The Brain-Behavior Connection: Focus on Foster Care

Neurobiological & Neurodevelopmental Impact of Traumatic Stress & Prenatal Alcohol Exposure in Children & Adolescents: The Many Faces of Integration

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“My question is: Are we making an impact?”
So... *how* can we work together to make an *impact* to help children and adolescents in foster / kinship / adoptive care???

...
INTEGRATION!!!
Integration

Dictionary.com to the rescue!

• “An act or instance of combining into an integral whole”

• “Organization of the constituent elements into a coordinated, harmonious whole”
Foster Care Complexities: Many trauma pieces to integrate!

- Prevention
- Surveillance
- Screening
- Triage / referral
- Assessment
- Treatment / Management
- Ongoing case management / progress monitoring
Overarching Brain-Behavior Goal: *Total Systems Integration*

- Individual child *(integrated brain function)*
- Committed caregivers *(integrated family function)*
- Individual professionals *(vertical integration)*
- Individual “silos” *(vertical integration)*
- Creative collaboration between silos *(horizontal integration)*
**TSI: Vertical Systems Integration:** Taking care of yourself and your team

- Each “silo” must be the best it can be
- Each member must be ready for action
- Training / professional development issues
- Secondary trauma issues are critical
- The **brain** must be the **common language** that links **in all directions**
- Vertical integration allows & **propels** horizontal integration
**TSI:** Horizontal Systems Integration: Seamless & Creative Collaboration

- All (system) silos unite!
- The key word is *transdisciplinary*
- No specific hierarchy / Check egos at the door!
- Involves assessment & treatment/management
- **Ongoing** communication between systems
- **Brain** is the common language to accomplish
- Must use Trauma-/FASD-informed brain model
- Child must always remain *in the center*
Always remember...

Children must remain in the center of any discussion.
Making an Impact ...by...

Thinking *waaaaaay* out of the box!

The “why” behind challenging behaviors
Exploring the “Why” Behind Challenging Behavior in Children & Adults

• Requires a *reframing* of often long-standing paradigms re the etiology of “bad / illegal behavior”

• Multiple factors: This is *complex*!!!

• Requires a *community-wide shift* of thinking differently

• The power of the *trans-disciplinary* mindset ➔
Power of the Transdisciplinary Model

It’s all the same elephant!
What happens if we continue with the behavioral “Status Quo”?
How can we achieve integration?

One kid at a time...
One family at a time...
One professional at a time...
One agency (silos) at a time...
Let’s talk about the brain!!

Because the brain is clearly the *common language* needed to enhance communication / facilitate creative collaboration between all parties and... we need it for “*true integration*”
And............

Brain knowledge helps us really understand our challenging kids and adults!...
Thinking about the brain: A 3-D Jigsaw Puzzle

- Upstairs vs Downstairs
- Left meets Right
- Back meets front
The Human Brain

Brakes (Upstairs)

Accelerator (Downstairs)

- Neocortex
- Limbic
- Diencephalon
- Brainstem

B. Perry, MD
Hemispheric Integration
Left meets Right

• Connecting logic with emotion

• Key to emotional processing / regulation

• Corpus Callosum: Major structure that is not well understood by most clinicians

• Huge part of complex regulation
Corpus Callosum
Back meets Front

- **Perceive** (sensory system) then **act** (motor system)

- **Cerebellum**: (“white-hot” in behavioral neuroscience) is central “player” for all sensory, behavioral and cognitive function

- Cerebellar connections to PFC / subcortical areas have major impact on complex regulation
Let’s get practical!!!
Brain – Behavior Functional Model: Building integration one level at a time

Neurodevelopmental Core Base
(IQ, Language, Learning Style, Attachment, etc)

Master Controllers
( Brakes vs Accelerator)

Complex Fine Tuners
(Complex Regulation)

Social Communication

Behavioral Choice / Free Will
Neurodevelopmental Core Base
(IQ, Language, Learning Style, Attachment, etc)

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Behavioral Choice / Free Will
Inspecting the Foundation: Core Neurodevelopmental Building Blocks

("Hard wiring" of the Brain)
- Cognition / IQ
- Learning Preferences / Differences / Disability
- Language
- Memory
- Neuromotor processing / control
- Visual-Spatial Processing
- Tempero-sequential processing
- Temperament / Personality
- Attachment
Master Controller Level
Upstairs vs Downstairs
Brakes vs Accelerator
The Human Brain

Brakes (Upstairs)

Accelerator (Downstairs)

Neocortex
Limbic
Diencephalon
Brainstem
Master Controller Level: Accelerator vs Brakes

• This level is where the **action** is!
• Huge impact on all behavior
• Assessment at this level is critical
• Many physiological treatments impact here:
  – Medication
  – Physical exercise / complex movement
  – Occupational therapy
• Let’s examine this level in some detail...
Floorin’ it: 0 to 60 in 4.3 seconds!

Importance of the **accelerator**

- RPM of the brain
- Intrinsic Energy Levels
- Circadian Variations
Arousal Genesis / Regulation

Way too wound-up / “wild” (“Tigger - on crack”)

Too wound-up (Tigger)

Bored / Low energy / Tired & sleepy (Ee-yore)

Total shut-down (via parasympathetics) “Ee-yore on Quaaludes”
Accelerator: (“RPM” of the brain) 

*Increasing* Brain Energy

- Physical activity *(mind-brain-body connection)*
- Risk-taking behavior *(auto pilot teen function)*
- Motivation *(Intrinsic / Extrinsic)*
- Sensory inputs *(vestibular, auditory, tactile)*
- Anxiety / Panic *(remote control to the accel.)*
- Anger / Explosiveness *(redline tachometer)*
- Drugs *(legal / illicit) (stimulants)*
- Mania / Hypomania *(stuck fast accelerator)*
Accelerator: (“RPM” of the brain)

Decreasing Brain Energy

- Depression / sadness / grief
- Conscious effort (relaxation, meditation)
- Drugs (legal / illicit) (opiates, cannabis, sedatives, anesthetics)
- Sensory input / strategies
Remote Control of the Accelerator
The Confusing Picture of Anxiety
Fight-Flight-Freeze in the JJ / CMH / DHS system

• Anxiety / Panic as source for reactive anger ➔ aggression

• Anxiety – Attention – Language interplay in kids/teens w/ aggression

• False machisimo in anxious teen boys
Anger / Explosiveness: Critical Link to Reactive Aggression

- Anger as coping skill
- ("Just" anger as clinical progress!)
- Reactive / emotive aggression = Anger plus "bad" brakes ➔

Many faces of anger!
The Prefrontal Cortex: The home of Executive Function

Executive Function: The "brakes" of the brain

- Working memory / memory recall
- Focusing (locking, shifting & sustaining)
- Planning / organizing
- Self-monitoring of behavior/action
  - Impulse control
  - Key role in interoception
- Major role in Regulation
Delicate Balance of Arousal / Behavioral Regulation: Control of brain energy / behavior

Top-Down "Brakes" (Prefrontal Cortex)

Bottom-Up "Accelerator" (Brainstem/Limbic System)
Fine Tuner Level: The Case for Complex Regulation

• Arousal Regulation
• Behavioral Regulation
• Emotional / Affect Regulation
Complex Regulation: Clinical Realities

- Arousal Regulation can be critical 1st step
- Arousal regulation translates to behavioral regulation / "clinical traction"
- Emotional regulation can be the most difficult to achieve in traumatized kids
- Complex regulation leads to true brain integration
- Link to social communication
Social Communication: Basic Structure

Social Cognition  Complex Regulation  Language Function
Social Communication:
FASD / Trauma can impact each component

- Complex Regulation
- Language Function
- Social Cognition
Free Will / Choice / Behavior
Don’t Forget About the Steering

- Conscious control of behavior
- Importance of **tight structure** for optimal behavior management
- Willfulness misconceptions
  - It’s not **all** willful!
  - But some **is** willful!
  - And some **looks** willful!
- Behavioral “curve balls” in homes, schools, detention...
Final Thoughts re Regulation: Power Steering vs Manual Steering

- **Regulated** steering = *power* steering!
  - Easier to make appropriate motor / behavioral decisions while regulated

- **Dysregulated** steering = *manual* steering
  - Tougher to keep the behavioral “car” on the road
Searching for Goldilocks

When regulation turns into integration

Optimal Complex Regulation =

Optimal Learning, Behavior, Attention, Memory
The Brain-Behavior connection:
3 major components influence our behavior

- **Genetics / Epigenetics**
  - What you inherit from both parents

- **Intrauterine environment**
  - During pregnancy

- **Extrauterine environment**
  - After pregnancy
The Brain-Behavior connection:
3 major components influence our behavior

- Must include all 3 components when assessing and treating foster kids
- Impact of prenatal drug & alcohol exposure on the brain
- Impact of traumatic stress on the brain
WMU CTAC
Comprehensive Assessment

- History (caregiver / teacher / “system” input)
- Cognitive screen (K-BIT 2)
- Neurodevelopmental screen
- Neuromotor evaluation
- Pragmatic language evaluation
- Psychosocial interview
- Medical (including FASD assessment)
Assessment Reality Check

• Too many foster kids needing help... not enough CTAC’s

• Role of Primary Care Provider (Now and in the future):
  – Patient-Centered Medical Home (Pediatrics)
  – Family-Centered Medical Home (Family Practice)
Effective Trauma/FASD Treatment: Creative Collaboration by the totally integrated “Dream Team”
Effective Trauma/FASD Treatment:

- Comprehensive Assessment (1st step of treatment)
- Psychoeducation / Demystification
- Creative / collaborative case management
- Trauma-informed Psychotherapies
- Sensory-focused Occupational Therapy
- Expressive Therapies (Music, Art, Dance therapy)
- Optimized nutrition
- Exercise / complex movement (Yoga / Tai Chi)
- Trauma / FASD-informed medication treatment
Effective Trauma/FASD Treatment

- Classroom accommodations / special education
- Tutoring / coaching / mentoring
- Speech-Language Therapy
- Social skills treatment / enhancement
- Wraparound protocols
- Behavioral management
- Parent behavioral management training (PMTO)
- Multi-systemic Therapy (MST)
How to decide what to do when:
Who wants to be quarterback?

• Overwhelming list of choices!
• Many barriers to coordinated care
  – Access to quality care
  – Insurance issues
  – Transportation / Time issues
  – Lack of creative case management
• Case for primary care provider tx:
  – Trauma-informed patient / family-centered medical home treatment model
We are all in this together!

• Need for all parties to really work together in all areas to help our kids achieve total integration

• “Just keep swimming” (Dorie from Finding Nemo)