Working Through Procedural Memories of Trauma, Abuse, and Neglect: Using Sensorimotor Play & Enactments

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Agenda

- Placing Trauma into an Interdisciplinary Context using Neurorelational Framework Principles
- Working Through Procedural Memories through Sensorimotor Play
- Working Through Procedural Memories through Enactments

The Importance of the Early Years

Experiences lay down
- Circuits (brain development)
- Lifelong expectations (procedural memories)
- Reactions to stress (stress responses)

- Emotional care is the most important care an infant needs

The Current State of Affairs: Diagnostic Categorization

- Autism Spectrum
- Early Intervention Diagnostic Categories
- Genetic
- Sensory Processing
- Praxis, Motor Planning
- Learning Disabilities

- Trauma
- Mental Health Categories
- Bipolar
- ADHD
- Depression Anxiety
- Attachment
Framework vs. Model

- Framework holds multiple clinical models that one has been trained in
- Framework uses neurodevelopmental principles that can help you organize and more efficiently use the knowledge you already have
- Allows you to shift from foreground to background across multiple variables
- Enhances your understanding as to where your knowledge is weighted and where you need to expand across disciplinary boundaries

The Importance of Context

Multiple Dimensions of Trauma

- The meaning of behavior is based upon multiple causality, rather than singular causality, as multiple causes usually underlie the "behavioral problems" that are identified as the presenting problem.

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The Neurorelational Framework is based upon multiple co-occurring dimensions...

1. Quality of dyadic engagement
   - Socio-emotional Milestones
2. Relational resilience, stress, and stress recovery patterns
   - Heart, Hands, Head Interpersonal Modes
3. Individual differences
   - 4 Brain Systems

Figure 2.1 — A developmental hierarchical progression of brain systems.

The Importance of Context

Multiple Dimensions of Trauma

- Regulation
  - States of Arousal & Allostatic Load
- Sensory
  - Reactions to all sources of sensory information (including vestibular, proprioception, pain, temperature)
- Relevance
  - Emotions, memories, & meanings
- Executive
  - Ability to initiate and shift as well as inhibit and sustain motor (includes attention) activity and behavior according to the context

Assessment of Load Conditions and Current Brain Capacities for Child and Parent

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The Importance of Context

Multiple Dimensions of Trauma

- The distributed nature of trauma
- Touches all brain systems
- Clinical models are distributed across brain systems
- Today, our focus is on treatment from a bottom-up perspective

The Importance of Context

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Procedural Memories are Bottom-Up Processes

Bottom-up = Any behavior that is
- Automatic & Habitual
- Things we do without thinking
- Often does not involve the use of words

"We learn by example and by direct experience because there are real limits to the adequacy of verbal instruction."  
Malcolm Gladwell

"Habit is Stronger Than Reason."  
George Santayana

Declarative Memories are Top-Down Processes

Top-down = Any behavior that is
- Conscious & Effortful
- Things we do with thinking
- Often does involve the use of words

"The mind is everything, what we think, we become…"  
Gautama Buddha

"There are two primary choices in life: to accept conditions as they exist, or accept the responsibility for changing them."  
Dennis Waitley

Working with Procedural Trauma from a Bottom-up Perspective

Regulation: Baseline Health

Guiding Principles from Allostasis & Allostatic Load
- Health = flexibility with stability
  - We call this “Coordination”
- Loss of health = too much flexibility and/or too much rigidity
  - We call this “Load”
- Disease does not occur at the time of the diagnosis, rather it’s the outcome of long-term wear and tear on the body and brain
Working Through Procedural Memories

Multiple Dimensions of Trauma
Dimension of the Regulation System

Coordinated Baseline Health

1. The ability to engage in a full sleep cycle
during sleep, cycling into restorative deep sleep
2. The ability to obtain and maintain an ability
to be in a calm, alert state when awake
3. The ability to have efficient stress recovery
from any 3 primary stress responses =
Coordination

Baseline Health Has 3 Key Elements

1. The ability to engage in a full sleep cycle during sleep, cycling into restorative deep sleep

Deep sleep is restorative...

Baseline Health Has 3 Key Elements...

2. The ability to obtain and maintain an ability to be in a calm,
alert state when awake
   a. a prerequisite for learning
   b. the foundation for healthy attachment

Alert processing is “just right”...
for learning and relationships
Baseline Health Has 3 Key Elements...

3. The ability to have efficient stress recovery from any 3 primary stress responses = Coordination

Flooded is anger, panic, or mania...

Hypoalert can mean taking a break or being depressed and shut down...

Hyperalert is anxious, worried, or frightened...

Multiple Dimensions of Trauma
Dimension of the Regulation System

Four Allostatic (Toxic) Load Patterns
1. Stress responses that occur too frequently and too quickly
2. Inability to adapt to normal challenges and transitions
3. Prolonged stress responses that take too long to recover (more than 10 to 20 mins)
4. Inability to recover from stress response back to baseline health (healthy sleep cycle, healthy awake state)

Multiple Dimensions of Trauma
Dimension of the Sensory System

Sensory Modulation According to Context
The capacity to balance the flow of sensory signals in a way that is appropriate to context. 
- Sight
- Sounds
- Touch
- Taste
- Smells
- Deep Touch Pressure
- Movement
Threat is in the senses of the beholder.

Multiple Dimensions of Trauma
Dimension of the Sensory System

Sensory Triggers:
Sensations that provoke a stress response that can become sensitized

Sensitization: an increase in responsiveness after repeated exposure

Sensory Preferences:
Sensations that calm/soothe or alert/engage

Habituation: a decrease in responsiveness after repeated exposure

Low Road or High Road?

Amygdala

Working with Procedural Trauma from a Bottom-up Perspective

Multiple Dimensions of Trauma
Dimension of the Relevance System

Range of emotions

Adjusted to context
Multiple Dimensions of Trauma
Dimension of the Relevance System

Emotional Modulation According to Context
- Mild stress \(\rightarrow\) neutral/positive valence
- Moderate stress \(\rightarrow\) negative w/positive valence
- Severe stress \(\rightarrow\) negative valence

Multiple Dimensions of Trauma
Dimension of the Sensory & Relevance System

Memories are sensory fragments
- Sensory events set off flashbacks and trigger procedural memory enactments
- Sensations and emotions become ‘dually coded’
- In healing, oscillate between positive and negative emotions and memories
- Sometimes, the sensory preference and trigger will be embodied in the same sensory event

Modulation Variables
- Is the infant, child, or adult over or under-reactive to sensory information?
- Do mid-range intensities of sensations support optimal arousal or do extremes need to be used?
- Experiment with sensations: begin with low intensity, slow rhythms, and short durations to be safe

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Multiple Dimensions of Trauma
Dimensions of the Sensory System

Use intensity, duration, and rhythm for baseline measures, assessment, and intervention
- By varying the intensity, duration, and rhythm (parameters) of the flow of sensory information (behavior) one can recover, maintain, and enhance the window of the alert processing state:
  - Intensity: high/mid-range/low
  - Duration: long/mid-range/short
  - Rhythm: fast/mid-range/slow

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Working Through Procedural Memories

Procedural Memory Enactments

- Repetition of the traumatizing events by enacting the same scenario with therapist or teacher or significant others in a rigid, repetitive manner
- Work to expand the rigid theme by expressing different emotions as a way to transform the experience, creating more flexibility (affect as sensory input)

Multiple Dimensions of Trauma
Dimensions of the Sensory & Relevance System

Working with Procedural Memories...

- When you do not know what they are
- Procedural enactments without having a clear history due to the foster care system
- Expanding the rigid emotional themes in the Relevance System:
  - From bully, to victim, to protector

Multiple Dimensions of Trauma
Dimensions of the 4 Brain Systems

- Kai, removed at 15 months due to severe abuse and neglect
- At first foster home until 34 months of age
- Diagnosed as severely developmentally delayed with mental retardation
  - Behaviorally “resistant” to parental boundaries
  - Frequent crying and aggression
  - Limited language
  - Refusal to toilet train; chronic diarrhea
  - Diagnosed with mental retardation, reactive attachment disorder, severe speech delays

Two weeks in new foster home...

- Temper tantrums decreased
- Began to talk with one word, two words and four word sentences
- Talking nonstop within one month with articulation problems
- Began to show appropriate separation anxiety with second foster mom
- Able to sleep alone after one month
- No longer “mentally retarded”
- Food allergies noticed; chronic diarrhea stopped

Three months later...

- Began to babble and regress in speech
- Aggressive behaviors returned
- Became hysterical every time he was not in control
- Cried for long periods at time of night; inconsolable
- Long periods of time awake staring off into space
- Pulling his own eyelashes out; pulling foster mom’s hair and doll hair out
- Diarrhea returns following bio visits
- Inconsolable during the day

When there is a loss of baseline health...

- Return to conditions of baseline health whenever possible
- Whatever relationships were promoting baseline health need to be honored
- A collision of safety and threat
- One has to consider that procedural memories are being triggered by the forced reunions with an abusive or neglectful parent

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**Multiple Dimensions of Trauma**

**Load Dimensions of the Regulation, Sensory, & Relevance Systems**

**Pre-adoption treatment**

- Registered no pain himself in his own body
- Repetitive, restrictive play of aggression towards vulnerable puppets (babies)
- He laughed, thinking victimizing others was funny - a lack of empathy towards the attacked
- Inability to show protective skills towards victims
- Reversals of safety and threat

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**Multiple Dimensions of Trauma**

**Dimensions of Sensory & Relevance Systems**

**Post-adoption Symptoms of PTSD**

- Began preschool, lots of new faces and stimulation
- Once attending daily, he became aggressive, biting the teacher
- Afraid "old daddy" was going to show up at school and take him away
- Had a nightmare that old daddy found him at a park and bit his arm off
- Worried his old daddy would come at night to steal him at home
- Waking up screaming and rubbing his leg in pain
- Loss of bowel and bladder control

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**Multiple Dimensions of Trauma**

**Load Dimensions of the Relevance System**

**Constricted Themes**

- No affect
- Only brief positive affect
- Predominance of negative range, with no positive affect
- Predominance of positive range, with no negative affect

**Extreme Expressions**

- Repeated aggression
- Self-destructive behaviors (e.g., head-banging, self-biting)
- Destructive actions to vulnerable other(s)
- Repeated victimization scenarios
- Repeated themes of suspicion and fear

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**Multiple Dimensions of Trauma**

**Dimensions of the Relevance System**

**Working Bottom-Up Through Procedural Memory Enactments**

- Active, sensory-motor, procedural play (no interpretations are being made)
- Expand rigid sadistic-aggressive theme to include nurturance & empathy toward victim, appropriate fear and pain while being a victim, and protection from aggressor
- Repetition of new protective, empathic and victim themes are enacted in real-time play to encode new learning experiences and memories
- Support increased flexibility of emotional themes in sharing the different playing of roles

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**Thank You!**