

# Understanding Complex Developmental Trauma in Children and Adolescents

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# COMPLEX DEVELOPMENTAL TRAUMA

- **THE TWO CASES OF TRAUMA**

- I. A child of eight is badly mauled by a neighbor's pet. The initial attack is followed by two reconstructive surgeries and six months of rehabilitation. He suffers from nightmares and recurrent intrusive memories, his fear of dogs keeps him from playing outdoors, he is irritable and unhappy and he fights with his siblings. He loses interest in school and friends for nearly six months. Eventually, the parents are able to find specific treatment for trauma, he is briefly on antidepressants, and within eighteen months he is virtually back to his previous self.

# COMPLEX DEVELOPMENTAL TRAUMA

- **THE TWO CASES OF TRAUMA**
- II. A child of six comes into state custody after being reported by the school for neglect. The mother is a methamphetamine addict who has had a number of other adults living in the home, the child has been sexually and physically abused, in addition to the extended and pervasive neglect of her basic care. She has some peer related behavior problems, infrequent and unpredictable anger and self-control problems, and does poorly in school. Not many fears, not much obvious depression, and a surprising competence at self-care.

# COMPLEX DEVELOPMENTAL TRAUMA

- **THE TWO TYPES OF TRAUMA**

- I. ***SINGLE INCIDENT TRAUMA***

- Responds relatively well to carefully constructed treatment
    - Fits the criteria for DSM IV diagnosis of PTSD

- II. ***DEVELOPMENTAL TRAUMA***

- Responds poorly to intervention
    - Does not fit well into the DSM IV criteria for PTSD
    - Does not fit well into *any* DSM IV diagnostic criteria
    - Can also be called Reactive Attachment Disorder or “digested trauma”

# COMPLEX DEVELOPMENTAL TRAUMA

- **TWO CASES OF TRAUMA—*PROGNOSIS***
  - I. Single incident PTSD has a distinct presentation with active, and sometimes extreme symptoms related to the trauma itself. More like a foreign body than an infection. Although single incident trauma may leave permanent tracks, it does not usually spread into the entire personality, and full functional recuperation is possible. A person with childhood PTSD still has a chance of fully functioning as an adult.

# COMPLEX DEVELOPMENTAL TRAUMA

- **TWO CASES OF TRAUMA—*PROGNOSIS***

- II. In contrast, Developmental Trauma has an indistinct relationship to the trauma itself (fewer nightmares, less active or intrusive memories, and less avoidance of traumatic stimuli). Sometimes the full consequences of early developmental trauma are not fully appreciated until adolescence—the “time bomb” effect. The effects are more pervasive, and cross the boundaries of emotion, cognition, reality testing and personality. (*cont.*)

# COMPLEX DEVELOPMENTAL TRAUMA

- **TWO CASES OF TRAUMA—*PROGNOSIS***

- II. (*cont.*) The second child went on to have early behavior problems and marked oppositional attitudes toward caretakers and authorities, an overall poor school performance, unsuccessful and conflicted peer relationships. She initiated drug use in middle school, was sexually active by 14, and eventually served time as a juvenile for repeated probation violations. She went on to a conflicted and violent marriage, had children whose custody was assumed by the state, and repeated the process.

# COMPLEX DEVELOPMENTAL TRAUMA

- Children like the second fill the case loads of social workers, psychologists, therapists, child psychiatrists and probation officers. They first enter the child protective system, then transition to the psychiatric hospitals and RTCs, and eventually enter the juvenile justice system. As Bessel van der Kolk notes, *“People with childhood histories of trauma, abuse and neglect make up almost the entire criminal justice population in the U.S.”* (van der Kolk, 2004)



# COMPLEX DEVELOPMENTAL TRAUMA

- ***THE SALIENT FEATURES of DEVELOPMENTAL TRAUMA***
  - Repetition of Trauma
  - More than one Kind of Trauma
  - Early Age
  - Chronicity and Persistence
  - Interpersonal / Intra-familial



# THE SOCIAL BRAIN



*What is the meaning of infancy?  
What is the meaning of the fact  
that man is born into the world  
more helpless than any other  
creature, and needs for a much  
longer season than any other  
living thing the tender care and  
wise counsel of his elders?*

(John Fiske, 1883, as quoted by William Greenough in his 1987 article on experience dependent development)

# Complex Developmental Trauma

Trauma and maltreatment in the first decade of life has substantially more pervasive consequences than later trauma



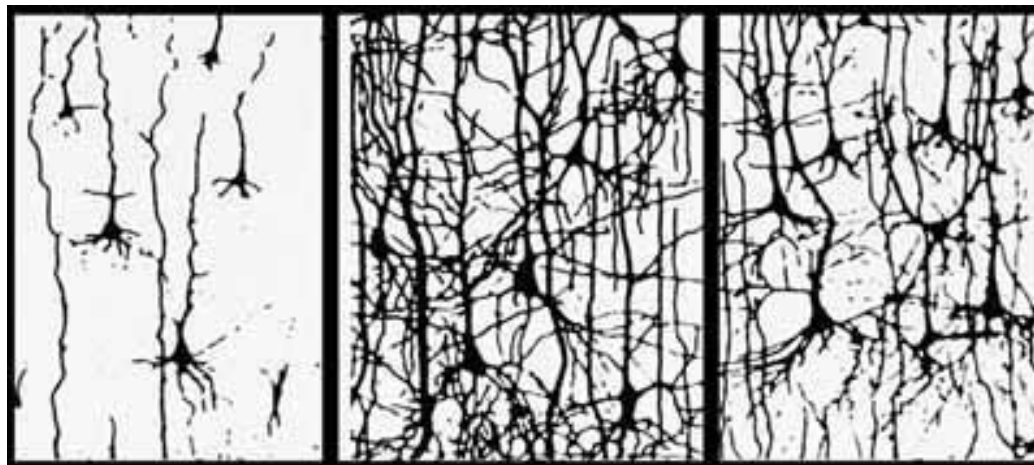
# EARLY BRAIN GROWTH AND DEVELOPMENT

- **EARLY BRAIN GROWTH**
  - From the last trimester to the 2<sup>nd</sup> year the size of the brain doubles
  - 10% AT BIRTH
  - 75% BY 24 MONTHS
  - 90% BY FIVE YEARS
  - HEAD CIRCUMFERENCE



# EARLY BRAIN DEVELOPMENT

- *Synaptic pruning*—begins to sculpt the synapses between neurons depending upon which connections are reinforced by experience. Synapses that are not used are eliminated, and by this means use-dependent development proceeds.



At Birth

6 Years Old

14 Years Old

Synaptic Density in the Human Brain

# THE SOCIAL BRAIN

- THE RIGHT HEMISPHERE
  - Dominant for Social and Emotional Functioning
  - Growth Spurt during the 1<sup>st</sup> eighteen months
  - Motor Development—Eye hand coordination, crawling and walking
  - Safety and Danger
  - Regulation of Emotion
  - Densely Connected to Subcortical and Brainstem Structures—Physical and Autonomic Functions  
(Shapiro, Jamner & Spence, 1997)

# THE SOCIAL BRAIN

## ○ THE RIGHT HEMISPHERE

- Primitive and unconscious
- Non-linear and pre-logical processing
- Guided by sensory and emotional inputs
- Early attachment patterns
- “Unconscious emotional processing based upon past experiences invisibly guides our moment to moment thoughts, feelings and behaviors.”

(Kimura et al, 2004)

# NEUROLOGICAL DEVELOPMENT IN INFANCY

- **DEVELOPMENTAL PLASTICITY** (Greenough and Black, 1987)
  - *EXPERIENCE EXPECTANT*
    - “evolved as a neural preparation for incorporating specific information that is common to the species”
  - *EXPERIENCE DEPENDENT*
    - “incorporating information idiosyncratic to the individual”
  - *DIRECTED PLASTICITY AND ATTACHMENT*



# NEUROLOGICAL DEVELOPMENT IN INFANCY

Critical periods and sensitive periods:

A critical or sensitive period is a time during an organism's life span when it is more sensitive to environmental influences or stimulation than at other times during its life.

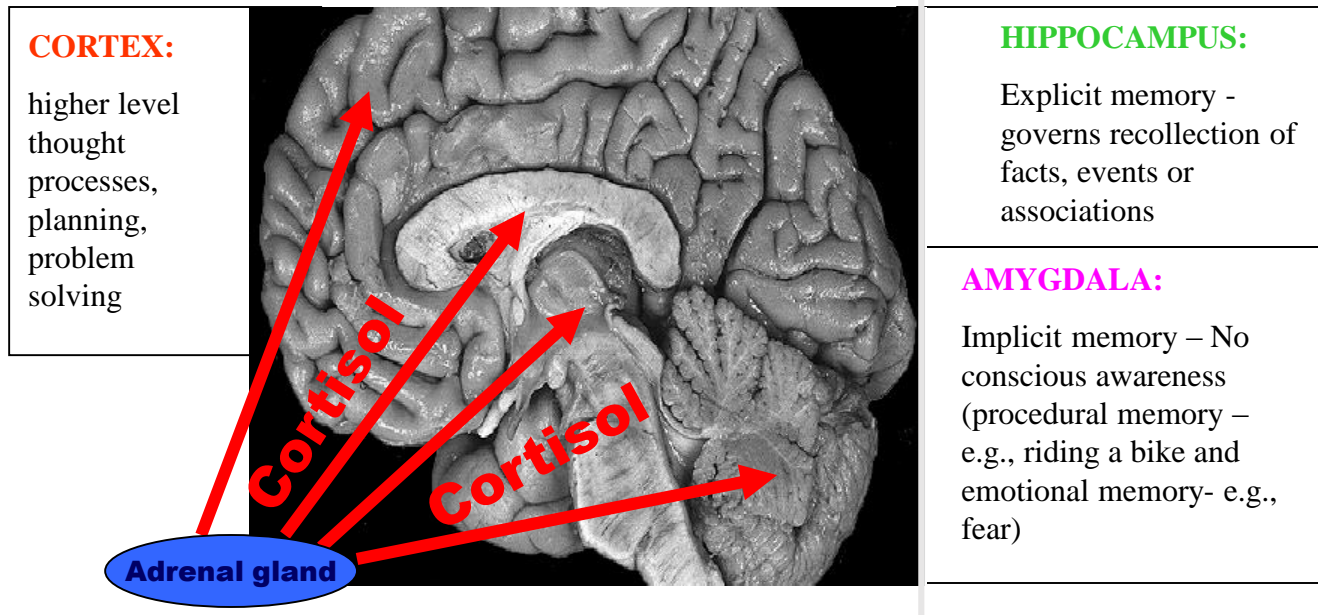


# NEUROLOGICAL DEVELOPMENT IN INFANCY

- **Critical period:**
  - begins and ends abruptly
  - period beyond which a phenomenon will not appear
  - Lorenz - imprinting
- **Sensitive period:**
  - begins and ends gradually
  - period of maximal sensitivity
  - Binocular vision



# Explicit and Implicit Memory



Chronic stress = overstimulation of the **Amygdala**, resulting in the release of cortisol, possible shrinkage or atrophy of the **Hippocampus** and **Cortex**, affecting memory and cognition, and leading to anxiety or depression.

(Adapted from: Brunson, Lorang, & Baram, 2002)

# Attachment

Mirroring: Affect Synchrony

Mirror systems : areas in the premotor cortex and Broca's area that are activated during observation, imagination, empathy and execution of motor movements. The mirror system also extends to insula, amygdala, basal ganglia and cerebellum.



# mirroring

- Effects: recognizing emotional states of self and others, empathy, theory of mind, development of the mirror neuron system.



# Attachment

## Attunement:

- The mother must be attuned not so much to the child's overt behavior as to the reflections of the rhythms of his or her internal state, enabling the dyad to create "mutual regulatory systems of arousal." To regulate the infant's arousal, she must be able to regulate her own arousal state. (Alan Schore June, 2006)



# Attunement

- Effects: recognizing emotional states of self and others, empathy, theory of mind, sense of efficacy, feeling of reward in relational encounters



# Contingent Communication

- Transaction that involves:
  - Perception of the child's signals
  - Making sense of the signals in terms of what they mean for the child
  - A timely and effective response





# Contingent Communication

- Effects: recognizing emotional states of self and others, empathy, theory of mind, sense of efficacy, feeling of reward in relational encounters



# Attachment

## **Rupture and Repair**

- When there is the inevitable rupture in the ideal attuned, contingent communication, repair is an acknowledgement of the disconnection and the attempt to reconnect.

# Rupture and Repair

- Effects: recognizing emotional states and physical state of self, theory of mind, sense of efficacy, basic trust that ones needs will be met, capacity to self soothe, capacity to tolerate negative physical and affect states



# Attachment



## **Reflective dialogue**

- Focusing verbally based discussions on the contents of the mind itself
- Parents elaborate on the deeper layer of subjective human experience by focusing on the mental processes (thoughts, feelings, perceptions, beliefs etc.)

# Reflective dialogue



- Effects: builds an emotional vocabulary, self knowledge, theory of mind, enhances positive experiences, reflect and recover from negative experiences.

# Edward Tronick – still face experiment

