

How Early Life Builds Cognition and Emotional Intelligence: A Video Case Study

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Agenda

- Introduction
- Quick overview of self-regulation lenses
- Quick review of Porges' Hierarchical Response to Threat
- Body Reading of Stress Level
- Video case study

The Milton and Ethel Harris Research Institute Centre

- York University institute dedicated to studying emotion and the brain
- Established in 2005 at York University (MEHRI)- now The MEHRIT Centre Ltd. Toronto, ON (TMC)
- TMC as an academic, research, and clinical organization
- For more information, go to www.mehritcentre.com

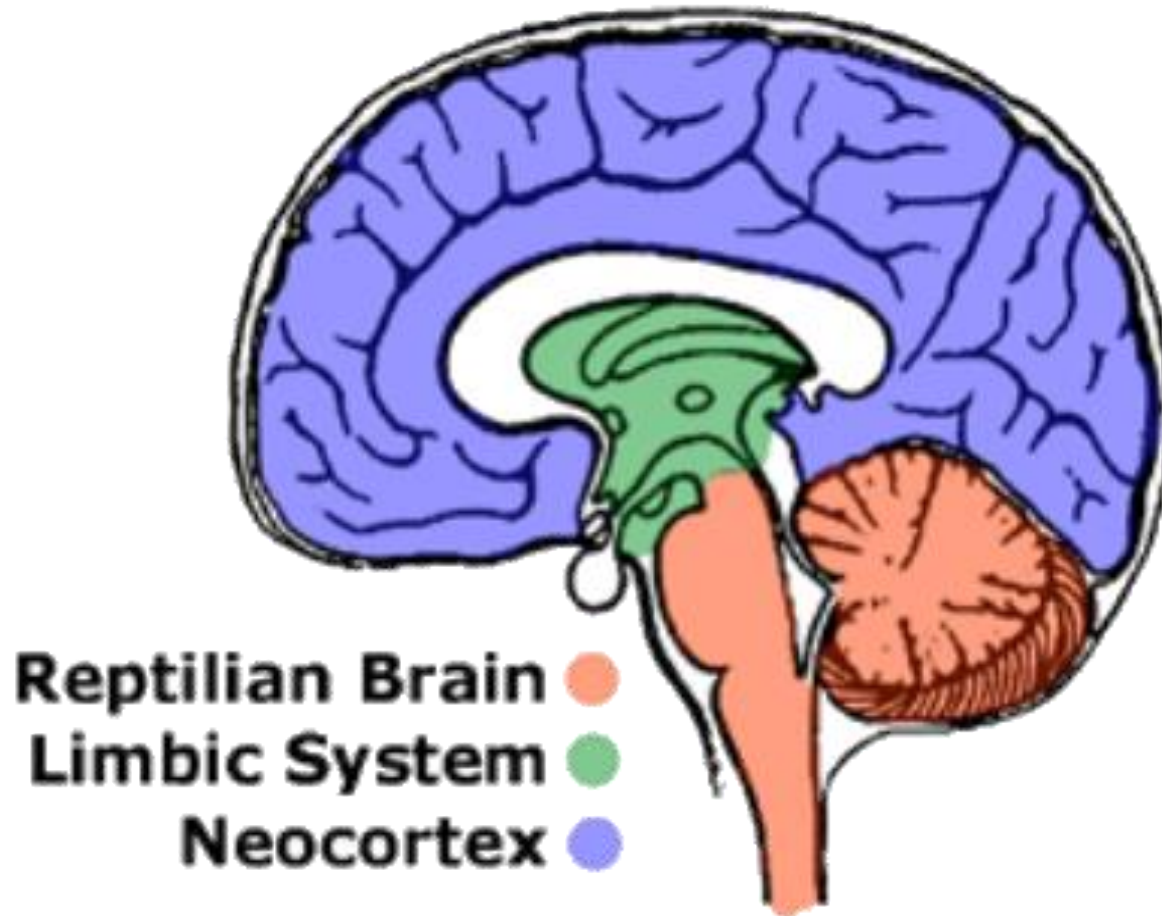


Self-Regulation – Different Lens

- Psychological lens – leans toward self-control (neocortex)
- Psychophysiological lens – leans toward understanding neuroceptive levels (reptilian and limbic brains)
- TMC Model involves a three brain model with an emphasis on the lower older parts as a basis for study and treatment



The Evolution-Designed Brain



Self-Regulation from a Self-Control Lens

- The top-down control of one's behaviour using the last evolutionarily developed parts of the brain
- Use of effort to conform one's behaviour to others/ the group's expectations in a given situation

Cognitive Competencies in the Self-Control Model

- Delayed gratification
- Perseverance and grit
- Attentional control
- Planning, sequencing
- Anticipating consequences of actions
- Inhibition of actions
- Ignoring distractions
- Emotional control

Self-Regulation from a Psychophysiological Lens

- The ability to recognize and respond to any stressor from within or outside of oneself
- The integrated use of all 3 brains – reptilian, limbic, and neocortex
- Ability to switch back and forth from awareness of one's experience to thinking capacities in order to be both present and responsive in any moment

Dr. Shanker's Theory of Self-Regulation: What is Stress?

Stress is any perceived threat (stressors) to the body (neuroception).

- The body understands threat before the mind (gut response)

Self-Regulation is a physiological process of recovery from stress but it must be first learned through co-regulation with primary caregivers.

Five Domain Model Of Self-Regulation Integrates and Expands Our Understanding About Stress

- Dr. Stuart Shanker, Five Domain Model - see *Calm, Alert and Learning*, Pearson, 2013
- Inextricably Linked Domains and Development
- Capacities and stressors in each domain
 - Biological
 - Emotional
 - Cognitive
 - Social
 - Pro-Social

Dr. Stephen Porges' Human Species Specific Hierarchical Response to Threat – see *Polyvagal Theory*, Norton, 2011

- 1) Social engagement – Fast PNS
- 2) Mobilization (fight, flight) – SNS
- 3) Immobilization (freeze) – Slow PNS
- 4) Feigning Death (dissociation) – Sustained PNS

What Does the Work at TMC Actually Look Like?

- Starts with reframing a child's "behaviour" in terms of 5 domain stressors
- And purposely changing the lens of treatment from:
 - a behavioural and deficit-based approach
 - to a co-regulatory interaction that brings an experience of being calm and alert, enjoyment as well as learning for the child and parent
 - Allowing for restoration of the brain and therefore learning- emotional and cognitive



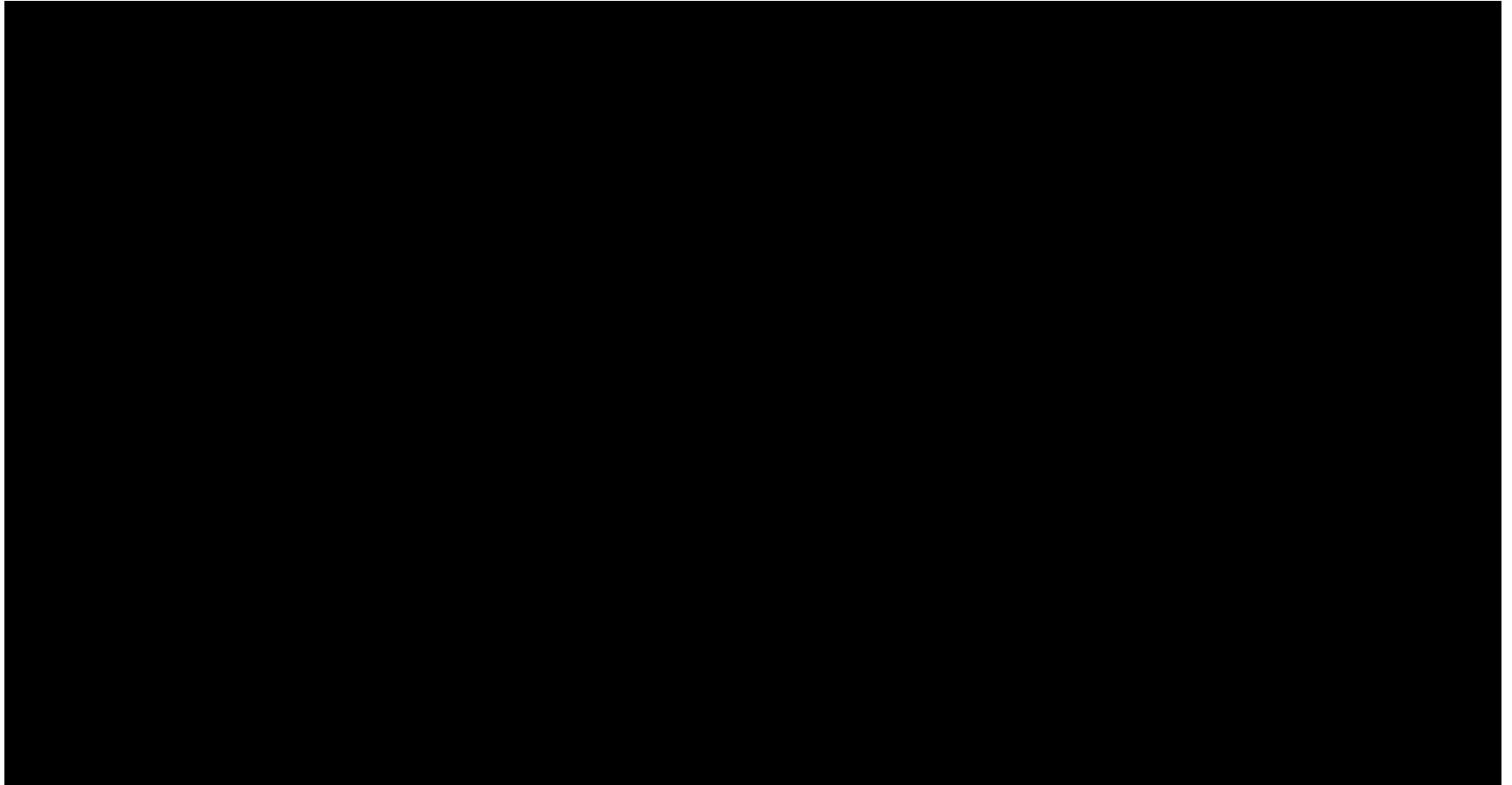
How Do We Assess for Stressors in Young Children?

- 1) Learn to “body read” young children’s stress levels
- 2) Assess stressors across all 5 domains in light of significant developmental history

Body Reading Arousal States

	Hypoalert	Alert	Hyperalert	Flooded
Posture (in seat)	Slumped, too relaxed	Upright enough but relaxed enough	Upright and stiff or Cowering and slumped	Too upright and too rigid
Body Movements (when sitting and/or when moving around)	Slow, aimless, wandering	Coordinated and purposeful	Fast and repetitive – such as toe tapping, bouncing legs, hand wringing, clinging and grabbing	Sudden forceful threatening arm and leg movement
Interactions with Others	Slow, delayed	“Just right” speed and quality	Withdrawn or too fast	Very fast and impulsive
Voice	Sad, weak monotone	Pleasant melodic	High pitched, quivering, whimpering, moaning	Loud, hostile, gruff, high pitched
Attention	Appears ‘stuck’ on objects or far away daydreaming	Stays focused but takes breaks by looking away	Very focused on potential source of concern	Very narrow focus on source of concern or roving attention to find more potential sources of concern
Facial Expressions	No smiles, flat affect	Natural range of emotion	Eyebrows (raised or furrowed) Mouth (open or trembling)	Clenched jaw and/or teeth Open mouth
Eyes	Little or no eye contact Looking through you	Bright, shiny and focused on faces and tasks	Staring, darting Wide open	Closed or wide open and dilated

Taking You Through the Process: *A Video Example of Our Approach – Sam Video Clip # 1*



What's Going on Here?

- Lack of self-control
 - Neocortex

Or

- Lack of self-regulation
 - Response to 5 domain stressors at a limbic and reptilian levels of the brain

Observations from Video Clip #1

- Body Reading Child and Parent: How calm and alert does the child look?
 - Child's body actions were coordinated and purposeful, however he appeared to be overly focused on the noodles and did not shift his attention to his mother. He became upset at the end of the video.
- How calm and alert does the parent look?
 - Parent appeared relatively calm and alert (on the outside) She stayed close to the child, was purposeful and helped him, at the “just right” speed, with a natural range of emotion.

Body Reading Matrix

	Hypoalert	Alert	Hyperalert	Flooded
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Observing And Gathering Information Concerning Stressors According to the 5 Domains for Child

- Biological stressors: sleep difficulties, restricted diet and GI problems, extreme auditory sensitivity and chronic hyperalert states
- Emotional stressors: limited emotional growth, appears overwhelmed by extremes of emotional/sensory states
- Social stressors: difficulty reading others intentions
- Cognitive stressors: difficulty shifting attention from objects to the parent, repetitive play

Reframing the Child's Behaviour in Light of Body Reading and 5 Domain Stressors

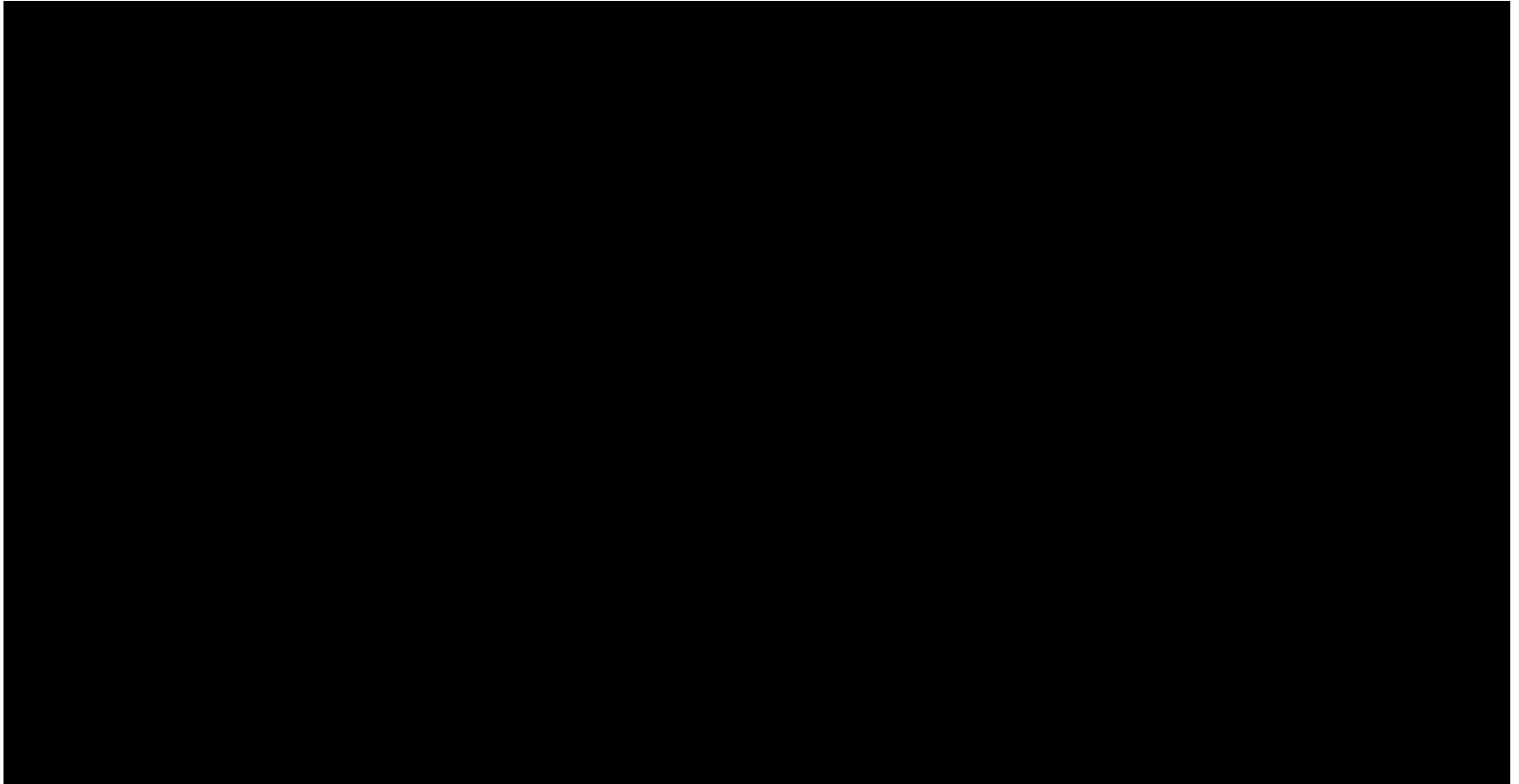
- Parent and child who are both exhausted
- Parent who is surprisingly calm and alert
- Child who is chronically hyperalert from bio stressors, compounded by cognitive and social stressors, and limited emotional growth

- Need to create opportunities for brain recovery by reducing activation of the reptilian and limbic brains, by engaging the SES

How to Reduce the Load on the Limbic and Reptilian Brain for this Child?

1. Use visual predictability of the mats in a pattern to reduce stress while increasing interest
2. Engage with child in his lower visual field, to allow him to look at my hands instead of my eyes, to reduce visual stress for him.
3. Use rhythm, familiar language and movement during the interaction to reduce cognitive stress.
4. Use playful affect to engage the child's SES.

Taking you through the process: *A video example of our approach – Sam Video Clip # 2*



Body Reading Parent and Child

	Hypoalert	Alert	Hyperalert	Flooded
Posture (in seat)	Slumped, too relaxed	Upright enough but relaxed enough	Upright and stiff or Cowering and slumped	Too upright and too rigid
Body Movements (when sitting and/or when moving around)	Slow, aimless, wandering	Coordinated and purposeful	Fast and repetitive – such as toe tapping, bouncing legs, hand wringing, clinging and grabbing	Sudden forceful threatening arm and leg movement
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Body Reading During this Tailored Interaction:

- Child: Relaxed posture, coordinated use of body with the adults, just right speed of interaction with the adults when supported, shifting attention from adults to objects without prompting, bright shiny face focused on adults
- Parent: Interactive and present but needs support to engage in the activity due to her own stress level

Evidence of Emotional Intelligence and Cognition (Neocortex) when the Limbic and Reptilian Brain are Supported:

- 1) The child giggling and taking the parents finger are examples.
- 2) The child takes the lead, initiating the interaction by doing the counting.
- 3) The child repeats a number to either do the same thing again, or try something new.
- 4) Coordinated use of the child's body with the parent to engage in the play e.g. pushing mom's head down at the end.

Summary: How We Build Cognition and Emotional Intelligence in Young Children

- 1) Learn to “body read” young children’s stress levels
- 2) Assess stressors across all 5 domains in light of significant developmental history
- 3) Build routines and environments to help to reduce stress for both child(ren) and caregiver(s)
- 4) Begin reducing stressors across 5 domains as able
- 5) Promote co-regulated tailored Interactions to support the child’s limbic and reptilian brains, using the SES so that the neocortex can fully come online.

Bibliography and Questions

- *Calm, Alert and Learning* by Stuart Shanker, 2013
Pearson Canada Inc., Toronto Canada
- *Engaging Autism* by Dr. Stanley Greenspan and Serena Wieder, 2006, Da Capo Press, Philadelphia PA
- *The Polyvagal Theory* by Stephen Porges, 2011, Norton and Company Inc. New York, NY
- The MEHRIT Centre Ltd, Body Reading Tool, 2013

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