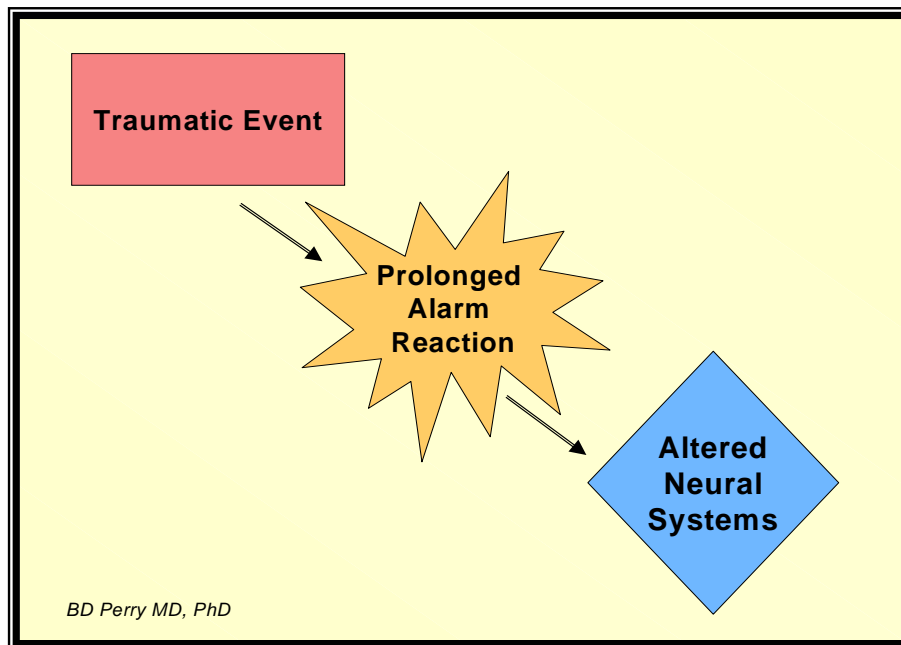




# EFFECTS OF TRAUMATIC EVENTS ON CHILDREN

## *AN INTRODUCTION*



Bruce D. Perry, MD, Ph.D.

This booklet is one in a series developed by the ChildTrauma Academy to assist parents, caregivers, teachers and various professionals working with maltreated and traumatized children.

## Introduction

Each year in the United States approximately five million children experience some form of traumatic experience. More than two million of these are victims of physical and/or sexual abuse. Millions more are living in the terrorizing atmosphere of domestic violence. Natural disasters, car accidents, life-threatening medical conditions, painful procedures, exposure to community violence - all can have traumatic impact on the child. By the time a child reaches the age of eighteen, the probability that any child will have been touched directly by interpersonal or community violence is approximately one in four. Traumatic experiences can have a devastating impact on the child, altering their physical, emotional, cognitive and social development. In turn, the impact on the child has profound implications for their family, community and, ultimately, us all.

Traumatic events in childhood increase risk for a host of social (e.g., teenage pregnancy, adolescent drug abuse, school failure, victimization, anti-social behavior), neuropsychiatric (e.g., post-traumatic stress disorder, dissociative disorders, conduct disorders) and other medical problems (e.g., heart disease, asthma). The deterioration of public education, urban violence and the alarming social disintegration seen in some of our urban and rural communities can be traced back to the escalating cycles of abuse and neglect of our children.

### Response to Trauma

#### Heterogeneity of response patterns

- Adaptive changes in *cognition*
- Adaptive changes in *affects*
- Adaptive changes in *behavior*
- Adaptive changes in *neurophysiology*
- Adaptive changes in *physiology*

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This introductory booklet is written for an interdisciplinary audience. Caregivers, childcare providers, teachers, law enforcement, child protection workers, social workers, judges, nurses, pediatricians and mental health service providers all are will work with traumatized or maltreated children. The more we can understand these children and the impact of traumatic experiences, the more compassionate and wise we can be in our interactions and in our problem solving. To date, few of the systems designed to care for, protect, educate, evaluate or heal

our children have solved the multiple problems posed by the maltreated or traumatized children. A first step in solving these problems is learning about the roots of trauma-related problems: *the adaptive responses to threat* present during the traumatic experiences.

## The Alarm State

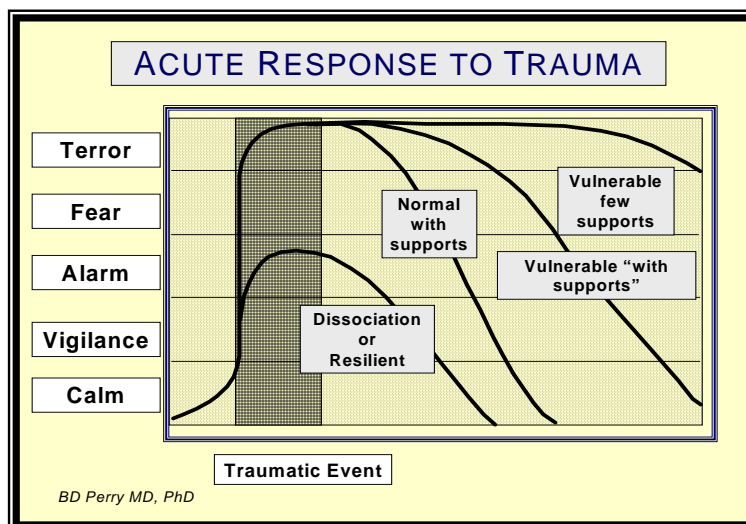
The human body and human mind have a set of very important and very predictable responses to threat. Threat may come from an internal (e.g., pain) or external (e.g., an assailant)

source. One common reaction to danger or threat has been labeled the 'fight or flight' reaction. In the initial stages of this reaction there is a response called the alarm reaction.

As the individual begins to feel threatened, the initial stages of a complex, total-body response will begin. The brain orchestrates, directs and controls this response. If the individual feels more threatened, their brain and body will be shifted further along an arousal continuum in an attempt to ensure appropriate mental and physical responses to the challenges of the threat. The cognitive, emotional and behavioral functioning of the individual will reflect this shift along the arousal continuum.

During the traumatic event, all aspects of functioning of the individual change - feeling, thinking, behaving all change. Someone being assaulted doesn't spend a lot of time thinking about the future or making an abstract plan for survival. At that moment, their thinking, behaving and feeling is being directed by more 'primitive' parts of the brain (see Table in Appendix). A frightened child doesn't focus on the words; they attend to the threat related signals in their environment - the non-verbal signs of communication such as eye contact, facial expression, body posture or proximity to the threat. The internal state of the child shifts with the level of perceived threat. With increased threat a child moves along the arousal continuum from vigilance through to terror.

The alarm continuum is characterized by a graded increase in sympathetic nervous system activity, in turn, causing increased heart rate, blood pressure, and respiration, a release of glucose stored in muscle and increased muscle tone. Changes in the central nervous system cause hypervigilance; the child tunes out all non-critical information. These actions prepare the child to fight with, or run away from, the potential threat. This total body mobilization, the "fight or flight" response, has been well characterized and described in great detail for adults. These responses are highly adaptive and involve many coordinated and integrated neurophysiological responses across multiple brain areas such as the locus coeruleus, the amygdala, the hypothalamus and the brainstem nuclei responsible for autonomic nervous system regulation.



**The Acute Response to Trauma:** Each traumatic event has a beginning and an end. As the traumatic event begins, the individual will move along the arousal continuum. Their internal state will shift from calm to vigilance, alarm, fear and then terror. The descriptive labels – calm, vigilance, alarm, fear, terror - merely designate various points along this continuum and are common descriptive terms for the emotional state corresponding to various stages of the response to threat.

## HETEROGENEITY OF RESPONSE TO THREAT: DISSOCIATION

The most well characterized response to threat is the fight or flight response. However, it is increasingly clear that individual responses to threat can vary tremendously. Another of the major adaptations to threat involves a different set of physiological and mental changes. Sometimes, when fighting or fleeing is not possible, the child will use avoidant and

psychological fleeing mechanisms that are *dissociative*. Dissociation is basically a mental mechanism by which one withdraws attention from the outside world and focuses on the inner world. Dissociation may involve a distorted sense of time, a detached feeling that you are "observing" something happen to you as if it is unreal, the sense that you may be watching a movie of your life. In extreme cases, children may withdraw into an elaborate fantasy world where they may assume special powers or strengths. Like the alarm response, this "defeat" or dissociative response is graded. The

### Differential Response to Threat

#### Dissociation

- Detached
- Numb
- Compliant
- Decrease HR
- Suspension of time
- De-realization
- 'Mini-psychoses'
- Fainting

#### Hyperarousal

- Hypervigilance
- Anxious
- Reactive
- Alarm response
- Increase HR
- Freeze: Fear
- Flight: Panic
- Fight: Terror

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intensity of the dissociation varies with the intensity and duration of the traumatic event. Even when we are not threatened, we use dissociative mental mechanisms all of the time. Daydreaming is an example of a dissociative event. The period between wakefulness and sleep is another example of dissociating from the present to your inner thoughts, ideas, fears, fantasies and, then, ultimately moving into the state of sleep. All children and most adults use some degree of dissociation during a traumatic event. Some individuals will use, and some kinds of trauma induce, dissociation as a primary adaptive response.

For most children and adults, however, the adaptive response to an acute trauma involves a mixture of hyperarousal and dissociation. During the actual trauma, a child will feel threatened and the arousal systems will activate. With increased threat, the child moves along the arousal continuum. At some point along this continuum, the dissociative response is activated. This results in the host of protective mental (e.g., decreases in the perception of anxiety and pain) and physiological responses (decreased heart rate) that characterize the dissociative response (see *Differential Response to Trauma* Figure, above).

## The Acute Post Traumatic Period

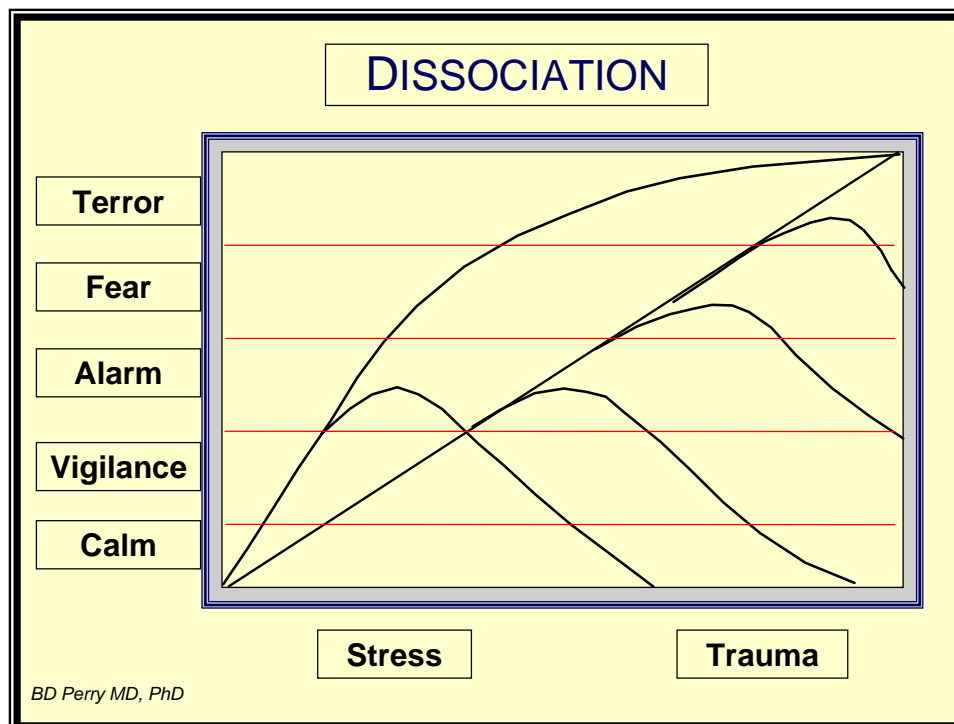
As the traumatic event ends, the mind and body slowly move back down the arousal or dissociative continuum. The child moves from the brink of terror, through fear, alarm and, with time and support, back to calm (see *The Acute Response to Trauma* figure above). Heart rate, blood pressure and other physiological adaptations normalize. If a child can move back down the arousal continuum, their brain will resume baseline (pre-trauma) styles of thinking, feeling and behaving. Hypervigilance decreases and the mental mechanisms related to

attention begin to normalize as well. The child that has dissociated will begin to pay attention to external stimuli. While the child that has been completely focused on external cues related to threat will actually pay attention to *internal* stimuli (e.g., feelings, thoughts, sensing their pounding heart or noticing the cut on their leg from diving under a desk during the shooting).

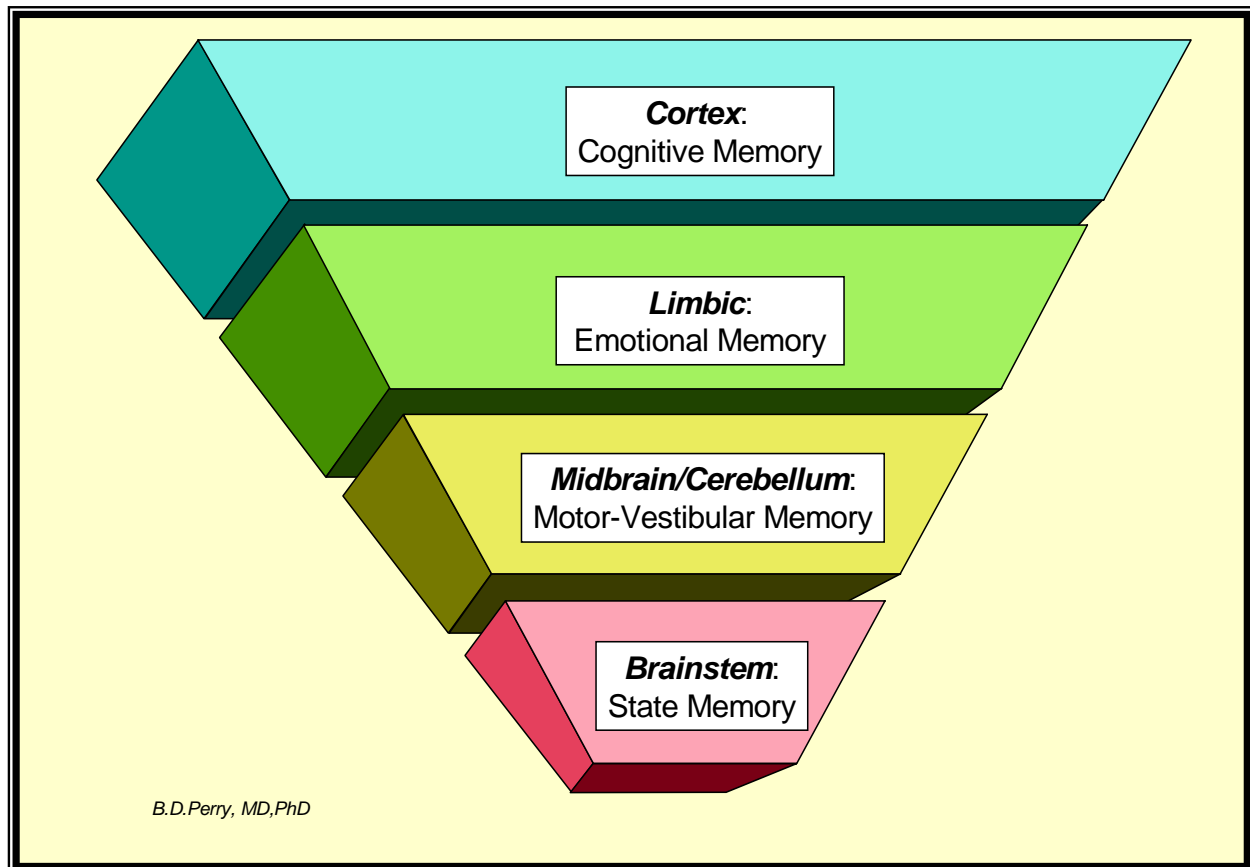
*This means, for example, that the child will now perceive the sense of fear and anxiety. This is when they will actually feel the fear associated with the trauma. The individual will begin to process and think about what happened, attempting to make sense out of what has just happened. Because the traumatic event is so far out of the normal range of experience, there will be a variety of mental attempts to process and "master" this event.*

The event will play itself out in the mind of the child again and again. A host of intrusive images related to the trauma may swamp the child's thinking. This set of re-living and re-experiencing phenomenon may include telling the story over and over again to friends. The child may act this event out in their play and drawings (see below) or have intrusive dreams. In essence, these children have created memories of the traumatic memory. But these memories are complex and multi-domain. Traumatic memory involves the storage and recall of traditional cognitive information (who, what, when, where), emotional information (fear, dread, sadness), motor-vestibular information (e.g., the body position during the rape) and state memory (vigilance, physiological hyperarousal).

The normal and predictable mental mechanisms that are used to process all experiences will, at times, fail in the attempts to master and understand a traumatic event. Because traumatic events have features that are so outside the range of normal experience, there are very few internal experiences with which to judge or make sense out of the event. *The more outside the range of the normal experience and the more life-threatening the experience, the more difficult it will be for the normal mental mechanisms to work efficiently to process and master that experience.* The inability to control elements of the traumatic event or the intrusive thoughts that follow leads to a set of predictable, mental and physiological responses.



## EMOTIONAL MEMORY AND PHYSIOLOGICAL HYPERAROUSAL



**Trauma and Memory:** One of the key functions of nervous tissue is to store information. All areas of the brain store information related to the functions they mediate. The cortex stores cognitive information – names, faces, facts. The limbic system can store emotional information – fear, pleasure, sadness. Motor-vestibular memories such as typing, playing the piano or riding a bike are stored in other parts of the brain. In the brainstem, the anxiety or arousal states associated with a traumatic event can be stored. The symptoms of PTSD are stored throughout the brain in these various systems and areas. Re-exposure to cues associated with the trauma (e.g., sights, sounds, and smells) can elicit these stored “memories” and result in the signs and symptoms of PTSD.

Unfortunately, as this event plays itself out again and again in the mind of the child, not only will the thoughts of the event be recalled, the emotions and feelings (fear, anxiety, pain) of being out of control and threatened will be re-experienced as well. Each intrusive thought, nightmare and re-enactment in play also re-evokes the emotional or affective memory of being in the midst of the threatening event.

A classic set of predictable symptoms and physical changes seen in the acute post-traumatic period is related to the ability to re-evoked the emotional and physiological memories of being in the traumatic event. This means very simply that in addition to having cognitive remembrances of the facts and narrative details of their thoughts during the event, the child has the capacity for recollection and reliving of the physiological changes that were present in the alarm reaction. *In effect, the child has emotional and state memories from the traumatic event.* This means that the children will be hypervigilant, and may have an increased startle response, increased muscle tone, a fast heart rate (tachycardia) and blood pressure. Indeed, even at rest in the weeks following a traumatic event, children and adolescents often exhibit signs of physiological hyperarousal - including tachycardia or a fast heart rate. Despite normal behaviors in most situations, children exposed to trauma are internally agitated. They have not truly been able to move back down the arousal continuum to the state of calm. This has profound implications for the child's long term functioning (see Post-traumatic Stress Disorders below).

Persisting physiological and emotional distress is physically exhausting and emotionally painful. Because of the pain, energy and discomfort associated with the recurring intrusive thoughts and the physiological and emotional 'memories' associated with these thoughts, a variety of protective *avoidance* mechanisms are used to escape reminders of the original trauma. These include active avoidance of any reminders of the trauma and the mental mechanisms of numbing and dissociation.

**State and affect memories elicited in a non-conscious state:** *David is a 9 year-old boy. From age 2 through 6, he was sexually abused by his father. This abuse induced severe physical injuries. At age 6 he was removed from the family.*

*At age 8, he was seriously injured in a fall. He suffered from serious brain injury resulting in a coma state for 8 months following the injury. He continues to be difficult to arouse and is non-verbal. He exhibits no form of meaningful communication. In the presence of his biological father, he began to scream, moan, and his heart rate increased dramatically. Audiotapes of his biological father elicit a similar response. The scent of his father (one of the father's shirts) resulted in similar agitated behavior and physiological hyperarousal. These "memories" are stored in lower parts of the brain and do not require cognitive memory or consciousness to be expressed.*

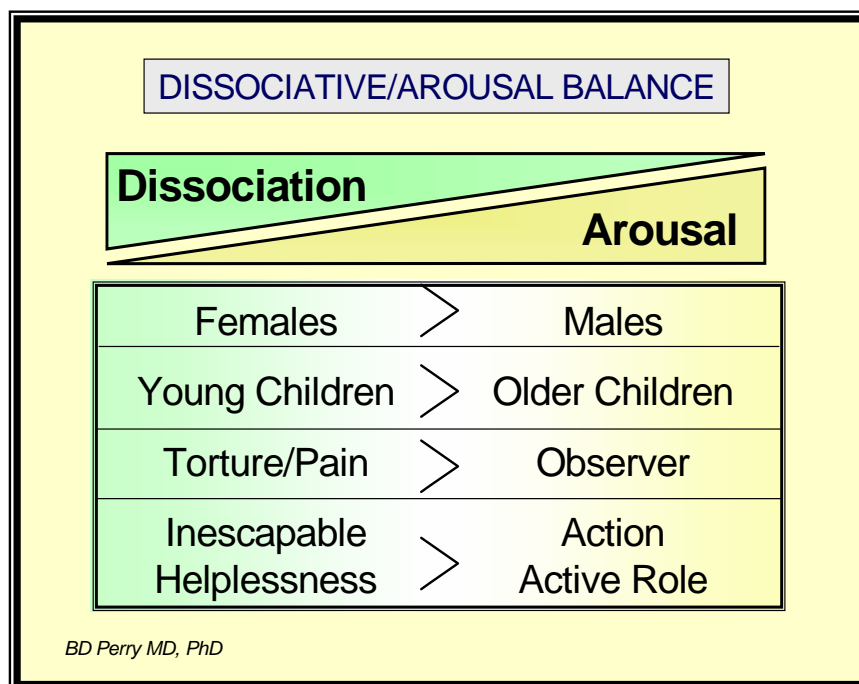
## AVOIDANCE, EMOTIONAL NUMBING AND DISSOCIATION

Traumatized children, when faced with reminders of the original traumatic event, may experience so much pain and anxiety that they become overwhelmed. In these situations - when they cannot physically withdraw from those reminders - they may dissociate. Following a traumatic experience, children may act stunned or numb. Dissociating children often appear to be gazing off into nowhere. They will not readily respond to questions by adults. Their answers to questions will seem unclear, unfocused or evasive. This is understandable if

we remember that while these children are present in body, their minds may be 'off in another place' - dissociated, trying to avoid the painful reminders of the original trauma.

Avoiding direct reminders of the trauma sometimes is extremely difficult. In that case, children will withdraw in to themselves in a variety of ways. This inward focused withdrawal basically means that they will have fewer opportunities to be provoked into having more intrusive thoughts about the event, and therefore, they can thereby avoid pain.

In the first days and weeks following the traumatic event, the symptoms listed above, 1) re-experiencing phenomena, 2) attempts to avoid reminders of the original event and 3) physiological hyper-reactivity are all relatively predictable, and indeed, highly adaptive physiological and mental responses to a trauma. *Unfortunately, the more prolonged the trauma and the more pronounced the symptoms during the immediate post-traumatic period, the more likely there will be long term chronic and potentially permanent changes in the emotional, behavioral, cognitive and physiological functioning of the child. It is this abnormal persistence of the originally adaptive responses that result in trauma-related neuropsychiatric disorders such as Post-traumatic Stress Disorder (PTSD).*



**The Adaptive Balance:** *The primary adaptive response to threat appears to vary according to several factors. Dissociation is more common in younger children, females and during traumatic events that are characterized by pain or an inability to escape. A hyperarousal response is more common in older children, males and when the trauma involves witnessing or playing an active role in the event. In most traumatic events, the individual will use a combination of these two primary adaptive response patterns.*



## POST-TRAUMATIC STRESS DISORDERS

Children and adults surviving traumatic events very frequently will have persistence of the acute post-traumatic stress response beyond six months. When this occurs, the child or adult is then considered to be suffering from post-traumatic stress disorder (PTSD). Post-traumatic stress disorder is a diagnostic label that has been traditionally associated with combat veterans. More recently however, it has been very well described in children who have been survivors of physical abuse, sexual abuse, exposure to community or domestic violence, natural disasters, motor vehicle accidents and a host of other traumatic events. The three major clusters of symptoms as described above are observed in a variety of forms of post-traumatic stress disorder.

### **Persisting 'fear' in a traumatized child:**

*Rachel is a 10-year-old girl. She lives in a foster home after being removed from her family following the severe physical assault of a sibling by her stepfather. She was exposed to chronic violence in the home as her stepfather battered her mother and her older male sibling. She was referred to the ChildTrauma Clinic with presenting problems of sleep difficulties, increased startle response, difficulty concentrating (hypervigilance), academic failure and pervasive anxiety. Her resting heart rate was 120 beats per minute (bpm).*

*Following a multidisciplinary evaluation, she was diagnosed with post-traumatic stress disorder. Her symptoms were interpreted as being the persistence of the fear-related emotions and behaviors that were normative and adaptive during the violence but now were maladaptive. Treatment included: a) psychoeducation for the foster family and school regarding the impact of exposure to trauma on the emotional, behavioral and cognitive functioning of children, b) small group therapy with a focus on social skills and c) pharmacotherapy with clonidine, a medication that specifically decreases the activity of fear-related neurobiological systems in the brain. Dramatic improvement in sleep, impulsivity, anxiety and concentration were noted following the clonidine. Temporary discontinuation of the medication resulted in partial return of symptoms.*

In brief however, children who survive a traumatic event and have persistence of this low level fear state, may be behaviorally impulsive, hypervigilant, hyperactive, withdrawn or depressed, have sleep difficulties (including insomnia, restless sleep and nightmares) and anxiety. In general, these children may show some loss of previous functioning or a slow rate of acquiring new developmental tasks. Children may act in a regressed fashion. In addition, many of these children have persisting physiological hyper-reactivity with resulting fast heart rate or borderline high blood pressure.

### POST-TRAUMATIC STRESS DISORDER

Recurring intrusive recollection of the traumatic event

Persistent avoidance of stimuli associated with the trauma or numbing of general responsiveness

Persistent symptoms of increased arousal -- physiological hyper-reactivity

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Whether or not someone develops post-traumatic disorder following a traumatic event is related to a variety of factors. The more life-threatening the event, the more likely someone is to develop PTSD. The more the event

disrupts their normal family or social experience the more likely someone is to develop PTSD. Having an intact, supportive and nurturing family appears to be a relative protective factor.

Unfortunately, a great majority of children who survive traumatic experiences also have a concomitant major disruption in their way of life, their sense of community, their family structure, and will be exposed to a variety of ongoing provocative reminders of the original event (e.g., ongoing legal actions, high press visibility). The frequency with which children



***The Firing Squad.*** Extract from of a drawing by a 12 year old Kosovar child witnessing the violence, chaos and destruction of war. Drawings by children exposed to traumatic events frequently include elements from the original trauma and are often re-enactment efforts.

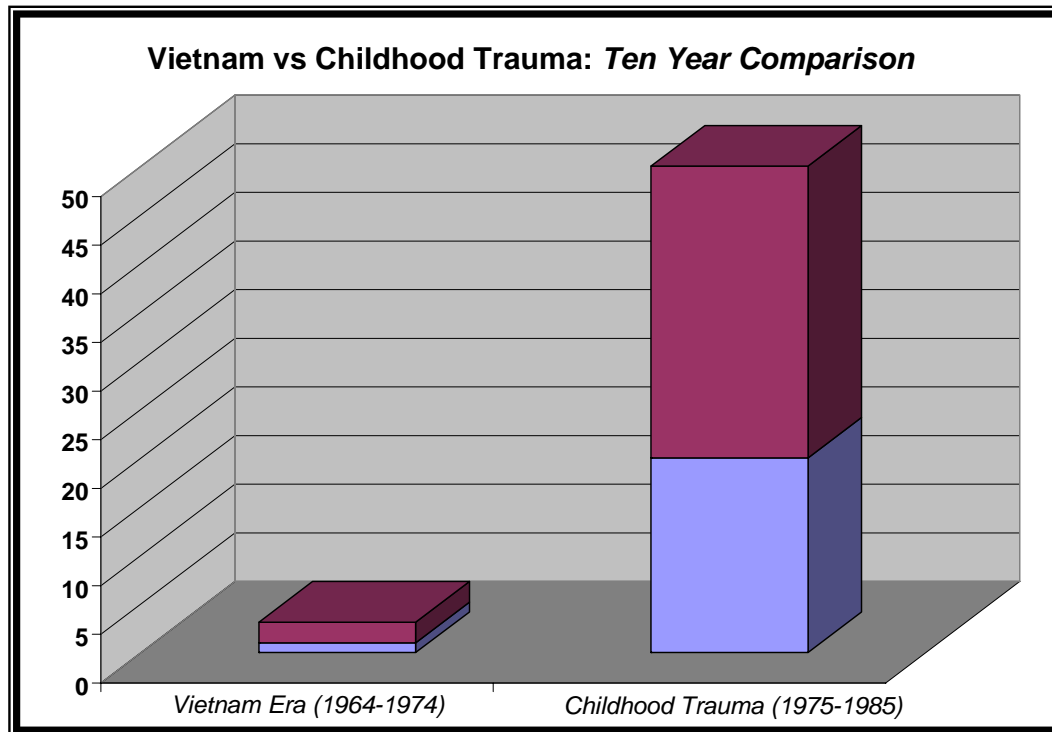
From the collection of Dr. Shoaib (Psychiatry resident trainee at the ChildTrauma program in 1998) obtained during his work in Kosovar refugee camps in Albania in 1999.

develop post-traumatic stress disorders following comparable traumatic events is relatively high (45-60%).

Children who survive traumatic events and exhibit this diverse set of symptoms and physical signs are frequently also able to meet diagnostic criteria for attention-deficit hyperactivity disorder, anxiety disorder NOS, major depressive disorder, conduct disorder, and a variety of Axis I DSM IV diagnoses. Keeping in mind, however, that these children have been traumatized and that the symptoms of anxiety, depression and behavioral impulsivity are reflective of core changes related to the traumatic event helps one provide better diagnostic, prognostic and the therapeutic services for these children.

## APPENDIX I

## The Scope of Childhood Trauma



**The Wars of Childhood:** During the ten years of the Vietnam war, over 3 million young men and women served in Vietnam. Of these 3.14 million (left column above) young adults, over 1 million (blue in left column above) developed PTSD at some point over the next 20 years. In response, we have established the National Centers for PTSD; thousands of specialized clinical services, research programs and educational initiatives focused on combat-related PTSD. Billions of dollars have dedicated to treating and understanding combat-related trauma.

In contrast, **each year** in the United States, five million children are exposed to abuse, violence and other traumatic events. Unlike the veterans from Vietnam, most of these children don't rotate out of the war zone after a year. Millions of these children live year after year in the violent and terrorizing world of domestic or community violence, physical and sexual abuse. They are chronically exposed to pervasive trauma at ages when they are most vulnerable. During the ten years following the Vietnam era, more than 50 million children were exposed to traumatic events (right column above). If only thirty percent (a conservative estimate) of these children developed PTSD (blue in right column), thirty million children developed severe and chronic neuropsychiatric problems during this ten-year period. Despite the pervasive and devastating nature of childhood trauma, our society has dedicated few focused resources for research, clinical or educational programs for traumatized or maltreated children.

## APPENDIX II

### Key Points

#### The Adaptive Response to Trauma

The brain mediates threat with a set of predictable neurobiological, neuroendocrine and neuropsychological responses.

These responses may include different 'survival' strategies -- ranging from fighting or fleeing to 'giving up' or a 'surrender' reaction.

There are multiple sets of neurobiological and mental responses to stress. These vary with the nature, intensity and frequency of the event. Different children may have unique and individualized 'response' sets to the same trauma.

Two primary adaptive response patterns in the face of extreme threat are the hyperarousal continuum (defense -- fight or flight) and the dissociation continuum (freeze and surrender response). Each of these response 'sets' activates a unique combination of neural 'systems'.

These response patterns are somewhat different in infants, children and adults -- though they share many similarities. Adult males are more likely to use hyperarousal (fight or flight) response -- young children are more likely to use a dissociative pattern (freeze and surrender) response.

As with all experience -- when the brain 'activates' the neurophysiological systems associated with alarm or with dissociation, there will be use-dependent neurobiological changes (or in young children, use-dependent *organization*) which reflects this activation.

It is these use-dependent changes in the brain development and organization which underlie the observed emotional, behavioral, cognitive, social and physiological alterations following childhood trauma.

In general, the predominant adaptive style of an individual in the acute traumatic situation will determine which post-traumatic symptoms will develop -- hyperarousal or dissociative.

## APPENDIX III

*The Threatened Child*  
*How Fear Changes Thinking, Feeling and Behaving*

<i>Hyperarousal Continuum</i>	REST	VIGILANCE	RESISTANCE Crying	DEFIANCE Tantrums	AGGRESSION
<i>Dissociative Continuum</i>	REST	AVOIDANCE	COMPLIANCE Robotic/detached	DISSOCIATION Fetal Rocking	FAINTING
<i>Regulating Brain Region</i>	NEOCORTEX Cortex	CORTEX Limbic	LIMBIC Midbrain	MIDBRAIN Brainstem	BRAINSTEM Autonomic
<i>Cognitive Style</i>	ABSTRACT	CONCRETE	EMOTIONAL	REACTIVE	REFLEXIVE
<i>Internal State</i>	CALM	AROUSAL	ALARM	FEAR	TERROR

Different children have different styles of adaptation to threat. Some children use a primary hyperarousal response some a primary dissociative response. Most use some combination of these two adaptive styles. In the fearful child, a defiant stance is often seen. This is typically interpreted as a willful and controlling child. Rather than understanding the behavior as related to fear, adults often respond to the 'oppositional' behavior by becoming more angry, more demanding. The child, over-reading the non-verbal cues of the frustrated and angry adult, feels more threatened and moves from alarm to fear to terror. These children may end up in a primitive "mini-psychotic" regression or in a very combative state. The behavior of the child reflects their attempts to adapt and respond to a perceived (or misperceived) threat.

## RESOURCES

There are many other places to learn more about the impact of traumatic events during childhood. A few starting places are listed below.

### SELECTED READING

#### Books

**Stress in Children.** Child and Adolescent Psychiatric Clinics of North America Pfefferbaum, B. 1998. W.B. Saunders Company, Philadelphia

This contributed volume summarizes the current state of clinical, research and policy related issues in the area of childhood traumatic stress. Several of the primary theoretical constructs guiding research and treatment are outlined. Excellent summaries of clinical experience and reviews of current clinical research are included.

**Too Scared To Cry.** Terr, L. 1992 Harper Collins, New York

Winner of the Blanche Ittleson Award for her research on childhood trauma, Dr. Terr is without peer in her experience and insight regarding childhood trauma. This book is a classic. She provides hope for all families and clinicians working with traumatized children. This book is highly recommended.

#### Articles

Perry, BD and Azad, I. Post-traumatic stress disorders in children and adolescents. *Current Opinions in Pediatrics* 11: 4, 121-132, 1999

Perry, B. D. and Pollard, R. Homeostasis, stress, trauma, and adaptation: A neurodevelopmental view of childhood trauma. *Child and Adolescent Psychiatric Clinics of North America* 7[1], 33-51. 1998.

Perry, B.D. The neurodevelopmental impact of violence in childhood. In Textbook of Child and Adolescent Forensic Psychiatry, (Eds., D. Schetky and E.P. Benedek) American Psychiatric Press, Inc., Washington, D.C. pp. 221-238, 2001

Pfefferbaum, B. Posttraumatic stress disorder in children: A review of the past 10 years. *J.Am.Acad.Child Adolesc.Psychiatry* 36[11], 1503-1511. 1997.

Terr, L. Childhood traumas: An outline and overview. *Am J Psychiatry*, 1991. 148: 10-20.

### ORGANIZATIONS

#### ***Prevent Child Abuse, America***

*Prevent Child Abuse (formerly the National Committee to Prevent Child Abuse) is nationally recognized as one of the most innovative leaders in child abuse prevention. It has a nationwide network of chapters and their local affiliates in hundreds of communities. Through our media campaigns, people are finding ways they can help prevent abuse. PCA*

*seeks to equip professionals with the latest, proven prevention approaches through training and technical assistance. To find out more about your local affiliate and the national program activities contact:*

***Prevent Child Abuse America***  
200 S. Michigan Avenue, 17th Floor  
Chicago, Illinois 60604-2404  
(800) CHILDREN  
Tel: (312) 663-3520  
Fax: (312) 939-8962  
[www.preventchildabuse.org](http://www.preventchildabuse.org)  
[mailbox@preventchildabuse.org](mailto:mailbox@preventchildabuse.org)

***American Professional Society on the Abuse of Children (APSAC)***

APSAC's mission is to ensure that everyone affected by child maltreatment receives the best possible professional response. This organization has many useful scholarly and clinical materials focused primarily at the professional audience. Caregivers working with abused or maltreated children may find this a useful resource, nonetheless. For more information contact:

***APSAC***  
407 South Dearborn Street Suite 1300  
Chicago, IL 60605  
<http://www.apsac.org/>

***The National Center for PTSD***

The National Center for PTSD is a program of the U.S. Department of Veterans Affairs and carries out a broad range of activities in research, training, and public information. The primary focus of the Center has been combat veterans and their families. Over the last few years, however, this focus has been expanded. There are many useful programs, activities and resources for anyone interested in the effects of traumatic stressors.

The PILOTS database is an electronic index to the worldwide literature on PTSD and other mental-health sequelae of exposure to traumatic events. It is available to Internet users through the courtesy of Dartmouth College, whose computer facilities serve as host to the database. No account or password is required, and there is no charge for using the PILOTS database.

***The National Center for PTSD***  
<http://www.dartmouth.edu/dms/ptsd/>

***International Society for Traumatic Stress Study***

The International Society for Traumatic Stress Studies (ISTSS), founded in 1985, provides a forum for the sharing of research, clinical strategies, public policy concerns and theoretical formulations on trauma in the United States and around the world. ISTSS is dedicated to the discovery and dissemination of knowledge and to the stimulation of policy, program and service initiatives that seek to reduce traumatic stressors and their immediate and long-term consequences.

***International Society for Traumatic Stress Studies***

60 Revere Drive, Suite 500  
Northbrook, Illinois 60062 USA  
Phone: 847/480-9028; Fax: 847/480-9282  
<http://www.istss.org>

### ***National Clearinghouse for Child Abuse and Neglect (NCCAN)***

The National Clearinghouse on Child Abuse and Neglect Information is a national resource for professionals seeking information on the prevention, identification, and treatment of child abuse and neglect, and related child welfare issues.

#### ***National Clearinghouse on Child Abuse and Neglect Information***

330 C Street, SW  
Washington, DC 20447  
Phone: (800) 394-3366 or (703) 385-7565  
Fax: (703) 385-3206  
<http://www.calib.com/nccanch/>  
[nccanch@calib.com](mailto:nccanch@calib.com).

## **OTHER**

### ***David Baldwin's Trauma Information Pages***

Without question the best trauma-related resource that exists on the Web. Dr. Baldwin has done a remarkable job, collecting, sorting and commenting on this information. If you have access to the Web, start here. You won't be disappointed.

These Trauma Pages focus primarily on emotional trauma and traumatic stress, including PTSD (Post-traumatic Stress Disorder), whether following individual traumatic experience(s) or a large-scale disaster. New information is added to this site about once a month. The purpose of this award-winning site is to provide information for clinicians and researchers in the traumatic-stress field. Baldwin's interests include both clinical and research aspects of trauma responses and their resolution.

#### ***David Baldwin's Trauma Information Pages***

<http://www.trauma-pages.com>

## **GLOSSARY**

**Dissociation:** The mental process of disengaging from the stimuli in the external environment and attending to inner stimuli. This is a graded mental process that ranges from normative daydreaming to pathological disturbances that may include exclusive focus on an inner fantasy world, loss of identity, disorientation, perceptual disturbances or even disruptions in identity.

**Dysphoria:** The subjective emotional state of sadness, disquiet, malaise.

**Hyperarousal:** Mental and physical changes caused by alterations in central and peripheral nervous system activation related to perceived or actual threat. This graded response



includes increased sensory and perceptual focus on the threat, activation of physiological systems required for survival and corresponding changes in emotional and behavioral functioning.

**Homeostasis:** The tendency for stability in normal physiological states achieved by a system of control mechanisms activated by various feedback systems.

**Hypervigilance:** The state of increased arousal and attention to any cue in the external environment that may potentially be associated with threat. Often results in distractibility and attention problems when present in children with PTSD.

**Post-traumatic Stress Disorder (PTSD):** A neuropsychiatric disorder that may develop following a traumatic event that includes changes in emotional, behavioral and physiological functioning.

**Stress:** Any challenge or condition that forces the regulating physiological and neurophysiological systems to move outside of their normal dynamic activity. Stress occurs when homeostasis is disrupted.

**Trauma:** A psychologically distressing event that is outside the range of usual human experience, often involving a sense of intense fear, terror and helplessness.

These resources will be periodically updated and posted in a special section of the ChildTrauma Academy web site <http://www.ChildTrauma.org>. Visit this site for updates and for other resource materials about traumatic events and children.

## *About the Author*

*Bruce D. Perry, M.D., Ph.D.*

Dr. Perry is the Senior Fellow of the ChildTrauma Academy. Dr. Perry served as the Thomas S. Trammell Research Professor of Child Psychiatry at Baylor College of Medicine and Chief of Psychiatry at Texas Children's Hospital in Houston, Texas from 1992 to 2001. In addition he has served as the Director of Provincial Programs in Children's Mental Health for Alberta, Canada, and is the author of more than 200 scientific articles and chapters. He is the recipient of dozens of awards and honors and is an internationally recognized authority in the area of child maltreatment and the impact of trauma and neglect on the developing brain.

## *The ChildTrauma Academy*

The ChildTrauma Academy, a not-for-profit organization based in Houston, TX, is a unique collaborative of individuals and organizations working to improve the lives of high-risk children through direct service, research and education. These efforts are in partnership with the public and private systems that are mandated to protect, heal and educate children. The work of the Academy has been supported, in part, by grants from Texas Department of

Protective and Regulatory Services, the Children's Justice Act, the Court Improvement Act and through innovative partnerships with academic and corporate partners such as Powered, Inc., Scholastic, Inc. and Digital Consulting and Software Services.

The mission of the ChildTrauma Academy is to foster the creation of innovations in practice, programs and policy related to traumatized and maltreated children. To support this mission, the Academy has two main activities; 1) Program development and consultation and 2) Specialized education and training services.

**For more information or to direct donations:**

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**Web Resources:**

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## UNDERSTANDING TRAUMATIZED AND MALTREATED CHILDREN: THE CORE CONCEPTS

“**Understanding Traumatized and Maltreated Children**” is a seven-part series featuring *Bruce D. Perry, M.D., Ph.D.* and hosted by *Art Linkletter*. Comprehensive information is presented by Dr. Perry on the primary problems facing maltreated children and dynamic approaches for effective care giving for professionals and lay people alike.

“One of the purposes of this video series is to try and provide some of the baseline information for frontline providers — like teachers, caseworkers, mental health workers, and professionals — so they can better understand these children and really begin to think about how to intervene in different ways. There is presently a real lack of useful and easy to understand information about this. We recognize that and that is what we’re trying to respond to in this series...*We tend to pay more attention to information that reinforces our beliefs, than to information that challenges our beliefs.*” — *Dr. Perry*

**#1 Program CHALLENGING OUR BELIEFS (#1-01)** In this introductory program to the series, Dr. Perry and Art Linkletter challenge us to evaluate existing childcare systems, and urge us to consider their effectiveness. Opportunities for change include better communication, corporate workplace involvement, community involvement, and increasing a maltreated child’s opportunities for affiliation to promote healing and hope. “Challenging Our Beliefs” is also an excellent stand alone program for both lay people and professionals.

**#2 Program THE AMAZING HUMAN BRAIN (#1-02)** Dr. Perry covers the basics of brain anatomy and function. An understanding of the hierarchical make-up of the human brain helps caregivers and professionals to better diagnose children’s problems and formulate effective treatment approaches. Adverse affects caused by neglect, fear, trauma, and violence are presented.

**#3 Program HOW THE BRAIN DEVELOPS: THE IMPORTANCE OF EARLY CHILDHOOD (#1-03)** Dr. Perry stresses the importance of bonding and attachment as the cornerstones of early childhood optimal brain development. Caregivers and professionals learn the various behaviors and problems of children who missed these early opportunities, and presents examples to help in recognition and appropriate treatment paths.

**#4 Program NEGLECT: HOW POVERTY OF EXPERIENCE DISRUPTS DEVELOPMENT (#1-04)** Severe neglect and even simple missed care giving opportunities cause various degrees of brain effects and behavior problems in maltreated children. An absence of stimulation and chaotic stimulation are both responsible for promoting an absence of experience that contributes to disruptive childhood development. Dr. Perry presents new and dynamic information on this often ignored subject.

**#5 Program THE FEAR RESPONSE: THE IMPACT OF CHILDHOOD TRAUMA (#1-05)** Caregivers learn to effectively recognize the behaviors and physical reactions of children in the various stages of “the fear response.” This is particularly helpful for caregivers and professionals in assessment, treatment, and intervention to determine the degree of trauma, and Post-Traumatic Stress Syndrome, in children.

**#6 Program LIVING AND WORKING WITH TRAUMATIZED CHILDREN (#1-06)** Dr. Perry presents in-depth information and effective skills for those who are “on the front lines” of care giving for traumatized and maltreated children. Recording a child’s progress, identifying strengths and weaknesses, and respite care for caregivers all help to promote effective and optimal opportunities for a healing environment.

**#7 Program VIOLENCE AND CHILDHOOD (#1-07)** Children today are bombarded with violence: violence in the media, gang violence, domestic violence, abuse, and school violence. Dr. Perry presents information concerning how insufficient brain Cortex modulation and primitive Brain Stem impulsivity can lead to acts of violence. Dr. Perry concludes: “*It’s a really unique form of heroism that is most often unrecognized. There are a lot more people than you might expect who are walking around that are very heroic just in being ‘good people’ — considering what they’ve gone through.*”

## THE SIX CORE STRENGTHS FOR HEALTHY CHILDHOOD DEVELOPMENT

**#1 Program DEVELOPING POTENTIAL (#2-01)** In this introductory tape, Dr. Perry discusses the core strengths that provide a child with the framework for a life rich in family, friends, and personal growth. Teaching children these core strengths gives them a gift they will use throughout their lifetimes. They will learn to live and prosper together with people of all kinds—each bringing different strengths to create a greater whole.

**#2 Program ATTACHMENT (#2-02) The template for future relationships** Attachment is the capacity to form and maintain healthy emotional bonds with another person. It is first acquired in infancy, as a child interacts with loving, responsive, and attentive parents and caregivers. This core strength is the cornerstone of all the others. Healthy attachments allow a child to love, to become a good friend, and to have a positive and useful model for future relationships. As a child grows, other consistent and nurturing adults such as teachers, family friends, and relatives will shape his ability to develop attachments. The attached child will be a better friend, student, and classmate—which promotes all forms of learning.

**#3 Program SELF-REGULATION (#2-03) The capacity to regulate internally** Developing and maintaining the ability to notice and control primary urges such as hunger and sleep—as well as feelings of frustration, anger, and fear—is a lifelong process. Its roots begin with the external regulation provided by parents or significant caregivers, and its healthy growth depends on a child's experience and the maturation of the brain. Pausing a moment between an impulse and an action is a life tool. Developing this strength helps a child physiologically and emotionally. But it's a strength that must be learned—we are not born with it.

**#4 Program AFFILIATION (#2-04) Joining In** The capacity to join others and contribute to a group springs from our ability to form attachments. Affiliation is the glue for healthy human functioning. It allows us to form and maintain relationships with others and to create something stronger, more adaptive, and more creative than the individual. Human beings are biologically designed to live, play, grow, and work in groups. The family is a child's first and most important group. But most other groups that children join are based on circumstance or common interests. It's in these groups that children will have thousands of brief emotional, social, and cognitive experiences that can help shape their development.

**#5 Program ATTUNEMENT (#2-05) Thinking of Others** Awareness is the ability to recognize the needs, interests, strengths, and values of others. Infants begin life self-absorbed and slowly develop awareness - the ability to see beyond themselves and to sense and categorize the other people in their world. An aware child learns about the needs and complexities of others by watching, listening, and forming relationships with a variety of children. He becomes part of a group and sees ways in which we are all alike and different. With experience, a child can learn to reject labels used to categorize people, such as skin color or the language they speak.

**#6 Program TOLERANCE (#2-06) Accepting Differences** Tolerance is the capacity to understand and accept how others are different from you. This core strength builds upon another - awareness (once aware, what do you do with the differences you observe?). It's natural and human to be afraid of what's new and different. To become tolerant, a child must first face the fear of differences. This can be a challenge because children tend to affiliate based on similarities—in age, interests, families, or cultures. But they also learn to reach out and be more sensitive to others by watching how the adults in their lives relate to one another. With positive modeling, caregivers can insure and build on children's tolerance. The tolerant child is more flexible and adaptive in many ways. Most important, when a child learns to accept difference in others, he becomes able to value the things that make each of us special and unique.

**#7 Program RESPECT (#2-07) Respecting yourself and others** Appreciating your own self-worth and the value of others grows from the foundation of the preceding five strengths. An aware, tolerant child with good affiliation, attachment, and self-regulation strengths gains respect naturally. The development of respect is a lifelong process, yet its roots are in early childhood. Children will belong to many groups, meet many kinds of people, and will need to be able to listen, negotiate, compromise, and cooperate. Having respect enables a child to accept others and to see the value in diversity. He can see that every group needs many styles and many strengths to succeed and he can value each person in the group for her talents. When children respect—and even celebrate—diversity, they find the world to be a more interesting, complex, and safer place.

In the past, the impact of traumatic events on infants and young children has been passed over when in reality early childhood is the stage when a child is most vulnerable to the effects of trauma (Perry et. al., 1995). There are numerous interventions for early childhood trauma that focus on the child and the child's primary caregiver. I wanted to design an intervention that will be able to go beyond the home environment of the child and into the school environment. Reasoning behind effects of early childhood trauma will be discussed later in regards to attachment theory, stress and trauma theory, and psychoanalytic theory. Traumatic experience can occur to children under the age of six (Zero to Six Collaborative Group, 2010). The effects of domestic violence on children play a tremendous role on the well-being and developmental growth of children witnessing the event. Children who witness domestic violence in the home often believe that they are to blame, live in a constant state of fear, and are 15 times more likely to be victims of child abuse. Close observation during an interaction can alert providers to the need for further investigation and intervention, such as dysfunctions in the physical, behavioral, emotional Traumatic events can affect how a child's brain develops and that can have lifelong consequences. A study published in 2015 showed that the more adverse childhood experiences a person has, the higher their risk of health and wellness problems later in life. Childhood trauma may increase an individual's risk of Effects of Childhood Trauma on Depression and Suicidality in Adulthood. Psychiatric Times. 2016.