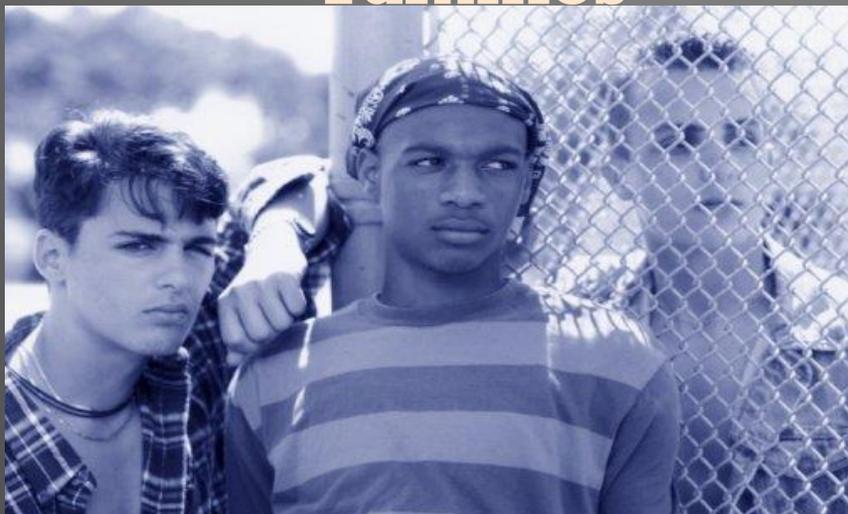


# **THE DEVELOPMENTAL ORIGINS OF DELINQUENCY**

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Families**



# TRAUMA and DEVELOPMENT



## *THE TWO CASES OF TRAUMA*

I. A child of eight is 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 stays on antidepressants for a few months, and he essentially recovers.

# **TRAUMA and DEVELOPMENT**

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## **● THE OPERATIVE FACTORS:**

- Positive early childhood experience and parenting before the event**
- Parental support and attuned, intelligent intervention after the event**

# TRAUMA and DEVELOPMENT

## 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.



# TRAUMA and DEVELOPMENT

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## ○ THE TWO TYPES OF TRAUMA

### • I. *TYPE I* SINGLE INCIDENT TRAUMA

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

### • II. *TYPE II* DEVELOPMENTAL TRAUMA

- Responds less easily 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

# TRAUMA and DEVELOPMENT

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## ◎ 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, overall poor school performance, and 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 the circle turns again.

# TRAUMA and DEVELOPMENT

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- Children like the second fill the case loads of social workers, psychologists, special education teachers, therapists, child psychiatrists and probation officers. They first enter the child protective system, then transition to special education classes, some get all the way to psychiatric hospitals and RTCs, and another group eventually enters the juvenile justice system.

# TRAUMA and DEVELOPMENT

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- *“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)



# CASE HISTORY I

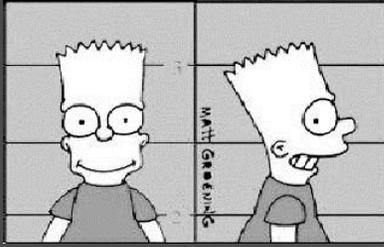
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- Sixteen year old Native American male finishing a one year sentence for non-violent offenses
- Father was an alcoholic who died when patient was fourteen, mother functional (now) but overwhelmed
- Some moderate neglect during infancy and latency, no molestation, no abuse but did witness domestic violence between parents at a young age
- Above average intelligence, practical and resourceful, respected by staff and peers alike
- Released into custody of his mother at the end of his very successful completion of sentence

# CASE HISTORY I



- ◉ Bought a new truck with money he had previously earned and saved
- ◉ Drove without a license
- ◉ Cut off his electronic monitor, violated parole and stayed on the run for three weeks



# CASE HISTORY I

## LESSONS LEARNED

- Minimal criminal or antisocial intent and no violent history or propensity
- Performance while in custody was very good
- Insight, foresight and oversight are intrinsically impaired
- The potential for serious consequences was not effective to motivate behavior change or keep the goal in mind
- *The target of intervention has to be brain development rather than behavior*

**Tracking Children  
With Juvenile  
Referrals to  
Determine if  
They Have  
Subsequent  
Contacts With the  
Adult Criminal  
Justice System: A  
Feasibility Study**

*(Busch and Freeman,  
2012)*

**Table 3. Years Followed and Time-to-Arrest, All Groups**

Number of Years Followed	Number of People in Sample Group	Number of People that Recidivated	Recidivism Rate by Years Tracked	Average Time to Recidivate In Days	Median Number Days To Recidivate
<b>Handled Informally</b>					
<b>Totals</b>	<b>328</b>	<b>61</b>	<b>18.6%</b>	<b>507</b>	<b>440</b>
2 Years	20	1	5.0%	440	440
3 Years	104	17	16.3%	337	277
4 Years	137	24	17.5%	518	527
5 Years	65	17	26.2%	711	723
6 Years	2	2	100.0%	107	107
7 Years	0	0	n/a	n/a	n/a
<b>Court Petition</b>					
<b>Totals</b>	<b>344</b>	<b>155</b>	<b>45.1%</b>	<b>465</b>	<b>408</b>
2 Years	23	3	13.0%	234	130
3 Years	126	63	50.0%	387	360
4 Years	138	57	41.3%	493	492
5 Years	57	32	56.1%	592	381
6 Years	0	0	n/a	n/a	n/a
7 Years	0	0	n/a	n/a	n/a
<b>Committed to a Facility</b>					
<b>Totals</b>	<b>318</b>	<b>164</b>	<b>51.6%</b>	<b>547</b>	<b>404.5</b>
2 Years	6	3	50.0%	232	74
3 Years	6	0	0.0%	n/a	n/a
4 Years	39	16	41.0%	516	446
5 Years	151	75	49.7%	500	394
6 Years	95	57	60.0%	608	292
7 Years	21	13	61.9%	665	504

# RECIDIVISM

**Reoffending data from studies of juveniles released from state incarceration show that rearrest rates are substantially higher than rates based on other measures of recidivism**

Recidivism measured for 12-month followup period	States	Average rates across studies	
		Recidivism	Success
<b>Rearrest</b>			
Delinquent/criminal offenses in the juvenile and adult systems	FL, NY, VA	55%	45%
<b>Rereferral to court</b>			
Delinquent/criminal offenses in the juvenile and adult systems	CO, MD	45	55
<b>Reconviction/readjudication</b>			
Delinquent/criminal offenses in the juvenile and adult systems	AK, FL, GA, KY, MD, ND, OK, VA	33	67
<b>Reincarceration/reconfinement</b>			
Delinquent/criminal offenses in the juvenile and adult systems	FL, MD, VA	24	76
All offenses in the juvenile and adult systems	AZ, OH, TX	25	75
Delinquent offenses in the juvenile system only	AR, MO, NM	12	88

Source: Authors' adaptation of Virginia Department of Juvenile Justice's *Juvenile Recidivism in Virginia*.

# RECIDIVISM RATES BY STATE

(Lockwood & Mengers, 2009)

STATE	% REARRESTED IN 12 MONTHS	% REARRESTED IN 24 MONTHS
CALIFORNIA	62%	76%
MARYLAND	62%	72%
TEXAS	43%	63%

# ADVERSE CHILDHOOD EXPERIENCES

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## ***ADVERSE CHILDHOOD EXPERIENCES (ACE) STUDY BY CDC AND KAISER***

- **17,337 Adult Subjects make up the Total Sample**
- **11% Emotionally Abused**
- **28 % Physically Abused**
- **21 % Sexually Abused**
- **27 % Exposed to Drug or Alcohol Abuse**
- **19 % Exposed to Mental Illness**
- **13 % Witnessed Violence Toward Their Mothers**
- **23 % Lost a Parent due to Divorce or Separation**
- **63 % Experienced at Least One Negative Childhood Experience, and 20% had Three**

# Adverse Childhood Experiences

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- Researchers found a strong link between adverse childhood experiences and adult onset of chronic physical illness.
- Those with ACE scores of 4 or more had many higher rates of chronic physical disease
  - Chronic pulmonary lung disease
  - Hepatitis
  - Heart disease
  - Diabetes
  - Reduced life span

# Adverse Childhood Experiences

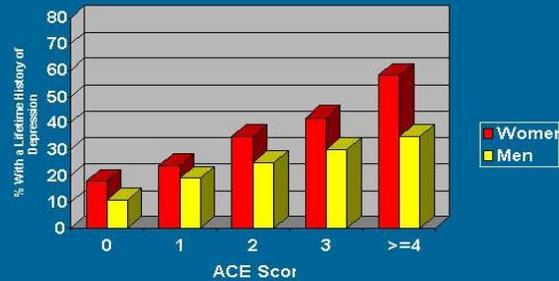
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- **Researchers also found a link to emotional illness and behavioral changes:**
  - Depression
  - Delinquency
  - Substance abuse of all kinds
  - More domestic violence
  - Greater chance of suicide

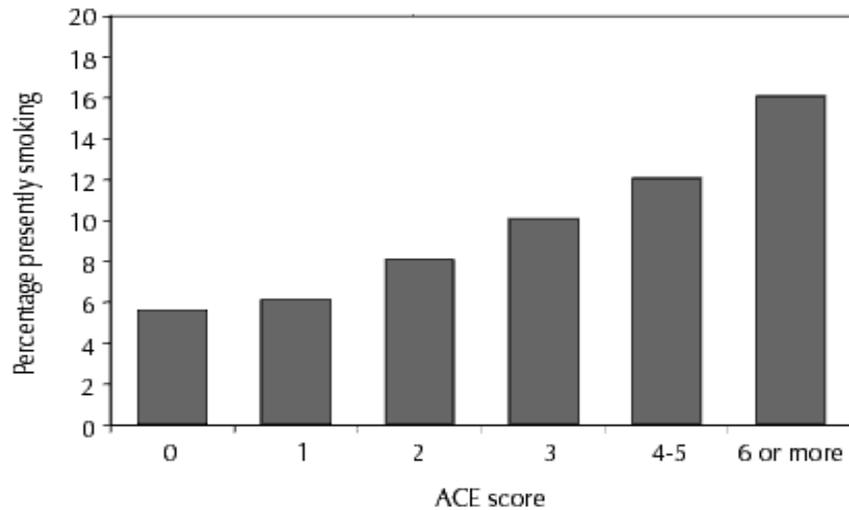
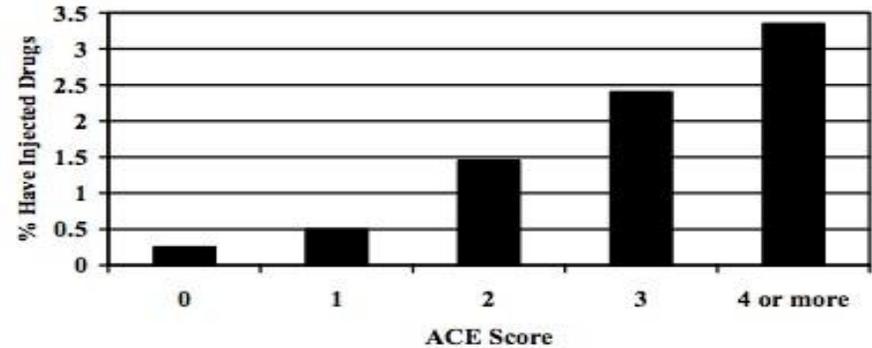
# DOSE DEPENDENT DAMAGE

## Mental Health

### Childhood Experiences Underlie Chronic Depression



### ACE Score vs. Injected Drug Use



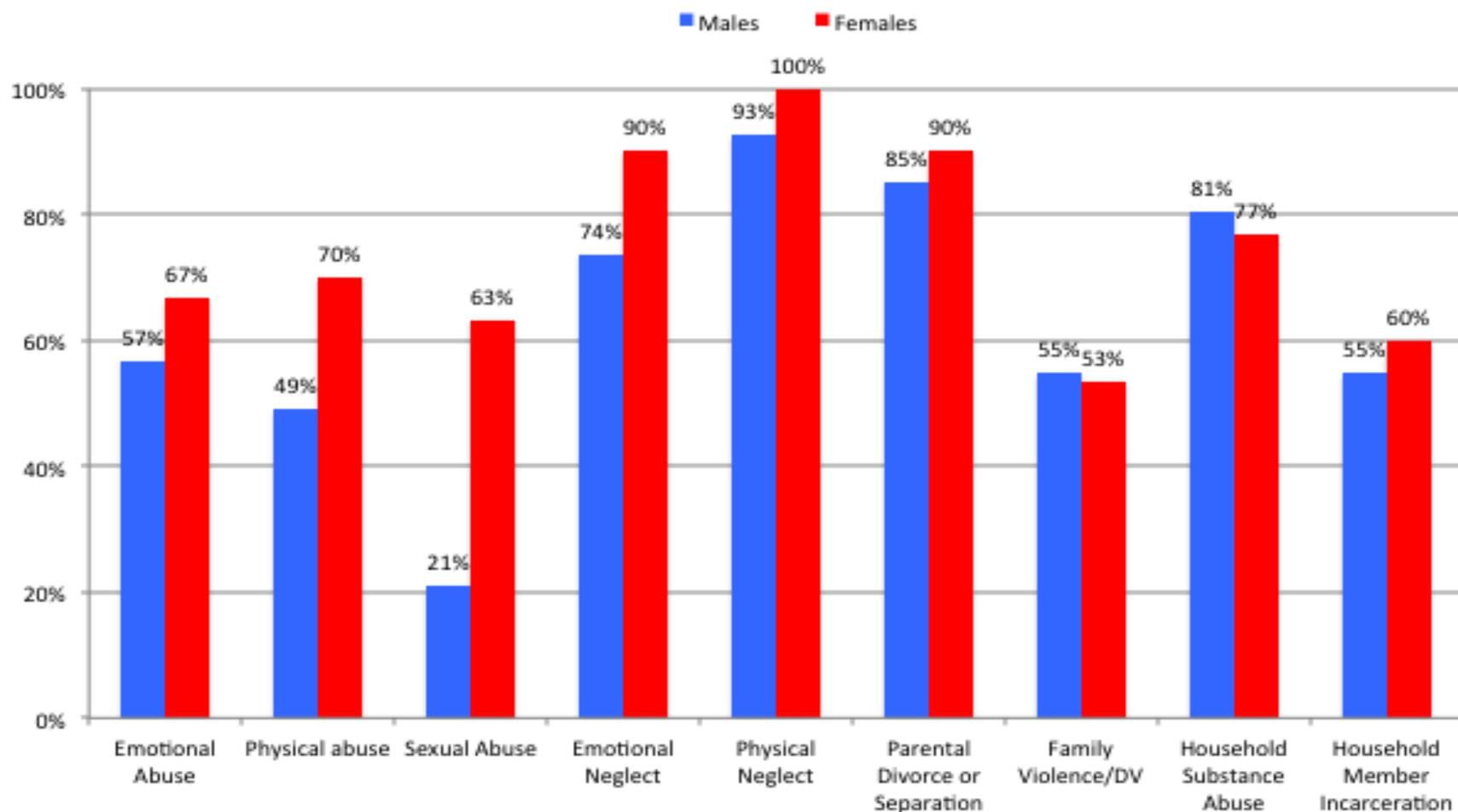
## Health Risks

### Childhood Experiences vs. Adult Alcoholism



# ADVERSE EXPERIENCES IN DELINQUENTS

Figure 2. Prevalence of ACE Description Indicators by Gender



# ADVERSE EXPERIENCES IN DELINQUENTS

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- 86% of incarcerated New Mexico juveniles experienced 4+ ACEs, 7 times higher than the CDC-Kaiser study.
- Among incarcerated New Mexico juveniles, majorities experienced
  - emotional neglect (76%)
  - physical neglect (94%)
  - parental divorce/separation (86%)
  - substance abuse in the home (80%)

# WHAT IS THE MECHANISM OF DAMAGE?

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1. Activation of the stress response system
2. Under and over activation of sensitive neurodevelopmental processes
3. Sensitive and critical periods

# WHAT IS THE MECHANISM OF DAMAGE?

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4. Chronic stress results in altered function and development—eg, changes in arousal, attachment, reward.
5. Which lead to maladaptive coping mechanisms
6. Which lead to disease, pathological behaviors, and early death

## ACE MECHANISM—*a closer look*

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- The adverse experience happens in childhood
- It happens *to* the brain and *through* the brain—the nature of the trauma is psychological
- The subjective perception and meaning of the event is more important than the event itself...
- Because the inner experience of the child is the basis of neurodevelopment
- Developmental trauma is a brain injury

# THE DEVELOPMENTAL ORIGINS OF DELINQUENCY

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## ○ *The CONSEQUENCES of ABUSE and NEGLECT SHARE the SAME CORE FEATURES as ANTISOCIAL BEHAVIOR*

- Impulsivity
- Dysregulation of Arousal
- Dysregulated Moods—Labile and Changeable
- Dysregulated Behavior—Explosive and Aggressive
- Poor Interpersonal Relations—Impaired Attachments and Empathy
- Substance Abuse
- Impaired frontal “Executive Functions” like Insight, Introspection, Patience, Prediction and Planning

# THE DEVELOPMENTAL ORIGINS OF DELINQUENCY

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- Three fundamental effects of abuse and neglect are all related to the core traits of delinquent behavior:
  - *Dysregulation of arousal*
  - *Disturbance of attachment*
  - *Dysregulation of reward*

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# AROUSAL



# THE DEVELOPMENTAL ORIGINS OF DELINQUENCY

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- Basic regulatory functions are normally established in infancy and early childhood
  - The ability to reach deeper levels of waking rest
  - The ability to initiate sleep and to reach deeper levels of sleep—sleep / wake cycle
  - The ability to calm and be calmed
  - Resting heart rate and blood pressure
  - Reactivity to stress

# THE DEVELOPMENTAL ORIGINS OF DELINQUENCY

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- Basic regulatory functions are normally established in infancy and early childhood
  - Through the protection of the infant from environmental and interactional stressors
  - By the external regulation of the infant who is not initially capable of self-regulation



# REGULATION AND CO-REGULATION

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- The management of positive arousal and gratification through mutual interactional behaviors between two individuals
- Involving multisensory Interactions
  - *Olfactory*
  - *Visual*
  - *Auditory*
  - *Tactile*

# REGULATION AND CO-REGULATION

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- Co-regulation is a right brain event
  - It is an implicit, non-verbal, bottom up communication schema that relies on affect recognition, facial matching, attunement and accurate contingent communications
  - It communicates the most basic elements of safety and security and mutual affect coordination

# REGULATION AND CO-REGULATION

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## ○ 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 Recognition
- Autonomic and Physiologic Regulation
- Densely Connected to Subcortical and Brainstem Structures—Physical and Autonomic Functions  
*(Shapiro, Jamner & Spence, 1997)*

# CO-REGULATION

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**MIRRORING:** Affect  
Synchrony

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



# REGULATION AND CO-REGULATION

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- Maternal facial expressions flash onto a recorded interaction clip in a third of a second, the baby reacts in a half of a second, and by that time the mother has already begun to repair the interaction
- Although synchronous interactions are the goal, more than 70% of the time is spent in mismatch and repair (*Tronick, Catch Our Children Before They Fall, youtube.com*)

# THE DEVELOPMENTAL ORIGINS OF DELINQUENCY

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## HOW DOES CHILDHOOD TRAUMA ALTER SELF-REGULATION?

*When distress is overwhelming, or when the caregivers themselves are the source of the distress, children are unable to modulate arousal. This causes a breakdown in the capacity to process and regulate experience. At the core of traumatic stress is a breakdown in the capacity to regulate internal states.*  
(van der Kolk, 2002)

# THE DEVELOPMENTAL ORIGINS OF DELINQUENCY

## ○ The PERSISTENT FEAR RESPONSE and the SIGNS of HYPERAROUSAL:

- *Impulsivity*
- *Reactivity*
- *Aggression*
- *Hyperactivity*



## ○ (mis) DIAGNOSED AS:

- *ADHD*
- *Bipolar Affective Disorder*
- *Learning Disability*
- *Conduct Disorder*



# ATTACHMENT



# THE DEVELOPMENTAL ORIGINS OF DELINQUENCY

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## ○ Attachment and Development

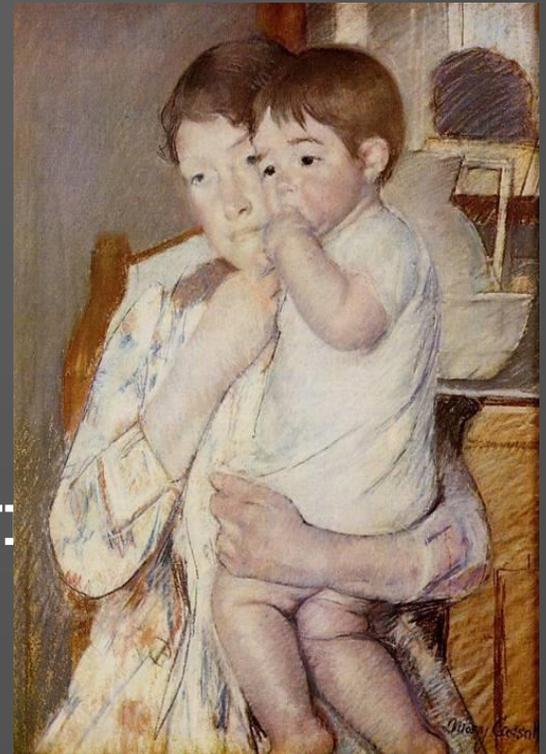
- Critical, early and encompassing

## ○ Early Templates for Relations

- Pleasurable, calming or distressing
- Permanent unconscious expectations

## ○ The Management of Aggression through Empathy

- Reading and understanding others



# THE DEVELOPMENTAL ORIGINS OF DELINQUENCY

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## ○ THE DEVELOPMENT OF EMPATHY

- Defined as “*an affective response in one individual that is triggered by the observed or imagined feeling state of another individual*” (Nelson, 2010; Blair, 2005)
- Fundamental support to human interactions such as maternal-infant bonding, social learning, pair bonding, and social cohesiveness (Nelson, 2010)
- Present in rudimentary or partial form in animals
  - *Distress signals of birds and mammals*
  - *Aversive and rescue response inducing*

# THE DEVELOPMENTAL ORIGINS OF DELINQUENCY

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- Very early infant foundations of empathy are found in initial bonding operations:  
(Meltzoff and Decety, 2003)
  - Imitation of facial expressions
  - Response to distress calls of other infants
  - Eye contact and response
  - Imitation of vocalizations
- Refinement and advancement of empathic responses develop into early adulthood

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# REWARD



# THE SOCIAL BRAIN



## ○ NEUROCHEMICAL BASIS OF ATTACHMENT AND BONDING

- Attachment and nurturing are highly rewarded activities early in life
- Neurotransmitters of pleasure and arousal initiate and accompany early developing interpersonal interactions
- The earliest source of reward is proximity and attention from the primary caregiver
- Attachment and close interpersonal interaction is driven and accompanied by the primary neurotransmitters associated with reward



# THE SOCIAL BRAIN

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## ○ ENDORPHINS

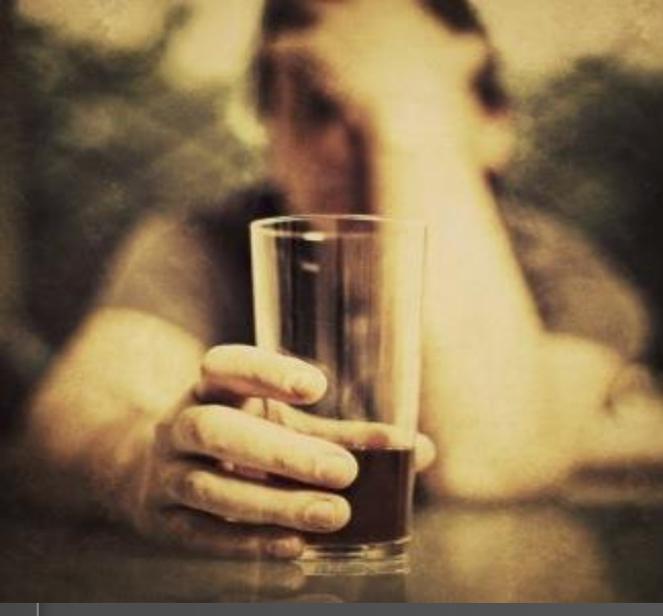
- Overall decreased pain and increased well being
- The satisfaction of proximity in both mother and infant is mediated by opioid neurotransmitters
- Endorphins promote a sense of safety and comfort for the infant in the presence of the mother
- Both mothers and infants experience a sense of distress and anxiety when separated from one another based upon a drop in endorphins
- Administration of opioids decreases affiliation and attachment behaviors in both infant and mother rats

# THE SOCIAL BRAIN

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## ◎ DOPAMINE

- Dopamine drives the central reward system, including but not limited to social interactions and attachment
- By rewarding certain actions and responses, dopamine directs the learning of attachment
- Repeatedly separating rat pups from caregivers decreases dopamine production and increases reactivity to stress. It also increases sensitivity to cocaine as a reward. (Meany, Brake and Gratton, 2002)



# Emotional Neglect and Substance Use

- Lack of early life attachment leads to underdevelopment of 'reward' systems
- Therefore, the reinforcing effects of relationships or intimacy is minimal
- External stimulation of these reward systems using dopamine-stimulating (e.g., cocaine) or opioid-like drugs becomes an alternative route to reward

# THE DEVELOPMENTAL ORIGINS OF DELINQUENCY

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- **ABUSED and NEGLECTED CHILDREN HAVE INCREASED RISK for DELINQUENCY**
  - Abused and neglected children were 11 times more likely to be arrested for criminal behavior (English, Widom & Brandford, 2004)
  - In 150 Mexican females, child abuse increased the chance of substance use, antisocial behavior, and harsh discipline of their own children (Frias-Armenta, 2002)
  - Research finds a significant relationship between child maltreatment and later delinquency. More mistreatment causes more severe delinquency (Smith & Thornberry, 1995)
  - 632 males in inner city: abuse and especially neglect is highly associated with delinquency (Lemmon, 1999)
  - In males, the risk for later sexual perpetration was increased 3 times by prior sexual abuse (Glasser & Kolvin, 2001)
  - Female children of sexually abused women have 8-12 times the risk for delinquency (Putnam, AACAP 2007)

# THE DEVELOPMENTAL ORIGINS OF DELINQUENCY

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## ◎ A NEW MODEL OF DELINQUENCY

- Two decades of research
- A reconsideration of recidivism

## ◎ A NEW MODE OF TREATMENT

- Application of brain science
- Real life solutions
- The real place for compliance

## ◎ PREVENTION

**END**