Michael Barnes Family Institute

Trauma 101:
PTSD, Neuroscience, Memory, and Therapy

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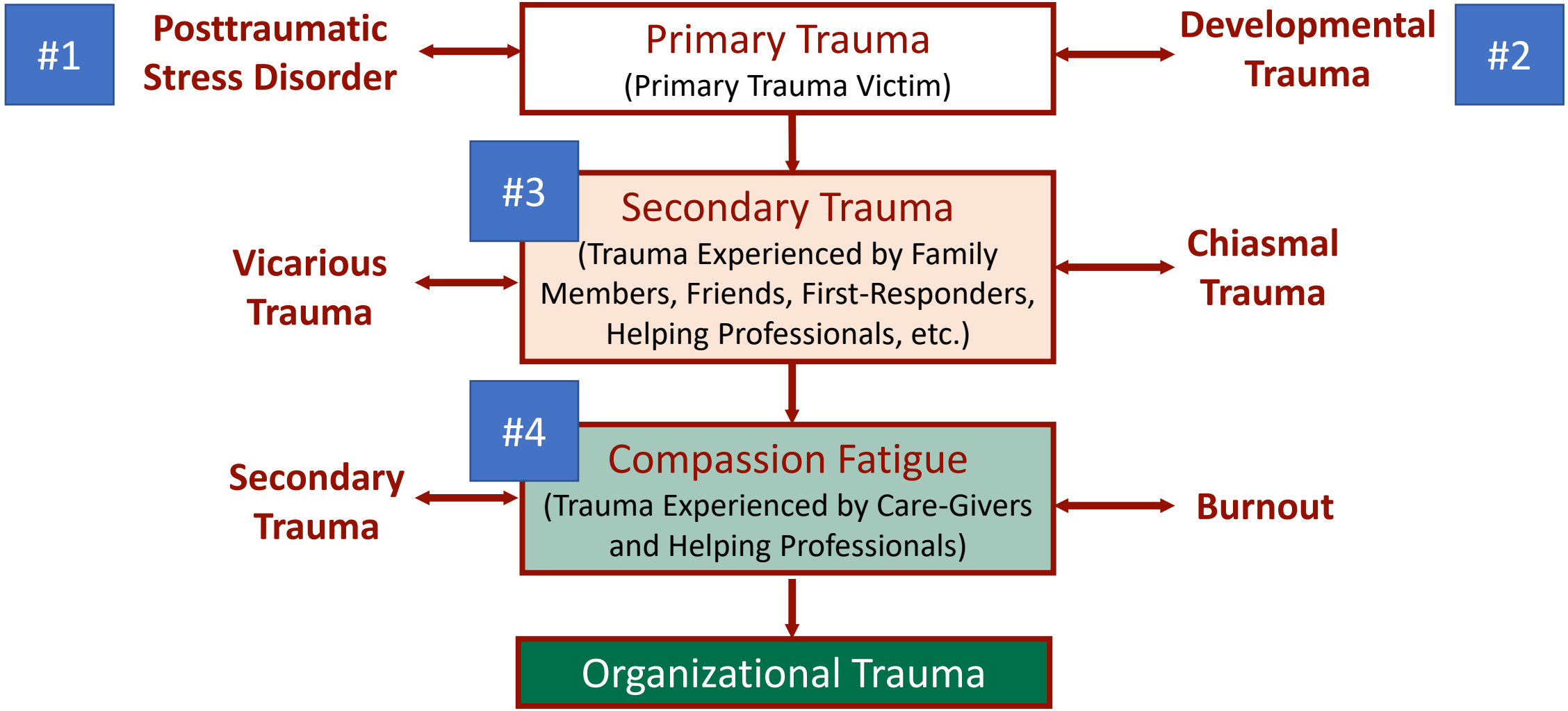
Founder and Director of the Michael Barnes Family Institute

Continuum of traumatic stress



Program Description

Posttraumatic Stress Disorder is one of the most common presenting problems for individuals seeking treatment for addiction, depression, and anxiety. In order to successfully treat it, it is critical for therapists, counselors, case managers, and other service providers to have a thorough understanding of the biological, psychological and social factors that clients will need to work on in treatment. In this training, Dr. Barnes will present a neurobiological model of the trauma response, significant factors that influence trauma memories, common symptoms of individuals with PTSD, and effective methods of treatment.

Learning Objectives

1.) Participants will be able to identify symptoms of PTSD.

2.) Participants will be able to discuss the neurobiology of a trauma response, how it impacts an individual's memory of the event, and how future threat response can be impacted as a result of the past trauma.

3.) Participants will be able to recognize the difference between top-down and bottom-up interventions to assist in meeting clients where they are in the trauma response.

4.) Participants will be able to plan trauma interventions based on Judith Herman's Tri-Phasic Model of trauma treatment.

Introduction - What is PTSD?

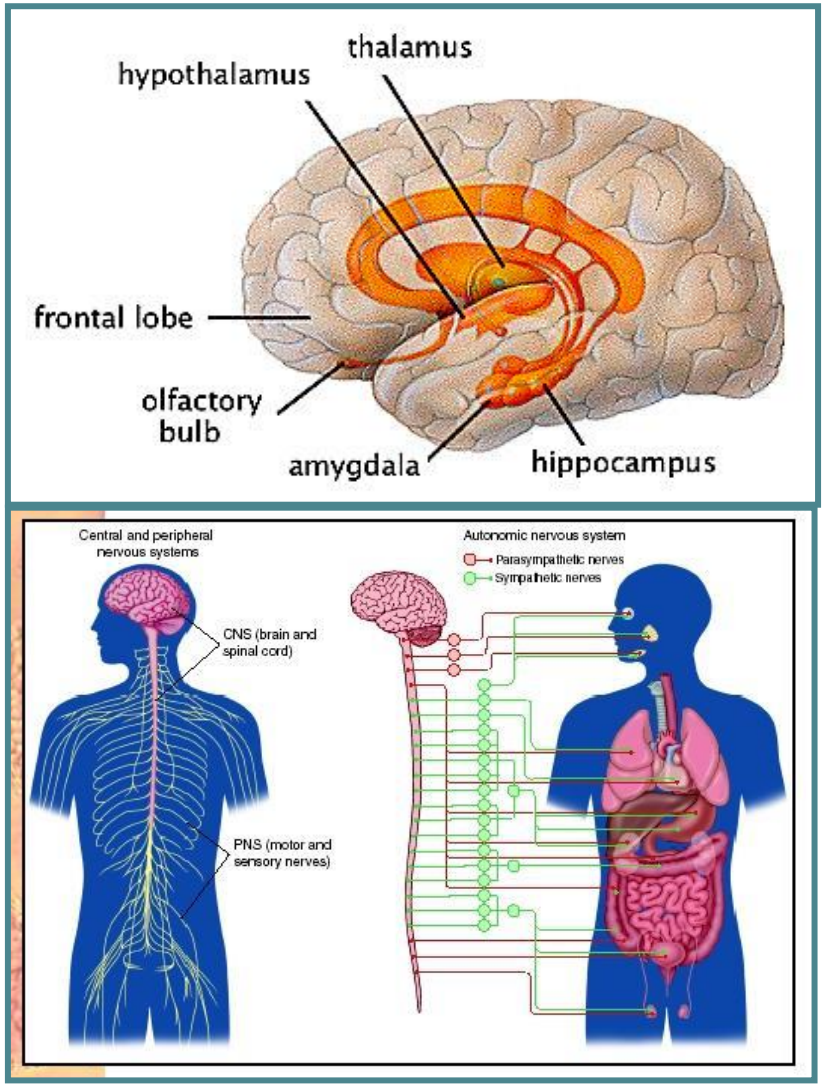
It is a:

Bio-Psycho-Social-Spiritual Disorder

At its core, PTSD is a biological process that results in significant emotional, systemic, and behavioral consequences.

Trauma Integrated addiction treatment MUST recognize the biological and systemic factors that maintain the disorder and identify appropriate interventions for treating each.

Like Addiction, PTSD is a family disease!

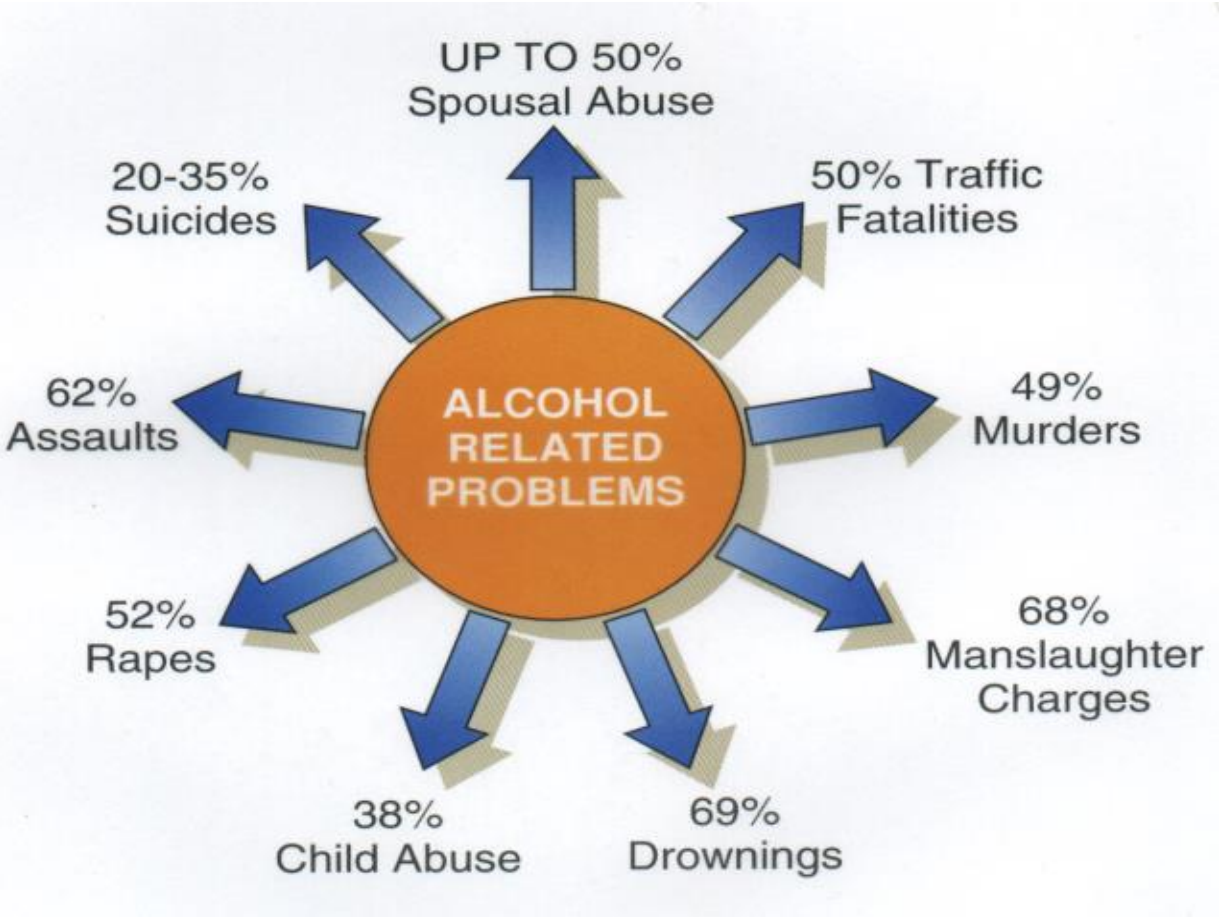


Significance of trauma

- According to the National Center for PTSD:
- 61% of men and 51% of women report having experienced at least one traumatic event (lifetime)
- 10% of men and 6% of women report having experienced four or more traumatic events (lifetime)

- Of these trauma victims, 8% receive diagnosis of PTSD
- 1% of American population (New England Journal of Med)
- Women are twice as likely to be diagnosed with PTSD as Men! 10% of Women and 5% of men who experience traumatic event will be diagnosed! (Tolin & Foa, 2006)

Relationship between addiction & Trauma



Each day in the United States there are:

- 43 people will be murdered (15,695 annual)
- 2,200 rapes (moderate estimate) (803,000 annual)
- 123 suicides (20 veterans per day) (44,895 annual)
- 128 opiate overdose deaths (46,720 annual)
- 241 alcohol related deaths (87,965 annual)
- 4,754 people with be diagnosed with cancer and 1,670 will die from cancer. (609,550 annual)
- 2,191 people die from heart disease (800,000 annual), 573 die from sudden cardiac arrest (209,145 annual)
- 1,808 people will die in tobacco related illnesses (659,920 annual)
- 102 people die from automobile accidents (37,230 annual)
- Mass shootings in schools, churches, etc.

PTSD & Substance Abuse Disorders

Clients with PTSD/SUD more vulnerable to poorer short & long-term outcomes, more likely to Relapse!

Prevalence of PTSD and Substance Use Disorders

Bride (2007) - of treatment seeking substance abusers:

- 60% to 90% have history of physical or sexual abuse.
- 30% to 50% meet criteria for PTSD.

Among persons who develop PTSD, 52% of men and 28% of women are estimated to develop an alcohol use disorder. 35% of men and 27% of women develop a drug use disorder (Najavits, 2007)

The numbers are even higher for veterans, prisoners, victims of domestic violence, first responders, etc. (Najavits, 2004a, 2004b, 2007)

Individuals with PTSD are 3 to 4 times more likely to develop SUD's than individuals without PTSD have earlier histories with A & D, more severe use, and poor treatment adherence.

(Khantzian & Albanese, 2008)

DSM-5 Diagnostic Criteria for PTSD

- Criterion A: Traumatic Event
  - *How does someone get traumatized?*

  - Direct *personal experience* of an event that involves threatened death, actual or threatened serious injury, or threat to one's physical integrity;

  - Or *witnessing an event* that involves death, injury, or a threat to the physical integrity of another person;

  - Or *learning about* unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associates;
  - Or *experiencing repeated or extreme exposure to aversive details of the traumatic event* (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse).

DSM V

DSM-5 Diagnostic Criteria for PTSD

- Criterion B: Intrusion or Re-Experiencing
  - Intrusive thoughts or memories
  - Nightmares related to the traumatic event
  - Flashbacks, feeling like the event is happening again
  - Psychological and physical reactivity to reminders of the traumatic event, such as an anniversary

- Criterion C: Avoidant Symptoms
  - Avoidant symptoms describe ways that someone may try to avoid any memory of the event, and must include one of the following:
    - Defensive Avoidance
      - Avoiding thoughts or feelings connected to the traumatic event
      - Avoiding people or situations connected to the traumatic event

DSM-5 Diagnostic Criteria for PTSD

- Criterion D: Negative alterations in mood or cognitions
  - Decline in someone's mood or though patterns following the traumatic event, which can include:
    - Memory problems that are exclusive to the event (inability to recall key features)
    - Negative thoughts or beliefs about oneself or the world
    - Distorted sense of blame for oneself or others, related to the event
    - Being stuck in severe emotions related to the trauma (e.g. horror, shame, sadness)
    - Severely reduced interest in pre-trauma activities
    - Feeling detached, isolated or disconnected from other people

- Criterion E: Increased Arousal Symptoms
  - symptoms are used to describe the ways that the brain remains "on edge," wary and watchful of further threats. Symptoms include the following:
    - Difficulty concentrating
    - Irritability, increased temper or anger
    - Difficulty falling or staying asleep
    - Hypervigilance and efforts to control
    - Being easily startled

Common Symptoms of Traumatic Stress

- Hypervigilance
  - Watching everything around you for any type of threat.
  - Looking at facial expressions (anger, frustration, disappointment, expectation, disrespect, etc.)
  - Neuroception (happens unconsciously – part of procedural memory)
  - Constantly ready for fight, flight, freeze response
- Control
  - Making every attempt to be in charge of your life.
  - Putting pressure on others to do what you want (i.e., makes you feel safe)
  - Talk about what you are comfortable talking about (ie. Avoid talking about what you are uncomfortable talking about)
  - Controlling what others think and say (i.e., agree with you).
  - Controlling expectations of yourself and others,

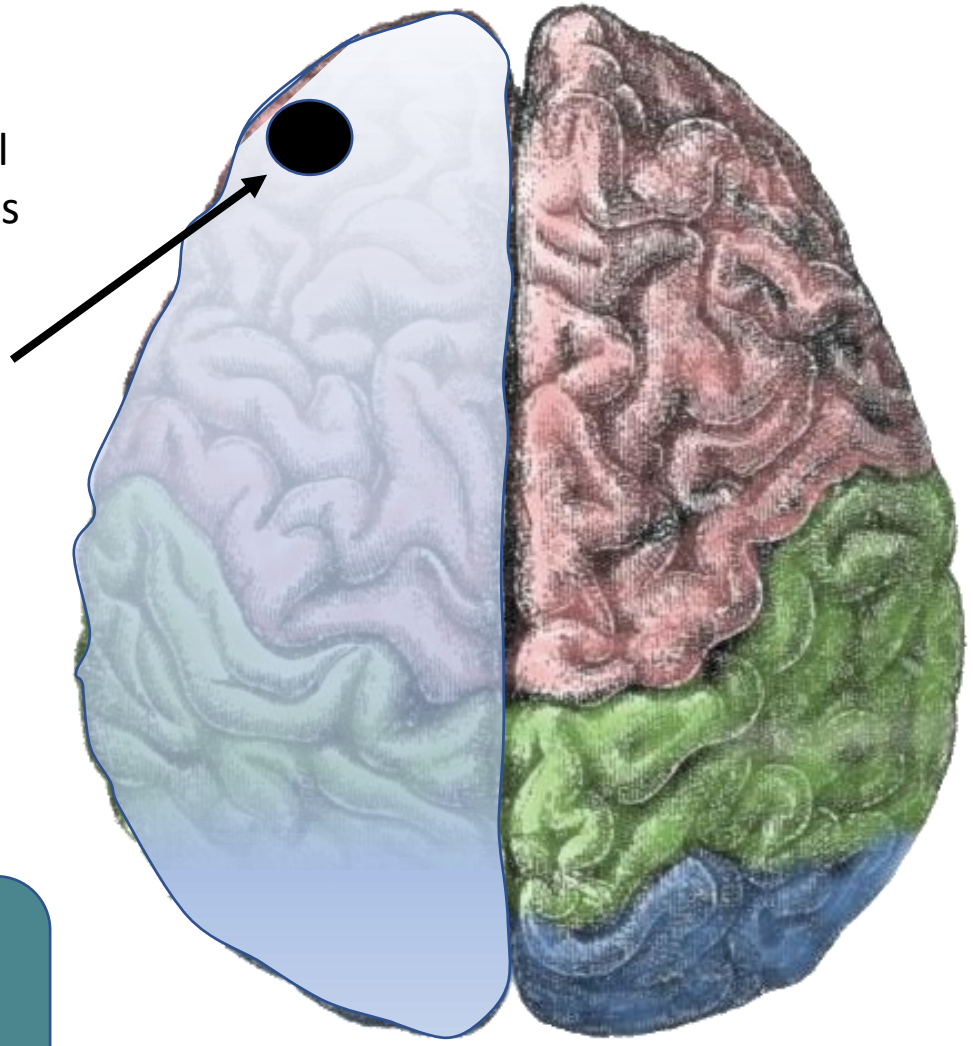
Left Hemisphere:

Linguistic, sequential, and Analytical
Facts, statistics, vocabulary of events

Broca's Area – Speech Center of the Brain shuts down during trauma. "Speechless Terror"

When left brain shuts down, survivor is not aware that they are reenacting or reexperiencing the past, during flashback,

Shut down of left hemisphere make organizing the trauma experience into logical sequences, words, a story of what happened, cause & Effect.



Right Hemisphere:

Intuitive, emotional, visual, spatial & tactical.

Stores memories of sound, touch, smell, and the emotions they evoke.
Reacts automatically to voice, facial features,
What it recalls feels like intuitive truth – the way it is.

Traumatic events, trauma triggers and memories activates the right side of the brain, while shutting down the left side.

Trauma Treatment is Developmental

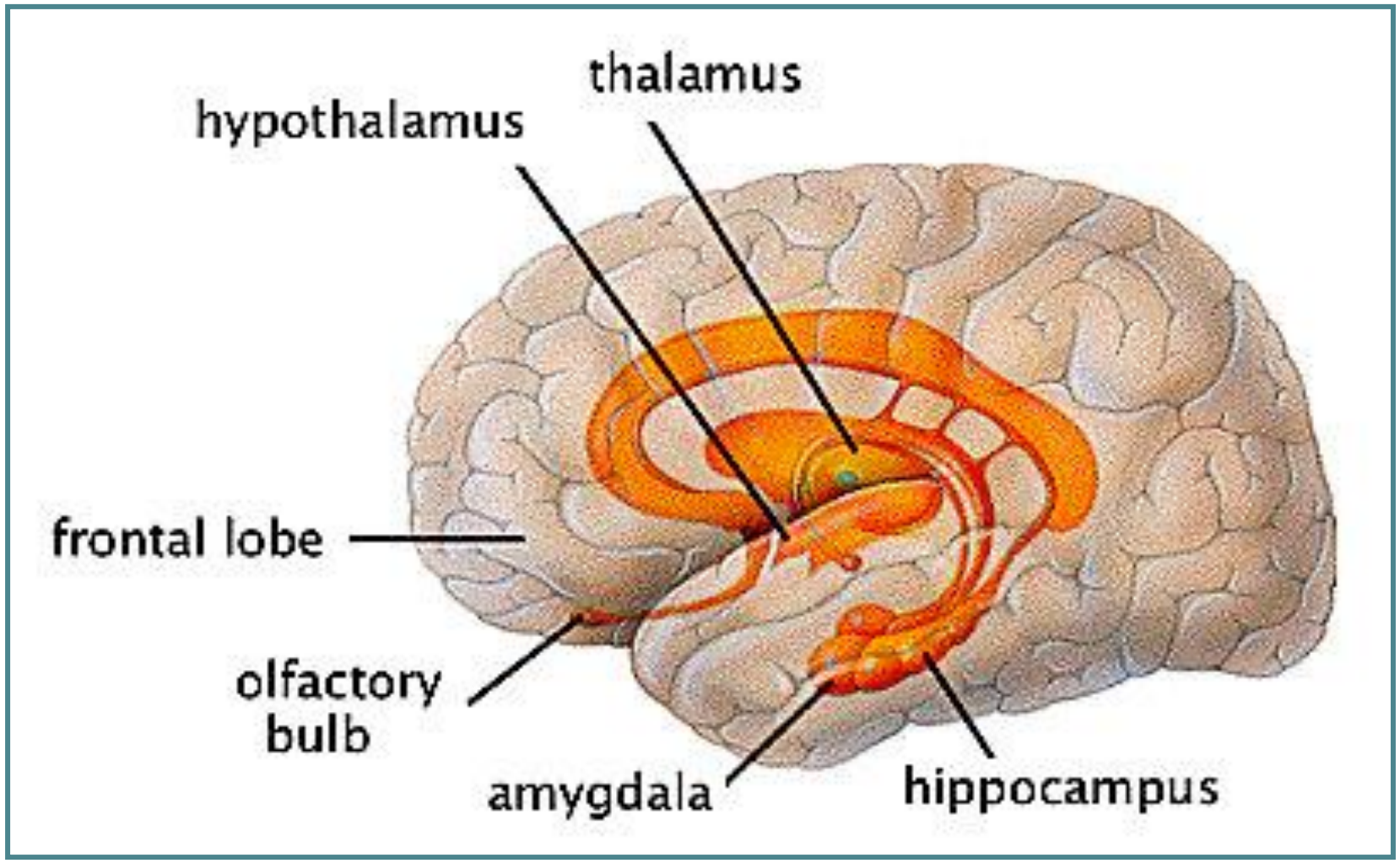
- Tri – Phasic Model of Trauma Recovery (Herman, 1992)
  - Safety – Starts with control of the body and then control of the environment.
    - Management of hyperarousal (ANS Regulation), cessation of dangerous coping behaviors (self-harming, using drugs/alcohol, acting out, acting in), management of intrusive symptoms, begin to re-establish trust, relationships, attunement.
  - Remembrance and Mourning - Working on specific traumatic events
    - Telling the story in its entirety, in depth, and in detail.
    - May use trauma-specific models of care such as EMDR, Somatic Experiencing, Sensory Motor Psychotherapy.
  - Reconnection with the Community
    - Reconsider safety issues from phase 1 and implement action plan for return to community.
    - Generally focused in IOP or Outpatient level of care

Integrating Trauma Memories. (van der Kolk, 1996)

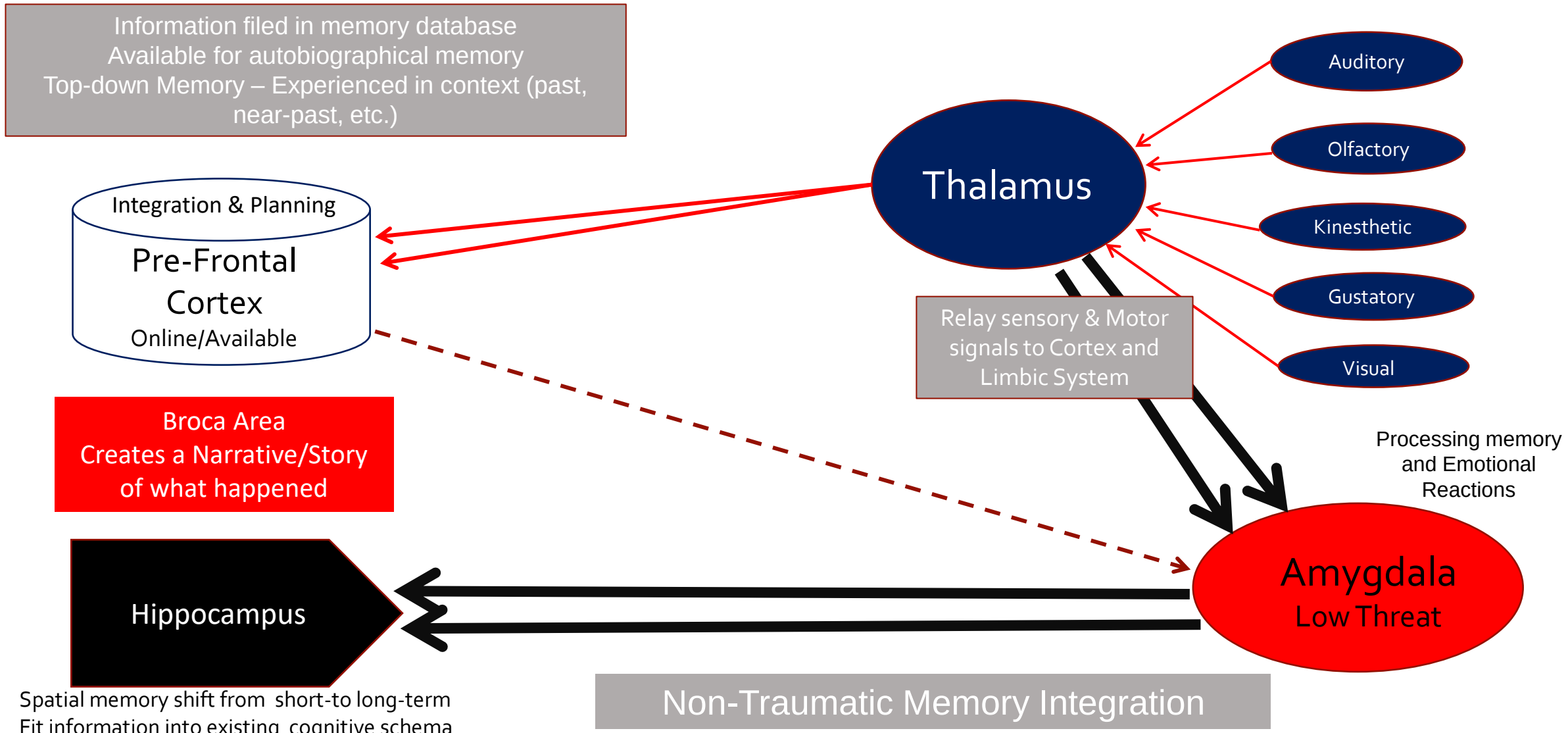
(Trauma and Memory from Traumatic Stress: The Effects of Overwhelming Experience on the Mind, Body, and Society)

- In dissociation, there is interference with proper information processing and storage of information in narrative (Semantic) Memory
- Van der Kolk calls this "speechless terror." Words fail to describe situation.
- ***Trauma organized in memory on a perceptual level.***
  - During periods of extreme ANS activation (stress or dissociation), see decrease in activation of Broca's area (part of brain most critical for transformation of subjective experience into speech.
  - Also see significant increase in activation of areas in right hemisphere that are thought to process intense emotions and visual images.
  - Development of Event Memory of traumatic event.
- **Autobiographical memory** (i.e., memory of what happened or the trauma story) is therefore **semantic and symbolic**.
- Semantic memory is social and adapted to the needs of both the narrator and the listener
- It can be expanded or contracted, according to social demands.

Limbic System – The Root of Trauma Response



Understanding Trauma Memory, (Van Der Kolk, 1996)



Effect of emotional arousal on Semantic Memory, (van der Kolk, 1996)

Information NOT filed in memory database
Experience memories as sensory triggers
Bottom-Up Memory – experienced as present

Pre-Frontal Cortex
Offline/Unavailable

Thalamus

Olfactory
Auditory
Kinesthetic
Gustatory
Visual

Fear, terror, powerlessness, anger, somatic experience, images, sounds, smells, etc.

Extreme Stress interferes with hippocampal functioning, memories based on fragments of information!
Broca's Area is off-line (language center)
No language = No narrative memory

Processing memory and Emotional Reactions

Autonomic Nervous System
Fight/Flight/Freeze

Amygdala
High Threat
Fear-Terror

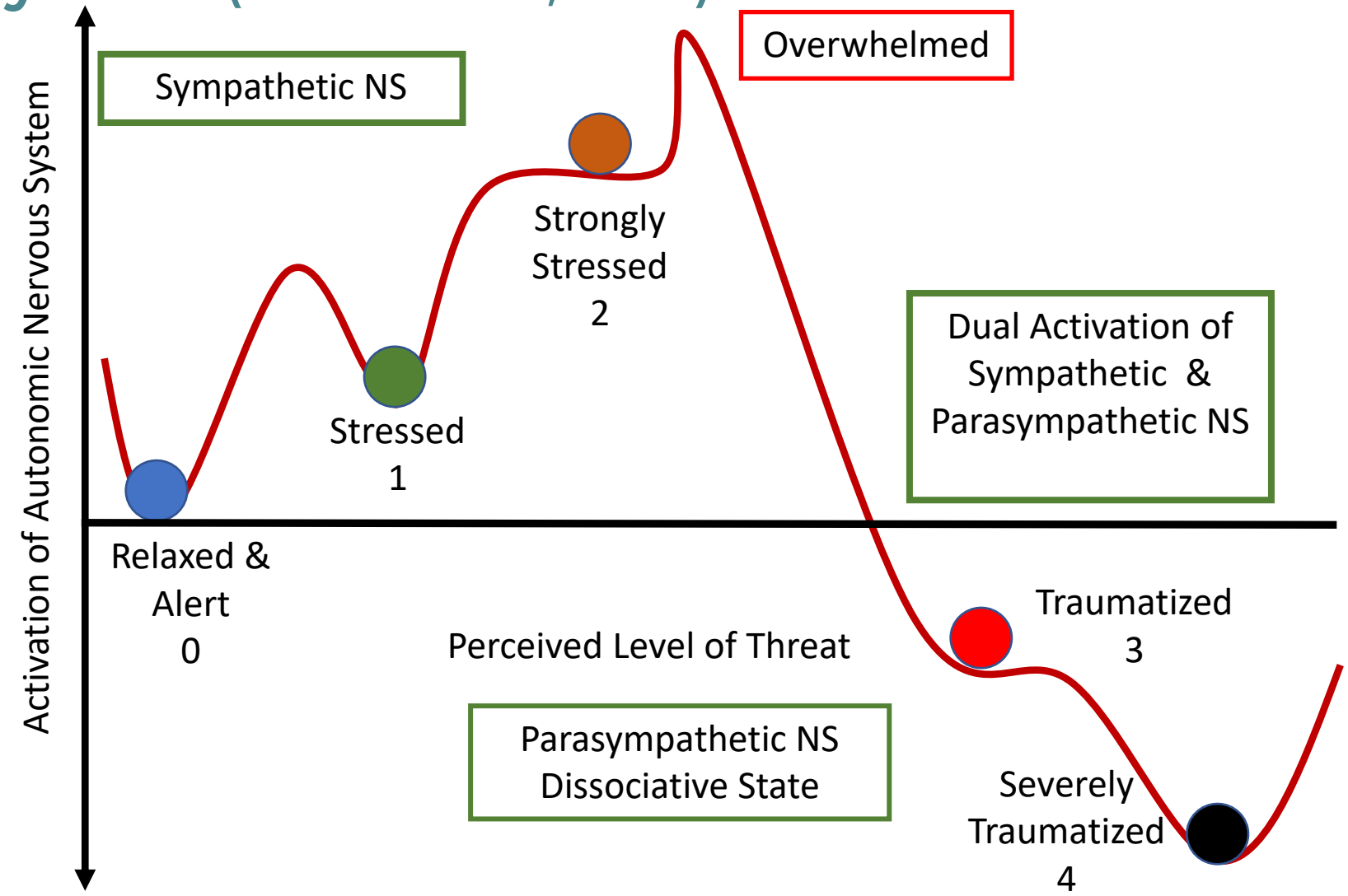
Hippocampus

Spatial Memory
Shift from Short to Long Term
Fit information into existing cognitive Schema

Threat → Event → Semantic → Procedural

Time

Levine-Wolterstorff 5 States Map of the Autonomic Nervous System (Wolterstorff, 2009)



State 0: (zero): calm, responsive, awake

State 1: slightly anxious, annoyed, nervous, physical tension

State 2: highly anxious, angry, panic symptoms, intense physical tension (stomach, chest, breathing), powerful fight or flight responses

State 3: Dual activated (a mixture of activation with dissociative symptoms): tension with somatic collapse, anxiety, sleepy, panic, hopelessness, heaviness, blurred vision

State 4: pure dissociation marked by a distinct lack of physical sensation and flat affect, numbed out, blank, feeling 'floaty', depersonalized, and disconnected

Understanding Memory Systems (Grigsby & Stevens, 2000)

- Declarative Memory – explicit memory referring to intentional or conscious awareness of facts or events that have happened to the individual.
  1. Episodic Memory – recall of subjective events in one's life
  2. Semantic Memory – (knowledge) – recall of objective facts and other non-personal information.

- Event Memory –subcortical mechanism of emotional learning that bypasses the cerebral cortex.
  - Generally experienced as intense emotion or fragments of sensory information. Timeless

- Nondeclarative Memory – implicit memory referring to unconscious memories of skills and habits, emotional responses, reflexive actions and classically conditioned responses.
  - Procedural Memory – learned from prior experience. Lack ability to utilize new existing knowledge, given unconscious nature of the memory.
  - Anger, depression, avoidance, dissociation, hyper-vigilance, control

“Autobiographical memories are not precise Reflections; they are stories we tell to convey our personal take on our experience!”

— Van der Kolk, 2014

Five Steps to Trauma Memory Integration

(Wolterstorff, 2003, A Speculative Model of How Groups Respond to Threats)

1. A threat is initially remembered as Event Memory and then Semantically.

2. Over time the semantic memory degrades (with each telling of the story it changes) and accuracy is eventually lost.

3. Response to threat behaviors initiated to deal with the event and semantic memory is habituated. (Procedural Memory evolves into demonstration of trauma symptoms, defensive avoidance, affect dysregulation, dissociation, hypervigilance, control, anger, etc.)

4. Memory complex develops including Event, Declarative and Procedural Memory systems. Develops a confabulation in the form of a metaphor that is stored in semantic memory.

5. The metaphor is reified and becomes "The Trauma Story"

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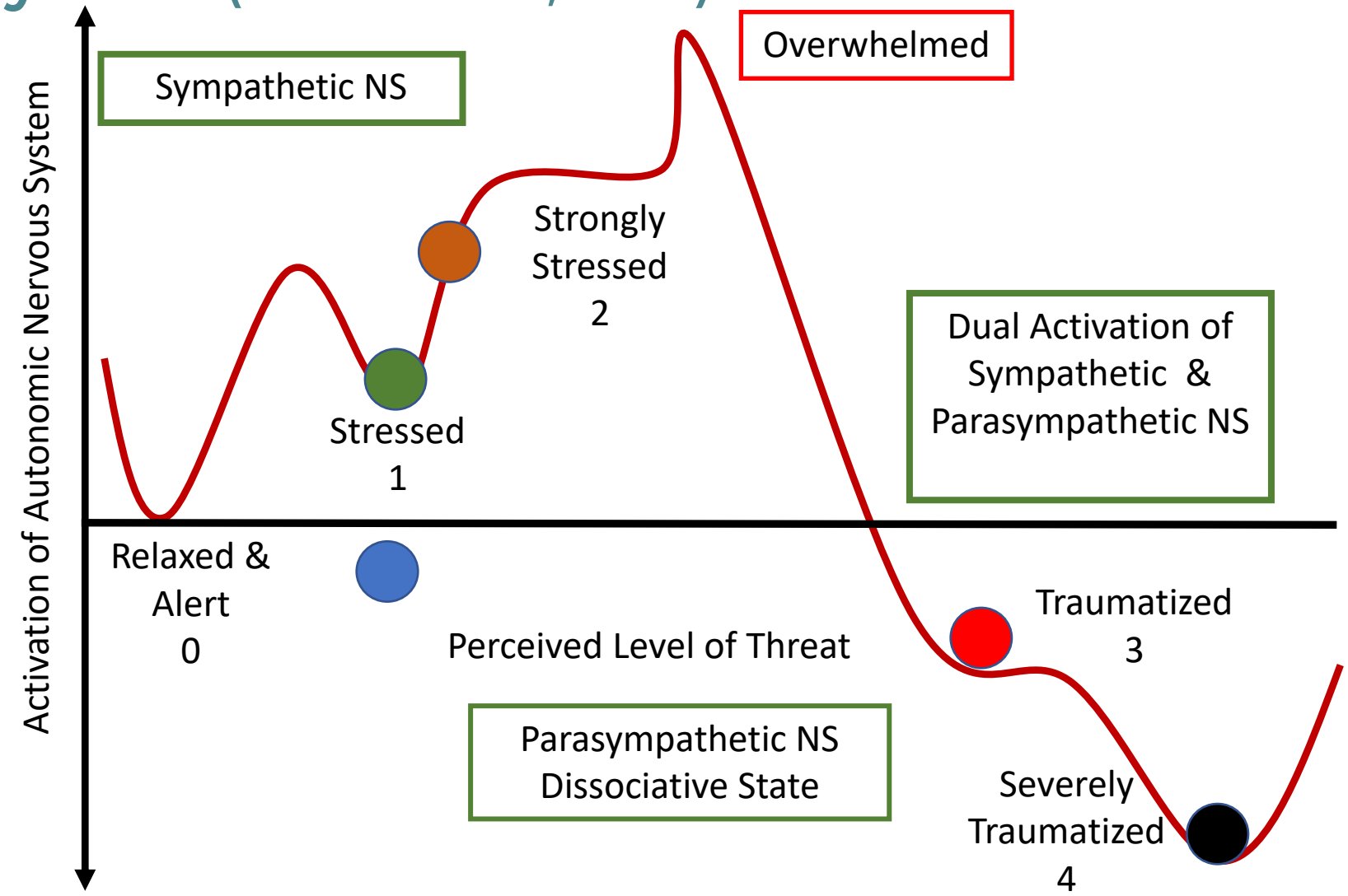

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9 Functions of the Pre-Frontal Cortex

1. Regulation of body – ANS balance
2. Attuned Communication, felt sense of other's experience.
3. Regulation of emotion
4. Response Flexibility – pause, options, evaluate options, appropriate decision
5. Empathy
6. Insight – Self-Awareness
7. Fear Extinction – GABA fibers to Amygdala
8. Intuition – deep knowing without logic
9. Morality – Behavior based on empathy

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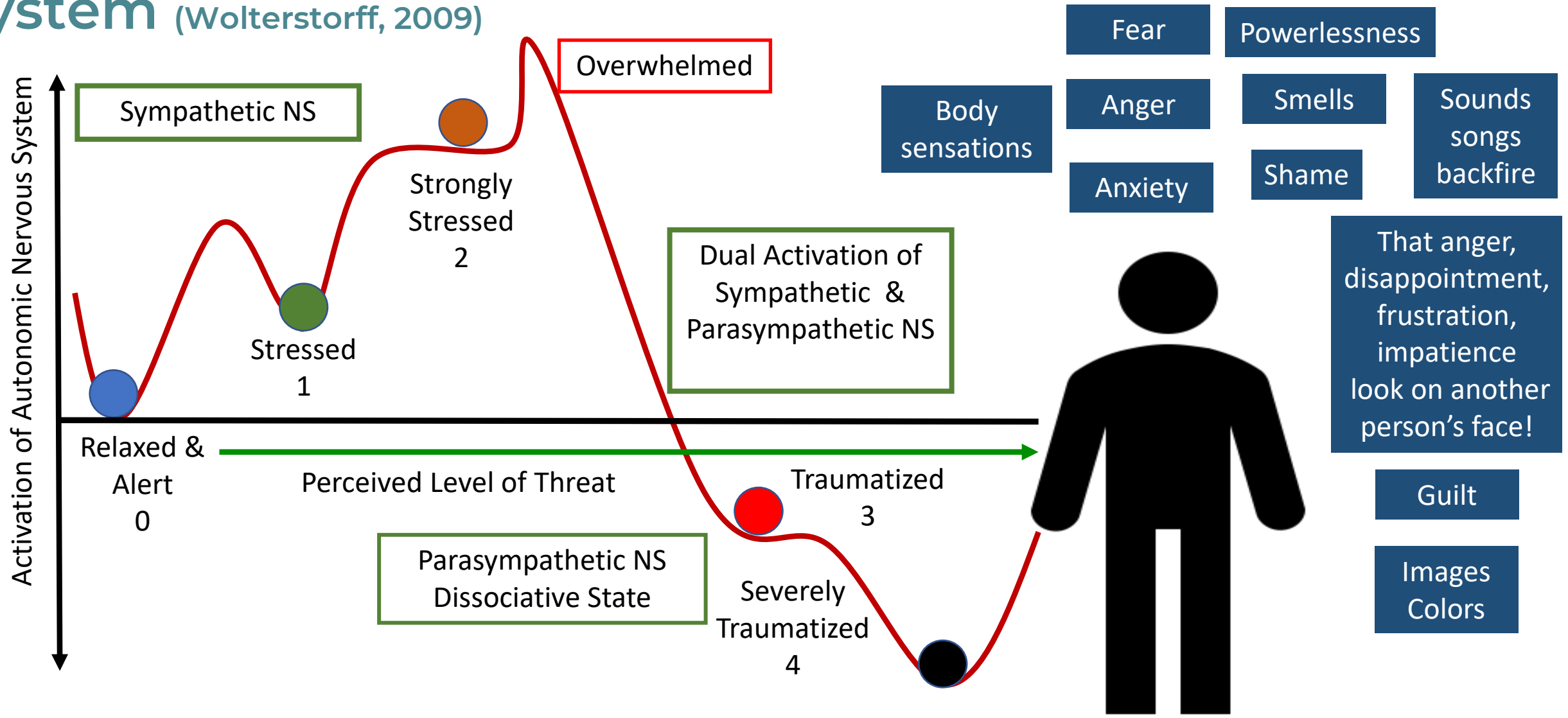

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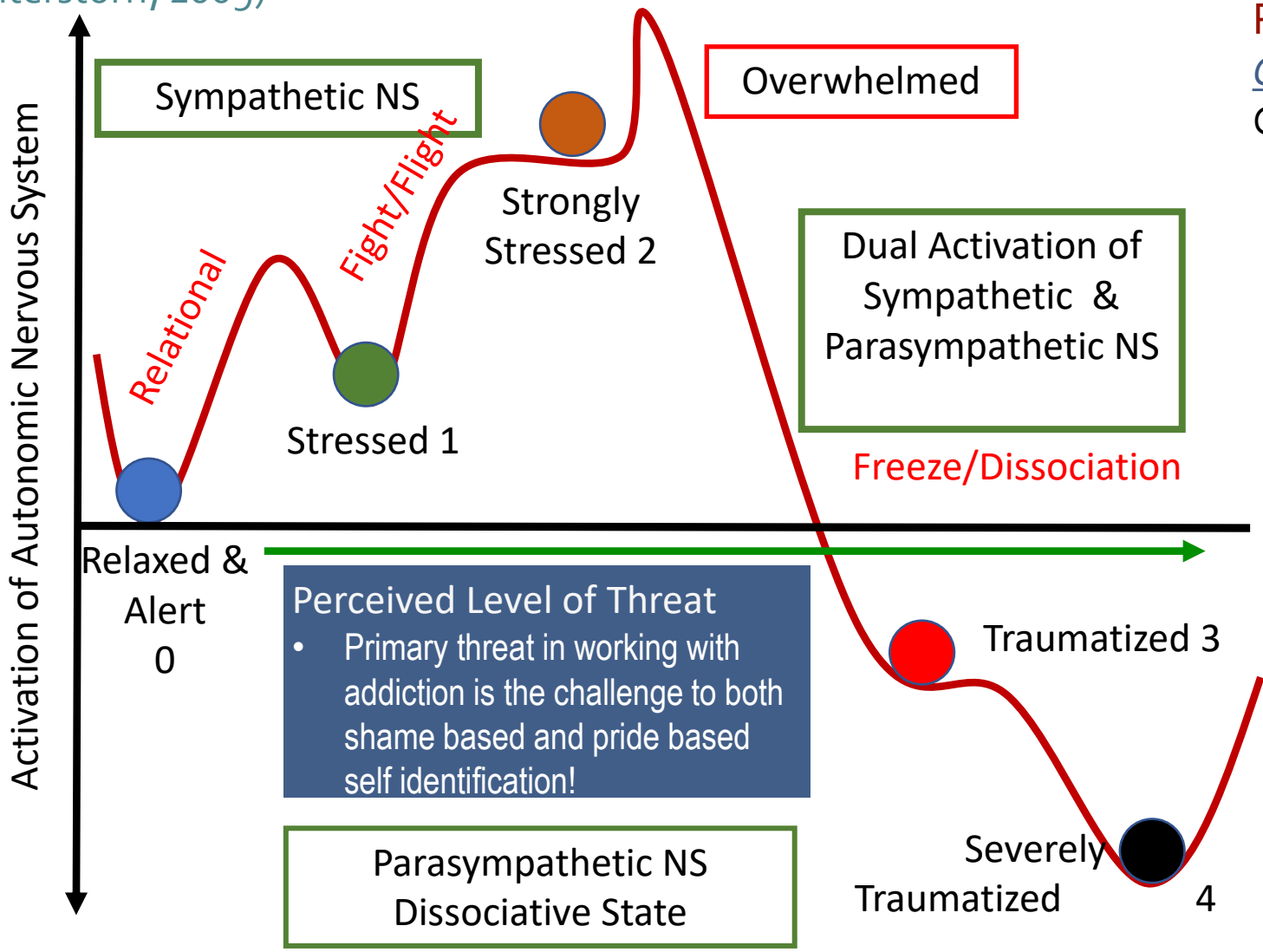


Resolution of Recovery Milestones

Commit to abstinence and on-going recovery

Connect life consequences to:

- Chemical use
- Personal identity, thoughts, feelings, and behaviors
- Family and social relationships
- Grief, loss, and trauma issues
- Co-occurring disorders
- Process addictions (spending, sex, etc.)
- Chronic pain and other medical complications

Learn recovery concepts, such *as powerlessness, acceptance, surrender, rigorous honesty*

Investigate issues with *higher power, spirituality* and how they may be impacting recovery

Become open to need for continuing care

Therapeutic Implications

“Trauma Therapy is Developmental, Tri-Phasic Model of Targeted Work.”

— Judith Herman, 1992

Top-Down Processing

Cortical, Cognitive processing that initiates with thoughts, which flow down to emotions, sensory information.

Pre-frontal cortex fully engaged

More relaxed emotional state

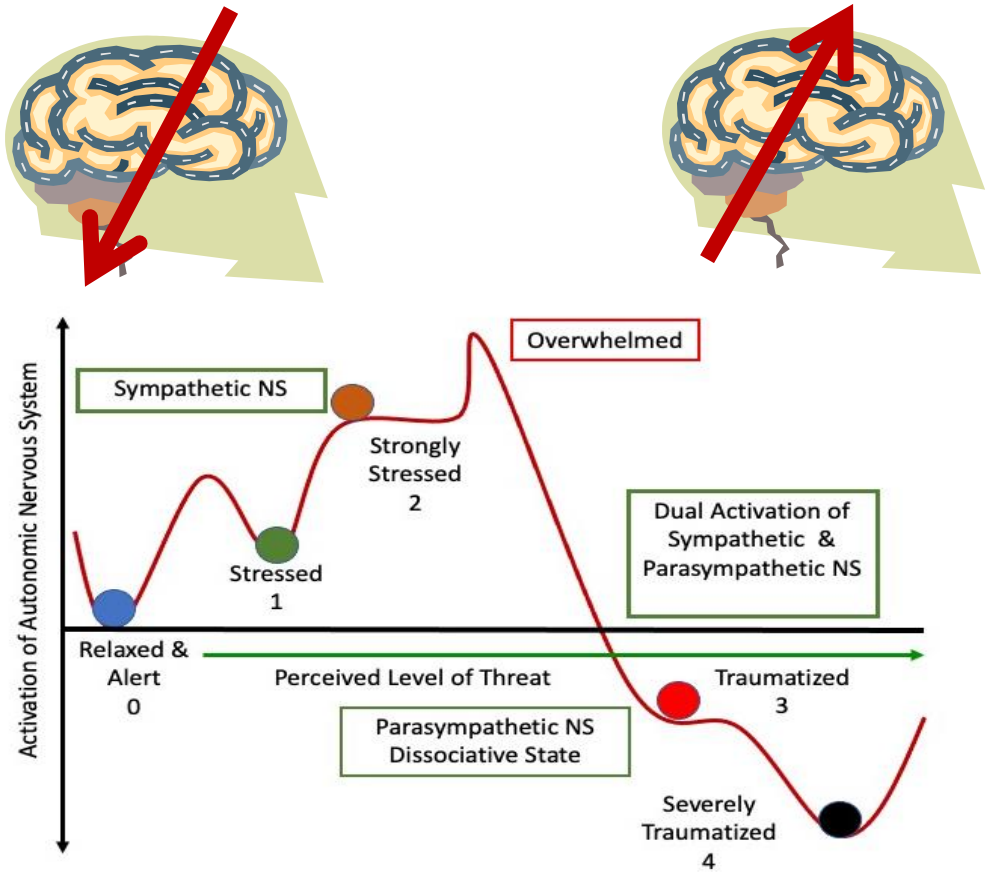
Intentional interaction with full executive functioning

Environment experienced as safe or relatively safe

Talk therapy works!

- CBT, MI, 12 Step Facilitation

In Trauma Integrated Treatment, Therapists must be able to move quickly and insightfully between these two types of information processing!



Bottom-Up Processing

Subcortical, limbic system processing of sensory information, Autonomic Nervous System Response, Pre-Frontal Cortex off-line

Highly activated, anxious, panic, dissociative

Reactive Interaction with limited to no executive functioning.

Environment experienced as threatening or dangerous.

Talk Therapy doesn't work!

Clinical focus must shift to affect regulation, resourcing, DBT skills until patient resumes lower stressed state.

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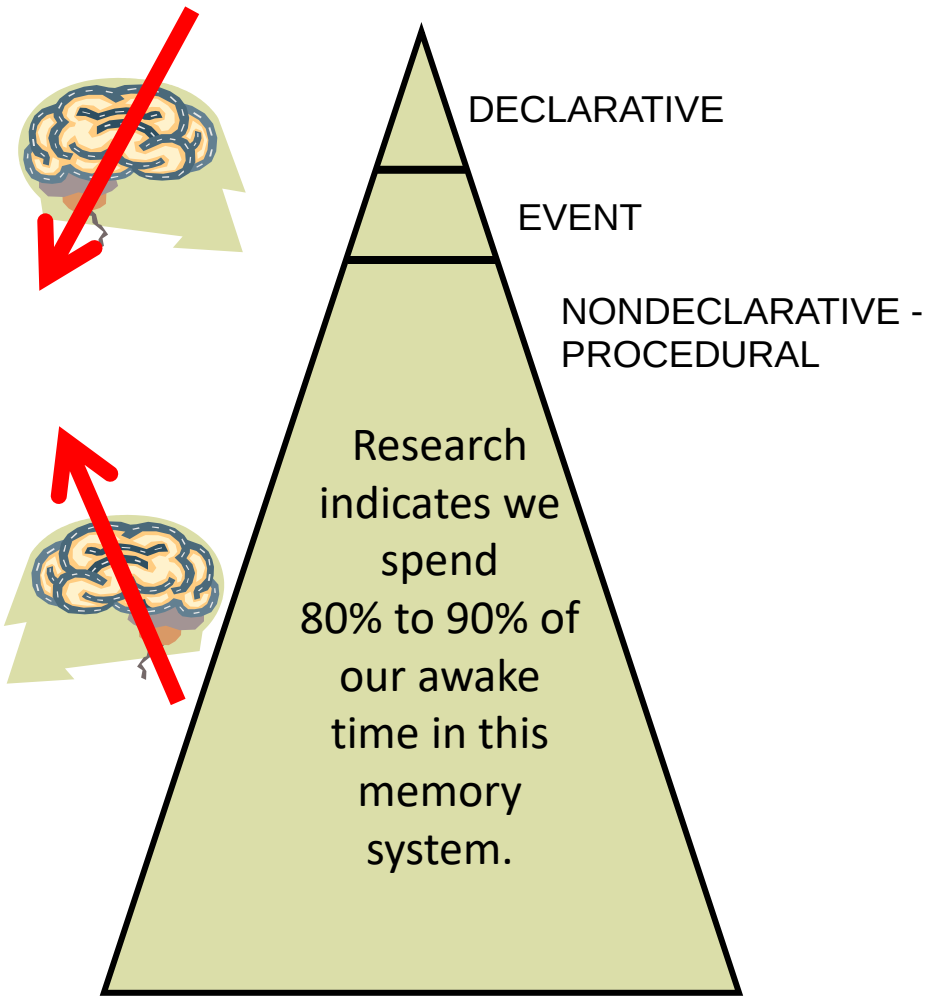
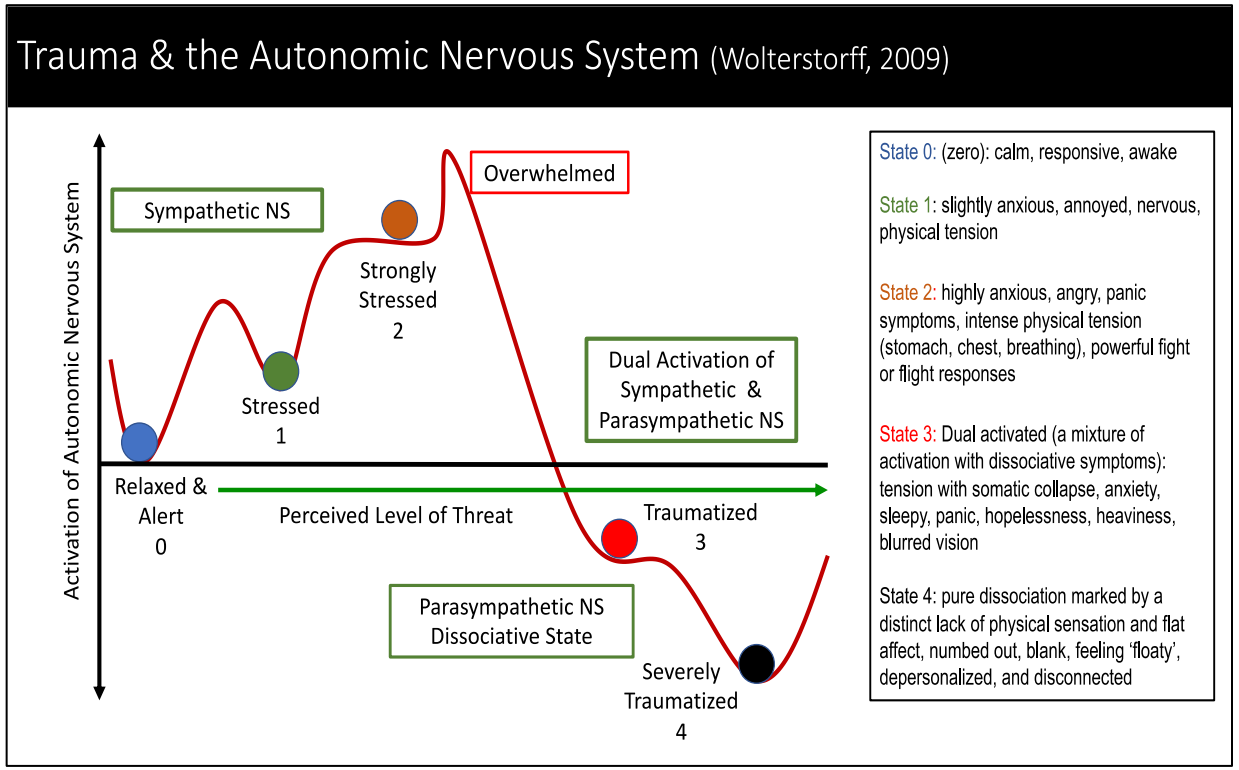
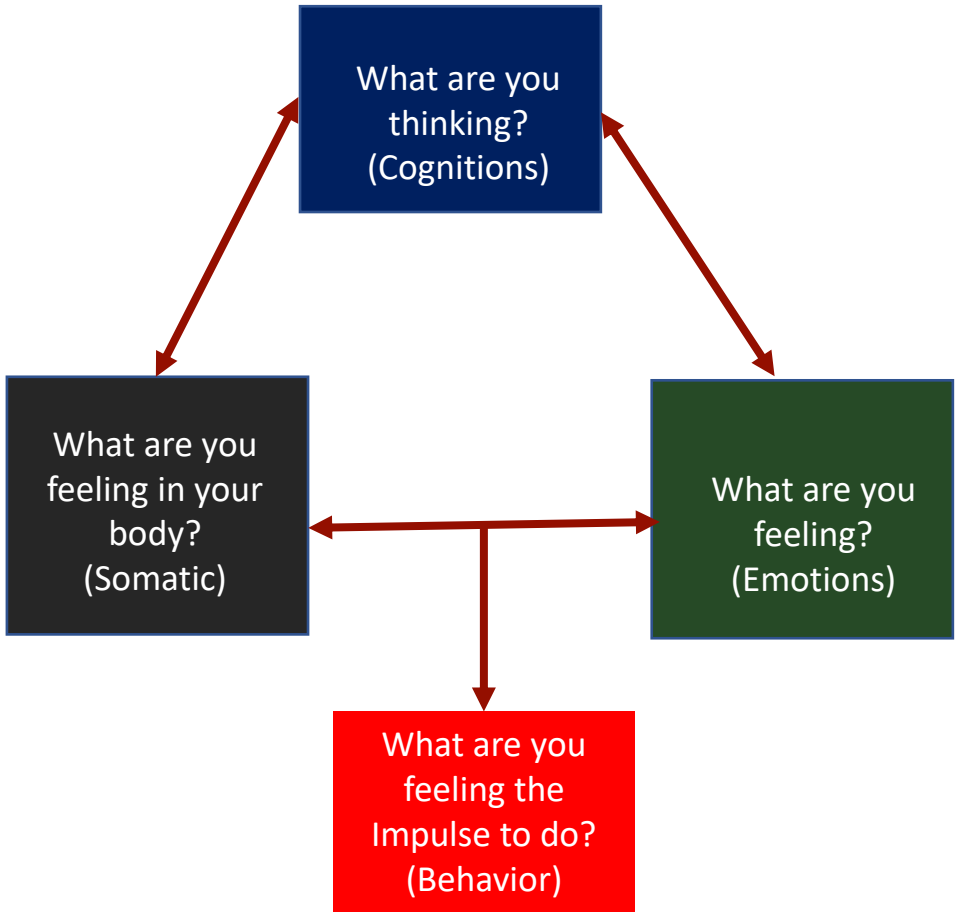


Helping Clients Make a Connection with Themselves





"As far as the "newer normal" is concerned, like any other area of your life that you desire to change, learning more about it is the prerequisite for action.

* New Insights stimulate new solutions.
* New solutions allow for new actions.
* New actions allow for different relationships.
* Different relationships promote family healing."

M.F. Barnes, 2023 "When the Solution Becomes the Problem: Helping Families Struggling with Addiction and Trauma."

Therapist Skills (NARM Principles)

1. Support Connection and Organization
   - Tracking Connection and Disconnection
   - Tracking Organization and Disorganization
   - Develop Positive Resources
   - Encourage Somatic Mindfulness (connect to the body)
   - Maintain Therapeutic Relationship
     - Develop, Challenge, Rebuild, Challenge

2. Work in Present Moment
   - Simultaneous work on need for Top-Down and Bottom-Up Foster Agency and Empowerment in the moment
   - Present focus on emotions, body sensations

3. Regulate the Nervous System
   - Containment – work with issues while remaining grounded in their body and the present moment.
   - Grounding – relieve dissociation, get grounded in the body
   - Titration – awareness of pace and ANS/Organizational tolerance of distress.
   - Pendulation – conscious movement of client into and out of work on issues and the maintenance of tolerable levels of distress & ANS regulation

Food For Thought for Therapist/Coach

- Maintain a Non-Anxious Presence (Clients are assessing you . . .)
- Manage the Session
  - No Interruptions, no cross-talk, limit arguments,
  - Pace and lead
- Manage the individual and collective Autonomic Nervous System
  - Who is the Amygdala of the family? (Smoke Detector)
  - Who is the person with the power? Who does everyone look at when things are uncertain or when someone broaches an issue that violates family rules?
- You should see family organization play out in session. Predict it!
  - Be curious about rules, roles, and boundaries.
  - It would be unrealistic to believe they would give up this protective process easily
  - “Tell me again why you are frustrated by a traumatized client acting like a traumatized client?”

Curiosity?

- Pace and Lead
  - Slow down, pay attention, make sure they answer your question
- Contraband Language – identification of general terms that clients use to describe what they want or feel but are too general to tell us much information.
  - Love, trust, intimacy, etc.
- Inherent Paradox
  - Identification of client inconsistencies.
  - In our last session, you said this, but now you are saying this . . .

Impact of Counselor Non-Verbal Communication?

What are you communicating when you don't think you are communicating?

- *Let's brainstorm how a counselor's non-verbal communication can influence client autonomy and self-directedness.*

- *What non-verbal communication does the counselor need to be aware of when using MI in groups?*

“Resourcing & Relational Abilities”

— Eric Wolterstorff, 2009

Resourcing Protocol

ACCESSING

Begin by identifying at least one internal or external resource.

DEEPENING

Choose one resource (either a memory or fantasy) to explore imaginally through adding details and the five senses. Stay with this until person feels relatively calm and relaxed. Ask client to provide details of what they notice in client's body. If client has a hard time locating body sensations, model for client: **"I am noticing my hands are warm, my breathing is easy, my shoulders are a little tense.")** You may also guide client by asking client to scan client's body. (e.g. **"How does your head feel, your neck, your breath, your belly, your arms, legs, hands, feet?")** Practice with client until client is comfortable. Weave client between the resource-memory-fantasy and client's sensations in the present moment in the room with you.

ANCHORING

Make a plan with client participation to find a way to remember to use the memory during the week (physical reminders: post-it notes, reminders). Make a plan for any obstacles and how to avoid them. (**"How can you make sure you will remember?")**

WIDENING

Once client achieves a resourced state, ask client to remember more memories or fantasies that are positive.
Write these down for client to take home.

STRENGTHENING & TESTING

Once client has done the previous steps, you can check client's ability to bring self from a stressed state to a resourced state. Ask client to provide details of what client notices in client's body before and after. Feel free to practice with client a few times.
This can be done during a session by remembering something mildly stressful, and then having client return self to the positive memory state. (**"We want to make sure that, if you are upset, you can bring yourself back into a good emotional state.")**
It can also be done if client comes to a session in a stressed or traumatized state.

Homework: Continue widening resource list and practice remembering and achieving resourced state (anchoring). Check on homework in next session.

Relational Abilities

- Relational abilities are indicators/symptoms of client's ability to maintain the self in daily life.

- By its very nature, trauma is a violation of the "no" response. If we could have said no to stop the event from happening, we would have.

- Intervention focuses on client practicing:

  - No
  - Yes
  - Perseverance (When beliefs or feelings were discounted or challenged)

Possible Symptoms of Relational Ability Disturbance

- Resentful or conflicted “yes”
- Structural boundaries (Emotional or physical distance, Enmeshment)
- Escalated Response (anger)
- Easily Offended that anyone would even ask them to do something.
- Avoidance of situations
- Over commitment
- Inability to join or relax into contact (emotional, physical)

Relational Abilities Intervention

- ”No” Practice
  - Easy “No” to therapist (no tracking from map)
  - Stressed “No” to therapist (no tracking from map)
  - Establishing Resourced “No” (Pre & post tracking from map)
  - Strengthening the ability to say “No” (practice, working towards harder “no’s)
- ”Yes” Practice
  - Easy “Yes” to therapist (no tracking from map)
  - Stressed “Yes” to therapist (no tracking from map)
  - Establishing Resourced “Yes” (Pre & post tracking from map)
  - Strengthening the ability to say “Yes” (practice, working towards harder “no’s)
- “Perseverance” Practice

Thank Your for Attending!

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Throughout the past 40 years, Dr. Michael Barnes has served as an addiction professional, program administrator, family therapist, and counselor educator. For the past 4 years, he has served as the Chief Clinical Officer at Foundry Treatment Center in Steamboat Springs, Colorado. Prior to working at Foundry, Dr. Barnes served as the Manager of Residential Services and Clinical Educator at the Center for Dependency, Addiction and Rehabilitation (CeDAR) at the University of Colorado Hospital. Prior to that he was on the faculty of the MA Program in Counseling at the University of Colorado in Denver. Dr. Barnes earned his Ph.D. in Marriage and Family Therapy at Florida State University, his M.Ed. in Rehabilitation Counseling at the University of Pittsburgh, and his BA in Psychology at Indiana University of Pennsylvania. He is a Master Addiction Professional (NAADAC), Licensed Addiction Counselor, Licensed Professional Counselor (Colorado) and Diplomate in the American Association of Experts in Traumatic Stress. Dr. Barnes speaks nationally on Families Trauma and Addiction, Trauma Integrated Addiction Treatment, and Compassion Fatigue. His publications in books and scholarly journals have focused on secondary trauma and clinical work with traumatized family systems.