CHILDHOOD TRAUMA DEMYSTIFIED

Robbyn Peters Bennett, LPC, CMHS
NOV 10-11, 2018
Cortex

Limbic

Diencephalon

Cerebellum

Brainstem

Abstract thought
Concrete Thought
Affiliation/reward
"Attachment"
Sexual Behavior
Emotional Reactivity
Motor Regulation
"Arousal"
Appetite/Satiety
Sleep
Blood Pressure
Heart Rate
Body Temperature

ANS - body
Poly Vagal Theory

Ventral Vagal

Dorsal Vagal

Sympathetic

Stephen Porges, MD, PhD
Polyvagal Theory – Evolutionary Hierarchy

**Ventral Vagal**
- Connection
- Relational listening
- Mutual vulnerability
- Facial Expressions (upper)
- Eye gaze
- Prosody

**Sympathetic Nervous System**
- Mobilization
- Upregulation
- Increased heart rate
- Metabolic shifts
- Peripheral listening

- Reduced reception of new info
- Reduced attachment
- Reduced prefrontal

**Dorsal Vagal**
- Flat affect
- Immobilization
- Reduced HR
- Slowing metabolism
- Constipation/Diarrhea
- Freeze / faint / dissociation
- Attempt to appear inanimate
Developing Window of Tolerance

- Active Seeking of Connection
- Excitement
- Novelty Seeking
- Curiosity
- Play
- Sexuality

- Immobilization without fear
- Co-experienced reverie
- Dreamy eye-contact immediately after nursing
- Purring breath

- Immobilized with active sense of terror
Ventral Vagal & Dorsal
VENTRAL VAGAL & SYMPATHETIC
In the happiest of our childhood memories, our parents were happy too.

- Robert Brautt

Mutual Enjoyment VS Approval or Disapproval
Dissociative Response to Threat

- Detached
- Numb
- Compliant
- Suspension of Time
- De-realization
- “mini-psychosis”
- Fainting

- Frequent work ups for absence seizures
- Cue-dependent decrease in HR may result in syncope
- Frequent somatic complaints -- headaches, muscle aches, abdominal pain, constipation
- These symptoms are consistent with sensitization and dysregulation of CNS opioid systems
Hyperarousal Response to Threat

- Hypervigilance
- Anxious
- Reactive
- Startle
- Increased HR
- Freeze: Fear
- Flight: Panic
- Fight: Terror
Co-Regulation Manages Positive Arousal

- Management of positive arousal and affect stability through mutual interactional behaviors between two individuals
- Involving Multisensory Interactions
  - Olfactory (smell)
  - Visual (sight)
  - Auditory (sound)
  - Tactile (touch)
  - Taste
Ambivalent attachment in infancy can diminish positive up-regulation into adulthood.

Early secure attachment predicts how hard the brain will have to work to flourish emotionally as an adult.

Moutsiana, 2014
Low Resiliency: Opioid system less effective in easing social pain

http://www.nature.com/mp/journal/v18/n11/full/mp201396a.html
Happy Marriages have higher bid response
- Divorced: 33% bid response
- Happy: 87%

Divorced/Unhappy Marriages higher arousal

#1 Factor in Divorce: CONTEMPT
- Preoccupied with the negative
- Failing to recognize the positive 50%
- Deliberately ignoring partner

#1 Factor in Happy Marriages: Kindness
- Expressively enjoying the other person’s joy

Gottman (2014)
Attitude About Naughty Children

- Mother’s hostile attributions about infant's intentions signal risk for maltreatment
- 23% Scored 5 on scale of 0-5
- If Hostility Score = 5 mother is 2X more likely to abuse child as toddler

L. Berlin, JAMA Pediatrics
Neuroceptive & Interoceptive Communication

http://stopspanking.org/videos  Chris Ulmer, Special Ed Teacher
Interoceptive Exercise (30 minutes)

- Ventral
- Sympathetic
- Dorsal

Bonnie Badenoch, The Brain Savvy Therapist’s Workbook
“Self-regulation” (SR)

Somatosensory regulation/self-soothing (SS)

Bottom – Up: Primary
Starts in womb; suck/swallow
Tied to intrauterine and perinatal associations
Breathing, walking, running, rocking, swimming, rhythm
Doodle, hum, swing, jump, dance

Cortical Modulation (CM)

Top – Down: Secondary
Tied to cortical development & state-dependence
Slower process -

Dissociation (Diss)

In – Out: Pervasive
Adaptive continuum
Mind-wandering to threat-induced full dissociation
Used rhythmically (“in-out”)
Stimulation of “Reward” Neural Systems in the Human Brain: *Multiple*

- Music and rhythmic sensory input
- Drugs of Abuse: cocaine, opiates, stimulants
- Behavior consistent with value or belief system
- Sensation of pleasure and safety
- Release of hormones and “calmer” regulation of stress response neural systems
- Positive Human Interaction
- Sweet, salty, fatty foods
- Sex
- EtOH
- Decrease physiological distress
- Cut, pick, pull

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Personality Disorders Result from Disruption in Co-regulation

- “States become traits” due to persistent activation of the neurophysiology of threat which “re-sets” homeostatic equilibrium
- Persistent hyperarousal results in altered noradrenergic systems (Sympathetic)
- Persistent dissociation results in altered opioid and dopaminergic systems (Parasympathetic)
- The more a neural system is “activated,” the more that system changes to reflect that pattern of activation
<table>
<thead>
<tr>
<th>Hyperarousal Continuum</th>
<th>Rest (Male Child)</th>
<th>Vigilance</th>
<th>Resistance</th>
<th>Defiance</th>
<th>Aggression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissociative Continuum</td>
<td>Rest (Female Child)</td>
<td>Avoidance</td>
<td>Compliance</td>
<td>Dissociation</td>
<td>Fainting</td>
</tr>
<tr>
<td>Primary secondary Brain Areas</td>
<td>NEOCORTEX Subcortex</td>
<td>SUBCORTEX Limbic</td>
<td>LIMBIC Midbrain</td>
<td>MIDBRAIN Brainstem</td>
<td>BRAINSTEM Autonomic</td>
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<tr>
<td>Cognition</td>
<td>Abstract</td>
<td>Concrete</td>
<td>Emotional</td>
<td>Reactive</td>
<td>Reflexive</td>
</tr>
<tr>
<td>Mental State</td>
<td>CALM</td>
<td>ALERT</td>
<td>ALARM</td>
<td>FEAR</td>
<td>TERROR</td>
</tr>
</tbody>
</table>
Function (Developmental Stage, Quality of Attachment, Sensory Sensitivity) is STATE Dependent

<table>
<thead>
<tr>
<th>Ages</th>
<th>30 ← 15</th>
<th>15 ← 8</th>
<th>8 ← 3</th>
<th>3 ← 1</th>
<th>1 ← 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developmental Stage</td>
<td>Adult</td>
<td>Adolescent</td>
<td>Adolescent</td>
<td>Child</td>
<td>Toddler</td>
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Bruce D Perry, MD, PhD © 2010

www.ChildTrauma.org
## Escalation is Predictable

<table>
<thead>
<tr>
<th><strong>Adaptive Response</strong></th>
<th><strong>REST</strong></th>
<th><strong>VIGILANCE</strong></th>
<th><strong>FREEZE</strong></th>
<th><strong>FLIGHT</strong></th>
<th><strong>FIGHT</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictable De-escalating Behaviors (behaviors of the teacher or caregiver when a child is in various states of arousal)</td>
<td>Presence Quiet Rocking</td>
<td>Quiet voice Eye contact Confidence Clear simple directives</td>
<td>Slow sure physical touch “Invited” touch Quiet melodic words Singing, humming music</td>
<td>Presence Quiet Confidence Disengage</td>
<td>Appropriate physical restraint Withdraw from class TIME!</td>
</tr>
<tr>
<td>Predictable Escalating Behaviors (behaviors of the teacher or caregiver when a child is in various states of arousal)</td>
<td>Talking Poking Noise Television</td>
<td>Frustration, anxiety Communicate from distance without eye contact Complex, compound directives Ultimatums</td>
<td>Raised voice Raised hand Shaking finger Tone of voice, yelling, threats Chaos in class</td>
<td>Increased or continued frustration More yelling Chaos Sense of fear</td>
<td>Inappropriate physical restraint Grabbing Shaking Screaming</td>
</tr>
</tbody>
</table>

### Regulating Brain Region
- **NEOCORTEX Cortex**
- **CORTEX Limbic**
- **LIMBIC Midbrain**
- **MIDBRAIN Brainstem**
- **BRAINSTEM Autonomic**

### Cognition
- **ABSTRACT**
- **CONCRETE**
- **EMOTIONAL**
- **REACTIVE**
- **REFLEXIVE**

### STATE
- **CALM**
- **ALERT**
- **ALARM**
- **FEAR**
- **TERROR**
Somatosensory Experience

What does it feel like to be in your child’s body at any given time?

...Oh, and how about your body?
The lower somatosensory parts of the brain must be regulated to develop impulse control, empathy, morality and cognitive capability.

Harsh punishment of small children has transactional and cascading effect on brain development. Boys at greater risk.

B. Perry, Child Trauma Academy
Andrea Gromoske, Journal of Marriage & Family
Brian Boutwell, Aggressive Behavior
What are Your *and* Their Sensory Needs?

- **Touch**
- **Proprioception** (sense of position and movement of our limbs and trunk, the sense of effort, the sense of force, and the sense of heaviness)
- **Vestibular** (sense of movement)
- **Auditory**
- **Vision**
- **Taste and Smell**

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**Sensory Checklist**
From *Raising a Sensory Smart Child*, © Biel & Peske, 2005

<table>
<thead>
<tr>
<th></th>
<th>AVOIDS</th>
<th>SEEKS</th>
<th>MIXED</th>
<th>NEUTRAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being touched on some body parts, hugs and cuddles</td>
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<tr>
<td>Certain clothing fabrics, seams, tags, waistbands, cuffs, etc.</td>
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<tr>
<td>Clothing, shoes, or accessories that are very tight or very loose</td>
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<tr>
<td>Getting hands, face, or other body parts “messy” with paint, glue, sand, food, lotion, etc.</td>
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</tr>
<tr>
<td>Grooming activities such as face and hair washing, brushing, cutting, and nail trimming</td>
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<tr>
<td>Taking a bath, shower, or swimming</td>
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<tr>
<td>Getting toweled dry</td>
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<td></td>
<td></td>
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<tr>
<td>Trying new foods</td>
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<tr>
<td>Feeling particular food textures and temperatures inside the mouth—mushy, smooth, etc.</td>
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<tr>
<td>Standing close to other people</td>
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<td></td>
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</tr>
<tr>
<td>Walking barefoot</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Background TV noise disrupts Executive Functioning

- 1,150 children ages 2 – 8
- 4 hours a day
- Exception: Educational Shows

D. Linebarger, 2014
Sensory Regulation – Kinesthetic Learning Tables

Activating cortical functioning by regulating lower brain
Yoga Reduces Anxiety in Kids

Pranayama yoga activates Ventral Vagal
- Slower exhale
- Stimulating the striated muscles in the upper face

American Journal of Occupational Therapy, Nov 2015
7- to 9-year-old children who run around and play for at least 70 minutes a day show improved thinking skills, particularly in multitasking, compared to children who aren't as active.

Hillman, Pediatrics, 2014
Mutual Somatosensory Enjoyment Stimulates Growth

Welcomed eye contact, melodic vocalization, affectionate facial expressions, smiling eyes, singing, humming, rocking, dancing, touching, laughing, back and forth relating, eating together
Co-Regulation Exercise

30 minutes
What is Resiliency?

- The neurodevelopmental capacity to regularly feel good in the body, maintain nurturing relationships, and experience our higher mind.
- The ability to co-regulate under stress.
Cortical Modulation

Mature

Cortex
Limbic
DE
BS

Developing/
Neglect

Cortex
Limbic
DE
BS
Neurodevelopmental Effects of Parenting

Potential for Greater Stress and/or Growth
- Reward Circuit
- Social Information Circuit
- Emotional Regulation Circuit

Two Open Windows
Aspen Institute, 2015
Developing our own Resiliency...

**Relational Reward**
Developing a healthy sense of relational reward is the most important way to build resilience. These questions help clarify if your connection with others is sufficiently nourishing.

- I have good friends who support me.
- I have mentors or someone who shows me the way.
- I feel secure in my close relationships.
- I am empathetic to others.
- I trust my close friends.
- My role as a caregiver/provider is important.
- I feel like I belong in my community.
- I am lovable.
- I regularly reach out those I trust for comfort when I'm distressed.
- I can ask for help.
- It is OK if some people do not like me.

**Advanced Mind**
Our advanced mind develops best when our bodies feel good and our relationships nourish us. These are the conditions that help us to develop the most human part of our brain that feels empathy toward the world and ourselves. It is our "big picture" thinking. When this part of our brain is engaged, we can tolerate life's difficulties more easily, and stay connected to others even if we're suffering.

- I practice mindfulness or meditation.
- I am creative.
- I communicate effectively with others.
- I try many different ways to solve a problem.
- I enjoy learning and seek out new knowledge.
- I am open to new ideas.
- I can usually find something to laugh about.
- I am able to say no.
- I express my emotions.
- I am flexible.
- My life has meaning.
- I am a friend with myself.

**Sensory Reward**
These questions help clarify if you are able to enjoy healthy sensory reward in a way that consistently restores your sense of wellbeing. We may rely too heavily on sensory reward to feel better, due to problems with self-regulation and/or our
## Functional Brain Map Key (Part C)

<table>
<thead>
<tr>
<th>Abstract Cognition</th>
<th>Math/ Symbolic Cognition</th>
<th>Performance</th>
<th>Modulate Reactivity/ Impulsivity</th>
<th>Verbal</th>
<th>Values/ Beliefs/ Morality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speech/ Articulation</td>
<td>Language/ Communication</td>
<td>Somato/ Motor/ Sensory Integration</td>
<td>Sense Time/ Delay Gratification</td>
<td>Self Awareness/ Self Image</td>
<td>Concrete Cognition</td>
</tr>
<tr>
<td>Share/ Relational</td>
<td>Attunement</td>
<td>Reward</td>
<td>Affect Regulation/ Mood</td>
<td>Psycho-sexual</td>
<td>Short-term memory/ Learning</td>
</tr>
<tr>
<td>Neuroendocrine/ Hypothalamic</td>
<td>Dissociative Continuum</td>
<td>Arousal Continuum</td>
<td>Primary Sensory Integration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fine Motor Skills</td>
<td>Feeding/ Appetite</td>
<td>Sleep</td>
<td>Coordination/ Large Motor Functioning</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Suck/ Swallow/ Gag</td>
<td>Attention/ Tracking</td>
<td>Temperature regulation/ Metabolism</td>
<td>Extraocular Eye Movements</td>
<td>Cardiovascular</td>
<td>Autonomic Regulation</td>
</tr>
</tbody>
</table>
Co-regulation
A Bottom Up Approach

- **Regulate** – lower brain
- **Relate** – midbrain
- **Reason** – higher brain

Build in regulation when calm

![Graph showing level of arousal over time of day](image)
Bottom Up & Top Down Co-regulation
Return to Somato-Relational Memories