What is “traumatic” depends upon our vulnerability

Because children are so dependent on their caretakers for survival and safety, many experiences are traumatic for them that might not traumatize an adult

- “Frightened and frightening” caregiving (Lyons-Ruth)
- Neglect, separation, abandonment (Perry)
- Exposure to domestic violence, witnessing violence
- Parental fighting
- Threatening words and behavior: “I’ll kill you if you . . .”
- Secondary effects of parental PTSD (Yehuda)
- Accidents, medical crises, surgery, invasive procedures
- Death of a parent or parent figure

The post-traumatic syndrome is the result of a failure of time to heal all wounds: the memory of the trauma is not integrated and accepted as a part of one’s personal past. Instead, it is dissociated. When this occurs, one particular event, or series of events, can alter people’s psychological, biological, and social equilibrium to such a degree that the memory of the trauma comes to taint all other experiences.”

van der Kolk, 1996
The Triune Brain

- Mammalian Brain: or Limbic System: emotional and somatosensory memory, attachment
  - Speaks the language of emotion
- Frontal Cortex: Regulatory abilities, cognitive and executive functioning
  - Uses verbal language and analytical reasoning
- Reptilian Brain: Autonomous arousal, instinctive responses
  - Speaks language of sensation and impulse

The Emergency Stress Response

- Fight-Flight
  - Cortisol release triggers Parasympathetic System
  - Sympathetic Nervous System: norepinephrine release, increased heart rate and respiration, rush of energy to muscle tissue, suppression of non-essential systems, frontal lobe inhibition
  - Amygdala
- Freeze-Submit
  - Parasympathetic Nervous System: decreased autonomic activation, freezing and trembling, rebound gastrointestinal activity, exhaustion, depletion, shutting down, numbing, total collapse, "licking the wounds"

Threat and the Brain

- Limbic System or Emotional Brain: perceives and reacts to threat
- Frontal Cortex: analyzes, problem-solves, learns from experience
- Reptilian Brain: controls our instinctive responses and functions
- Amygdala
  - Fire Alarm and Emotional Memory Center
  - Threat
After the threat has passed,

- Consolidation and retrieval of a clear event memory is compromised because of two factors: **activity in the hippocampus** (in charge of processing experience prior to its being ‘remembered’) is inhibited under threat, and the prefrontal cortex has failed to witness the experience.
- The “raw data” remains unprocessed, encoded in the **amygdala**. Feeling memories, sensory memories, muscle memories, autonomic memories provide the record of what happened divorced from a narrative that could explain them.
- Since the amygdala is also the brain’s “smoke detector,” the result is sensitization to even subtle reminders of the traumatic event.

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“Under conditions of extreme stress, there is failure of . . . memory processing, which results in an inability to integrate incoming input into a coherent autobiographical narrative, leaving the sensory elements of the experience unintegrated and unattached. These sensory elements are then prone to return . . . when a sufficient number of [them] are activated by current reminders.”

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Sensory elements without words = implicit memory

- Brain scan research demonstrates that **traumatic memories are encoded primarily as bodily and emotional feelings** without words or pictures—detached from the event.
- These implicit memories do not “carry with them the internal sensation that something is being recalled. . . . we act, feel, and imagine without recognition of the influence of past experience on present reality.” (Siegel, 1999)
- “Emotional memory converts the past into an expectation of the future . . . [and] makes the worst experiences in our past persist as felt realities.” (Ecker et al, 2012, p. 6)
Triggers and Triggering

• The human body is self-protective: it automatically reacts to any cue indicating the possibility of danger.

• The brain is biased to respond to any danger signal it has known before: times of day, days of the week, times of year, gender and age, facial expression, colors, smells or sounds, weather conditions, a tone of voice or body language, touch, even our own emotions and body sensations.

• When we get triggered, we experience sudden and overwhelming feelings, sensations, and impulses that convey, “I AM in danger—right now!” not “I was in danger then.”

Fisher, 2015

<table>
<thead>
<tr>
<th>Triggers</th>
<th>Being asked a lot of ?s, especially by authority figures</th>
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<tbody>
<tr>
<td></td>
<td>Messy rooms</td>
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<td>Combat movies</td>
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<td>Getting sober</td>
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<td>Being threatened</td>
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<td>Suicide in the news</td>
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<td>Feeling guilt, shame</td>
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<td>Being watched</td>
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<td>People leaving</td>
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<td>Break-ups</td>
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<td>Feeling trapped</td>
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<td>Being told what to do</td>
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<td>Change (bad or good)</td>
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<td></td>
<td>People who are vulnerable</td>
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<td></td>
<td>Certain kinds of altered states</td>
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<td></td>
<td>Witnessing others being traumatized</td>
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<td>Heights</td>
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<td>Confrontation</td>
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<td>Being center of attention</td>
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<td></td>
<td>Feeling inferior</td>
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<td>Alcohol, drugs</td>
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Brainstorming: How can you tell when you are triggered?

• Triggered reactions = sudden, intense, and hard to shift
• Anxiety, fear
• Increased heart rate
• Pit, tightness, clenching in stomach
• Shallow breathing, hyperventilation, holding the breath
• Obsessive thinking
• Response disproportional to event, major change in previous state
• 0 to 60 reactions
• “I’m doing something I shouldn’t/didn’t want to do”
• Hypertension
• Muscle tension (either whole body or specific areas)
• Twitches, tics
• Jumping to conclusions
• Jumping to “worst case scenario”
• Feeling that ‘the sky is falling’
• Sense of not belonging, being on the outside looking in
• Fear of abandonment or aloneness
• Feeling small
### Implicit memories take many different forms

- **Intrusive emotions disproportional to the stimulus:** fear, anger, shame, dread
- **Thoughts the predict threat or failure,** as well as intrusive, contradictory, or ruminate thoughts
- **Impulses:** to run, to hurt the body, drink or drug, hide under the bed, avoid going out
- **Somatic sensations:** spinning, dizziness, pain, heaviness, floating, tingling, numbing, ‘noise’ in the head, loss of hearing or vision
- **Attachment symptoms:** yearning for contact, painful loneliness, and a felt sense of abandonment

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### Autonomic Nervous System is Shaped by Parental Attachment Behavior

<table>
<thead>
<tr>
<th>High Activation</th>
<th>Optimal Arousal Zone</th>
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<td>Window of Tolerance*</td>
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<td></td>
<td>feelings can be tolerated</td>
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<td>we feel safe</td>
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| Low Activation |

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### Autonomic Adaptation to a Threatening World

**Hyperarousal-Related Symptoms:**
- Impulsivity, risk-taking, poor judgment, racing thoughts
- Perceptual and muscular hypervigilance, post-traumatic paranoia, states of frozen terror
- Intrusive images, sensations, emotions; flashbacks and nightmares
- Self-destructive and addictive behavior

**Hyporarousal-Related Symptoms:**
- Flat affect, numb, feels dead or empty, "not there"
- Cognitive functioning slowed, "lazy"
- Preoccupied with shame, despair and self-hating
- Disabled defensive responses, victim identity

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*Ogden and Minton (2005); Fisher, 2006
*Siegel (1999)*
“One of the most robust findings of the neuro-imaging studies: under stress, the higher brain areas involved in "executive functioning"—planning for the future, anticipating the consequences of one’s actions, and inhibiting inappropriate responses—become less active.”


To Stabilize, Frontal Lobe Inhibition Must Be Reversed

“In order for the amygdala to respond to fear reactions, the prefrontal region has to be shut down. . . . [Treatment] of pathologic fear may require that the patient learn to increase activity in the prefrontal region so that the amygdala is less free to express fear.”

LeDoux, 2003

Simple ways of “waking up” the prefrontal cortex

• Evoking curiosity: before we try to problem-solve with patients, we first need to help them be curious. What triggered the shame? The impulses to self-harm or purge? What is the patient hoping for? How does s/he hope to feel after acting out?

• Providing accurate information to counter patient interpretations: “Let me explain why you might be feeling this way…” or “why the cutting brings relief…”

• Helping patient achieve more distance from the symptoms: universalizing or reframing the symptoms, re-contextualizing them as "feeling [or body] memories” or "long slow flashbacks”

Fisher, 2013
**Psychoeducation**

- Offer a “crash course” on the effects of trauma on the mind and body: “body memories,” the nervous system, cortical inhibition
- Normalize feelings/behavior that have been sources of shame as ingenious attempts to cope
- Label the symptoms as “symptoms:” poor judgment and impulse control, self-loathing, self-neglect
- Increase awareness of post-traumatic triggering and habitual triggered survival responses: “getting” the logic of trauma decreases shame/increases understanding of cause-and-effect
- Encourage curiosity and compassion: “That makes sense.” “Of course you feel trapped.” “No wonder you had to cut [drink, restrict, act out]—you were trying to get some relief”

_Fisher, 2003_

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“*The therapist’s role is both intellectual and relational, fostering both insight and empathic connection. Kardiner notes that the central part of the therapy should always be to enlighten the patient as to the nature and meaning of his symptoms, but the same time the attitude of the physician in treating these cases is that of the protecting parent. He must help the client reclaim his grip on the outer world. . . .”*

_Herman, 1992, p. 137-138_

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**Developing Cognitive “Maps”**

- Survivors rely on trauma-based “limbic maps” that drive the habitual responses that lead to depression, isolation, shame, self-sabotage, self-injury, or self-sacrifice
- As they become identified with these “maps,” they develop cognitive schemas to explain them, such as “It’s not safe,” “I deserve nothing,” “Something is wrong with me.”
- A “cognitive map” is a psychoeducationally based map that explains the “trauma logic” inherent in their feelings, actions and reactions, helps clients “dis-identify” with the symptoms and habitual responses by explaining them in more accurate scientific terms: “Of course, you were in a panic—rejection is a huge trigger for most people” “Shame is an ingenious self-regulatory ability: it dampens intense emotions—it kept you safer”

_Fisher, 2005_
**Transforming Trauma-related Responses Requires Curiosity and Mindfulness**

"Where attention goes, neural firing goes. And where neurons fire, new connections can be made."

*Siegel, 2006*

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**Ingredients of Mindfulness**

- **Awareness** or recognition of sensation, thought, emotion, movement, external stimulus (medial prefrontal cortex)
- **Detachment**: noticing it but ‘not participating’ in it or getting swept away by it (medial prefrontal cortex)
- **Labeling**: putting neutral language to what is noticed (e.g., "I’m having a thought—some emotion is coming up")
- **Mindfulness can be directed or directionless**: following the flow of thoughts, feelings and body experience as it unfolds or deliberately focused on an aspect of experience (e.g., the breath)

*Fisher, 2009*

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**Facilitating Mindful Awareness**

- **Mindfulness in therapy depends upon the therapist becoming more mindful**: slowing the pace, refraining from interpretation or direction in favor of neutral observation, helping the patient begin to focus on the flow of thoughts, feelings, & body sensations
- **Mindful attention is present moment attention**: We use "retrospective mindfulness" to bring the client into present time: "As you are talking about what happened then, what do you notice happening inside you now?"
- **Curiosity is cultivated because of its role as an entrée into mindfulness**: "Perhaps by binging and purging, you were trying to help yourself get to the wedding…"

*Fisher, 2009*
Distinguishing Thoughts, Feelings, and Body Sensations

In traditional talking treatments, we do not always clearly differentiate cognition, emotion, and body responses:

For example, when we say, "I feel unsafe,"
- It could reflect a cognition: "I am never safe,"
  "The world is not a safe place"
- It could mean an emotion: "I'm feeling frightened"
- It could mean bodily sensation: "My chest is tight; my heart is racing; it's hard to take a breath"
- It could mean action: "I want to hurt myself"

On what do we focus?

- Trauma patients generally come to treatment because of post-traumatic triggering: trauma-related stimuli have stimulated anxiety symptoms, intrusive memories, overwhelming emotions, depression, and/or suicidality

- The first goal of trauma treatment is to help patients recognize the role of triggering in causing and perpetuating their symptoms in order to empower them

- With greater understanding comes decreased fear and shame when these responses are triggered. With more self-awareness and a language to describe what is happening, the capacity for self-regulation in the face of triggering can potentially increase

Connecting Symptoms to Triggers

In the context of client's having cut herself, therapist tries to evoke curiosity:

- "I hear you cut last night—what might have triggered you?"
  "I don’t know—I just hate myself!"

- What was going on just before?
  "My boyfriend was supposed to call me, but he didn’t!"

- What feelings and thoughts came up when he didn’t call?
  "I was mad at myself for trusting him—that’s why I hate myself!"

- And you probably couldn’t tell anyone because you felt ashamed?
  "Yeah, I thought, “What kind of fool am I for trusting him?”"
Connecting Symptoms to Triggers, cont.

Therapist continues to ask mindful questions:

When you had that thought, what feelings came up?

“Completely overwhelmed—I couldn’t stand it.”

How overwhelmed were you?

“Completely overwhelmed—I couldn’t stand it.”

Well, cutting triggers adrenaline so you feel calmer—you were just trying to get control back, huh?

“But now I’m feeling stupid, and my arm is killing me.”

Do you want me to show you something else to do that will help you feel less overwhelmed? It won’t work as well, but it doesn’t get you in trouble!

“Sure. . . I’d like to survive this weekend.”

Fisher, 2006

Dis-identifying from Symptoms

• When we preface a self-observation with the pronoun, “I,” we identify with that feeling or symptom, rather than just noticing it. But identifying with states of shame and self-loathing or helplessness and hopelessness is not adaptive. Thus, we must help the client to dis-identify with the symptoms

  • By separating self from symptoms: “When you feel stressed, that old belief, ‘I’m a loser,’ gets more intense and feel real—isn’t that a coincidence?”

  • By labeling symptoms as ‘just’ symptoms: “That anxiety is meant to be your early warning signal for danger—I wondered what triggered it . . .”

Fisher, 2008

Re-framing the Symptoms

• We should assume that every symptom is a valuable piece of information about how the client survived, adaptive instead of pathological

  • Use psychoeducational material to wonder about the meaning of each symptom: is this a feeling memory? Or a valiant attempt to cope or self-regulate?

  • Heighten curiosity about what the symptom is trying to accomplish: Increase hypoarousal? Decrease hyperarousal? Regulate feelings of emptiness or loneliness? Restore a sense of power and control over one’s own experience? Admire the symptom as a survival resource!

Fisher, 2006
What Symptoms Try to Accomplish

Generally, these secondary symptoms reflect unconscious, instinctive efforts to regulate autonomic arousal:

• Suicidal symptoms: “You found a way to live by always having a way out, a bail-out plan, that gave you some control over your fate”

• Cutting or self-injury: “Hurting the body when you feel overwhelmed is an ingenious way to get relief because it triggers your body to produce adrenaline and endorphins”

• Mistrust and paranoia: “You learned the hard way that it was safer to assume the worst in people…”

• Eating disorders and addictive behavior: “You found that alcohol took away the fear of being around people…” “Yes, when you restrict, you can’t feel … it lowers your activation.” Fisher, 2008

Trying to stay here, not ‘go there’

“Let’s both be curious: how could wanting to give up have helped you survive in an unsafe world? How was that smart?”

“OK — just keep saying, ‘It’s just body memory—just triggering— I’m just remembering how it felt then.’”

Procedural Learning and Memory

• Procedurally-learned habits or responses, representing the safest strategies available at the time, get encoded in our bodies and operate as automatic “default settings”

• Procedural learning theory suggests that reactivating memories by talking about old experiences “may actually perturb procedural learning” (Grigsby & Stevens, 2001). When we recount an old experience, we evoke sensory and emotional aspects as well as the narrative memory

• To resolve childhood trauma and attachment failure, the theory suggests that cultivating new experiences in therapy may be more useful in challenging procedural learning than talking about old experiences!

Fisher, 2007
The neural substrate for procedural learning appears to develop prior to the capacity for declarative learning. This means [that] templates for habitual behaviors may be acquired, and the behaviors become relatively automatic and routine, before the child has an episodic memory system capable of remembering the events that produced these behaviors. [Thus,] very young children are likely to experience a kind of learning . . . that is dissociated from the content.”

Grigsby & Stevens, 2002

The Expectation of Danger is a Procedurally Learned Response

“[Procedural] memory shapes how we experience the present and how we anticipate the future, readying us in the present moment for what comes next based on what we have experienced in the past.”

Siegel, 2006

Years later, do we treat the memories? or the body responses?

“While telling ‘the story’ provides crucial information about the client’s past and current life experience, treatment must address the here-and-now experience of the traumatic past . . . Thus, ‘in the moment’ trauma-related emotional reactions, thoughts, images, body sensations and movements that emerge spontaneously in the therapy hour [must] become the focal points of exploration and change.”

Ogden, Minton & Pain (2006)
Sensorimotor Psychotherapy

- Sensorimotor Psychotherapy is a body-oriented therapy developed by Pat Ogden, Ph.D. and enriched by contributions from Alan Schore, Bessel van der Kolk, Daniel Siegel, Onno van der Hart, and Ellert Nijenhuis.
- Sensorimotor work combines traditional talking therapy techniques with body-centered interventions that directly address the somatic legacy of trauma.
- Using the narrative only to evoke the trauma-related bodily experience, we attend first to discovering how the body has "remembered" the trauma and then to providing the somatic experiences needed for resolution.

“Small gestures and changes in breathing are at times more significant than the family tree”
(Christine Caldwell, 1997)

- Sensorimotor Psychotherapy is less focused on the narrative of what happened then.
- Instead, the narrative is used to evoke the nonverbal implicit memories: the autonomic responses, movements, postural changes, emotions, beliefs, etc.
- The therapist looks for patterns, for habits of response: too much or too little affect, movement or stillness, negative cognitions, patterns of gesture or movement.
- We observe the client “right here, right now:” how is the client organizing internally in response to the narrative? How is the memory being expressed somatically?

Sensorimotor Principles of Treatment

- Regulation of arousal is a prerequisite for successful treatment. When clients are hyper- or hypouroused, their frontal lobes shut down instinctively, interfering with therapeutic collaboration and integration. Whatever intervention we are using, it must regulate arousal.
- Keeping the frontal lobes ‘online’ must be a priority. Both mindfulness and psychoeducation facilitate this.
- Procedurally learned patterns must be identified as the “culprits” keeping the trauma ‘alive’ in the client’s body. Whether we identify those to the client or not, they must become the focus of treatment.
Sensorimotor Principles of Treatment, cont.

• Observation and disruption of procedurally learned patterns must be done without dysregulating the client!
  If we dysregulate the client, there is no new learning.
• As we observe the client, we keep in mind at all times that the habitual patterns of response represent once creative adaptations to traumatic experiences. Rather than becoming frustrated with the client who can’t feel anything, we get curious about how that helped him/her to survive.
• Even self-destructive behavior is viewed as an attempt at a solution, not just as a problem. Numbing, acting out, self-judgment, shame are all “survival resources.”

““The most direct way to effect change is by working with the procedural learning system, rather than with declarative memories.”

[Grigsby & Stevens, 2000]

There are two pathways to addressing procedural learning:

• “The first is to … observe, rather than interpret, what takes place, and repeatedly call attention to it. This in itself tends to disrupt the automaticity with which procedural learning ordinarily is expressed.”

• “The second therapeutic tactic is to engage in activities that empathically but directly disrupt what has been procedurally learned” and create the opportunity for new experiences

[Grigsby & Stevens, 2000, p. 325]

Mindfulness Skills

• “Notice . . .”
• “Be curious, not judgmental. . .”
• “Let’s just notice that reaction you’re having inside as we talk about your boy friend”
• “Notice the sequence: you were home alone, bored and lonely, then you started to get agitated and feel trapped, and then you just had to get out of the house”
• “What might have been the trigger? Let’s be curious—go back to the start of the day and retrace your steps”  

Fisher, 2004
Introducing Attention to Somatic Experience

Because somatic awareness can be threatening for trauma survivors, as well as helpful, we introduce attention to the body slowly and carefully and track the patient’s response:

• “When you talk about feeling scared, how does that feel inside?”
• “That’s the thought that goes with that scared feeling: what’s the visceral sensation that goes with it?”
• “What sensations tell you that you’re scared? How does your body tell you that?”
• Throughout, attention is paid to signs that the patient is becoming more, rather than less, dysregulated

Increasing Frontal Lobe Activity: Offer a Menu of Possibilities

• “When you feel the panic come up, what happens? Do you feel more tense? More jittery? Or do you want to run?”
• “As you feel that anger, is it more like energy? Or muscle tension? Or does it want to do something?”
• “When you talk about feeling ‘nothing,’ what does ‘nothing’ feel like? Is it more like calm? Or numbing? Or like freezing?”

Making it Even Easier: Asking Contrasting Questions

• “Does that sensation feel good or bad? Is it more pleasurable or unpleasurable?”
• “Does it feel like something that will hurt you from the inside or the outside?”
• “When you say those words, ‘I’m a loser,’ does the shame get better or worse?”
Principles of Neuroplastic Change

• The first principle is that **neuroplasticity is induced by changes in the amount [and kind] of sensory stimulation reaching the brain**” (Schartz & Begley, 2002, p. 16).

  • That means that we need to ask ourselves: what kinds of stimulation is my client’s brain is getting now? Does that stimulation reinforce the trauma-related patterns? Or challenge them?

  • How do we change the “amount and kind of sensory stimulation reaching the brain”? Fisher, 2010

Principles of Neuroplasticity, cont.

• The second principle is that neuroplasticity has to be “directed.” **Calculated, repetitive patterns of stimulation are necessary to obtain specific brain change.** That requires us to be active, unafraid to be repetitive or to ‘direct’ the client in changing his/her habitual actions and reactions.

• Third, neuroplasticity requires focused attention. Attention stimulates neuronal firing in the areas we wish to restructure and also helps the brain to retain the new learning.

Fisher, 2010

“The discovery that neuroplasticity cannot occur without [focused] attention has important implications. **If a skill becomes so routine you can do it on autopilot, practicing it will no longer change the brain. And if you take up mental exercises to keep your brain young, they will not be as effective if you become able to do them without paying much attention.**” Siegel, 2010
Principles of Neuroplasticity, cont.

• The next and perhaps most important principle: neuroplastic change requires that we first **consistently inhibit the old responses and then engage in intense repetition of new, more adaptive responses**. We can’t develop new patterns if we habitually engage in procedurally-learned patterns or fail to practice new ‘habits’

• As luck would have it, Sensorimotor and other body psychotherapies incorporate many of these principles already

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Expecting the best brings out the best in all of us . . .

"If I accept you as you are, I will make you worse; if I treat you as though you are what you’re capable of becoming, I will help you become that."

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-- Johann Wolfgang von Goethe

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