Psychodynamic,[52] Cognitive - behavioral,[53] and Behavioral.[54] A review of these models is beyond the scope of the present paper (see 55, 56 for thorough reviews), but a brief discussion of a "psychosocial" framework is warranted.

Green and her colleagues[1] have proposed a psychosocial framework which advocates that psychological responses to traumatic events are multiply determined. In this model, the central feature of the determination of outcome is the nature and intensity of the traumatic event. As the intensity of the trauma increases, it is hypothesized that greater numbers of individuals will develop symptoms. If the event is severe enough, virtually all individuals exposed to it will manifest symptoms. Whether a disaster is man-made or natural has been a consideration in determining differential impact on psychological well-being. It has been speculated that the effects of man-made disasters are more severe and long lasting than naturally occurring disasters yet this has received little empirical support. In the Green model, the characteristics of the event are seen as interacting with both the characteristics of the individuals and the characteristics of the recovery environment.[1]

The contribution of individual attributes to the development of PTSD has been a controversial and often emotional subject. Some feel that by implicating personality or premorbid (prior to the onset of trauma or symptoms) characteristics, one is denigrating the effect of the catastrophic event and in essence "blaming the victim".[57] As can be expected, the findings in this area yield contradictory results. For example, in a study of supper club fire victims, Green[58] found that 60% of the variance in psychological functioning was attributable to event characteristics with premorbid characteristics accounting for a much smaller percentage. McFarlane's firefighter studies[16 27] suggest that event characteristics (e.g. threat experienced, losses incurred) decreased over a 29 month period. However, the more chronic the posttraumatic symptoms, the more important premorbid individual factors became ("neuroticism," family or personal history of psychiatric illness, tendency to avoid thinking through unwanted or negative experiences). Similar results were obtained in a study of Norwegian factory paint fire victims (59 cited in 16) where the occurrence of acute PTSD was associated with the initial intensity of exposure. However, as time went on, the prognosis was related more to premorbid psychological functioning than to intensity of exposure.

Among a sample of Vietnam veterans, Card[60] found that the intensity of combat experience was a "strong contributory factor" in which veterans developed PTSD. The only two "background characteristics" significantly associated with PTSD development were low self confidence at age 15 and heavy liquor consumption during military service. Similarly, Foy and Card[61] found that combat exposure accounted for a much larger proportion of variance than other predictors among Vietnam vets. Lastly, in a study of POWs the authors conclude the "severe trauma experienced as an adult can precipitate psychopathology, particularly PTSD, independently of predisposing factors"[43] (p. 150).

Returning to the Green *et al.*[1] model, characteristics of the recovery environment have received relatively little attention. Of those characteristics studied, social supports have received the most attention. It appears the social supports are involved in the moderation of symptoms in PTSD in much the same way as they moderate

the effects of other emotional disorders.[55] Other recovery environment variables include cultural differences in the way survivors are expected to respond, demographic characteristics (age, social class, education level), and attitudes of society.

TREATMENT CONSIDERATIONS

If, as most researchers and theoreticians believe, the onset and maintenance of PTSD results from a complex interaction of multiple factors, then the challenge faced by clinicians in the treatment of PTSD is monumental. Here are but a few of the challenges that the clinician must face. First, there is diagnostic uncertainty. What constitutes an event "outside the range of usual human experience?" In whose eyes is the event judged to be traumatic or not—the victim, the clinician, society? Second, given the increased expression of dissociative symptoms (e.g. depersonalization, derealization, psychogenic amnesia)[62] in PTSD, is the victim able to access or even remember the event? Third, given the time delay in which PTSD can manifest itself, both clinician and victim may not associate the current symptoms to the precipitating trauma. Fourth, many victims are hesitant to seek treatment or feel shame with respect to the trauma (e.g. rape). Fifth, while the symptoms of PTSD may be easily detected in their "pure" form, there is a significant number of PTSD sufferers with comorbid disorders (e.g. personality disorders, drug/alcohol addiction, another anxiety disorder). The symptoms of these other disorders must be treated in tandem in order to achieve a successful therapeutic outcome. Sixth, clinicians must carefully examine their own reactions to the trauma being presented and their ability to sensitively yet directly probe the experience of the trauma.[63] Lastly, the clinician must be keenly aware of cultural and subcultural norms when assessing PTSD in a diverse, multicultural society.[30]

As with most disorders in the mental health field, there are various treatment approaches to PTSD: pharmacologic,[64] behavioral/cognitive,[53,54] psychodynamic,[65] psychoanalysis,[66,67] hypnosis,[68] play therapy[49] and integrated approaches.[69] Scurfield[63] has reviewed the treatment literature and isolated four "key factors" in facilitating the recovery process: (1) an exploration of the trauma itself with attention paid to the initial (emergency) coping mechanisms; (2) the subsequent intrusion or reexperiencing of the negative aspects of the traumatic event; (3) coping attempts to control, reduce or eliminate the unwanted intrusions or reexperiencing; and (4) the integration of the traumatic experience and its positive and negative impact on the individual, relationships with significant others, and society.

In the acute phase of symptom manifestation, a crisis intervention approach is usually adopted whereby the thrust of the intervention is aimed at helping the individual return to a premorbid level of functioning as quickly as possible. This approach takes advantage of the weakened state of the individual's defenses (coping mechanisms) in order to make rapid therapeutic gains.[63] The defensiveness which is usually seen is significantly diminished allowing the clinician easier access to disturbing material. A subsequent reorganization or reconstitution takes place which may be either adaptive or maladaptive.

Scurfield also delineates five key principles which he believes are involved in the treatment of PTSD: (1) the establishment of a therapeutic trusting relationship; (2) education with respect to the recovery process in which the victim learns what to expect in the way of symptoms, the process of treatment, and the belief that PTSD is responsive to treatment; (3) stress management/reduction focused on managing the expression of distressing symptoms; (4) a regression back to or reexperiencing of the trauma in such a way that the trauma is experienced in the present to the fullest extent possible, thereby allowing the client access to feelings and conflicts that were previously unavailable; and (5) an integration of the traumatic experience such that all components of the trauma, both positive and negative, are consolidated with the survivor's notions of who he or she was before, during, and after the trauma.

In addition to individual forms of treatment, group therapy has been found to be successful in the treatment of PTSD, with some arguing that it is the treatment of choice.[63] Family approaches have also been used successfully.[63] While the present discussion does not allow for a review of disaster preparedness or community/organizational response from a mental health perspective, the reader is referred to Wright and his colleagues[26] for an interesting case study of an aircraft disaster.

CONCLUSIONS

While the nature and extent of the psychological effects of traumatic events remains a matter of debate, few would argue that disasters and other catastrophic events touch the lives of many people in a variety of ways. For some, the event represents just one of a number of challenges which life throws at them and which must be conquered. For others, the event represents an insurmountable obstacle which has shattered their sense of self, trust in others, and even eliminated their will to live. The literature reviewed above doesn't help answer many question. In fact, it creates many more: What are the psychological ramifications of trauma? Is there a "normal" response to trauma? Why is it that some people develop severe psychological symptoms in response to trauma and others do not? How are premorbid personality characteristics related to symptom manifestation? Conversely, what premorbid characteristics help innoculate the individual from the development of symptoms? What is the natural course of PTSD? Which symptoms develop when and why? Can treatment provided early arrest the progression to more serious forms of the disorder? If so, how do you identify the individuals who should be treated?

The answer to these and many more questions will not come easily nor cheaply. However, there are some things we do know. First, *some* individuals do develop severe posttraumatic reactions which exhibit a relatively well defined cluster of symptoms. Taken together, these symptoms represent what is referred to as PTSD. Second, a relationship must exist between individual characteristics and the development and onset of PTSD. If not, it would be virtually impossible to explain the differential effects of a given traumatic event on a variety of people. Our task is to isolate those characteristics whether they are biological, cognitive, intrapsychic or character-

ological in nature. Third, it appears that PTSD is not simply an acute phenomena in that symptoms tend to persist and, at times, intensify. The course of symptom reduction and exacerbation remains largely unknown. Fourth, the symptoms of PTSD may take time to develop. As such, the mental health community must be prepared to provide treatment for long periods of time following trauma. Fifth, many individuals are reluctant to seek treatment while others are so involved in denial that they are unaware they need help. Outreach efforts must be extensive and vigorous. Lastly, children exposed to traumatic events manifest symptoms in different ways at different developmental levels. Similarly, they appear to exhibit different symptoms at different developmental levels. A developmental perspective must be incorporated in working with children exposed to trauma.

Clearly, much work needs to be done. Yet it appears that a solid foundation has been laid for future work. The introduction of PTSD has helped to focus much of the thinking in the area and delineate those components which are in need of further investigation. The proliferation of literature in this area in recent years is a hopeful sign that there is interest and energy available to understand this phenomena and thereby help those individuals whose lives are so severely disrupted.

REFERENCES

1. Green, B.L., J.P. Wilson and J.D. Lindy. 1985. Conceptualizing Post-traumatic Stress Disorder: a psychosocial framework, pp. 53-69. In: C.R. Figley (ed). *Trauma and its wake: the study and treatment of Post-traumatic Stress Disorder.* Brunner/Mazel, New York.
2. Madakasira, S. and K.F. O'Brien. 1987. Acute Post-traumatic Stress Disorder in victims of a natural disaster. *J. Nerv. Ment. Dis.* 175:286-290.
3. Bromet, C., H.C. Schulberg, and L. Dunn. 1982. Reactions of psychiatric patients to the Three Mile Island Nuclear accident. *Arch. Gen. Psychiat.* 39:725-730.
4. Melick, M.E. 1978. Life change and illness: Illness behavior of males in the recovery period of a natural disaster. *J. Health. Soc. Beh.* 19:335-342.
5. Quarantelli, E.L. and R.R. Dynes. 1977. Response to social crisis and disaster. *Annu. Rev. Sociol.* 3:23-49.
6. Burke, J.D., J.F. Borus, B.J. Burns, K.H. Millstein and M.C. Beasley. 1982. Changes in children's behavior after a natural disaster. *Am. J. Psychiat.* 139: 1010-1014.
7. Logue, J.N. and H. Hansen. 1980. A case control study of hypertensive women in a post-disaster community. Wyoming Valley, PA. *J. Human Stress.* 6:28-34.
8. Logue, J.N., M.E. Mellick and E.L. Struening. 1981. A study of health and mental health status following a major natural disaster. *Res. Comm. Ment. Health.* 2:217-274.
9. Newman, C.J. 1977. Children of disaster: clinical observations at Buffalo Creek. *Ann. Prog. Child Psychiat Child Dev.* 10:149-161.

10. Ollendick, D.G. and M. Hoffman. 1982. Assessment of psychological reactions in disaster victims. *J. Comm. Psychol.* 10:157-167.
11. Adams, P.R. and G.R. Adams. 1984. Mount Saint Helen's Ashfall: evidence for a disaster stress reaction. *Am. Psychologist.* 39: 252-260.
12. American Psychiatric Association. 1980. *Diagnostic and statistical manual of mental disorders (3rd ed.).* Washington, D.C.
13. Freud, S. 1939. Moses and monotheism: three essays. In: *Complete psychological works, standard ed., vol. 23.* Hogarth, London.
14. Brett, E.A., R.C. Spitzer and J.B.W. Williams. 1988. DSM-III-R criteria for Post-traumatic Stress Disorder. *Am. J. Psychiat.* 145:1232-1236.
15. American Psychiatric Association. 1952. *Diagnostic and statistical manual of mental disorders.* American Psychiatric Association, Washington, D.C.
16. McFarlane, A.C. 1990. Vulnerability to post-traumatic stress disorder, pp. 3-20. In: M.E. Wolf & A.D. Mosnaim (eds.). *Posttrautamic Stress Disorders: etiology, phenomenology, and treatment.* American Psychiatric Press, Washington, D.C.
17. American Psychiatric Association. 1968. *Diagnostic and statistical manual of mental disorders, 2nd ed.* American Psychiatric Association, Washington, D.C.
18. Green, B.L., J. Lindy and M.C. Grace. 1985. Post-traumatic stress disorder: Toward DSM-IV. *J. Nerv. Ment. Dis.* 173:406-411.
19. American Psychiatric Association. 1987. *Diagnostic and statistical manual of mental disorders, 3rd edition, Revised.* American Psychiatric Association, Washington, D.C.
20. Ross, R.J., W.A. Ball, K.A. Sullivan and S.N. Caroff. 1989. Sleep disturbance as the hallmark of Post-traumatic Stress Disorder. *Am. J. Psychiatry.* 146:697-707.
21. Penick, E.C., B.J. Powell and W.A. Sieck. 1976. Mental health problems and natural disaster: Tornado victims. *J. Community Psychol.* 4:64-67.
22. Quarantelli, E.L. 1985. An assessment of conflicting views on mental health: the consequences of traumatic events, pp. 173-215. In: C.R. Figley (ed.) *Trauma and its wake: The study and treatment of Post-traumatic Stress Disorder.* Brunner/Mazel, New York.
23. Green, B.L. 1982. Assessing levels of psychological impairment following disaster. *J. Nervous and Mental Disease.* 170:544-552.
24. Helzer, J.E., L.N. Robins and L. McEvoy. 1987. Post-traumatic Stress Disorder in the general population: Findings of the epidemiologic catchment area survey. *N. Engl. J. Med.* 317:1630-1634.
25. Kulka, R.A., W.E. Schenger, J.A. Fairbank, R.L. Haugh, B.K. Jordan, C.R. Marmar and D. Weiss. 1990. *Trauma and the Vietnam War generation.* Brunner/Mazel, New York.
26. Wright, K., R.J. Ursano, L. Ingraham and P. Bartone. 1990. Individual and community responses to an aircraft disaster, pp. 127-138. In: M.E. Wolf & A.D. Mosnaim (eds.). *Posttraumatic Stress Disorders: etiology, phenomenology and treatment.* American Psychiatric Press, Washington, D.C.
27. McFarlane, A.C. 1988. The longitudinal course of post-traumatic morbidity: The range of outcomes and their predictors. *J. Nerv. Ment. Dis.* 176:30-39.

28. McFarlane, A.C. 1988. The phenomenology of Post-traumatic Stress Disorders following a natural disaster. *J. Nerv. Ment. Dis.* 176:22-29.
29. Titchener, J.L. and F.T. Kapp. 1976. Family and character change at Buffalo Creek. *Am. J. Psychiatry.* 133:295-299.
30. Kinzie, J.D., J.K. Boehnlein, P.K. Leung, L.J. Moore, C. Riley and D. Smith. 1990. The Prevalence of Post-traumatic Stress Disorder and its clinical significance among Southeast Asian refugees. *Am. J. Psychiatry.* 147:913-917.
31. Mollica, R.F., G. Wyshak and J. Lavelle. 1987. The psychosocial impact of war trauma and torture on Southeast Asian refugees. *Am. J. Psychiatry.* 144:1567-1572.
32. Kinzie, J.D., W. Sack, R. Angell, *et al.*. 1986. The psychiatric effects of massive trauma on Cambodian children, I: the children. *J. Am. Acad. Child Psychiatry.* 25:370-376.
33. Kilpatric, D.G., L.J. Veronen and C.L. Best. 1985. Factors predicting psychological distress among rape victims, pp. 113-141. In: C.R. Figley (ed.). *Trauma and its wake: The study and treatment of Post-traumatic Stress Disorder.* Brunner/Mazel, New York.
34. Frank, E. and B.P. Anderson. 1987. Psychiatric disorders in rape victims: past history and current symptomatology. *Compr. Psychiatry.* 28:77-82.
35. Coons, P.M., C. Cole, T.A. Pellaw and V. Milstein. 1990. Symptoms of Post-traumatic Stress and dissociation in women victims of abuse, pp. 205-221. In: R.P. Kluft (ed.). *Incest related syndromes of adult psychopathology.* American Psychiatric Press, Washington, D.C.
36. Donaldson, M.A. and R. Gardner. 1985. Diagnosis and treatment of traumatic stress among women after childhood incest, pp. 356-377. In: C.R. Figley (ed.). *Trauma and its wake: the study and treatment of Post-traumatic Stress Disorder.* Brunner/Mazel, New York.
37. Horowitz, M.J. and G.F. Solomon. 1975. A prediction of delayed stress response syndromes in Vietnam veterans. *J. Soc. Issues.* 31:67-80.
38. Horowitz, M.J. 1976. *The stress response syndromes.* Jason Aronson, New York.
39. McFarlane, A.C. 1986. Post-traumatic morbidity of a disaster. *J. Nerv. Ment. Dis.* 174:4-14.
40. Simpson-Housley, P. and A. deMan. 1989. Flood experience and Posttraumatic trait anxiety in Appalachia. *Psychol. Reports.* 64:896-898.
41. Davidson, L.M., A. Baum. 1986. Chronic stress and Post-traumatic Stress Disorders. *J. Cons. Clin. Psychol.* 54:303-308.
42. Kinzie, J.D., R.H. Fredrickson, R. Ben, J. Flick and W. Karls. 1984. Post-traumatic Stress Disorder among survivors of Cambodian concentration camps. *Am. J. Psychiat.* 141:645-650.
43. Speed, N., B. Engdahl, J. Schwartz and R. Eberly. 1989. Post-traumatic Stress Disorder as a consequence of the POW experience. *J. Nerv. Ment. Dis.* 177:147-153.
44. Leopold, R.L. and H. Dillon. 1963. Psychoanatomy of a disaster: A long term study of post-traumatic neuroses in survivors of a marine explosion. *Am. J.*

Psychiatry. 119:913-921.
45. Henderson, S. and T. Bostock. 1977. Coping behaviour after shipwreck. *Brit. J. Psychiat.* 131:15-20.
46. Kiser, L.J., B.J. Ackerman, E. Brown, N.B. Edward, E. McColgan, R. Pugh and D.B. Pruitt. 1988. Post-traumatic Stress Disorder in young children: A reaction to purported sexual abuse. *J. Am. Acad. Child Adolesc. Psychiatry.*
47. McFarlane, A.C. 1987. Post-traumatic phenomena in a longitudinal study of children following a natural disaster. *J. Amer. Acad. Child Adolesc. Psychiatry.* 26:764-769.
48. Martini, R.D., C. Ryan, D. Nakayama and M. Ramenofsky. 1990. Psychiatric sequelae after traumatic injury: The Pittsburgh Regatta accident. *J. Am. Acad. Child Adolesc. Psychiatry.* 29:70-75.
49. Eth, S. and R.S. Pynoos. 1985. Developmental perspective on psychic trauma in childhood, pp. 36-52. In: C.R. Figley (ed.). *Trauma and its wake: The study and treatment of Post-traumatic Stress Disorder.* Brunner/Mazel, New York.
50. Van der Kolk, B.A., H. Boyd, J. Kaystol and M. Greenbury. 1984. Post-traumatic Stress Disorder as a biologically based disorder: Implications of the animal model of inescapable shock, pp. 124-134. In: B.A. Van der Kolk, (ed.). *Post-traumatic Stress Disorder: psychological and biological sequelae.* American Psychiatric Press, Washington, D.C.
51. Kolb, L.C. 1987. A neuropsychological hypothesis explaining Post-traumatic Stress Disorders. *Am. J. Psychiatry.* 144:989-995.
52. Horowitz, M.J. 1986. *Stress response syndromes* (2nd ed.). Jason Aronson, Northvale, N.J.
53. Foa, E.B., G. Steketee and B.O. Rothbaum. 1989. Behavioral/Cognitive Conceptualizations of Post-traumatic Stress Disorder. *Beh. Therapy.* 20:155-176.
54. Keane, T.M., R.T. Zimering and J.M. Caddell. 1985. A behavioral formulation of Post-tramatic Stress Disorder in Vietnam veterans. *The Beh. Therapist.* 8:9-12.
55. Jones, J.C. and D.H. Barlow. 1990. The etiology of Post-traumatic Stress Disorder. *Cl. Psychol. Rev.* 10:299-328.
56. Fairbank, J.A. and Nicholson, R.A. 1987. Theoretical and empirical Issues in the treatment of Post-traumatic Stress Disorder in Vietnam veterans. *J. Clin. Psychology.* 43:44-53.
57. Reich, J.H. 1990. Personality Disorders and Post-traumatic Stress Disorder, pp. 65-79. In M.E. Wolf & A.D. Mosnaim (eds.). *Posttraumatic Stress Disorders: etiology, phenomenology and treatment.* American Psychiatric Press, Washington, D.C.
58. Green, B.C., M.C. Grace, J.D. Lindy, J.L. Titchener and J.G. Lindy. 1983. Levels of functional impairment following a civilian disaster: The Beverly Hills supper club fire. *J. Cons. Clin. Psychol.* 51:573-580.
59. Weisaeth, L. 1984. *Stress reactions in an industrial accident.* unpublished doctoral dissertation, Oslo University, Oslo, Norway.
60. Card, J.J. 1987. Epidemiology of PTSD in a national cohort of Vietnam veterans. *J. Clin. Psychol.* 43:1-18.

61. Foy, D.W. and J.J. Card. 1987. Combat-related Post-traumatic Stress Disorder etiology: Replicated findings in a national sample of Vietnam-era men. *J. Clin. Psychol.* 43:28-31.
62. Spiegel, D. and E. Cardena. 1990. Dissociative mechanisms in Post-traumatic Stress Disorder, pp. 23-34. In: M.E. Wolf & A.D. Mosnaim (eds.). *Posttraumatic Stress Disorders: etiology, phenomenology and treatment.* American Psychiatric Press, Washington, D.C.
63. Scurfield, R.M. 1985. Post-trauma stress assessment and treatment: Overview and formulations, pp. 219-256. In: C.R. Figley. *Trauma and its wake: The study of and treatment of Post-traumatic Stress Disorder.* Brunner/Mazel, New York.
64. Fiedman, M.J. 1990. Interrelationships between biological mechanisms and pharmacotherapy of post-traumatic stress disorder, pp. 205-225. In: M.E. Wolf & A.D. Mosnaim (eds.). *Posttraumatic Stress Disorders: etiology, phenomenology and treatment.* American Psychiatric Press, Washington, D.C.
65. Horowitz, M. 1974. Stress response syndromes: Character style and brief psychotherapy. *Arch. Gen. Psychiat.* 31:768-781.
66. Haley, S. 1974. When the patient reports atrocities. *Arch. Gen. Psychiat.* 30:191-196.
67. Haley, S. 1978. Treatment implications of post-combat stress response syndromes for mental health professionals, pp. 254-267. In: C. Figley (ed.). *Stress disorders among Vietnam veterans.* Brunner/Mazel, New York.
68. Brende, J. and B. Benedict. 1980. The Vietnam combat delayed stress syndrome: Hypnotherapy of "dissociative" symptoms. *Am. J. Clin. Hypnosis.* 23:34-40.
69. Friedman, J. 1981. Post Vietnam syndrome: Recognition and management. *Psychosomatics.* 22:931-943.