

SYMPTOM FORMATION: With advancing development, an individual becomes more complexly organized as more differentiated and specific response capacities accumulate in a layered fashion from interactions among aspects of a potential traumatic event and the emerging composite of distinctive individual biopsychological vulnerabilities and resilience, coping strategies, and familial and communal environments (49, 20). Although it may not yet be possible in any individual case to pinpoint the contribution of any single factor in this composite, extent of development can be one factor in determining whether an event will become a traumatic stressor that provokes malignant memories. Thus, what would be experienced as a stressor for an adolescent might not be traumatic for a younger child. For example, unlike an adolescent who may react to the communal destructiveness of a devastating hurricane, a very young infant may respond only to the mother's behavior or emotional states during and after the storm.

The presentation and course of post-traumatic symptoms depend on how far a person has progressed along his developmental trajectory. Because malignant memories, reflecting altered neurodevelopmental and neural network processes, are organized according to developmentally-dependent perceptions, cognitions, arousal states, and memory mechanisms, they differentiate youngsters of varying ages and adults. For example, while adult PTSD symptoms appear to be more stimulus-specific, children, most notably those younger or chronically traumatized, seem to respond to a variety of stimuli that may not be directly associated with the original trauma. Youngsters manifest a more pervasive and persistent increase in basal autonomic nervous system tone and a generalization of hyper-reactivity (55), more global confusion and effect on behavior (46), and report reactivity to more generalized stimuli (74). Furthermore, developmentally sensitive depression, behavior problems (78), and grief reactions (61, 78) may coexist with PTSD symptoms when the trauma is associated with loss. Malignant memory configuration in children may therefore reflect development-specific neuropsychological processes that underlie grief and depression.

Other observations suggest that response to trauma depends on age. For example, while not always obvious in adults, regression can be striking in individuals whose developmental gains are still

consolidating. Also, cognitive development determines how a survivor places the stressor in time and attributes causality, influencing prediction of future trauma as well as framing the present stressor. Time sense distortions such as omen formation and future foreshortening, described initially for children, have also been reported in adults (88, 74). Youngsters' notions of cause of events and their impact evolve from the magical, through the egocentric and the concrete, to more abstract concepts of multiple interacting factors and morality. Moreover, Terr (89) found absence of flashbacks in children, but the definition of flashback as distinct from other manifestations of reexperiencing is not clear (47). Additionally, some symptoms seen in adult PTSD presentations may not be useful or would be difficult to assess in infants or preschoolers (e.g. difficulty concentrating). Avoidant symptomatology may decrease and anger increase with age (74). In general, malignant memories rooted in trauma occurring during early development are likely to manifest later as disorders of self, personality or ego functions, including cognitive development and regulation of object relations, attention, affect, and arousal, and are not usually recalled as deriving from discreet events (26). Development beyond early childhood adds differentiated reactions that increasingly resemble those of adults and enable use of adult PTSD criteria (74). Whatever the age, sufficiently severe stressors can interact with individual characteristics to create malignant memories that reflect reorganized activities of established neural networks initially arrayed during earliest development. The more severe a stress or vulnerable an individual, the more likely will symptoms involve functions consolidated earlier in development and greater the regression seen clinically.