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# COPING WITH TRAUMATIC STRESS

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The qualitative literature on coping with trauma is among the most fascinating reading in psychology. Bettelheim's (1943) account of his personal experiences and research in Nazi concentration camps is a prime example. His descriptions of how psychological reactions changed depending upon the phase of the experience, the sources of individual differences in appraisal and coping, and how the use of coping and defense mechanisms contributed to survival in this extreme environment presaged much of the current literature on coping with trauma. In the past decade, researchers have begun to conduct more systematic studies in this area. Kahana, Kahana, and their colleagues (1988) provide an excellent overview of the general field of coping research, especially the distinction between problem- and emotion-focused coping, and how findings from the trauma literature fit into that framework. The purpose of this article is to review some of the more recent developments and controversies in the general coping literature, then address the importance of these for coping with trauma.

*Recent Controversies in the Coping Literature.* Lazarus and Folkman (1984) define coping as behaviors and cognitions that individuals utilize to manage a stressful situation and the attendant negative emotions. A key element is how individuals appraise both the stressful situation and their resources to cope with the problem. Stressful appraisals include whether the situation involves threat, harm, and/or loss, and are a function of both the person (beliefs, values, commitments, and personal preferences) and the situation (e.g., its controllability). As Hobfall (1989) pointed out, coping resources can include material goods, psychological resources such as coping skills, and social support.

Lazarus (1993) examined a key controversy in the coping area, namely, whether researchers should assess coping styles or coping strategies, also termed coping processes. Coping styles are thought to be relatively stable characteristics of individuals based upon personality traits. These styles are generally divided into two basic types, approach and avoidance, also termed blunting and monitoring or repression/sensitization. Roth and Cohen (1986) characterized approach styles as attempts to manage the problem, while avoidant styles ignore the problem and focus on emotions. In general, approach coping is associated with better outcomes, while avoidant coping seems to increase distress. In contrast, the coping strategies approach emphasizes that coping is a flexible process which changes with environmental demands and fluctuates over time. Further, the outcome of any particular strategy may vary depending upon the nature of the situation.

Advocates of coping styles such as Endler and Parker (1990) criticize process measures as showing relatively poor reliability over time and varying factor structures across situations. Measures of coping styles tend to have much better psychometric properties, including superior reliability and stable factor structures, which is not surprising, given that these are basically personality assessments. In contrast, process measures are supposed to assess change over time, and thus it is not surprising that these psychometrics (which, after all, index stability) are poorer.

Proponents of the process approach have shown unequivocally that people vary in their use of coping strategies. Folkman and Lazarus (1985) showed that students taking a midterm changed their use of coping strategies depending upon the fluctuating demands of a situation (i.e., before, during, and after the exam). In a study of women coping with breast cancer, Dunkel-Schetter et al. (1992) showed that women generally use a wide variety of strategies and that most did not exhibit a characteristic style. Further, Bolger's (1990) study of premed students taking MCATS showed that immediate coping processes were more important than personality characteristics in predicting outcomes; personality had only indirect effects through its influence on the use of coping strategies. Finally, in a large community survey of coping with stress, Mattlin and colleagues (1990) demonstrated that the efficacy of approach/avoidant strategies varies as a function of the type of problem. Avoidant strategies were associated with good outcomes in uncontrollable situations such as bereavement, but were associated with poorer outcomes with controllable stressors.

Unfortunately, many studies blur this distinction between styles and strategies, as this distinction often rests primarily in the instructions on the instrument rather than the specific items. If researchers ask people to say how they generally cope, or do not tie this request to a specific problem or episode, they are measuring styles rather than processes. Only if the researchers instruct the respondents to think of a specific episode are they actually assessing coping processes. Carver et al.'s (1989) COPE instrument makes this explicit by providing two different instructions, one assessing styles and the other strategies. (Ideally, process studies also have multiple

assessments of coping, but this happens all too rarely.)

Another problem concerns the generalizability and specificity of strategies. Global items that can be applied across situations may be too vague to fit specific situations and thus may have limited validity. On the other hand, assessing strategies that are highly specific to one type of problem may limit cross-situational generalizability. This is especially relevant to the trauma field, as it raises the issue of whether generalized coping inventories tap the types of strategies thought to be important in traumatic situations.

Finally, many researchers neglect the distinction between coping effort and coping efficacy (Aldwin & Revenson, 1987). The more stressful the problem, the greater the use of coping strategies, which can result in a spurious correlation between coping and distress. For example, Fairbank et al. (1991), in their study of prisoners of war (POWs), found that both approach and avoidant coping were correlated with psychological distress, but this may reflect effort rather than test coping efficacy. Vitaliano and his colleagues (1987) have developed a way of scoring coping strategies that controls for coping efforts by computing the ratios of particular strategies to overall effort.

More coping is not necessarily better coping. Coyne and his colleagues (1981), for example, found that chronically depressed individuals use more coping strategies than non-depressives. It is as if they do not know which strategies work or how to match their coping efforts with the seriousness of the problem. There may also be nonlinear relations between a strategy and an outcome; that is, moderate use of avoidance used to decrease emotional distress may actually facilitate problem-focused coping and be associated with better outcomes, whereas too much avoidance will prevent problem-focused strategies and be associated with poor outcomes (Mattlin et al., 1990). Thus, it is usually better to have independent assessments of efficacy as well as effort, or at least control for effort via scoring.

*Coping with Trauma.* In many ways, a process approach may be most useful in trauma research, as there are different phases to traumatic experience. For example, Burgess and Holmstrom (1976) showed that women who had been raped used different coping strategies when they first felt threatened, during the actual attack, and then immediately afterward, when they needed to escape or inform others. Horowitz (1986) showed that coping after the event also changes over time. A traumatic event may initially lead to outcry, then denial, which in turn may be followed by intrusive memories, flashbacks, and obsessive review. Individuals may oscillate between denial and obsession until they begin the process of working through, namely, acceptance and the development of adequate coping skills. The end result may be identity change. Unfortunately, coping instruments tend not to be sensitive to these types of fluctuations (unless the respondents are specifically instructed to remember different phases and fill out a questionnaire for each phase), and trauma researchers should be careful to make this distinction in their studies.

Problem-focused coping is a critical factor in adapting to trauma. This has been studied extensively by Solomon and her colleagues (1988, 1989), who have shown that soldiers who use this strategy are less likely to suffer PTSD. Freedy et al.'s (1992) study of survivors of Hurricane Hugo also found positive impacts of problem-focused coping. However, perceived controllability and source of the problem are critical mediators of the efficacy of this strategy (Benner et al., 1980). In Baum et al.'s (1983) study of Three Mile Island, problem-focused coping was associated with higher degrees of distress, in part because efforts to effect bureaucratic changes are invariably frustrating. In general, technological disasters may be more traumatic and frustrating than ones caused by nature.

Controllability also mediates the efficacy of emotion-focused strategies such as withdrawal. While Freedy et al. (1992) found that disengagement was associated with greater psychological distress, Ursano et al.'s (1986) review suggested that withdrawal under extreme, chronic distress, such as being a POW, may be adaptive. In his description of Norwegian concentration camp survivors, Eitinger (1980) found that the coping strategies of building up an "inner world" and idealizing the world outside of the camps were nearly universal. Indeed, psychological numbing and disengagement may be the only way to maintain ego integrity under great duress, and may actually assist problem-focused coping (Figley, 1983). However, after the traumatic event, higher levels of emotion-focused coping are associated with poorer outcomes, such as PTSD (Blake et al., 1992). Indeed, Wolfe and her colleagues (1993) found that current use of escapism and extreme avoidance among Vietnam veterans was a better predictor of psychological distress than even degree of combat exposure.

Confiding in someone also plays a central role in coping with trauma (Pennebaker & O'Heeron, 1984). Silver et al. (1983) found that survivors of incest who confided in someone had the best outcomes. Harvey et al. (1991), in their study of rape survivors, caution that confiding is most efficacious if done shortly after the trauma and is most helpful if it receives a positive response.

Trauma researchers highlight the development of meaning and transformation of the self to a much greater extent than is common in the larger coping literature (see Lifton, 1988). Silver et al. (1983) reported that women who had "made sense" out of their incest experiences had less negative affect and higher levels of self-esteem than women who were still struggling with this issue. Roth and Newman (1991) suggest that the best way to cope with rape is to gradually dose oneself with manageable amounts of emotional material, come to an understanding of its meaning, and recalibrate conceptions of the self and the world until some sort of reasonable fit is found.

Finally, the positive outcomes of stress are emphasized to a much greater degree in the trauma literature than in the stress and coping literature. Burt and Katz (1987) found that over 50% of the rape victims they studied felt that they had changed in a positive direction, including improved self-concept, self-directed activity, less passivity, and less stereotyped attitudes, although only 20% of Silver et al.'s (1983) rape victims perceived positive outcomes. Surpris-

ingly, Ursano et al. (1986) found that Vietnam POWs who were imprisoned longest were most likely to perceive benefit from their experience. Over 90% of the community-residing veterans in Aldwin et al.'s (in press) study perceived positive outcomes of their military experience, such as enhanced mastery, self-esteem, coping, and leadership skills; these ratings were positively and linearly correlated with combat exposure. Smith (1983) avers that natural disasters are often accompanied by altruistic acts and social solidarity.

Obviously, not all individuals experience positive outcomes, and some events may be less amenable to this than others. Roth and Lebowitz (1988) argue that incest may be particularly traumatic, as it often occurs before a child has developed adequate coping skills, and violation by family members may destroy basic trust. Nonetheless, being able to perceive positive outcomes may aid in future adaptation. Kahana, Harel et al. (1988) found that Holocaust survivors who believed that their experiences positively impact their coping abilities have less negative affect.

*Future Research.* Quantitative assessments of coping in trauma research are important, as they allow for more systematic observations, hypothesis testing, and comparison across studies. In much of the literature on coping with trauma, however, researchers often simply code for the presence of various types of coping strategies from semi-structured interviews or utilize standard coping inventories without examining their appropriateness to the particular situation. Surprisingly, no coping instruments exist that are specific to trauma. Such instruments should differentiate between the different phases of a traumatic event, be sensitive to issues of controllability and the source of the stressor, and include constructs which are often neglected in standard coping instruments, such as those relating to meaning, identity, and community involvement.

## FURTHER READING ON COPING

ALDWIN, C. & REVENSON, T.A. (1987). **Does coping help? A reexamination of the relationship between coping and mental health.** *Journal of Personality and Social Psychology, 53,* 337-348.

BOLGER, N. (1990). **Coping as a personality process: A prospective study.** *Journal of Personality and Social Psychology, 59,* 525-537.

CARVER, C., SCHEIER, M.F. & WEINTRAUB, J.K. (1989). **Assessing coping strategies: A theoretically based approach.** *Journal of Personality and Social Psychology, 56,* 267-283.

COYNE, J., ALDWIN, C. & LAZARUS, R.S. (1981). **Depression and coping in stressful episodes.** *Journal of Abnormal Psychology, 90,* 439-447.

DUNKEL-SCHETTER, C., FEINSTEIN, L.G., TAYLOR, S.E. & FALKE, R.L. (1992). **Patterns of coping with cancer.** *Health Psychology, 11,* 79-87.

ENDLER, N.S. & PARKER, J.D.A. (1990). **Multidimensional assessment of coping: A critical evaluation.** *Journal of Personality and Social Psychology, 58,* 844-854.

FOLKMAN, S. & LAZARUS, R.S. (1985). **If it changes it must be a process: A study of emotion and coping during three stages of a college examination.** *Journal of Personality and Social Psychology, 48,* 150-170.

HOBFALL, S.E. (1989). **Conservation of resources: A new attempt at conceptualizing stress.** *American Psychologist, 44,* 513-524.

LAZARUS, R.S. (1993). **Coping theory and research: Past, present, and future.** *Psychosomatic Medicine, 55,* 234-247.

LAZARUS, R.S. & FOLKMAN, S. (1984). **Stress, appraisal, and coping.** New York: Springer.

MATTLIN, J.A., WETHINGTON, E. & KESSLER, R.C. (1990). **Situational determinants of coping and coping effectiveness.** *Journal of Health and Social Behavior, 31,* 103-122.

ROTH, S. & COHEN, L.J. (1986). **Approach, avoidance, and coping with stress.** *American Psychologist, 41,* 813-819.

VITALIANO, P.P., MAIURO, R.D., RUSSO, J. & BECKER, J. (1987). **Raw versus relative scores in the assessment of coping strategies.** *Journal of Behavioral Medicine, 16,* 1-18.

# SELECTED ABSTRACTS

BAUM, A., FLEMING, R. & SINGER, J.E. (1983). **Coping with victimization by technological disaster.** *Journal of Social Issues, 39,* 117-138. Technological catastrophes, defined as mishaps involving breakdown in human-made systems, appear to differ in the nature of threats that they pose. Coping with chronic stress associated with these events was examined by considering response to the Three Mile Island nuclear accident. Using the Ways of Coping Inventory, use of emotional regulation, problem-oriented coping, and the assumption of responsibility or blame for problems associated with living near the damaged plant were considered. Patterns of response at TMI were compared to those of a control group, consisting of people living near an undamaged nuclear plant more than 100 miles from TMI. Stress was assessed by making simultaneous measurements of symptom reporting, task performance, and urinary catecholamines (epinephrine and norepinephrine). Findings suggested that both emotionally-focused coping and self-blame were associated with less stress than were problem-focused coping and denial. Further, emotional regulation and assumption of responsibility for encountered difficulty were related to one another and to perceived control as well. This suggested that a control-oriented coping style, in which the perception of control is actively created or maintained, can be effective in reducing distress associated with technological catastrophes.

BETTELHEIM, B. (1943). **Individual and mass behavior in extreme situations.** *Journal of Abnormal and Social Psychology, 38,* 417-452. The author spent approximately one year in the two biggest German concentration camps for political prisoners, at Dachau and at Buchenwald. With the setting-up of concentration camps the Gestapo appears to seek various goals, one of which seems to be to produce changes in the personality of the prisoners. An effort will be made to understand how this is done by means of an historical account of what happens in, and to the prisoners in, the camp. The collecting of data is viewed as an example of private behavior of one prisoner who develops this behavior as a mechanism to be better able to survive in the camp. It seems that most, if not all, prisoners tried to react against the initial shock by mustering forces which might prove helpful in supporting their badly shaken self-esteem. Those groups which found in their past life some basis for the erection of such a buttress to their endangered egos seemed to succeed. During the transportation the prisoners were exposed to physical and mental tortures, the purpose of which seemed to be to break any ability to resist the Gestapo. The prisoners developed a state of detachment, feeling as if what happened did not really happen to them as persons. Significant differences could be observed when comparing old and new prisoners. They seemed to originate in personality changes which were brought about by the impact of the camp experiences on the prisoners. A prisoner had reached the final stage of adjustment to the camp situation when he had changed his personality so as to accept as his own the values of the Gestapo. It seems that what happens in an extreme fashion to the prisoners who spend several years in the concentration camp happens in less exaggerated form to the inhabitants of the big concentration camp called greater Germany. [Adapted from Text]

BURGESS, A.W. & HOLMSTROM, L.L. (1976). **Coping behavior of the rape victim.** *American Journal of Psychiatry, 133,* 413-418. The coping behavior of rape victims can be analyzed in three distinct phases: the threat of attack, the attack itself, and the period immediately thereafter. The authors analyzed the reported coping behavior of 92 women diagnosed as having rape trauma. Most of the women used verbal, physical, or cognitive strategies when threatened, although 34 were physically or psychologically paralyzed. The actual rape prompted coping behaviors in all but 1 victim. Escaping the situation or the assailant is the primary task immediately after the attack. In counseling the rape victim, it is important to understand her individual style of coping, to be supportive of it, and to suggest alternatives for future stressful situations.

FAIRBANK, J.A., HANSEN, D.J. & FITTERLING, J.M. (1991). **Patterns of appraisal and coping across different stressor conditions among former prisoners of war with and without post-traumatic stress disorder.** *Journal of Consulting and Clinical Psychology, 59,* 274-281. Little is known about how survivors of extreme events cope with traumatic memories and subsequent negative life experiences. The present study compared (a) repatriated prisoners of war (RPWs) from World War II (WWII) with chronic PTSD, (b) RPWs without PTSD, and (c) noncombat veterans on measures of general psychological functioning, appraisal, and coping. Appraisal and coping were assessed under 2 stressor conditions: memories of war/captivity and recent negative life events. RPWs with PTSD reported poorer general psychological functioning; significantly less control over memories of WWII; and more frequent use of self-isolation, wishful thinking, self-blame, and social support in an effort to cope with these memories than did the 2 comparison groups. Fewer between-groups differences were found for the recent stressor condition. Findings are discussed in terms of factors that may explain the perseverance of coping difficulties associated with PTSD.

FREEDY, J.R., SHAW, D.L., JARRELL, M.P. & MASTERS, C.R. (1992). **Towards an understanding of the psychological impact of natural disasters: An application of the Conservation Resources stress model.** *Journal of Traumatic Stress, 5,* 441-454. The current study employed the Conservation of Resources (COR) stress model as a template for understanding short-term adjustment following a natural disaster. The following three hypotheses were supported: resource loss was positively related to psychological distress; resource loss was relatively more important in predicting psychological distress than personal characteristics and coping behavior; and, resource loss constitutes a risk factor for the development of clinically significant psychological distress. The theoretical importance of the current findings is discussed, particularly the tendency within disaster literature to confound crisis experiences (e.g., terror) with resource loss experiences (e.g., loss of possessions, loss of social support) when defining degree of disaster exposure. Also, the practical importance of considering resource loss in planning intervention services is highlighted.

HARVEY, J.H., ORBUCH, T.L., CHWALISZ, K.D. & GARWOOD, G. (1991). **Coping with sexual assault: The roles of account-making and confiding.** *Journal of Traumatic Stress, 4,* 515-531. A study was conducted to evaluate the roles of account-

making (i.e., story-like constructions involving explanations, reported memories, description, and emotional expression ) and confiding in empathic others as facilitators of recovery for survivors of sexual assault. 25 women and 1 man anonymously participated in a questionnaire study that asked them to provide accounts of instances of sexual assault, their own and others' reactions to the assault, and their perceptions of the impact of the assault on aspects of their lives. Respondents' reactions were coded and classified by independent raters. Consistent with parts of the theoretical conception, included among the findings were the following: (1) account-making was positively associated with successful coping and with helpful confidant reactions; (2) empathic confidant reactions occurring early after the assault led to more successful coping than did nonempathic reactions occurring either in the first 12 months or later after the assault; and (3) incest survivors indicated that they had more difficulty in coping and in their close relationships than did nonincest survivors. The data are discussed in terms of the value of story-construction activities and confiding as vital to the recovery process.

KAHANA, E., KAHANA, B., HAREL, Z. & ROSNER, T. (1988). **Coping with extreme trauma.** In J.P. Wilson, Z. Harel, & B. Kahana (Eds.), *Human adaptation to extreme stress: From the Holocaust to Vietnam* (pp. 55-79). New York: Plenum Press. This chapter outlines a conceptual framework provided by a dynamic consideration of immediate and long-term coping with trauma and considers the relationship of coping to psychological well-being. We have identified five aspects of extreme stress that delineate environmental conditions involving man-made disasters. These common elements can render environments universally stressful and serve to reduce individual differences in response. Under such traumatic conditions, the nature of the demand on the individual appears more pervasive, more central to psychobiological and physical survival, than is the case in normal life, and nothing in the pretraumatic order of things can be assumed any longer. We present a model of coping with the Holocaust, in which motives and orientations to survival from intrapsychic responses are distinguished from observable behaviors. The survivor of extreme trauma is coping with a multiplicity of stressors at any given time, and researchers must be careful in considering the adaptive tasks of the survivor in interpreting his or her coping responses. [Adapted from Text]

ROTH, S. & LEBOWITZ, L. (1988). **The experience of sexual trauma.** *Journal of Traumatic Stress, 1,* 79-107. Abstracted in *PTSD Research Quarterly, 3(3), 1992.*

SILVER, R.L., BOON, C. & STONES, M.H. (1983). **Searching for meaning in misfortune: Making sense of incest.** *Journal of Social Issues, 39,* 81-102. A critical feature of many undesirable life events is that they often shatter the victim's perception of living in an orderly, meaningful world. Many authors have suggested that following such outcomes, the search for meaning is a common and adaptive process. This paper explores the validity of that claim by considering data from a recent study of 77 adult women who were victimized as children: survivors of father-daughter incest. In the process, several central questions regarding the search for meaning are addressed. How important is such a search years after a crisis? Over time, are people able to make sense of their aversive life experiences? What are the mechanisms by which individuals find meaning in their negative outcomes? Does finding meaning in one's victimization facilitate long-term adjustment to the event? Finally, what are the implications of an inability to find meaning in life's misfortunes?

SOLOMON, Z., MIKULINCER, M. & AVITZUR, E. (1988). **Coping, locus of control, social support, and combat-related posttraumatic stress disorder: A prospective study.** *Journal of Personality and Social Psychology, 55,* 279-285. We examined the relations between coping, locus of control, and social support and combat-related PTSD. The sample consisted of 262 Israeli soldiers who suffered a combat stress reaction episode during the 1982 Lebanon war and were followed 2 and 3 years after their participation in combat. Cross-sectional analyses revealed significant relations between locus of control, coping, and social support and PTSD at the two points of assessment. Changes in PTSD from Time 1 to Time 2 were also associated with changes in coping. We discuss theoretical and methodological implications of the findings.

SOLOMON, Z., MIKULINCER, M. & BENBENISHTY, R. (1989). **Locus of control and combat-related post-traumatic stress disorder: The intervening role of battle intensity, threat appraisal and coping.** *British Journal of Clinical Psychology, 28,* 131-144. The study examined the role of control expectancies in the formation of PTSD among Israeli soldiers combat stress reactions (battle shock) casualties of the Lebanon War (1982). A random sample of 104 soldiers who fought in the Lebanon War and were identified as combat stress reaction casualties were clinically interviewed and given a battery of self-report questionnaires a year after their participation in combat. In general, the components of Lazarus' stress-illness model were predictive of the severity of PTSD. Greater appraisal of threat, more negative emotions, and more emotion-focused coping were all found to predict a larger number of PTSD symptoms. Path analyses were performed separately for soldiers who reported that they were under high battle intensity and those who were under relatively low battle intensity. For low battle intensity, externals suffered more PTSD than internals. This relationship was due mainly to the indirect effects of locus of control via threat appraisal. These significant relationships were not found when battle intensity was high. The implications of the findings for the study of combat stress reactions and for the stress-illness model are discussed. The relative impact of generalized control expectancies and situational factors are examined for the various components of the model.

WOLFE, J., KEANE, T.M., KALOUPEK, D.G., MORA, C.A. & WINE, P. (1993). **Patterns of positive readjustment in Vietnam combat veterans.** *Journal of Traumatic Stress, 6,* 179-193. This study examines readjustment patterns in 152 Vietnam combat veterans. Subjects were nontreatment-seeking volunteers who felt that they had made an adequate life adjustment since Vietnam. Using a set of self-report instruments, data were obtained on background characteristics, military experiences (including combat), exposure to war trauma, current day PTSD symptomatology, and types of coping strategies. A subset of well-functioning veterans with substantial combat exposure was identified. Results indicated that these veterans suffered considerable distress during wartime but that they dealt with current recollections of this experience in a fashion that was significantly different from more symptomatic cohorts. Nonavoidant coping styles characterized the functioning of well-adjusted veterans; furthermore, type of coping strategy predicted current adjustment better than combat exposure. Implications of different approaches to coping are discussed, particularly as they relate to the long-term integration of traumatic war experiences.

# ADDITIONAL CITATIONS
## Annotated by the Editors

ALDWIN, C.M., LEVENSON, M.R. & SPIRO, A. (in press). **Vulnerability and resilience to combat exposure: Can stress have lifelong effects?** *Psychology and Aging.*
Examined the relationship between combat exposure and later-life mental health in 1,287 male veterans of WWII and/or the Korean conflict. Combat exposure predicted PTSD, but path analysis indicated that this relationship was mediated by perceived desirable and undesirable effects of military service.

BENNER, P., ROSKIES, E. & LAZARUS, R.S. (1980). **Stress and coping under extreme conditions.** In J.E. Dimsdale (Ed.), *Survivors, victims, and perpetrators: Essays on the Nazi Holocaust* (pp. 219-258). Washington, DC: Hemisphere.
Presents a transactional model of stress and coping and applies the model to behavior in a concentration camp and to long-term outcomes for survivors. The authors discuss similarities and differences between extreme and ordinary stress.

BLAKE, D.D., COOK, J.D. & KEANE, T.M. (1992). **Post-traumatic stress disorder and coping in veterans who are seeking medical treatment.** *Journal of Clinical Psychology, 48,* 695-704.
Studied the relationship between PTSD and coping processes in 74 male medical patients who had served in the military during WWII, the Korean conflict, or the Vietnam War. PTSD was associated with increased emotion-focused coping, but not with decreased problem-focused coping.

BURT, M.R., & KATZ, B.L. (1987). **Dimensions of recovery from rape: Focus on growth outcomes.** *Journal of Interpersonal Violence, 2,* 57-81.
Studied how women grow and change as a consequence of having to cope with rape by administering a questionnaire to 113 female rape victims who were recruited through five rape-crisis centers. Factor analysis of a 33-item questionnaire yielded five coping factors: avoidance, expressive, nervous/anxious, cognitive, and self-destructive.

EITINGER, L. (1980). **The concentration camp syndrome and its late sequelae.** In J.E. Dimsdale (Ed.), *Survivors, victims, and perpetrators: Essays on the Nazi Holocaust* (127-160). Washington, DC: Hemisphere.
Reviews studies on Norwegian survivors of Nazi concentration camps. Stress reactions and onset of chronic illnesses were often delayed, and were correlated with severity of treatment in the camp rather than pre-existing personality or current social context. The author argues that many cognitive and emotional problems were due to organic brain syndrome caused by malnutrition.

FIGLEY, C.R. (1983). **Catastrophes: An overview of family reactions.** In C.R. Figley & H.I. McCubbin (Eds.), *Stress and the family. Vol. II: Coping with catastrophe* (pp. 3-20). New York: Brunner/Mazel.
Discusses patterns of family reactions to catastrophic and ordinary stressors. Functional coping is distinguished from dysfunctional coping in terms of 11 characteristics, including viewing the situation as a family problem, open communication among members, family cohesion, and evidence of role flexibility.

HOROWITZ, M.J. (1986). **Stress response syndromes (2nd ed.).** Northvale, NJ: Jason Aronson.
Provides a theoretical model for understanding responses to traumatic events. Denial is seen as a response to the outcry that follows an event and immediate attempts to cope with it. Intrusion is initially seen as arising from denial, but thereafter intrusion and denial may influence each other.

KAHANA, B., HAREL, Z. & KAHANA, E. (1988). **Predictors of psychological well-being among survivors of the Holocaust.** In J.P. Wilson, Z. Harel & B. Kahana (Eds.), *Human adaptation to extreme stress: From the Holocaust to Vietnam* (pp. 171-192). New York: Plenum.
Discusses empirical research on predictors of mental health in three populations of Holocaust survivors. Important predictors include physical health, economic resources, social support, coping, and self-disclosure. The authors note that Holocaust survivors are not a homogeneous group, and that many are well-adjusted, productive individuals.

LIFTON, R.J. (1988). **Understanding the traumatized self: Imagery, symbolization, and transformation.** In J.P.Wilson, Z. Harel & B. Kahana (Eds.), *Human adaptation to extreme stress: From the Holocaust to Vietnam* (pp. 7-31). New York: Plenum.
Presents 10 fundamental principles for guiding research and treatment of PTSD, which is viewed as "a normal adaptive process of reaction to an abnormal situation" (p. 9). Trauma is defined as an assault on and a threat to the self, and the recovery process is defined as an attempt to reintegrate the self in which symptoms represent adaptation.

PENNEBAKER, J.W. & O'HEERON, R.C. (1984). **Confiding in others and illness rate among spouses of suicide and accidental-death victims.** *Journal of Abnormal Psychology, 93,* 473-476.
Administered a questionnaire on health and coping to 19 spouses of suicide and accidental death victims approximately one year after the spouse's death. Number of physical health problems was positively associated with rumination and negatively associated with amount of confiding in others.

ROTH, S. & NEWMAN, E. (1991). **The process of coping with sexual trauma.** *Journal of Traumatic Stress, 4,* 279-297. Abstracted in *PTSD Research Quarterly, 3(3), 1992.*

SMITH, S.M. (1983). **Disaster: Family disruption in the wake of natural disaster.** In C.R. Figley & H.I. McCubbin (Eds.), *Stress and the family. Vol. II: Coping with catastrophe* (pp. 120-147). New York: Brunner/Mazel.
Reviews the importance of family characteristics in producing reactions to natural disaster. Prevention is emphasized. The author argues that professional disaster planners and caregivers should view the family as a unit of concern.

URSANO, R.J., WHEATLEY, R., SLEDGE, W., RAHE, A. & CARLSON, E. (1986). **Coping and recovery styles in the Vietnam era prisoner of war.** *Journal of Nervous and Mental Disase, 174,* 707-714.
Examined four coping styles in over 300 male USAF veterans who were POWs during the Vietnam War. Neither coping during captivity nor recovery style was robustly related to psychiatric morbidity, although MMPI scores on some scales differed as a function of coping style. Successful coping was related to the degree and duration of the captivity experience.

## PILOTS UPDATE:
## Developing Your Search Strategy

A database search is really a three-step process. First, you put together a search strategy. Then you execute the search. And then you examine the results and modify your search accordingly. We dealt with the mechanics of searching in "PILOTS on Dartmouth," the brief user's guide that accompanied our Fall 1992 issue. In this column, we'll look at the first and last steps in the search process.

Think of a PILOTS search as an exercise in pattern matching. You tell the computer what pattern of letters, words, or phrases you are looking for, and it attempts to match that pattern with those it finds in the database. You can tell the computer where in the database to look for a pattern, and you can tell it to search for a combination of patterns. The success of your search depends on the clarity with which you form the pattern you try to match, the accuracy with which you type it into the computer, and the skill and completeness of the database producer. Two out of the three are up to you.

There are two basic approaches to searching the PILOTS database: controlled vocabulary and natural language. In *controlled-vocabulary* searching, you are instructing the computer to match terms from a prescribed list against fields within the bibliographical citations in the database in which those terms are used to describe the papers indexed. In *natural-language* searching, you are telling the computer to match words or phrases that you think might occur in the bibliographical records, regardless of whether they appear on a prescribed list of terms. Each offers advantages and disadvantages. Many users will find that a combination of both types of searching will produce the best results.

*Controlled-vocabulary searching* takes advantage of the work done by National Center staff to standardize the terminology used by the thousands of authors and editors who produce the traumatic stress literature. This standardization is especially important in an interdisciplinary field, as there is no assurance that the terms used by psychiatrists will necessarily match those used by criminologists, or art therapists, or social workers. Even within a discipline, changes in terminology occur over time, or across geographic or ideological boundaries.

We use two vehicles for standardizing terminology in the PILOTS database.

• *Authority lists* ensure consistency in the way that names (of authors, journals, incidents, etc.) are entered in PILOTS. These are simply continually updated alphabetical lists that we maintain at the National Center. When adding new records to the database, we check all names against the appropriate authority lists.

• The *PILOTS Thesaurus* is a listing of descriptors—terms used to describe the subject content of a document—in the PILOTS database. It consists of two parts: a hierarchically arranged listing of descriptors that specifies the relationship between broader and narrower terms, and an alphabetical index that lists descriptors—each with a listing of broader, narrower, and related terms, as well as unapproved terms for which the descriptor is used—and "entry terms" (non-descriptor terms that a database user might have in mind) with a reference to the appropriate descriptor.

*Natural-language searching* allows you to use the terms that you are most comfortable with; it does not require you to use the PILOTS Thesaurus. And it provides a way to locate material on subjects that are too new to be included in the Thesaurus, or that the Thesaurus does not cover well enough for your particular need. However, it is neither as precise nor as complete a way of searching as using a controlled vocabulary. If you simply want to find a few publications relevant to your area of interest, natural-language searching is an easy way to go about it. But if you need to make a thorough study of the literature, and you wish to be sure that you do not miss important papers, you should not rely upon natural-language searching alone.

It often happens that a search of PILOTS (or any other database) doesn't produce the results that you expect. Database searching works best as an iterative process. Don't expect to get definitive results with your first try; plan on doing an exploratory search, and then modify your search strategy according to the results you get. Here are some suggestions:

*If your search produces an impossibly large number of citations*, examine at least a few of them to see whether you defined your topic too broadly, or used too broad a search strategy.

• If almost all of them are indeed relevant, ask yourself how you can redefine your *objective.* (Perhaps you should choose a narrower topic: for example, natural disasters rather than stressors in general.)

• If many of the citations your search has retrieved are irrelevant, you need to refine your *search strategy.* Look at some of the irrelevant citations, and see what they have in common. Does the same descriptor appear in all of them? If you repeated your search without using that descriptor would you be eliminating valuable citations as well as irrelevant ones? If not, you've found one way of bringing your search results down to a more manageable size. (Other methods might include restricting your search by language, or by date, or by format.)

*What if your search has retrieved fewer citations* than you think it should have?

• Perhaps there really *are* very few papers in your area. (Or at least very few that have found their way into PILOTS.)

• Or perhaps your search strategy was too narrow. Again, look at your results. Find a citation that is directly relevant, and see what descriptors were applied to it. Perhaps you might want to add one or more of them to your search strategy.

• And don't forget to double-check to be sure that you weren't done in by a simple typing error. The computer has no way of knowing that you meant "alcohol" when you typed "alvohol"!

*And what if you could find no relevant citations?* Is there a paper that you know to be relevant? Then search for that paper (by author and title), retrieve the citation, and see how it was indexed in PILOTS. That might suggest one or more descriptors to use in searching.

Don't be discouraged if your first search strategy doesn't work perfectly. Experts at database searching often have to modify their search techniques, especially when working with a database that is new to them. And don't be surprised if you come across a citation whose indexing seems strange to you. This is a complex literature, and the indexer is, after all, perforce a generalist. You may well know more about the topic than the indexer does. (If you find a paper that you believe has been incorrectly indexed, please let us know. We don't mind correcting our mistakes.)

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The PILOTS Thesaurus is included in the *PILOTS User's Guide,* which was sent to each VA medical library. Other libraries supporting mental health research and clinical activity also may have copies. The *PILOTS User's Guide* may be ordered as document PB92-100262 from the National Technical Information Service, Springfield, Virginia 22161, or from their agents overseas; telephone orders may be placed by calling (703) 487-4650 and using a credit card. The price is $19.50, plus a handling fee (of $3.00 for regular mail or telephone orders). We are currently revising the Thesaurus, which will appear in the second edition of the *PILOTS User's Guide* this winter.

# RESEARCH IN THE TRAUMA RECOVERY PROGRAM AT THE JACKSON VA MEDICAL CENTER
Judith A. Lyons, Ph.D.

Jackson VAMC was one of the forerunners in research on PTSD among Vietnam veterans during the early 1980s, under the leadership of Drs. Foy, Keane, and Fairbank. When those individuals left Jackson, the program closed in the mid-1980s.

The program reopened in late 1987 as the Trauma Recovery Program, focusing on both combat trauma from all eras and non-combat trauma. The initial emphasis was on rebuilding the clinical foundation of the program, including a PTSD Clinical Team (PCT). Consequently, writings during that period took the form of case studies (Cassiday & Lyons, 1992; Cassiday, Scotti & Lyons, 1990; Lyons, 1991a; Scotti & Lyons, 1991) and other non-empirical articles (e.g., Lyons, 1991b; Lyons & Keane, 1992). Research was gradually incorporated, beginning with basic psychometric studies (Lyons & Scotti, 1992; Pittman et al., 1989; Scotti & Lyons, 1991). A Research Advisory Group (RAG) grant to study "Patterns of stress and coping among Vietnam veterans" was conducted, and Jackson VAMC has participated in the multi-site Cooperative Study "Psychophysiological study of chronic PTSD" and in the Northeast Program Evaluation Center's treatment evaluation studies. Data from these most recent efforts are currently being analyzed.

One of the Trauma Recovery Program's most interesting studies tested the two-factor learning model's predictions regarding serial conditioning of trauma cues (Scotti et al., 1992). Vietnam and Vietnam-era veterans were presented with verbal cues which varied in their temporal relationship to the outbreak of a firefight in Vietnam. As predicted, combat veterans with PTSD showed a greater fear response (were more physiologically aroused and made more errors on a dichotic shadowing task) than combat and non-combat veterans who did not have PTSD. As predicted by the model, cues closest in sequence to the actual trauma elicited the greatest physiological arousal and disruption of task performance. Manipulation of the context in which these cues were presented (i.e., during a description of Vietnam or during a description of other, non-trauma-related geography) did not produce systematic differences in response.

During 1993, the Trauma Recovery Program grew to include a 10-bed Evaluation and Brief Treatment PTSD Unit (EBTPU). The EBTPU is organized as an interdisciplinary team in which all staff blend their areas of expertise in coordinating care based on a two-factor learning model of PTSD. The homogeneity of theoretical stance allows collaborative research to be easily incorporated within the clinical program. Research projects are grouped along two basic themes, psychophysiological assessment and behavioral medicine. Most program staff are active in one or both of the research groups. The behavioral medicine group is studying the incidence of various medical and psychosomatic conditions among the PTSD patient population. A wellness education program has been developed which will focus on elements such as exercise, nutrition, leisure activities, and awareness regarding substance use. Data collection regarding this program component has recently begun. The psychophysiological assessment research group has also begun data collection. Reactivity in response to trauma-related cues is assessed through standard laboratory protocols as well as via continuous heart rate monitoring of each patient during therapy groups. Preliminary reports on these projects will be presented at professional conferences later this year.

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