

**Connecting the Dots:**  
The Effects of  
Adverse Childhood Experiences (ACEs)  
  
Promoting the Physical and Mental Health of  
Girls and Women of Child-bearing Age by  
Addressing the Effects of Early Trauma  
  
*Gabor Maté M.D.*

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*“The paradox remains, how could the absence of something or somebody create such disturbances... There must be a biology of loss, and we must find it.”*

*Dr. Myron Hofer*

*“Developmental experiences determine the organizational and functional status of the mature brain.”<sup>i</sup>*

*Dr. Bruce Perry*

## **I. The Early Rearing Environment**

1. The brain functions implicated in all dysfunctional childhood and adult behaviors: impulse control, social awareness, attention to what is appropriate, emotional self-regulation.
2. What it means when children (or adults) “act out”: three perspectives—behavioral, medical/genetic, developmental/social.

From the point of view of development, we seek to understand the internal dynamics of the child (or adult) and to identify the developmental stages not yet achieved.

3. The example of AD(H)D: poor impulse control, deficient attentional capacities, +/- hyperactivity;
  - a. The medical model: disease, largely inherited solutions: medications;
  - b. Behavioral model: “out of control behavior” solutions: behavioral modifications, such as rewards and punishments;
  - c. Developmental model: impaired development solutions: medications if necessary, but the main goal is the healthy development of the child.
4. The example of addiction: brain functions implicated in addiction:
  - a. The endorphin pain relief/pleasure/reward/attachment circuitry;
  - b. The dopamine incentive/motivation circuitry;
  - c. Impulse regulation;
  - d. Emotional self-regulation;
  - e. Stress regulation.

## 5. How the human brain develops:

- a. Biology does not equal heredity, physiology is not ruled by genetics: epigenetic influences;
- b. Neural Darwinism;
- c. The prefrontal cortex: it's role, and how its development is influenced by the psycho-emotional environment;
- d. Attunement in brain development;
- e. The hereditary component: sensitivity; predisposition does not equal predetermination.

*The necessary condition for all the brain circuits discussed above is access to a consistently available, emotionally stable, non-stressed nurturing parental caregiver.*

“Human connections create neuronal connections.” (Dr. Daniel Siegel, a founding member of UCLA’s Center for Culture, Brain and Development.<sup>ii</sup>).

“For the infant and young child, attachment relationships are the major environmental factors that shape the development of the brain during its period of maximal growth . . . Attachment establishes an interpersonal relationship that helps the immature brain use the mature functions of the parent’s brain to organize its own processes.”<sup>iii</sup> (Dr. D. Siegel).

“At any point in this process you have all these potentials for either good or bad stimulation to get in there and set the microstructure of the brain.”<sup>iv</sup> (Dr. Robert Post, chief of the Biological Psychiatry Branch of the [U.S.] National Institute of Mental Health).

“[An] abnormal or impoverished rearing environment can decrease a thousand fold the number of synapses per axon [the long extension from the cell body that conducts electrical impulses toward another neuron], retard growth and eliminate billions if not trillions of synapses per brain, and result in the preservation of abnormal interconnections which are normally discarded over the course of development. Environmentally induced deficits include a reduced ability to anticipate consequences or to inhibit irrelevant or inappropriate, self-destructive behaviors, and humans and other animals demonstrate severe disturbances in all aspects of social, emotional, expressive and perceptual functioning.”<sup>v</sup> (Dr. Rhawn Joseph, brain researcher).

## II. The biology of loss<sup>vi</sup>

- a. Intrapartum stress;
- b. Early separation: rats, monkeys;
- c. Postpartum stress;
- d. Childhood abuse.

### III. Implicit Memory

“...when people are influenced by past experience without any awareness that they are remembering.”

“[The] implicit effects of past experiences shape our emotional reactions, preferences, and dispositions—key elements of what we call personality...”

(Dr. Daniel Schacter, *Searching for Memory: The Brain, The Mind and The Past*)

- 1) Emotional memory
- 2) Template for world view
- 3) Template for relationships
- 4) Body memories and responses
- 5) Priming

### IV .The brain’s three core defenses against vulnerability and their implications for mental illness

- a. Shut-down (and its consequences)
- b. Detachment (emotional withdrawal, not caring)
- c. Dissociation (from ADHD to psychosis)

### V. Mental health implications of disturbed or insecure attachments and early stress

- Depression;
- Anxiety;
- PTSD;
- Social Phobia;
- ADHD
- Psychosis
- Paranoia
- Concurrent diagnoses

### VI. The evolutionary brain and its three responses to challenge

- a. Freeze (reptilian)
- b. Flight or fight
- c. Social engagement: higher mammalian, the only state conducive to learning, restorative health, and development

### VII. The Social Environment

“If our society were truly to appreciate the significance of children’s emotional ties throughout the first years of life, it would no longer tolerate children growing up, or parents having to struggle, in situations that cannot possibly nourish healthy growth.”

(Stanley Greenspan, M.D., Child Psychiatrist and Former Director, Clinical Infant Development Program, [U.S.] National Institute of Mental Health).

## VIII. The ACE Evidence

### IX: When Something is Missing: Attunement

### X. The Medicalization of Childbirth and Parenting

### XI. Long term implications of early stress and disrupted attachment for physical health<sup>vii</sup>:

- Obesity (ACE studies);
- Autoimmune disease;
- Hypertension, cardiovascular disease;
- Malignancy ;
- Chronic Illness<sup>viii</sup>.

### XII. Promoting Development (short term behavioral goals) in childhood disorders

#### A. Psychological/Emotional Aspects

- a. Low self-esteem;
- b. Sense of being an outsider;
- c. Ingrained feeling of rejection;
- d. Inability to read social cues;
- e. Difficulty learning from negative experience;
- f. Desperate need for acceptance and belonging.

#### B. What Children Act Out: Understanding Behaviors

- a. “Just looking for attention”;
- b. Provocative” or “manipulative” behaviors;
- c. No such thing as laziness, only lack of motivation;
- d. Oppositionality: *counterwill* (not true will, but the lack of it)
- e. Implicit memory (example: *rage, defensive detachment*).

#### C. The Peer Factor (see page 6)

- D. Long-Term Goals of Development Take Precedence Over Short-Term Behavioral Objectives**
- a. The *plasticity* of the human brain: allows new circuits of impulse control, motivation, and attention to develop if the right conditions for such development are provided;
  - b. The essential conditions that only adults can offer to children, and only mindful and conscious caregivers can offer to adults
    - *unconditional positive regard*: the importance of relationship;
    - *compassionate curiosity*;
    - *self-awareness*.
  - c. Behavioral goals and behavioral techniques often result in emotional shut-down, the loss of vulnerability, enhanced counterwill, stored up frustration and anger, and diminished self-esteem;
  - d. The negative impact of punishments and rewards.
  - e. Understanding what is being acted out
- F. Girls in Childhood and Adolescence: psychological and hormonal effects of abuse and of disrupted relationships**
- G. What Medications Can and Cannot Do**

## THE PEER FACTOR IN LEARNING AND DEVELOPMENT

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*Action has meaning only in relationship and without understanding relationship, action on any level will only breed conflict. The understanding of relationship is infinitely more important than the search for any plan of action.*

J. Krishnamurti

Peer Orientation: Children looking to each other for values, for direction, for cues to how to be--how to talk, how to look, for what is important to pursue

Attachment: the drive for closeness and contact, physical and emotional

### Attachment Voids

#### The Six Ways of Attaching

1. Senses
2. Sameness
3. Belonging and Loyalty
4. Significance
5. Feeling
6. Being known

#### How Attachment Supports Parenting and Child-rearing

1. Arranges the parent/adult and child hierarchically
2. Evokes the parenting instincts
3. Commands the child's attention
4. Keeps the child close to the parent/adult
5. Makes a model out of the parent/adult
6. Designates the parent/adult as the primary cue giver
7. Makes the child want to be good for the adult

### Peer Orientation Stunts Healthy Development

1. The flight from feeling
2. Immaturity, lack of individuality
3. Aggression
4. The making of bullies and victims
5. Precocious, inappropriate sexuality
6. Unteachability

### Counterwill: Understanding Oppositionality

### The Teachability Factor: How Peer Orientation Undermines Learning

- The four types of learning:
1. Curiosity
  2. Adaptivity, trial-and-error
  3. Integrative learning
  4. Attachment-based learning

### How To Hold On To Our Kids (Or To Reclaim Them)

1. Collecting the child
2. Inviting dependence
3. Make the relationship the priority
4. Structures and restrictions
5. Attachment-friendly discipline

### Preventing Peer Orientation

1. Don't court the competition
  - peers are not the answer to socialization problems, shyness, lack of siblings
  - the stress of daycare in the absence of attachment
2. Recreate the attachment village
3. Who the adults are being for the child

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### **Books by Gabor Maté**

*Scattered Minds: A New Look at the Origins and Healing of Attention Deficit Disorder*, Vintage Canada, 2000.

*When The Body Says No: The Cost of Hidden Stress*, Vintage Canada, 2004.

*Hold On To Your Kids: Why Parents Need to Matter More Than Peers*, Vintage Canada, 2005.

*In The Realm of Hungry Ghosts: Close Encounters With Addiction*, Vintage Canada, 2009.

### **Endnotes**

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<sup>i</sup> B.D. Perry et al., “Childhood Trauma, the Neurobiology of Adaptation, and ‘Use-dependent’ Development of the Brain: How ‘States’ become ‘Traits,’” *Infant Mental Health Journal* 16(4) (1995): 271–91.

<sup>ii</sup> D. Siegel, *The Developing Mind: Toward a Neurobiology of Interpersonal Experience* (New York: The Guildford Press, 1999), 85.

<sup>iii</sup> *Ibid*, 67 and 85.

<sup>iv</sup> quoted in R. Kotulak, *Inside the Brain: Revolutionary Discoveries of How the Mind Works* (Kansas City: Andrews and McMeel, 1996).

<sup>v</sup> R. Joseph, “Environmental Influences on Neural Plasticity, the Limbic System, Emotional Development and Attachment: A Review,” *Child Psychiatry Hum Dev* 29(3) (Spring 1999): 189–208.

<sup>vi</sup> For a full discussion of stress, trauma and brain development, with extensive journal references, see *In The Realm of Hungry Ghosts*, Chapters 17 and 18

<sup>vii</sup> For a full discussion, see *When The Body Says No*, especially Chapter 15: The Biology of Loss

<sup>viii</sup> Gluckman, Peter D. et. al., Effect of in Utero and Early-Life Conditions on Adult Health and Disease, *NEMJ*, July 2, 2008