Neuroeducation: Integrating the Phenomenological Whole

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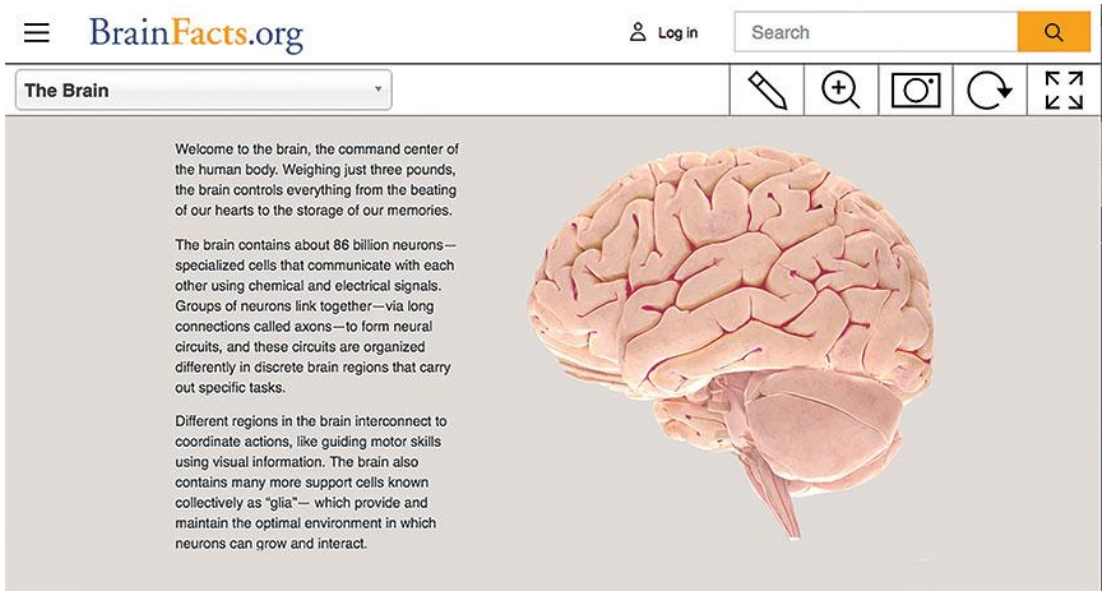
Day 1

Welcome and Overview

Share agenda . . .

Intro Game



Key Brain Terms Glossary and Basic Neuroanatomy

Dana Foundation: https://www.dana.org/explore-neuroscience/brain-basics/key-brain-terms-glossary/

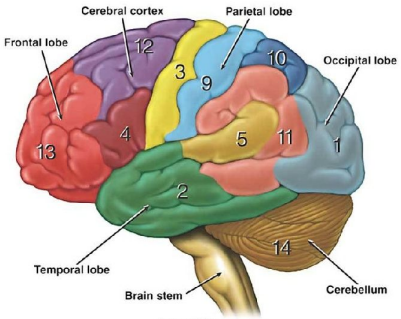
BrainFacts: https://www.brainfacts.org/

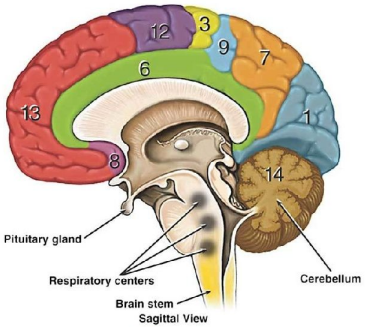
Functional Areas of the Cerebral Cortex

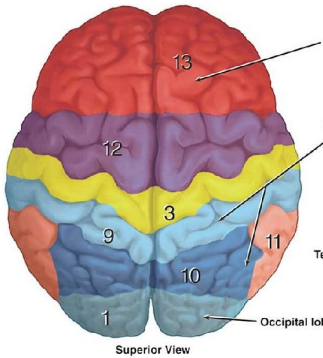
1. **Visual Area:** Sight, Image recognition, Image perception
2. **Association Area** Short-term memory, Equilibrium, Emotion
3. **Motor Function Area** Initiation of voluntary muscles
4. **Broca's Area** Muscles of speech
5. **Auditory Area** Hearing
6. **Emotional Area** Pain, Hunger, "Fight or flight" response
7. **Sensory Association Area**
8. **Olfactory Area** Smelling
9. **Sensory Area** Sensation from muscles and skin
10. **Somatosensory Association Area** Evaluation of weight, texture, temperature, etc. for object recognition
11. **Wernicke's Area** Written and spoken language comprehension
12. **Motor Function Area** Eye movement and orientation
13. **Higher Mental Functions** Concentration, Planning, Judgment, Emotional expression, Creativity, Inhibition

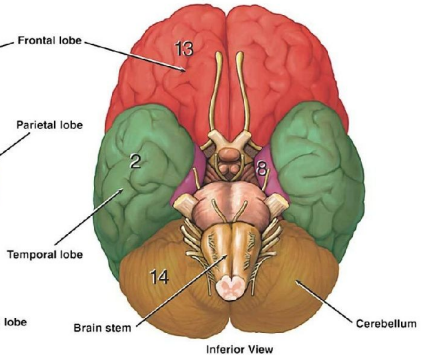
Functional Areas of the Cerebellum

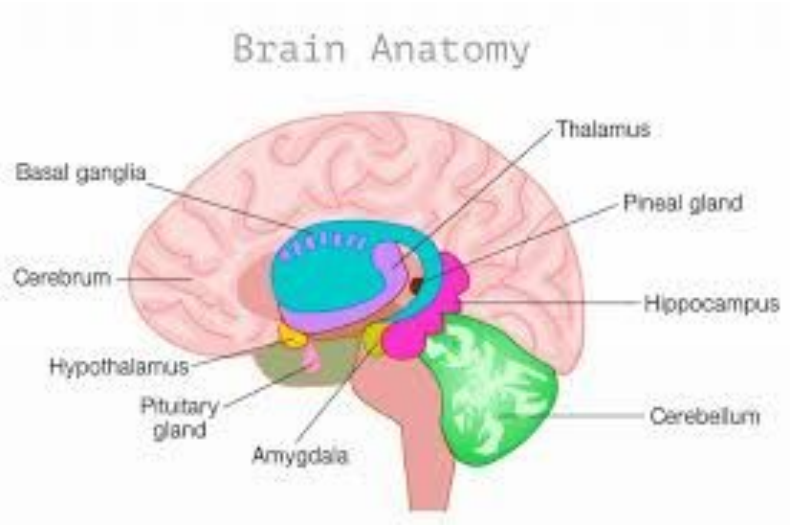
14. **Motor Functions** Coordination of movement, Balance and equilibrium, Posture











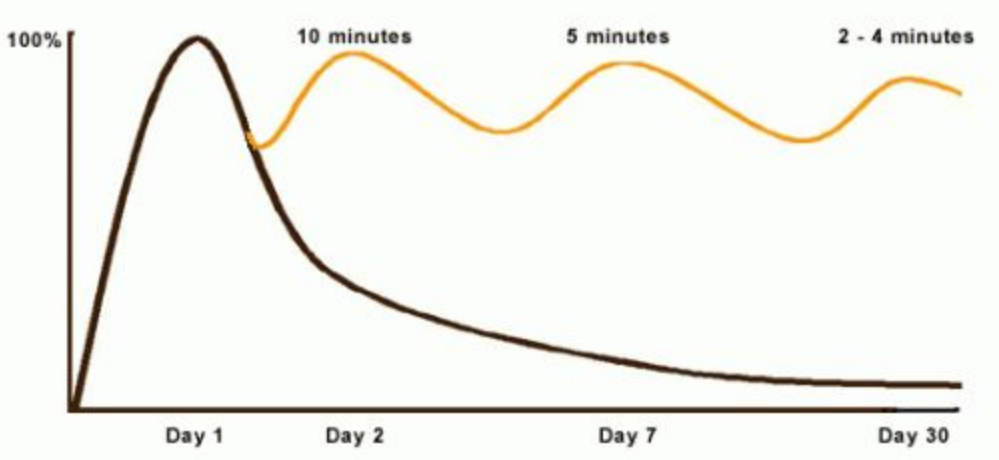
Setting Intentions

1. What do you already know about neuroscience? Likert Scale?
2. What do you hope to gain from our time together?
3. What would make this a valuable use of your time?

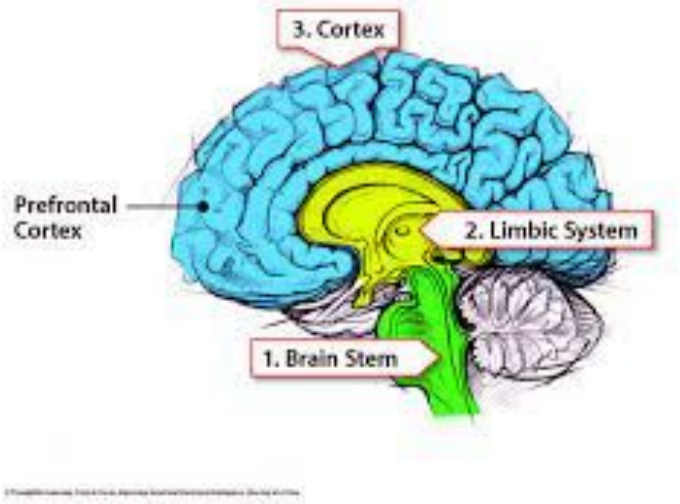
Overview/Intro to Participant Handouts

Create your own neuroeducation activity - Revisiting throughout

The Curve of Forgetting



Why Neuroscience Matters to Me



Individual Psychology and Neuroscience

Adlerian Concept	Neuroscience Link

- See *Linking Adlerian Concepts and Neuroscience Research* handout.

Individual Psychology and a Psychoeducation Tradition

Adlerian is a “psychoeducational model” (Watts, 2000)

- Change occurs through “re-education” re: lifestyle and the lifetasks

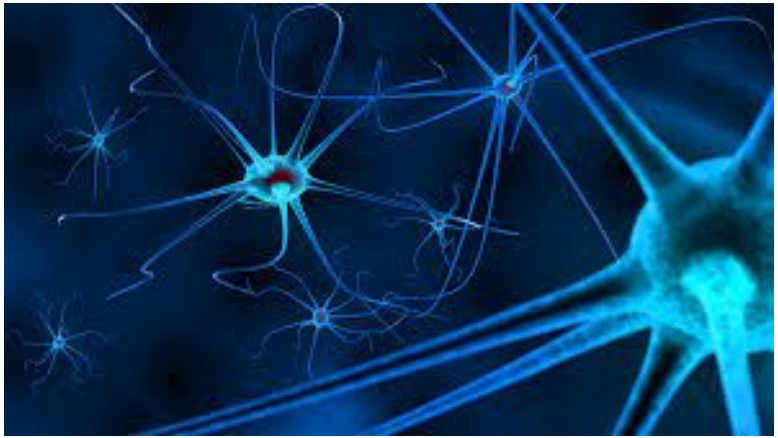
Break

Introduction to Neuroeducation

What is Neuroscience?

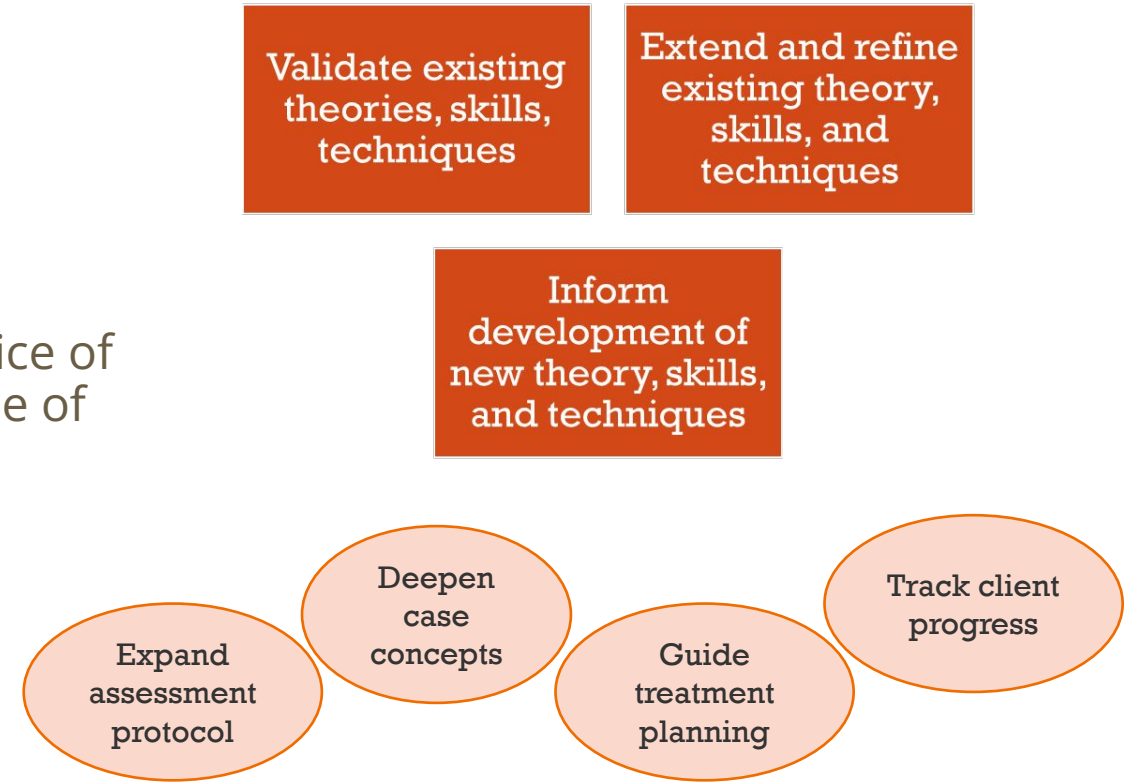
The study of the complete human nervous system and its interactions with the full scope of environmental and developmental variables

(Beeson & Luke, 2022)



Neuroscience-Informed Counseling

- "The art and science of integrating neuroscience principles related to the nervous system and physiological processes underlying all human functioning into the practice of counseling for the purpose of enhancing clinical effectiveness"
  - (Beeson & Field, 2017; p. 74).



The shift to Neuroscience-Informed Counseling

1. The art and science of integrating neuro-principles
2. Just like any other evolution in scientific methods and theory development
3. Provides new research tools
4. Identifies new constructs
5. Provides another lens to view existing constructs
6. Organizes skills/techniques by impact

(Beeson & Luke, 2022)

Neuroscience-Informed Counseling

- Is when we use neuroscience to **reinforce**, **enhance/refine**, and/or **create** new methods

- Is when neuroscience is the **target** of the intervention, the **inspiration** for the intervention, or the **method** used to evaluate the intervention

(Beeson & Luke, 2022)

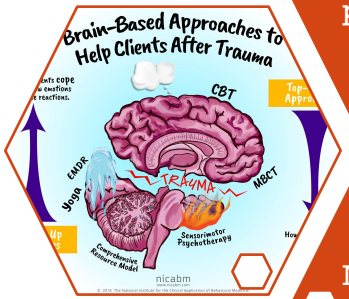
Where does neuroeducation fit in?

Defining neuroeducation:

- A didactic or experiential based intervention that aims to reduce client distress and improve client outcome by helping clients understand the neurological processes underlying mental functioning. (Miller, 2016)
- A transdiagnostic and transtheoretical process grounded in the real therapeutic relationship (Miller & Beeson, 2022)
- The use of neuroscience information as a means of exploration, not explanation, into past, current, or future conceptualizations of the human experience, expectations for change, and actualized changes in counseling and psychotherapy (Beeson et al, in press)
- Communication with our patients about the brain's role in mental health, learning and memory, and brain-based explanations for how and why psychosocial interventions work. (Kryza-Lacombe et al., 2021)

OTHER TERMS

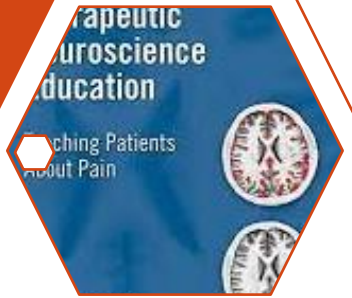
Brian-based psychoeducation



Neuroscience-informed psychoeducation

Therapeutic neuroscience education

Internal Education



Neuroeducation Research

General Psychoeducation

Donker et al., 2009; Magill et. al, 2021

Counseling

Miller, 2016; Miller et al., 2018

Addiction

Ekhtiari et al., 2017

Psychology

De Raedt, 2020; Kryza-Lacombe et al., 2021

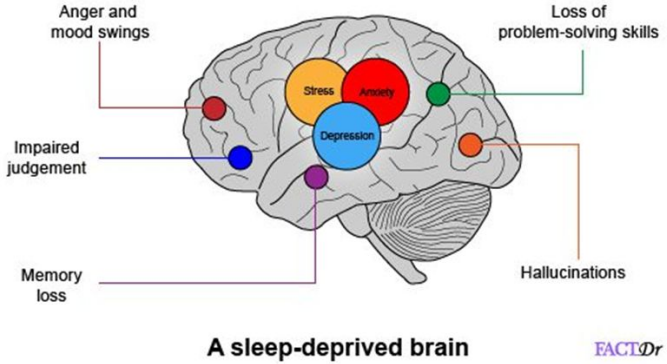
Psychical Therapy

Mosley, 2002; Luow et al., 20216

Neuroeducation Content Example

Insufficient or poor quality (e.g., fragmented) sleep impacts the brain in several critical ways:

- Increased arousal (hypersensitivity) in the amygdala
- Impaired hippocampal functioning related to learning and memory
- Increased activity in emotion-generating regions of the brain (e.g., limbic system) and reduced activity in emotion-regulating regions (e.g., prefrontal cortex)
- Altered dopamine signaling linked to greater motivation for reward, greater approach behavior, enhanced susceptibility to cravings
- Irregularities in the default mode network related to self-referential processing, rumination



Emotional	Cognitive	Physiology and Health
Increased	**Impaired**	**Increased Risk**
Irritability	Cognitive performance	Day time sleepiness
Anxiety	Focus/concentration	Weight gain/obesity
Negative salience	Attention	Cardio- metabolic dysfunction
Substance use	Memory and learning	Altered sensory thresholds
Risk-taking and impulsivity	Decision-making	Infection, lowered immunity (impaired vaccine responsiveness)
Depression, suicidal behavior	Creativity	Accidents and injuries
	Problem solving	Cancer
Decreased	Motor performance	Altered stress response – inflammation, elevated cortisol and adrenalin
	Dissociation/detachment	
Response flexibility		
Emotional competence (perceive, regulate, and express ones' emotions)		
Frustration tolerance		

What reaction do you have to this information?

Benefits or Uses of Neuroeducation

- Support positive narratives
- Increase compassion and empathy for self and others
- Normalize client experience and the change process
- Support regulation (“name it to tame it”)
- Enhance client engagement and motivation

Stories of the Mind Sleep Experiment

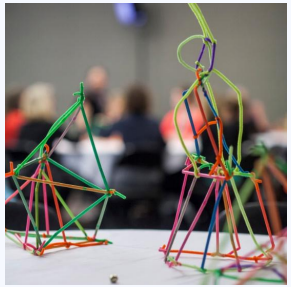
(https://www.pbs.org/video/stories-mind-get-your-sleep/)

Barriers to Using Neuroeducation

- Lack of familiarity with neuroscience concepts
  - I wasn't trained in neuroscience, how can I possibly provide accurate neuroscience information to clients?
  - Taxonomy (or neuro nomenclature) is less important than understanding processes and systems.
- Success in practice without integration of neuroeducation
  - I've been effective with my clients so far, why do I need to add in something new? Is it really necessary?
- Belief that neuroeducation is "medical model" and too deterministic
  - I practice from a more humanistic lens and believe my client's first-person, lived experience is most important, wouldn't neuroeducation just pathologize my clients and leave them with less agency and empowerment?

(Kryza-Lacombe et al., 2021)

Brain Architecture Game



ABOUT THE GAME

- Initial development began in 2009 with a partnership between developmental scientists at the National Scientific Council on the Developing Child and communication scientists at the FrameWorks Institute.
  - Marientina Gotsis at the Interactive Media & Games Division of the School of Cinematic Arts at the University of Southern California and students created first version.
  - A full list of contributors and intellectual property rights can be found here.
- **Purpose is to experientially teach about the role experiences play in early brain development**
  - Hand-on and engaging
  - Promotes discussion and connection

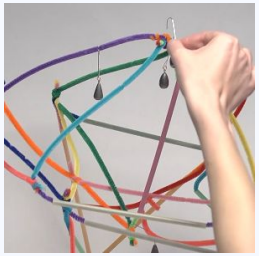
FACILITATION PROCESS

- Divide into small groups of 3-5 people
- Watch *The Science of Early Childhood & The Brain Architecture Game* video
  - Content covered: hierarchical nature of brain development, genetic + experiences interplay, impact of toxic stress
  - Content to elaborate on later: specific areas of the brain and body that are negatively impacted by toxic stress + practical strategies for helping professionals in working with children who have experienced toxic stress
- Play the game
  - Walk around to answer questions, clarify rules
  - Encourage participants to slow down and talk about the relevance of experiences and what is happening (vs. rushing to build the biggest, best brain)
- Debrief
  - Discussion questions
  - Link to application (chart) and deepen neuroeducation areas (i.e., go into further detail with topics mentioned in the video)

MATERIALS

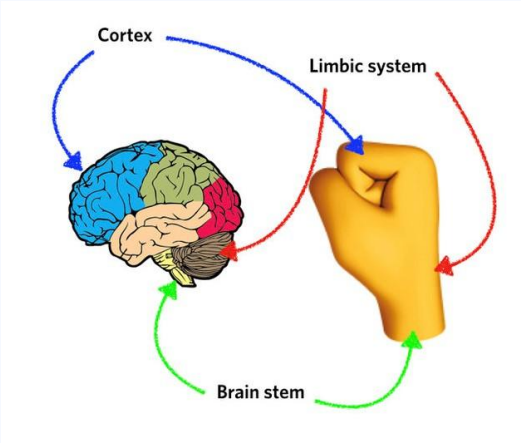
- In Person
  - Life experience cards, rule book, life journal
  - Straws, weights, dice, and pipe cleaners

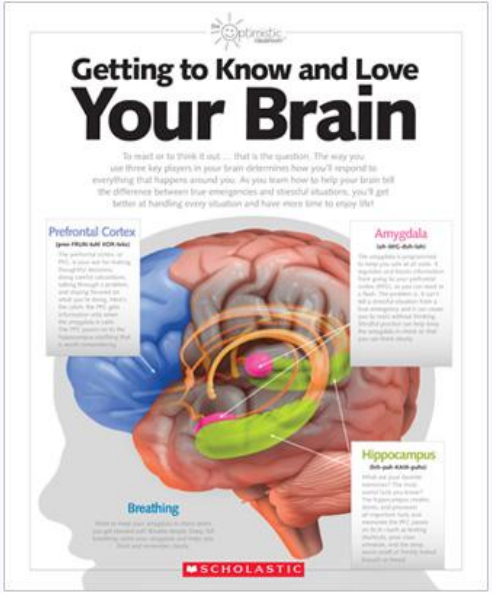
- Online
  - Navigate to https://play.thebrainarchitecturegame.com/
  - Register for a free 7-day trial
  - One person will be in-person with building supplies



BRAIN ARCHITECTURE GAME IN ACTION

EXAMPLE POSTER FOR NEUROEDUCATION ADD-ONS





MindUp Curriculum

APPLICATION GUIDE

Miller, R. M. (2021). Early adversity and neurodevelopment: Implications for school counselors. In M. A. Rausch & L. L. Gallo (Eds.), Strengthening school counselor advocacy and practice for important populations and difficult topics (pp. 315-336). IGI Global. http://doi:10.4018/978-1-7998-7319-8

Brain and Nervous System Impact	ACEs-Informed Prevention and Intervention
Impaired growth and functioning of the amygdala. Adversity can lead to over-excitation of the amygdala and lead to affective dysregulation and the development of a social information processing bias (i.e., the proclivity to respond aggressively and have heightened vigilance in response to facial cues that indicate anger, as well as less processing of non-threatening stimuli.).	• Establish safety through creating predictable environments (e.g., consistent routines, warnings about upcoming teacher absences, monitor tone and facial expressions, set limits on dangerous behaviors). • Follow Bruce Perry's "Sequence to Engagement" when responding to a child or adolescents' dysregulation – 1) Regulate, 2) Relate, and 3) Respond. (See: https://www.youtube.com/watch?v=LNuxy7FxEVk for a video tutorial). • Give as much choice as possible to encourage agency and develop an internal locus of control.
Disrupted growth of the hippocampus. Adversity can impair the hippocampi's ability to efficiently or effectively translate daily learning into long term memory.	• Ensure children are getting enough sleep. Sleep is the time the hippocampus is most active in converting experiences into memory. If a child is sleepy in the classroom, let him or her sleep. Consider having a space in the school that children can nap when needed. • Recognize that adults' requests of students (e.g., problem-solving, emotional regulation, perspective taking) may be assuming cognitive development that has not happened for the student yet.
Inhibited prefrontal cortex (PFC) functioning. Adversity can impair the bi-directional connections between the medial PFC and amygdala leading to less inhibitory control when dealing with emotionally arousing or threatening stimuli.	• Avoid punishments that decrease the child's ability to move (e.g., sit out in PE, no recess). Exercise helps strengthen the mPFC, thus supporting healthy development of inhibitory abilities. • Integrate teaching and practicing of regulation skills into the classroom (e.g., mindfulness, yoga, breathing, calm down spaces). • Do not over-rely on top-down (i.e., cognitive) regulation strategies. Avoid saying things like "What were you thinking?" – they weren't "thinking" from their PFC, they were reacting from their survival part of their brain.
Increased inflammation. Adversity can lead to dysregulation of stress hormones, which leads to unregulated inflammation. Chronic inflammation leads to decreased immunity, higher risk for diseases, and sickness behaviors (e.g., low motivation, fatigue, withdrawal from others).	• Avoid giving any snacks or drinks that contain processed or refined sugars (e.g., candy, soda, cupcakes, etc.). These foods increase inflammation in the body and can lead to blood sugar spikes that make emotional and behavioral problems worse. • See what students are doing *right* not just what they are doing *wrong*. Intentionally increasing positive interactions through attuned connection, identification of strengths, and encouragement supports the development of a healthy immune system.

DISCUSSION GUIDE

1. What was your child's life history?
2. How did life experiences shape the child's brain architecture (via the metaphor of the house)?
3. What role did early social supports (i.e., straws) play in development?
4. If a child experienced a lot of toxic stress without social support early in life, how did they handle stressors (i.e., weights), later in life?
5. What are the social supports in our community that are available for supporting children's healthy brain development?
6. What other insights or take-aways did you get from the experience?

Lunch Break

Neuroeducation Best Practice

What, if any, ethical concerns do you have regarding the integration of neuroscience into counseling?

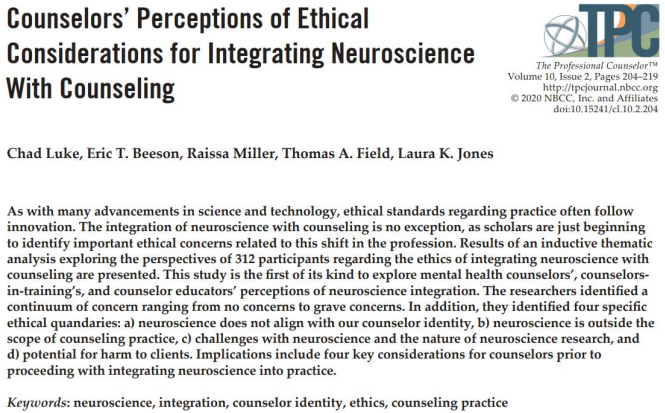
(Luke et al., 2020)

Perceived Ethical Challenges

- 321 participants
- 78% had some degree of ethical concerns

- Themes:

1. Neuroscience does not align with our counselor identity
2. Neuroscience is outside the scope of counseling practice
3. Challenges with neuroscience and the nature of neuroscience research
4. Potential for harm to clients
5. Unethical not to integrate neuroscience in counseling



Counselors' Perceptions of Ethical Considerations for Integrating Neuroscience With Counseling

The Professional Counselor™
Volume 10, Issue 2, Pages 204–219
http://tpcjournal.nbcc.org

doi:10.15241/cl.10.2.204

Chad Luke, Eric T. Beeson, Raissa Miller, Thomas A. Field, Laura K. Jones

As with many advancements in science and technology, ethical standards regarding practice often follow innovation. The integration of neuroscience with counseling is no exception, as scholars are just beginning to identify important ethical concerns related to this shift in the profession. Results of an inductive thematic analysis exploring the perspectives of 312 participants regarding the ethics of integrating neuroscience with counseling are presented. This study is the first of its kind to explore mental health counselors', counselors-in-training's, and counselor educators' perceptions of neuroscience integration. The researchers identified a continuum of concern ranging from no concerns to grave concerns. In addition, they identified four specific ethical quandaries: a) neuroscience does not align with our counselor identity, b) neuroscience is outside the scope of counseling practice, c) challenges with neuroscience and the nature of neuroscience research, and d) potential for harm to clients. Implications include four key considerations for counselors prior to proceeding with integrating neuroscience into practice.

Keywords: neuroscience, integration, counselor identity, ethics, counseling practice

(Luke et al., 2020)

Breaking news,
which do you click first...

Which do you click first…

#1

Psychotherapy improves quality of life.

#2

Psychotherapy changes the brain.

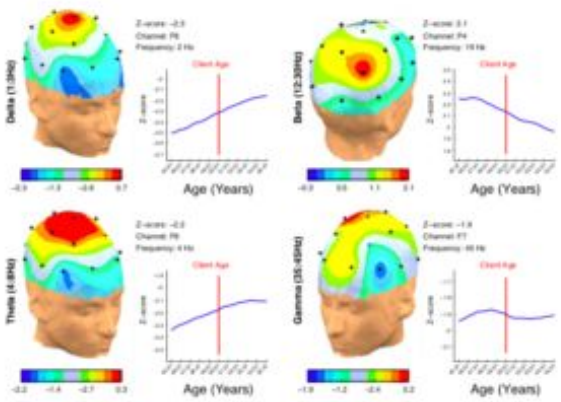
How about now?

#1

Psychotherapy improves quality of life.

#2

Psychotherapy changes the brain.



What led to our selections?

Could neuroscience have a seductive allure?

- Neuroscience seems to have a unique allure on the way people evaluate information.
- People tend to believe false/erroneous information tied to neuroscience more than true information not tied to neuroscience (even when brain images aren't used).
- People tend to assign improper superiority to neuro-data over other forms of data.

(Beeson & Miller, 2019; Coutinho et al., 2017; Fernandez-Duque et al., 2015; Haslam & Kvaale, 2015; Lebowitz et al., 2015; Lilienfedl, 2014; Nowack & Radicki, 2018; Weisberg, 2008)

Are counselors susceptible to the seductive allure of neuroscience (*in progress*)?

If so, how might this influence our work?

Imagine a client asks you…

“What is going on in my brain, that I feel so depressed?”

How do counselors respond?

- 334 counselors responded
- Findings:
    1. 50% used neuroscience theories
    2. 25% used multiple
    3. Monoamine and neuroplasticity theories were most common
    4. Created model recommendations for neuroeducation

(Field et al., 2019)

What could the implications of this explanation be?

“You are feeling so depressed because X is going on in your brain.”

Bio/Neuro-Genic Explanations can have various impacts

You are feeling so depressed because X is going on in your brain.

I am permanently broken and can't get better…

Well, that's good to know that it isn't all my fault…

Good news

- Reduced shame.
- Increased pain tolerance and regulation.
- New view of challenges with recovery.
- Society might have less judgement and more social acceptance/proximity

(Beeson & Miller, 2019; Coutinho et al., 2017; Fernandez-Duque et al., 2015; Haslam & Kvaale, 2015; Lebowitz et al., 2015; Lilienfeld, 2014; Nowack & Radicki, 2018; Weisberg, 2008)

Perhaps, not so good news

- Clinicians viewed as less empathic.
- Less use of psychosocial interventions.
- More use of pharmacological interventions.
- Society might still view people as innately broken & damaged.

(Beeson & Miller, 2019; Coutinho et al., 2017; Fernandez-Duque et al., 2015; Haslam & Kvaale, 2015; Lebowitz et al., 2015; Lilienfeld, 2014; Nowack & Radicki, 2018; Weisberg, 2008)

Do counselors deliver bio/neuro-genic explanations differently?

Do counselors deliver bio/neuro-genetic explanations differently?

Perhaps it's not about explanation, but it's about exploration.

Do counselors deliver bio/neuro-genetic explanations differently?

Perhaps it's not about explanation, but it's about exploration.

That is the heart of our model.

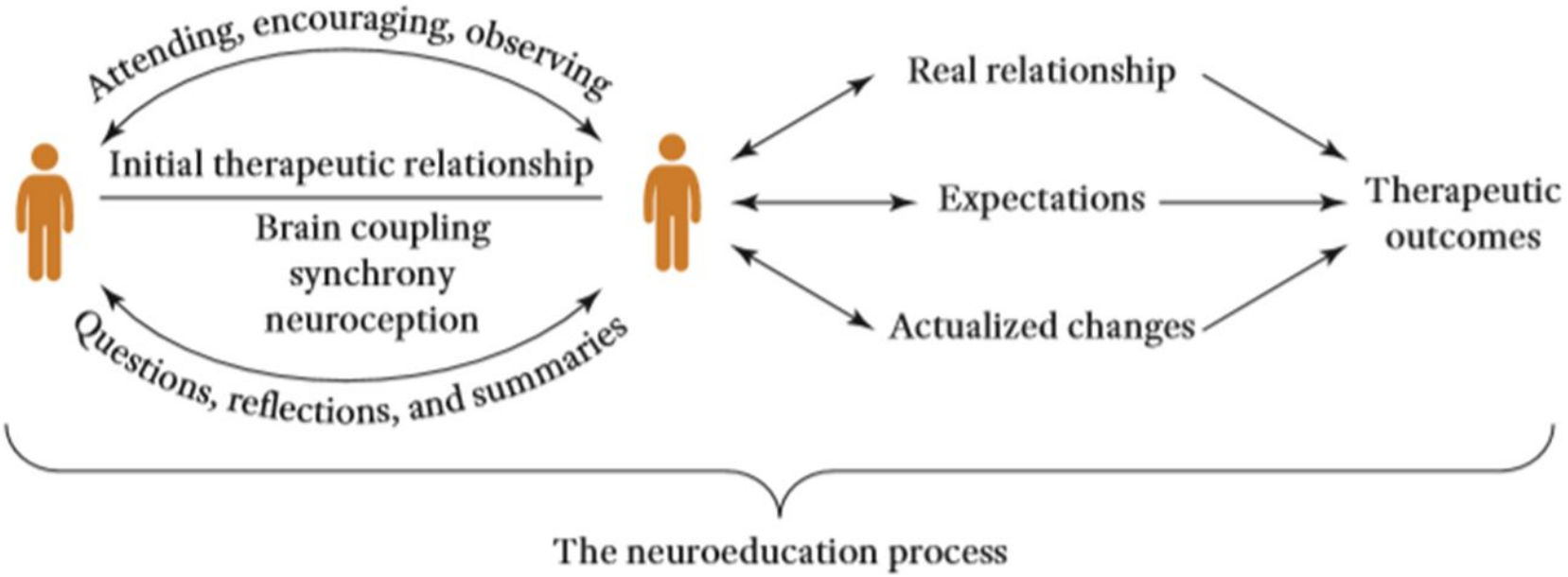


FIGURE 2.2 The Neuroeducation Process Is Informed by the Contextual Model

Common Factors p. 10

Common Factor	Neuroeducation Implication
Goal Consensus/ Collaboration	Neuroeducation is never prescribed or dictated by the counselor. Neuroeducation is presented at the behest of the people being served, which begins a collaborative meaning-making process that compares the neuroeducation information to their past experiences, current challenges/opportunities, and future desires.
Empathy	Empathy is crucial to neuroeducation. Neuroeducation rests on the ability to see another person's experience as they see it rather than how the counselor sees it, reflect this perception, and then share in the emotional experience that follows.
Alliance	Neuroeducation requires an understanding of the potential threats posed by a therapeutic relationship. Therefore, it is essential to foster safe neuroception that drives the therapeutic alliance necessary for the neuroeducation process, and then the neuroeducation process further depends on the therapeutic relationship in which both are affected by one another.
Positive Regard/ Affirmation	Neuroeducation is not about accurate assimilation of knowledge. Rather, it is about exploring what information means within the client's unique developmental and cultural history. In this way, the process is affirmed as clients move closer to the therapeutic gains they desire.
Congruence	Neuroeducation requires the counselor to maintain a balance between their internal experiences and external behaviors. This congruence fosters the neuroeducation process and the synchrony between counselor and client.
Genuineness	Neuroeducation comes from a place of hope to benefit the client's life. Rather than one person holding knowledge and power and bestowing it on another, neuroeducation employs the egalitarian pursuit of knowledge and meaning.
Cultural Adaptation	Neuroeducation, to some degree, is transcultural, although the meaning made from the process is directly linked to and affects the cultural history and intersectionality of the client. In addition, neuroeducation must include metaphors, images, etc., that are culturally aware.
Expectations	Expectations shape experience with neuroeducation, and neuroeducation shapes expectations moving forward. As expectations are explored, processed, and made use of, this bidirectional nature enhances each.

Neuroeducation Attitudes and Intentions

TABLE 1.1

Less Helpful ⟷	More Helpful
Disembodied	Embodied
Standardized	Contextualized
Universalized	Individualized
Reductionistic	Holistic
Arbitrary	Intentional
Dogmatic	Hypothesis driven
Unilateral	Collaborative
Predetermined	Emergent
Judgment	Appreciation
Critical	Compassionate

Neuroeducation 10 Step Process

1.Attend to the Client and the Relationship

2.Explore the Client's Theory and Motivations

3.Identify Neuro-Concepts Relevant to the Client's Story and Developmental/Cultural Context

4.Reflect on Ethical Considerations and the Counselor's Theory and Motivations

5.Consider the Influence of Social Positions and Power Differentials

6.Assess Client Knowledge of and Interest in the Neuro-Concept

7.Determine your Method for Introduction and Exploration

8.Deliver Information Ethically and with Curiosity and Neuro-Humility

9.Use Information as a Vehicle for Exploration

10.Co-Construct a Plan for What to do Next

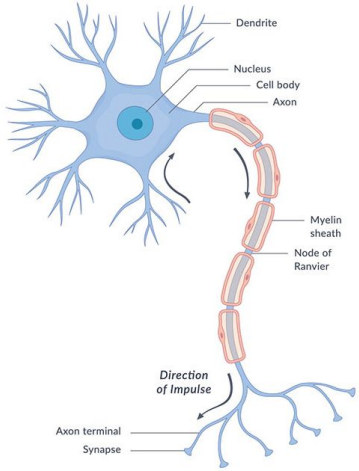
(Beeson et al., *in press*)

Break

Neuroeducation Examples

COMMON NEUROEDUCATION TOPICS

- Neuroplasticity
  - The brain can change! How?
  - What promotes or inhibits change?
  - How counseling changes the brain.
- Physiology of emotions
  - Top-down, bottom-up processing
  - Emotion regulation network
- Social nature of the brain
  - Expected baseline of the brain is to be in trusted, connected relationships
  - Co-regulation, emotion contagion
- Threat response system
  - Adaptive nature
  - Role of the amygdala
- Foundations of health
  - The big three: sleep, movement, nutrition
- Nervous system functioning
  - Autonomic nervous system
  - Hypothalamic-pituitary-adrenal [HPA] axis
- Memory
  - Brain systems involved in memory
  - How events (e.g., traumas) impact memory systems
  - How to enhance learning
- Hormones and neurochemicals
  - Impact of hormonal imbalances on mental health
  - Ways to capitalize on neurochemicals (e.g., dopamine) for optimal functioning
  - Reward pathway in the brain
- Brain development
  - Age-related strengths and challenges
  - The impact of experiences on brain development



Neuroeducation: ANS and Heartmath

Let's Evaluate Eric

- Potential to show my video with HeartMath and have them evaluate me on which of the 10 steps, uses/less-more helpful from book, etc. I did and did not do
- How I could improve, etc.
- https://familyinstitute-my.sharepoint.com/:v:/g/personal/ebeeson_family-institute_org/Eews5CBmuZNCh3lc9wgcM1IBfawR9JeUjuLet8a5THu9Dw?e=2wS2Tc

Small Group Processing

Discuss impressions of the session

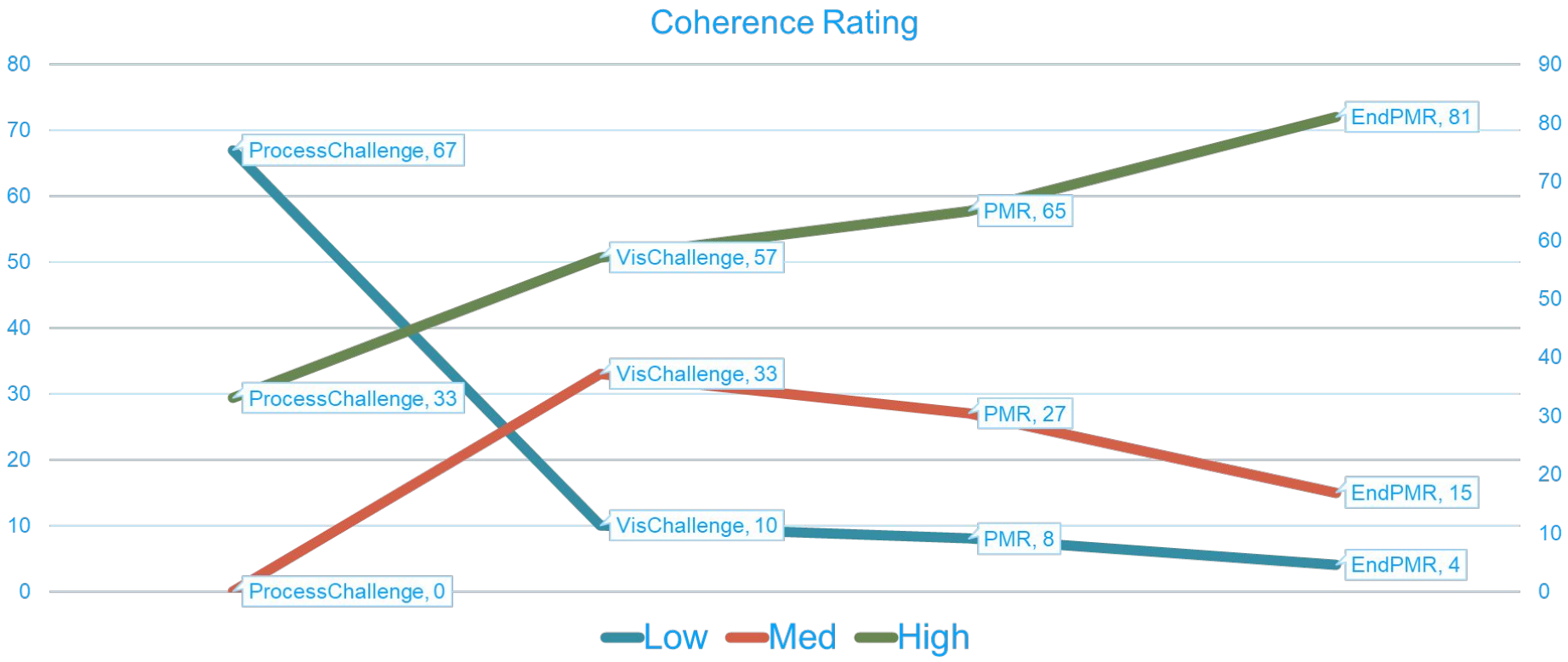
Discuss your ratings of Eric

Identify themes in your discussion

Large Group Processing

What were the key themes?

Eric’s Self Evaluation Using Checklist


Coherence Rating
80
70
60
50
40
30
20
10
0
90
80
70
60
50
40
30
20
10
0
ProcessChallenge, 67
VisChallenge, 57
PMR, 65
EndPMR, 81
ProcessChallenge, 33
VisChallenge, 33
PMR, 27
EndPMR, 15
VisChallenge, 10
PMR, 8
EndPMR, 4
ProcessChallenge, 0
Low
Med
High

Small Group

How would you present and explore the graph with a client?

End of the Day Wrap-Up and Discussion

*If you have a laptop, bring it tomorrow!

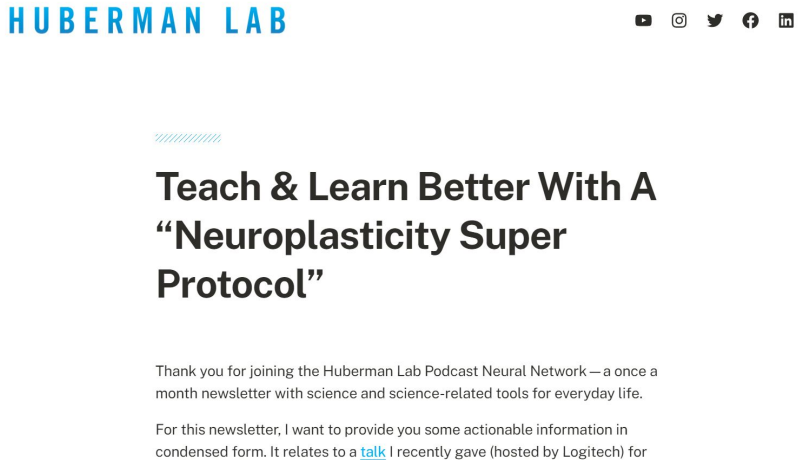
Day 2

Neuroeducation: Neuroplasticity

Backward Bicycle

More Learning on Neuroplasticity

https://www.instagram.com/p/CBwR2SWHZW5/



https://hubermanlab.com/teach-and-learn-better-with-a-neuroplasticity-super-protocol/

If you start to check out today…

7. LIMIT LEARNING SESSIONS TO 90 MINUTES

Solid research shows that 90 minutes is about the longest period we can expect to maintain intense focus and effort toward learning. Shorter bouts are fine but after ~90 minutes, take a break (see #8). Also, space intense learning bouts 2-3 (or more) hours apart. Most people can’t do more than 270 minutes of intense learning bouts per day.

Neuroeducation: Information Processing

Waves of nCBT

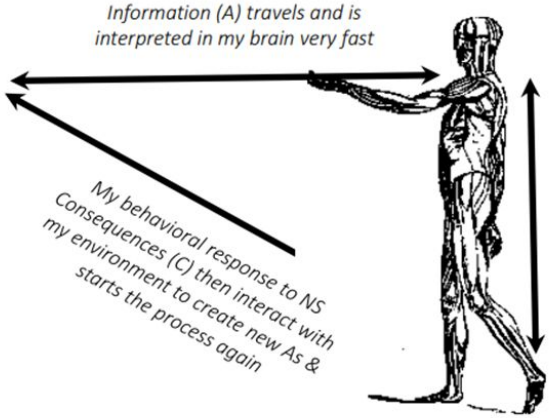
"I don't know what happened, it came like a wave"

B1: Brain from the Bottom-Up—
My brain makes sense of it w/o me knowing it

B2: Brain from the Top-Down—
My brain collects more information and begins to make sense of it while I begin to make decisions about it
* (Brain processing exists w/in the context of various factors including implicit associations, existing schema, primary modes, brain development & activity, and genetic and epigenetic dispositions)

A1: Activating Event—
Something happens

A2: Awareness—
I become aware of what my body is doing
*(Events and awareness exist w/in the context of various sociocultural variables including social injustice, gender roles, family of origin, etc.)



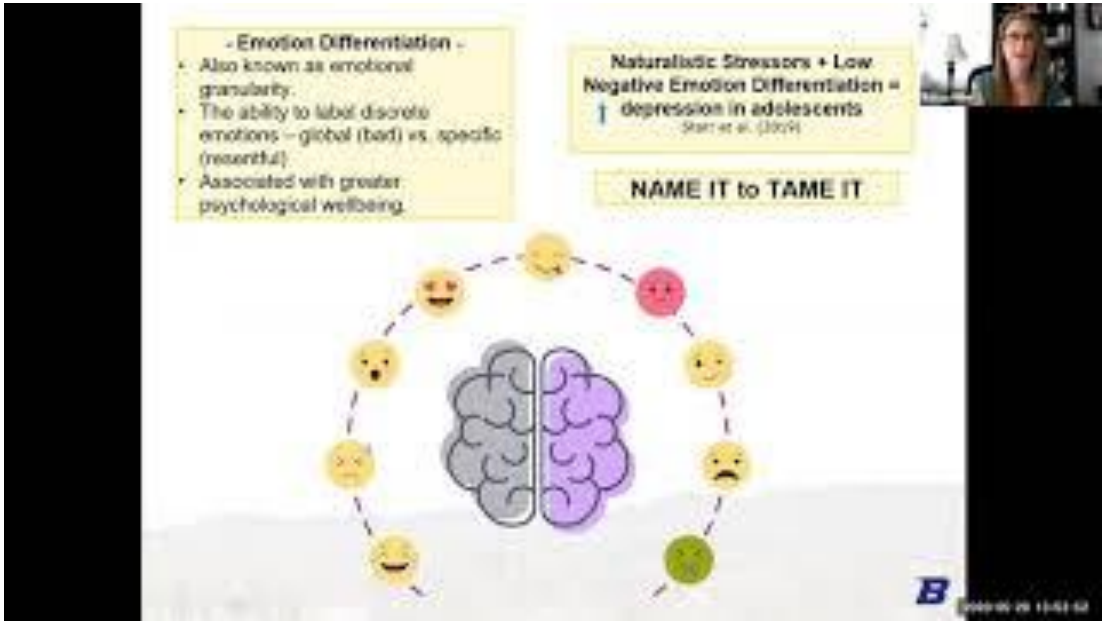
nCBT
Attend. Build. Connect.

C1: Consequence (Nervous System)—
My body does what my brain tells it to do

C2: Consequences (Nervous System)—
My body does what I, via my brain, tells it to do
*(Consequences exist w/in the context of physical development and physiological functioning)

Neuroeducation: Emotions

Name it to Tame It



Keep in Mind Re: Emotions & Neuro

Question: Who are the best self- regulators?

Keep in Mind Re: Emotions & Neuro

- **Problem:** Children of lower-socioeconomic status complete fewer years of education, have a higher prevalence of health problems, and are convicted of more criminal offenses.
- **Prior Research**: Low self-control underlies some of these disparities
- **Solution**: Implement skills training (e.g., character skills, regulation) into school curricula and social services
  - Studied 292 African American teenagers from rural Georgia over 10 years.
  - Measured self-control at age 11 – did interventions – measured self-control and related impacts, as well as DNA methylation profiles (measure of epigenetic aging) at age 22
- **Outcome:** Higher self-control predicted less depressive symptoms, less substance use, and less aggressive behavior – but advanced epigenetic aging
- **Conclusion:** Self-control can be a double-edged sword for low SES youth – resilience is “skin deep”. Outward positive impacts masking emerging problems with physical health. Implications for models of resilience and interventions aimed at reducing social and racial disparities.

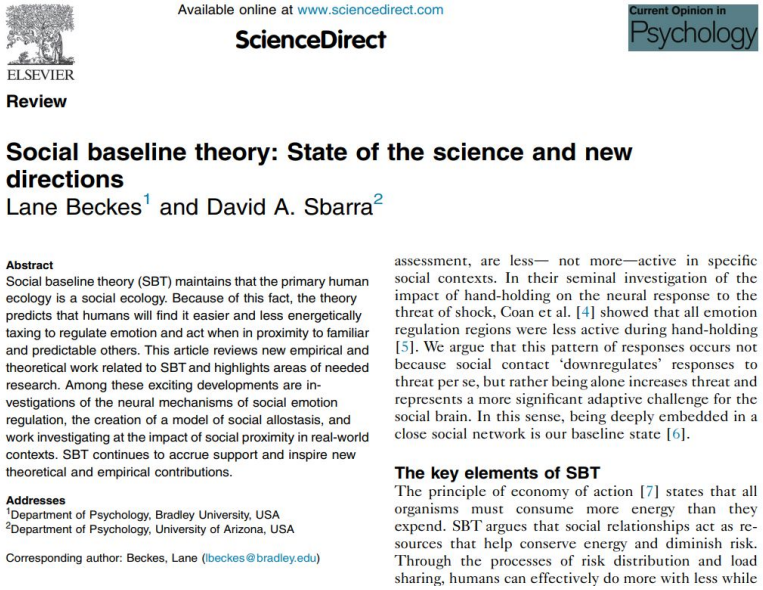
(Miller et al., 2015)

Keep in Mind Re: Neuro & Emotions

Social baseline theory

- The expected environment for the brain is one with trusted and supportive relationships (i.e., familiarity, joint attention, shared goals, and interdependence; Beckes & Coan, 2011; Beckes & Sbarra, 2022).
    - Facing challenges in connection is less metabolically costly to our brain.

Caution: Avoid overemphasis on teaching self-regulation skills. Instead, put your energy toward fostering interpersonal skills and building opportunities for healthy relational connection.



Available online at www.sciencedirect.com
ScienceDirect
Current Opinion in Psychology
ELSEVIER
Review

Social baseline theory: State of the science and new directions

Lane Beckes[1] and David A. Sbarra[2]

Abstract
Social baseline theory (SBT) maintains that the primary human ecology is a social ecology. Because of this fact, the theory predicts that humans will find it easier and less energetically taxing to regulate emotion and act when in proximity to familiar and predictable others. This article reviews new empirical and theoretical work related to SBT and highlights areas of needed research. Among these exciting developments are investigations of the neural mechanisms of social emotion regulation, the creation of a model of social allostasis, and work investigating at the impact of social proximity in real-world contexts. SBT continues to accrue support and inspire new theoretical and empirical contributions.

Addresses
[1]Department of Psychology, Bradley University, USA
[2]Department of Psychology, University of Arizona, USA

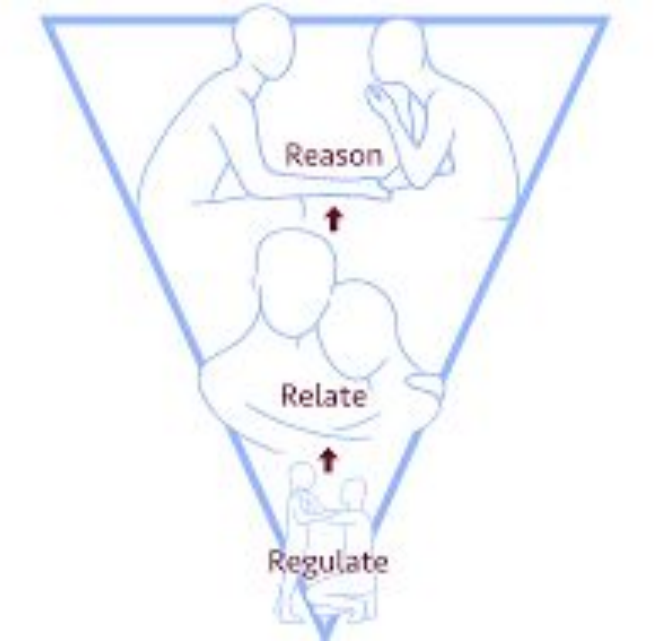
Corresponding author: Beckes, Lane (lbeckes@bradley.edu)

assessment, are less— not more—active in specific social contexts. In their seminal investigation of the impact of hand-holding on the neural response to the threat of shock, Coan et al. [4] showed that all emotion regulation regions were less active during hand-holding [5]. We argue that this pattern of responses occurs not because social contact 'downregulates' responses to threat per se, but rather being alone increases threat and represents a more significant adaptive challenge for the social brain. In this sense, being deeply embedded in a close social network is our baseline state [6].

The key elements of SBT

The principle of economy of action [7] states that all organisms must consume more energy than they expend. SBT argues that social relationships act as resources that help conserve energy and diminish risk. Through the processes of risk distribution and load sharing, humans can effectively do more with less while

Sequence of Engagement



(Perry & Ablon, 2017)

- Cognitive training is most effective when it follows emotional regulation and relational connection:
  - Acknowledge and engage with the negative emotions before reappraising.
  - Cognitive-oriented strategies require access to the prefrontal cortex, which can be inhibited during emotional overwhelm.
  - Cognitive training is not the most effective strategy with young children.

Help Consolidate Your Learning

https://www.youtube.com/watch?v=AKGrmY8OSHM

8. AFTER A LEARNING BOUT, DO A NSDR (NON-SLEEP DEEP REST) PROTOCOL

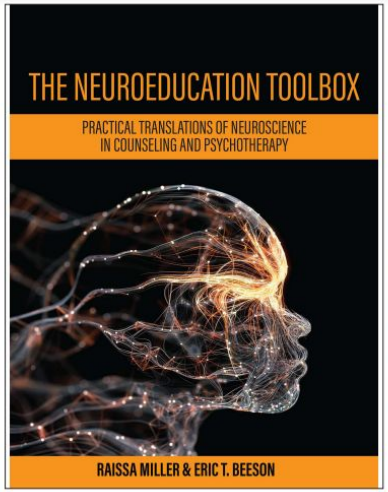
Two studies (on humans) published in the last 2 years show that shallow naps and/or NSDR can enhance the rate and depth of learning. This is an easy practice to incorporate. Within 1 hour of completing a learning bout, do a short NSDR protocol. You have options as to what NSDR you choose: Reveri is a zero-cost (research tested), self-hypnosis app, or take a brief 20 minute nap, or listen to an NSDR script such as Yoga Nidra (I like this 10 minute one and do it daily, or here is a longer 30 minute video that is excellent).

Break

Neuroeducation Resources

Resources

- The Science of Psychotherapy: https://www.thescienceofpsychotherapy.com/
- Brainstorm Live: https://www.webrainstorm.org/
- Clinical Applications of Neuroscience Credential Course: https://www.mentalhealthacademy.com.au/credential/neuroscience/enrol
- Dana Foundation: https://www.dana.org/
- Society of Neuroscience: https://www.sfn.org/initiatives/animals-in-research/tools-and-resources
- Center on the Developing Child at Harvard https://developingchild.harvard.edu/
- National Neuroscience Curriculum Initiative- https://nncionline.org/our-resources/
- BrainFacts: https://www.brainfacts.org/
- Neurocognitive Therapies: https://www.neurocognitive-therapies.com/articles
- The Thoughtful Counselor https://concept.paloaltou.edu/resources/the-thoughtful-counselor-podcast



The Neuroeducation Toolbox
Practical Translations of Neuroscience in Counseling and Psychotherapy
Raissa Miller and Eric T. Beeson

Print: $47.45 **EBook:** $37.95
Pages: 388 pg | **ISBN:** 978-1-5165-3948-2 | © 2021

Use the code **NEURO20** to receive 20% off when you purchase a paperback or ebook copy of the book from the Cognella Title Catalog

Combining scientific research with insightful literature, *The Neuroeducation Toolbox: Practical Translations of Neuroscience in Counseling and Psychotherapy* provides students and clinicians with a set of tools for integrating neuroscience into clinical practice. The text emphasizes the application of neuroeducation and highlights how this powerful intervention can reduce client stress, improve outcomes, and increase levels of collaboration between counselors and their clients.

Opening chapters demonstrate the myriad uses of neuroeducation in practice and explain how to facilitate the neuroeducation process. Readers explore key principles of brain development, learn about brain anatomy and physiology, and develop understanding of the autonomic nervous system. The embodied brain, memory systems, and the social emotional nature of the brain are addressed. The book closes with discussions of the technical applications of neuroscience and the future of neuroeducation. Each chapter features diverse and thought-provoking literature on neuroscience and creative neuroeducation activities written by counselors, psychotherapists, and scholars in the field. Ethical and multicultural considerations are also highlighted in each activity chapter.

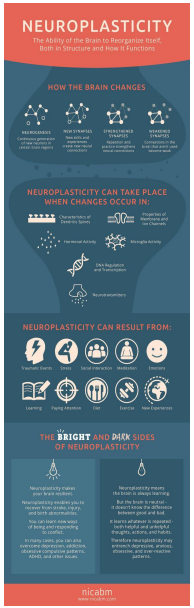
The Neuroeducation Toolbox is an ideal resource for courses in counseling and psychotherapy, especially those that emphasize neuroscience research and neuroeducation. Practicing clinicians will also find the text a valuable addition to their libraries.

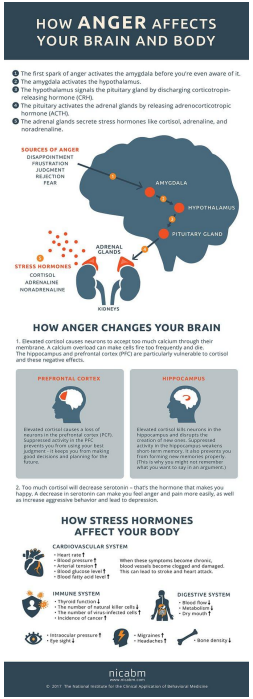
Raissa Miller is a Licensed Professional Counselor and holds a Ph.D. in counseling from the University of North Texas. She is an assistant professor of counselor education and coordinator of the Addiction Counseling Cognate at Boise State University. Dr. Miller specializes in applying principles of neurobiology within counseling to address a wide range of developmental and clinical concerns.

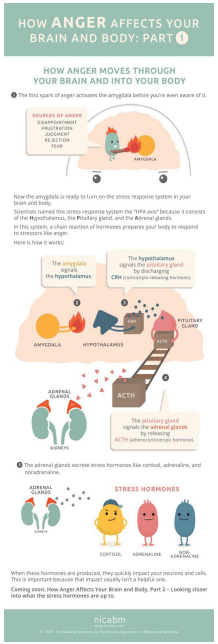
Eric T. Beeson is a Licensed Professional Counselor and holds a Ph.D. in counselor education from Ohio University. He is a core faculty member of The Family Institute at Northwestern University. Dr. Beeson's research focuses on the infusion of neuroscience into counseling research and practice.

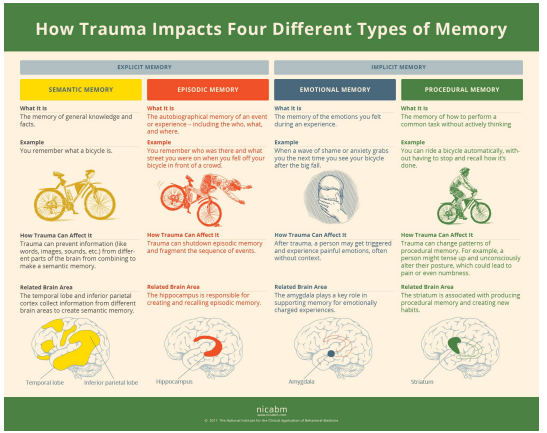
Neuroeducation: Create Your Own

Link to Resource Folder







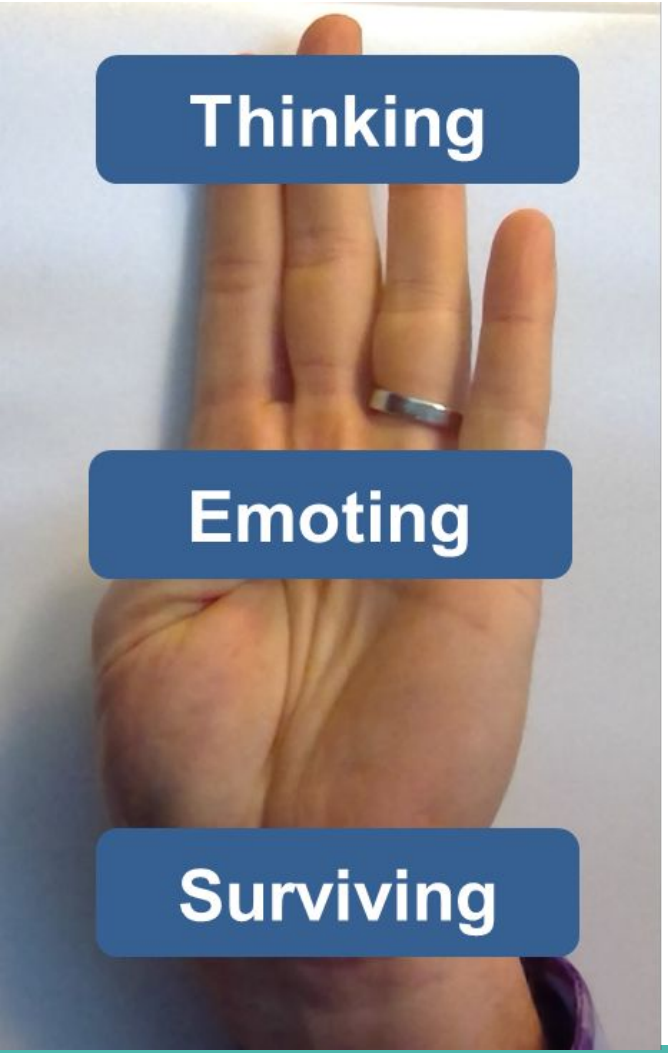


(Source: https://www.nicabm.com/)

Other Possible Neuroeducation Demos

Hand Model

SES and WOT Diagram



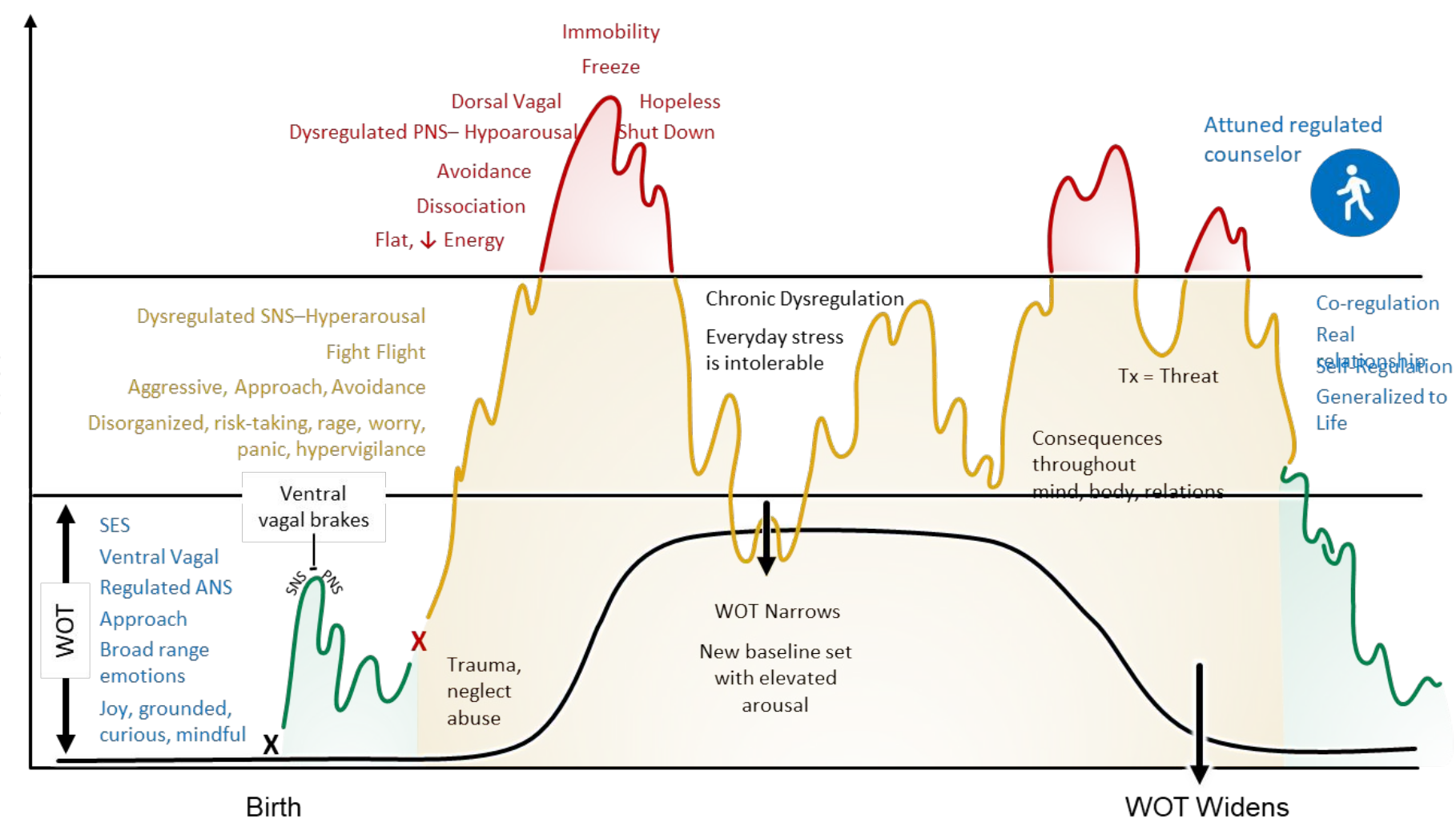
Prefrontal cortex
Neocortex
Cerebrum

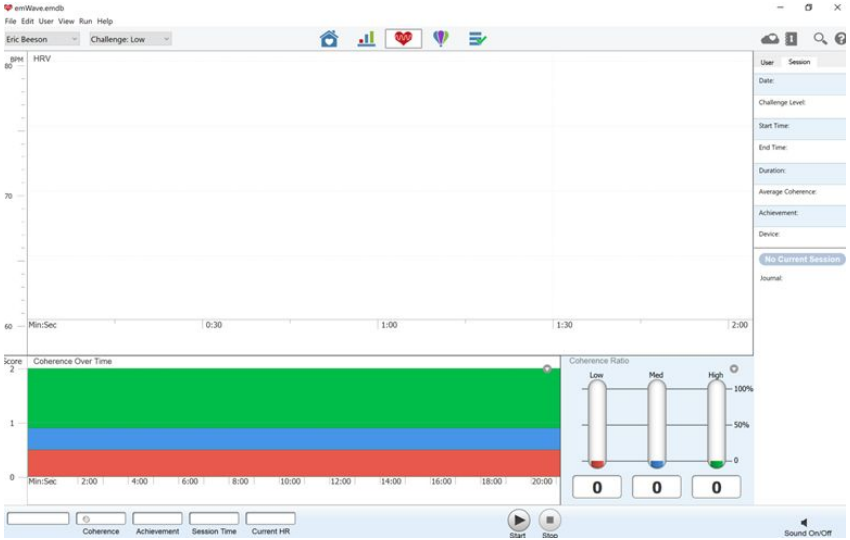
More conscious, slower intentional, planful

Limbic regions
Cingulate cortex
Amygdala, hippocampus
Diencephalon: thalamus, hypothalamus

Cerebellum
Base of the skull
Brain stem
Spinal cord and vagus nerve
Body brains (heart, gut)

Less conscious, quick, reactive


Immobility
Freeze
Dorsal Vagal
Hopeless
Dysregulated PNS– Hypoarousal
Shut Down
Avoidance
Dissociation
Flat, ↓ Energy
Attuned regulated counselor
Dysregulated SNS–Hyperarousal
Fight Flight
Aggressive, Approach, Avoidance
Disorganized, risk-taking, rage, worry, panic, hypervigilance
Chronic Dysregulation
Everyday stress is intolerable
Tx = Threat
Co-regulation
Real relationship
Self-Regulation
Generalized to Life
Consequences throughout mind, body, relations
Ventral vagal brakes
SNS
PNS
WOT
SES
Ventral Vagal
Regulated ANS
Approach
Broad range emotions
Joy, grounded, curious, mindful
X
X
Trauma, neglect abuse
WOT Narrows
New baseline set with elevated arousal
Birth
WOT Widens


emWave.emdb
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Eric Beeson
Challenge: Low
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User
Session
Date:
Challenge Level:
Start Time:
End Time:
Duration:
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Achievement:
Device:
No Current Session
Journal:
Score
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Min:Sec
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4:00
6:00
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10:00
12:00
14:00
16:00
18:00
20:00
Coherence Ratio
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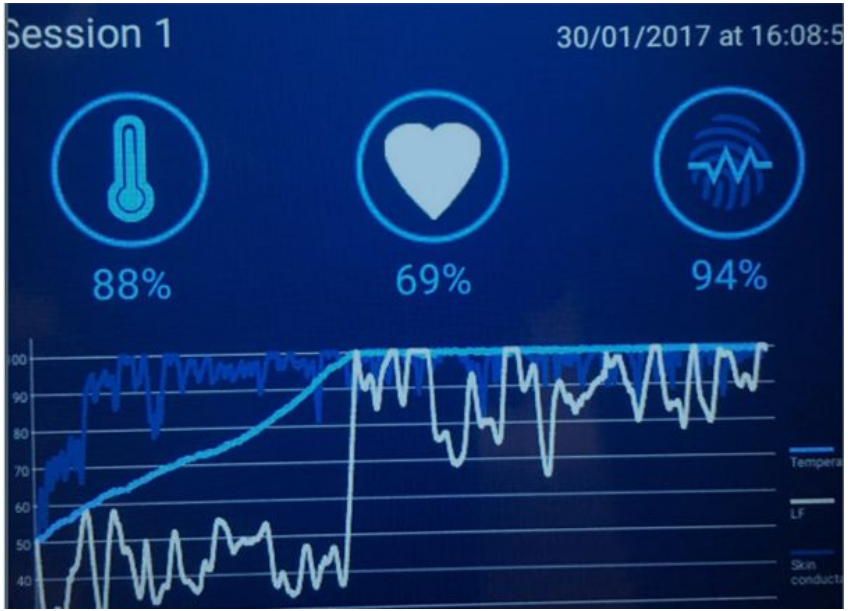
Med
High
100%
50%
0
0
0
0
Coherence
Achievement
Session Time
Current HR
Start
Stop
Sound On/Off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