DEVELOPMENTAL CONSIDERATIONS
NEURODEVELOPMENT AND MALIGNANT MEMORIES:
A growing body of evidence suggests that the developing brain organizes in response to the pattern, intensity , and nature of sensory perceptual and affective experience of events during childhood and adolescence to produce a unique person. Mediated by neurotransmitters and hormones, a stressor can affect the differentiation of the brain undergoing neurogenesis, migration, synaptogenesis, and neurochemical differentiation, (52, 53, 54). Indeed, the developing CNS is exquisitely sensitive to stress. For example, rats exposed to perinatal handling stress show major alterations in their stress response later in life (96). Such studies suggest that early exposure to consistent, daily stress can result in more adaptive later behavior and resiliency, while exposure to unpredictable stress can result in deficits. Predictability and control can make events much less destructive or traumatic.
We may speculate that its plasticity makes the developing brain more susceptible to formation of malignant memories that affect not only the stress response system but also the emerging organizations of neural networks regulating other basic states and characteristics of the individual. Thus, an infant, who has reasonable frustration, gratification, and control during rapprochement in regulating tension anxiety by returning to a welcoming mother for comfort, may be establishing an appropriate neurochemical milieu for the development of a flexible, maximally-adaptive physiological apparatus for responding to future stressors, as well as other neuropsychological structures that mediate object relations, affect regulation, and adaptive personality characteristics. For traumatized children, however, the template for organization of their developing systems includes powerful experiences of fear, threat, unpredictability, frustration, anger, helplessness, hunger, and pain. Perry (54, 55) found altered cardiovascular regulation, affective lability, behavioral impulsivity, increased anxiety and startle response, and sleep abnormalities in such children. Such youngsters are at risk to develop 'traumatized' brains characterized by dysregulated systems that would serve them poorly when exposed to psychosocial stressors later in life (52, 55, 53).
A number of studies provide correlative data suggesting that severe early trauma can be a major expresser of underlying constitutional

or genetic vulnerability and may be a primary etiological factor in the development of a broad range of later disorders (5, 41, 66). Davidson and Smith (10) showed that 22% of adult psychiatric outpatients received a diagnosis of PTSD, with vulnerability to trauma greatest during early childhood and adolescence. Moreover, veterans with combat-related PTSD were more likely to have a history of childhood physical abuse than those without PTSD (4). Breier and co-workers (3) concluded that early parental loss accompanied by absence of a supportive relationship is associated with adult psychopathology. Other studies have documented associations between developmental trauma and the creative output of adult artists and writers (90), and borderline personality (51, 27), depressive (32), dissociative (59, 56), and a variety of other medical and psychiatric disorders (8, 9, 21, 1, 2, 24, 10). Indeed, alterations in a variety of neuroendocrine and blood element markers observed in borderline personality disorder are similar to those seen in PTSD (81, 97).