



Published in final edited form as:

J Loss Trauma. 2014 January 1; 9(1): 78–97. doi:10.1080/15325024.2013.791797.

Children's Coping in the Context of Disasters and Terrorism

BETTY PFEFFERBAUM,

Department of Psychiatry and Behavioral Sciences, College of Medicine, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma, USA

MARY A. NOFFSINGER,

Courtroom Sciences, Inc., Irving, Texas, USA

LESLIE H. WIND, and

School of Social Work, Orange County Academic Center, University of Southern California, Irvine, California, USA

JAMES R. ALLEN

Department of Psychiatry and Behavioral Sciences, College of Medicine, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma, USA

Abstract

Disasters and terrorism present significant and often overwhelming challenges for children and families worldwide. Individual, family, and social factors influence disaster reactions and the diverse ways in which children cope. This article links conceptualizations of stress and coping to empirical knowledge of children's disaster reactions, identifies limitations in our current understanding, and suggests areas for future study of disaster coping. Coping strategies, developmental trajectories influencing coping, and the interplay between parent and child coping represent critical areas for advancing the field and for informing programs and services that benefit children's preparedness and foster resilience in the face of mass trauma.

Keywords

child development; coping; disasters; resilience; stress; terrorism

Disasters, terrorism, and other mass trauma events cause disruption and devastation for many individuals and families worldwide. The needs of children are particularly compelling, given their developmental fragility and unique vulnerability. For children, the consequences of these events depend on exposure and inherent factors such as development, personality, and overall functioning, as well as on the reactions of family members and aspects of the recovery environment. While numerous studies have examined the consequences of disasters and terrorist incidents, little is known about how children cope with the deleterious effects of these events. We link the burgeoning literature on the effects of disasters on children to existing conceptualizations of stress and stress responses, appraisal, and coping; discuss theoretical dimensions and developmental issues related to coping; review key contextual issues and concepts related to coping in the aftermath of disasters; and identify limitations in our current knowledge that suggest areas for future study of coping with disasters and terrorism.

Copyright © Taylor & Francis Group, LLC

Address correspondence to: Betty Pfefferbaum, Department of Psychiatry and Behavioral Sciences, College of Medicine, University of Oklahoma Health Sciences Center, P.O. Box 26901, WP 3470, Oklahoma City, OK 73126-0901, USA. betty-pfefferbaum@ouhsc.edu.

STRESS RESPONSES, APPRAISAL, AND COPING

Disasters, terrorist incidents, and other mass trauma events provide a real-world application for investigations of the effects of severe stress. Lazarus (1966) offered some of the earliest formulations of the concept of stress, which have since evolved into the transactional model of stress and coping. According to this model, stressful experiences are conceptualized as person-environment transactions in which individuals actively engage with the environment and weigh situational demands against their perceived resources to manage them (Lazarus & Folkman, 1984). The impact of disasters and terrorism is mediated by individual and environmental antecedents and by an individual's repeated appraisal of the disaster and his or her coping resources.

Cognitive appraisal is a key element in interactions with the environment and helps to explain inter- and intra-individual differences in responses to disasters and terrorism. Through "primary appraisal," an individual evaluates the significance of an event to determine whether it is stressful and threatening to his or her psychological well-being (Lazarus & Folkman, 1984). The individual then assesses the event's potential for creating harm, loss, or personal growth, a process comprising "secondary appraisal" (Lazarus & Folkman, 1984). Following the appraisal process is coping, which entails involuntary and conscious cognitive and behavioral efforts intended to reduce the perceived discrepancy between environmental demands and available personal resources (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Lazarus, 1993). In the context of disasters and terrorism, effective coping involves accurate appraisals of the event itself, the implications for one's well-being, and the availability of one's capacity for dealing with the effects of the event (Lazarus & Folkman, 1984).

DIMENSIONS OF COPING

There is no unifying theory regarding the underlying elements of child and adolescent coping, although three dimensions are most commonly used to categorize coping strategies: (a) problem-focused and emotion-focused coping, (b) primary and secondary control coping, and (c) engagement and disengagement coping (also referred to as approach versus avoidance coping) (Compas et al., 2001). In response to a disaster or terrorist incident, individuals may engage in problem-focused coping, as evidenced by activities such as seeking information or attempting to change the circumstances in some way. Emotion-focused coping involves, for example, seeking support, expressing emotions, and evading anything related to the event. Children also may use primary control (see Rothbaum, Weisz, & Snyder, 1982), or assimilative coping, to enhance their sense of personal control by attempting to change events or by regulating their own emotions (Compas et al., 2001). Secondary control (also known as accommodative coping) is coping focused on adaptation through, for example, acceptance or cognitive restructuring. Children may approach their disaster-related stressors through problem solving or seeking support, which reflects engagement coping. Disengagement, or passive coping, focuses away from the event or one's reactions to it, through, for example, withdrawal or denial (Compas et al., 2001).

DEVELOPMENTAL CHANGES IN COPING

Three literature reviews have laid an empirical foundation for understanding developmental changes in coping (Compas et al., 2001; Fields & Prinz, 1997; Losoya, Eisenberg, & Fabes, 1998), although none is specific to disaster coping. In 1997, Fields and Prinz reviewed the existing literature on stressors, coping, and adjustment in children from preschool age through adolescence. The following year, Losoya and colleagues (1998) reviewed coping in the context of emotional regulation and social functioning in children from infancy through adolescence. In 2001, Compas and colleagues summarized general developmental changes

in coping, describing the involuntary response processes existing at birth that function as precursors to later voluntary processes.

Specifically, infants rely on caregivers to deal with stressors and demonstrate a partiality to sucrose (Compas et al., 2001), thumb-sucking, and head turning (Losoya et al., 1998) for comfort. During preschool years, children broaden their responses to include problem-focused strategies (Fields & Prinz, 1997), such as seeking comfort from interpersonal relationships and physical objects and withdrawing from potential threats (Compas et al., 2001). Losoya and colleagues (1998) documented a pattern of increasing use of cognitive coping strategies across childhood and adolescence. Specifically, in early to middle childhood, problem-solving strategies gain complexity as children begin to use cognitive reframing or restructuring and calming through self-talk (Compas et al., 2001; Fields & Prinz, 1997) and the formation of abstract “cognitive representations” of important others (Compas et al., 2001, p. 91). By middle childhood and adolescence, coping responses become more diverse and more focused on specific features of the problem or stressor (Compas et al., 2001; Field & Prinz, 1997). Adolescents are more likely to use approach rather than avoidance (Field & Prinz, 1997).

These three reviews provide the foundation for understanding changes in children’s responses to stress and their coping strategies across development. Findings concerning age-related patterns in the use of various coping strategies are somewhat inconsistent (Losoya et al., 1998), however, underscoring the need for further research and refinement of theory regarding stress appraisal and coping across childhood and adolescence. Furthermore, these conceptualizations do not address coping in the context of sudden, and often devastating, stressors such as a disaster or terrorist attack. Some initial theoretical groundwork has been provided, along with a growing body of empirical results on children’s disaster coping. Linking developing theory with emerging research findings is essential to enhance our knowledge of children’s coping processes and to facilitate their recovery from immensely stressful events such as disasters and terrorism.

Developmental Changes in the Disaster Context

Deering (2000) relied on Piaget’s theory of cognitive development to describe changes in coping styles and strategies in the context of disasters. During infancy and through early childhood, children rely on imagination and attribute human characteristics to inanimate objects (animism), which can shape disaster-specific fears. Given their focus on problem-focused coping, preschool-aged children rely upon their parents and others for consolation during and following a disaster. They are also egocentric, viewing events as triggered by their own actions, which may lead to guilt and self-blame for causing or not preventing a disaster. Advancing in their cognitive abilities, children of school age are capable of concrete operations and can apply logic to understand events, to appreciate the seriousness of an event, and to consider the potential effects of an event (Deering, 2000). School-aged children may reenact their experiences in play and/or discuss them repeatedly; they also are attuned to the perspectives of others (Deering, 2000). During adolescence, an increasing tendency to approach (rather than avoid) and an evolving ability to conduct formal operations enable teens to utilize reflection, abstract thinking, and analysis (Deering, 2000); predict outcomes; test alternative perspectives; and experience empathy for others (McNamara, 2000). Adolescents are at risk for difficulties following a major event because the stress caused by adolescence itself may interact with the adolescent’s limited ability to accurately evaluate the impact of the situation (Grant, Hardin, Pesut, & Hardin, 1997; Terranova, Boxer, & Morris, 2009).

THE EFFECTS OF DISASTERS

Children's post-disaster adjustment includes a wide range of biological, cognitive, emotional, and behavioral components. Posttraumatic Stress Disorder (PTSD) and posttraumatic stress symptoms have been identified as the most commonly assessed mental health outcomes for child and adult disaster survivors (Norris, 2005). Children's disaster reactions also include other anxiety disorders, depression, grief, bereavement, and academic difficulties (Silverman & La Greca, 2002); behavior problems (Houlihan, Ries, Polunsky, & Hanson, 2008; Marsee, 2008; Shaw, Applegate, & Schorr, 1996; Stuber et al., 2005; Ward, Shelley, Kaase, & Pane, 2008); and substance use (Reijneveld, Crone, Verhulst, & Verloove-Vanhorick, 2003; Rohrbach, Grana, Vernberg, Sussman, & Sun, 2009). Although their comprehensive disaster research review does not specifically describe children's symptomatology, Norris and colleagues (Norris, Friedman, Watson, Byrne, et al., 2002) identified problems in addition to posttraumatic stress that specifically affect child and adolescent functioning, including separation anxiety, aggressiveness, delinquency, hyperactivity, and dependence.

Severity of Children's Disaster Reactions

Researchers disagree with respect to the impact of disasters on children's mental health. Silverman and La Greca (2002, p. 19) reported that most disaster studies have found "high levels of PTSD" among children and adolescents, but some (e.g., Belter & Shannon, 1993; Wilson & Rosenthal, 2004) have concluded that the vast majority of children exposed to disasters do not develop diagnosable psychopathology. As indicated in the extensive review by Norris and colleagues (Norris, Friedman, Watson, Byrne, et al., 2002), however, children are more likely to be severely impaired than adults, even if not directly exposed to the disaster. While the severity of symptoms appears to diminish over time in most children, distress and other problems associated with disaster experiences may endure for months or even years in others (Norris, Friedman, & Watson, 2002).

The Role of Coping

Children's disaster reactions are influenced by their own inherent characteristics including demographics (i.e., gender, race and ethnicity, and age and development), disposition, and pre-disaster adjustment and psychological functioning; by their exposure to the disaster; by family reactions and support; and by features of the recovery environment. While the literature documents a number of important influences on disaster outcomes (e.g., Norris, Friedman, & Watson, 2002; Norris, Friedman, Watson, Byrne, et al., 2002; Silverman & La Greca, 2002), little work has focused specifically on coping in this context. Coping plays a vital role in determining children's post-disaster adjustment; however, considerable theoretical and empirical efforts are needed to elucidate the relationship between coping and children's adjustment following a disaster.

La Greca, Silverman, Vernberg, and Prinstein (1996) have proposed a model to delineate the effects of disasters on children, which includes coping as a key variable. The hierarchical model, based on this team's theoretical formulation, illustrates directional relations between influential individual, family, and community factors, including (a) preexisting child characteristics, (b) exposure to traumatic events during and after the disaster, (c) coping, and (d) characteristics of the post-disaster recovery environment. La Greca and colleagues (1996) assert that disaster exposure is the "most critical factor" in explaining its inclusion as the first variable in their exploratory model examining posttraumatic stress after Hurricane Andrew (p. 713). Coping is expected to be influenced by the other predictors or correlates in the model (exposure, preexisting child characteristics, and characteristics of the post-disaster recovery environment) and to have a bidirectional relationship with outcomes, including

PTSD symptoms. Further research is needed to confirm directional and/or causal relations between coping and the other variables.

COPING WITHIN THE CONTEXT OF DISASTERS AND TERRORISM

In support of the theoretical model proposed by La Greca and colleagues (1996), some evidence exists in the literature regarding the specific coping strategies used by children who had recently experienced a natural disaster or terrorist attack. For example, children commonly reported using “wishful thinking” to cope with disasters (Lack & Sullivan, 2008; La Greca et al., 1996; Russoniello et al., 2002; Vernberg, La Greca, Silverman, & Prinstein, 1996; Wadsworth et al., 2004). In terms of emotional responses, young disaster victims commonly reported that they expressed their feelings (Wadsworth et al., 2004) or “vented” (e.g., Cardeña, Dennis, Winkel, & Skitka, 2005), communicated “blame or anger” toward others (e.g., La Greca et al., 1996), ruminated (Cryder, Kilmer, Tedeschi, & Calhoun, 2006), and/or experienced emotional numbing (Wadsworth et al., 2004). Children also reported using “distraction,” either through cognition or behavior, to cope with disasters (Cardeña et al., 2005; Lack & Sullivan, 2008). Although not included in all measures of coping, in some studies children have reported using acceptance (or resignation) (e.g., Cardeña et al., 2005; Wadsworth et al., 2004). Seeking social support (e.g., Russoniello et al., 2002) or withdrawing from others (e.g., La Greca et al., 1996; Vernberg et al., 1996) also have been reported in response to disasters.

Coping and Distress

It is difficult to conceptualize the precise nature of the coping process and its association with various disaster outcomes. Within a transactional context, distress resulting from disasters leads to the use of coping strategies, and coping reciprocally affects distress (La Greca et al., 1996). Empirical studies of children’s disaster reactions support this notion, as coping is consistently associated with maladjustment. For example, Cardeña and colleagues (2005) found that three weeks after the September 11, 2001, terrorist attacks, coping explained most of the variance in adolescents’ acute distress, even after accounting for demographic variables. Furthermore, coping seems to be directly and positively correlated with posttraumatic stress symptoms (La Greca et al., 1996; Lack & Sullivan, 2008; Pina et al., 2008; Stallard & Smith, 2007; Terranova et al., 2009), despite some conflicting evidence (e.g., Udwin, Boyle, Yule, Bolton, & O’Ryan, 2000; Yule, Udwin, & Bolton, 2002). Coping also appears to be associated with symptoms of depression in young disaster survivors (Jeney-Gammon, Daugherty, Finch, Belter, & Foster, 1993; Vigil & Geary, 2008). Assessments of the specific coping strategies employed are likely more informative than those providing only a global rating of coping. For example, Stallard and Smith (2007) found that the use of “rumination, thought suppression, and distraction” was associated with higher posttraumatic stress ratings (p. 197).

The Role of Appraisal

Consistent with the transactional model of stress and coping, one’s attributions about a stressor like a disaster or terrorist incident play a key role in the development or exacerbation of negative outcomes such as distress, depression, or posttraumatic stress. Lack and Sullivan (2008) found that while coping and posttraumatic stress symptoms correlated directly in children exposed to a devastating tornado, attributions about the tornado accounted for a large portion (48.7%) of the variance in distress. Self-reported fear explained additional variance in distress, but coping did not, indicating that attributions may play a stronger role than exposure or coping in long-term distress (Lack & Sullivan, 2008). The type(s) of coping strategies utilized, as well as the types and degree of distress, may affect the nature of the relationship between them. Recent research suggests the presence of

an underlying attributional style that may make certain individuals more prone to increased posttraumatic stress symptoms, or more likely to experience avoidance symptoms following trauma exposure. For example, Pina and colleagues (2008) found that children with an avoidant coping style had higher anxiety and posttraumatic stress symptom severity levels than children who used active coping following exposure to Hurricane Katrina. Clearly, caution is warranted in using both avoidant coping and PTSD (diagnoses and symptoms) variables in analyses, due to criterion contamination. Avoidance of trauma-associated stimuli is an essential feature of PTSD and, thus, represents an outcome also measured as a coping strategy.

FACTORS ASSOCIATED WITH DISASTER COPING

Nearly 30 years of research have elucidated an abundance of individual, family, and social factors that are potentially linked to children's abilities to cope with disasters. Clearly, coping strategies are likely to differ between and within individuals according to the individual's disaster exposure and experiences as well as his or her prior experiences and conditions, family and social support, and particular aspects of the recovery environment. Coping strategies also may change over the course of a disaster.

Exposure

As a predictor or correlate of disaster outcomes, exposure includes physical proximity, interpersonal exposure, perceived life threat, personal loss, and life disruption. The relative impact of each type of exposure is undetermined, as is the relationship between exposure and coping. While there is some evidence that physical proximity may affect children's abilities to deal with a disaster, as indicated by severity of disaster-related symptomatology (e.g., Belter & Shannon, 1993; Chemtob, Nomura, & Abramovitz, 2008; Pynoos et al., 1987; Shaw et al., 1995), only one study has involved concurrent measures of coping strategies and exposure (Terranova et al., 2009). Terranova and colleagues (2009) examined several psychosocial and behavioral factors among children and adolescents involved in Hurricane Katrina. Exposure was measured as the extent to which participants experienced damage to their homes, were separated from loved ones, lacked necessities during or after the storm, were evacuated, and viewed disaster-related media coverage. The study failed to find a relationship between this exposure and "negative" coping, which was undefined but included externalized, internalized, and avoidant behaviors (p. 348). Negative coping was associated with more severe posttraumatic stress symptoms, even 8 months after the hurricane. Additional research is needed to further elucidate the nature of associations between physical, interpersonal, and subjective exposure; coping; and disaster reactions.

Child Characteristics

A number of characteristics of children themselves influence their coping in the context of disasters. These include demographic characteristics such as gender, race and ethnicity, and age and development; disposition; and pre-disaster functioning and adjustment.

Gender—Among disaster studies that use gender as a predictor variable, being female is commonly identified as a risk factor for negative outcomes. Many studies find girls to have higher rates of posttraumatic stress symptoms and to be at greater risk for posttraumatic stress symptoms in general (e.g., Bokszczanin, 2007; Green et al., 1994; Hoven, Duarte, & Mandell, 2003; Lonigan, Shannon, Taylor, Finch, & Sallee, 1994; Vernberg et al., 1996; Weems et al., 2007). In terms of coping, studies have found that in the context of disasters and terrorism, girls use more emotion-focused coping (Cardeña et al., 2005; Wadsworth et al., 2004) and may be more likely to engage in dysfunctional coping strategies (e.g., denial, "behavioral disengagement") (Cardeña et al., 2005, p. 74) than boys. Following the

September 11, 2001, terrorist attacks, a nationwide survey of adolescents and adults ages 13 years and older found that males primarily utilized substance abuse, planning, humor, and acceptance to cope (Cardeña et al., 2005). As Silverman and La Greca warned (2002), however, gender differences typically are assumed from modest results, yielding unclear statistical and clinical conclusions. For example, Vernberg and colleagues (1996) found that although being female contributed to PTSD symptoms among child survivors of Hurricane Andrew, it contributed only 1% of additional variance to their model, for which other variables (e.g., exposure, coping, social support) explained the remaining 61%.

Culture, race, and ethnicity—Research is needed to examine cultural factors associated with coping styles and coping effectiveness in the context of disasters. Definitive results regarding racial and ethnic differences in children’s disaster reactions and coping are lacking as well. Results of studies examining racial and ethnic differences in child and adolescent disaster outcomes vary, and investigations of coping differences across racial and ethnic groups in the context of disasters are virtually nonexistent. Some dated studies of young disaster victims have found disaster outcomes to be relatively equivalent across racial groups (e.g., Garrison et al., 1995; Shannon, Lonigan, Finch, & Taylor, 1994; Vernberg et al., 1996), but in a review of the literature on child disaster reactions and interventions, La Greca and Silverman (2006) concluded that minority racial status is a risk factor for greater posttraumatic stress severity among child disaster survivors.

Some studies of child disaster victims have revealed differences among racial and ethnic groups in their level of post-disaster distress, use of support systems, and, to a lesser extent, coping strategies (Norris, Friedman, Watson, Byrne, et al., 2002). For example, in their study of children’s coping following Hurricane Floyd, Russoniello and colleagues (2002) found blaming others to be more prevalent among African American children than in European American children. These researchers proposed that other preexisting social factors, such as inequitable socioeconomic conditions, explained this finding. Similarly, Silverman and La Greca (2002) concluded that race and other sociodemographic factors may simply represent other variables more directly involved and not investigated (e.g., stress resulting from discrimination, cultural values) in children’s coping responses. The need for a unifying conceptual basis to explain racial and ethnic group differences in the development of coping over childhood is clear.

Age and development—While development certainly affects children’s ability to process and cope with disasters, little empirical research has examined the developmental progression in coping. Cross-sectional designs that include both children and adolescents often use age as a proxy for measuring developmental differences due to the complexity of measuring youth development. Norris and colleagues (Norris, Friedman, Watson, Byrne, et al., 2002) have concluded that the results of age were too varied to interpret as supporting or disputing development as a factor affecting children’s disaster outcomes. La Greca and Silverman (2006) summarized the results of analyses based on age as having “uncertain” meaning, due to developmental differences in symptom presentation, small samples, and contradictory results across the child disaster literature. Comprehensive measurement of developmental influences would include evaluation of five developmental realms: biological, cognitive, social, emotional, and environmental. Using age ranges typically obscures true developmental differences because any apparent trends are generally particular to a specific group or sample rather than representing true developmental differences. Nor do such findings specify the influence of developmental changes. At the very least, longitudinal designs are necessary to overcome the confounding of age and cohort effects.

A study of Israeli children who took refuge in a sealed room during scud missile attacks revealed that fifth-grade children used more problem-focused and less emotion-focused

coping than their older seventh- and ninth-grade counterparts (Weisenberg, Schwarzwald, Waysman, Solomon, & Klingman, 1993). Wadsworth and colleagues (2004) discovered a similar pattern of a progression in coping responses of adolescents, young adults, and adults related to the September 11, 2001, terrorist attacks. Results indicated improved abilities to express and regulate emotion and a reduction in disengagement from adolescence through adulthood. The use of rumination also decreased with age, while intrusive thoughts increased. In a similar study following the September 11 attacks, Cardeña and colleagues (2005) found that adolescents and young adults (participants aged 13 to 24 years), as compared with adults (older than age 24 years), engaged in more disengagement, distraction, and instrumental support seeking and relied less on acceptance, emotional venting, and planning the future.

Disposition—The transactional model of stress and coping outlines a situation-specific approach to stress and coping (Lazarus & Folkman, 1984) and places little emphasis on temperamental and personality variables that affect individuals' appraisals of their experiences. Carver and colleagues (Carver, Scheier, & Weintraub, 1989) emphasized the importance of examining specific traits that predispose individuals to respond to stress in characteristic ways—a process described as “dispositional coping” (p. 270). A growing body of evidence reveals the influence of dispositional variables in the coping process, however. Specifically, child disaster studies have provided some empirical evidence of a link between disposition and disaster-specific coping style and strategies. Terranova and colleagues (2009) found positive correlations between coping and two dispositional qualities—regulatory abilities (i.e., attention and inhibitory control) and fear reactivity. Specifically, children's abilities to shift and focus attention and exert inhibitory control over behaviors were associated with a reduction in the use of certain externalizing, internalizing, and avoidant coping strategies. Conversely, a rating of temperamental fear reactivity correlated directly with the use of these “negative” coping strategies.

Researchers have compared the relative influence of dispositional coping to that of situation-specific coping. For example, Ayers, Sandler, West, and Roosa (1996) found moderate to strong associations between children's dispositional and situation-specific coping styles and concluded that, in comparison with adults, children's dispositional coping (versus situational coping) more strongly influences their stress responses. This finding is supported by a study of children and parents interviewed 1 month after the September 11, 2001, terrorist attacks, which demonstrated that children's pre-event dispositional coping (active or avoidant) and their event-specific situational coping (active or avoidant) affected their September 11 posttraumatic stress symptoms (Lengua, Long, & Meltzoff, 2006). Results revealed that dispositional coping directly affected the initiation of situation-specific coping strategies and the development of positive or negative stress outcomes. Specifically, Lengua and colleagues (2006) discovered a link between dispositional avoidance, situation-specific avoidant coping, and the development of posttraumatic stress symptoms.

Avoidance is one of the fundamental criteria necessary for a diagnosis of PTSD (American Psychiatric Association, 2000). Silverman and La Greca (2002) contend that “avoidance” of trauma-related stimuli is an uncommon symptom reported by child disaster victims and thus may represent an important indication of the presence of genuine psychopathology. The study by Lengua and colleagues (2006) suggests that a preexisting, dispositional trait of avoidant coping may be a risk factor for the development of a pathological response to a disaster. More research on avoidance as a coping style or specific strategy is clearly indicated. For example, some evidence exists to support the notion that situation-specific avoidance alone may not predict maladaptive outcomes. In fact, Muldoon and Cairns (1999) cited results from studies with children exposed to chronic war, which indicated that avoidance may actually serve as an effective coping style.

Pre-disaster adjustment, prior trauma, and psychological functioning—Coping is significant for children’s adjustment and is related to symptoms of several childhood psychiatric disorders (Compas et al., 2001). Certainly, the ways in which children cope with general life stress and the ways in which they deal with traumatic experiences affect their overall functioning and shape their responses to disasters. Empirical support has emerged to illustrate the influence of pre-disaster psychopathology (e.g., Asarnow et al., 1999; Earls, Smith, Reich, & Jung, 1988; La Greca, Silverman, & Wasserstein, 1998; Silverman & La Greca, 2002; Vogel & Vernberg, 1993; Weems et al., 2007) and exposure to prior trauma (e.g., Garrison, Weinrich, Hardin, Weinrich, & Wang, 1993; Hoven et al., 2005; Pfefferbaum et al., 2003) on disaster outcomes; however, a link between pre-disaster adjustment and post-disaster coping has yet to be fully investigated. Pre-disaster functioning, although seldom assessed prospectively, affects children’s functioning prior to the disaster and would seem to indicate an ability to cope with disasters. Lengua and colleagues (2006) demonstrated that children’s stress load prior to the September 11 attacks predicted attack-specific reactions, which predicted greater post-traumatic stress. Additionally, preexisting psychiatric disorders (Earls et al., 1998), particularly pre-disaster anxiety (Asarnow et al., 1999; La Greca et al., 1998), are associated with maladaptive disaster reactions. There also is some evidence to indicate that children who have preexisting difficulties with inattention and academic performance may have greater difficulty coping with a disaster (see La Greca et al., 1998). Clearly, prospective studies provide an avenue for enhancing our knowledge in this area.

Family Factors

As primary sources for children’s care in the post-disaster recovery environment, parents play a key role in their children’s responses. Parents provide social and other forms of support; they serve as role models for effective or ineffective coping; and they can contribute to the development or exacerbation of negative outcomes (Compas & Epping, 1993). Research generally supports the existence of these roles and indicates that parental stress significantly affects their children’s responses to disasters. In fact, Norris and colleagues (Norris, Friedman, Watson, Byrne, et al., 2002) concluded that parental stress is among the most robust predictors of children’s distress following disasters.

Parental interpretations and emotional reactions may provide a measure of the seriousness of the event for their children (Deering, 2000). Allen and Rosse (1998) found that among Hurricane Katrina families, parental distress was directly related to child stress, but there was no association between parental coping and child stress. Studies of child and parent reactions to the September 11, 2001, terrorist attacks also support the existence of a relationship between parent and child disaster coping. For example, Gil-Rivas, Silver, Holman, McIntosh, and Poulin (2007) found an increase in adolescents’ post-traumatic symptoms associated with their parents’ distress. Similarly, Fairbrother, Stuber, Galea, Fleischman, and Pfefferbaum (2003) found a link between New York City children’s severe posttraumatic stress and parents’ crying in their presence. Children’s behavior problems also were associated with parents’ lack of knowledge of how their children were responding to the September 11 attacks as well as with parental posttraumatic stress disorder or depression (Stuber et al., 2005).

Adults affected by a disaster may not have the psychological or emotional means to assist children, and they may underestimate or overlook the support children require (Belter & Shannon, 1993; Silverman & La Greca, 2002). Results from a study of Polish families exposed to a flood demonstrated that lower parental support and parental overprotectiveness were both associated with increased posttraumatic stress symptoms (Bokszczanin, 2008).

Parents' accurate appraisals of their children's disaster reactions and adequate support are likely to enhance children's coping following disaster.

Furthermore, some evidence suggests that parents' identification of specific coping strategies may be beneficial. For example, lower distress among adolescents was found to be associated with parental recommendations to use particular coping strategies, such as positive reframing, acceptance, and emotional expression, in response to the September 11 terrorist attacks (Gil-Rivas et al., 2007). In a study with adolescents displaced by Hurricane Katrina, Vigil and Geary (2008) assessed the specific strategies adolescents and their families used when facing difficult (non-disaster) situations and found seeking social support, seeking spiritual support, mobilizing community resources, reframing, and passive appraisal to be most common. Results indicated that families' use of "mobilizing coping" (i.e., seeking assistance from community programs) was associated with lower self-esteem and increased distress and depression among adolescents post disaster (p. 178). Importantly, mobilizing coping partially mediated the influence of the hurricane and relocation experience on adolescents' functioning, such that disaster exposure and displacement were not as detrimental as the family's use of mobilizing coping. Researchers postulated several possible explanations, including adolescents' perceptions of increased vulnerability, social humiliation, and/or repeated exposure to traumatic memories. Additionally, mobilizing coping may have actually signified increased maladjustment among family members and/or families' experiences with secondary adversities, indicating a greater need for and use of community assistance.

Social Factors

Social factors also affect children's reactions and coping. Specifically, schools and communities greatly influence children, comprising the social environment in which they interact as they recover from a disaster. Empirical findings confirm the significance of social factors and support in children's disaster reactions, including support from individuals, schools, and greater society. Udwin and colleagues (2000) found that the lack of perceived and received social support correlated with the development and duration of PTSD. Similarly, La Greca and colleagues (1996) discovered that children reporting high levels of social support from significant others during the 3 months immediately after Hurricane Andrew had fewer posttraumatic stress symptoms at 10 months.

The relationship between community support and children's coping is complex, as findings indicate both positive and negative outcomes. While receiving professional or community support may be associated with increased distress (Pina et al., 2008; Vigil & Geary, 2008), there is insufficient evidence to date that indicates a causal relationship. As Vigil and Geary (2008) suggested, perhaps particular aspects of support result in untimely reexperiencing of the disaster, or receipt of support itself exacerbates perceptions of vulnerability or stigmatization. A more important issue, however, may be the interplay between children's and parents' disaster reactions. The benefits of community support for affected children may be primarily influenced by the stress appraisals, severity of reactions, and coping strategies of their parents.

SUMMARY AND LIMITATIONS IN CURRENT KNOWLEDGE

The accumulation of evidence on exposure, demographic variables, pre-disaster adjustment, family factors, and features of the disaster recovery environment provides foundational information about important contributors to disaster reactions. The value of addressing coping as an influence on disaster reactions is recognized in theoretical conceptualizations; however, only recently has empirical evidence begun to link coping with other disaster-related variables and to reveal its relationship with disaster outcomes. While researchers

have made strides in studying child coping in the context of disasters, empirical results are limited and conclusions tentative due to a lack of consensus in terminology and theoretical formulations, difficulties inherent in conducting disaster research, the relative paucity of studies, and a lack of consensus in methods and measures.

This review of the existing literature on children's coping in disasters reveals the need for further elucidation of conceptualizations of coping. Further, in their research plan, Compas and colleagues (2001) recommended better standardization in assessing coping and enhanced knowledge of the correlates and consequences associated with coping. Although some researchers include measures of threat appraisal, children's attributions and thoughts about the disaster and their abilities to cope have not been evaluated systematically and require attention in future studies. Compas and Epping (1993) suggested that research focus on identifying optimal coping strategies within and across situations as well as across time. Oakland and Ostell (1996) emphasized the importance of assessing coping efficacy, including qualitative descriptions of why a strategy was chosen, whether it was effective, and what effects it had on reactions and the situation. Clearly, future research is needed to assess the effectiveness of various strategies, through both subjective and objective means. Furthermore, the extant literature has not clarified biological processes involved in coping or the importance of temperament.

It is difficult to conceptualize the precise nature of coping processes and their association with various disaster outcomes in part because extant studies have not used consistent or rigorous methodology or designs that support conclusions about cause and effect. Significant variability exists in the measurement tools, study methods, samples, and variables used in studies dealing with children's coping in the context of disasters and terrorism. Inherent problems in study design exist (e.g., cross-sectional rather than longitudinal assessment), as well as a bidirectional relationship between coping and outcome (Norris, Friedman, Watson, Byrne, et al., 2002). Use of designs that incorporate non-victimized controls or baseline data (Belter & Shannon, 1993) and investigate adaptive coping among resilient children and those who experience positive outcomes (Cryder et al., 2006) will enhance the validity of results. Furthermore, the extent to which results from adolescent studies apply to children (and vice versa) and the degree to which findings can be generalized to diverse samples of youth remain unclear. As a result, researchers are cautioned against making broad-reaching conclusions from their results. A better understanding of children's coping in the disaster context should contribute to the development of prevention and intervention efforts that will foster resilience for children and families in the face of mass trauma.

Acknowledgments

This work was funded in part by the National Institute of Mental Health, the National Institute of Nursing Research, and the Substance Abuse and Mental Health Services Administration (Grant 5 R25 MH070569), which established the Child and Family Disaster Research Training and Education Program at the Terrorism and Disaster Center (TDC) at the University of Oklahoma Health Sciences Center. TDC is a partner in the National Child Traumatic Stress Network and is funded by the Substance Abuse and Mental Health Services Administration (Grant 1 U79 SM57278).

References

- Allen, RD.; Rosse, W. Children's response to exposure to traumatic events; Quick Response Report. 1998. p. 103 Retrieved from www.colorado.edu/hazards/research/qr/qr103.html
- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4. Washington, DC: Author; 2000. text revision

- Asarnow J, Glynn S, Pynoos RS, Nahum J, Guthrie D, Cantwell DP, Franklin B. When the Earth stops shaking: Earthquake sequelae among children diagnosed for pre-earthquake psychopathology. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1999; 38:1016–1023. [PubMed: 10434494]
- Ayers TS, Sandler IN, West SG, Roosa MW. A dispositional and situational assessment of children's coping: Testing alternative models of coping. *Journal of Personality*. 1996; 64:923–958. [PubMed: 8956518]
- Belter, RW.; Shannon, MP. Impact of natural disasters on children and families. In: Saylor, CF., editor. *Children and disasters*. New York, NY: Plenum Press; 1993. p. 85-103.
- Bokszczanin A. PTSD symptoms in children and adolescents 28 months after a flood: Age and gender differences. *Journal of Traumatic Stress*. 2007; 20:347–351. [PubMed: 17598138]
- Bokszczanin A. Parental support, family conflict, and overprotectiveness: Predicting PTSD symptom levels of adolescents 28 months after a natural disaster. *Anxiety, Stress & Coping*. 2008; 21:325–335.
- Cardeña E, Dennis JM, Winkel M, Skitka LJ. A snapshot of terror: Acute posttraumatic responses to the September 11 attack. *Journal of Trauma and Dissociation*. 2005; 6:69–84. [PubMed: 16150670]
- Carver CS, Scheier MF, Weintraub JK. Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*. 1989; 56:267–283. [PubMed: 2926629]
- Chemtob CM, Nomura Y, Abramovitz RA. Impact of conjoined exposure to the World Trade Center attacks and to other traumatic events on the behavioral problems of preschool children. *Archives of Pediatric and Adolescent Medicine*. 2008; 162:126–133.
- Compas BE, Connor-Smith JK, Saltzman H, Thomsen AH, Wadsworth ME. Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin*. 2001; 127:87–127. [PubMed: 11271757]
- Compas, BE.; Epping, JE. Stress and coping in children and families: Implications for children coping with disaster. In: Saylor, CF., editor. *Children and disasters*. New York, NY: Plenum Press; 1993. p. 11-28.
- Cryder CH, Kilmer RP, Tedeschi RG, Calhoun LG. An exploratory study of posttraumatic growth in children following a natural disaster. *American Journal of Orthopsychiatry*. 2006; 76:65–69. [PubMed: 16569128]
- Deering CG. A cognitive developmental approach to understanding how children cope with disasters. *Journal of Child and Adolescent Psychiatric Nursing*. 2000; 13:7–16. [PubMed: 11022467]
- Earls F, Smith E, Reich W, Jung KG. Investigating psychopathological consequences of a disaster in children: A pilot study incorporating a structured diagnostic interview. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1988; 27:90–95. [PubMed: 3343213]
- Fairbrother G, Stuber J, Galea S, Fleischman AR, Pfefferbaum B. Posttraumatic stress reactions in New York City children after the September 11, 2001, terrorist attacks. *Ambulatory Pediatrics*. 2003; 3:304–311. [PubMed: 14616045]
- Fields L, Prinz RJ. Coping and adjustment during childhood and adolescence. *Clinical Psychology Review*. 1997; 17:937–976. [PubMed: 9439874]
- Garrison CZ, Bryant ES, Addy CL, Spurrier PG, Freedy JR, Kilpatrick DG. Posttraumatic stress disorder in adolescents after Hurricane Andrew. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1995; 34:1193–1201. [PubMed: 7559314]
- Garrison CZ, Weinrich MW, Hardin SB, Weinrich S, Wang L. Posttraumatic stress disorder in adolescents after a hurricane. *American Journal of Epidemiology*. 1993; 138:522–530. [PubMed: 8213756]
- Gil-Rivas V, Silver RC, Holman EA, McIntosh DN, Poulin M. Parental response and adolescent adjustment to the September 11, 2001 terrorist attacks. *Journal of Traumatic Stress*. 2007; 20:1063–1068. [PubMed: 18157889]
- Grant SM, Hardin SB, Pesut DJ, Hardin T. Psychological evaluations, referrals, and follow-up of adolescents after their exposure to Hurricane Hugo. *Journal of Child and Adolescent Psychiatric Nursing*. 1997; 10:7–16. [PubMed: 9146173]

- Green BL, Grace MC, Vary MG, Kramer TL, Gleser GC, Leonard AC. Children of disaster in the second decade: a 17-year follow-up of Buffalo Creek survivors. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1994; 33:71–79. [PubMed: 8138524]
- Houlihan D, Ries BJ, Polunsky MA, Hanson CN. Predictors of behavior and level of life satisfaction of children and adolescents after a major tornado. *Journal of Psychological Trauma*. 2008; 7:21–36.
- Hoven CW, Duarte CS, Lucas CP, Wu P, Mandell DJ, Goodwin RD, Susser E. Psychopathology among New York City public school children 6 months after September 11. *Archives of General Psychiatry*. 2005; 62:545–552. [PubMed: 15867108]
- Hoven CW, Duarte CS, Mandell DJ. Children's mental health after disasters: The impact of the World Trade Center attack. *Current Psychiatry Reports*. 2003; 5:101–107. [PubMed: 12685989]
- Jeney-Gammon P, Daugherty TK, Finch AJ, Belter RW, Foster KY. Children's coping styles and report of depressive symptoms following a natural disaster. *Journal of Genetic Psychology*. 1993; 154:259–267. [PubMed: 8366334]
- Lack CW, Sullivan MA. Attributions, coping, and exposure as predictors of long-term posttraumatic distress in tornado-exposed children. *Journal of Loss & Trauma*. 2008; 13:72–84.
- La Greca, AM.; Silverman, WK. Treating children and adolescents affected by disasters and terrorism. In: Kendall, PC., editor. *Child and adolescent therapy, third edition: Cognitive-behavioral procedures*. New York, NY: Guilford Press; 2006. p. 356-382.
- La Greca AM, Silverman WK, Vernberg EM, Prinstein MJ. Symptoms of posttraumatic stress in children after Hurricane Andrew: A prospective study. *Journal of Consulting and Clinical Psychology*. 1996; 64:712–723. [PubMed: 8803361]
- La Greca AM, Silverman WK, Wasserstein SB. Children's predisaster functioning as a predictor of posttraumatic stress following Hurricane Andrew. *Journal of Consulting and Clinical Psychology*. 1998; 66:883–892. [PubMed: 9874901]
- Lazarus, RS. *Psychological stress and the coping process*. New York, NY: McGraw-Hill; 1966.
- Lazarus RS. Coping theory and research: Past, present, and future. *Psychosomatic Medicine*. 1993; 55:234–247. [PubMed: 8346332]
- Lazarus, RS.; Folkman, S. *Stress, appraisal, and coping*. New York, NY: Springer; 1984.
- Lengua LJ, Long AC, Meltzoff AN. Pre-attack stress-load, appraisals, and coping in children's responses to the 9/11 terrorist attacks. *Journal of Child Psychology and Psychiatry*. 2006; 47:1219–1227. [PubMed: 17176377]
- Lonigan CJ, Shannon MP, Taylor CM, Finch AJ, Sallee FR. Children exposed to disaster: II. Risk factors for the development of posttraumatic symptomatology. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1994; 33:94–105. [PubMed: 8138526]
- Losoya S, Eisenberg N, Fabes RA. Developmental issues in the study of coping. *International Journal of Behavioral Development*. 1998; 22:287–313.
- Marsee MA. Reactive aggression and posttraumatic stress in adolescents affected by Hurricane Katrina. *Journal of Clinical Child and Adolescent Psychology*. 2008; 37:519–529. [PubMed: 18645743]
- McNamara, S. *Stress in young people: What's new and what can we do?*. New York, NY: Continuum International; 2000.
- Muldoon, O.; Cairns, E. Learning to cope: Children, young people and war. In: Frydenberg, E., editor. *Learning to cope*. Oxford, England: Oxford University Press; 1999. p. 322-337.
- Norris, FH. Range, magnitude, and duration of the effects of disasters on mental health: Review update 2005. Hanover, NH: National Center for PTSD; 2005.
- Norris FH, Friedman MJ, Watson PJ. 60,000 disaster victims speak: Part II. Summary and implications of disaster mental health research. *Psychiatry*. 2002; 65:240–260. [PubMed: 12405080]
- Norris FH, Friedman MJ, Watson PJ, Byrne CM, Diaz E, Kaniasty K. 60,000 disaster victims speak: Part I. An empirical review of the empirical literature, 1981–2001. *Psychiatry*. 2002; 65:207–239. [PubMed: 12405079]
- Oakland S, Ostell A. Measuring coping: A review and critique. *Human Relations*. 1996; 49:133–155.

- Pfefferbaum B, North CS, Doughty DE, Gurwitsch RH, Fullerton CS, Kyula J. Posttraumatic stress and functional impairment in Kenyan children following the 1998 American embassy bombing. *American Journal of Orthopsychiatry*. 2003; 73:133–140. [PubMed: 12769235]
- Pina AA, Villalta IK, Ortiz CD, Gottschall AC, Costa NM, Weems CF. Social support, discrimination, and coping as predictors of posttraumatic stress reactions in youth survivors of Hurricane Katrina. *Journal of Clinical Child and Adolescent Psychology*. 2008; 37:564–574. [PubMed: 18645747]
- Pynoos RS, Frederick C, Nader K, Arroyo W, Steinberg A, Eth S, Nunez F, Fairbanks L. Life threat and posttraumatic stress in school-age children. *Archives of General Psychiatry*. 1987; 44:1057–1063. [PubMed: 3689093]
- Reijneveld SA, Crone MR, Verhulst FC, Verloove-Vanhorick SP. The effect of a severe disaster on the mental health of adolescents: A controlled study. *Lancet*. 2003; 362:691–696. [PubMed: 12957091]
- Rohrbach LA, Grana R, Vernberg E, Sussman S, Sun P. Impact of Hurricane Rita on adolescent substance use. *Psychiatry*. 2009; 72:222–237. [PubMed: 19821646]
- Rothbaum R, Weisz JR, Snyder SS. Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology*. 1982; 42:5–37.
- Russoniello CV, Skalko TK, O'Brien K, McGhee SA, Bingham-Alexander D, Beatley J. Childhood posttraumatic stress disorder and efforts to cope after Hurricane Floyd. *Behavioral Medicine*. 2002; 28:61–71. [PubMed: 12613287]
- Shannon M, Lonigan CJ, Finch AJ, Taylor CM. Children exposed to disaster: I. Epidemiology of posttraumatic symptoms and symptom profiles. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1994; 33:80–93. [PubMed: 8138525]
- Shaw JA, Applegate B, Schorr C. Twenty-one-month follow-up study of school-age children exposed to Hurricane Andrew. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1996; 35:359–364. [PubMed: 8714325]
- Shaw JA, Applegate B, Tanner S, Perez D, Rothe E, Campo-Bowen AE, Lahey BL. Psychological effects of Hurricane Andrew on an elementary school population. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1995; 34:1185–1192. [PubMed: 7559313]
- Silverman, WK.; La Greca, AM. Children experiencing disasters: Definitions, reactions, and predictors of outcomes. In: La Greca, AM.; Silverman, WK.; Vernberg, EM.; Roberts, MC., editors. *Helping children cope with disasters and terrorism*. Washington, DC: American Psychological Association; 2002. p. 11-33.
- Stallard P, Smith E. Appraisals and cognitive coping styles associated with chronic posttraumatic symptoms in child road traffic accident survivors. *Journal of Child Psychology and Psychiatry*. 2007; 48:194–201. [PubMed: 17300558]
- Stuber J, Galea S, Pfefferbaum B, Vandivere S, Moore K, Fairbrother G. Behavior problems in New York City's children after the September 11, 2001 terrorist attacks. *American Journal of Orthopsychiatry*. 2005; 75:190–200. [PubMed: 15839756]
- Terranova AM, Boxer P, Morris AS. Factors influencing the course of posttraumatic stress following a natural disaster: Children's reactions to Hurricane Katrina. *Journal of Applied Developmental Psychology*. 2009; 30:344–355.
- Udwin O, Boyle S, Yule W, Bolton D, O'Ryan D. Risk factors for long-term psychological effects of a disaster experienced in adolescence: Predictors of posttraumatic stress disorder. *Journal of Child Psychology and Psychiatry*. 2000; 41:969–979. [PubMed: 11099114]
- Vernberg EM, La Greca AM, Silverman WK, Prinstein MJ. Prediction of posttraumatic stress symptoms in children after Hurricane Andrew. *Journal of Abnormal Psychology*. 1996; 105:237–248. [PubMed: 8723005]
- Vigil JM, Geary DC. A preliminary investigation of family coping styles and psychological well-being among adolescent survivors of Hurricane Katrina. *Journal of Family Psychology*. 2008; 22:176–180. [PubMed: 18266546]
- Vogel JM, Vernberg EM. Part I: Children's psychological responses to disasters. *Journal of Clinical Child Psychology*. 1993; 22:464–484.

- Wadsworth ME, Gudmundsen GR, Raviv T, Ahlkvist JA, McIntosh DN, Kline GH, Burwell RA. Coping with terrorism: Age and gender differences in effortful and involuntary responses to September 11th. *Applied Developmental Science*. 2004; 8:143–157.
- Ward ME, Shelley M, Kaase K, Pane JF. Hurricane Katrina: A longitudinal study of the achievement and behavior of displaced students. *Journal of Education for Students Placed at Risk*. 2008; 13:297–317.
- Weems CF, Pina AA, Costa NM, Watts SE, Taylor LK, Cannon MF. Predisaster trait anxiety and negative affect predict posttraumatic stress in youths after Hurricane Katrina. *Journal of Consulting and Clinical Psychology*. 2007; 75:154–159. [PubMed: 17295574]
- Weisenberg M, Schwarzwald J, Waysman M, Solomon Z, Klingman A. Coping of school-age children in the sealed room during scud missile bombardment and postwar stress reactions. *Journal of Consulting and Clinical Psychology*. 1993; 61:462–467. [PubMed: 8326048]
- Wilson WC, Rosenthal BS. Psychological effects of attack on the World Trade Center: Analysis before and after. *Psychological Reports*. 2004; 94:587–606. [PubMed: 15154191]
- Yule, W.; Udwin, O.; Bolton, D. Mass transportation disasters. In: La Greca, AM.; Silverman, WK.; Vernberg, EM.; Roberts, MC., editors. *Helping children cope with disasters and terrorism*. Washington, DC: American Psychological Association; 2002. p. 223-239.

Biographies

Betty Pfefferbaum is George Lynn Cross Research Professor, Paul and Ruth Jonas Chair, Professor, and Chairman in the Department of Psychiatry and Behavioral Sciences at the University of Oklahoma College of Medicine in Oklahoma City, Oklahoma. Dr. Pfefferbaum is the Co-Director of the Terrorism and Disaster Center of the National Child Traumatic Stress Network. Her expertise and research interests include child trauma and disaster mental health.

Mary A. Noffsinger is currently with Courtroom Sciences, Inc. in Irving, Texas. Dr. Noffsinger's expertise and research interests encompass the fields of neuropsychology, forensic and jury psychology, and mass trauma.

Leslie H. Wind is Clinical Associate Professor and Associate Dean of Academic Programs in the School of Social Work at the University of Southern California in Irvine, California. Dr. Wind's overarching area of expertise is in trauma. Her research interests include coping and resilience in the aftermath of trauma.

James R. Allen is Rainbolt Family Chair in Child Psychiatry, Professor, and Vice Chairman of Child and Adolescent Psychiatry in the Department of Psychiatry and Behavioral Sciences at the University of Oklahoma College of Medicine in Oklahoma City, Oklahoma. Dr. Allen is Co-Director of a diagnostic nursery and has a special interest in working with early relational trauma in the preschool group.