

“Neurobiology: What we need to know when working with teens who sexually abuse or have been abused”

Internet panel discussion

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Host: Joan Tabachnick

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Head Injury, TBI, and its impact on the brain: applications for clinical practice

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 Serendipity Healing Arts

Definition of TBI

“...[T]raumatic brain injury” as “...an acquired injury to the brain. Such term does not include brain dysfunction caused by congenital or degenerative disorders, nor birth trauma, but may include brain injuries caused by anoxia due to trauma.”

The Maternal and Child Health Act of 1996, 104-166 Sec. 393A(d) and revised in 2000

Juvenile Justice

- 475,000 Brain injuries in children (age 0-14) each year
- Estimates of youth in juvenile justice facilities with TBI is 15% - 90%.
- Estimated of TBI prevalence in the adult corrections population is 60%.



“Children And Traumatic Brain Injury (Tbi) In The Juvenile Justice System.” December 13, 2011, Hrsa Federal Tbi Program.

Behaviors That May Result from Head Injury

Behaviors that may result from a head injury may include:

- Aggression
- Cognitive –related impairments
- Coping skills deficits
- Interpersonal skills problems
- Self-care skills have diminished

Complicating Factors: Juvenile Justice System

Most TBIs are mild and often are never identified because treatment is not sought successfully.

Youth With TBI May Have:

- Difficulty Following Rules Due To Impaired Understanding, Recall
- Irritability, Impulsivity, Anger, Inability To Inhibit Behavior
- Depression, Anxiety, Suicidal Thoughts and/or Behavior
- Impaired Problem-solving Ability
- Substance Abuse
- Social Inappropriateness
- Victimization

Diane Smith Howard; Staff Attorney For Juvenile Justice and Education Issues, National Disability Rights Network (NDRN) Webinar, October 25, 2012

Impact of TBI on the Brain

In Summary... TBI can often look like:

- ADHD
- PTSD
- Learning disability
- Anxiety
- Depression
- Oppositional Defiant Disorder
- Bipolar disorder

Trauma and Development

Kevin Creeden, M.A., LMHC
The Whitney Academy

Basics of a Developmental approach

- development proceeds from simple to complex
- early developmental tasks provide critical skills and traits that are the foundation of later more complicated skills
- understanding the “foundation” skills that are missing directs the focus of intervention

Understanding Cumulative Harm

Neurodevelopment and Trauma

- Increased limbic irritability
- Decrease left hemisphere development
- Decrease left/right hemisphere integration
- Limited activation of cerebellar vermis in self-regulation

The Human Brain: The brain can be divided into five macrostructural areas: forebrain, midbrain, and hindbrain. The forebrain is the largest and most complex, the midbrain, and the hindbrain.

Teicher, et al 2002

Developmental Approach

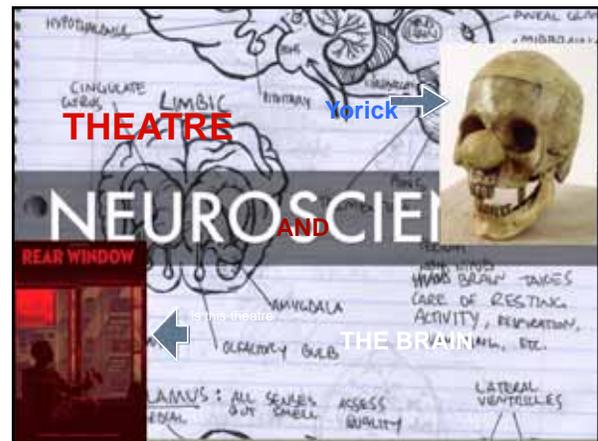
- ‡ Target interventions to early developmental obstacles and then move forward
- ◆ safety, attunement, attachment, self-regulation, social skills, cognitive skills, moral development
- ◆ resource: Child Development and Trauma Guide

Intervention Approaches

- ‡ Be guided by neurodevelopmental process
- ‡ Consider “Bottom-Up” before “Top Down”
- ‡ Environmental and Specific
- ‡ Persistent/Regular stimulation of pathways
- ‡ Systemically adaptive and available

Theatre and neuroscience

John Bergman ,MA,RDT,MT,BCT



Does the Brain/Body really favor Theatre?

Theatre is an ANCIENT form of SOCIAL KNOWLEDGE whose product from Aristotle to Brecht to Moreno includes :

- Theatre for social change
- Interventionist Theatre
- Drama in Education
- Theatre for integrated Rural Development
- Theatre in Prisons,
- Theatre for Special Audiences
- Applied Theatre
- Theatre for Conflict Resolution/Reconciliation
- Theatre as Therapy
- Drama Therapy

...and is found in every country in the world.

is theatre a real analog for how the brain/body experiences?

FACT:
Interpersonal experiencing stimulates neurones to fire, grow, connect.

- The firing pattern shapes the neural circuitry of the brain body
- The neural circuits are the blueprints for perception/reaction/action-LIVING

SO Watching OR doing theatre sets *similar* experience dependent neural circuits in action.

Hypothesis:

- People neurobiologically perceive /experience emotional meaning in life in nearly the same way as they perceive meaning in the THEATRE.

Theatre or Life-similar neural circuitry?

Choose One!

1. Actors can generate emotions that are neurologically recognizable by an fMRI (Kassam, 2013)
2. There is speaker-listener neural coupling during story telling (Stephens, 2010)
3. Hearing metaphors activates activity on brain regions especially the areas for touch (Lacey, 2000)
4. There is neural synchronization during face-to-face communication (left inferior frontal cortex) thus the actor and spectator engage in similar neural experiencing.
5. Mirror neurones (Rizzolatti, et al) " allow us to directly understand the meaning of the actions and emotions of others we are observing by internally replicating them without any explicit reflective mediation

WE understand what the actors mean because we are internally replicating their actions!

Neurobiological evidence?

One study assessed the use of art as therapy's impact in a hemodialysis unit using both the BECK, and medical outcomes.

Results showed positive changes in:

- weight gain,
- carbon dioxide scores and
- Phosphate levels.

(Arts as therapies are used in 140 countries.)

What does this neurobiological approach suggest for treatment?

- Treatment should augment neural networks for developing intentional communication and more accurate social interaction (Bergman and Creeden, 2011)
- Agencies that are life analogous (e.g., theatre) can be controlled to make new NEURAL networks, vital for brain/body treatment.
- C. Social brain information must be generated for our younger clients -- group role plays that are dependent on interpersonal sensory experiencing and attuned decision making -- key to changing neural interactions with others. (Cozzolino)

Bottom line

1. Neurobiology tells us: To make changes to the brain/body the change agency must be
 - EXPERIENCE dependent
 - Theatre/as therapy historically, phenomenologically
 - Neurobiologically MIMICS/CREATES interpersonal experience and it's dependent neural change
2. The neurobiology of the brain/body is a critical extension of our knowledge of how to effect neural changes

a prediction

WE are at the beginning of a profound change in the very heart of our psychotherapeutic tools.



I just heard....



Where We Are and Where We Need to Be

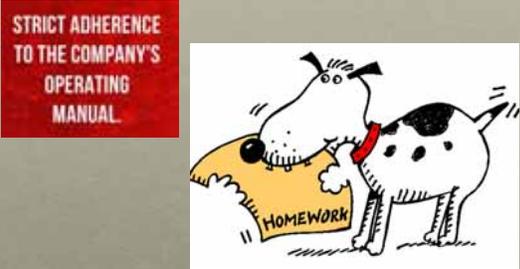
David S. Prescott, LICSW
Welcome!

Let's get back to what we know

- Simple, not easy
- Connection
- Autonomy
- Competence
- Meaning
- Purpose



How do people change?



Compassion



HOPE & POSSIBILITY

Relationships can be challenging



Empathic, attuned interventions

- Unexpected
- Welcome
- Impactful



Tell me. Maybe I'll help.

What we need

- Mindset
- Heartset
- Spirit
- Attitude
- Intention

There is no passion to be found playing small - in settling for a life that is less than the one you are capable of living.

-Nelson Mandela

We can leave no one behind



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