Caught Between the Amygdala and a Hard Place

By Karyn Purvis, PhD & David Cross, PhD

Tufts of red hair emerged over the kitchen counter followed by dancing blue eyes and a small freckled nose. "Mommy!" asked the pleading voice of a young five-year-old Suzie, "Can I have a power bar?" Busily working in the kitchen mother replied, "No sweetie, I've cooked a big dinner with some of your favorite foods and it will be ready in just ten minutes." Without warning little Suzie erupted into a volcanic flurry of rage. "You're so mean to me! You're always mean to me! You never let me have anything I want! I hate you! I hate you! I HATE YOU!" As she ran to her bedroom her mother listened with dread to the slamming of the door followed by the all too familiar sound of toys being thrown against the wall, smashing new toys that replaced toys from her last rage. Mom sighed at the reverberation of another familiar sound - a crash, as Suzie pulled over her bookshelf – followed by the tearing and ripping sounds of Suzie's books as they were disemboweled and thrown across the bedroom floor.

This scene, with its mystifying shifts and abrupt changes, is all too familiar for many parents of children who come from the "hard places". These children are often volatile and unpredictable. Parents say their child can "turn on a quarter and give them fifteen cents change" at any moment in the day. Mercurial, volatile, unpredictable,

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erupting at the slightest change in the environment from playing happily to sweeping fits of tears and rage – these children can be challenging and confusing. Any tiny pebble in the pond of their lives can become a torrential tidal wave across the family. Crazy? One might think so but in our experience with hundreds of youngsters like Suzie we would say that this child is not a mentally ill child but rather, a child who is "caught between the amygdala and a hard place". Episodes like this can be easily generated in children who have come from hard places with backgrounds of abuse, neglect or trauma. Many of them experience chronic activation of the fear-alarm system with its *Fight, Flight or Freeze* responses and are driven by primitive brain structures like the amygdala. These responses, intended for activation only during crisis situations, can become chronic – and in that state, the amygdala is a cruel taskmaster. The amygdala is responsible for activation of the sympathetic nervous system (Flight, Fight, Freeze!) and the release of adrenaline and other stress hormones. It is also involved in learning and memory about emotionally charged experiences – causing many childhood traumas to become seared in the memory of these at-risk children. Although they have been removed physically from the hard places, they live in a world of unseen and shadowy danger – and are always on guard! They are caught between the amygdala and a hard place.

Early Risk Factors

Our research, as well as the research of others, has identified numerous risk factors that cause these children to appear emotionally unstable. The two driving goals of our past ten years have been, first, the development of research-based interventions that address root causes of this maladaptive behavior and second, to empower parents to

become healers in the lives of these children from the hard places. We can never be quite certain how many risk factors our children have faced before they came to the safety of our homes, but the list potential risks is long. Exposure to toxic substance in utero (e.g., drugs and alcohol), the absence of prenatal care, prenatal malnutrition, prematurity, low birth weight, birth complications, abuse, neglect and trauma are only a few of the risks our children may have experienced. These risk factors singly or in combination present a formidable foe against a small, vulnerable child.

Several immeasurable gifts are lost for a child from the hard places: trust, a sense of their own worth and preciousness, a safe attachment to a trustworthy caregiver and a sense of their own efficacy. Each time an adoring parent gently cradles their child and gazes wistfully into the beautiful eyes of amazing bundle of life, the parents' face becomes a mirror reflecting their preciousness. This birthright of a child is to be held tenderly while parents count tiny fingers, tickle toes and play games like peek-a-boo. Safe infants learn to communicate their needs long before they have words to do so. They develop a sense of self-efficacy when they communicate needs by crying and a parent responds quickly. These loses occur not only for children who were harmed by profound abuse and trauma, but also for children who were "only" neglected. The message of *abuse*

An atmosphere of playful engagement becomes a powerful tool in disarming the fear systems of a child from the "hard places".

is “I don’t like you.” The message of *neglect* is “You don’t exist.” In both cases shame is buried at the core of what should be a child’s sense of their preciousness.

Changes in Brain Chemistry

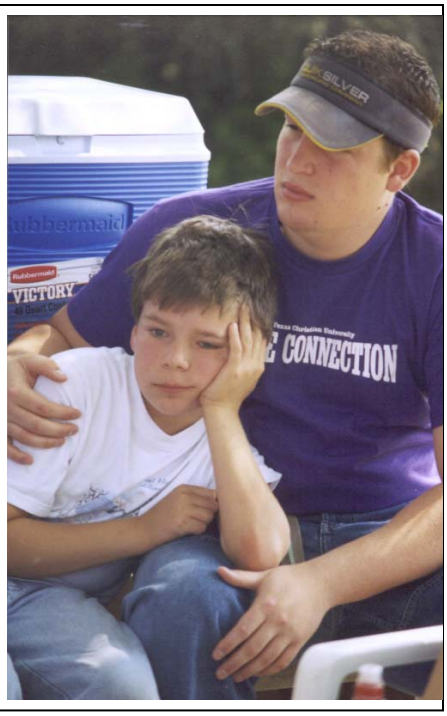
Many changes occur in the brains of children who come from the hard places, including chronic activation of the Fight, Flight or Freeze system, overproduction of stress hormones, and the underproduction of calming brain chemicals, called neurotransmitters. Serotonin, considered the master regulator of the brain, is ubiquitous in its function in the brain and in the body. Deficits in serotonin are associated with a host of mental and emotional disorders including Post-Traumatic-Stress Disorder, Obsessive Compulsive Disorder, Bipolar Disorder, Depression, and a host of others. Serotonin supports virtually all functions but is solely responsible for none. Serotonin is developed in children and adults through several pathways: the first is nutritious food, laden with nutritional precursors that will become serotonin, second is safe, affectionate, loving touch, and third, is an environment of “felt-safety”, and fourth, through appropriate physical activity.

Beginnings of “Mental Illness”

When a child is upset, for example in the first year of life, by the time a parent reaches them they are crying, their heart is pounding, their blood pressure is increased, their little face is red. The amygdala and other structures of the primitive brain are activated causing the release of excitatory neurotransmitters associated with danger - Fight, Flight or Freeze! A loving parent comes quickly in response to the tears, and holds the cradles their child; this baby is now snuggled affectionately, rocked, fed, and held. The baby’s crying is hushed and along with it, the primitive brain and its signals of

danger. Now, safely cradled in tender care this baby's body and brain experience a gentle cascade of calming brain chemicals including serotonin.

This balance in the body and brain of a child who receives attentive, nurturing care, become the foundation for later mental health and emotional self-regulation. Later in development, this child is able to regulate themselves because of the cycle they experienced repeatedly in their formative months of development. They were upset, and experienced a flood of stress hormones and neurotransmitters; then they were comforted and cared for and they experienced the gentle cascade of calming, healing, regulating neurotransmitters. This foundation of brain regulation becomes the foundation for later behavioral regulation. When someone hurts their feelings, they get upset but they can calm themselves; they can self regulate. When they can't find their shoe five minutes before leaving for school, they're upset but they can calm themselves and self regulate. For most children who have come into protective custody of Child Protective Services (CPS), the calming cycle may have never occurred, or may have occurred intermittently, leaving them on a runaway train of neurochemicals associated with danger (Fight, Flight or Freeze).



An attentive camp buddy comforts his young camper and lets him know that he is not alone in his pain.

Adrenal Burnout

Another casualty of this runaway stress response, is the over production of adrenaline, the stress hormone produced by the adrenals. We find in our research that young children, under the age of ten, who have been harmed or neglected have excessive production of adrenaline. In addition, we have found that as these children from hard place become about ten or eleven years of age the adrenals "burn out" because they have pumped so hard, for so long. We've seen children four years old who have the adrenal depletion typically only seen in very, elderly individuals. Sadly, the overproduction of adrenaline, for example, is associated with withdrawn behaviors, depressed behaviors, and anxious/afraid behaviors ("acting-in behaviors"). And those same children, by the age of nine or ten, are vulnerable for adrenal depletion that is associated with aggression, delinquency and other externalizing behaviors ("acting-out behaviors").

Clearly, these changes in brain development are important mechanisms that drive the appearance of mental illness. Unfortunately, these changes are reinforced by the child's experience with early caregivers. Inability to trust, lack of attachment to a safe caregiver, over production of excitatory brain chemicals, and underproduction of serotonin and other calming brain chemicals – these are the mechanisms that actually drive mental illness in many children.

Interventions

Recognize the Root Causes of Behavior

The most important force in facilitating behavioral change in your child is in understanding root causes for their "crazy" behaviors. We see vast changes in parent-child relationships as parents begin to recognize that their child's behavior is not a personal assault on them as parents, but is rather, a blind assault on the shadowy terrors

A family practices safe touch and snuggling during a therapeutic nurture group during at the Hope Connection® Family Camp.

of the past that haunt them. Recognizing that most aberrant behavior is driven by fear helps parents become advocates for their child. It is now, you and your child working together against their history of harm, rather than you and your child working against each other! We encourage parents to watch for signs that their child is caught between the amygdala and a hard place. Physiological symptoms of Fight, Flight or Freeze include pupil dilation, stiffening of the muscles, and shallow breathing. In these situations, disarming the amygdala can diffuse the behavioral explosion. Diverting the child, redirecting them, or using other techniques mentioned below, such as helping your child "use their words" (not their behavior) to tell you what they feel and need, or stopping for a time-out together (a nutritious snack or brisk walk) at the first sign of behavioral deterioration will help redirect your child toward more acceptable behaviors. We frequently ask parents to keep a journal of times that their child has meltdowns and what happened in the minutes or hours preceding it. With a little detective work, parents quickly begin to identify common precursors such as hunger, sensory overload, fatigue, and unexpected changes in schedule. Armed with this information, families can develop proactive strategies and plans that become pre-emptive strikes for disarming maladaptive behavior and learning new prosocial behaviors.

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Give Your Child a Voice

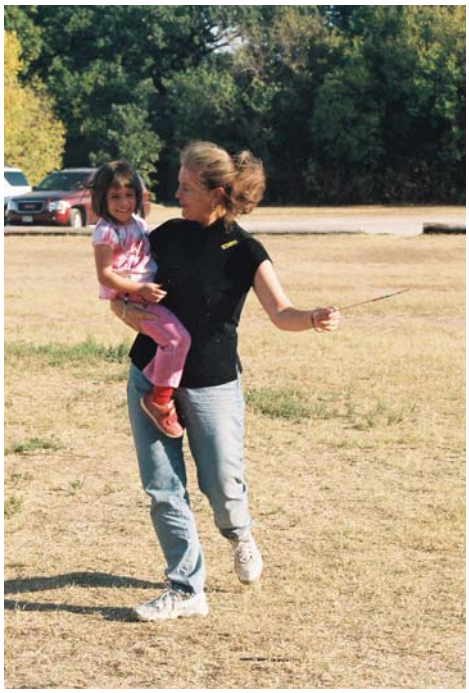
We have seen dramatic changes in what appears to be mental illness in at-risk children through interventions that mimic optimal developmental experiences. The first is to give your child the "voice" that was silenced by neglectful or abusive biological parents; give them words and permission to ask for their needs with language (not behavior). Puppet practice in which children and parents learn to ask for needs can be a powerful tool. Practice in helping them understand their needs can be strengthened with the use of a Feelings Poster, which can be purchased for a few dollars at most school supply stores. We often recommend that parents and their children attend the *ALERT Program: How Does Your Engine Run?* (http://www.alertprogram.com/). One of its greatest strengths is that it helps children learn specific tools for understanding what they need and for self-regulating – both are powerful tools for a child who has previously dissolved into aggression or tears in an attempt to get their needs met.

A father and his son practice talking about feelings and asking for needs through puppet play.

Restoring "Felt-Safety"

One of the most dynamic tools for helping your at-risk child is to create an environment in which your child knows they are safe. This is not to imply that they aren't safe now, but for *YOU* to know they are safe has no bearing on their primitive brain –

only when *THEY* know they're safe, does the safety valve shut down the powerful primitive responses. This can be achieved largely by making the world *predictable* and by giving them *appropriate levels of control.* Remember the driving force in the derailment of their brain chemistry was that their world was *NOT* predictable, and was *OUT* of control! Psychologists know from generations of research that optimal development occurs when a child's environment is both predictable and when they have appropriate levels of control. For example, orienting the child to a new environment, explaining to them what the different rooms of a home are when you visit someone new, explaining to them a new game, these can all provide predictability for your child. In addition, by allowing child appropriate choices throughout the day, you give them predictability and appropriate levels of control. For example, letting them choose between playing outside for thirty minutes before doing homework or doing homework first and then playing outside for thirty minutes. (We have written extensively on this topic. See also, *Fostering Families Today*, July-August, 2006 articles *Six Words for Adoptive Families To Live By* and *Fostering Families Today*, Spring 2005, *Creating Safe Places for Our Children*.)



An adult holds a small child and shows her how to use a sparkler until the child feels safe enough to hold her own sparkler.

Nutrition and Exercise

Parents can help support healthy brain chemistry through solid nutrition with foods such as turkey, rich grains, whole grains, and lentils that provide precursors for serotonin. We recommend foods low on the Glycemic Index, that is, food that are low in sugar content. In our therapeutic summer camp and other interventions, we feed the children every two hours, to keep their blood sugar stable. Simply by adapting their food intake, we often see significant shifts in behavior. In addition, a medical doctor or certified nutritionist can recommend nutritional supplements for supporting healthy brain chemistry. Appropriate levels of physical activity can also influence serotonin, which is elevated through activities that consist of repetitive movements. Activities such as lifting light hand weights, riding a bike, or jumping on a trampoline in moderate amounts can elevate serotonin and bring down the stress hormones such as adrenaline and cortisol. Physical activity every two hours can help optimize your child's brain chemistry. In addition, a certified nutritionist or medical doctor who specializes in natural protocols can provide testing and supplements that will help support healthy brain chemistry for your child.

Summary

While it is true that many children who come from the hard places have the appearance of mental illness, we are confident from our decade of research based intervention development that many children have "crazy" behaviors which can be disarmed by disarming their belief that they are cornered in a hard place and by disarming the work of the amygdala and other primitive brain structures that keep the child in a chronic Fight, Flight, or Freeze mode. Data from our camp and from our intensive home program provide documentation that our children's stress hormone,

cortisol, can be cut in half *in a period of days* when they feel safe. In addition, data from our research document the fact that the excitatory neurotransmitters that drive mental illness can be *cut in half* when a child knows that they are safe.

Numerous findings from our work have been presented in miniature here. Other articles and resources for parents are available online at our web site http://www.child.tcu.edu/Secondary%20Pages/Training_Articles.htm). For the past ten years, we have worked exclusively with the families of children from the hard places. Our years of experience have taught us that the amazing beauty of each struggling child is simply hidden beneath a thin veneer of aberrant behaviors. Based on these years of research, we are confident that by understanding the impact of their fears, by restoring to them their voice, by creating an environment of felt-safety, and by meeting their nutritional and physical needs, we can go a long way towards becoming healers for these precious ones who have come from the hard places.