
Growing Up in the Shadow of Terrorism

Youth in America After 9/11

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Research conducted in the aftermath of the September 11th terrorist attacks (9/11) suggests that, except for those who directly witnessed or suffered loss from the attacks, for most children the emotional impact was relatively transitory. We review this literature as well as consider other ways in which the attacks may have played a role in the development of adolescents and young adults as they came of age in the shadow of 9/11 in the United States. Specifically, we discuss the potential impact of the collective trauma of 9/11 on children's coping and emotional regulation, their sociopolitical attitudes, and their general beliefs about the world. Developmental issues and the role of parents in shaping their children's responses to 9/11 are also addressed. Researchers interested in children's social, emotional, and psychological development have much to learn about children's reactions to events like 9/11 and factors that might mitigate the negative consequences of such events on children's development.

Keywords: terrorism, 9/11, youth, coping, self-regulation

Most of the children and adolescents who lived in the United States during the September 11, 2001, terrorist attacks (9/11) have grown up in the shadow of societal changes that followed or coincided with the reality of terrorism on U.S. soil. The 9/11 attacks ushered in a number of restrictions to travel and civil liberties, changes to political discourse, and two wars. Many young adults who came of age during the post-9/11 decade may be unaware of the ways in which this singular event led to an unprecedented government and societal response. Yet, early in May 2011, the death of Osama bin Laden was anecdotally greeted with celebration among mostly youthful crowds at public venues and college campuses across the United States. Many commentators noted the enthusiasm vocally expressed by young people relative to other demographic groups, perhaps an acknowledgment of the degree to which their lives uniquely had been altered by the 9/11 attacks.

Although thousands of adults witnessed or directly experienced the attacks in New York City, New York; Washington, DC; and Pennsylvania, the majority of individuals in the United States learned about the events of the day via the media, most by watching them live on television (Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002). Similarly, whereas some schoolchildren in New York City were able to see the attacks from their class-

rooms (Hoven et al., 2005), it is likely that most children learned about the attacks indirectly, either because their teachers played television or radio in the classroom on 9/11 (Noppe, Noppe, & Bartell, 2006), because they were informed by caregivers or peers, or because they learned about the attacks as a result of subsequent media exposure.

In the past decade, there has been a growing body of research on the effects of political conflict and exposure to disasters on children's mental health and socioemotional development. These bodies of work provide some initial information on the effects of terrorism and natural disasters, with some of the early studies delineating the correlates and effects of the events of 9/11 on children. However, as noted by Cummings et al. (2010), a second generation of research on children and political violence, including a focus on issues of moderation and mediating processes, is needed "to advance process-oriented understanding of how and why, for whom and when, these contexts are associated with adjustment problems in children" (p. 827; see also Comer & Kendall, 2007; Furr, Comer, Edmunds, & Kendall, 2010, for similar arguments). In addition, moderating and mediating processes seldom have been studied in regard to the associations of terrorism or disasters with potential outcomes for children other than maladjustment, such as their regulation, sociopolitical attitudes, or positive adjustment. Furthermore, little is known about the long-term effects—over more than a few years—of political conflict/terrorism (or other types of disasters) on children's functioning.

The effects of terrorism and political violence may differ from those of natural disasters. As noted by Torabi and Seo (2004), both natural disasters and terrorist attacks typically come without much warning and may involve aftershocks. However, natural disasters, they argued, have a clear low point, whereas, for terrorist attacks, it is difficult to identify when the worst is over and things can be expected to improve. Moreover, terrorist attacks may be

This article was published Online First August 8, 2011.

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This research was supported by National Institute of Mental Health Grant MH060838 awarded to Nancy Eisenberg and Tracy L. Spinrad.

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especially devastating because they are deliberate acts with political or ideological overtones. Indeed, the specific goals of the perpetrators are to instill fear and create ongoing anxiety in the populace, leading to wide-ranging social, political, psychological, and economic consequences (Silver & Matthew, 2008).

Distress and Symptomatology After Terrorism

Major negative life events can play an important role in adolescents' short- and long-term psychological adjustment. Exposure to disasters, terrorism, or community and family violence frequently elicits symptoms of anxiety, generalized distress, avoidance, persistent reexperiencing of the event, sleep disturbances, and behavioral difficulties (Bolton, O'Ryan, Udwin, Boyle, & Yule, 2000; Davis & Siegel, 2000; Fremont, 2004). Moreover, these events may have a detrimental impact on adolescents' ability to manage normal developmental tasks, which in turn may have consequences for their psychosocial adjustment (Margolin & Gordis, 2000). Evidence suggests that both direct and indirect exposure to the 9/11 attacks resulted in a modest increase in symptomatology (posttraumatic stress symptoms, anxiety, separation anxiety disorder) among representative samples of youth and young adults in New York City, with some children and adolescents exhibiting clinically significant symptomatology (Comer et al., 2010; Gould, Munfakh, Kleinman, Lubell, & Provenzano, 2004; Hoven et al., 2004). In general, greater exposure resulted in greater symptomatology (Agronick, Stueve, Vargo, & O'Donnell, 2007), although factors other than exposure were significant predictors of post-9/11 psychopathology, including economic difficulties and disadvantaged circumstances before the attacks and cumulative traumas after the

attacks (see, e.g., Calderoni, Alderman, Silver, & Bauman, 2006; Hoven et al., 2005; Mullett-Hume, Anshel, Guevara, & Cloitre, 2008). Understandably, negative psychological effects of 9/11 were especially likely for children who lost a parent or sibling (Brown & Goodman, 2005; Pfeffer, Altemus, Heo, & Jiang, 2007; Rosen & Cohen, 2010) or had family members who were directly exposed but survived the attacks (O'Donnell & Powers, 2009; Rosen & Cohen, 2010). (See Comer & Kendall, 2007; Fremont, 2004; and Fremont, Pataki, & Beresin, 2005, for reviews of additional research on direct exposure to terrorism, including attacks beyond the events of 9/11).

There have been a few studies of the psychological impact of 9/11 on nationally representative samples of children, with parents reporting distress and posttraumatic symptomatology among their children in the first several months afterward (Schlenger et al., 2002; Schuster et al., 2001; Stein et al., 2004). Other studies conducted outside New York City have also found posttraumatic stress symptoms, often higher among children watching more television after the attacks (e.g., Otto et al., 2007) or among children with preexisting psychiatric disorders or learning disabilities (e.g., Gil-Rivas, Silver, Holman, McIntosh, & Poulin, 2007). In fact, there is even evidence to suggest that the psychological impact of 9/11 crossed the Atlantic, with schoolchildren in London, England, who merely witnessed the attacks on television reporting persistent attack-related intrusive images, moderate to severe posttraumatic symptoms, and functional impairment during the first six months post-9/11 (Holmes, Creswell, & O'Connor, 2007). Variation in the degree to which researchers have found an association between media exposure to the attacks and psychological problems may be partly due to media exposure being more closely associated with feelings of personal vulnerability among those children who are prone to anxiety (Comer, Furr, Beidas, Babyar, & Kendall, 2008).

Admittedly, the psychological or behavioral outcomes of 9/11 often have been found to be relatively modest, even for the typical child in New York City. For example, Gershoff, Aber, Ware, and Kotler (2010) noted that direct exposure to the events of 9/11 was not associated with posttraumatic stress symptoms among adolescents on average 15 months after the attacks, and although exposure was significantly associated with depression, this association was weak. Aber, Gershoff, Ware, and Kotler (2004) found that direct or family exposure to the events was not associated with change in mental health, although exposure through the media was associated with symptoms of posttraumatic stress disorder (PTSD). Aber et al. further noted that change in mental health from pre- to post-9/11 was more strongly associated with victimization or witnessing other forms of violence than with exposure to events on 9/11 (see also Mullett-Hume et al., 2008, for a similar finding). Moreover, Lengua, Long, and Meltzoff (2006) found that neither knowing someone directly affected by the attacks nor media exposure to the attacks predicted 9- to 13-year-olds' PTSD symptoms seven months after 9/11. Finally, in the limited number of longitudinal studies conducted on youth after 9/11, the initial distress associated

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with 9/11 seemed to diminish over time (see, e.g., Gil-Rivas, Holman, & Silver, 2004; Gil-Rivas et al., 2007).

Parents' Role in Children's Expressions of Distress

Parents play an important role in adolescents' adjustment following traumatic events. More generally, there is evidence that parents' support and youths' feelings of trust and communication with parents buffer anxious children's reactions to disasters (Costa, Weems, & Pina, 2009). After a disaster or traumatic experience, posttraumatic symptoms and psychological distress among children have been associated with their parents' posttraumatic stress symptoms, distress, and fears about possible future negative events, even after controlling for objective characteristics of the event (Gil-Rivas et al., 2007; Korol, Green, & Gleser, 1999; Laor, Wolmer, & Cohen, 2001; McFarlane, 1987). For example, mothers' depression and PTSD were associated with New York City preschool children's increased emotional reactivity and aggressive behavior (Chemtob et al., 2010). Hendricks and Bornstein (2007) studied 97 adolescents and their mothers on average about a year after the attacks in one of the only studies examining the psychological impact of 9/11 among children in the Washington, DC, area. Adolescents' posttraumatic stress responses were significantly predicted by their mothers' own stress responses, their mothers' personal characteristics, and perceptions of their mothers' parenting styles.

Parents can also play a role in their children's emotional responses in other ways. For example, in their study of a representative sample of New York City schoolchildren Grades 4–12, Comer and colleagues (2010) found that children whose parents restricted their activities and their travel in the six months after the attacks (presumably

because of anxiety over future terrorism) were about three times as likely to meet criteria for probable PTSD and approximately twice as likely to exhibit symptoms of other anxiety disorders and major depressive disorder as compared to students whose parents did not restrict their activities. Gil-Rivas and colleagues (2007) assessed a sample of adolescents twice over the first six months after 9/11 and reported that specific forms of parental coping advice had both beneficial and detrimental effects on adolescents' reports of distress. For example, parents' encouragement of positive reframing, emotional expression, and acceptance were associated with lower distress levels in their adolescents over time. These types of advice may have enhanced adolescents' feelings of security and safety. In contrast, parental recommendations that their adolescents seek help and advice from others to cope with the attacks and their aftermath were associated with higher levels of posttraumatic stress symptoms. Perhaps adolescents interpreted this type of response as parental unavailability or inability to cope with the events. In addition, recommendations to seek help and advice from others may have been viewed by adolescents as a sign of parental inability to keep them safe in the future.

In contrast, Gershoff et al. (2010) found no evidence that mothers' attempts to help youths cope by discussing youths' emotions, maintaining normal routines and roles, and distracting the youths with other activities were related to youths' mental health after controlling for the impact of youths' exposure to 9/11 on their mental health. However, Gould and colleagues (2004) found that youths living in the vicinity of New York City reported using their parents for support in the week after the 9/11 attacks and that a clear majority reported that this support was beneficial. Similarly, in the months after Hurricane Andrew, schoolchildren reported that their parents were the primary providers of coping assistance, and this assistance was positively related to their reports of receiving social support and engaging in better quality coping (Prinstein, La Greca, Vernberg, & Silverman, 1996).

Some have speculated that parents' postevent emotional distress may lead adolescents to avoid talking to them about the stressor or to avoid seeking support from them (Gil-Rivas et al., 2007; Hawkins, McIntosh, Silver, & Holman, 2005). This spillover of anxiety and distress from parent to child may have long-term consequences; indeed, one year after 9/11, greater parent–adolescent conflict was positively associated with adolescents' trauma symptoms, distress, and functional impairment among a small national sample of youth (Gil-Rivas et al., 2004). Charuvastra and Cloitre (2008) argued that when both the child and his or her parent are exposed to the same stressor, the child's and parent's responses are likely to be related, suggesting that “parental emotional and cognitive appraisal influence the child's response” (p. 310). In addition, Charuvastra and Cloitre highlighted the potential detrimental role of negative parental behaviors (rejection, avoidance, or distancing from the trauma or the child's emotional response to it) on children's posttraumatic response to traumatic events.

It is possible that parents' effects on their children after 9/11 were greater for younger children and/or that the effects of parents' reactions on their children were mediated through parents' own emotional and psychological reactions. However, serious maternal maladjustment likely has its effects on children through effects on their level of engagement with offspring and perhaps the quality of discipline. Of course, through their behavior, less distressed parents can demonstrate to their children how to regulate and control emotional responses (Kliewer, Fearnow, & Miller, 1996; Power, 2004). Indeed, this set of findings suggests the importance of conducting further research examining mechanisms by which parents may directly and indirectly influence their children's adjustment over time.

Developmental Issues

Little is known about how the events of 9/11 have differentially affected younger versus older children. Few researchers have systematically compared children of various ages within studies of 9/11 or, for that matter, other disasters, natural or political, in the United States. Nonetheless, some have speculated about the importance of age of the child (see Fremont et al., 2005). For example, Cantor (2002, 2003) reviewed literature examining age differences in children's reactions to fearful images in the media. She reported that younger children are less likely to understand abstract dangers portrayed in news media and interpret them as frightening but that, as they grow older, children are more frightened by portrayals of abstract concepts and realistic threats (e.g., war). In fact, Smith, Moyer, Boyson, and Pieper (2002) found that in the week after 9/11, parents reported that both exposure to news reports of the attacks and the intensity and prevalence of fears for personal safety and concerns about flying increased with children's age.

Elkind (2009) argued that infants and children ages 6 years or younger tend to react in a manner consistent with the emotional reactions of their parents and, due to cognitive limitations, might think the events of 9/11 happened each time they viewed them on the media. In contrast, Elkind suggested that children ages 6 to 12 would not only mirror their parents' reactions but also have fears over the loss of their own parents. Elkind also noted that children this age might be especially likely to act out fears through aggression. He further suggested that by adolescence, youths' mental abilities to grasp concepts of geographical space and contrary-to-fact propositions might allow them to understand the full magnitude of the 9/11 attacks and imagine the possibility of future attacks. Adolescents also are better equipped to imagine, and hence fear, other potential consequences for themselves, such as a war and military draft. Elkind further cautioned that youths are likely to react in diverse ways due to the multitude of different approaches to coping that they may enact (e.g., denial, active helping of victims, acting out with impulsive behavior).

Summarizing the disaster literature from 1981 to 2001, Norris and colleagues (2002) observed that children consistently exhibited more extreme psychological impairment and less frequently had minimal psychological im-

pairment compared with adult survivors of disasters. Bonanno, Brewin, Kaniasty, and La Greca (2010) argued that although very young children, because of their rudimentary cognitive development, tend not to encode or recall important aspects of disaster events relative to older children (Bahrack, Parker, Fivush, & Levitt, 1998), younger children may be more fully impacted and less likely to show rapid recovery from disaster-related PTSD symptoms than older children. Younger age in childhood has been associated with higher levels of PTSD or emotional symptoms in response to a disaster (e.g., McDermott, Lee, Judd, & Gibbon, 2005, for primary vs. secondary students; Weems et al., 2010, in a study of 4th–8th graders; Schwarzwald, Weisenberg, Solomon, & Waysman, 1994, in a study of 6th, 8th, and 11th graders; Yelland et al., 2010, with 8- to 18-year-olds). In contrast, in a sample of 7- to 14-year-olds in Thailand, most of whom were affected by a recent tsunami, older children were more prone to disaster-related depressive symptoms (Thienkrua et al., 2006). Thus, younger and older children may be prone to different types of symptoms due to differences in their susceptibility to fear versus depression.

Norris et al. (2002) noted that children may also respond to distress from disasters in age-specific ways. For example, young children have been observed to respond to disasters with temper tantrums, refusing to sleep alone, hyperactivity, dependency, separation anxiety, and incontinence, whereas adolescents sometimes display elevations in minor deviance and delinquency (although declines in externalizing problems also have been noted). Indeed, among a representative sample of over 7,500 New York City public school students between Grades 4 and 12 who were assessed for probable PTSD approximately six months after 9/11, Rosen and Cohen (2010) found that grade level was the single strongest predictor of probable PTSD, with 4th-grade students at greatest risk (over one quarter screened positive for probable PTSD). In fact, 4th-grade students were twice as likely to screen positive as 5th graders. Rates of probable PTSD among New York inner-city high school students were also significantly lower than rates of students from younger grades (see Hoven et al., 2005). Nonetheless, approximately eight months after 9/11, those high school students in New York City who continued to feel unsafe and unprotected by the government were approximately four times as likely to meet criteria for PTSD as their peers (Calderoni et al., 2006).

More generally, we would hypothesize that due to increasing cognitive skills across childhood and adolescence, with greater age children not only recognize the broader implications of 9/11 or similar attacks but also are less irrational in their fears regarding the probability of harm to themselves and their loved ones. If young children are not repeatedly exposed to the events of 9/11 or their effects, such attacks are likely to have less of a direct effect on the child unless the child's family has suffered loss or been directly impacted. If younger children are repeatedly exposed to threatening reminders of terrorism or a disaster (e.g., to the film of a plane hitting the Twin Towers), they

may be especially vulnerable to fearful reactions because they may not realize that the events are in the past. For young children experiencing heightened fears of loss, parental support might be especially helpful for their mental health. However, additional research is needed to verify or disconfirm these speculations. Moreover, the moderators of the effects of 9/11 and other acts of terrorism on children's psychological and behavioral development may vary with age, and virtually nothing is known regarding how the effects of risk- and resiliency-enhancing factors vary across age.

Moving Beyond Psychopathology

The relatively modest levels of posttraumatic symptomatology following the events of 9/11 in several studies, especially after the passage of some time, are consistent with other findings on disasters. Bonanno and colleagues (2010) summarized the body of research and concluded that among youths, elevated symptoms are common in the first few months following a high-impact disaster but that chronic elevations in symptoms rarely exceed 30% of the youths sampled. They further concluded that the effects of a disaster on unexposed populations generally are limited and transient, with increased incidence of psychopathology likely only among populations with preexisting vulnerabilities (e.g., prior psychiatric illness) or actual direct exposure (e.g., loss of a loved one due to the disaster). They also suggested that outcomes of disasters may depend on a combination of risk and resilience factors, including contextual factors and personality.

Similarly, drawing on Bronfenbrenner's (1979) ecological systems theory, Weems and Overstreet (2008b) noted that numerous factors can moderate the effects of disasters and affect risk and resiliency in the face of disasters. These include macrosystem influences (the most distal ecology, including cultural values and beliefs such as discrimination and prejudice), exosystem influences (processes taking place between two or more contexts, one of which does not directly involve the child but has implications for children, such as disruptions in school and government agencies, workplace demands on parents, or neighborhood violence after a disaster), mesosystem influences (linkages between proximal ecologies such as school and home, e.g., degree of separation from peer group and family, community-based parent meetings), and microsystem influences (proximal ecologies such as school-based mental health services).

The variability of individuals' outcomes to 9/11 is consistent with Bonanno et al.'s (2010) focus on risk and resilience factors and suggests that there are important moderators of children's and youths' reactions to 9/11 besides degree of exposure. A number of moderators have been suggested, sometimes implicitly rather than through direct testing, by the findings in existing studies on 9/11 or disasters more generally. In addition to moderation by previous mental health vulnerabilities discussed by Bonanno et al., certain demographic groups such as lower income children and minorities (e.g., Latinos) might be especially vulnerable to emotional and behavioral reactions

(e.g., Calderoni et al., 2006; Stein et al., 2004). To complicate matters, some of the same variables that moderate the effects of disasters/terrorism on children's adjustment and maladjustment may mediate the relations of these events to other outcomes for children (e.g., regulation or coping may moderate the effects of disasters on prosocial behavior and also mediate relations of exposure to disasters to outcomes such as posttraumatic stress symptoms). In general, much less is known about the effects of 9/11 on socioemotional outcomes other than maladjustment, and findings regarding the prediction of maladjustment may not replicate for potential outcomes such as regulation, social mistrust, and heightened prejudice.

In the remainder of this article, we focus on some understudied outcome variables that would seem to be especially relevant for understanding the long-term effects of events such as 9/11 on children's and adolescents' functioning. Although numerous variables could be discussed, we focus on regulation/coping, sociopolitical attitudes and beliefs, and general beliefs about the world. The events of 9/11 might be expected to affect regulation for some children, which in turn could affect this adjustment. We briefly review existing, relevant research and then discuss gaps in scientific knowledge. In addition, we consider the potential role of dispositional regulation as a moderator of the effects of political and natural disasters on other aspects of children's functioning.

Children's Coping and Regulation

One of the most popular areas of study in developmental psychology today is children's regulation, defined as "processes used to manage and change if, when, and how (e.g., how intensely) one experiences emotions and emotion-related motivational and physiological states, as well as how emotions are expressed behaviorally" (Eisenberg, Hofer, & Vaughan, 2007, p. 288). Dispositional differences in children's emotion-related regulation are often indexed with measures of children's temperamental effortful control (EC), defined by Rothbart and Bates (2006) as "the efficiency of executive attention—including the ability to inhibit a dominant response and/or to activate a subdominant response, to plan, and to detect errors" (p. 129). Typical measures of EC tap the abilities to willfully shift and focus attention and to inhibit or activate behavior, especially under circumstances in which the child may not want to do so. These abilities are believed to help children modulate exposure to emotional stimuli and their emotional and behavioral reactions to evocative stimuli.

Children's emotion-related self-regulation and coping appear to be overlapping variables; indeed, Compas, Connor, Saltzman, Thomsen, and Wadsworth (2001) defined coping as "conscious volitional efforts to regulate emotion, cognition, behavior, physiology, and the environment in response to stressful events or circumstances . . . Coping is a subset of broader self-regulatory processes" (p. 89). Some modes of coping (e.g., social support) differ from those typically discussed by those interested in emotion-related self-regulation, but coping in general involves regulation under stress. A controversial issue in both the

regulation and coping literatures is the degree to which involuntary, noneffortful behaviors should be considered self-regulation or coping (see Compas et al., 2001; Eisenberg & Spinrad, 2004; Skinner & Zimmer-Gembeck, 2007). Note that Compas et al. defined coping as “conscious volitional efforts.” Eisenberg and colleagues (e.g., Eisenberg et al., 2004) argued that it is useful to differentiate EC from reactive control. EC, although often implemented in a rather automatic way, is subject to conscious control. Reactive control, in contrast, is primarily involuntary or so automatic that it is difficult to bring under voluntary control (see Carver, 2005, for a similar view). Regardless of whether or not those behaviors or cognitions that have been labeled as coping/regulation can be brought under effortful control, it is useful to consider the implications of effortful and less volitional actions/cognitions when coping with terrorism or other disasters.

Conceptual Relevance of Regulation/Coping to 9/11

On a conceptual level, depending on the degree of exposure, the events of 9/11 reasonably would be expected to directly affect children’s negative emotional arousal and experience of threat; as already noted, for some children, exposure to the events of 9/11 were associated with post-traumatic stress symptoms and anxiety. If exposure to 9/11 had effects on regulation, they are likely due to the effects of the emotional distress and feelings of threat on children’s motivation and ability to self-regulate their attention and inhibit emotion and emotionally driven behavior (Blair, 2010). In addition, children might have learned to use either adaptive or nonadaptive coping behaviors as a consequence of 9/11, depending on their circumstances and the resources, internal and social, available to them. Both the emotional reactivity that might ensue from stressful events and its effects on regulatory processes would in turn be expected to affect the degree to which children display psychological symptoms (Eisenberg, Spinrad, & Eggum, 2010) and the quality of their postevent behavior.

In general, children’s active, problem-focused, or engagement coping has been associated with better developmental outcomes (e.g., fewer symptoms, higher social competence), whereas avoidant or disengagement coping often, but less consistently, has been linked to negative developmental outcomes (see Compas et al., 2001). It appears that problem-focused coping is associated with better adjustment in response to controllable stressors, whereas avoidant/disengagement coping might be more productive when stressors are uncontrollable (see Compas et al., 2001). Although stressors themselves such as 9/11 may be uncontrollable, the ways that one deals with some of their consequences might be more controllable. Moreover, in general, effortful means of self-regulating or coping might be especially relevant to positive adaption because they can be willfully enlisted and managed.

Not only might the events of 9/11 indirectly affect children’s self-regulation but also children’s preexisting or post-9/11 regulation/coping would be expected to affect the

degree to which they experience psychological and social problems. Thus, as already mentioned, regulation/coping might moderate the relation between exposure to the events of 9/11 and social/psychological outcomes such that children with higher regulation or more effective coping would exhibit fewer negative outcomes.

Empirical Findings on Children’s Regulation/Coping and Reactions to Terrorism and Disasters

Initial work on children’s coping and 9/11 has been fairly sparse and not very consistent. Lengua et al. (2006) found that preattack child-reported threat and positive appraisals predicted Seattle, Washington, children’s (mean age of about 11 years) 9/11-specific threat and positive appraisals, respectively. Preattack active coping predicted less 9/11-specific avoidant coping, whereas preattack avoidant coping positively predicted 9/11-specific avoidant coping. When predicting postattack outcomes, preattack symptomatology and exposure to the events of 9/11 (as well as some demographic variables, preattack stress load, and time since 9/11) were covaried. Although the use of active coping to deal with events prior to 9/11 correlated with similar coping after the attacks, it was related to only 9/11-specific avoidant coping (negatively), not active coping, when controlling for the aforementioned variables. Moreover, 9/11-specific threat appraisals and/or avoidant coping predicted higher mother-reported posttraumatic stress symptoms (when controlling for preattack symptomatology) and mediated the relations of preattack stress load and threat appraisal to postattack symptoms. These findings suggest that individual differences in coping might have influenced the manner in which, and how well, children dealt with 9/11.

Wadsworth et al. (2004), in another sample of adolescents geographically distant from 9/11, found that girls’ reported primary coping (i.e., problem solving, emotional regulation, emotional expression) and boys’ and girls’ secondary control coping (cognitive restructuring, positive thinking, acceptance, distraction) were negatively related to 9/11-related anxiety. These modes of coping are believed to be effortful and voluntary. In contrast, girls’ and boys’ involuntary engagement (rumination, intrusive thoughts, emotional arousal, physiological arousal, impulsive actions) and girls’ involuntary disengagement (emotional numbing, cognitive interference, escape, inaction) were positively related to 9/11-related anxiety. Disengagement coping (denial, avoidance, wishful thinking) was not related to anxiety.

Other research with adult participants supports the importance of flexible emotion-related regulation to mental health after a disaster. For example, among a nationally representative sample of adults, Silver et al. (2002) found that coping strategies assessed within the first two weeks after the 9/11 attacks were the strongest predictors of posttraumatic stress symptoms over the next six months. Specifically, the use of active coping in the immediate aftermath of the attacks was protective against ongoing distress; in contrast, immediately disengaging from coping

efforts (e.g., giving up, denial, self-distraction) increased the likelihood of experiencing ongoing distress and post-traumatic stress symptoms over time. Among a sample of New York City college students, Bonanno, Papa, Lalande, Westphal, and Coifman (2004) found that the ability to flexibly regulate the expression and suppression of emotion across different situational demands soon after the 9/11 terrorist attacks was associated with less distress two years after the attacks (relative to other less expressively flexible students).

Studies of other disasters provide additional insight into individual differences in children's coping/regulation and their possible effects. Among children exposed to hurricanes, coping strategies such as blame/anger and social withdrawal have been shown to predict greater PTSD symptoms or anxiety (e.g., La Greca, Silverman, Vernberg, & Prinstein, 1996; Russoniello et al., 2002; Vernberg, La Greca, Silverman, & Prinstein, 1996; cf. Ortiz, Silverman, Jaccard, & La Greca, 2011, where dispositional negative [mostly avoidant] coping was negatively correlated with state anxiety in response to seeing a film about a hurricane). In contrast, active coping strategies such as cognitive restructuring and support seeking have been found to predict fewer depression symptoms in youth following a hurricane (e.g., Jeney-Gammon, Daugherty, Finch, Belter, & Foster, 1993). Pina et al. (2008) also found that although active coping following Hurricane Katrina was substantially related to posttraumatic stress symptoms and anxiety in zero-order analyses, it was not uniquely related to posttraumatic stress symptoms when controlling for confounding variables, such as demographics, prehurricane mental health, and prior hurricane experience. In another study of the effects of Hurricane Katrina, Kilmer and Gil-Rivas (2010) did not find a relation between children's coping competency beliefs and their posttraumatic growth (i.e., positive change experienced as a result of the struggle with trauma).

In one of the few studies measuring EC instead of coping, Kithakye, Morris, Terranova, and Myers (2010) examined 3- to 7-year-old children's adjustment to the Kenyan political conflict. EC was measured postconflict and was negatively related to disaster severity and to experiences such as parental separation, harm to parent, or destruction of the home. The fact that the children were young and at an age when EC is rapidly emerging could have heightened the association between severity of the outcomes and children's EC. Consistent with other findings (see Eisenberg, Fabes, & Spinrad, 2006; Eisenberg et al., 2010), EC in this sample also was associated with less aggression and more prosocial behavior, even when controlling for participants' sex, age, prosocial behavior pre-conflict, and disaster severity. Surprisingly, EC was not related to fearful/anxious symptoms and did not moderate the relation between disaster exposure and emotional symptoms. It is possible that these findings were partly due to the age of the children and the relatively small sample size (84 children).

The aforementioned group of studies suggests that coping and EC are relevant to children's reactions to 9/11 and other disasters. Active, primary coping generally has

been associated with positive outcomes to disasters, whereas venting of emotion, avoidant coping and disengagement (especially if involuntary), as well as blame and anger, have been associated with negative outcomes. Wadsworth et al.'s (2004) study suggested that involuntary control processes, which likely involve more emotion and reactive control than primary and secondary control processes, are associated with negative outcomes for children. In contrast, modes of coping that are voluntary, flexible, and likely involve EC appear to be associated with more positive outcomes. However, it should be noted that sometimes effortful coping might be associated with negative outcomes in response to political violence, especially in highly uncontrollable settings. For example, three weeks after the first Gulf War ended, Weisenberg, Schwarzwald, Waysman, Solomon, and Klingman (1993) assessed Israeli middle and high school students' reported strategies for coping during air raids (e.g., wearing gas masks and going to sealed rooms). After doing the minimal amount one could do, such as putting on the mask, problem-focused strategies such as information seeking were positively related to PTSD, whereas verbal distraction was associated with better postwar functioning. However, verbal distraction in this study included "talking with others in the sealed room" (Weisenberg et al., 1993, p. 465), which could also reflect a form of social support seeking.

In their review of the literature on disasters, mostly conducted with adults, Bonanno et al. (2010) concluded that perceptions of control and sense of mastery or self-efficacy assessed immediately after disasters or sometimes later are associated with better mental health outcomes. In addition, they noted that rumination after a disaster, which can be viewed as indicative of low adaptive attentional control (e.g., low ability to effortfully shift attention), has been associated with PTSD symptoms (see Nolen-Hoeksema & Morrow, 1991). These findings are consistent with the conclusion that perceptions of being able to effortfully control one's emotion and behavior are related to positive outcomes for disaster victims, whereas less willfully controlled reactions are often less adaptive.

When thinking about the long-term outcomes of exposure to terrorism on children, it is helpful to differentiate between pre-event levels of regulation/coping (when possible) and concurrent levels of coping. Prior coping/regulation quality likely affects how well some children deal with the event-related stressors; moreover, the disaster might undermine the quality of their regulation/coping. For many children with distal exposure to an event, there may be no long-term changes in regulation/coping. However, for children who are more affected by events—often those who have suffered greater losses or been exposed to more frightening or hurtful events—and for children prone to negative emotions, one might expect considerable variation in reactions. Some likely will become more dysregulated and use more ineffective modes of coping. Others may learn to use more effective and previously underutilized ways of coping and may even experience greater coping self-efficacy over time. Of course, factors in the environment such as parental or professional support (see Gil-Rivas et al., 2004, 2007;

Norris et al., 2002; O'Donnell & Powers, 2009) might affect which trajectory children exhibit.

The distinction between EC and reactive control or between voluntary and involuntary coping (see above) also appears to be useful when considering regulating reactions to major collective stressors such as 9/11. As already discussed, Wadsworth et al. (2004) found that involuntary engagement and involuntary disengagement were positively related to anxiety. One would also expect increases in less voluntary modes of reactive undercontrol and overcontrol, such as impulsivity and behavior inhibition (including withdrawal from or avoidance of novel stimuli), to be associated with some negative developmental outcomes. If children react to terrorism with unregulated emotion and behavior, they are likely to exhibit impulsivity, which tends to be associated with externalizing problems (e.g., Eisenberg et al., 2005, 2009).

An important moderating factor when examining relations of EC/coping with symptoms or with their level of socially competent functioning is children's dispositional proneness to experiencing emotions, especially negative emotions—an aspect of temperament (Rothbart & Bates, 2006). In research unrelated to disasters or terrorism, the positive relation between self-regulation and adjustment and the negative relation with maladjustment have been stronger for children who are prone to intense and/or negative emotions (e.g., Degnan, Calkins, Keane, & Hill-Soderlund, 2008; Eisenberg, Fabes, Guthrie, & Reiser, 2000; Valiente et al., 2003) or neuroticism (Muris, 2006), especially anger or frustration (rather than sadness or fear; Diener & Kim, 2004; Eisenberg et al., 2004; Oldehinkel, Hartman, Ferdinand, Verhulst, & Ormel, 2007). Thus, both pre-event and disaster-concurrent self-regulation may be better predictors of outcomes for children who are prone to experience negative emotions.

Finally, currently psychologists have little idea of how political violence, especially if the threat is ongoing, affects children's adaptive coping and regulation over longer periods of time. Numerous moderators such as degree of child emotionality, parental or other support, age of the child, degree of exposure, and so forth are likely relevant. Given the clear and marked relation of self-regulatory capacities to children's positive and negative adjustment (see Eisenberg et al., 2010; Rothbart & Bates, 2006, for reviews), it is a factor that clearly should be more central in research on children's reactions to terrorism and disasters.

Terrorism and Social and Political Attitudes

Although relevant research is limited, it is likely that 9/11 and similar acts of terrorism have a more widespread effect on social and political attitudes than on the development of psychopathology, especially for individuals who have not directly experienced the events or do not have friends and relatives who were victims. Huddy, Feldman, Taber, and Lahav (2005) argued that the association of perceived threat with increases in intolerance, prejudice, ethnocentrism, and xenophobia is quite consistent. In the face

of threat, real or perceived, groups that are disliked or disruptive elicit heightened intolerance and face heightened restrictions on their liberties (e.g., Sullivan, Piereson, & Marcus, 1982; see Huddy et al., 2005, for a brief review). Moreover, real or perceived threat to one's own group's resources or status has been associated with increased prejudice toward the threatening outgroup (Bettencourt, Charlton, Dorr, & Hume, 2001; Struch & Schwartz, 1989), xenophobia and rejection of outgroups (Lahav, 2004), and support for punitive action against outgroup members (e.g., Herrmann, Tetlock, & Visser, 1999). The erosion of a sense of community that is a common correlate of disasters (Bonanno et al., 2010; Kaniasty & Norris, 1995) might also be expected to heighten individuals' feelings of threat, vulnerability, and suspicion of others.

Huddy and colleagues (2005) further suggested that experiences of anxiety or perceived threat in response to terrorism have different psychological effects (see also Huddy & Feldman, 2011, this issue). Anxiety is expected to lead to an overestimation of risk and, thus, risk-averse behavior (Lerner & Keltner, 2001). In contrast, perceived external threat is expected to increase support for retaliatory action against the threatening party (Herrmann et al., 1999). Huddy et al. found that higher perceived threat after 9/11 was related to greater support for U.S. military intervention and overseas involvement, whereas reported anxiety, albeit related to less accurate knowledge regarding Afghanistan, Islam, and Osama bin Laden, was negatively related to support for military intervention and overseas involvement. Perceived threat was also related to heightened support for policies restricting foreign visitors to the United States, singling out Arabs for special checks after entry and when applying for visas, and threatening civil liberties (e.g., monitoring of telephone and e-mail), as well as intensified negative stereotypes of Arabs. In contrast, anxiety had only a weak, near-significant relation to support for greater security checks and for heightened stereotyping and was unrelated to support for domestic antiterrorism policies. Thus, different negative emotional reactions appear to relate somewhat differently to sociopolitical responses to terrorism (see also Huddy & Feldman, 2011, this issue).

Findings consistent with the notion that many adults reacted to 9/11 with increased positive attitudes toward militarism, restriction of civil rights, and/or anger have been reported by others. For example, Carnagey and Anderson (2007) found that attitudes toward war became more positive after 9/11 and remained high over a year later. Support for violence as part of the penal code became more positive immediately after 9/11 but was not sustained over time. Reported trait anger and hostility increased from November 2000 to September 2001 but were sustained over the next year only for the former. Other researchers have reported that fear and/or anger over 9/11 predicted less political tolerance, support for deportation policies, and/or support for expanded war on terrorism (Lerner, Gonzalez, Small, & Fischhoff, 2003; Skitka, Bauman, & Mullen, 2004; see Morgan, Wisneski, & Skitka, 2011, this issue).

Reexperiencing feelings and memories related to 9/11 could sustain its effects over time, at least for some individuals. Poulin and colleagues (2011), in a longitudinal survey of a nationally representative sample assessed in late 2006 and early 2007, found that degree of reexperiencing of 9/11 events was related to greater support for military action in Iraq and Afghanistan, greater willingness to sacrifice civil liberties, and greater support for the use of torture to protect national security. Moreover, based on follow-up data from 2007 and 2008 of the same respondents, Poulin and colleagues found that higher levels of posttraumatic stress were associated with increased perceptions of national and personal risk from terrorism, greater political salience given to terrorism, greater support for aggression and unilateralism in foreign policy, greater acceptance of torture, greater willingness to give up civil liberties for the sake of security, greater trust in government, and optimism about the future security outlook.

The Impact of Terrorism on Children's Sociopolitical Attitudes

Thus, it is clear that perceived threat and feelings evoked by the events of 9/11 and memories of those events are related to adults' political attitudes and attitudes toward minorities and perceived outgroups, although findings may vary somewhat for different emotions and across individuals who are differentially susceptible to perceptions of threat and/or negative emotional reactions. What are the implications of these findings for children? There are few empirical data on this topic. A study of Dutch children and adolescents following several national terrorist events found that children's views about enemies became more articulated and concrete, although there was little evidence that a uniform view of a collective enemy emerged (e.g., that they were Muslim extremists; Oppenheimer, 2010). Ford, Udry, Gleiter, and Chantala (2003) conducted a cross-sectional study of a national sample of over 7,000 young adults (18–26 years old) within the first nine weeks after 9/11 and found an increase in trust in government, although those effects have not been reported over time. Gershoff and colleagues (2010) found that media exposure to the events of 9/11 was a positive predictor of New York City youths' trust in the local community. This finding is not consistent with the relation between exposure to political violence in Ireland and children's insecurity in their community (Cummings et al., 2010) or with Kaniasty and Norris's (1995) finding of an association between the stress of disasters and deterioration of feelings of community (also see Bonanno et al., 2010). Moreover, contrary to expectations, Gershoff et al. found that the more youths reported direct exposure to 9/11, the less they reported prejudice toward immigrants. It should be noted, however, that the children in this study were mostly ethnic and racial minorities and that 64% of the adolescents had parents born outside the United States. Findings might be quite different for Caucasian, majority children. In addition, as noted by the authors, youths in the Gershoff et al. study were asked about immigrants in general, not about Muslims or people

from the Middle East. Reports of prejudice may have been much higher for questions about these groups of people.

In addition, Gershoff et al. (2010) found that the more youths or mothers reported being exposed to 9/11 via the media, the more they reported that their families were likely to discuss the extent to which they should be vigilant and distrustful of other people, as well as current events. Media exposure was also related to discussion of prejudice, but, based on the sample items, these discussions appeared to focus more on prejudice toward the adolescent and not specifically on prejudice toward others. In addition, the more mothers reported that friends or family were directly exposed to the events of 9/11, the more they reported engaging in family lessons about prejudice, whereas the more they reported direct exposure to 9/11, the less likely they were to discuss social mistrust with their adolescents. Thus, Gershoff et al. found associations of exposure to 9/11 with sociopolitical attitudes and discussions, but the pattern of findings was unexpected and somewhat challenging to explain. It is difficult to know the content of the discussions reported in this study and the degree to which they were likely to foster distrust and prejudice.

Although seldom if ever examined, it is reasonable to hypothesize that many factors moderate the effects of exposure to events such as 9/11 on children's sociopolitical attitudes. For example, parental education and family prosperity, as well as minority and immigrant status, might affect youths' sociopolitical attitudes, both due to the relations of these variables to parents' attitudes (e.g., Gershoff et al., 2010) and through mechanisms/processes related to variables such as sociodemographic characteristics (e.g., socioeconomic status is associated with higher regulation). Moreover, family members' a priori political affiliations and attitudes are likely to act as filters for interpreting the sociopolitical significance of events such as 9/11 and for processing issues such as where to place blame. For example, Poulin, Silver, Gil-Rivas, Holman, and McIntosh (2009) found that religious and politically conservative adults perceived higher levels of religious and political social benefits after the 9/11 attacks. In addition, individual differences in emotional reactivity, self-regulation of emotion and behavior, cognitive processing skills, and social skills might affect the degree to which children and youths feel threatened and vulnerable; indeed, anxiety sensitivity (Hensley & Varela, 2008) and predisaster anxiety (Costa et al., 2009; Weems et al., 2007) have been found to predict the strength of children's reactions to disasters. Researchers are unlikely to obtain a coherent picture of the effects of events such as 9/11 on children's and youths' sociopolitical reactions until such moderating factors are considered in research.

Parents' and Children's Effects on One Another's Sociopolitical Reactions

One might expect the effects of 9/11 on parents' sociopolitical attitudes and beliefs to have some bearing on the attitudes/beliefs of their children; moreover, for older children, the reverse process of influence (i.e., from youth to parent) might hold. However, to our knowledge, this prop-

osition has not been tested. Indeed, findings are inconsistent in regard to the effects of parents' responses to 9/11 on their children's sociopolitical reactions. Gershoff et al. (2010) reported that parents' exposure to 9/11 was associated with their own reactions to 9/11 and the degree to which they reported family discussion of prejudice, social mistrust, and current events. However, there was no evidence that these discussions between parents and children (as reported by youths) influenced youths' trust in the local community or prejudice toward immigrants.

There is some reason to expect factors that compromise the quality of parenting to be related to children's humanitarian political attitudes. Recent findings are consistent with the view that the effects of terrorism on children could be mediated at least in part through the effects of terrorism on the quality of parenting. In three experimental studies, Fischer et al. (2010) found that exposing adults, including parents, to reminders of terrorist incidents increased reported authoritarian parenting and parents' impatience and negativity when interacting with their children. Because authoritarian parenting style has been associated with adolescents' political alienation (e.g., Gniewosz, Noack, & Buhl, 2009), the effects of terrorism on parenting might have long-term effects on youths' sociopolitical attitudes (see Rohan & Zanna, 1996).

Although it seems plausible that children's and youths' sociopolitical beliefs are affected by terrorist attacks such as 9/11, there is little evidence regarding the nature of such effects and how parents and other adults might play a role in shaping such beliefs. Indeed, the evidence is somewhat inconsistent in regard to parents' potential effects on children's functioning after 9/11 more generally, especially if one is concerned with areas of functioning besides parents' and children's psychological symptoms. Given that changes in sociopolitical attitudes may sometimes be sustained over a longer period of time and, perhaps, cause a cascade of effects in terms of related beliefs and behaviors, it is important to obtain a better understanding of how threatening terrorist events affect children's beliefs about others and their social world.

Terrorism and General Beliefs About the World

Many things can be learned following exposure to terrorism during one's early development. In particular, although limited research has examined the role of early exposure to 9/11 on children's general beliefs about the world, one might speculate that it has the potential either to enhance resilience or to increase perceptions of vulnerability in the future. Although most researchers have focused on the negative consequences of childhood exposure to traumatic experiences, several theorists and researchers have instead highlighted the strength and resilience exhibited by many young people who have been exposed to adversity (Bonanno et al., 2010; Masten, 2001; Werner & Smith, 1992). In fact, Seery, Holman, and Silver (2010) recently discussed how experiencing low levels of adversity can "teach effective coping skills, help engage social support net-

works, create a sense of mastery over past adversity, foster beliefs in the ability to cope successfully in the future, and generate psychophysiological toughness" (p. 1037). Exposure to the 9/11 attacks early in childhood or adolescence could thus enhance resilience to subsequent stressors to which individuals will inevitably be exposed over their lifetimes. In addition, although we are not aware of any comparable research in children after 9/11, Poulin et al. (2009) reported that the majority of adults in their nationally representative sample perceived social benefits of 9/11, including increased prosocial behavior, religiousness, and political engagement. Presumably, exposure to the attacks and witnessing subsequent positive societal change could have a long-term beneficial impact on youth over time.

Exposure to the collective trauma of 9/11 may also have had the opposite effect—perhaps resulting in perceptions that the world is less controllable, benevolent, and meaningful (Janoff-Bulman, 1992), given the malevolence of the perpetrators, the widespread destruction, and the randomness of the deaths. Exposure to the events of 9/11 may also have led children (and/or their parents) to worry about a foreshortened future. Little research has examined these issues in youth post-9/11, but the limited data are intriguing. For example, a sample of 9th graders assessed four weeks after the 9/11 attacks perceived the world as riskier (Halpern-Felsher & Millstein, 2002). Compared to a sample of youths assessed years prior to 9/11, adolescents reported feeling more vulnerable to death from all causes, not just terrorist attacks, including death from natural disasters. How long this increased vulnerability lasted, as well as its correlates and consequences, was unfortunately not examined, but it is a ripe area for future research.

Conclusions

Despite the passage of almost a decade, there is still much to be learned regarding the effects of 9/11 on children's and adolescents' development. Some research has been methodologically limited (e.g., use of parents' reports of children's distress vs. child self-reports; cf. Fairbrother, Stuber, Galea, Fleischman, & Pfefferbaum, 2003; Schuster et al., 2001); some studies have necessarily included retrospective reports of exposure that hamper the conclusions drawn. The impact of terrorism on youth—on both psychopathology and other responses more generally—has usually been examined in the short term, with few studies continuing beyond 2–3 years postattacks and most terminating much earlier (see Comer & Kendall, 2007, for a review). In addition, longitudinal studies are very rare. Moreover, little is known about how changes in the local community and society more generally in response to the attacks influenced children who came of age following 9/11. Little is known about the differences between mothers' and fathers' responses post-9/11 and how these differences affected their children over time. Less is known about teachers' influence on their students' post-9/11 responses, behaviors, and attitudes. Little is known about how parents can protect their children from unnecessary anxiety from heightened perceptions of risk of future terrorism. Little is known about the value or efficacy of intervention efforts that can assist

children as they cope with the psychological consequences of direct and/or media exposure to terrorism in the short or long term (Fremont, 2004). Fortunately, a large-scale terrorist attack has not been repeated in the United States, so researchers have not had the occasion to study these topics in the United States over the past decade. Also fortunately, researchers are increasingly studying political and natural disasters (e.g., see the two special issues of *Applied Developmental Science*, Gershoff & Aber, 2004, and special sections in the *Journal of Clinical Child and Adolescent Psychology*, Weems & Overstreet, 2008a; *Child Development*, Masten & Osofsky, 2010; and the *Journal of Consulting and Clinical Psychology*, La Greca, 2010) and their potential effects on children, with the consequence that scientists are moving in the direction of greater understanding of these events. This is important, as research conducted in other countries that have experienced political violence (e.g., Israel) has highlighted negative behavioral consequences of repeated exposure to terrorism among youth, including substance abuse (Schiff, Zweig, Benbenishty, & Hasin, 2007) and high levels of risk-taking behaviors, particularly among adolescents suffering posttraumatic stress symptoms (Pat-Horenczyk et al., 2007). Given the likelihood of continuing terrorism around the world, researchers interested in children's social, emotional, and psychological development have much to learn about children's reactions to events like 9/11 and factors that might mitigate the negative consequences of such events on children's development. If investigators draw on the growing evidence that characteristics of children, their family members, and the larger context in which they are embedded must be taken into consideration, they will more rapidly increase their knowledge of factors that contribute not only to children's vulnerability in the face of political disasters but also to resiliency and even learning and growth in response to events such as 9/11.

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