr>
</tbody>
</table>

Maximum Total 14

There are two types of items in the scale: those receiving a single rating (six items) and those receiving a double rating (four items). The items receiving the double rating are weighted to reflect the greater exposure to physical threat the veteran faced. While the potential maximum score on this scale is 14, no one in our sample scored higher than 13.

The statistical characteristics of the Combat Scale in our sample of 350 Vietnam veterans are:

<table>
<thead>
<tr>
<th>Code</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>33</td>
<td>27</td>
<td>41</td>
<td>16</td>
<td>22</td>
<td>14</td>
<td>29</td>
<td>23</td>
<td>22</td>
<td>24</td>
<td>38</td>
<td>32</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>%</td>
<td>9%</td>
<td>8%</td>
<td>12%</td>
<td>5%</td>
<td>6%</td>
<td>4%</td>
<td>8%</td>
<td>7%</td>
<td>6%</td>
<td>7%</td>
<td>11%</td>
<td>9%</td>
<td>3%</td>
<td>5%</td>
</tr>
</tbody>
</table>

The mean of the scale is 6.114; the median is 6; and the standard deviation is 4.07.

REFERENCES

Archibald, H. C., D. M. Long, C. Miller, and R. D. Tuddenham

Archibald, H. C., and R. D. Tuddenham

Ayers, B. D.

Borus, J. F.


Boulanger, Ghislaine, Charles Kadushin and John Martin

Castelli, J.

DeFazio, V. J.

Dohrenwend, B. P., and P. E. Shrout

Dohrenwend, B. P.; I. Levav, and P. E. Shrout

Egendorf, Arthur, Charles Kadushin, Robert S. Lauffer, George Rothbart, and Lee Sloan

Enzie, R. F., R. N. Sawyer, and A. F. Montgomery

Figley, Charles (ed.)
Fiman, B. G., J. F. Borus, and M. D. Stanton


Futterman, S., and E. Pumpian-Mindlin

Gould, W. S.

Haley, S. A.

Harris, Louis

Helzer, J. E.

Helzer, J. E., L. N. Robins, E. Wish and M. Hesselbrock

Huffman, R. E.

Keegan, John

Lauffer, Robert S., Thomas Yager, Ellen Frey-Wouters, and Joan Donnellan

Leventman, S., and P. Camacho

Lifton, Robert J.

Moskos, C. C.

Panzarella, R. F., D. M. Mantell, and R. H. Bredenbaugh

Robins, Lee N.

Robins, L. N., D. H. Davis, and D. W. Goodwin

Robins, L. N., and J. E. Helzer

Rothbart, G.

Rothbart, G., M. Fine, and S. Sudman

Shatan, C. F.

Sloan, L., and H. Pheonix


Strange, R. E., and D. E. Brown

Strayer, R., and L. Ellenhorn

Wilson, J. P.
1977 "Identity, ideology and crisis: The Vietnam veteran in transition, part I." Unpublished
Methodological Issues in Estimating Main and Interactive Effects: Examples from Coping/Social Support and Stress Field

JOHN W. FINNEY
ROGER E. MITCHELL
RUTH C. CRONKITE
RUDOLPH H. MOOS

Stanford University and
Veterans Administration Medical Center,
Palo Alto, California


Although used increasingly frequently, statistical analyses to explore moderating as well as main effects have not always been well-understood by researchers in the stress and coping/support field. We attempt to clarify three areas of potential confusion. First, three approaches for estimating main effects in multiple regressions with significant interaction effects and two methods for estimating main effects when a test for interaction has not reached statistical significance are evaluated. Second, multiple within-groups analysis is explored as an alternative to product-term regression analysis for probing interaction effects. Third, stress-attenuation analysis is distinguished from analyses of stress-moderating effects by locating both within the general framework of the elaboration paradigm.

Behavioral scientists in a number of substantive areas are exploring models of behavior

Preparation of this manuscript was supported by Veterans Administration medical research funds, NIAAA Grant No. AA02863, NIMH Grant No. MH08603, and funds from the John D. and Catherine T. MacArthur Foundation. We are indebted to Sarah Buxton and Dani Lawler for their assistance with data analyses. The comments of Andrew Billings, David Rogosa, and Charles Judd at various points in the preparation of this paper are deeply appreciated. Special thanks are extended to Helena Kraemer who was consulted on a number of occasions and consistently provided helpful advice.

Address communications to: John Finney, Social Ecology Laboratory, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, CA 94305.