Journal of Traumatic Stress, Vol. 10, No. 1, 1997

Trauma-Related Dissociative States and Long-Term Psychopathology in Posttraumatic Stress Disorder

J. Douglas Bremner[1,2,3] and Elizabeth Brett[2]

Dissociative responses to trauma have been hypothesized to be associated with long-term increases in psychopathology. The purpose of this study was to examine dissociative responses to premilitary, combat-related and postmilitary traumatic events and long-term psychopathology in Vietnam combat veterans with (n = 34) and without (n = 28) posttraumatic stress disorder (PTSD). PTSD patients reported higher levels of dissociative states at the time of combat-related traumatic events than non-PTSD patients. Higher levels of dissociative states persisted in PTSD patients in the form of higher levels of dissociative states in response to postmilitary traumatic events. In addition, dissociative responses to combat trauma were associated with higher long-term general dissociative symptomatology as measured by scores on the Dissociative Experience Scale, as well as increases in the number of flashbacks since the time of the war. These findings are consistent with previous formulations that dissociation in the face of trauma is a marker of long-term psychopathology.

KEY WORDS: dissociative responses; psychopathology; Vietnam combat veterans.

The effects of dissociative responses to trauma have been an area of considerably controversy. Many clinicians feel that dissociation has a protective effect on the individual in the face of stress. According to this

[1]National Center for Post-Traumatic Stress Disorder, West Haven Veterans Administration Medical Center, West Haven, Connecticut 06516.
[2]Department of Psychiatry, Yale University School of Medicine, New Haven, Connecticut 06511.
[3]To whom correspondence should be addressed.

0894-9867/97/0100-0037$12.50/1 © 1997 International Society for Traumatic Stress Studies

argument, dissociation is a defense mechanism which screens the individual from the overwhelming horror of traumatic stress and reduces long-term psychopathology. Opposed to this idea are the theories of Pierre Janet, whose contribution to the fields of dissociation and traumatic stress has recently been highlighted (Nemiah, 1989; Putnam, 1989; van der Hart & Horst, 1989; van der Kolk & van der Hart, 1989). Janet originally described the breakdown of identity, memory, and consciousness (known today as dissociation) which is associated with the strong emotions occurring during traumatic stress. Janet felt that this breakdown of the individual increased the risk for long-term dissociative psychopathology (Janet, 1889, 1920).

Since the time of Janet there have been a number of clinical reports of associations between exposure to traumatic stress and symptoms which we describe today as dissociation (Braun, 1984; Spiegel, 1984). Amnestic episodes and fugue states have frequently been observed on the battlefield (Geleerd, Hacker, & Rapaport, 1945; Riether & Stoudemire, 1988). Other symptoms, such as depersonalization and derealization, have been associated with extremely stressful situations (Krystal, 1969; Meninger, 1963). Kolb (1984) made the clinical observation that combat veterans returning from WWII continued to have dissociative responses to subsequent stressors. In the past 10 years a number of empirical investigations have been conducted in this area. Patients with posttraumatic stress disorder (PTSD) have been noted to have higher levels of dissociative symptomatology (Branscombe, 1991; Bremner et al., 1992; Bremner, Steinberg, et al., 1993; Carlson & Rosser-Hogan, 1991; Loewenstein & Putnam, 1988) than controls. In addition, individuals exposed to childhood abuse (Chu & Dill, 1990; Putnam, Guroff, Silberman, Barban, & Post, 1986; Sanders & Giolas, 1991) and the acute stressors of natural disasters (Cardeña & Spiegel, 1993; Holen, 1993; Koopman, Classen, & Spiegel, 1994) have been observed to have higher levels of dissociative symptomatology than controls. We have found in a group of Vietnam veterans with and without combat-related PTSD that dissociation at the time of combat trauma was a better predictor of long-term PTSD symptomatology than other factors including level of combat exposure, number of months in Vietnam, and substance abuse in Vietnam (Bremner et al., 1992). Other studies have also found a relationship between dissociation at the time of trauma and long-term psychopathology (Koopman, Classen, & Spiegel, 1994; Marmar et al., 1994).

These findings do not support the idea that dissociation during trauma has a protective effect, but rather are consistent with the original hypothesis of Janet, that individuals who respond to traumatic events with dissociative responses are at increased risk for psychopathology. The purpose of the

present study was to examine whether dissociation at the time of combat trauma was associated with higher levels of dissociative response to subsequent stressors after discharge from the military. Another purpose of the study was to examine the relationship between dissociative responses to combat-related trauma and long-term psychopathology in the form of general dissociative symptomatology, frequency of flashbacks, and level of PTSD symptomatology.

Method

Subjects

The subjects were 62 Vietnam combat veterans at the Veterans Administration Medical Center in West Haven, CT. The subjects were a subgroup from a previous study of 85 individuals which reported findings of higher levels of general dissociative symptomatology as measured by the Dissociative Experiences Scale (DES) (Bernstein & Putnam, 1986) in Vietnam combat veterans with PTSD in comparison to combat veterans without PTSD (Bremner et al., 1992). The current study examined only those individuals who were assessed with the Modified Dissociative Experiences Questionnaire (DEQ-M). The Vietnam combat veterans with PTSD (n = 34) were seeking treatment for PTSD and included 18 out of 24 consecutive admissions to our specialized inpatient unit and 16 admissions to clinicians who made referrals for research to our outpatient PTSD clinic during a 5-month time-period. Diagnosis of current PTSD was based on the Structured Clinical Interview for DSM-III-R (SCID) (Spitzer, Williams, & Gibbon, 1987). The non-PTSD group included 28 out of 30 patients who could be identified through mailings and multiple phone calls as Vietnam combat veterans without PTSD seeking treatment for medical problems in the outpatient ambulatory care clinic at the medical center. Patents in these clinics who subsequently met criteria for PTSD based on the SCID interview were excluded from the study.

Patients included in the study had a history of combat exposure defined as having received hostile or friendly fire, or incoming artillery rounds. Presence in a combat theater was verified by patient report and examination of the patients' official military record of service (DD214). Patients with a history of psychosis or organic brain syndrome were excluded from the study.

Instruments

Dissociative states at the time of specific traumatic events were examined using the Modified Dissociative Experiences Questionnaire (DEQ-M), which was developed for the purposes of this study. The DEQ-M is a clinician administered instrument for the assessment of dissociative states at specific time points. It has a range of 0 to 13 and consists of 6 questions from the Dissociative Experiences Questionnaire (Marmar et al., 1994) and 7 questions from another dissociation scale in development at our center (Bremner et al., unpublished). Score on the DEQ-M is determined by the total number of positive responses to the 13 questions about dissociative states. Patients were asked in an open-ended fashion to relate their most traumatic combat-related event, their most traumatic childhood event and their most traumatic postmilitary event. The DEQ-M was used retrospectively in the assessment of dissociative states at these three times. Specifically, symptoms in the areas of amnesia (one item), depersonalization (five items), and derealization (seven items) were assessed.

Traumatic events were defined, in conformity with DSM-III-R criteria for PTSD, as specific events which are beyond the range of normal human experience. All subjects reported a traumatic combat-related event. However, some subjects reported that they had not experienced traumatic events outside of the military. Of the PTSD patients, 16/34 (47%) reported a traumatic childhood event, and 22/34 (65%) a traumatic postmilitary event. Among the non-PTSD patients, 17/28 (61%) reported a traumatic childhood event and 22/28 (79%) a postmilitary traumatic event. Scripts of traumatic events were written down and later rated for severity in a blinded fashion by a psychiatrist with expertise in the treatment of PTSD. Childhood traumatic events included such incidents as being the victim of physical abuse or being in a natural disaster. Military traumatic events included a wide range of combat-related traumas. There was a range of from 20 to 24 years between the time of reported combat-related traumatic events and the time of the study. Postmilitary events included being in a life-threatening car or motorcycle accident, being shot at, or experiencing a threat to life in other ways. Events were rated by a clinician blinded to subject diagnosis on a scale of 0 to 4, with 4 being the most extreme example of a traumatic event and 0 being the least extreme. Reliability of this method was assessed by having a second clinician rate the measurements blinded to diagnosis and the first rater's assessment; agreement between the two raters for postmilitary traumatic events was assessed. Agreement between the two raters was very good, kappa (36) = .92, $p < .05$. This method was then used to compare mean severity of traumatic events between the PTSD and the non-PTSD groups.

Dissociative states at the time of traumatic events were compared to long-term psychopathology in the form of level of PTSD-specific symptomatology, general psychiatric symptomatology, general dissociative symptomatology, and number of flashbacks since Vietnam. For this purpose, patients were evaluated with the Mississippi Scale for Combat-Related PTSD, a validated measure of current PTSD symptom severity (Keane, Caddell, & Taylor, 1988). The Mississippi assesses the full range of PTSD symptomatology and quantifies scope and severity of symptoms. Patients were also evaluated with the Brief Symptom Inventory (BSI), an instrument for the assessment of general psychiatric symptomatology with acceptable reliability and validity (Derogatis & Spencer, 1983). General dissociative symptomatology was evaluated with the Dissociative Experiences Scale (DES), a 28-item, self-report instrument for the measurement of dissociative experiences which is widely used and has demonstrated reliability and validity (Bernstein & Putnam, 1986; Loewenstein & Putnam, 1988). Number of flashbacks since Vietnam were assessed by a semistructured interview for the assessment of flashbacks developed at our center (Brett, unpublished instrument). The flashback interview involves reading specific features of flashbacks and a brief description of an example of a flashback. The subject is then asked if he has experienced something similar, and if the answer is affirmative, is asked to describe a typical flashback. Categorization of whether or not a history of flashbacks exists is based on whether or not the interviewer ascertains that the subject has had the experience of seeing, hearing, or smelling something from Vietnam that at the time he felt was real, but that later he realized he was imagining. The total number of flashbacks since Vietnam is also estimated based on groupings of having never happened, happened 1–3 times, 4–5 times, 6–10 times, 11–20 times, and more than 20 times since Vietnam. This is an instrument in development, and reliability and validity measurements have not been performed.

Two-tailed tests of significance were used in all the analyses, and significance was defined as $p < .05$. Bonferroni correction was used to correct for multiple comparisons for DEQ-M scores measured for premilitary, military, and postmilitary events ($p = .05/3 = .0167$). Correlations between DEQ-M score during combat trauma and other scale scores were corrected for multiple comparisons using Bonferroni correction ($p = .05/4 = .0125$); correlations between postmilitary DEQ-M score and other scale scores were corrected in the same way ($p = .05/4 = .0125$). Pearson's product-moment correlations were performed between score on the DEQ-M for traumatic combat-related events and scores on the Mississippi Scale, BSI, DES, number of flashbacks since Vietnam, and DEQ-M for traumatic postmilitary events in the group of subjects as a whole. Pearson's product-mo-

ment correlations were performed between score on the DEQ-M for premilitary traumatic events and scores on the DEQ-M for combat-related and postmilitary traumatic events, as well as scores on the Mississippi, BSI and DES.

Results

There were no significant differences in any of the demographic variables measured between combat veterans with and without PTSD, including age, race and marital status. As expected, combat veterans with PTSD had higher levels of PTSD, dissociative, general psychiatric, and flashback symptomatology as measured by the Mississippi Scale, DES, BSI and flashback questionnaire, respectively PTSD patients did not have a greater trauma severity for individual traumatic events as measured by objective observer ratings (Table 1).

PTSD patients reported higher levels of dissociative symptomatology as measured by the DEQ-M at the time of combat-related traumatic events in comparison to Vietnam combat veterans without PTSD (Table 2) ($p < .01$). Examination of the data showed a remarkable lack of overlap between the two groups—almost all of the PTSD patients had high levels of dissociation during combat trauma, while almost all of the non-PTSD subjects were essentially free of dissociative symptoms during combat trauma. Both groups of veterans, however, experienced a wide range of very stressful events. One veteran with PTSD described his most traumatic combat-related event in Vietnam in the following way:

> It was my first firefight. We ran into a war zone. There was shooting everywhere, and guys getting hit. I saw a guy with three holes in his face. There was blood gurgling out of his mouth—he sounded like a baby. Another guy had brains on his fatigues. We were pinned down for a long time. I felt like I had something in my throat.

One veteran without combat-related PTSD related the following event:

> We got hit during the Tet offensive (an attack by the North Vietnamese army). I had to pull my best friend off of the barbed wire which we put up as a defense around our compound. He was in pieces.

A PTSD patient related the following event:

> I was a body bagger (responsible for picking up dead bodies). We were going out in a chopper, picking up bodies. We had overlooked a marine who had been killed. By the time we went out to get him he had been dead for a week. I went to pick him up, and my arm went right through him. I was standing there, holding his heart, guts, and insides in my hand.

A veteran without combat-related PTSD reported the following combat-related event as his most traumatic event:

Table 1. Demographic and Clinical Characteristics of PTSD Patients and Controls

	PTSD (n = 34)				Controls (n = 28)			
	M	*SD*	No.	(%)	*M*	*SD*	No.	(%)
Age	44.4	2.9			45.0	2.7		
Race								
White			27	79%			22	79%
Black			7	21%			4	14%
Hispanic			0	0%			2	7%
Marital status								
Married			8	24%			7	25%
Remarried			6	18%			4	14%
Separated			1	3%			1	3%
Divorced			13	38%			8	29%
Never married			6	17%			8	29%
Mississippi Scale Score	130.2	16.0			85.1	21.2[a]		
Dissociative Experiences Scale Score	28.5	18.2			4.4	17.3[b]		
Brief Symptom Inventory (GSI)	2.31	.77			1.00	.77[c]		
Number of flashbacks since Vietnam								
>20			24/34	71%			1/28	4%
11–20			1/34	3%			0	
4–10			4/34	12%			0	
1–3			0				2/28	7%
0			5/34	15%			25/28	89%[d]
Severity of traumas								
Premilitary	2.64	.63			2.50	.80		
Combat-related	2.88	.91			2.57	1.17		
Postmilitary	2.39	.85			2.68	.67		

[a] $t = 9.1$; $df = 54$; $p < .001$.
[b] $t = 2.9$; $df = 53$; $p < .01$.
[c] $t = 6.0$; $df = 49$; $p < .001$.
[d] chi-square = 41.3; $df = 1$; $p < .001$.

> We were in a heavy battle that went on for three days. A guy got hit in the head, and I was somewhat close to him. His head blew up in size.

Vietnam combat veterans with PTSD also reported higher levels of dissociative symptomatology as measured by the DEQ-M in response to postmilitary traumatic events in comparison to combat veterans without PTSD (Table 2) ($p < .01$). It was our clinical observation that there was a relationship between the types of dissociative experiences reported at the time of combat-related trauma and dissociative experiences reported during stressful events after the war. For instance, one patient reported that when he pulled his best friend out of a tank after the tank had hit a mine, the lower part of his body was missing. At that time he felt like he was in a

Table 2. DEQ-M Scores During Traumatic Events for PTSD Patients and Controls

	PTSD (n = 34)		Controls (n = 28)				
	M	*SD*	*M*	*SD*	*t*	*df*	*p*
Premilitary	3.3	3.4	0.7	1.3	2.8	31	.011
Combat-related	11.5	1.6	1.8	2.1	20.6	60	.0001
Postmilitary	9.4	4.3	1.0	2.6	7.9	42	.0001

dream, colors seem blurred, and he couldn't understand what people were saying around him. Twenty years later when he went on a trip to Disney World with his family he became overwhelmed by the crowds and the confusion. At that time also, he reported that he felt like he was in a dream and that colors were blurred. His wife was trying to talk to him, but he couldn't understand what she was saying, as if she was talking in a foreign language. This case illustrates how similar symptom patterns appear to be reported at the time of combat-related and postmilitary traumatic events.

In the group of Vietnam veterans as a whole, dissociative states at the time of combat-related traumatic events as measured with the DEQ-M were correlated with long-term psychopathology. This included significant correlations with long-term PTSD symptomatology as measured with the Mississippi Scale for Combat-related PTSD ($r(50) = .79, p < .001$) general psychiatric symptomatology as measured by the BSI ($r(50) = .71, p = .001$), general dissociative symptomatology as measured by the DES ($r(30) = .43, p = .008$), and increased dissociative symptomatology to subsequent postmilitary stressful events as measured by the DEQ-M ($r(37) = .76, p = .001$).

When the PTSD patients were examined alone, dissociative states at the time of combat trauma were significantly correlated with current score on the DES ($r(31) = .45, p < .009$, and number of flashbacks since Vietnam ($r(31) = 55, p = .001$), but not with score on the Mississippi Scale or the BSI. There was also a nonsignificant trend toward a relationship between dissociative states at the time of combat trauma and dissociative states in response to postmilitary traumatic events ($r(21) = .40, p = .06$). Dissociative states during postmilitary stressors were correlated with number of flashbacks since Vietnam ($r(21) = .69, p = .004$), but not with score on the DES, BSI, or the Mississippi Scale. There was no correlation in the non-PTSD group between dissociative states at the time of combat-related trauma, DES score, Mississippi or BSI score, number of flashbacks since Vietnam, or dissociative states in response to postmilitary traumatic events.

In addition to higher levels of dissociative symptoms at the time of combat-related and postmilitary traumatic events, there were also higher levels of dissociative symptomatology in PTSD patients relative to non-PTSD patients for premilitary traumatic events ($p < .017$). The magnitude of this elevation in dissociative symptoms, however, was not as great as for combat-related and postmilitary traumatic events (Table 2). We did not specifically plan to measure childhood abuse in this study. However, assessments of abuse were available in 15 PTSD patients using a method previously described (Bremner, Southwick et al., 1993). Patients reporting a history of childhood physical and/or sexual abuse did not have significantly higher levels of dissociation for premilitary trauma ($M = 4.0$, $SD = 2.9$ vs $M = 2.9$, $SD = 4.1$), although the number of subjects for whom assessments were available were limited. In the combat veterans as a whole, there was a nonsignificant trend for a relationship between dissociation during premilitary traumatic events as measured by the DEQ-M and dissociation for combat-related ($r(32) = .33$, $p = .06$) and postmilitary ($r(32) = .34$, $p = .051$) traumatic events. There was no relationship between dissociation during premilitary traumatic events as measured by the DEQ-M and dissociation for combat-related or postmilitary traumatic events in the PTSD patients when examined alone. There was no significant relationship between dissociation during premilitary traumatic events and long-term psychopathology as measured by score on the Mississippi, BSI, and DES in the PTSD patients examined alone.

Discussion

In the current study we found that PTSD patients had higher levels of dissociative states for both combat-related and postmilitary traumatic stressors in comparison to non-PTSD combat controls. In the PTSD patients, level of dissociative state during combat-related trauma was significantly correlated with level of long-term general dissociative symptomatology as measured by score on the DES, as well as number of flashbacks since Vietnam.

We also found a significant correlation between dissociation during combat trauma and long-term psychopathology within the group of Vietnam combat veterans as a whole. Correlations were found for long-term psychopathology in the form of PTSD symptomatology as measured with the Mississippi Scale, general psychopathology as measured with the BSI, and dissociative responses to postmilitary trauma as measured with DEQ-M. These findings are of interest as they related to the theories of Janet. He posited that dissociation during trauma represents a breakdown in the face of trauma, increasing the susceptibility to long-term dissociative psy-

chopathology. Correlations were not significant, however, when patients were broken down into PTSD and non-PTSD subgroups, although there was a trend ($r = .40$; $p = .06$) for the relationship between dissociation with combat trauma and dissociation with postmilitary trauma in the PTSD subgroup. It should be noted that correlations using PTSD plus non-PTSD subgroups may not be appropriate, as these represent distinct populations. However, within-group correlations may underestimate the relationship between variables due to the restriction of range (all PTSD patients were at the upper end of the scale on the DEQ-M for combat-related dissociation). Thus we are limited in the extent to which we can comment definitively on the relationships given our original study design.

It has previously been postulated that dissociation during trauma has a protective effect for the development of subsequent psychopathology. Our data did not support the idea that dissociation is universally protective for the development of psychopathology related to trauma. One might argue that dissociation is an effective defense for moderate stress levels, or alternatively, dissociation represents an effective short-term strategy that is detrimental to long-term functioning. If the first hypothesis were correct, one would expect to find that veterans who experienced a moderate level of stressor and dissociated would end up in the non-PTSD group. In comparison, those veterans who faced a moderate level stressor and did not dissociate should end up in the PTSD group. If the second hypothesis holds, then the opposite arrangement would be expected. In fact, our data are consistent with the second hypothesis. One of the most remarkable findings from this study was the degree to which dissociation during combat trauma separated the PTSD from the non-PTSD groups. Individuals who had the diagnosis of current PTSD typically reported high levels of dissociative symptomatology, whereas those who were exposed to similar magnitude of stressor but without the current diagnosis of PTSD did not experience any appreciable dissociative symptomatology in the vast majority of cases. Our findings therefore do not support the hypothesis that dissociation during trauma has a protective effect on the individual in terms of the development of psychopathology.

We did not find a difference in severity of the stressor, based on an objective observer's rating of the event, between PTSD and non-PTSD combat veterans. This finding suggests that the individual's appraisal and response to the event is a more important determinant of degree of psychopathology following the event than the objectively determined severity of the stressor.

Our findings of higher levels of dissociative symptomatology during premilitary traumatic events among patients with combat-related PTSD relative to patients without PTSD should be interpreted with caution. We

have previously reported higher rates of childhood physical abuse in Vietnam combat veterans with PTSD in comparison to Vietnam combat veterans without PTSD (Bremner, Southwick, et al., 1993). Since there is an association between trauma and dissociation, it is possible that the higher levels of premilitary dissociative symptomatology seen in the PTSD group are secondary to higher levels of traumatic exposure. In the subset of 15 PTSD patients in whom structured assessments of abuse were available there was not a significant difference in premilitary dissociation, although dissociation scores were about 25% higher in the abused subgroup, and larger sample sizes may be able to show a difference. Potential recall bias for premilitary events, or deficits in memory function (Bremner, Scott, et al., 1993) in the PTSD patients, that do not apply a non-PTSD patients, may confound our results. In summary, given the nature of our study design, including the fact that the specific aims of this study did not include an examination of the relationship between childhood trauma and dissociation, any conclusions about childhood dissociation and combat-related PTSD are premature. Future studies should specifically address these questions.

Our findings suggest that the response to trauma may be useful in determining risk for long-term psychopathology. Prospective studies may be indicated to determine if dissociation during trauma can be used as a predictive marker for the development of long-term psychopathology. For example, individuals presenting to a rape clinic could be assessed for dissociative symptoms at the time of the rape. These patients could then be followed over time in order to determine if there is a relationship between level of dissociative symptomatology at the time of the trauma and long-term psychopathology. Such an approach could have considerable clinical utility in directing long-term treatment of traumatized individuals.

Understanding dissociative responses to trauma may also have utility in the treatment of PTSD. Postmilitary stressors, such as family conflicts and the frustrations of daily-life existence, frequently lead through dissociative responses back to the original trauma. If extreme, these situations can result in flashbacks in which the patient acts out the original trauma in a dissociated state. Knowing the history of the trauma and dissociative reactions to the trauma may be useful in dealing with these crisis situations.

Acknowledgments

This study was supported by the National Center for Post-Traumatic Stress Disorder Grant. Sandi Capelli and Valinda Ouelette provided excellent assistance in data collection and processing.

References

Bernstein, E., & Putnam, F. (1986). Development, reliability, and validity of a dissociation scale. *Journal of Nervous and Mental Disease, 174*, 727-735.

Branscomb, L. P. (1991). Dissociation in combat-related posttraumatic stress disorder. *Dissociation, 4*, 13-20.

Braun, B. G. (1984). Towards a theory of multiple personality and other dissociative phenomena. *Psychiatry Clinics of North America, 7*, 171-191.

Bremner, J. D., Scott, T. M., Delaney, R. C., Southwick, S. M. Mason, J. W., Johnson, D. R., Innis, R. B., McCarthy, G., & Charney, D. S. (1993). Deficits in short-term memory in posttraumatic stress disorder. *American Journal of Psychiatry, 150*, 1015-1019.

Bremner, J. D., Southwick, S. M., Brett, E., Fontana, A., Rosenheck, R., & Charney, D. S. (1992). Dissociation and posttraumatic stress disorder in Vietnam combat veterans. *American Journal of Psychiatry, 149*, 328-333.

Bremner, J. D., Southwick, S. M., Johnson, D. R., Yehuda, R., & Charney, D. S. (1993). Childhood physical abuse in combat-related posttraumatic stress disorder. *American Journal of Psychiatry, 150*, 235-239.

Bremner, J. D., Steinberg, M., Southwick, S. M., Johnson, D. R., & Charney, D. S. (1993). Use of the Structured Clinical Interview for DSMIV-Dissociative Disorders for systematic assessment of dissociative symptoms in posttraumatic stress disorder. *American Journal of Psychiatry, 150*, 1011-1014.

Cardeña, E., & Spiegel D. (1989). Dissociative reactions to the San Francisco Bay Area earthquake of 1989. *American Journal of Psychiatry, 150*, 474-478.

Carlson, E. B., & Rosser-Hogan, R. (1991). Trauma experiences, posttraumatic stress, dissociation, and depression in Cambodian refugees. *American Journal of Psychiatry, 148*, 1548-1552.

Chu, J. A., & Dill, D. L. (1990). Dissociative symptoms in relation to childhood physical and sexual abuse. *American Journal of Psychiatry, 147*, 887-892.

Derogatis, L. R., & Spencer, P. M. (1983). *The Brief Symptom Inventory.* Towson, MD: Clinical Psychometric Research.

Geleerd, E. R., Hacker, F. J., & Rapaport, D. (1945). Contributions to the study of amnesia and allied conditions. *Psychological Quarterly, 14*, 199-220.

Holen, A. (1993). The North Sea oil rig disaster. In J. P. Wilson & B. Raphael (Eds.), *International handbook of traumatic stress syndromes* (pp. 471-478). New York: Plenum.

Janet, P. (1889). *L'Automatisme psychologique.* Paris: Balliere.

Janet, P. (1920). *The major symptoms of hysteria.* New York: Macmillan Co.

Keane, T. M., Caddell, J. M., & Taylor, K. L. (1988). Mississippi Scale for Combat-Related Post-traumatic Stress Disorder. Three studies in reliability and validity. *Journal of Consulting and Clinical Psychology, 56*, 85-90.

Kolb, L. A. (1984). The posttraumatic stress disorder of combat: a subgroup with a conditioned emotional response. *Military Medicine, 1'93*, 237-243.

Koopman, C., Classen, C., & Spiegel, D. (1994). Predictors of posttraumatic stress symptoms among survivors of the Oakland/Berkeley, Calif., firestorm. *American Journal of Psychiatry, 151*, 888-894.

Krystal, H. (1969). *Massive psychic trauma.* New York: International Universities Press.

Lowenstein, R., & Putnam, F. (1988). A comparison study of dissociative symptoms in patients with complex partial seizures, MPD, and PTSD. *Dissociation, 1*, 17-23.

Marmar, C. R., Weiss, D. S., Schlenger, D. S., Fairbank, J. A., Jordan, B. K. Kulka, R. A., & Hough, R. L. (1994). Peritraumatic dissociation and posttraumatic stress in male Vietnam theater veterans. *American Journal of Psychiatry, 151*, 902-907.

Meninger, K. (1963). *The vital balance.* New York: Viking.

Nemiah, J. C. (1989). Janet redivivus: The centenary of l'automatisme psychologique. *American Journal of Psychiatry, 146*, 1527-1530.

Putnam, F. W. (1989). Pierre Janet and modern views of dissociation. *Journal of Traumatic Stress, 2*, 413-429.

Putnam, F. W., Guroff, J. J., Silberman, E. K., Barban, L., & Post, R. M. (1986). The clinical phenomenology of multiple personality disorder: a review of 100 recent cases. *Journal of Clinical Psychiatry, 47*, 285-293.

Riether, A. M., & Stoudemire, A. (1988). Psychogenic fugue state: A review. *Southern Medical Journal, 81*, 568-571.

Sanders, B., & Giolas, M. H. (1991). Dissociation and childhood trauma in psychologically disturbed adolescents. *American Journal of Psychiatry, 148*, 50-54.

Spiegel, D. (1984). Multiple personality as a posttraumatic stress disorder. *Psychiatric Clinics of North America, 7*, 101-110.

Spiegel, D., & Cardeña, E. (1991). Disintegrated experience: the dissociative disorders revisited. *Journal of Abnormal Psychology, 100*, 366-378.

Spiegel, D., Hunt, T., & Dondershine, H. E. (1988). Dissociation and hypnotizability in posttraumatic stress disorder. *American Journal of Psychiatry, 145*, 301-305.

Spitzer, R. L., Williams, J. B. W., & Gibbon, M. (1987). Structured Clinical Interview for DSMIIIR. New York: New York State Psychiatric Institute, Biometrics Research Dept.

Stutman, R., & Bliss, E. (1985). Posttraumatic stress disorder, hypnotizability, and imagery. *American Journal of Psychiatry, 142*, 741-743.

van der Hart, O., & Horst, R. (1989). The dissociation theory of Pierre Janet. *Journal of Traumatic Stress, 2*, 397-412.

van der Kolk, B. A., & van der Hart, O. (1989). Pierre Janet and the breakdown of adaptation in psychological trauma. *American Journal of Psychiatry, 146*, 12-16.