Neuropsychological Understanding of Complex Trauma and Opiate Addiction

Ohio Opiate Conference 2018

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Does the Mind Exist?
Mind Awareness

It can’t be seen or quantified, so it is ignored, although we “know” it’s there.

“Are you out of your brain?” “Have you lost your brain?” “Sorry, my brain was wondering.”


Our mind is our most valuable resource!

“Neural maps (clusters) refer to a pattern of activity in the brain distinct from the mind.”

“The mind deserves its own description because that private (unique) experience is precisely the phenomenon we wish to explain (understand).”

Damasio 2012
Brain, Mind and Addiction

Medication Assisted Treatment

Medication is for your brain, treatment is for your mind!
Medication allows you the opportunity to get your mind back!
To get your life back you need to get your mind back!

Physiology is not the whole story!

“Squirrel Brain” “Hijacked Brain”

“So that’s why I am an addict!”

“Squirrel Brain” The rest of the story. The neocortex/PFC.

“Hijacked Brain” The “mind” (PFC) can free the “hostage”.

Are we creating “Medication Mills”? 
We Are All Addicted

Oxygen
Food
Water
Digestion and Elimination
Sleep

Shelter
Sex Drive
Attachment/Bonding-Relationships
Orientation/Control
Homeostasis: Physical-Emotional-Cognitive
Basic Human Need

“The attempt to regulate affect – to minimize unpleasant feelings and to maximize pleasant ones – is the driving force in human motivation.”

Weston - 1997

“Restoring homeostasis (physical-emotional safety and calm), even temporarily, is the cornerstone of life management.”

Damasio - 2010
Brain Stem and Limbic System

Brain Stem
Physical Pain?  
or  
Physical Comfort?

Limbic System
Danger – Anxiety?  
or  
Safety – Calm?

Determines Behavioral Response

These unconscious questions and responses are first and foremost throughout our lifespan.
<table>
<thead>
<tr>
<th>Left Hemisphere</th>
<th>Right Hemisphere</th>
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<tbody>
<tr>
<td>Identity - What</td>
<td>Self – Who</td>
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<tr>
<td>Cognitive</td>
<td>Visceral-Emotional</td>
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<tr>
<td>Separation</td>
<td>Integration</td>
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<td>Didactic</td>
<td>Immersion</td>
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<td>Learning</td>
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<td>Verbal</td>
<td>Non-Verbal</td>
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<td>Explicit</td>
<td>Implicit</td>
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<td>Memory</td>
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<td>Logical</td>
<td>Physiological</td>
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<td>Sequential</td>
<td>Emotional</td>
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<td>Language</td>
<td>Imagery</td>
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<td>Known</td>
<td>“Unknown”</td>
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<td>Conscious</td>
<td>Unconscious</td>
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<tr>
<td>Reflective</td>
<td>Reactive</td>
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<td>Intellectual</td>
<td>Emotional</td>
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<tr>
<td>Truth</td>
<td>Truth</td>
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<tr>
<td>Here and Now</td>
<td>There and Then</td>
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<tr>
<td>Anti-Symptom</td>
<td>Pro-Symptom</td>
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</tbody>
</table>
Craving
Self-Awareness, Self-Regulation: Self-Compassion, Self-Esteem, Self-Efficacy.

When the desire for a valued future is stronger than the desire for immediate relief. Don’t give up what you want most, for what you want now.
How Did I Become Who I Am?

Biology creates a grownup.

Environment creates an adult.

Mind Regulation

Brain Mechanism

Relationships Sharing Energy, Information

Adapted Siegel - 2012
Development of Self
Autobiography

“All experiences in your life – from single conversations to your broader culture – shape the microscopic details of your brain. Neurally speaking, who you are depends on where you have been. Because your experiences and subsequent brain wiring continue to change your whole life, your identity is a moving target; it never reaches an end point.”

David Eagleman Ph.D., Neuroscientist – 2015
The Brain: The Story of You

“If I want to influence your sense of self, I must do it by words and actions, that once they leave me become a part of you.” (Your sense of self and what you expect of yourself, others and the world, is an accumulation of “stories” told to you by parents and other important people in your life, about you, about other people and the world.)

Adapted Fredrick Feinberg M.D. – 2009
From Axons to Identity

“We do not out achieve what we have been taught we deserve!”
“My present and my future met in a room for the first time. (It was very, very tense.)

My Past said to My Present: (RH to LH)

“I am going to make you choose relationships, make decisions, and behave in certain ways, and you won’t know why.”

My Present said to My Past: (LH to RH)

“That’s OK because I am just going to make things up to hide the fact I don’t know why I am engaging in self-sabotaging behaviors, like choosing to be in unhealthy relationships, making poor decisions, and behaving in ways that creates trouble for me.”

After watching this conversation My Reflective Self (Prefrontal Cortex) thinks:

“If I don’t find a way to teach these two how to communicate honestly and respectfully I am trapped.”
“Male child with ACE score of 6 has a \textbf{4600\% increase} in likelihood of later becoming an IV drug user, compared to a male child with an ACE score of 0. Might drugs be used for the relief of profound anguish dating back to childhood experiences? Might it be the best coping device that an individual can find?”

(Fellitti, et. al. 1998)
Neurological Growth and Brain Integration
The Developing Mind

Frontal Lobe
Normal Myelination
Normal Activation

Frontal Lobe
Lack of Myelination
Under-Activation

Attachment Related Neurological Enhancement
Attachment Related Neurological Impairment
Critical Moments in the Development of Your Mind-Self

When you were growing up how did your parents or authority figures respond to you when you made a mistake? When you needed encouragement, help and emotional comforting?

Attunement?

**Attacked**
- Object
- Insecure Attachment
- Fearful/Disorganized
- Shame/Humiliation
- Anger/Rage
- Anxiety/Depression

**Ignored**
- Invisible
- Insecure Attachment
- Dismissive/Anxious
- Shame/Humiliation
- Anger/Rage
- Anxiety/Depression

**Indulged**
- Incompetent
- Insecure Attachment
- Anxious/Dismissive
- Shame/Humiliation
- Frustration/Anger
- Anxiety/Depression

**Nurtured**
- Valued/Competent
- Secure Attachment
- Compassion
- Confidence
- Self-Efficacy
- Positive Affect
Trauma

Acute – Type I – Obvious - Severe - Single Event

What happened to me? Why

Chronic – Type II – Obvious and Subtle - Multiple Events Over Time

Who am I? Why did it happen?

Relational Trauma

Developmental Trauma Disorder (DTD) – Childhood and Adolescent

Complex Trauma Syndrome (CTS) – Adulthood

Development of Self

Who am I, and How did I become Who I am today?

Why do I do, What I do, When I do it? What I deserve?
Relational Trauma

**Human Origin:**
Physical, Sexual, Psychological - verbal, emotional, neglect, abandonment.

**Damage Order: Descending Order**
Primary Caregiver (perpetrator or enabler)
Other Family Members
Betrayal Trauma - Hypocrisy
Trusted Adults (Teacher, Coach, Mentor, Priest)
Strangers
*Illness and Injury
*Natural Disasters

**Profound Brain and Mind Effects:**
Sensitized Limbic System, Neurological Underdeveloped Prefrontal Cortex (Kindling Effect)

**Result:**
Self-Sabotaging/Self-Soothing Behaviors (Internalizing-Externalizing Behaviors)
### Complex Trauma Syndrome

**Inability to Self-Regulate and Experience Relational Success**

<table>
<thead>
<tr>
<th>Extreme Mood Lability: Unregulated/Dysregulated Emotional Extremes</th>
<th>PTSD Symptoms: Avoidance/Intrusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Isolation, Alienation, Detachment</td>
<td>Undiagnosed/Unresponsive Medical Symptoms</td>
</tr>
<tr>
<td>Excessive Self-Sufficiency, Fear Intimacy</td>
<td>Chronic Medical Issues: Autoimmune Disorders</td>
</tr>
<tr>
<td>Excessive Dependency, Passivity, Superficial Compliance (False Self)</td>
<td>Chronic Low Self-Esteem, Self Hate</td>
</tr>
<tr>
<td>Self-Sabotaging Behaviors (Addictions/Compulsions)</td>
<td>Lack of Tolerance/Poor Recovery Mild Stressors</td>
</tr>
<tr>
<td>- Substances, Love, Relationships, Sex, Gambling, Shopping, Working, Exercising, Eating Disorders, Self-Mutilation, Suicidality</td>
<td>Shame, Guilt, Self Blame, Unresolved Grief</td>
</tr>
<tr>
<td>Impulsive, High Risk Behaviors</td>
<td>Insecure Attachment Styles (Anxious/Dismissive)</td>
</tr>
<tr>
<td>Uncontrolled Anger and Aggression (Self/Others)</td>
<td>Chronic Feelings of Helplessness, Ineffectiveness</td>
</tr>
<tr>
<td>Episodes of Cruelty Toward Others/Animals</td>
<td>Confusion/Incoherence Re: Personal Events, Life Events</td>
</tr>
<tr>
<td>Dysfunctional/Pathological Relationships</td>
<td>Chronic Hopelessness of Ever Being “Normal”</td>
</tr>
<tr>
<td>Persistent Dissociation</td>
<td>Information Processing Disorders</td>
</tr>
<tr>
<td>Social Problems: Suspicion/Mistrust, Lack of Social Skills</td>
<td>Psychotic Like Experiences</td>
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*Adapted Courtious and Ford 2013*
Self-Regulation is a Universal Human Biological Need
Self-Regulation – Health    Self-Dysregulation – Dis-Ease

**Emotion Regulation**
Affect Acceptance, Awareness, Accurate Identification and Origin, Management – Intensity, Duration, Type. WZOET.

**Emotion Dysregulation**
Affect Phobia, Temper, Impaired Recovery, Psychic Numbing, Expressive Emotion Impairment, NZOET.

**Somatic Regulation**
Sleep Health, Nutritional Awareness, Digestive Health, Awareness Somatic Issues = Emotional Distress.

**Somatic Dysregulation**
Sleep Disturbance, Eating, Digestive Functions, Somatoform Dissociation: Pain, Conversion Symptoms

**Attentional Regulation**

**Attentional Dysregulation**
Heightened Vigilance, Threat-Related Preoccupation or Avoidance of Cues

Adapted: Courtois and Ford  2013
Self-Regulation: Fundamental Human Biological Need
Self-Regulation – Health  Self-Dysregulation – Dis-Ease

Relational Regulation

Relational Dysregulation
Expect-Experience Betrayal and Victimization, Physical and Emotional Boundary Diffusion, Expect Attachment Loss

Behavioral Regulation

Behavioral Dysregulation
Threat Related Reactive Aggression, Threat Related Reactive Avoidance, Extreme Risk Taking, Self-Sabotaging/Self-Soothing Behaviors (Solution Becomes the Problem)

Intrapersonal Regulation

Intrapersonal Dysregulation
Self Hate, Perception of Self as Permanently Damaged

Adapted: Courtois and Ford 2013
Addiction

Self-Harm  Alcohol-Drugs
Food - Sugar  Anti-Social Behavior
Exercise  Gambling
Sex  Working
Shopping  Pornography
- **Medial Prefrontal Cortex (MPFC)**
  - Self-Awareness, Identity Development, Mindsight

- **Dorsolateral PFC**
  - Brings memories to mind, sorting, comparing them.
  - Insight, judgment, logic to new perspectives.
  - Make decisions, adjust previous decisions.

- **Ventral Striatum (accumbens)**
  - Impulsive actions leading to goals.
  - Feelings of attraction, desire, craving.
  - Attraction System. Impulsivity.

- **Dorsal Striatum**
  - Shift from impulsive to compulsive.
  - Stimulus-Response (Cue) Learning
  - Actions automatic, difficult to turn off.
  - Action System. Compulsivity.

- **Midbrain**
  - Sends dopamine to limbic system and PFC.

- **Amygdala**
  - Acquires and maintains emotional associations.
  - Trigger same emotion on subsequent occasions.
  - Focuses attention on likely source of emotion.

- **Orbitofrontal Cortex (OFC)**
  - Closely connected to amygdala and ventral striatum.
  - Creates context-specific interpretations of highly motivating situations.
  - Generates expectancies and helps initiate an appropriate response.

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**Brain Regions Most Relevant to Addiction**

**Impulsivity Becomes Compulsivity**

- **Self-Awareness and Self-Regulation**
- **Attachment Motivation**
Self-Sabotaging – Self-Soothing Behavior
The Solution Compounds the Problem

The Problem:
Insufficient awareness and understanding of self-dysregulation, and inability to re-regulate.

The Solution:
Self-Sabotaging/Self-Soothing Re-Regulating Behaviors

Behaviors providing immediate or quick self re-regulation.

Self-Sabotaging Behavior:
Any behavior engaged in to the point that other necessary and important aspects of your life is ignored, harmed or destroyed.

Self-Enhancing – Self-Soothing Behavior
The Solution Resolves the Problem

The Problem:
Experience of Self-Dysregulation (Dis-Ease)

The Solution:
Self-Enhancing/Self-Soothing Re-Regulating Responses
Responses resulting in self re-regulation.

Self-Enhancing Responses:
Any response that returns person to a regulated state, restoring and enhancing necessary, important aspects of life.

Reflective Functions: mindfulness, mindsight, passive and active meditation.
Approach Responses: problem solving, attachment repairing interactions.
Opiates block the experience of physical and emotional pain. Ultimate “Artificial” Emotional and Physical Re-Regulator

**Anterior Cingulate Cortex (ACC)**
Physical and Emotional Experience of Pain
Neuropsychological Brain Adaptations From Opiates/Opioids

Bonding System
Opiates/Opioids

- **Anxiolytic**
  - Oxytocin
  - Decreases Emotional Pain

- **Analgesic**
  - Endorphins
  - Decreases Physical Pain

- **Motivational**
  - Dopamine
  - Motivates
  - Repeat Behavior
### Process of Recovery

#### Narrow Zone of Emotional Tolerance
Managing, Discharging or Avoiding Emotional Distress

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<th>Aggression Eating Disorders</th>
<th>Fragmented Self</th>
<th>Substance Abuse Self-Harm</th>
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<td></td>
<td><strong>CHAOS</strong></td>
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<td></td>
<td><strong>Impulsive Behavior</strong></td>
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<td></td>
<td><strong>Awareness</strong></td>
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<tr>
<td>Inner/Outer World Integration Relationship Success</td>
<td>Coherent/Consistent Self and Identity</td>
<td>Mindful Mind-Sight</td>
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<td>Safe and Calm</td>
<td>Self-Regulation</td>
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<td>Self-Criticism Rumination Panic</td>
<td>Depleted Self RIGIDITY</td>
<td>Social Inhibition Attention Problem</td>
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<td>Concentration Issues</td>
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Least efficient neuronal connections between the limbic system (emotional brain), hippocampus (memory), and prefrontal cortex (thinking, evaluating brain).
### Process of Recovery

**Widening Zone of Emotional Tolerance**
Managing, Discharging or Avoiding Emotional Distress

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<tr>
<td>Relationship Success</td>
<td><strong>Safe and Calm</strong></td>
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<td><strong>Awareness</strong></td>
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<td><strong>Awareness</strong></td>
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<tr>
<td>Avoidant Behavior</td>
<td>Rigidity</td>
<td>Avoidant Behavior</td>
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Developing neuronal efficiency between the limbic system (emotional brain), hippocampus (memory) and prefrontal cortex (thinking, evaluating brain).
## Process of Recovery

### Wide Zone of Emotional Tolerance
Managing, Discharging or Avoiding Emotional Distress

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Highly developed neuronal efficiency between the limbic system (emotional brain), hippocampus (memory) and prefrontal cortex (thinking, evaluating brain).