



Understanding Trauma and Response

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Science wants to teach us something.

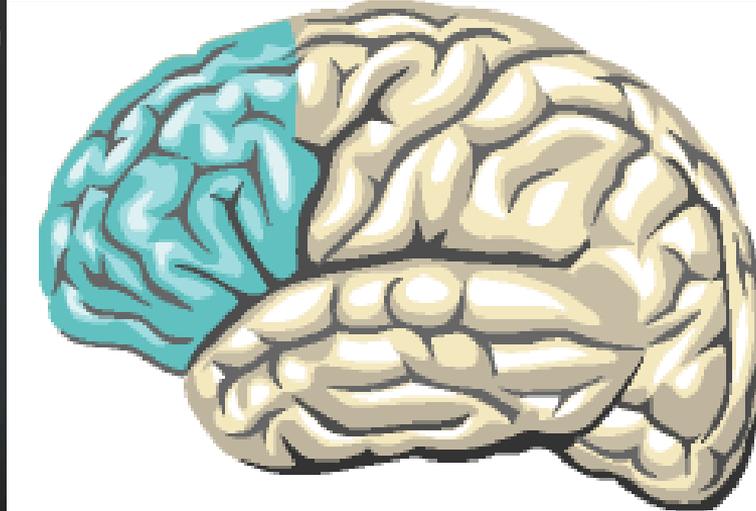
- ▶ Why is sensory memory and fragmented memory a normal finding in survivors of assault? (physiological evidence)
- ▶ Why are survivors often unable to articulate logical, sequential or time oriented information about an event? (testimonial evidence)
- ▶ Why do survivors tend to develop clearer memory, fill in or change details over time? (physiological evidence)
- ▶ Why are individuals with a history of complex trauma less likely to have accurate short term memory, logical reasoning or comprehension of consequences?
- ▶ Why are individuals with a history of complex trauma more likely be resistant to help?
- ▶ Why do individuals with a history of complex trauma unconsciously choose to exist in dangerous environments or have high risk behaviors?
- ▶ Why is not fighting back or not saying “no” NOT necessarily an indication of consent, but possibly physiological evidence?



Neural Circuitry Related to Trauma

Prefrontal Cortex

- ▶ Language Expression
- ▶ Logical thought
- ▶ Time/Sequence
- ▶ Impulse control
- ▶ Math/calculations
- ▶ Emotional regulation
- ▶ “personality”

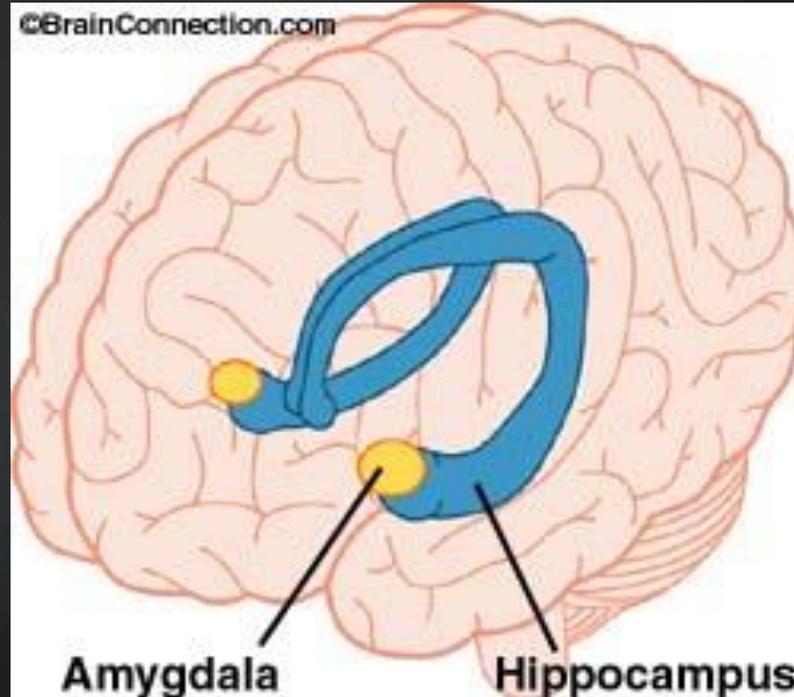


Neural Circuitry Related to Trauma

▶ **Limbic System**
“fear center”

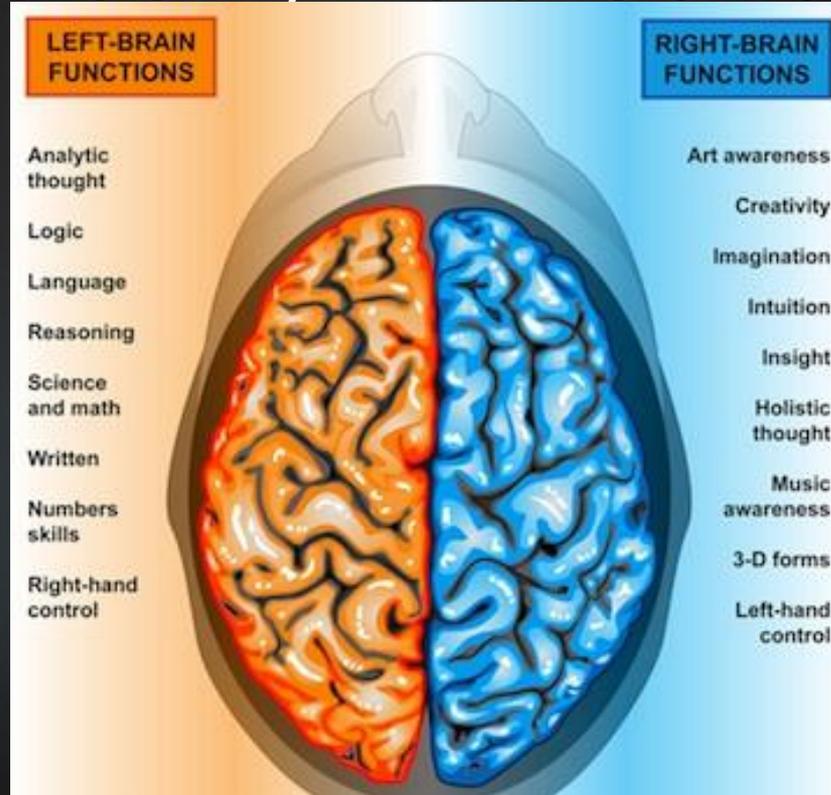
▶ **Amygdala**
“Smoke detector”
Causes autonomic response

▶ **Hippocampus**
Short term memory organization



Neural Circuitry Related to Trauma

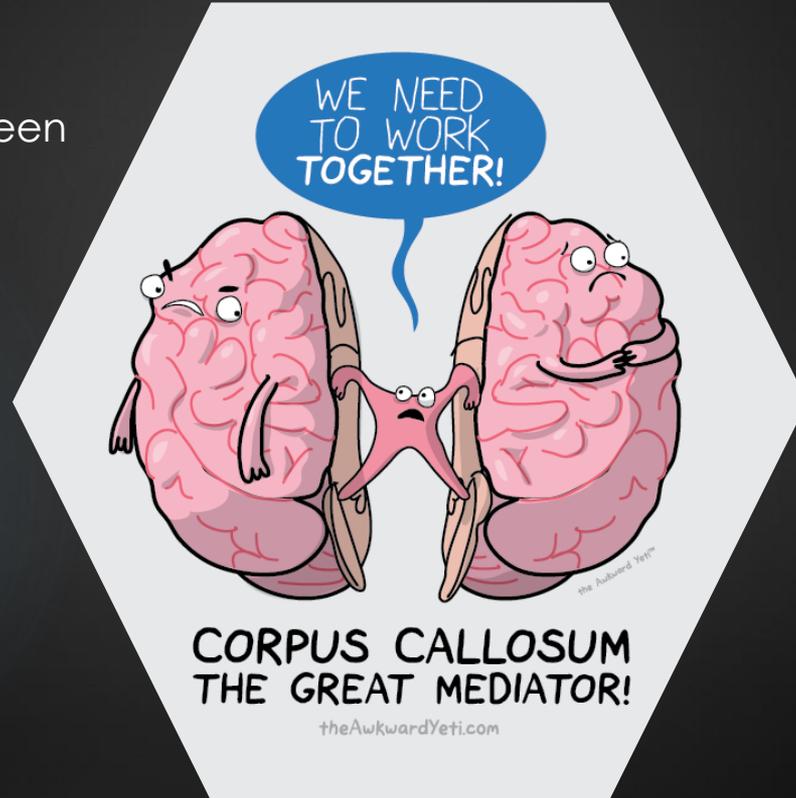
► Hemispheres of the brain



Neural Circuitry Related to Trauma

► Corpus Callosum

Communication between hemispheres



Psychological phenomena that occur with trauma:

- ▶ Perceptual narrowing (Archambault, J., 2008)
 - Auditory exclusion
 - Tactile exclusion
- ▶ Loss of cognitive and motor skills
- ▶ Critical incident amnesia

Simple vs Complex Trauma

- ▶ *One time event.*
- ▶ *Coping skills are intact.*
- ▶ *Rational thought is available.*
- ▶ *Subsequent events are not incorporated in the initial trauma.*
- ▶ *Environmental support system is intact.*
- ▶ *Multiple or chronic events*
- ▶ *Maldeveloped coping mechanisms*
- ▶ *Irrational beliefs/skewed processing*
- ▶ *Subsequent events become part of the trauma*
- ▶ *Environment reflects maladjustment*

Foundations of Complex Trauma

Childhood:

- **Prefrontal Cortex** is underdeveloped and inefficient.
- **Limbic system** becomes larger and overactive/hyper-responsive. (Research on children watching teachers' faces)
 - **Hippocampus** is slow to activate due to increased **amygdala** activity.
- **Corpus callosum** is underdeveloped in childhood (naturally) so language and emotion don't coincide well. This is the reason for play therapy.
- **Cortisol and Epinephrine** are present in consistently higher amounts, causing hyperactivity, slowed body and brain growth, higher heart rate, symptoms of fight or flight.

Foundations of Complex Trauma

Results in adulthood):

- Attention problems/ short term memory deficits/ disorganized thought (compromised PFC)
- Hyperactivity/Hypervigilance/bodily tension/ increased HR/increased startle reflex (overactive limbic system and high cortisol levels)
- Language and processing delays (compromised PFC and reduced corpus callosum)
- Falsely perceived threat/difficulty with authority/ poor social interactions (overactive limbic system and involuntary threat-focus)
- Problems with emotional regulation/reality tests with emotion rather than logic (compromised PFC and overactive limbic system)
- Sensory and emotional memory (right brain storage and retrieval)
- Pain dysregulation/hypo or hyper- responsive (several brain mechanisms)

Here's an 'Ah-ha' moment...

1. The amygdala detects danger in the external environment and physiologically prepares the organism to confront the threat.
 2. If an overactive amygdala perceives threat *all the time*, the organism is primed to confront threat *all the time*.
- ▶ *Why might those with complex trauma history choose to return to dangerous environments?*
 - ▶ *Why might those with complex trauma history feel uncomfortable in non-threatening environments?*

What's going on under normal circumstances?

Top Down Processing

- ▶ Prefrontal Cortex is primary processor
 - ▶ Focus is on language and logic
- ▶ Memory will be a sequential narrative
- ▶ Attention is voluntary and deliberate

BLUE

PURPLE

RED

GREEN

PURPLE

GREEN

What's going on during “fight or flight”?

Bottom Up Processing

- ▶ Limbic System is primary processor
- ▶ Focus is on sensation and emotion
 - ▶ Memory will be fragmented
- ▶ Attention is involuntary and threat-focused

BLUE

PURPLE

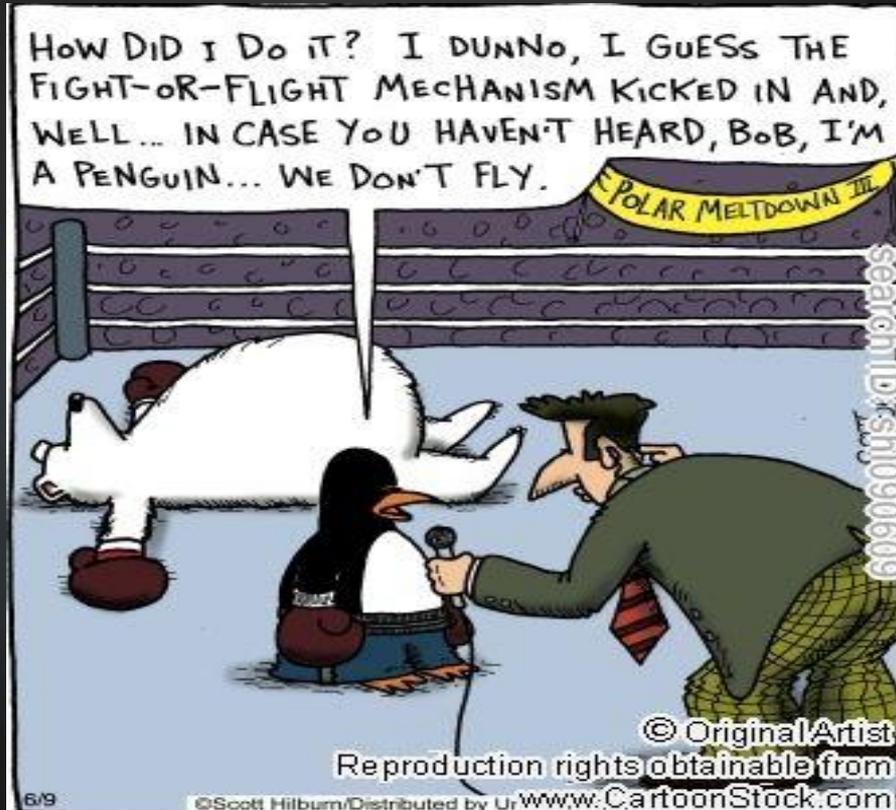
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Let's Talk about F or F...



Tonic Immobility



Tonic Immobility

- ▶ Involuntary
- ▶ Accelerated breathing, eyes may close or be open, paralysis of muscles involved in flight and vocalizations
- ▶ More common in complex trauma
- ▶ 12-50% rape victims report (Heidt et al., 2005)

Dissociation

Feeling separate from
body and experience

Memory may be
impaired or absent

Emotionally
disconnected from the
event

Can become an
involuntary response to
anxiety



The Puzzle: Putting it all together

Bottom up processing (sensory, fragmented, non-lingual oriented, illogical information)

+

Freeze state memory impairment

+

Anxiety induced threat perception or distrust (from history of complex trauma)

=

What kind of witness?

How can we put the puzzle together?

Set the stage...

- ▶ **Allow survivor to sleep** before interview if possible. 48 hours allows some degree of autonomic regulation.
- ▶ **Ground yourself.** Reduce your anxiety through deep breathing, relaxing your body, etc. Anxiety is energy that can easily trigger the anxious energy in the survivor.
- ▶ **Prepare yourself to listen.** Interrupting disrupts the train of thought. This presents a power differential and disallows processing of memory fragments. Make note of what you need clarification on and come back later.
- ▶ **Reduce power differential** whenever possible
 - ▶ Approach the victim as a student of what the offense entails rather than controlling her/him.
 - ▶ Body language
 - ▶ Eye contact
 - ▶ Offer choices
 - ▶ Tone of voice
 - ▶ Language ("survivor or victim", not "witness"; be careful for language that implies consent; avoid implying the victim's behavior, dress, actions led to perpetrator's behavior)
 - ▶ Follow the survivor's train of thought

Elicit recall in the way it was encoded

▶ Build a graphic timeline

- ▶ When was the first moment you realized you were in danger?
- ▶ When was the first moment you realized you were going to survive?
- ▶ “ “ you would get away?
- ▶ “ “ you would be OK?
- ▶ If there's not an identifiable endpoint: When did you first go to sleep after the event?

Remember, sleep requires a parasympathetic response and therefore it signifies the end of said traumatic event. The next wake cycle would represent a new traumatic episode if the parasympathetic system is triggered.)

Elicit recall in the way it was encoded

- ▶ **Focus on internal stimuli** (the border of the puzzle, the outline of the story) and then associate those with external stimuli (who, what, when, where).
 - ▶ What if anything can you remember?
 - ▶ Sensations?
 - ▶ What is the one thing that you cannot forget?
 - ▶ What was the worst part of the event?
 - ▶ Try to remove the word WHY from your vocabulary!!
 - ▶ What was your thought process when...
 - ▶ What do you remember about the moment when...
 - ▶ What else can you tell me about...
 - ▶ What was going on inside you when...

Thank you...

Questions?

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- ▶ Ben-David, Ofra. (2005). *Rape Perceptions, Gender Role Attitudes, and Victim-Perpetrator Acquaintance*, 53 *Sex Roles* 385, 386.
 - ▶ Lonsway, K., Archmbault, J. & Lisak, D. (2009). *False Reports: Moving Beyond the Issue to Successfully Investigate and Prosecute NonStranger Sexual Assault*, *The Voice*, Nat'l District Attorneys Ass'n Newsletter, 8
 - ▶ Rape-Related Posttraumatic Stress Disorder, National Center for Victims of Crime (2009), available at www.ncvc.org/ncvc/main.aspx?dbName=DocumentViewer&DocumentID=32366