

World Assumptions and Combat-Related Posttraumatic Stress Disorder

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ABSTRACT. The authors examined the association between (a) personal world assumptions and (b) combat stress reactions (CSRs), posttraumatic stress disorder (PTSD), and PTSD's course among three groups of Israeli veterans: 109 veterans who suffered from CSR on the battlefield, 98 decorated veterans, and 189 control participants. Participants completed standardized questionnaires that measured PTSD and world assumption. Both CSR and chronic PTSD were associated with lower levels of self-worth and beliefs about the benevolence of people. In addition, the authors found a linear association between self-worth perceptions and levels of mental status. The authors examined the results of the study considering the extraordinary characteristics and meaning of war.

Key words: combat stress reaction (CSR), posttraumatic stress disorder (PTSD), world assumptions

THE PSYCHOLOGICAL AFTERMATH of a traumatic event is multi-dimensional and may be manifested by cognitive, somatic, psychiatric, and functional dysfunction (Shalev, 2001). Among long-term sequelae that investigators have often observed in victims of traumatic events is the challenging, and even the shattering, of their basic cognitive schemes regarding the world and themselves (Janoff-Bulman, 1989), including a feeling of invulnerability, the tendency to see the world as meaningful, and the tendency to see themselves and others as worthy (Janoff-Bulman, 1985).

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In the present study, we examined war-induced trauma and assessed the association between (a) world assumptions and (b) combat stress reactions (CSRs), posttraumatic stress disorder (PTSD), and PTSD's course among three groups of Israeli veterans.

CSR, PTSD, and Recovery

Human reactions to war vary considerably. Although most combatants cope adequately, an estimated 10–30% of all veterans (Belenky, Noy, & Solomon, 1987; Glass, 1973) are unable to deal with the threatening stimuli and exhibit immediate psychological breakdown that is known as *combat stress reaction* (CSR).

CSR is labile and polymorphous. As such, its appearance in time of actual combat means it can be recognized but not analyzed then. It is characterized by high variability and rapid changes in manifestations (Solomon, 1993) that include restlessness, psychomotor deficiencies, withdrawal, increased activity of the sympathetic nervous system, stuttering, confusion, nausea, vomiting, and paranoid responses (Bartemeier, 1946; Grinker & Spiegel, 1945; Solomon, 1993). The many forms and manifestations of the clinical pattern and the difficulties in on-the-spot diagnosing on the battlefield have led most armies to use a functional definition. Accordingly, the defining feature is that the soldier ceases to be a part of the battle, no longer functions as a trained combatant, and acts in a manner that endangers himself and his fellow combatants (Kormos, 1978).

Whereas CSR veterans are at one end of the wartime performance continuum, at the other end are combatants who exhibit exceptional performance and are officially recognized as war heroes. Decorated veterans are combatants whose exceptionally high self-sacrifice, persistence, and leadership distinguish them from their peers (Blake & Butler, 1976; Gal, 1987). Little is known about them as a group, although some researchers have suggested that they are not necessarily fearless but act bravely despite their fear (McMillan & Rachman, 1987; Rachman, 1990).

Similar variability has been found in long-term reactions to combat. At the end of a war, most combatants readjust to their civilian lives without serious pathology. But 15–40% develop PTSD. PTSD is marked by a variety of intrusive, avoidance, and hyper-arousal symptoms and is often accompanied by heightened anxiety, depression, hostility, and somatic symptoms (Shalev, 2001) and difficulties in functioning (Solomon, 1993). Of those who develop PTSD, some recover within a brief period of time, whereas others have the condition chronically (Kulka et al., 1990). In some cases, the onset is delayed, and PTSD is diagnosed after a quiescent period (*Diagnostic and statistical manual of mental disorders*, 4th ed., American Psychiatric Association, 1994).

World Assumptions and Traumatic Events

Janoff-Bulman (1989) provided a theoretical and empirical framework for

understanding individuals' beliefs about the world. She distinguished three categories of basic assumptions by which an individual construes reality: benevolence of the world, meaningfulness of the world, and self-worth.

Benevolence of the world concerns the degree to which one views the impersonal world (e.g., events) and people positively or negatively. The more positive one's assumptions are in this category, the more one expects good things, rather than bad things, to happen, and the more one views people as basically good, kind, helpful, and caring.

Meaningfulness of the world refers to people's beliefs about the distribution of good and bad outcomes. This category can be explained in terms of three principles: (a) the principle of justice—people deserve what they get and get what they deserve; (b) the principle of the controllability of outcomes—people can directly control their world through their own behavior and minimize their vulnerability by engaging in the proper behaviors (e.g., caution, foresight); and (c) the principle of randomness—there is no way of making sense of why particular events happen to particular people, and this seems to be a matter of chance alone.

Self-worth involves three assumptions about the self, which parallel the assumptions about the world. These pertain to one's self-worth, self-controllability, and luck. One's degree of *self-worth* is the degree to which one perceives oneself as a good, decent, and moral person. One's degree of *self-controllability* is the degree to which one views oneself as engaging in right behaviors (e.g., precautionary, appropriate behaviors) to minimize one's vulnerability to negative outcomes. One's belief in *luck* entails the belief that one is somehow protected from ill fortune, although one cannot point to anything in one's character or behavior to account for this protection.

All in all, there are eight primary assumptions in the conceptual system: the assumptions of the benevolence of the world, the benevolence of people, justice, controllability, the randomness of the world, self-worth, self-controllability, and luck.

Past researchers have assessed the beliefs of individuals who had been exposed to a range of stressful and traumatic events. Janoff-Bulman (1989) found that college students who had been exposed to traumatic stress perceived themselves more negatively, perceived the world as less benevolent (Janoff-Bulman), and believed in a less meaningful world (Schwartzberg & Janoff-Bulman, 1991) than did students who had not experienced trauma. In a similar vein, Magwaza (1999) found that traumatized South African adults perceived the world as less meaningful and the environment as less benevolent than did a nontraumatized group.

The aforementioned studies examined the impact of exposure to trauma on one's world assumptions. However, the present researchers could not allocate studies that examined the associations between acute responses to traumatic stress and world assumptions.

In addition, few studies have examined the association between PTSD and world assumptions. In one study, Solomon, Iancu, and Tyano (1997) examined the cognitive schemas of adolescents who had survived a bus-train collision 7 years

earlier. The findings showed that lower perceptions of benevolence of the world, benevolence of people, luck, and self-worth were associated with higher levels of PTSD symptoms. In a different study, Foa, Ehlers, Clark, Tolin, and Orsillo (1999) found that individuals with and without PTSD differed in their perceptions of benevolence of the world, luck, and self-control. Individuals with PTSD reported lower levels of these assumptions.

Less clear is what happens to the world assumptions of trauma survivors if and when they recover from PTSD. Recovery connotes health and suggests a return to one's previous condition. But recovery is somewhat problematic with respect to trauma victims who do not return to their pretraumatic state. Janoff-Bulman (1989) argued that from the perspective of their inner worlds, victims recover not when they return to their prior assumptive world but when they reestablish an integrated, comfortable, assumptive world that incorporates their traumatic experience. That argument requires further investigation.

The present study examines the associations between (a) world assumptions and (b) CSR—of CSR veterans, decorated veterans, and control participants—PTSD, and the course of PTSD, specifically addressing the connection and the distinction between immediate reactions and long-term reactions and the changes in world assumptions between the two. The present study examines a wide spectrum of human functioning under stress, ranging from failure to function, to normative performance, and to exceptional performance. The stress literature tends to focus on either normative fulfillment of or failure to fulfill tasks under stress, and opportunities to operationalize and study exceptional performance, such as those used in the present study, are rare.

We examined the following hypotheses:

Hypothesis 1: CSR veterans will have world assumptions that are more negative than those of the control group, and the latter will have more negative assumptions than decorated veterans of war.

Hypothesis 2: Participants with PTSD will have world assumptions that are more negative than those of participants with PTSD.

Hypothesis 3: Participants who developed CSR on the battlefield and later developed PTSD will have world assumptions that are more negative than those of participants who either had CSR and recovered or who developed delayed PTSD after the war.

Method

Participants

Participants were 396 Israeli veterans of the 1973 Yom Kippur War. The sample was composed of three groups of men only: CSR veterans, decorated veterans, and control participants.

CSR veterans. The research team obtained the medical records of a treatment facility where clinicians diagnosed and treated 178 CSR veterans during the Yom Kippur War. Of these, 109 participated in the study, constituting a 61% response rate.

Decorated veterans. The Israeli Defense Force awarded medals for bravery to 150 combatants of the Yom Kippur War. Of these, 16 were abroad at the time of the present study. Of the remaining 134, 98 participated in the present study, constituting a 73% response rate.

Control participants. We sampled a control group of 280 combat veterans of the Yom Kippur War from the Israeli Defense Force's computerized data banks. These veterans fought in the war but neither sustained recognized acute stress reactions nor were decorated. At the time of the present research, 20 veterans were abroad, and 5 were deceased. Of the remaining 255, 189 participated in the present study, constituting a 74% response rate.

Table 1 presents the distribution of the sociodemographic variables among the groups.

As Table 1 shows, the groups differed significantly in ethnic background, educational background, and military rank during the war. Most of the decorated veterans (75%) had been born to native Israeli fathers, the majority was high-school graduates, and over half of them were officers. In addition, significant age differences between the groups were found, $F(2, 370) = 30.71, p < .001$. CSR veterans ($M = 25.27, SD = 3.85$) and decorated veterans ($M = 26.79, SD = 6.96$) were older during the war than the controls ($M = 22.30, SD = 3.60$).

We considered all these background differences in analyzing the results.

Measures

Post Traumatic Stress Disorder Inventory. The Post Traumatic Stress Disorder Inventory (PTSD Inventory) is a self-report scale that Solomon (1988a) developed and based on the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., revised, American Psychiatric Association, 1987). The questionnaire consists of 17 statements that correspond to the 17 PTSD symptoms listed in the *DSM-III-R* (for example, "recurrent distressing dreams of the war" and "efforts to avoid thoughts or feelings associated with the war").

For each statement, participants were asked to indicate (by "yes" or "no") both whether they experienced the symptom "sometimes since the war" (indicating PTSD in the past) and whether they experienced it "during the last month" (indicating PTSD in the present). On the basis of the number of PTSD symptoms reported, and according to *DSM-III-R* (1987) criteria, we classified participants into one of the four following categories:

1. *Chronic:* the participant suffered from PTSD both in the past and in the present ($n = 18$).

TABLE 1. Distribution of Sociodemographic Variables by Battlefield Status

Variable	CSR veterans		Decorated veterans		Control participants		χ^2
	N	%	N	%	N	%	
<i>Ethnic origin</i>							
Israel	58	52	75	81	108	59	
Asia/Africa	47	42	12	13	63	34	
U.S./Europe	7	6	6	6	13	7	$\chi^2(4, N = 389) = 22.11^*$
<i>Education</i>							
Less than 12 years	46	41	13	14	47	25	
12 years and more	65	59	87	86	136	75	$\chi^2(2, N = 394) = 19.70^*$
<i>Military rank</i>							
Private	88	81	31	34	116	65	
Corporal/Sergeant	9	8	4	3	18	10	
1st/2nd Lt.	10	9	36	39	41	23	
Lt. Col./Major	2	2	21	22	4	2	$\chi^2(8, N = 380) = 83.39^*$

Note. CSR = combat stress reaction. Lt. = Lieutenant; Lt. Col. = Lieutenant Colonel.

* $p < .001$.

2. *Delayed*: the participant did not have PTSD in the past, but was diagnosed in the present ($n = 5$).

3. *Recovered*: the participant had PTSD in the past but not in the present ($n = 52$).

4. *Unafflicted*: the participant has never had PTSD, past or present ($n = 298$).

Solomon (1988a) found the scale to have a high convergent validity when compared with diagnoses that clinicians had made on the basis of structured clinical interviews (Solomon, 1988a). Internal consistency for PTSD in the past was 0.86 and for PTSD in the present was 0.87.

World Assumptions Scale. Investigators use the World Assumptions Scale, a self-report scale, to examine participants' cognitive schemes about themselves and their world. The 32-item questionnaire consists of eight subscales with four statements in each. The subscales follow Janoff-Bulman's (1989) categories: benevolence of the world, benevolence of people, beliefs in a just world, control, randomness, self-worth, self-control, and luck. Each statement refers to one of the schemes, and participants are asked to indicate their beliefs on a 6-point Likert-type scale ranging from 1 = *strongly disagree* to 6 = *strongly agree*.

In the present study, we calculated subscale scores by summing responses across the items, higher scores indicating higher beliefs in the assumption that we were measuring. Cronbach's alpha internal reliability ranged from 0.68 to 0.86 (Janoff-Bulman, 1989) for the English version and from .66 to .76 for the present sample.

Procedures

We sent participants letters explaining the aim of the present study and asking them to participate in it. A few days after the letters were sent, we made telephone calls to all potential participants, again explaining the purpose of the present study and scheduling their assessments. Participants were seated in groups of 30–50 while filling out a series of questionnaires. Prior to receiving the questionnaires, the participants signed a consent form that guaranteed them confidentiality.

Results

Associations Between Wartime Performance and World Assumptions

First, we examined the association of wartime performance with world assumptions. We conducted a multivariate analysis of covariance (MANCOVA) with group (CSR veterans, decorated veterans, and controls) as the independent variable; the eight subscales of world assumption as the dependent variables; and rank, age, and education as covariates. The analysis revealed almost overall significant effect, $F(8, 307) = 1.77, p = 0.08$.

Subsequent univariate analysis of variance (ANOVA) for each of the eight

world assumption subscales revealed significant group differences in beliefs about the benevolence of people, $F(2, 318) = 4.59, p = 0.01$. A Duncan contrast that we performed to find the source of the group differences revealed that CSR veterans differed significantly from the two other groups. CSR veterans tended to report less belief in the benevolence of people ($M = 16.29, SD = 3.35$) than did controls ($M = 17.38, SD = 3.05$) and decorated casualties ($M = 17.33, SD = 2.79$).

Associations Between PTSD Status in The Past and World Assumptions

We next assessed the association between PTSD status in the past and world assumptions. We conducted a MANCOVA with PTSD status in the past as the independent variable; the eight subscales of world assumptions as the dependent variables; and rank, age, and education as covariates. The analysis revealed significant overall effect, $F(8, 307) = 3.36, p < 0.001$. A subsequent univariate ANOVA for each of the eight world assumption subscales revealed significant group differences in beliefs about the benevolence of people, $F(1, 318) = 4.22, p < 0.05$, and self-worth, $F(1, 318) = 23.87, p < 0.001$. The differences in beliefs about benevolence of the world, $F(1, 318) = 3.38, p = 0.07$, and randomness, $F(1, 318) = 3.22, p = 0.07$, almost reached significance. Table 2 presents the means and standard deviations of world assumptions as a function of PTSD status in the past.

As seen in Table 2, participants who had PTSD in the past perceived both others and themselves less favorably than did participants without PTSD. A similar trend can be seen regarding the benevolence of the world. As for randomness, veterans with PTSD perceived the world as more random than did veterans without PTSD.

TABLE 2. Means and Standard Deviations of World Assumptions Subscales as a Function of PTSD Status in the Past

Subscale	PTSD in the past (<i>n</i> = 59)		No PTSD in the past (<i>n</i> = 260)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Benevolence of world	14.71	3.81	15.76	3.85
Benevolence of people	16.05	3.54	17.26	2.97
Controllability	15.97	3.98	16.02	3.76
Self-control	17.42	3.66	17.23	3.34
Randomness	15.32	3.64	14.05	4.08
Just world	11.66	3.47	10.93	3.94
Luck	13.52	3.70	14.40	4.07
Self-worth	17.44	3.74	19.76	2.70

Note. PTSD = posttraumatic stress disorder.

Associations Between PTSD Status in the Present and World Assumptions

We performed the following step to assess the association between PTSD status in the present and world assumptions. We conducted a MANCOVA with PTSD in the present as the independent variable; the eight subscales of world assumptions as the dependent variables; and rank, age, and education as covariates. The analysis revealed significant overall effect, $F(8, 307) = 4.54, p < 0.001$. A subsequent univariate ANOVA for each of the eight world assumption subscales revealed significant group differences in self-worth, $F(1, 318) = 34.13, p < 0.001$. The differences in randomness, $F(1, 318) = 3.26, p = 0.07$, almost reached significance. Participants who suffered from PTSD perceived themselves as having lower levels of self-worth ($M = 15.52, SD = 4.28$) than did participants who did not suffer from PTSD ($M = 19.60, SD = 2.77$). In addition, participants with PTSD perceived the world as more random ($M = 16.05, SD = 3.76$) than did participants who did not suffer from PTSD ($M = 14.16, SD = 4.03$).

Associations Between Course of PTSD and World Assumptions

Finally, we examined the association between the course of PTSD and world assumptions. Because of small cell sizes, we performed eight separate ANCOVAs, each with one of the eight subscales of world assumptions as a dependent variable, the course of PTSD (chronic PTSD, improved, delayed, unafflicted) as the independent variable; and age, rank, and education as covariates. A significant main effect was found for self-worth, $F(3, 351) = 17.58, p < 0.001$. A Scheffé contrast that we performed to find the source of the group differences revealed that the four groups were significantly different from each other. The delayed group ($M = 14.20, SD = 5.17$) had the lowest self-worth, the chronic group ($M = 15.94, SD = 3.94$) was higher in self-worth than the delayed group, the improved veterans group ($M = 18.06, SD = 3.44$) was higher than the chronic group, and the unafflicted group ($M = 19.89, SD = 2.64$) was highest.

Discussion

Our examination of the continuum of functioning indicates that veterans who had sustained an acute psychological breakdown on the battlefield had less faith at the time of the study in the benevolence of people than did the control veterans and the decorated veterans. In a similar vein, those veterans who had PTSD in the past perceived people as less benevolent than did veterans who did not have PTSD at the time of the study.

Although we cannot conduct a longitudinal analysis of the present data, it seems that the first assumption that exposure to combat disturbs is the perception of the benevolence of people. Possible evidence for this can be found in

the clinical and empirical literature that portrays and explains the development of mental reactions during battle and afterward.

Early literature describing stress reactions pointed out that the connection between a soldier and his unit is one of the best defenses against floating anxiety (Grinker & Spiegel, 1945; Kardiner & Spiegel, 1947). A number of studies have shown that high morale and cohesiveness among unit members are connected to lower rates of CSRs, whereas low morale and cohesiveness are connected to higher rates of CSRs (Steiner & Neumann, 1978).

A number of sources indicate that besides the objective cohesiveness of the unit, the critical factor is the veteran's subjective perception of his belonging to his unit and being a part of it (e.g., Solomon, Mikulincer, & Hobfoll, 1986). Dasberg (1976) reported that the predominant feeling in soldiers who suffered from CSR was a deep feeling that they were all alone both in combat and after it, that they had felt deserted in combat, that all of their past and present relations had been severed in combat, and that everything had become meaningless.

It might be that the feelings that the CSR veteran experienced in combat that made it difficult for him to handle the battle stay with him afterward. He continues to feel lonely and unable to depend on others, up to the point of perceiving them as less benevolent and responsible and also perceiving them as to blame for his situation.

The differential views that CSR veterans and decorated heroes have about the benevolence of people may also reflect their different experiences at homecoming. Previous findings have shown that CSR veterans got negative feedback at homecoming (Solomon, 1993). Thus, CSR veterans exhibit erratic conduct at home and tend to express anger and withdrawal, and their ability to express affection and maintain intimacy is constricted. These factors make it difficult for family members to be supportive and also hinder the victims' ability to incorporate what support they did get (Solomon, 1988b). Both at home and in the wider social network, the CSR casualty is likely to encounter a certain wariness as well as overt and unspoken criticism. Conversely, the war hero generally receives a much warmer welcome, with strong support from family and the wider social network. Thus, after the war, the heroes' high belief in the benevolence of people would seem to reflect that more positive experience.

In the present results, self-worth perception is consistently associated with the mental status of the veterans. Veterans with PTSD in the past, PTSD in the present, or chronic PTSD have lower self-worth than do veterans without PTSD. Furthermore, our closer scrutiny of the data revealed that self-worth is linearly associated with level of psychological impairment. The most severely afflicted individuals are individuals with delayed-onset PTSD who coped effectively on the battlefield and whose severe distress became apparent only after a latent period. Next in severity of symptoms are individuals who suffered from both an antecedent CSR and PTSD (chronic group). Somewhat more resilient are individuals who broke down on the battlefield; although their symptoms decreased

and their situation improved, their CSR left a mark of vulnerability (Solomon, 1993). Finally, the most resilient group of veterans is composed of those who neither broke down on the battlefield nor suffered from PTSD.

Sense of self-worth is the combined product of (a) the individual's own judgment of his performance, abilities, and qualities against a personal standard of values and (b) the judgment of society. The veteran with PTSD, who has a low sense of self-worth, may be seen as the product of his own self-criticism for failure to live up to a collective internalized ideal of the tough soldier (Lieblich, 1983). This line of reasoning is consistent with Bednar, Wells, and Peterson's (1989) proposal that social feedback makes an impact only against the backdrop of personal feedback and only so long as it is consistent with that feedback.

In the present study, veterans did not endorse all measures of the world assumptions scale equally. The dimensions of self-worth and benevolence of people were clearly more strongly affected than the dimensions of controllability and self-control. These findings are consistent with some previous studies (Janoff-Bulman, 1989; Magwaza, 1999) yet inconsistent with others (e.g., Solomon, Iancu, & Tyano, 1997). The specific features of the traumatic events assessed in the various studies may explain these inconsistent findings. Whereas in the present study, the present investigators assessed world assumptions among men who engaged in combat, Solomon, Iancu, and Tyano examined the effects of a train-bus collision. Combat, one of the most brutal expressions of human aggression, negates basic rules that govern peacetime culture. Combatants are allowed to inflict death, injury, and suffering on other human beings. War also subjects combatants to the risks of being killed or maimed. Survivors of intentional, human-induced victimization confront the existence of evil and question the trustworthiness of people. They also question their own role in the victimization. In battle, the differentiation between the roles is further complicated, as the same person is at once victim and perpetrator, who comes to realize that he, like his enemy, commits atrocities and harm. Evil in this human interaction is associated both with other people as reflected in the malevolence of others (enemy and comrades alike) and with one's self as reflected in low self-esteem. The different results in the present study and the study by Solomon, Iancu, and Tyano (1997) suggest that the unique dimensions of the traumatic events have differential effects on the cognitive outcomes of psychic traumatization of combat.

The present study shows that people who have developed PTSD perceive the world differently than do those who have experienced a stressful situation but did not develop a mental disorder. However, the nature of the relationship between the emotional and cognitive outcomes of trauma is still unclear.

To this date, there have been no prospective, long-term studies in which investigators examine the change in a person's world assumptions as a result of exposure to trauma. It is consequently difficult to assess the extent to which emotional distress and more negative world assumptions are distinct outcomes of exposure to trauma. Similarly, it is difficult to assess their order and the extent to

which they are reciprocal outcomes. Furthermore, we cannot be sure that emotionally distressed persons who show negative world assumptions following trauma did not hold negative assumptions prior to the traumatic event. On the one hand, Foa et al. (1999) claimed that persons who had *rigid* world assumptions, which are strongly negative or strongly positive, before the trauma are more vulnerable than others to PTSD. On the other hand, two studies (Foa et al.; Wickie & Marwit, 2000) have shown that victims of deliberate human-inflicted traumatic events held more negative assumptions after the events than people exposed to natural disasters or accidents. Wickie and Marwit found that parents whose children were murdered had more negative assumptions about the world afterward than did parents whose children died as a result of an accident. Similarly, Foa et al. found that people who were exposed to a deliberate human-inflicted traumatic event reported feelings of decreased control, self-control, and luck relative to people who were involved in an accident. These findings strongly suggest that even if a trauma sufferer's prior assumptions matter, the traumatic experience itself has a negative effect on his or her world assumptions.

The present study is based on a retrospective study design. Yet, it does not allow us to draw casual inferences and to conclude that participating in war caused the changes that we observed in PTSD veterans. Possibly, individuals with certain assumptions about the world were more vulnerable to the impact of participating in the war. In addition, it is possible that the PTSD veterans experienced other difficult events after the war that brought about the disorder, and the source of the consequences is not necessarily the war alone. However, beyond causality, we believe that the practical meaning of our findings suggests that the PTSD person not only suffers from the specific symptoms of PTSD, but also perceives himself, his family, and his friends in less positive terms, yielding a perception that actually has a negative effect on the quality of his life.

The understanding and treatment of trauma needs further studies, and these should examine the changes in one's world assumptions following traumatic events and at the same time distinguish between one's direct exposure to trauma, development of acute stress reactions, and development of long-term reactions. In addition, investigators should use longitudinal prospective designs that enable tracking of the process and the relationship between the emotional consequences of exposure to traumatic events and the cognitive consequences.

REFERENCES

- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., revised). Washington, DC: Author.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Bartemeier, L. H. (1946). Combat exhaustion. *Journal of Nervous and Mental Disease*, *104*, 359-425.
- Bednar, R. L., Wells, M. G., & Peterson, S. R. (1989). *Self-esteem: Paradoxes and innovations in clinical theory and practice*. Washington, DC: American Psychiatric Association.

- Belenky, G. L., Noy, S., & Solomon, Z. (1987). Battle stress, morale, cohesion, combat effectiveness, heroism and psychiatric casualties: The Israeli experience. In G. L. Belenky (Ed.), *Contemporary studies in combat psychiatry* (pp. 11–20). Westport, CT: Green Greenwood Press.
- Blake, J. A., & Butler, S. (1976). The medal of honor structure in the U.S. military. *The Sociological Quarterly, 17*, 561–567.
- Dasberg, H. (1976). Belonging and loneliness in relation to mental breakdown in battle. *The Israel Annals of Psychiatry and Related Disciplines, 14*, 307–321.
- Foa, E. B., Ehlers, A., Clark, D. M., Tolin, D. F., & Orsillo, S. M. (1999). The posttraumatic cognition's inventory (PTCI) development and validation. *Psychological Assessment, 11*, 303–314.
- Gal, R. (1987). Combat stress as an opportunity: The case of heroism. In G. L. Belenky (Ed.), *Contemporary studies in combat psychiatry* (pp. 31–46). Westport, CT: Green Greenwood Press.
- Glass, A. J. (1973). Lessons learned. In W. S. Mullins & A. J. Glass (Eds.), *Neuropsychiatry in World War II*. Washington, DC: U.S. Government Printing Office.
- Grinker, R. P., & Spiegel, J. P. (1945). *Men under stress*. Philadelphia: Blakistan.
- Janoff-Bulman, R. (1985). The aftermath of victimization: Rebuilding shattered assumptions. In C. R. Figley (Ed.), *Trauma and its wake: The study and treatment of post-traumatic stress disorder* (pp. 15–35). New York: Brunner/Mazel.
- Janoff-Bulman, R. (1989). Assumptive worlds and the stress of traumatic events: Applications of the schema construct. *Social Cognition, 7*, 113–136.
- Kardiner, A., & Spiegel, H. (1947). *War, stress and neurotic illness*. New York: Hoeber.
- Kormos, H. R. (1978). The nature of combat stress. In C. R. Figley (Ed.), *Stress disorders among Vietnam veterans* (pp. 3–22). New York: Brunner/Mazel.
- Kulka, R. A., Schlenger, W. E., Fairbank, J. A., Hough, R. L., Jordan, B. K., Marmar, C. R., & Weiss, D. S. (1990). *Trauma and the Vietnam War generation: Report of finding from the national Vietnam veterans readjustment study*. New York: Brunner/Mazel.
- Lieblich, A. (1983). Between strength and toughness. In S. Breznitz (Ed.), *Stress in Israel* (pp. 39–65). New York: Van Nostard Reinhold.
- Magwaza, A. S. (1999). Assumptive world of traumatized South African adults. *The Journal of Social Psychology, 139*, 622–630.
- McMillan, T. M., & Rachman, S. J. (1987). Fearlessness and courage: A laboratory study of paratrooper veterans of the Falklands War. *British Journal of Psychology, 78*, 375–383.
- Rachman, S. J. (1990). *Fear and courage*. New York: W. E. Freeman.
- Schwartzberg, S. S., & Janoff-Bulman, R. (1991). Grief and the search for meaning: Exploring the assumptive worlds of bereaved college students. *Journal of Social and Clinical Psychology, 10*, 270–288.
- Shalev, A. Y. (2001). What is posttraumatic stress disorder? *Journal of Clinical Psychiatry, 62*, 4–10.
- Solomon, Z. (1988a). Convergent validity of posttraumatic stress disorder (PTSD) diagnosis: Self-report and clinical assessment. *Israel Journal of Psychiatry and Related Sciences, 25*, 46–55.
- Solomon, Z. (1988b). The effect of combat-related posttraumatic stress disorder on the family. *Psychiatry: Journal for the Study of Interpersonal Processes, 51*, 323–329.
- Solomon, Z. (1993). *Combat stress reaction: The enduring toll of war*. New York: Plenum.
- Solomon, Z., Iancu, I., & Tyano, S. (1997). World assumptions following disaster. *Journal of Applied Social Psychology, 27*, 1785–1798.
- Solomon, Z., Mikulincer, M., & Hobfoll, S. (1986). Effects of social support and battle intensity on loneliness and breakdown during combat. *Journal of Personality and Social Psychology, 51*, 1269–1277.

Steiner, M., & Neumann, M. (1978). Traumatic neurosis and social support in the Yom Kippur war returnees. *Military Medicine*, *143*, 866–868.

Wickie, S. K., & Marwit, S. J. (2000). Assumptive world views and the grief reactions of parents of murdered children. *Omega*, *42*, 101–113.

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