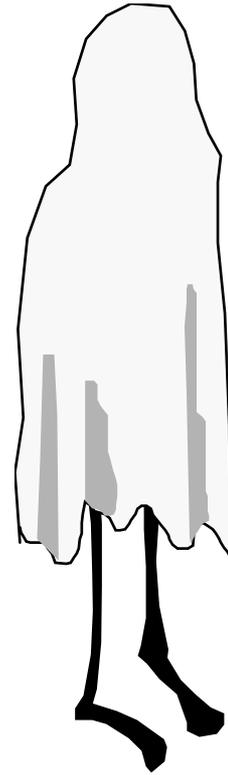


Neurobiology & Sexual Trauma

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Introduction & Overview

- Ginny not Paul
- Start with a therapeutic action
- Neurobiology of trauma
- Sexual trauma
- Other influences
- Typical & Diagnosable symptoms
- Everyday impact
- Metaphor activity
- Therapeutic approaches
- A Trauma Story integrated

Let's take a deep breath...



Neurobiology

- Interrelationship & Integration – a whole system inside and out
- Mind
 - Experiences
 - Conceptions, Perceptions, Observations
- Brain
 - Central Nervous System
 - Neurons
- Body
 - Enervation

Mind

- Informed by experiences
- Conceptions, perceptions, observations
- Rational vs. Emotional
- “Shapes how energy and information move across time”
(Siegel, 2012, p. 1-4).
- Conscious attention needed.



What does my brain have to do with trauma?



Brain

- Survival and Adaptation
- Develops in platforms (e.g. fetal alcohol)
 - Brainstem
 - Cerebellum
 - Parietal
 - Frontal Lobe
 - Limbic

Brainstem

- Keeps us alive!
 - Breathing
 - Heart beat
- Works with Limbic system
- Trauma – Fight/Flight responses – arousal
 - Sympathetic
 - Parasympathetic

Limbic system

- Limbic system – manages experiences
 - Amygdala (↑ reactive) - emotion
 - Hippocampus (↓ mass) - memory
 - Stress hormones (cortisol, epinephrine/norepinephrine)
- Where past and current experiences meet
- Relates to need for attachment
- Trauma
 - Overrides ability to think
 - Stuck in memory in a looping way

Memory

- Implicit – information stored below consciousness
 - Basal ganglia (rule guided behavior) – stores implicit and acts automatically
- Explicit – combined with experiences
 - Conscious
 - When blocked coded implicitly
- Trauma
 - Stress hormones (cortisol) inhibit hippocampus
 - Acting at implicit level with automatic responses
 - Leads to chaos or rigidity

Cerebellum

- Balance and body movement
- Trauma
 - Disconnect from body

Parietal

- Spatial dynamics
- Occipital
- Temporal
- Trauma
 - Sensory overwhelm
 - Sensory shut down

Cortex or neocortex

- Frontal Lobe
- Middle pre-frontal lobe
- Pre-frontal lobe
- Makes neural maps
- Executive functioning
- Trauma
 - Goes offline
 - Directions are impaired

Middle pre-frontal cortex

- Manages:
 - Regulates body
 - Attunes Communication
 - Emotional balance
 - Fear modulation
 - Flexibility of responses
 - Insight
 - Empathy
 - Morality
 - Intuition
 - Influenced by attachment and mindfulness
 - Trauma – disintegration of any above
- (Siegel, 2012)

Prefrontal cortex

- Integrates all areas of the brain so they work together
- Directs what goes in working memory
- Abstract thinking
- Judgment
- Decisions that override impulses
- Trauma
 - Goes offline

Neurons:

Epigenetics and gene expression

- One hundred billion neurons
 - Activity begins when a charged ion moves into a cell membrane
 - Action potential begins in the axon and moves to the end – synapse
 - Neurotransmitters released
 - Travels through the synapse to the receptors on the dendrites
- Brain is changed each time
- Foundation for information processing

A saying...

“Neurons that fire
together wire
together...and
survive together”

Why we care about neurons

- Neurons are supported by glial cells
 - When we learn, the glial cells myelinate the axons increasing speed of information and reducing recovery time (what internet provider do you use?)
 - Learning through repetition increases myelin sheaths
- Trauma – cells do not grow and actions of the nervous system to manage stress are affected

Good news...

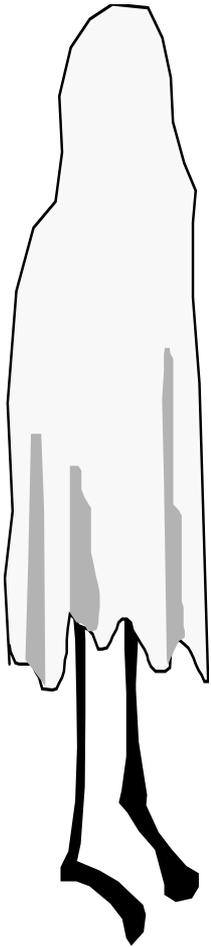
Neuroplasticity

Body

- Spinal Cord & Nervous system
- Enervation – vagal
- Heart
- Gut
- Body Memory
- Works together



Shifting to Sexual Trauma



- Information presented to you in this session is to increase your awareness of the impact of sexual trauma.
- The material that we cover can remind people of their own experiences (including you).

positive thoughts...

- I removed the photo so the file would take less space.
- Think of a person or place that makes you feel happy and focus on that.

Define sexual trauma

- A physically, emotionally, psychologically, socially, and/or perceptually distressing event
 - Interpersonal violence
 - Sex is the weapon
- Outside the range of usual human experience (not a rare event)
- Alters brain function & structure

Another definition

- Trauma, by definition, is “a person’s inability to come to terms with real experiences that have overwhelmed their ability to cope” (van der Kolk, 2009, p.4).
- It is an individual’s *subjective* experience that determines the degree of the trauma’s impact.

A person can be affected by trauma if:

- The event happened to them
- They witnessed the event
- The event happened to someone they love, or even someone they do not know that well
- They are supporting someone who has experienced trauma (vicarious)

A story of trauma

- A woman in her 30's
- Has a job, home, & a friend
- Able to manage at some level
- Friend takes her to confront her fears
- Abreacts
- Calls counseling center
- Mind, Brain, and Body - disintegrated
- What was her diagnosis?

What do the numbers look like?

- All statistics are “underreported”
- FY 2009 – sexual abuse alone
 - 207,700 victims of rape, attempted rape, or sexual assault & 44% under the age of 18; 80% under 30 (rainn.org/statistics)
- General population statistics: 1 out of 4 girls, 1 out of 6 boys

Range of Traumas

Big “T”

- These are the kinds of experiences that we would all agree are traumatic!
- e.g. Rape, mugging, physical beating, bullying, significant deaths, etc.

small “t”

- These are experiences that are individually traumatizing. They may accumulate over time and intersect with other life elements.
- e.g. Bullying, multiple moves, job loss, car accident, multiple losses of relationships.

Contributing Factors

- Type of assault
- Relationship
- Duration
- Age
- REMEMBER: Neurons that fire together wire together”

More of The Trauma Story

- Joy ride results in detention center
 - Home or Group home?
 - Had a job
 - Sexual assault
 - Other assaults followed
-
- REMEMBER: I am working with her reality that views her world through a lens of trauma.

Trauma can impact every aspect of a person's life!

- Neurobiological
- Physical
- Memory
- Emotional
- Cognition
- Social
- Sense of Control, Meaning, Power, Trust, Connection, Safety, and Self in Relationships = a lens for my life

Intersection of...

- Experiences
- Development
- Family Patterns of Coping via Violence & Silence
- Losses
- Genetic / Family History
- Nutrition
- Financial assets
- Neurology
- Diagnosis Imposters (medical)
- Fetal Alcohol
- Substances/Medications
- Treatment as a Contributing Factor
- Mental Health Conditions

Reactions/Responses to Trauma

Normal or Abnormal (?) reaction/response to an overwhelming event:

- Experience a range of feelings
- Fight/Flight/Freeze
- Emotional arousal
- Re-experience the trauma
- Sleep and appetite changes
- Keeping the “secret”

Outcome – Interferences with life activities

Biphasic Impact of Trauma: Themes of Extremes

- Alarm system disconnect (brain impact) = on & off
- Coping skills = Actions are shut down or impulsive and emotionally infused
- Communication = Violent or Silent
- Safety = Perception/Reality; Boundaries/No Boundaries
- Trust = Lack empathy or absorb experiences like a sponge
- Repeating the Pattern = victim and/or victimizer

More Every day impact: Themes of Extremes

- Boundaries (rigid or very loose)
- Unreal expectations (based on unreal experiences)
- Inconsistent learning (re-experiencing)
- Hold emotions (come out balled up as anger a.k.a challenging behavior or physical/mental illness)

Every day impact: Themes of Extremes

- Confusion about love and relationships (who loves me & is this really love?)
- “Help” is a theme
- Distorted sense of self
- Past and present are confused
- Memory is experienced as reality

What is happening with our friend?

- Survival – short appts & keeps jacket on
- Worries about the future based on the past – looping memory
- Safety story
- Cannot rely on biological signals to inform actions
- Triggers become more subtle and generalized

Let's shift our attention..



4 areas of PTSD symptoms

● Intrusive symptoms

● Avoidance symptoms

● Alterations in Cognition or Mood

● Alterations in Arousal and Reactivity

(DSM-5, 2013)

● Dissociation continuum

Developmental Trauma Disorder

- ◎ Present but undiagnosed in adults
- ◎ Outcome of insecure attachment in children
- ◎ Four Categories
 - Exposure – repeated and multiple interpersonal trauma
 - Dysregulation of responses (emotions, body, thinking, relationships, sense of self)
 - Altered Attributions and Expectations (self, caregivers, of protection, trust of social service agencies, of social justice, future victimization)
 - Functional impairment (education, family, peer, legal, vocation)

(Van der Kolk, 2005)

Complex PTSD

Definition involves types of trauma that occur:

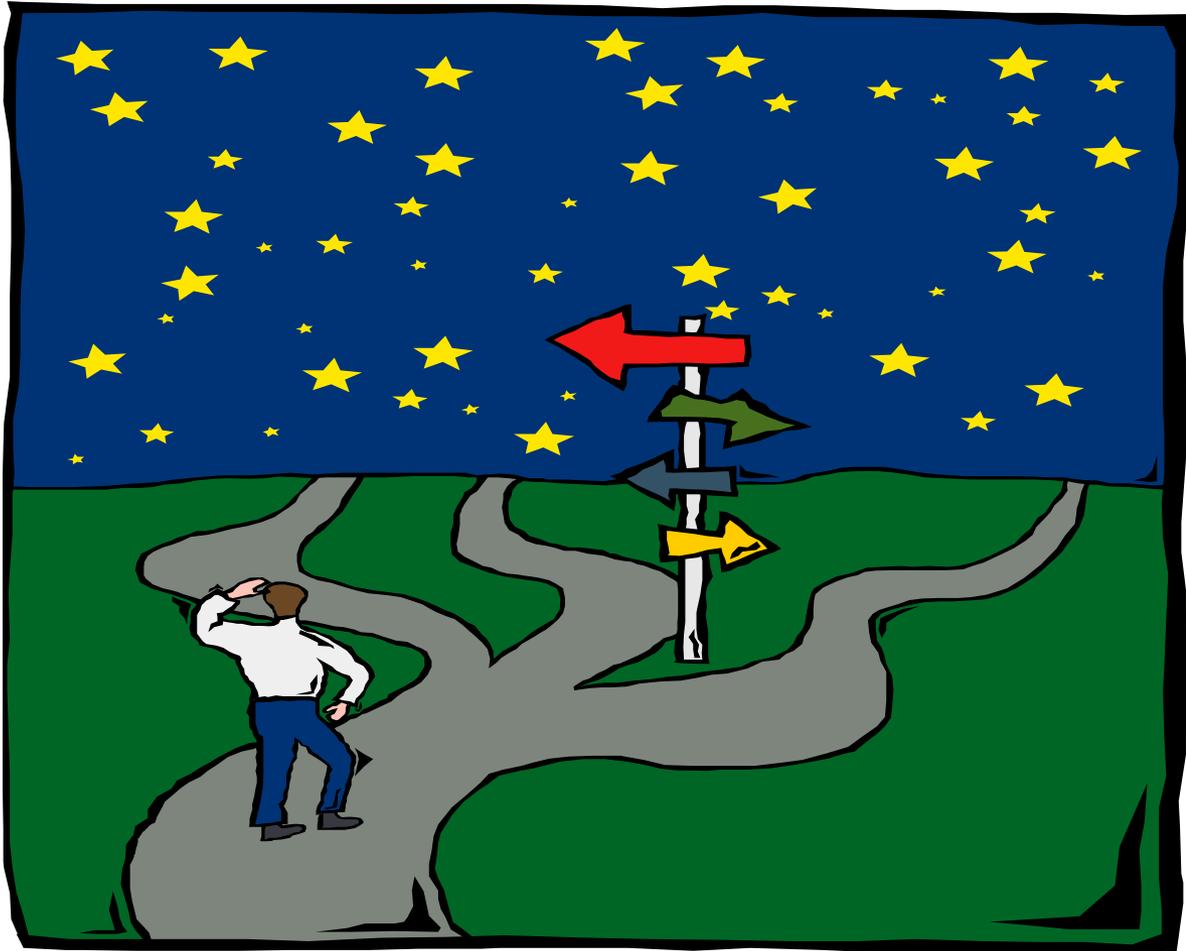
- Repeatedly and cumulatively
- Over a period of time and development
- In specific relationships and contexts
- Examples include those subjected to domestic battering, childhood physical or sexual abuse.

Criteria for Complex PTSD

1. Difficulty in regulating affective impulses (emotions)
2. Changes in Attention and Consciousness (amnesias and dissociative episodes)
3. Distorted perceptions of self, including a chronic sense of guilt and responsibility
4. Incorporation of the beliefs and perceptions of the perpetrator
5. Chronic difficulties in trusting/relating to others
6. Somatic complaints and/or medical problems
7. Alterations in systems of meaning

(Courtois, 2004)

Focusing our approaches:



Themes for supporting people

- Survival
- Power & Control
- Safety/Trust/Predictability
- Internal & External Resources
- Boundary issues
- Releasing the Secret
- End the process (How long does it take?)

Body Memory: What to do Everyday

- Vigorous daily and aerobic exercise
- Limit alcohol, drugs and medications intake
- Limit caffeine and nicotine intake
- Relaxation and meditation
- Yoga (see van der Kolk's website)
- Laugh
- Sleep
- Good nutrition

What is the best way to support a person?

Everyday Approaches

- Empathy & Compassion
- Relationships & Trust
- Strengths Based & Positive Approaches
- Power & Control
 - Choices & Decisions
- Personal Resources
 - Self Confidence & Esteem

Clinical Approaches

- ◎ Biographical Timeline
- ◎ Physical Health Assessment
- ◎ Therapy
 - EMDR
 - Cognitive Therapy
 - Biofeedback & Others ...
- ◎ Integrated Support Groups
- ◎ Medication (very, very, very last resort)

Trauma Story & Therapy

- Comes to appointments late
- Multiple layers of clothes
- Talks about the same issues over and over
- How I got in the way
- What is her diagnosis now?
- Mind, Brain, and Body – integrated?
- What I wished I knew

Let's use Social Therapy

- If the trauma is situated in a relationship then the path to healing is through a relationship.
- Most people are too overwhelmed to work on the big issues and so we work on integrating therapy in someone's everyday life.

Thank you!

