TRAUMA AND SAFETY:
USING AK TO FORM A POLYVAGAL INFORMED TECHNIQUE

Jay Marienthal, DC, DIBAK

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RUSSELL BRAND

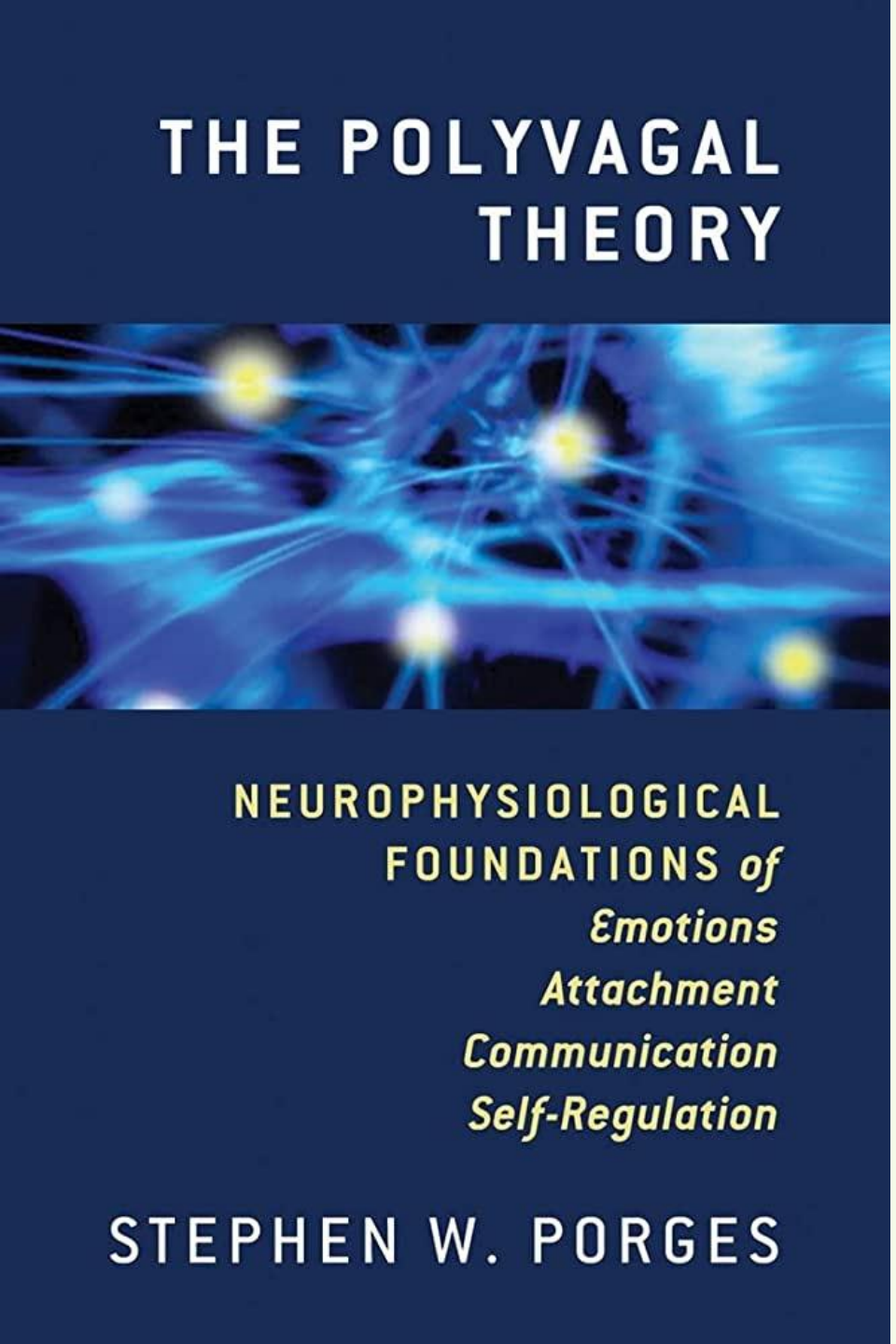
Cannabis isn’t a gateway drug.
Alcohol isn’t a gateway drug.
Nicotine isn’t a gateway drug.
Caffeine isn’t a gateway drug.

Trauma is the gateway.
Childhood abuse is the gateway.
Molestation is the gateway.
Neglect is the gateway.

Drug abuse, violent behavior, hypersexuality, and self-harm are often symptoms (not the cause) of much bigger issues. And it almost always stems from a childhood filled with trauma, absent parents, and an abusive family.

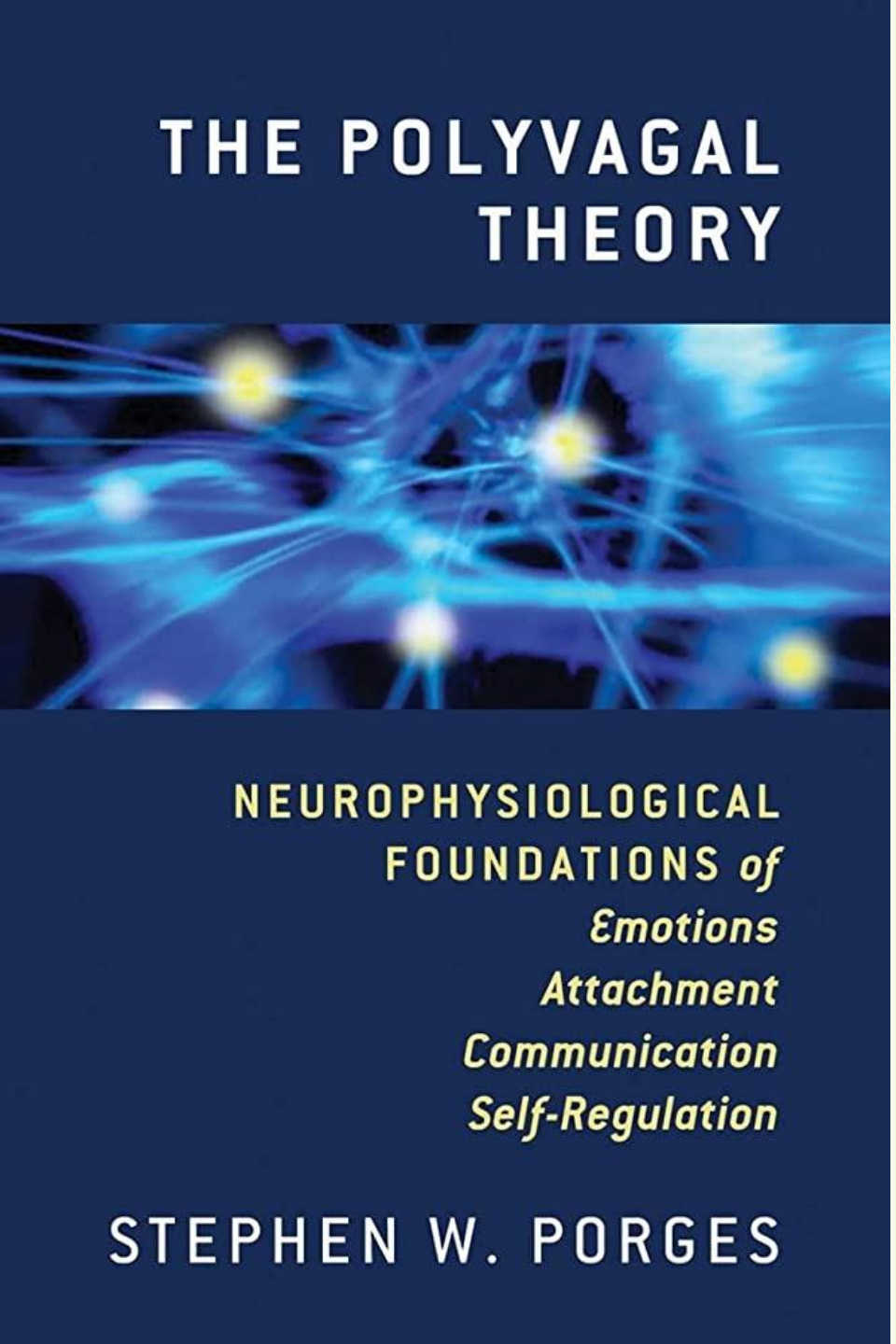
But most people are too busy laughing at the homeless and drug addicts to realize your own children could be in their shoes in 15 years.

Communicate. Empathize. Rehabilitate.



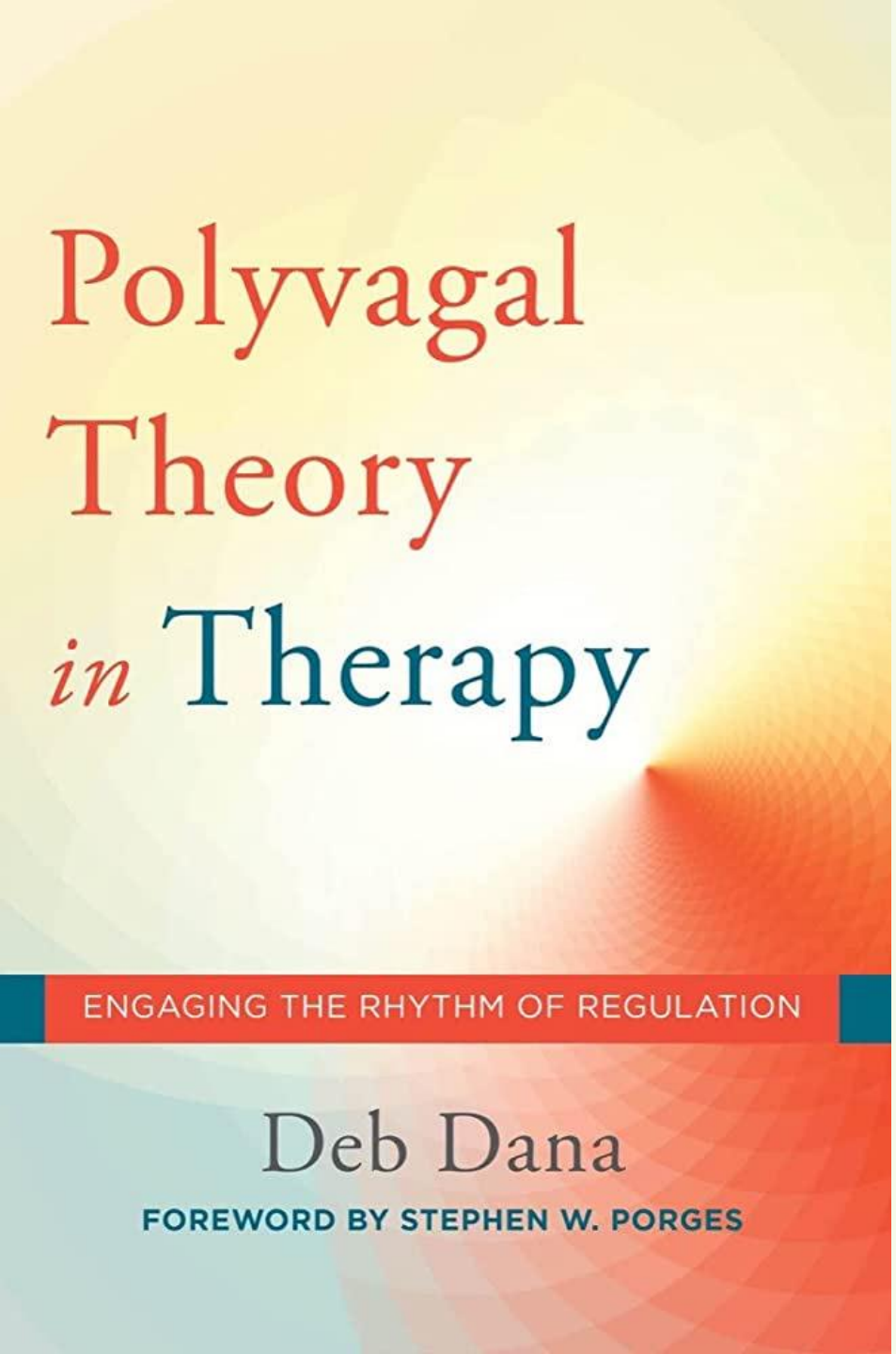
THE POLYVAGAL THEORY

- Released in 2011
- Began in 1983
  - “Heart rate patterns in neonates: a potential diagnostic window to the brain”



THE POLYVAGAL THEORY

- The vagal paradox
  - How can activation of the vagus create health and cause death?
    - Ventral Vagal Complex
    - Dorsal Vagal Complex
    - Sympathetic Nervous System

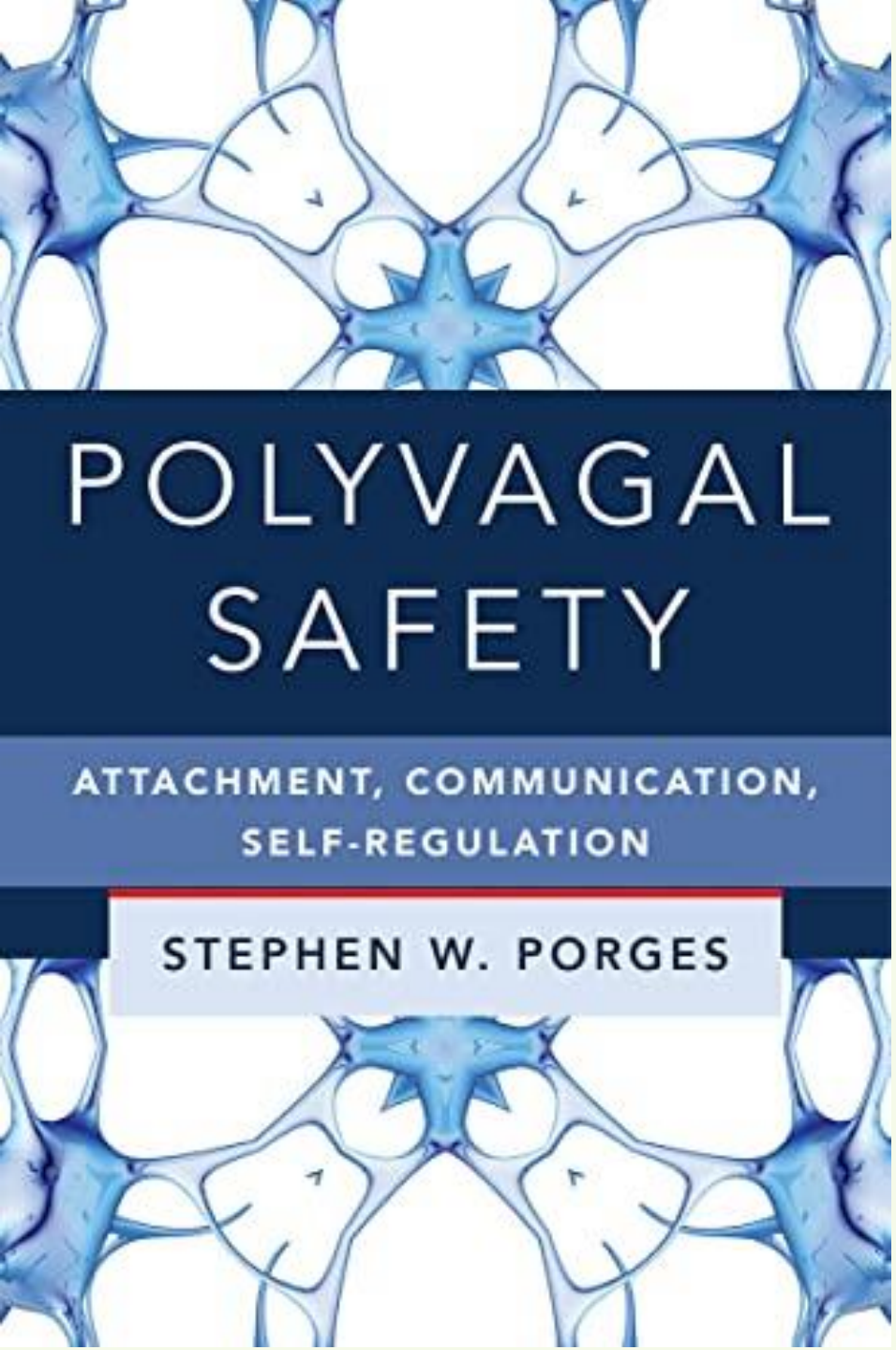


THE POLYVAGAL THEORY

- Trauma
  - The polyvagal theory was adopted as a viable way to explain the experience of trauma survivors

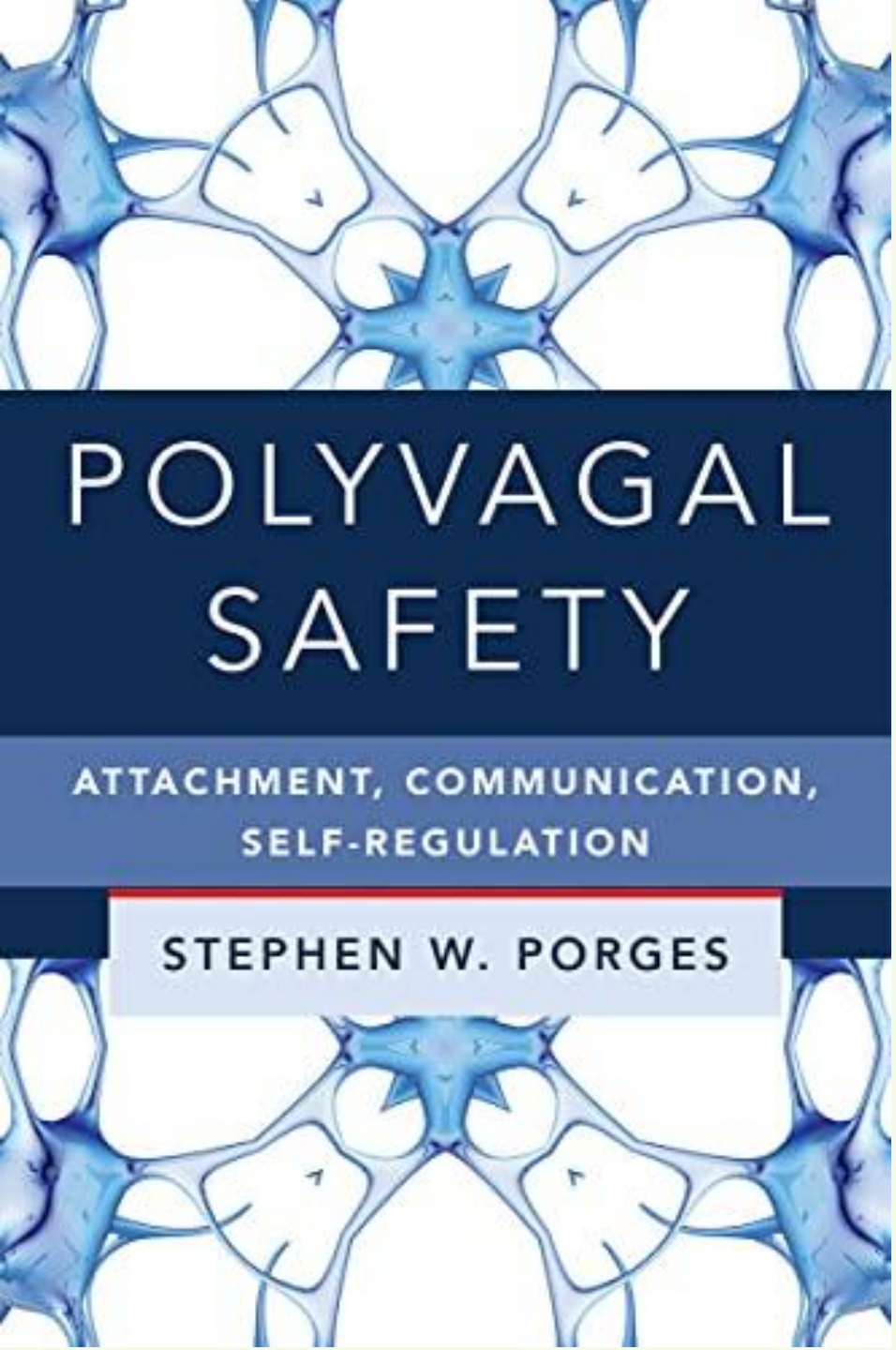
THE FUTURE OF TRAUMA THERAPY

- “It is clearly going more body oriented.”



SAFETY

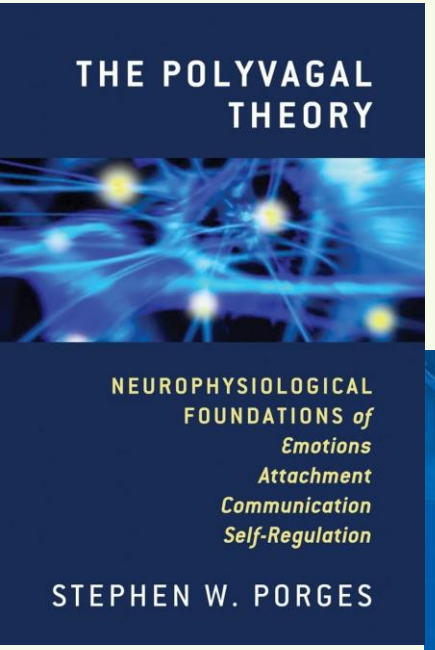
- "The quest for safety is the basis for leading a successful life."

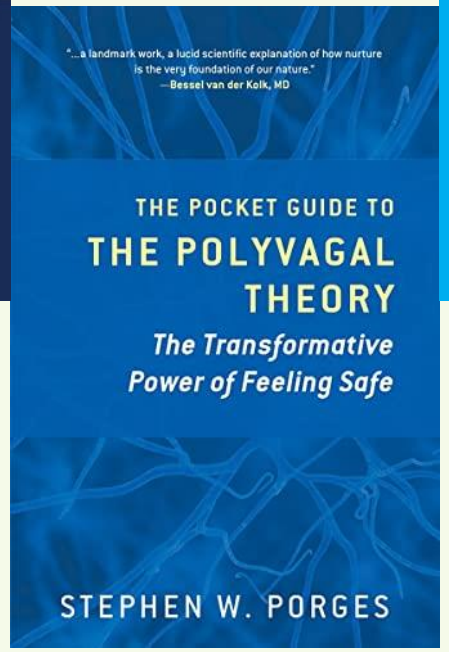


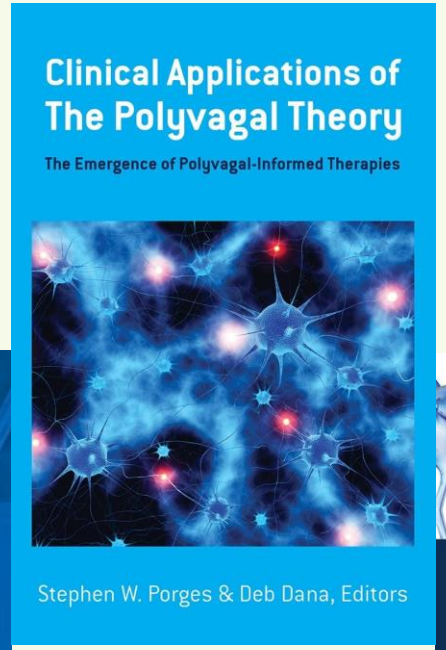
SAFETY

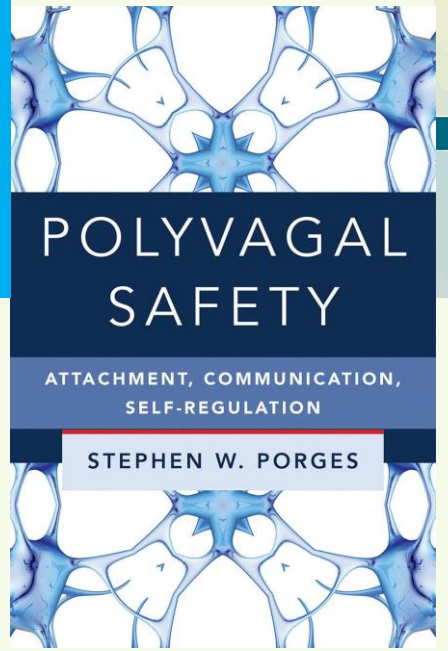
- "Deficits in feeling safe form the core bio-behavioral feature that leads to mental and physical illness."

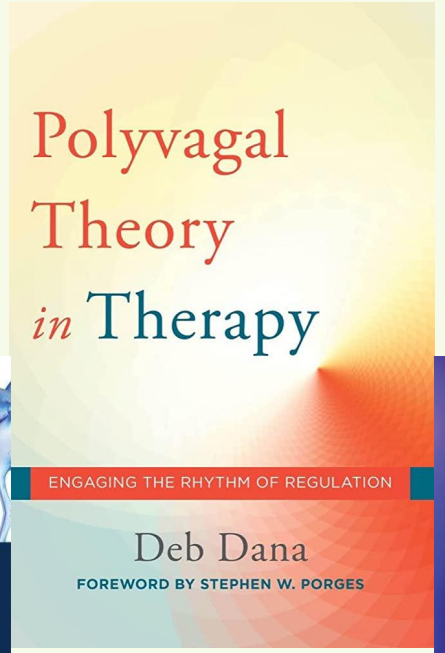
BOOKS ON THE POLYVAGAL THEORY

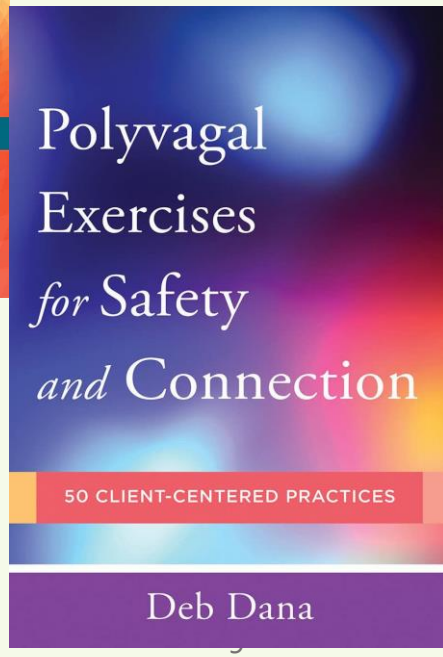








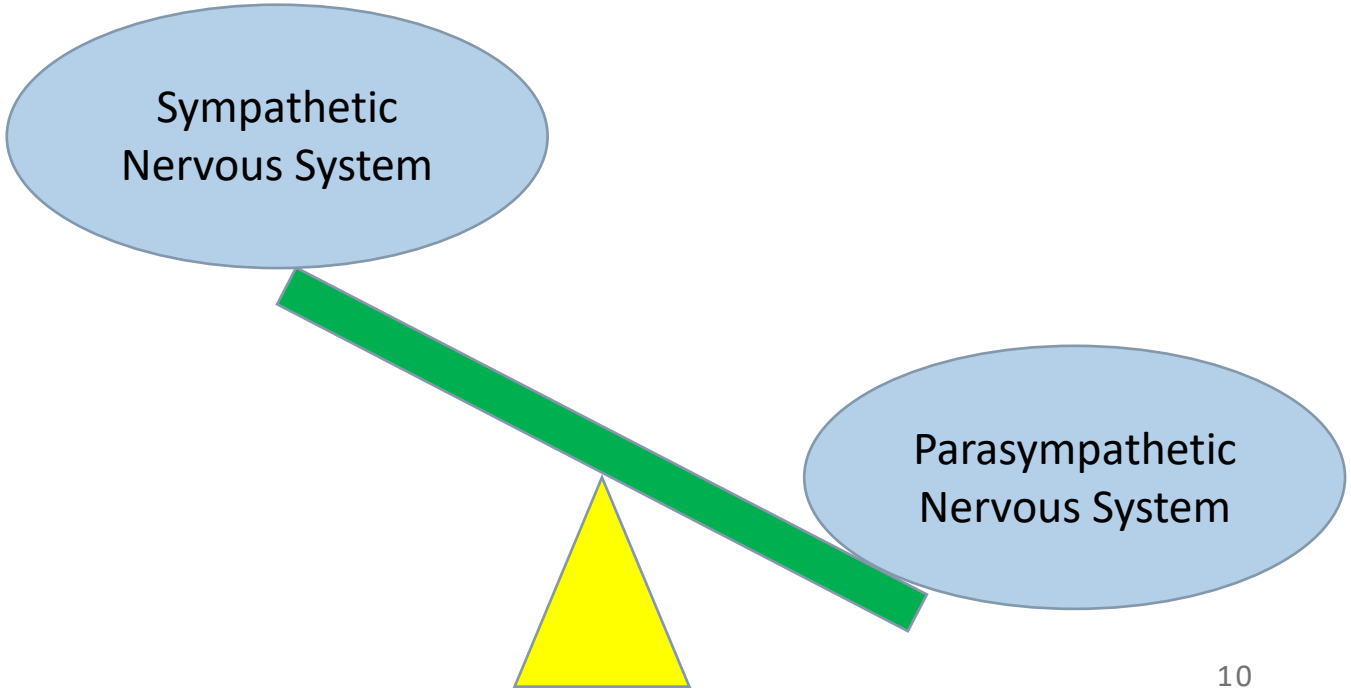




SYMPATHETIC VS. PARASYMPATHETIC

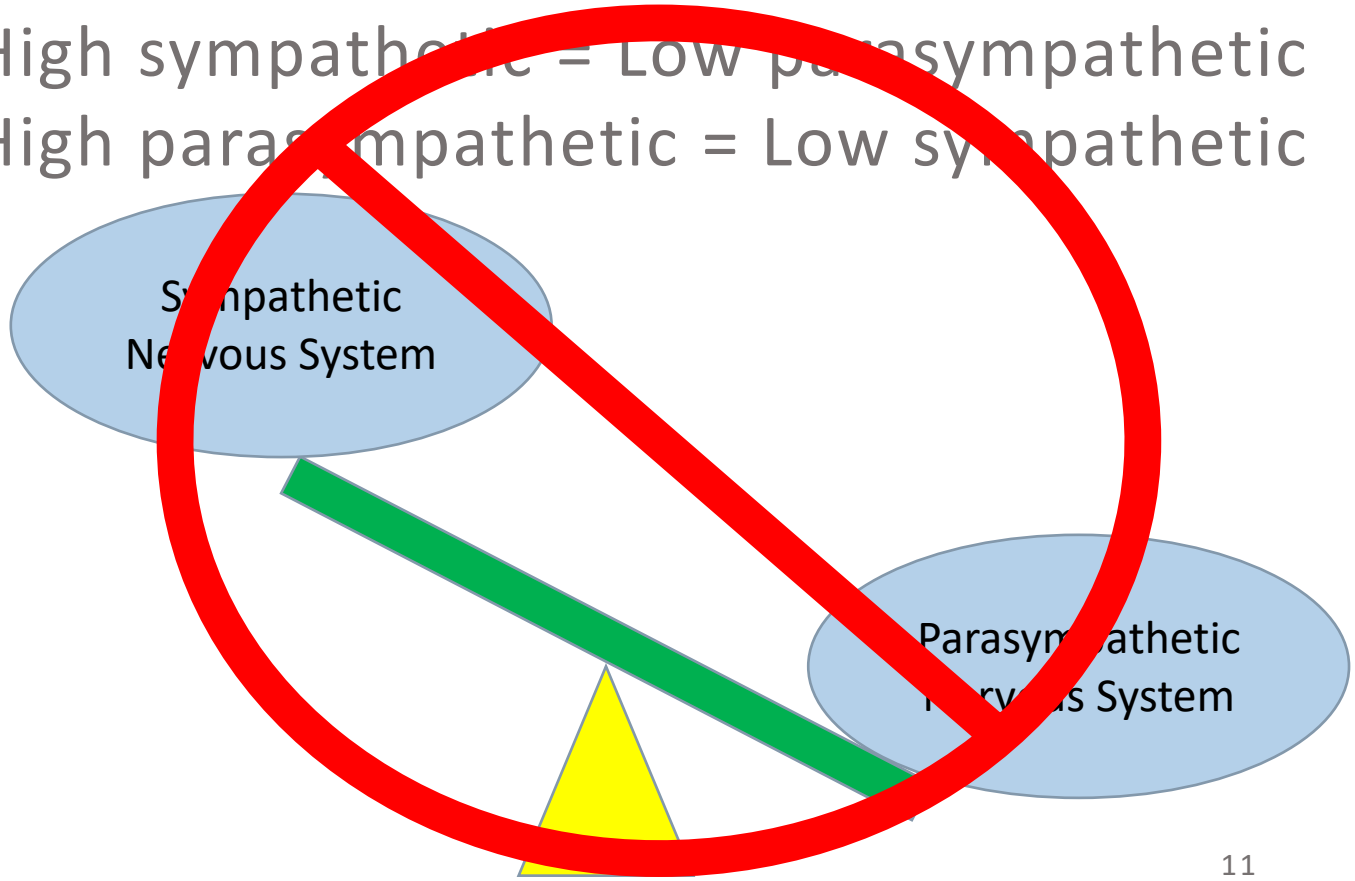
- Since the time of Galen (129 AD), we have always been taught that the **sympathetic nervous system functions antagonistically to the parasympathetic nervous system**

High sympathetic = Low parasympathetic
High parasympathetic = Low sympathetic



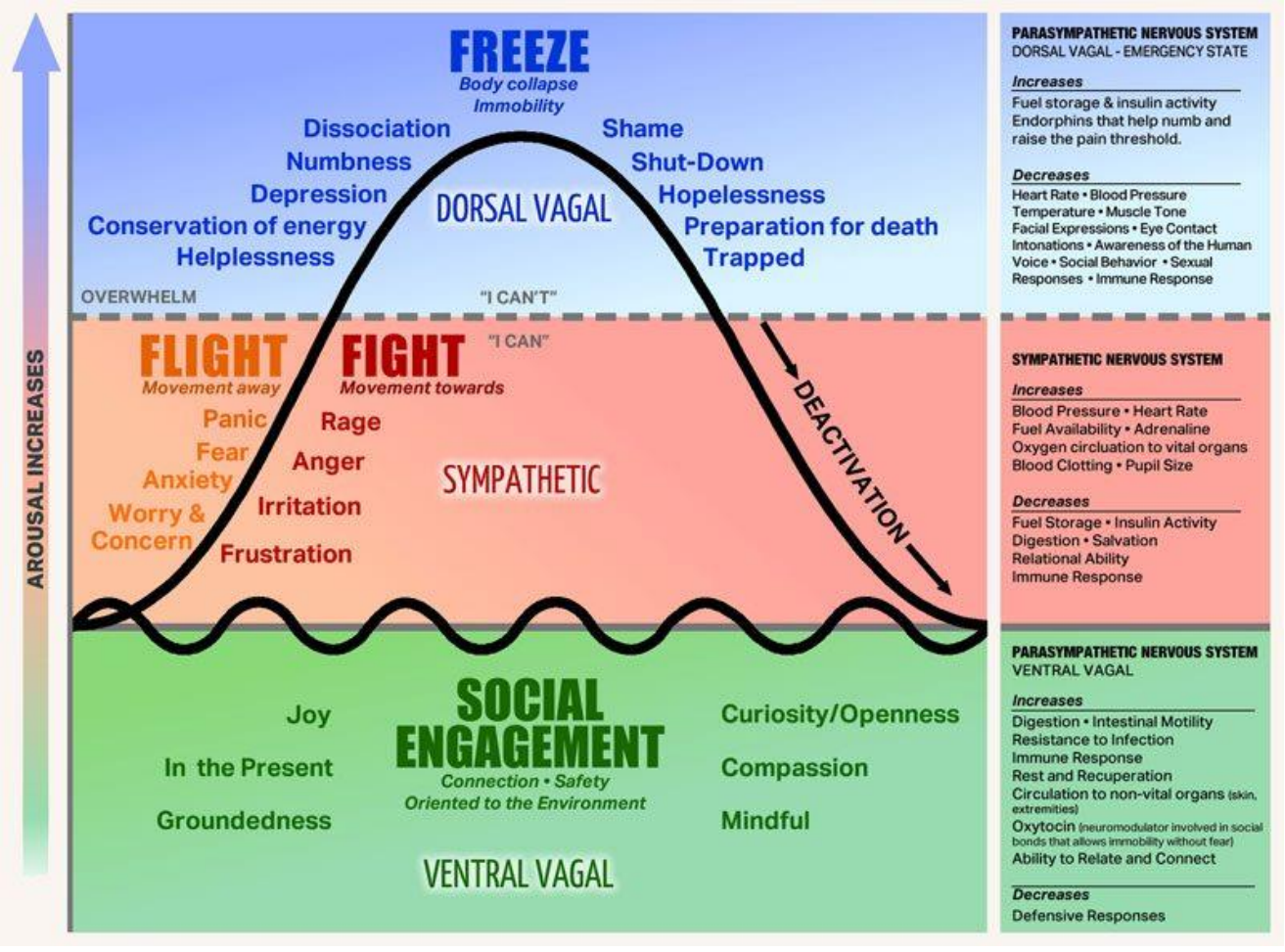
SYMPATHETIC VS. PARASYMPATHETIC

- Because of the polyvagal theory, we now know that **<u>this is not how it really works</u>**



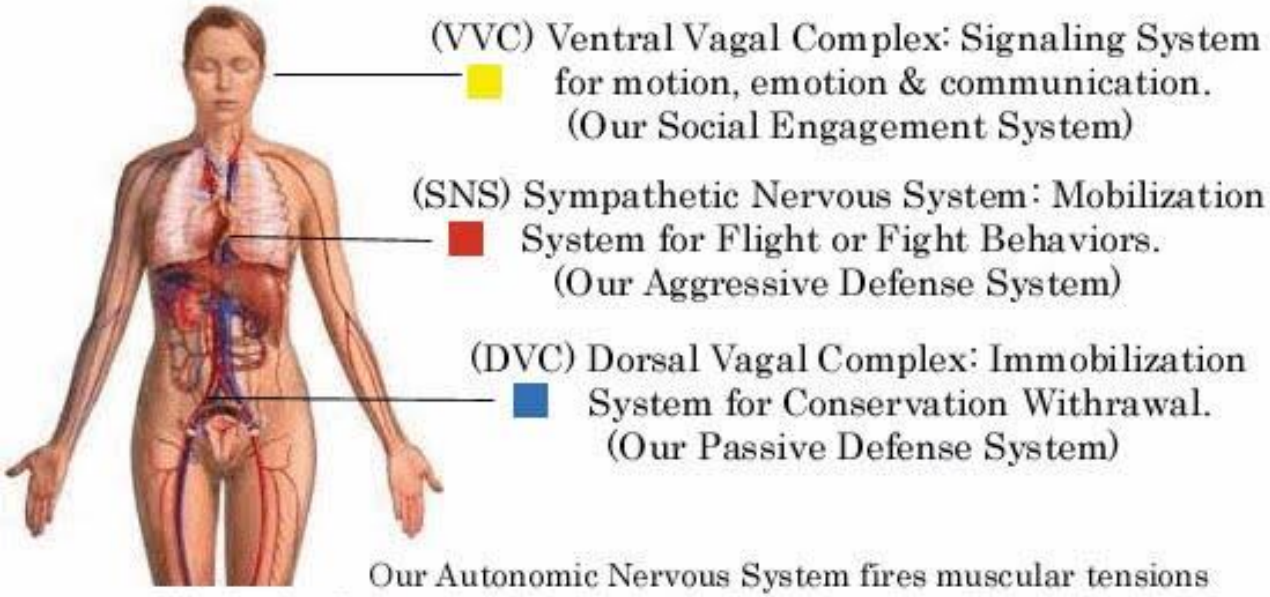
SYMPATHETIC VS. PARASYMPATHETIC

- A better analogy is the gas and breaks on a car
  - Sympathetic mobilize energy stores (the gas)
  - Parasympathetic creates inhibition (the breaks)
    - Can work all the way into a freeze response



POLYVAGAL THEORY: ANATOMY

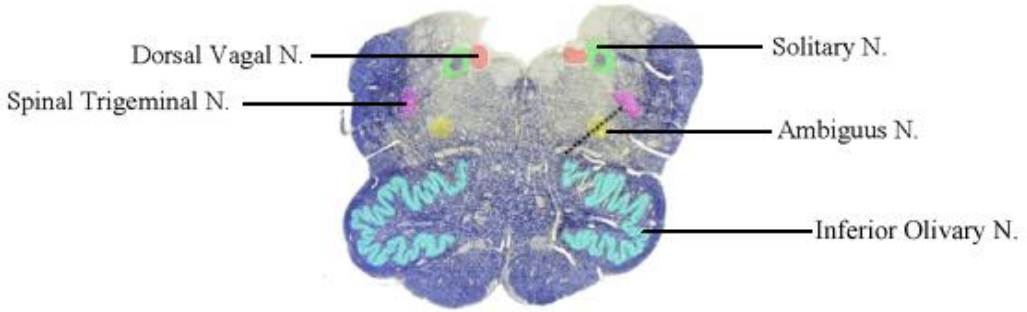
- Ventral Vagal Complex
  - Social Engagement System
- Dorsal Vagal Complex
  - Passive Defense System



POLYVAGAL THEORY: ANATOMY

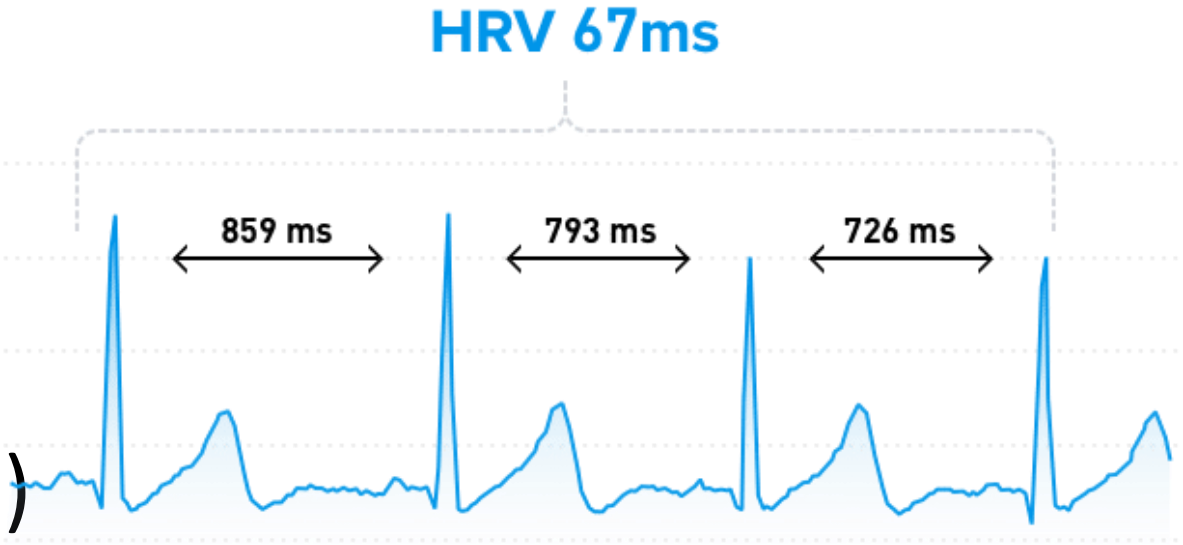
- Ventral Vagal Complex
  - Originates at the Nucleus Ambiguus
  - Myelinated portion
  - “Smart” vagus
  - Controls supradiaphragmatic visceral organs

Vagal Component	Associated Nucleus	Innervated Structures
Parasympathetic	Dorsal Vagal N.	Autonomic ganglia of thorax and abdomen
Motor	Ambiguus N.	Pharynx, larynx, palate
Viscerosensory	Solitary N.	Pharynx, larynx, esophagus, thoracic and abdominal viscera
Chemosensory	Solitary N.	Taste buds of epiglottis
Somatosensory	Spinal Trigeminal N.	Outer ear canal, pinna, dura



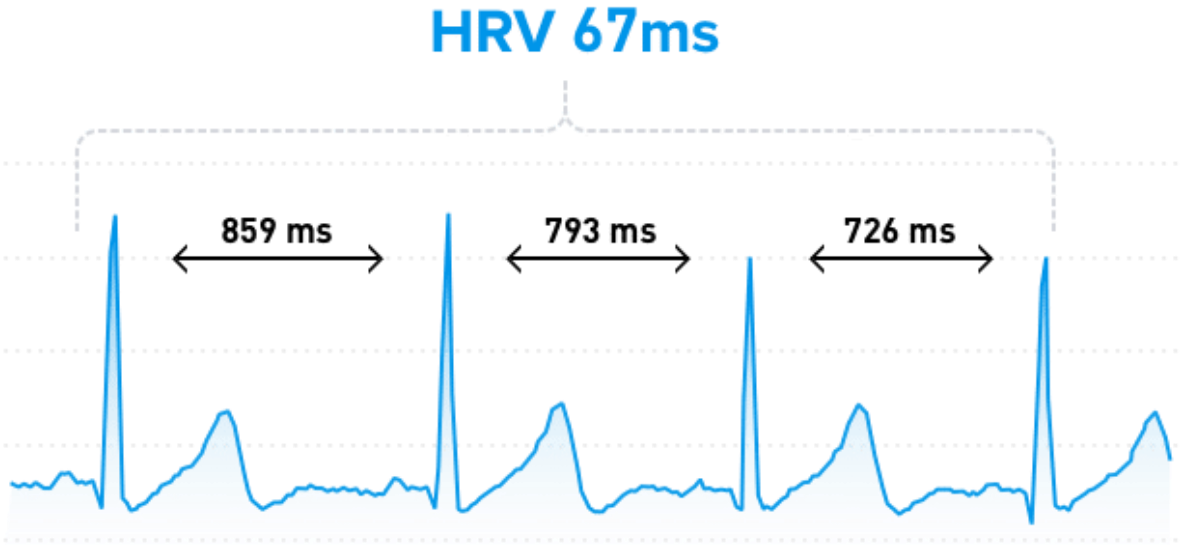
POLYVAGAL THEORY: ANATOMY

- Ventral Vagal Complex
  - This is the part of the vagus nerve that **creates heart rate variability**
  - **Suppresses heart rate** at SA node to create RSA (Respiratory sinus arrhythmia)
    - HRV (Heart rate variability)



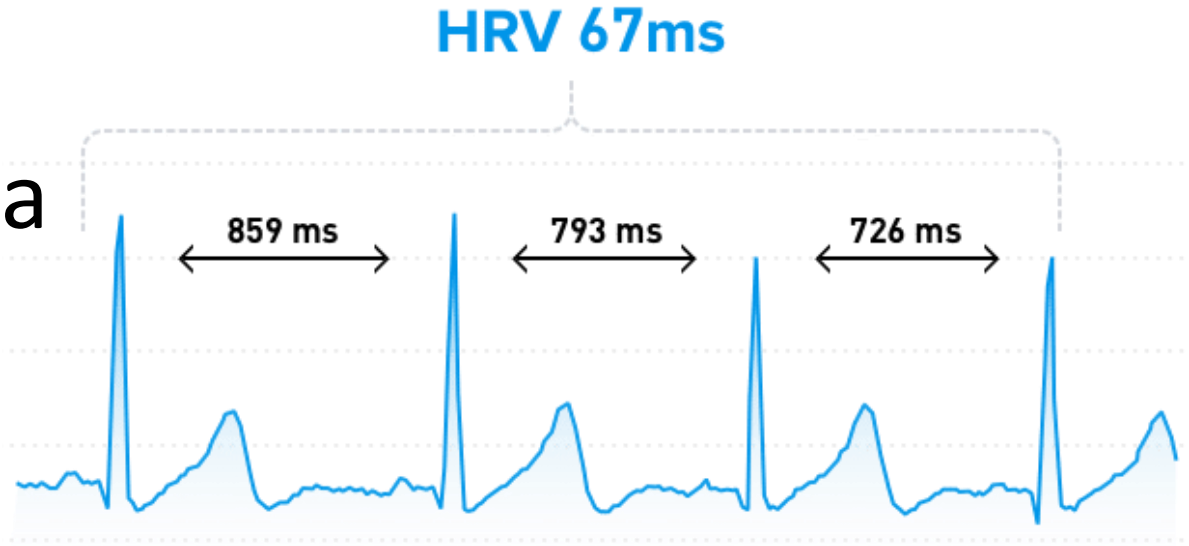
POLYVAGAL THEORY: ANATOMY

- Heart rate variability
  - Inspiration
    - **Decrease** in vagal activity
    - Heart rate **increases**
  - Expiration
    - **Increase** in vagal activity
    - Heart rate **decreases**



POLYVAGAL THEORY: ANATOMY

- Heart rate variability
  - Probably the **best current method** we have for assessing the **“stress”** that a person is under

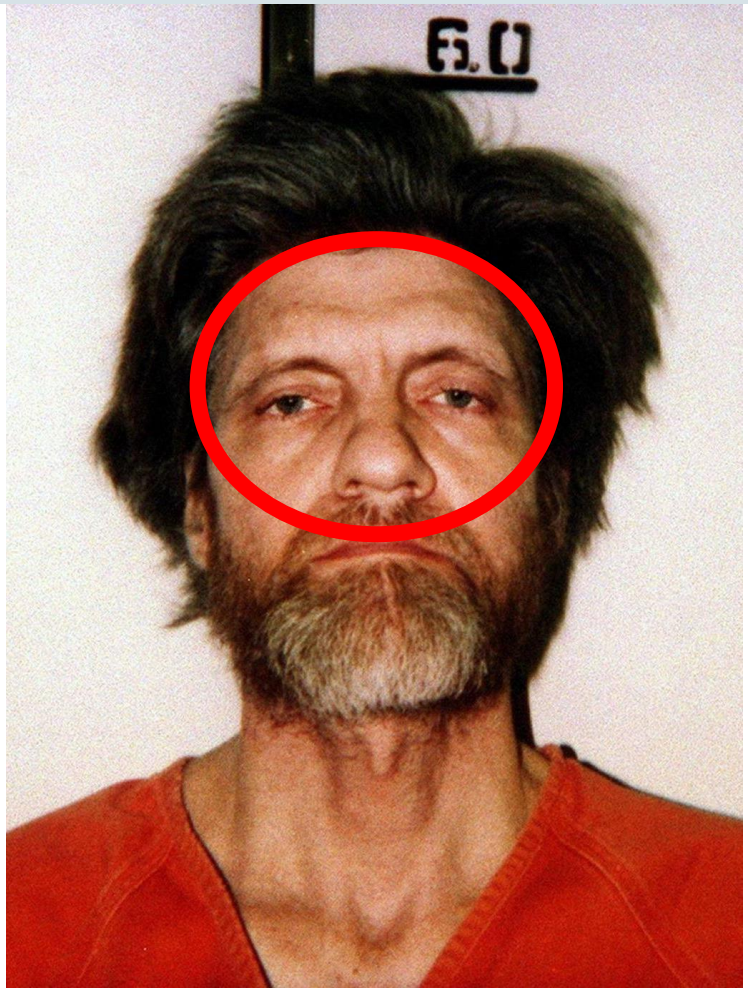


POLYVAGAL THEORY: ANATOMY

- Heart rate variability
  - HRV is best measured
    - First thing in the morning before any activity
    - While sleeping

POLYVAGAL THEORY: ANATOMY

- Ventral Vagal Complex
  - Has projections to the **muscles** of the **face**, neck, and ears
    - Loss of ventral vagal complex activation will result in **less emotional expression in the face**
      - Especially the muscles of the **upper half of the face**

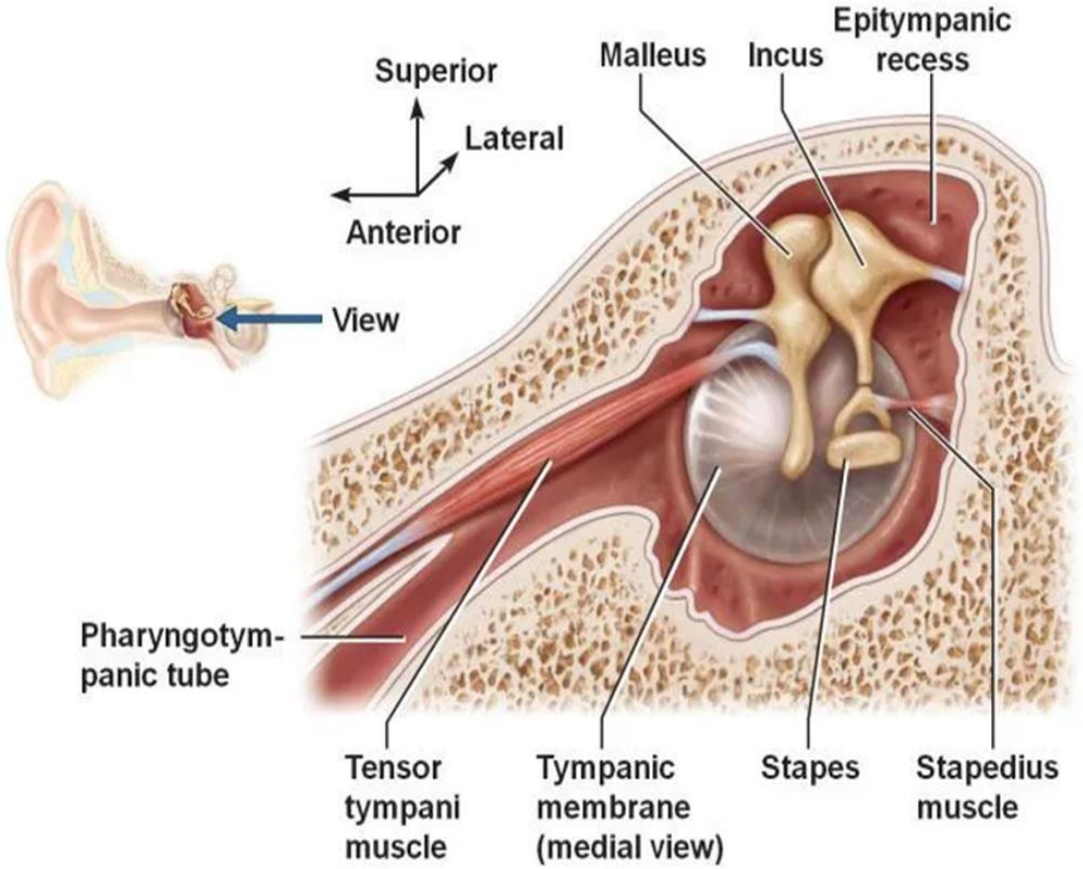


POLYVAGAL THEORY: ANATOMY

- Ventral Vagal Complex
  - Has projections to the **muscles** of the face, **neck**, and ears
    - Muscles involved in **vocalizations**
    - Creates **vocal prosody**

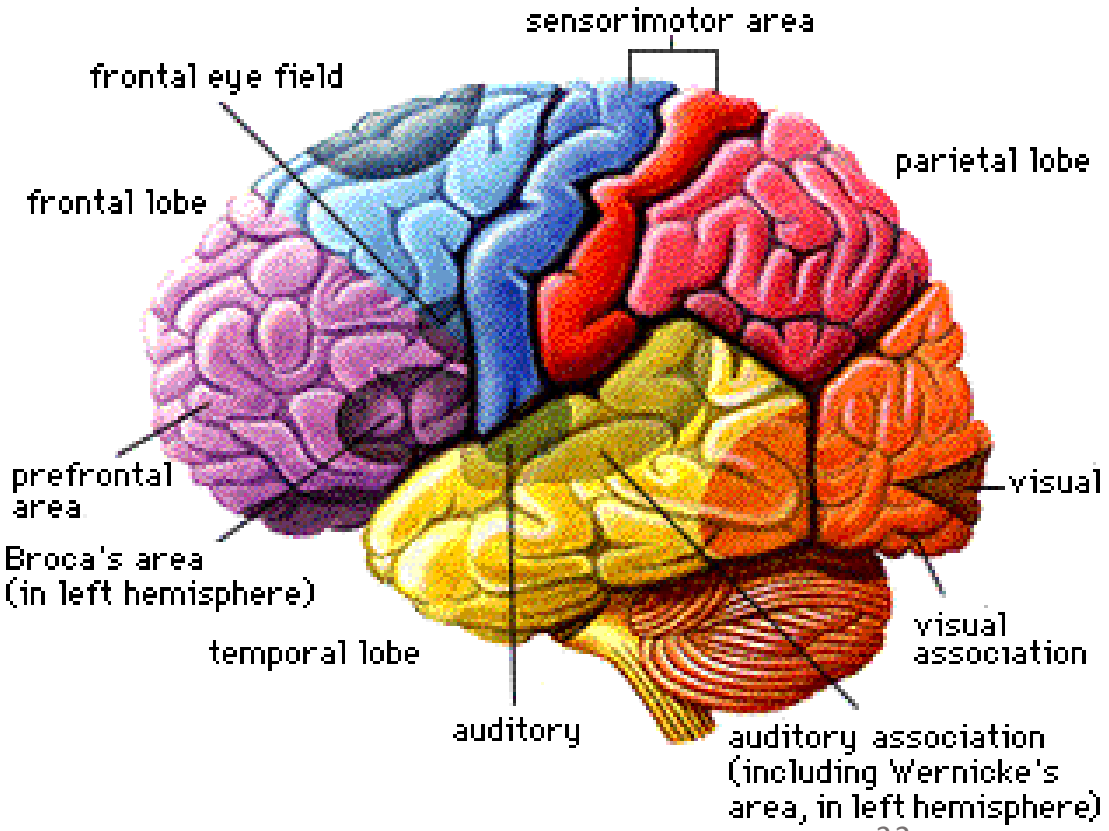
POLYVAGAL THEORY: ANATOMY

- Ventral Vagal Complex
  - Has projections to the **muscles** of the face, neck, and **ears**
    - Muscles involved in **dampening hearing**
      - Allowing for **discernment of vocalizations from background noise**



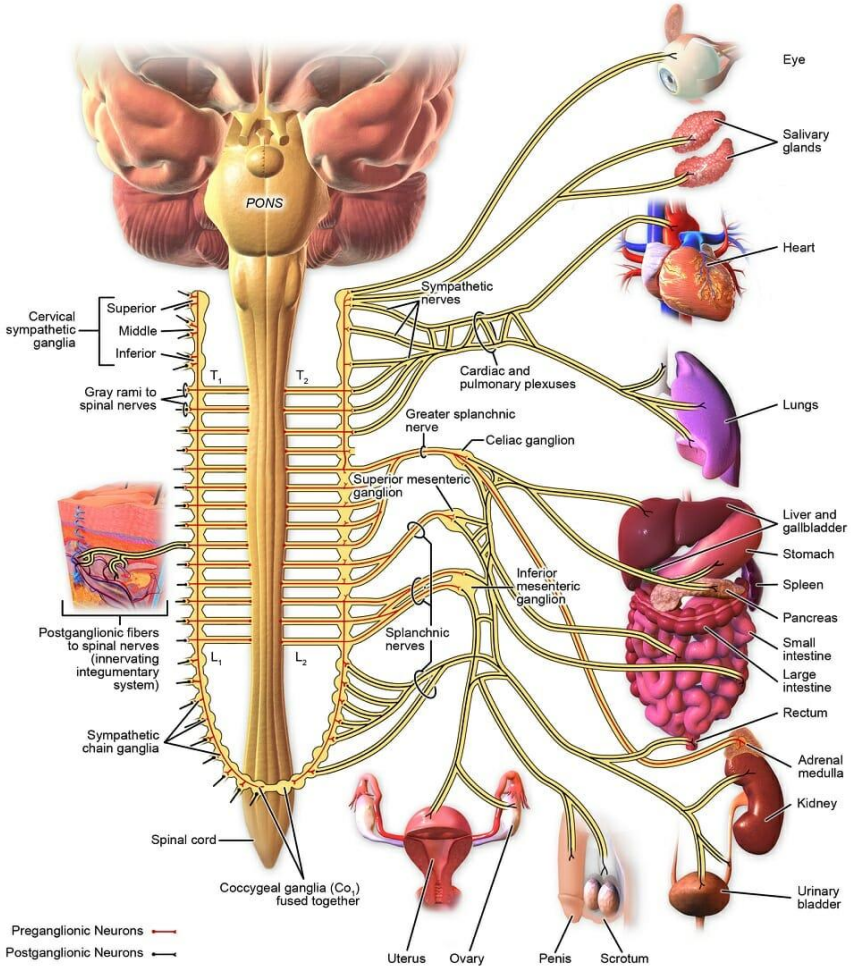
POLYVAGAL THEORY: ANATOMY

- Ventral Vagal Complex
  - Increases activation of the prefrontal gyrus and temporal lobes
    - Access our **personality**
    - Access our **memories**
    - **<u>Learn from our mistakes</u>**



POLYVAGAL THEORY: ANATOMY

- Sympathetic Nervous System
  - Principally controlled through the **adrenal glands** and the **sympathetic ganglia**
  - **<u>Releases energy stores</u>**



POLYVAGAL THEORY: ANATOMY

- Dorsal Vagal Complex
  - Originates at the Dorsal vagal nucleus
  - Unmyelinated portion
  - Considered older
  - “Reptilian”
  - Controls subdiaphragmatic visceral organs

Vagal Component	Associated Nucleus	Innervated Structures
Parasympathetic	Dorsal Vagal N.	Autonomic ganglia of thorax and abdomen
Motor	Ambiguus N.	Pharynx, larynx, palate
Viscerosensory	Solitary N.	Pharynx, larynx, esophagus, thoracic and abdominal viscera
Chemosensory	Solitary N.	Taste buds of epiglottis
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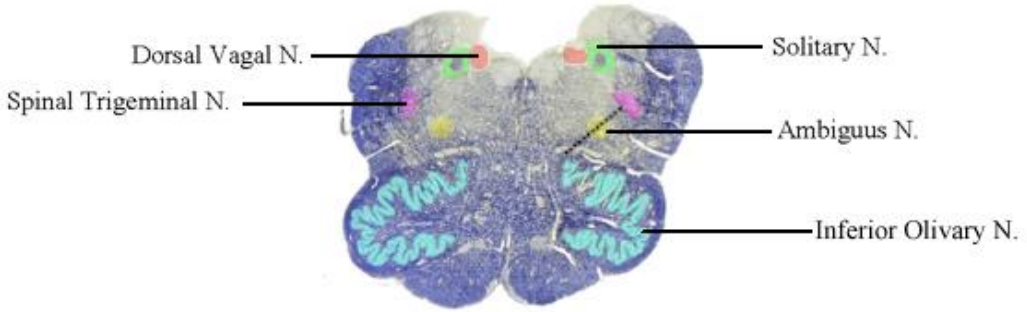
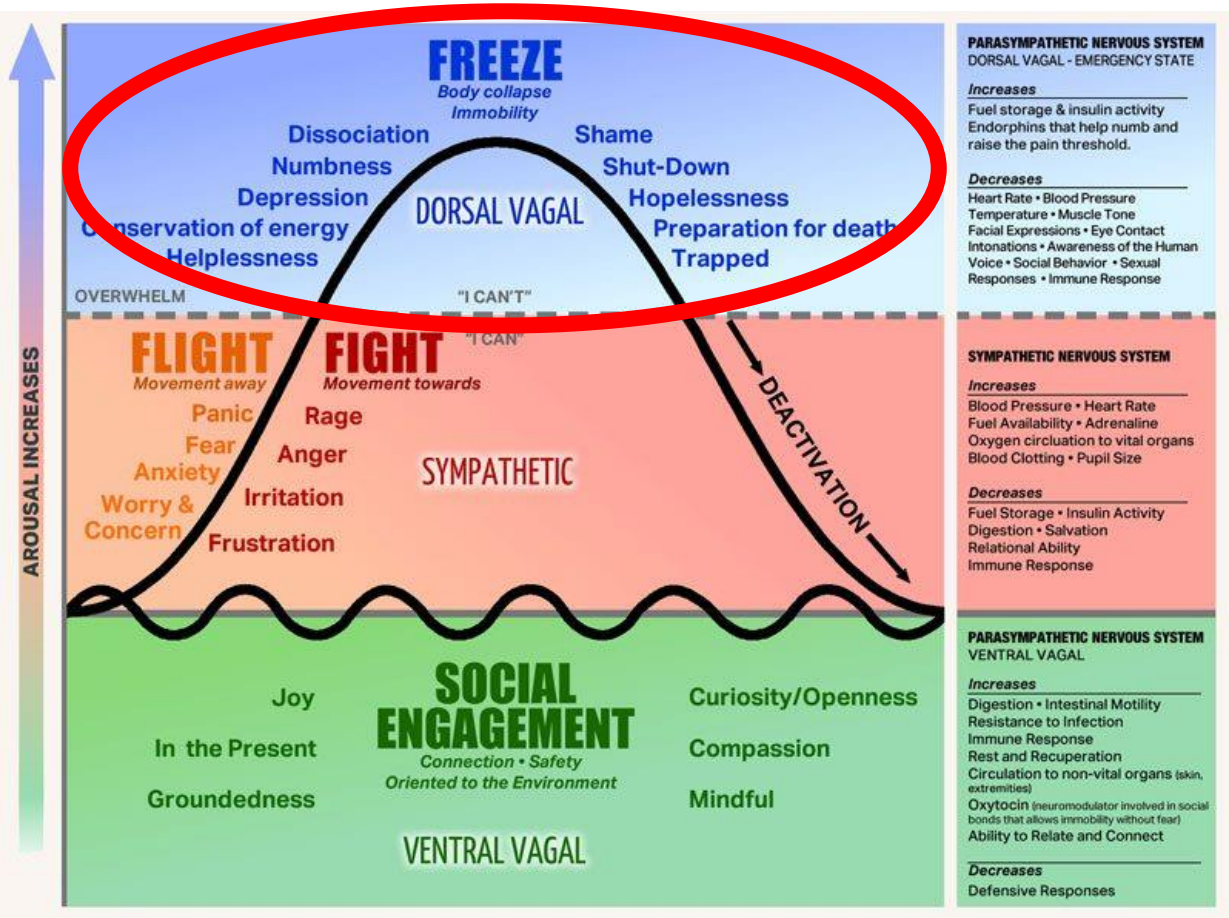


DORSAL VAGAL COMPLEX AND FREEZE

- Controls **subdiaphragmatic organs**
- Activation creates the **freeze** response



DISSOCIATION AND THE FREEZE RESPONSE

- “Based on polyvagal theory, one can speculate that there **may be gradations** in reactions to life threat from total shutdown and collapse, mimicking the death-feigning responses of small mammals, to an immobilization of the body during which **muscles lose tension** and the **mind <u>dissociates</u>** from the physical event.”

PERCEPTION VS. NEUROCEPTION

- **Perception**
  - **Conscious awareness** of surrounding and environment

PERCEPTION VS. NEUROCEPTION

- **Neuroception**
  - The neural process that evaluates risk in the environment **without conscious awareness**
  - Our neural pathways are constantly assessing if people or situations are safe, dangerous, or life threatening

PERCEPTION VS. NEUROCEPTION

- **Faulty neuroception**
  - We **feel unsafe** but **are safe**
  - We **feel safe** but **are unsafe**

PERCEPTION VS. NEUROCEPTION

- **Faulty Neuroception**
  - "Faulty neuroception might lie at the root of several psychiatric disorders, including autism, schizophrenia, anxiety disorders, depression, and reactive attachment disorder"
    - Stephen Porges, PhD

JACKSONIAN DISSOLUTION

- As we feel **more threatened**, we **move backwards** through our **more phylogenetically developed autonomic systems.**

JACKSONIAN DISSOLUTION

- **First**
  - **Lose** activation of **ventral vagal complex**

JACKSONIAN DISSOLUTION

- **Next**
  - **Activate <u>sympathetic nervous system</u>**

JACKSONIAN DISSOLUTION

- **Last**
  - **Activate dorsal vagal complex**
    - This will cause dissociation and the feeling that a person might pass out
    - Can move all the way to a death-feigning response, passing out and/or defecation

JACKSONIAN DISSOLUTION

- The more traumatized you become:
  - The **more** you **react** to your **environment**
  - The **less** you can **inhibit your reactions** to your **environment**

DISSOCIATION AND THE FREEZE RESPONSE

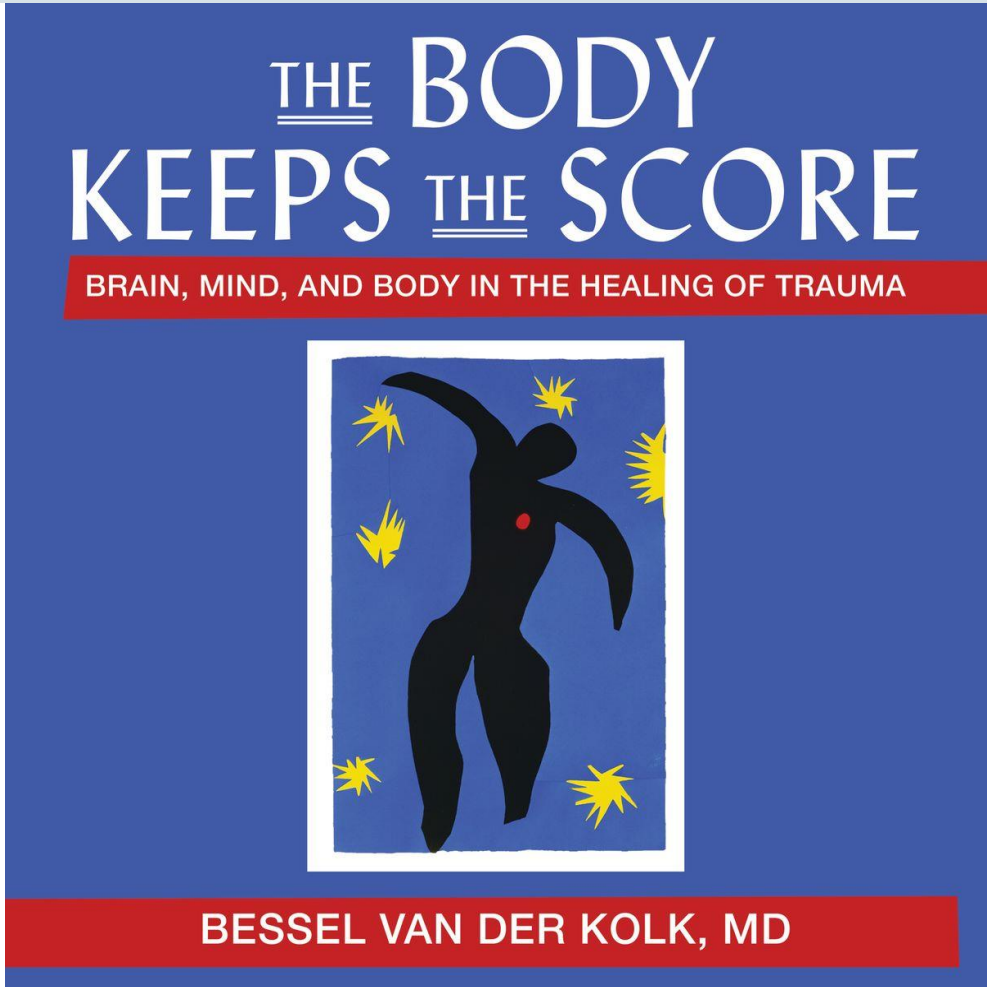
- “When our body reflexively puts us into a survival related state, such as shutting down, we have difficulties navigating out of this state”
  - Stephen Porges, PhD

DISSOCIATION AND THE FREEZE RESPONSE

- “When we go into a shut-down state, reflexively the range of voluntary behaviors that we have is greatly reduced.”
  - Stephen Porges, PhD

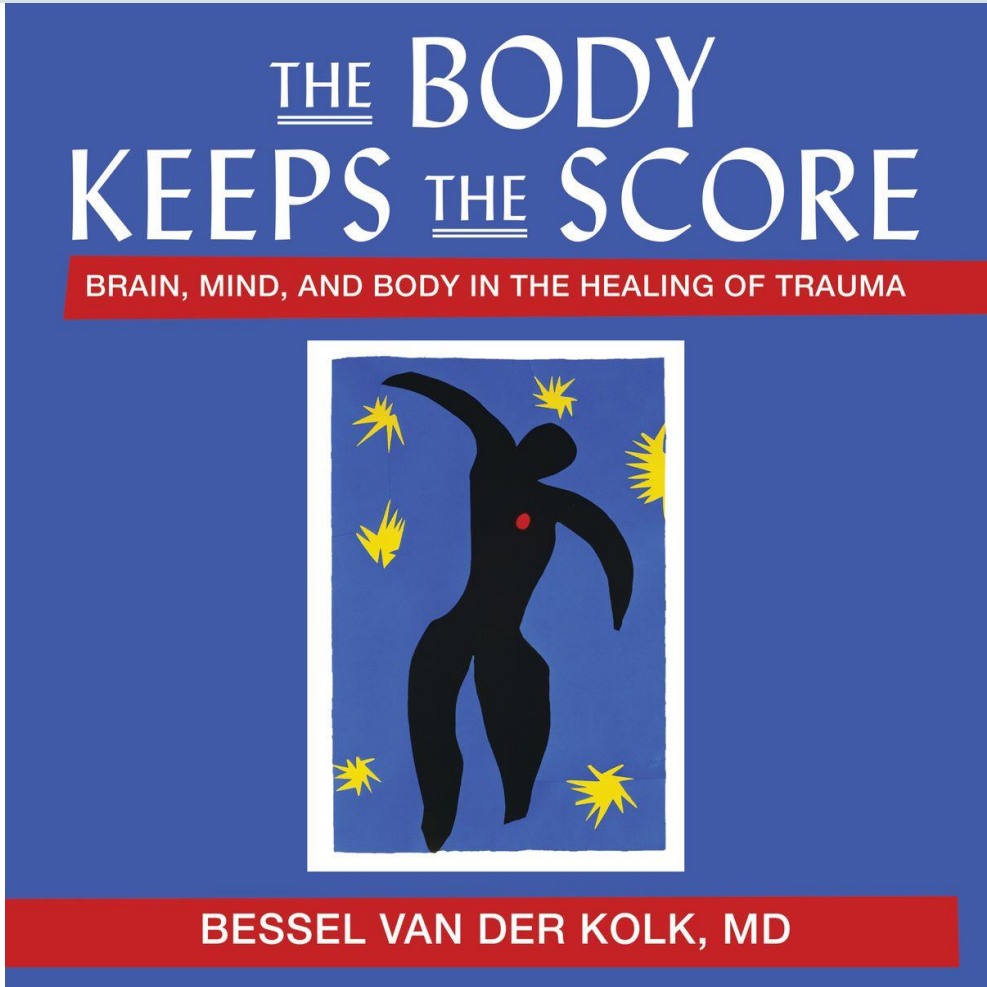
TRAUMA

- After trauma, our brains can lose the ability to differentiate between life-threatening and not life-threatening situations



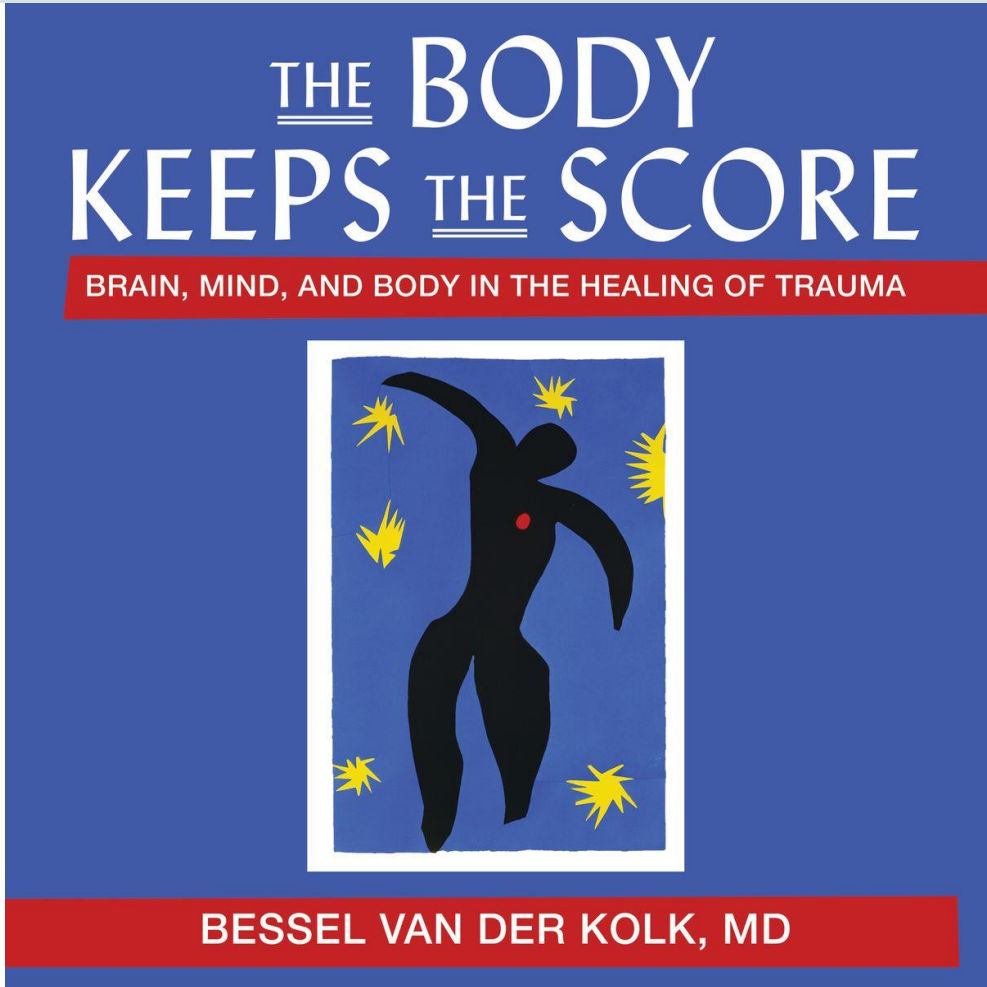
TRAUMA

- “As long as the mind is stuck in survival mode, its energy is focused on fighting off unseen enemies, which leaves no room for nurture, care and love.”



TRAUMA

- “As long as the mind is defending itself from invisible assaults, our closest bonds are threatened, along with our ability to imagine, plan, play, love, learn and pay attention to other people’s needs”



ANXIETY: A MALADAPTED MOBILIZATION RESPONSE

- **Maladapted mobilization response**
  1. **Activation** of the **sympathetic** mobilization hormones
     - Increases glucose mobilization in order to create more energy in the body
  2. **Maintenance** of mechanisms to **prevent us from moving**
     - Ventral vagal complex, dorsal vagal complex, frontal and temporal lobes

ANXIETY: A MALADAPTED MOBILIZATION RESPONSE

- **Maladapted mobilization response**
  - Increase in mobilization of energy sources within the body without physical activity creates the feeling of anxiety

SAFETY AND EAR COVERING

- Often observed in children with autism spectrum disorders.
  - This is an observable coping mechanism.

SAFETY AND EAR COVERING

- With loss of ventral vagal complex activation there will **not have proper dampening** of vibration of the **tympanic membrane**.
  - Increasing background sounds
  - More difficult to differentiate vocalizations
  - **<u>Activate other defense systems</u>**

SAFETY AND EAR COVERING

- By covering the ears, we **decrease neuroceptive input** that we are **not safe**.
  - Increase VVC
  - Decrease DVC
  - Decrease sympathetic nervous system

NEUROCEPTION TECHNIQUE

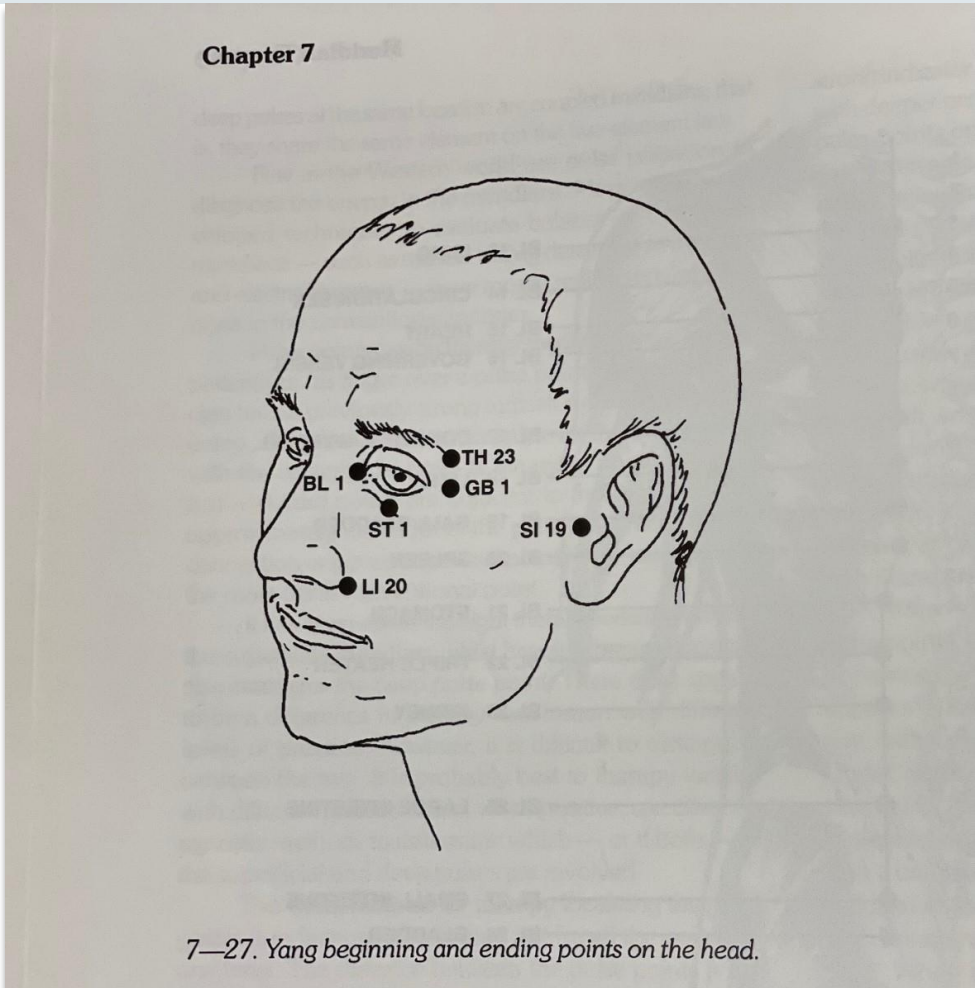
- Test group flexors and extensors
  - If either are inhibited
    - Have the patient cover his/her ears
  - If muscles become activated
    - The patient is actively experiencing neuroceptive input that the he/she is **not safe**
  - If there is no change
    - Move on through other trauma clearing protocol

NEUROCEPTION TECHNIQUE

- Treatment
  1. Have patient hold hands over the ears
  2. Tap active B & E Points around 100-200 times at a rate of one tap per second
  3. Pulse diaphragm and NV 2 (on forehead)
  4. Check for other areas of the body that need to be treated
  5. Recheck group flexors and extensors

B & E (BEGINNING AND ENDING) POINTS

- On the face
  - BL 1
  - ST 1
  - TH 23
  - GB 1
  - LI 20
  - SI 19
- On the body
  - GV 20
  - K 27
  - SP 21
  - GB 33
  - K 1



NEUROCEPTION TECHNIQUE

- Alternative treatments
  - Adjustments
  - Singing
  - Humming
  - Chanting
  - Gargling
  - Vibration to front of body
  - Visceral manipulation

NEUROCEPTION TECHNIQUE

- Breathing Technique
  1. 40 Wim Hof Breaths
     - End on a full exhale
  2. 4 rounds of 4-7-8 Breathing
     - 4 seconds – Inhale
     - 7 seconds – Hold your breath
     - 8 second – Exhale

NEUROCEPTION TECHNIQUE

- By clearing this response, people tend to become more present and less reactive to their environment.

NEUROCEPTION TECHNIQUE

- After this treatment, people should feel safer, which could potentially allow them to participate in additional treatments without the risk of being re-triggered

BODY ORIENTED TRAUMA THERAPIES

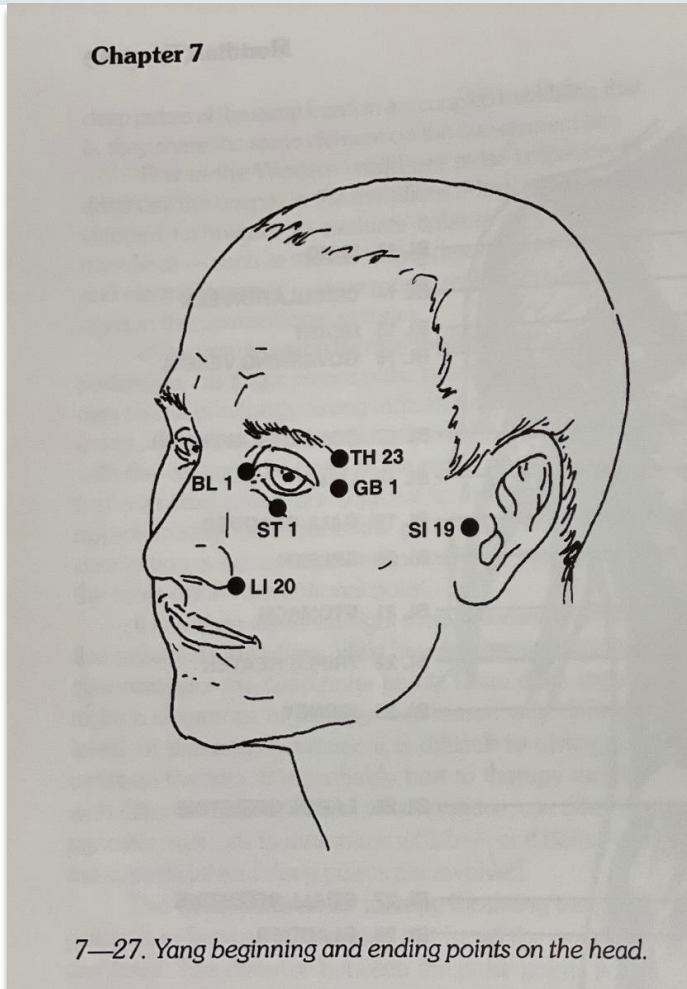
- Bandy Trauma Technique
- NET
- Somatic Experiencing
- Encoded memory technique
- Body electronics
- The Emotion Code
- Singing
- The Safe-and-Sound protocol
- EMDR (Eye Motion Desensitization and Reprocessing)
- ART (Accelerated Trauma Therapy)
- NLP (Neurolinguistic Programming)
- Thought field therapy
- Many more

SAFETY AND EAR COVERING

- Demonstration

B & E (BEGINNING & ENDING POINTS)

- B & E (Beginning & Ending) Points
- Why does this work so well?
- Which autonomic nervous system are we treating?
  - My guess is that we have a decrease in DVC break, which allows more VVC activity.



NEUROCEPTION TECHNIQUE

- Occasionally, tapping B & E points will be alarming to patients.
  - I suspect that in people that are constantly in a freeze state feel overwhelmed by their environment when they first move out of freeze.
    - This is in part because of the increased production of the sympathetic hormones that has been suppressed by the freeze reaction.

PUTTING IT ALL TOGETHER

- Polyvagal theory describes the physiology of how we are alerted to safety cues in our environment and interact with each other

PUTTING IT ALL TOGETHER

- When we go through trauma, we lose the ability to differentiate between **safe** and **unsafe**

PUTTING IT ALL TOGETHER

- The **more unsafe we feel**, the more easily we react to our environment and **move toward disconnection and shutdown**

Reading List

- **The Pocket Guide to the Polyvagal Theory**
  - Steven Porges
- **The Body Keeps the Score**
  - Bessel Van Der Kolk, MD
- **Polyvagal Theory in Therapy**
  - Deb Dana
- **Complex PTSD**
  - Pete Walker
- **Trauma and Memory: Brain and Body in a Search for the Living Past**
  - Peter Levine, PhD
- **No Bad Parts**
  - Richard Schwartz, PhD