
Taking in the Good

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Key Topics

- Inner resources and self-directed neuroplasticity
 - The mind/brain system
 - Using the mind to change the brain
- The challenge of the brain's negativity bias
 - Implicit memory and neuroplasticity
 - Consequences of the negativity bias
- How to take in the good (TIG)
 - Three primary steps of TIG
 - Benefits of TIG
- Using TIG to heal emotional pain
 - The fourth step of TIG
 - TIG and treatment compliance and relapse prevention

How to Take in the Good

1. Look for positive **facts**, and let them become positive experiences.
2. Savor the positive experience:
 - Sustain it for 10-20-30 seconds.
 - Feel it in your body and emotions.
 - Intensify it.
3. Sense and intend that the positive experience is soaking into your brain and body - registering deeply in emotional memory.

The Importance of Inner Resources

■ Examples:

- Freud's "positive introjects"
- Internalization of "corrective emotional experiences" during psychotherapy
- "Learned optimism"

■ Benefits

- Increase positive emotions: many physical and mental health benefits
- Improve self-soothing
- Improve outlook on world, self, and future
- Increase resilience, determination



But how, actually, can inner resources be developed?

The Mind/Brain System

- “Mind” = flow of information within the nervous system
 - Information is represented by the nervous system.
 - Most mind is unconscious; awareness is part of mind.
 - The headquarters of the nervous system is the brain.
- In essence then, apart from hypothetical transcendental factors, your mind *is* what your brain *does*.
- Brain = necessary, *proximally* sufficient condition for mind.
 - The brain depends on the nervous system, which intertwines with and depends on other bodily systems.
 - These systems in turn intertwine with and depend upon nature and culture, both presently and over time.
 - And as we’ll see, the brain also depends on the mind.

Your Amazing Brain

■ **Size:**

- 3 pounds of tofu-like tissue
- 1.1 trillion brain cells
- 100 billion “gray matter” neurons

■ **Activity:**

- Always on 24/7/365 - Instant access to information on demand
- 20-25% of blood flow, oxygen, and glucose

■ **Speed:**

- Neurons firing around 5 to 50 times a second (or faster)
- Signals crossing your brain in a tenth or hundredth of a second

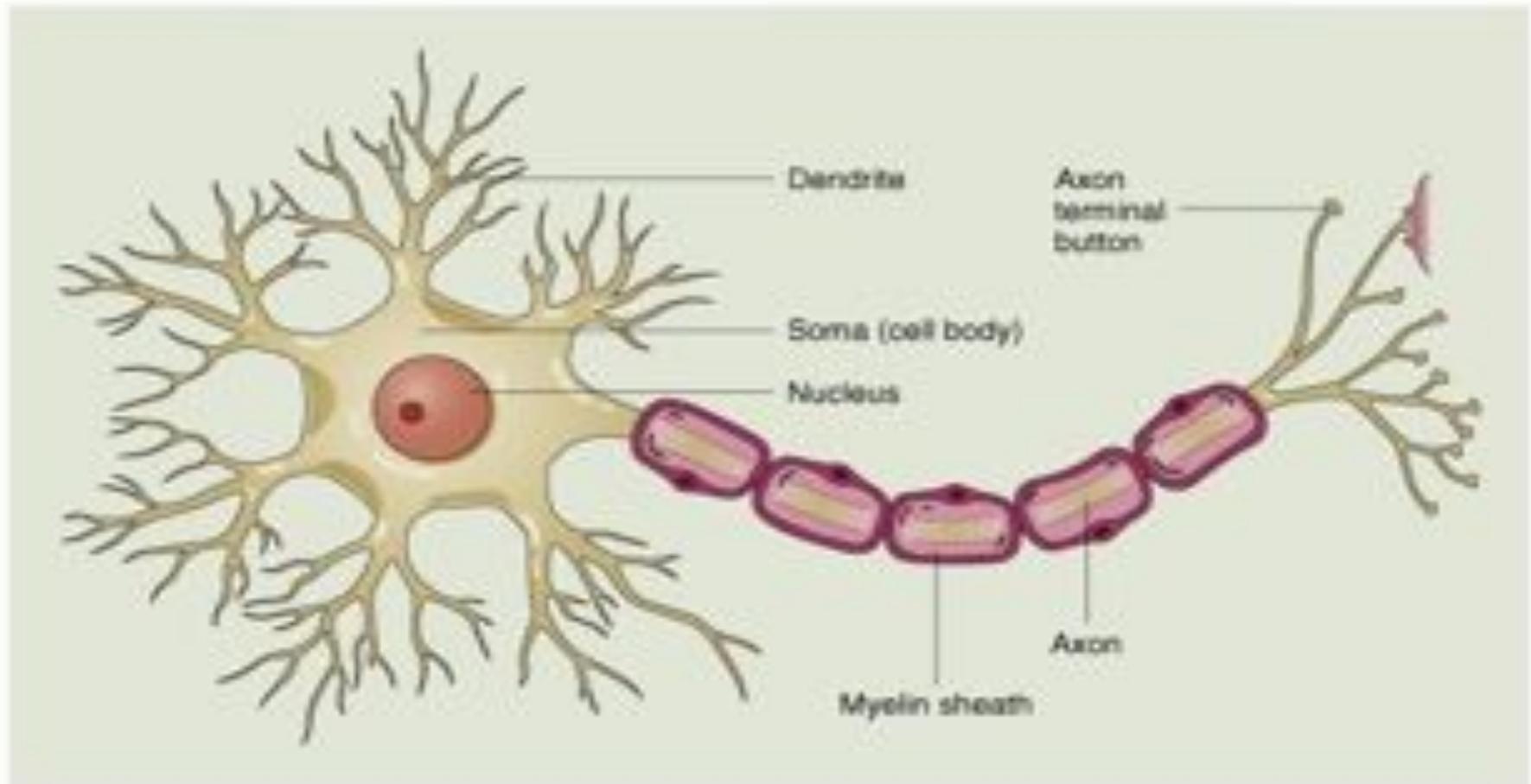
■ **Connectivity:**

- Typical neuron makes ~5000 connections with other neurons: ~ 500 trillion synapses
- During one breath, a quadrillion-plus signals coursed through your head.

■ **Complexity:**

- Potentially 10 to the millionth power brain states

A Neuron



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First Fact about Your Brain

As your brain changes, your mind changes.



Second Fact about Your Brain

As your mind changes, your brain changes.

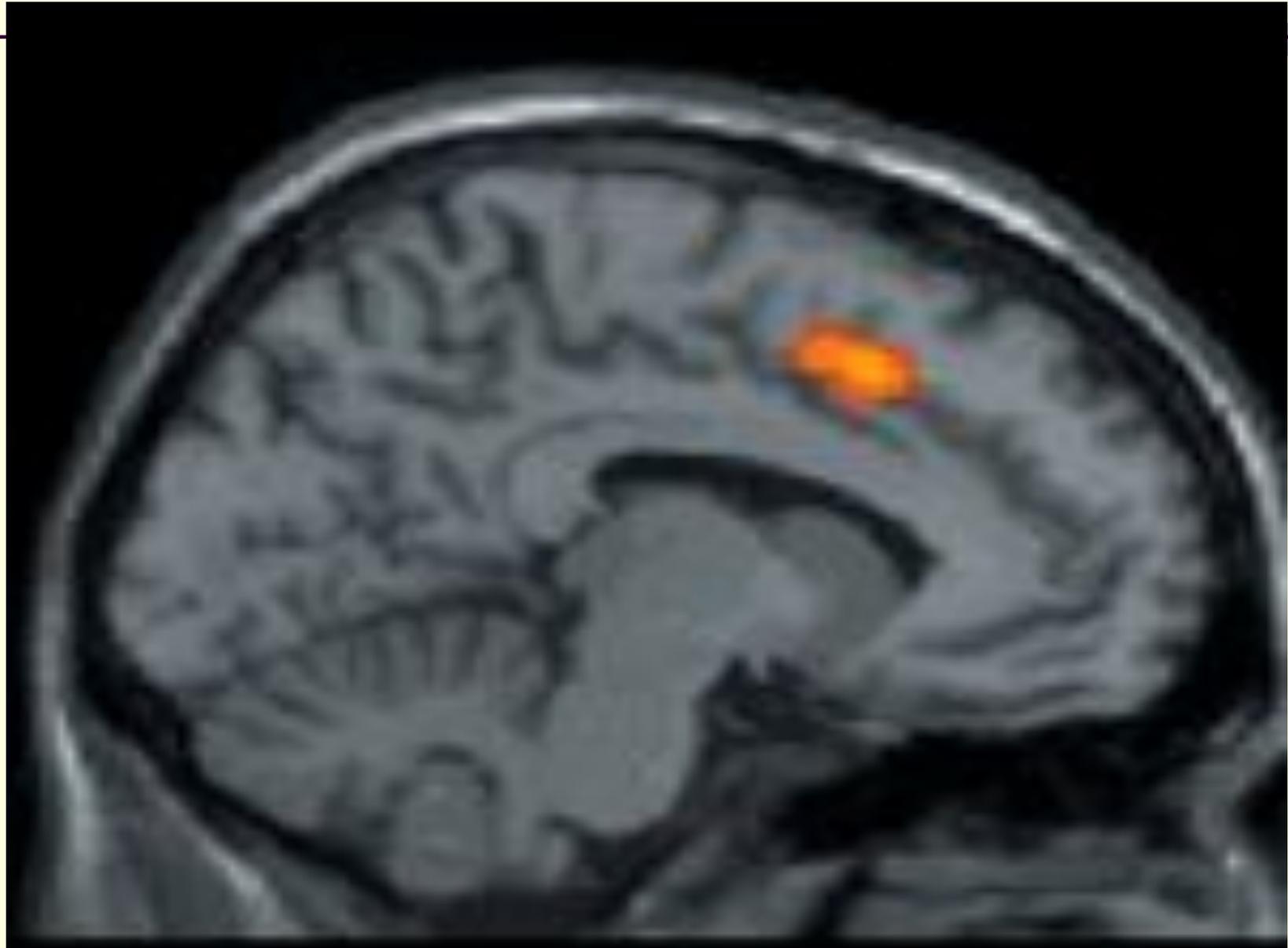
Immaterial mental activity maps to material neural activity.

This produces temporary changes in your brain and lasting ones.

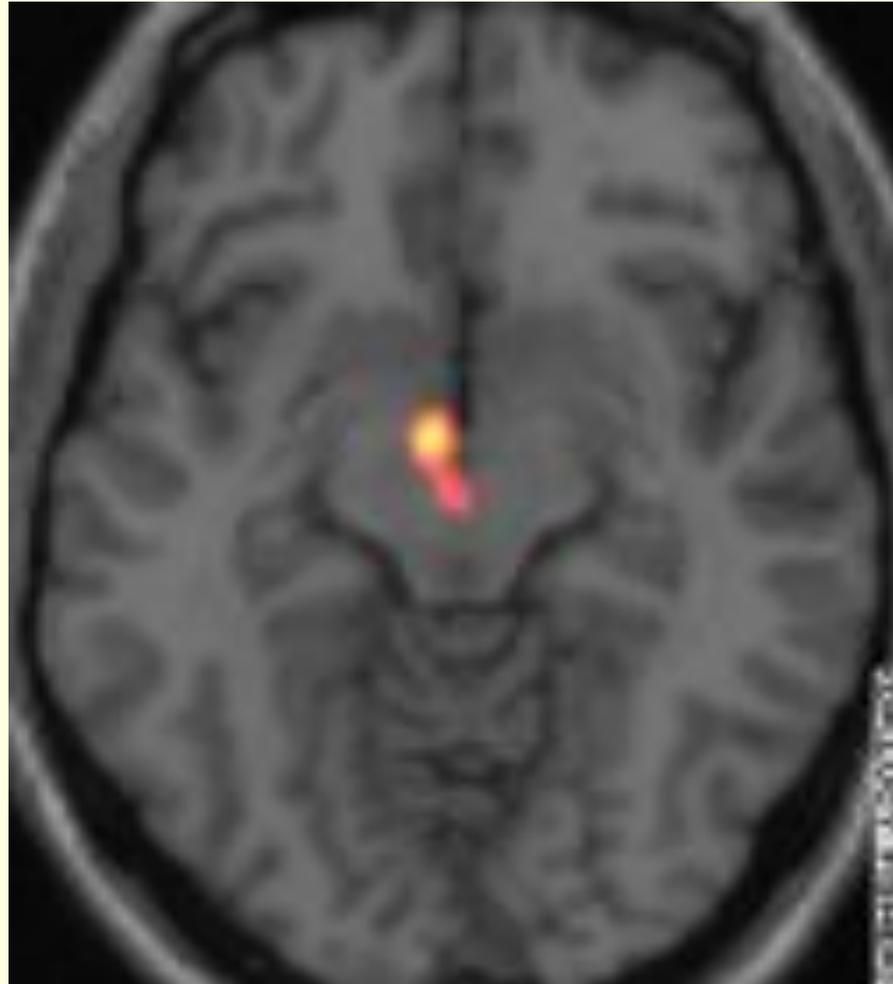
Temporary changes include:

- Alterations in brainwaves (= changes in the firing patterns of synchronized neurons)
- Increased or decreased use of oxygen and glucose
- Ebbs and flows of neurochemicals

Paying Attention

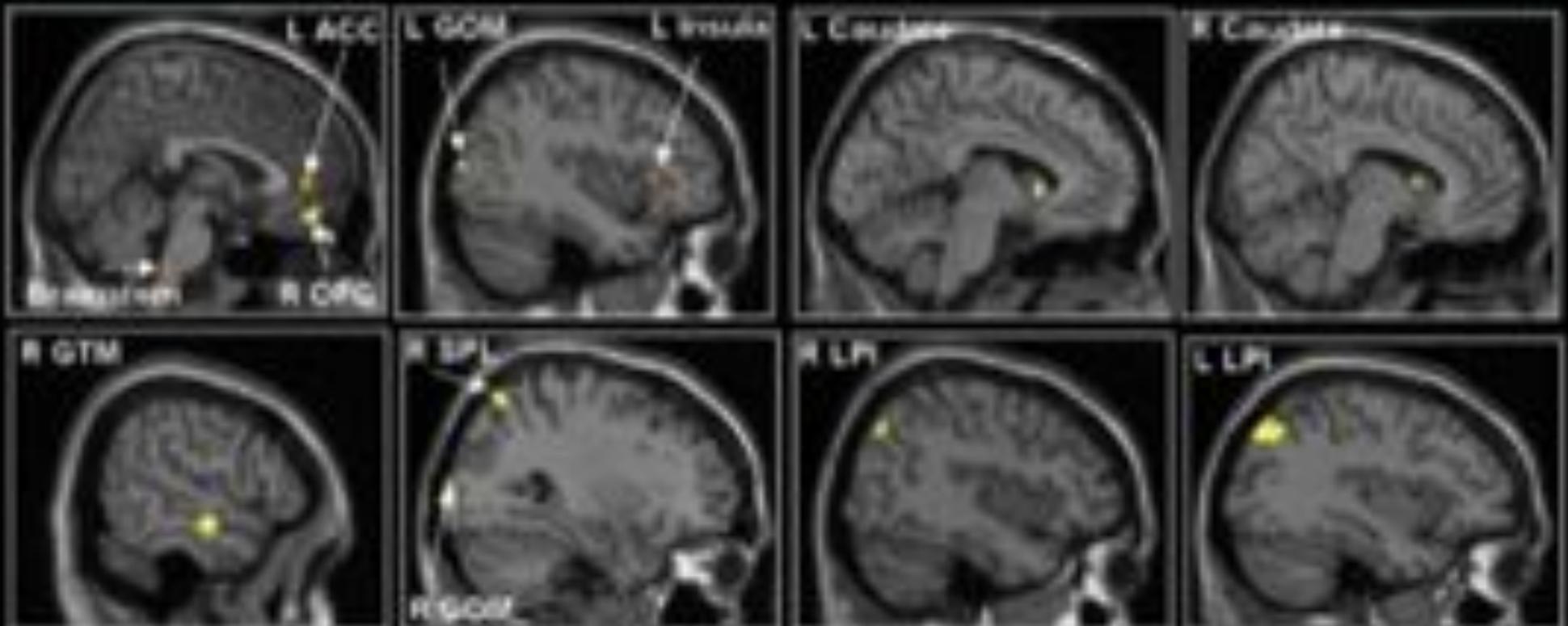


The Rewards of Love



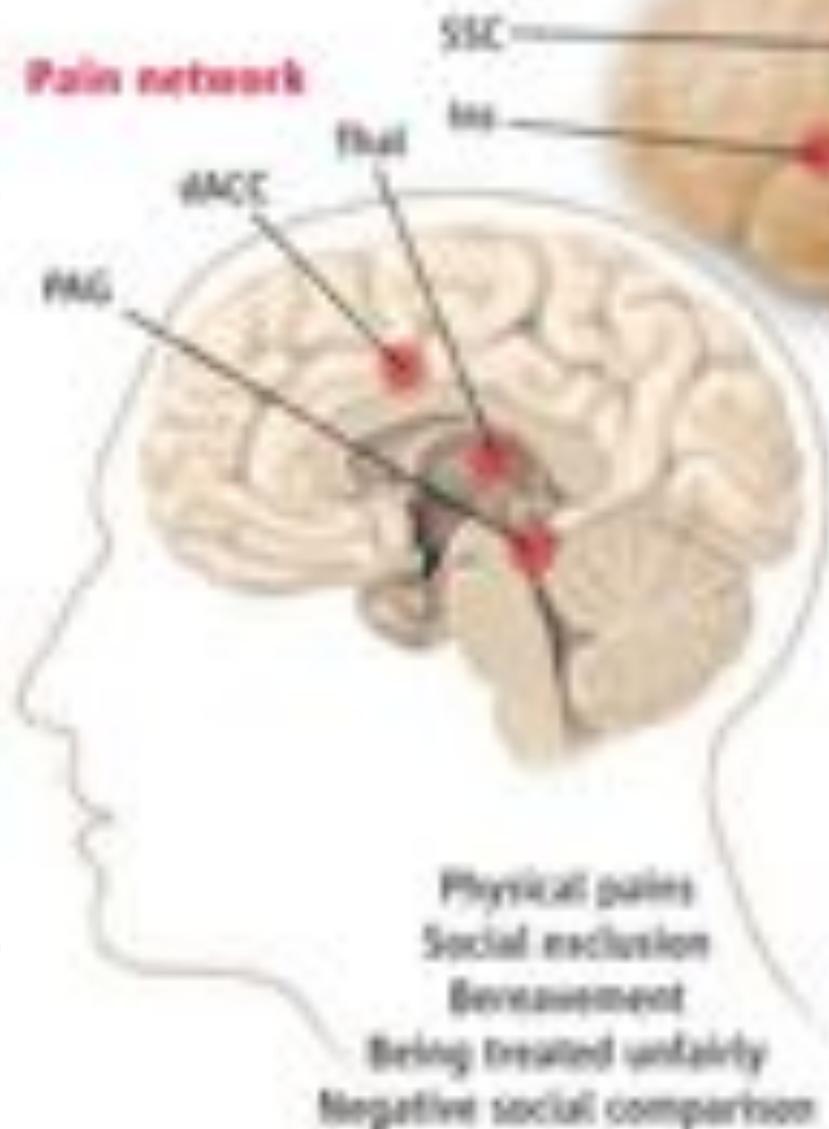
Nuns in Prayer

Mystical > Baseline

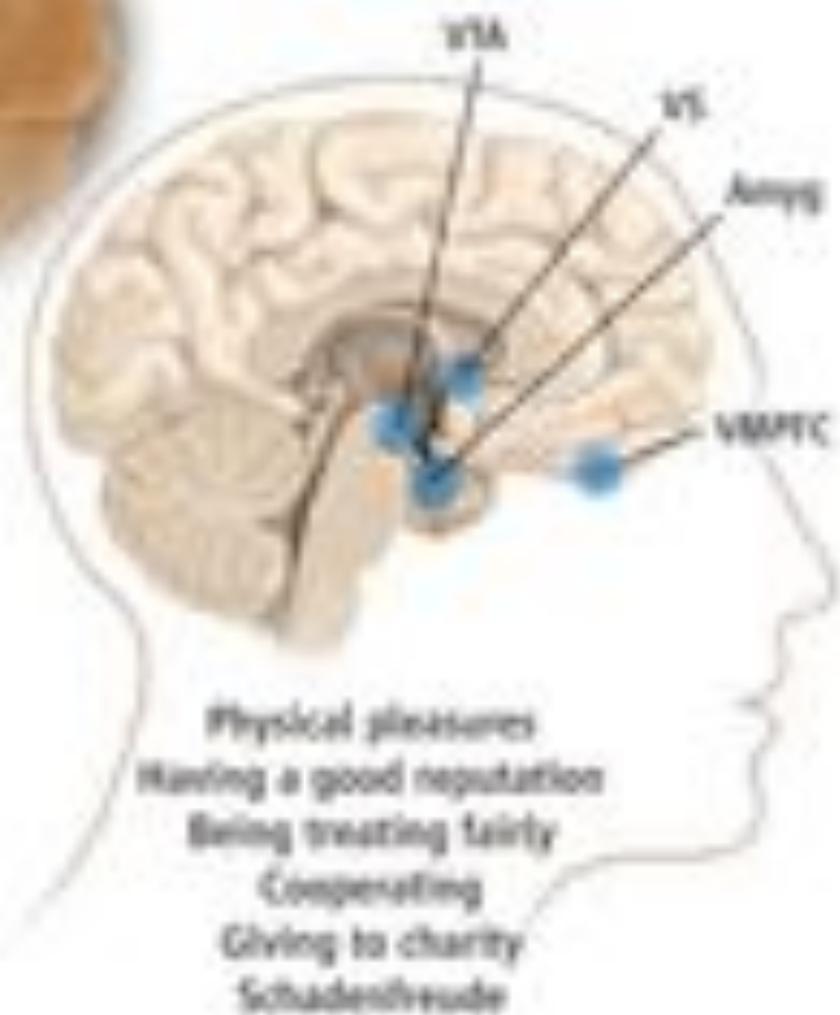


Beauregard, et al., *Neuroscience Letters*, 9/25/06

Pain network



Reward network



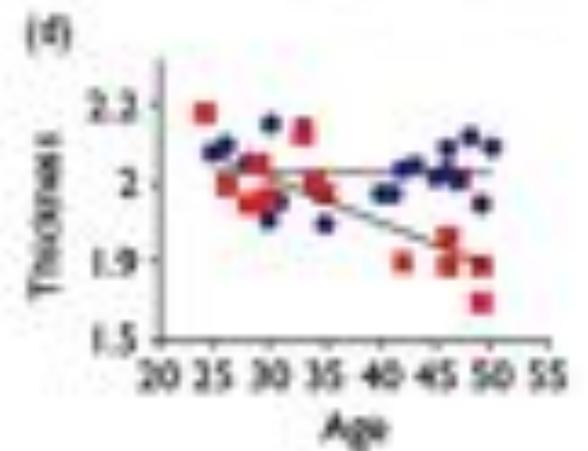
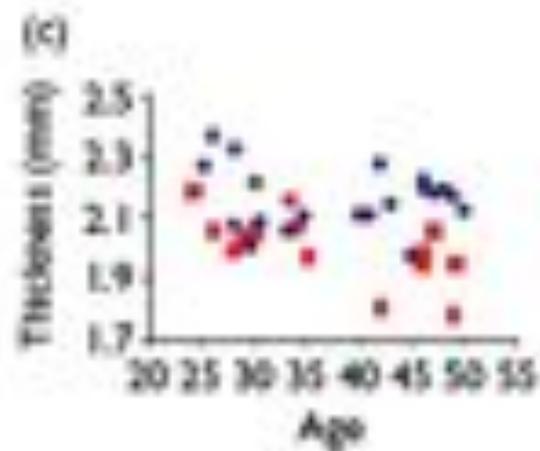
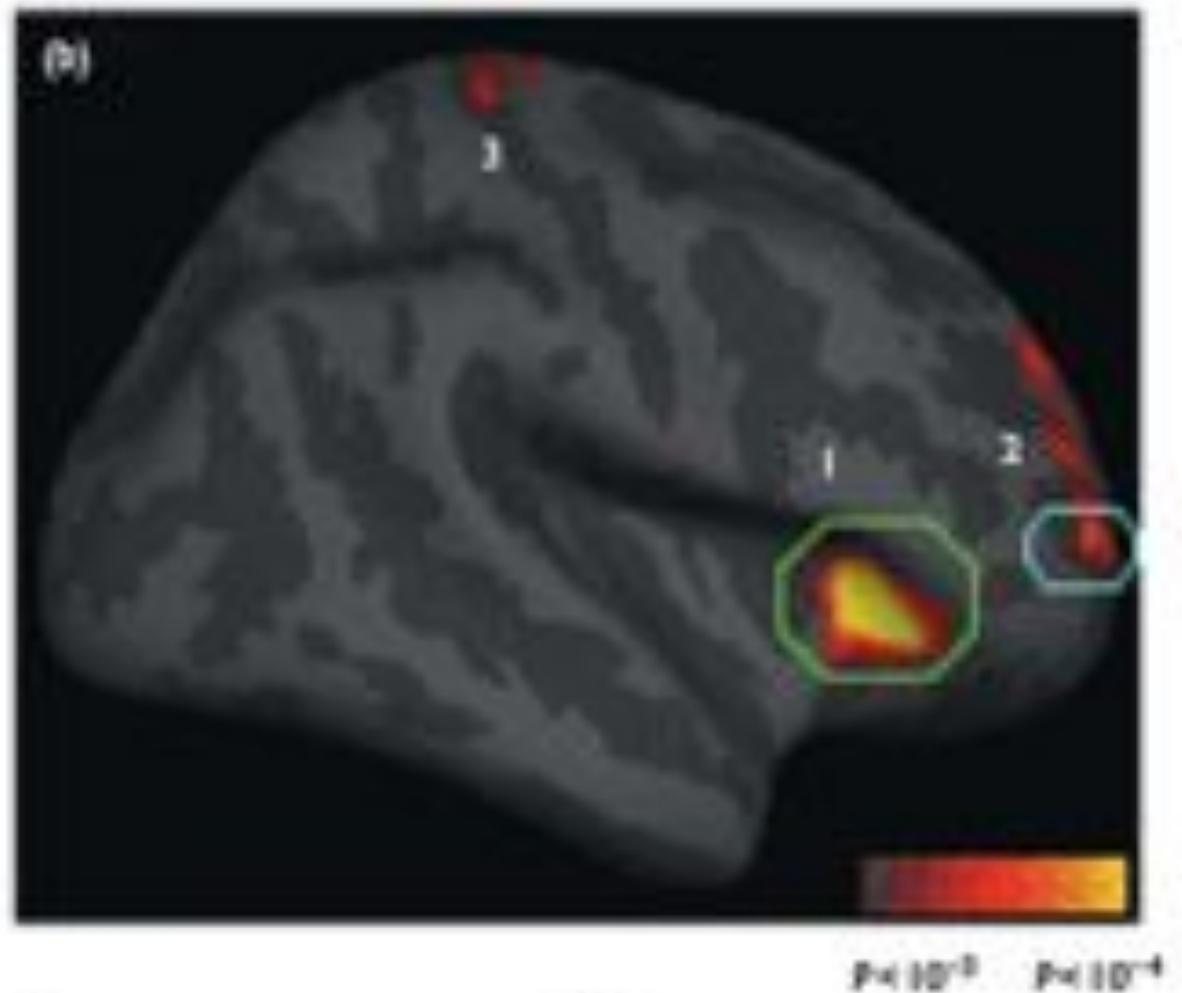
Mental Activity Shapes Neural Structure

- *What you think and feel changes your brain in numerous ways:*
 - Increased blood/nutrient flow to active regions
 - “Neurons that fire together wire together.”
 - Increasing excitability of active neurons
 - Strengthening existing synapses
 - Building new synapses; thickening your cortex
 - Neuronal “pruning” - “use it or lose it”
- What flows through your mind sculpts your brain.

Mind Changes Brain in Lasting Ways

- What flows through the mind sculpts your brain. Immaterial experience leaves material traces behind:
 - Increased blood/nutrient flow to active regions
 - Altered epigenetics (gene expression)
 - “Neurons that fire together wire together.”
 - Increasing excitability of active neurons
 - Strengthening existing synapses
 - Building new synapses; thickening cortex
 - Neuronal “pruning” - “use it or lose it”
- Experience *matters*. Both for how it feels in the moment and for the lasting residues it leaves behind, woven into the fabric of a person’s brain and being.

Lazar, et al. 2005.
Meditation
experience is
associated
with increased
cortical thickness.
Neuroreport, 16,
1893-1897.





*The principal activities of brains
are making changes in themselves.*



Marvin L. Minsky

Third Fact: Self-Directed Neuroplasticity

**We can use the mind
to change the brain
to change the mind for the better.**

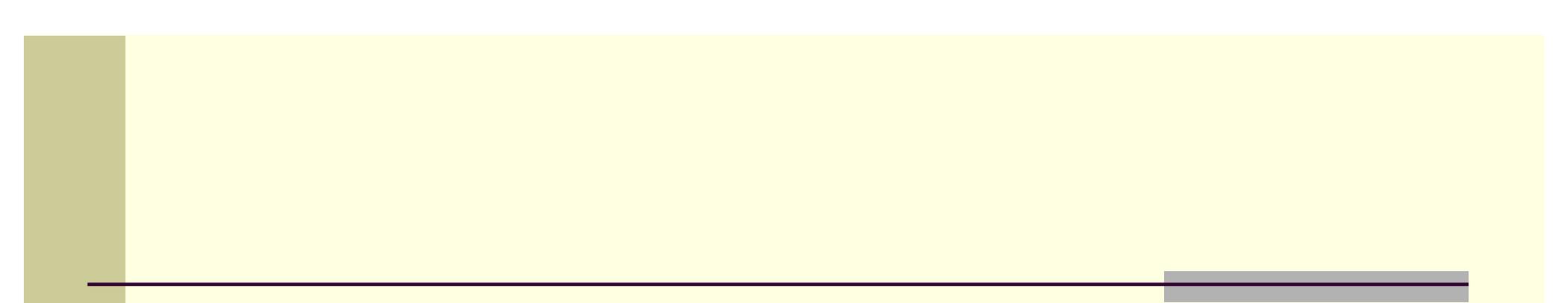
How to do this, in skillful ways?

A Spotlight and Vacuum Cleaner

- Attention is like a spotlight, illuminating what it rests upon.
- Because neuroplasticity is heightened for what's in the field of focused awareness, attention is also like a vacuum cleaner, sucking its contents into the brain.
- Directing attention skillfully is therefore a fundamental way to shape the brain - and one's life over time.

*The education of attention
would be an education par excellence.*

William James



How could patients use their attention in ways that improved health outcomes?

Three Phases of Psychological Healing and Growth

Know the mind, shape the mind, free the mind.

Be with mental contents, work with mental contents, transcend mental contents.

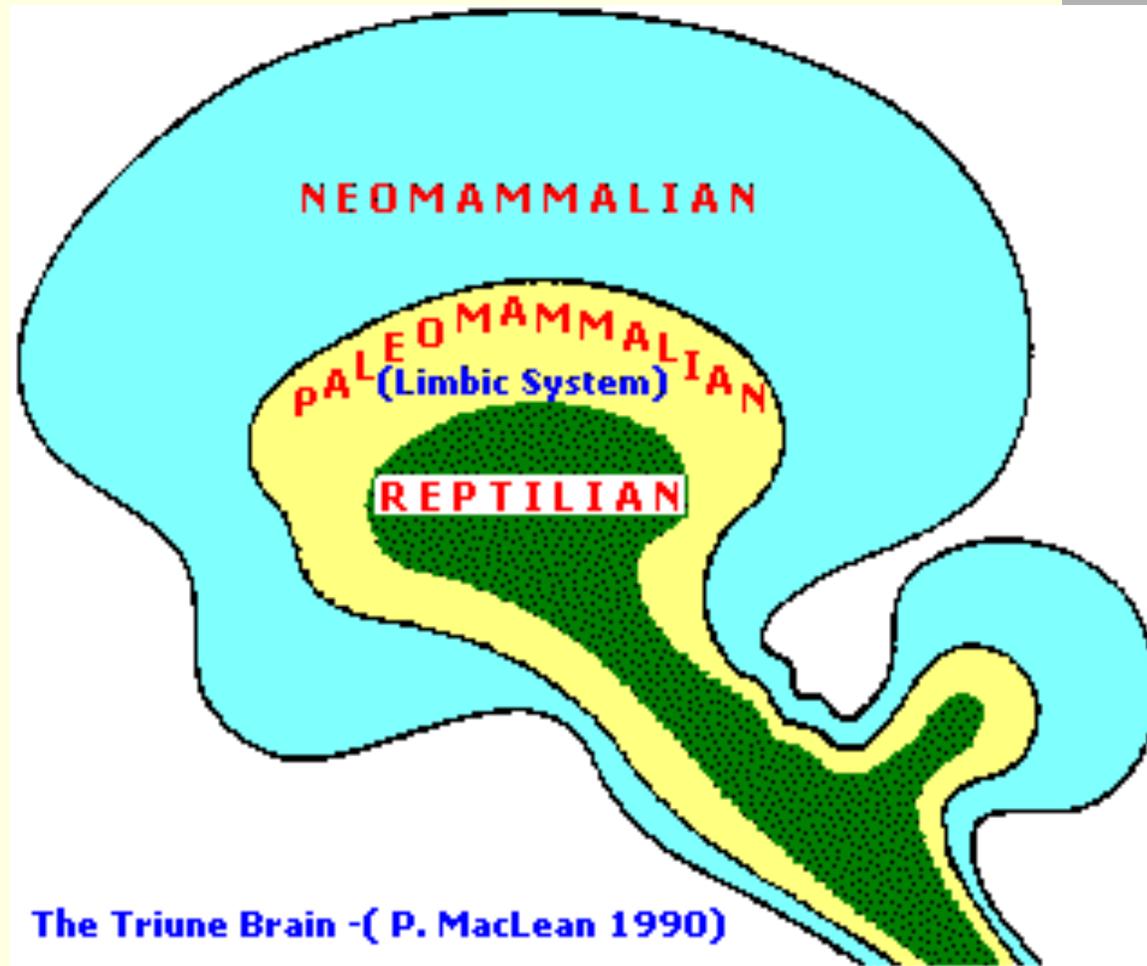
Be mindful of, release, replace.

Let be, let go, let in.

Let's explore the third phase: letting in new positive experiences and gradually replacing old negative ones.

Which means addressing some of the “collateral damage” of biological evolution.

Evolutionary History



The Triune Brain

Evolution of Approaching and Avoiding

- 3.5+ billion years of life
- Crucial functions: approach what promotes survival and avoid what threatens it
 - Motile protozoa will move toward a sucrose gradient and away from a toxic one.
 - Animals approach food, mates, and shelter; they flee from or resist predators and natural hazards.
 - Social animals approach caregivers, allies, and higher social status; they fight rivals, avoid or appease “alphas,” and resist lower status.
- Signals and rewards:
 - Pleasure and pain; “hedonic tone”
 - Emotion

The Negativity Bias - Sources and Dynamics

- In evolution, threats usually had more impact on survival than opportunities did. So sticks are more salient than carrots:
 - The amygdala is primed to label experiences negatively.
 - The amygdala-hippocampus system flags negative experiences prominently in memory.
 - *The brain is like Velcro for negative experiences but Teflon for positive ones.*
- Consequently, negative trumps positive:
 - It takes five positive interactions to undo a negative one.
 - People will do more to avoid a loss than get a gain.
 - It's easy to create learned helplessness, but hard to undo.
- Negative experiences create vicious cycles.

Negative Experiences Can Have Benefits

- There's a place for negative emotions:
 - Anxiety alerts us to inner and outer threats
 - Sorrow opens the heart
 - Remorse helps us steer a virtuous course
 - Anger highlights mistreatment; energizes to handle it
- Negative experiences can:
 - Increase tolerance for stress, emotional pain
 - Build grit, resilience, confidence
 - Increase compassion and tolerance for others

But is there really any shortage of negative experiences?

Health Consequences of Chronic Stress

■ Physical:

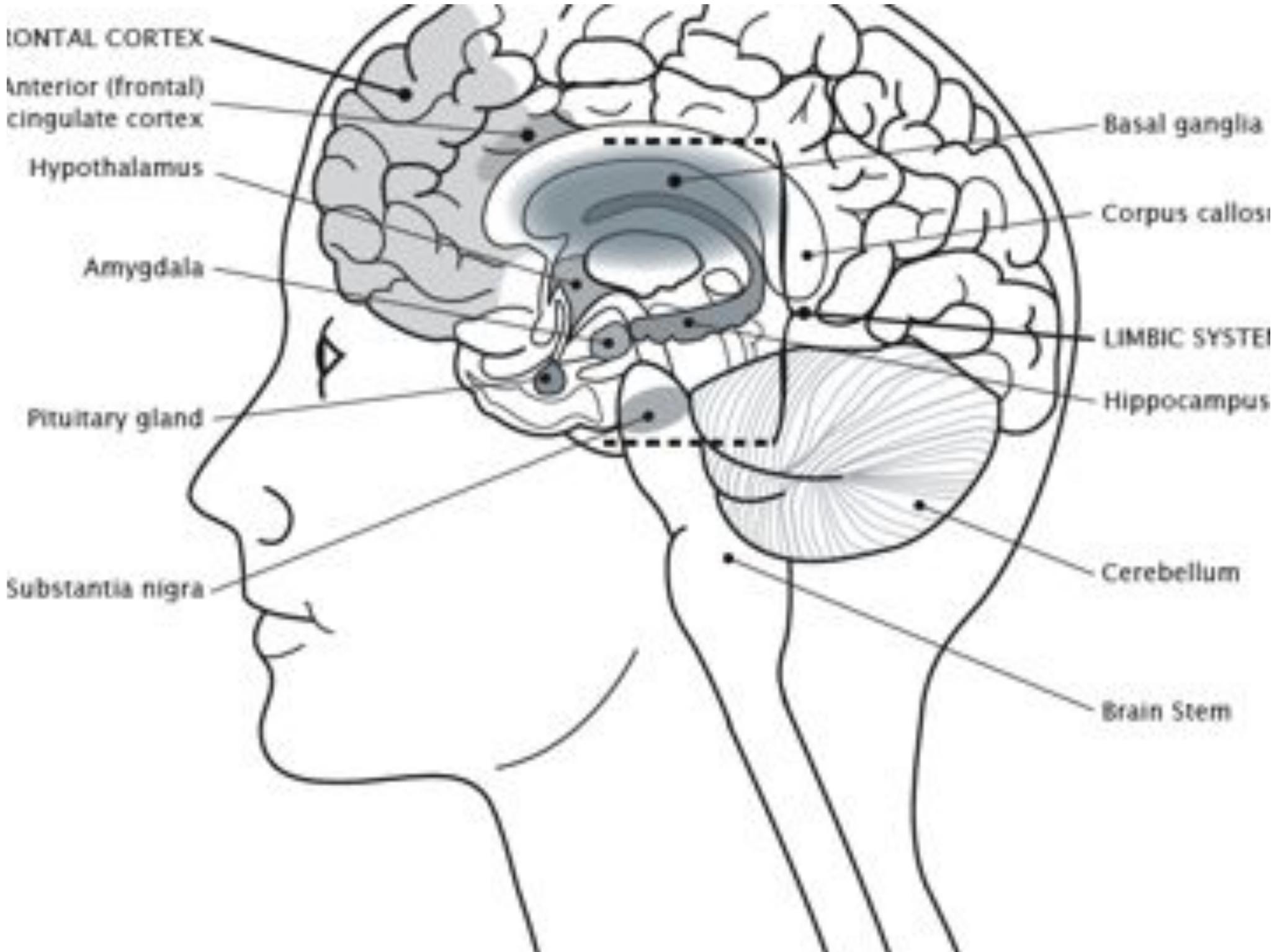
- Weakened immune system
- Inhibits GI system; reduced nutrient absorption
- Reduced, dysregulated reproductive hormones
- Increased vulnerabilities in cardiovascular system
- Disturbed nervous system

■ Mental:

- Lowers mood; increases pessimism
- Increases anxiety and irritability
- Increases learned helplessness (especially if no escape)
- Often reduces approach behaviors (less for women)
- Primes aversion (SNS-HPAA negativity bias)

One Neural Consequence of Negative Experiences

- Amygdala initiates stress response (“alarm bell”)
- Hippocampus:
 - Forms and retrieves contextual memories
 - Inhibits the amygdala
 - Inhibits cortisol production
- Cortisol:
 - Stimulates and sensitizes the amygdala
 - Inhibits and can shrink the hippocampus
- Consequently, chronic negative experiences:
 - Sensitize the amygdala alarm bell
 - Weaken the hippocampus: this reduces memory capacities and the inhibition of amygdala and cortisol production.
 - Thus creating vicious cycles in the NS, behavior, and mind



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Learning and Memory

- The sculpting of the brain by experience is memory:
 - Explicit - Personal recollections; semantic memory
 - Implicit - Bodily states; emotional residues; “views” (expectations, object relations, perspectives); behavioral repertoire and inclinations; what it feels like to be “me”
- Implicit memory is much larger than explicit memory. Resources are embedded mainly in implicit memory.
- Therefore, the key target is implicit memory. So what matters most is not the explicit recollection of positive *events* but the implicit emotional residue of positive *experiences*.

How to internalize resources in implicit memory - making it like Velcro for positive experiences, but Teflon for negative ones?

Factors of Neuroplasticity

■ Physiological:

- Norepinephrine (moderate)
- Dopamine
- Acetylcholine
- Brain-derived neurotrophic factor (BDNF)
- Natural opioids (?) (e.g., endorphins)

■ Mental:

- Priming memory through intention
- Target material:
 - Is within awareness
 - Receives focused attention
 - Is sustained, multimodal, and intense
 - Is (alas) negative

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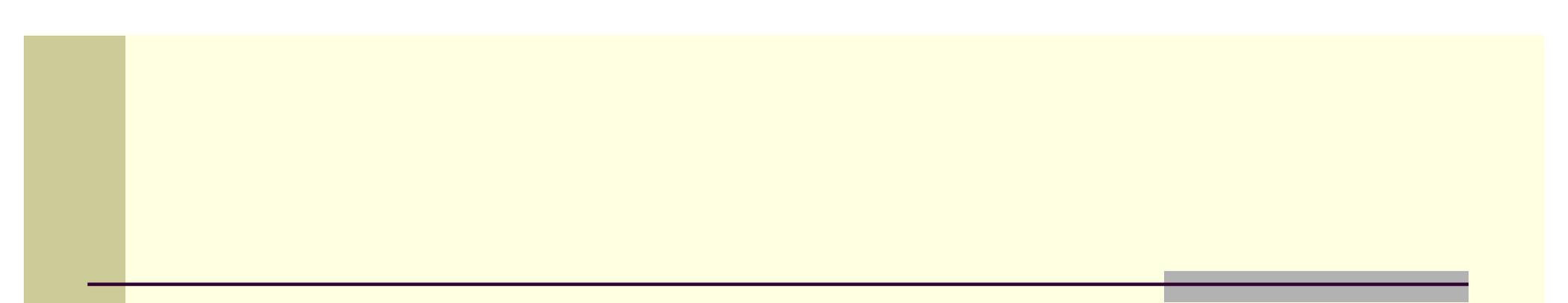
Kinds of “Good” to Take in

- The small pleasures of ordinary life
- The satisfaction of attaining goals or recognizing accomplishments - especially small, everyday ones
- Feeling grateful, contented, and fulfilled

- Things are alright; nothing is wrong; there is no threat
- Feeling safe and strong
- The peace and relief of forgiveness

- Being included, valued, liked, respected, loved by others
- The good feelings that come from being kind, fair, generous
- Feeling loving

- Recognizing your positive character traits
- Spiritual or existential realizations



What could be the benefits of taking in the good?

TIG and the Stress Response

- Activates and thereby strengthens general, top-down PFC-hippocampal (PFC-A) capabilities, which become enhanced resources for coping
- Generally desensitizes amygdaloid-SNS-HPAA networks
- Can include internalizing specifically regulatory experiences, which strengthens PFC-A and inhibits A-SNS-HPAA
- Can include other specific experiences that buffer stress and/or begin to remedy an individual's past deficits (e.g., self-confidence, being soothed or encouraged, feeling of worth)

Why It's Good to Take in the Good

- TIG cultivates *positive* sensory, emotional, cognitive, and behavioral **states** and **resources** - which:
 - Decrease negative states
 - Improve baseline mood
 - Buffer against stress
 - Increase positive actions (e.g., approach or prosocial behaviors) that lead to future positive states, in a positive cycle
- Can bring in missing “supplies” (e.g., love, strength, worth), and help heal painful, even traumatic experiences
- Implicitly, TIG:
 - Rights an internal injustice, given the negativity bias
 - Embodies a stand of self-care and -advocacy; particularly important if a person did not receive enough caring and support as a child

Benefits of Positive Emotions

- The benefits of positive emotions are a proxy for many of the benefits of TIG.
- Emotions organize the brain as a whole, so positive ones have far-reaching benefits
- These include:
 - Stronger immune system; less stress-reactive cardiovascular
 - Lift mood; increase optimism, resilience
 - Counteract trauma
 - Promote exploratory, “approach” behaviors
 - Create positive cycles

*The good life, as I conceive it, is a happy life.
I do not mean that if you are good you will be happy;
I mean that if you are happy you will be good.*

Bertrand Russell

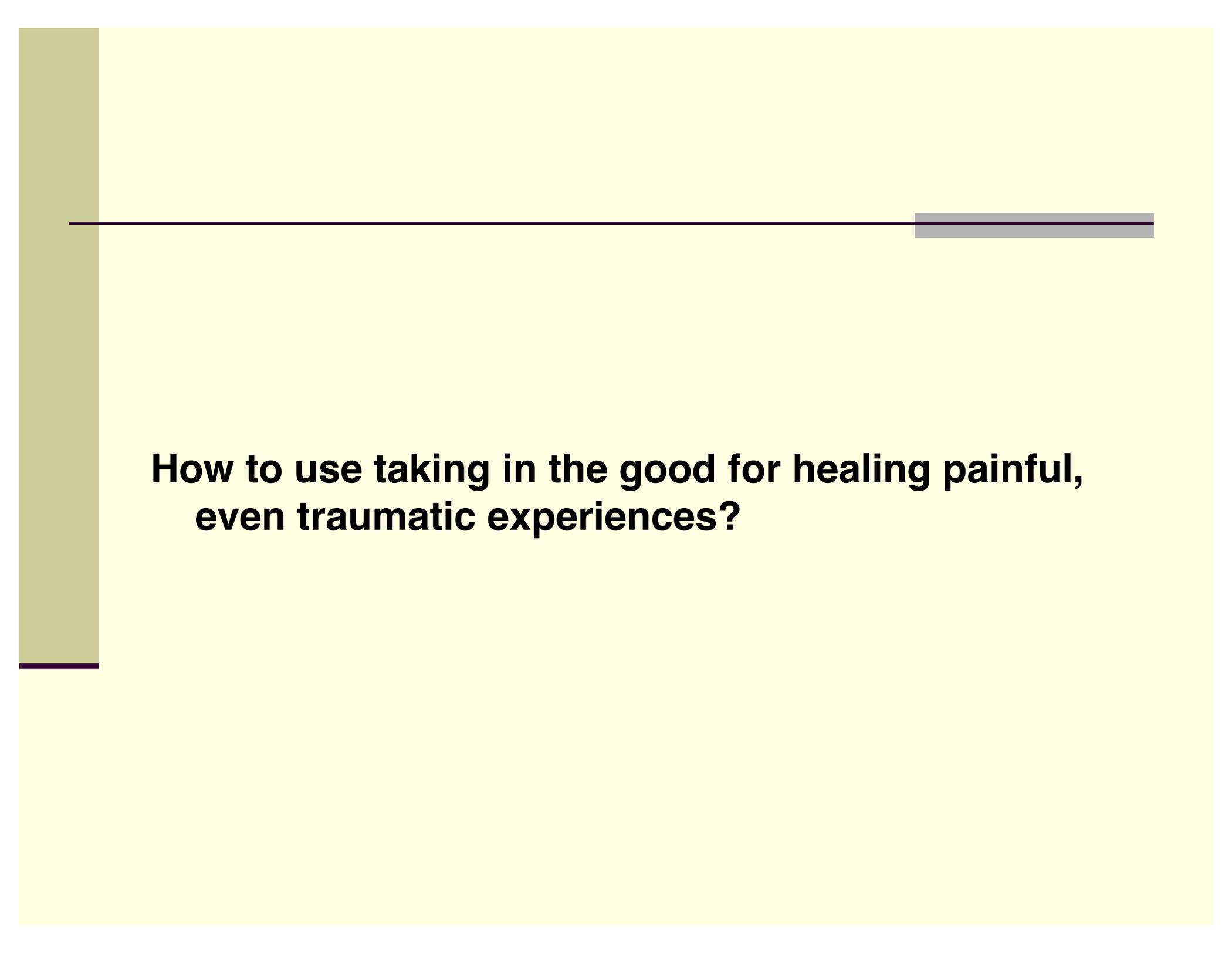
Being for Yourself

- All the great teachers have told us to be compassionate and kind toward all beings. And that whatever we do to the world affects us, and whatever we do to ourselves affects the world.
- You are one of the “all beings!” And kindness to yourself benefits the world, while hurting yourself harms the world.
- It’s a general moral principle that the more power you have over someone, the greater your duty is to use that power wisely. Well, who is the one person in the world you have the greatest power over? It’s your future self. You hold that life in your hands, and what it will be depends on how you care for it.
- Consider yourself as an innocent child, as deserving of care and happiness as any other.

“Anthem”

*Ring the bells that still can ring
Forget your perfect offering
There is a crack in everything
That's how the light gets in
That's how the light gets in*

Leonard Cohen



**How to use taking in the good for healing painful,
even traumatic experiences?**

Using Memory Mechanisms to Help Heal Painful Experiences

- The machinery of memory:
 - When explicit or implicit memory is re-activated, it is re-built from schematic elements, not retrieved *in toto*.
 - When attention moves on, elements of the memory get re-consolidated.
- The open processes of memory activation and consolidation create a window of opportunity for shaping your internal world.
- Activated memory tends to associate with other things in awareness (e.g., thoughts, sensations), esp. if they are prominent and lasting.
- When memory goes back into storage, it takes associations with it.
- You can imbue implicit and explicit memory with positive associations.

The Fourth Step of TIG

- When you are having a positive experience:
 - Sense the current positive experience sinking down into old pain, and soothing and replacing it.
- When you are having a negative experience:
 - Bring to mind a positive experience that is its antidote.
- In both cases, have the positive experience be big and strong, in the forefront of awareness, while the negative experience is small and in the background.
- You are not resisting negative experiences or getting attached to positive ones. You are being kind to yourself and cultivating positive resources in your mind.

Psychological Antidotes

Approaching Opportunities

- Satisfaction, fulfillment --> Frustration, disappointment
- Gladness, gratitude --> Sadness, discontentment, “blues”

Avoiding Threats

- Strength, efficacy --> Weakness, helplessness, pessimism
- Safety, security --> Alarm, anxiety
- Compassion for oneself and others --> Resentment, anger

Affiliating with “Us”

- Attunement, inclusion --> Not seen, rejected, left out
- Recognition, acknowledgement --> Inadequacy, shame
- Friendship, love --> Abandonment, feeling unloved or unlovable

Neuropsychology of TIG4

- Extinction, through pairing a negative experience with a powerful positive one.
- Reinforces maintaining PFC-H activation and control during A-SNS-HPAA arousal, so PFC-H is not swamped or hijacked
- Reinforcement of self-directed regulation of negative experiences; enhances sense of efficacy
- Dampens secondary associations to negative material; that reduces negative experiences and behavior, which also reduces vicious cycles
- Reduces defenses around negative material; thus more amenable to therapeutic help, and to insight

TIG4 Capabilities, Resources, Skills

■ Capabilities:

- Dividing attention
- Sustaining awareness of the negative material without getting sucked in (and even retraumatized)

■ Resources:

- Self-compassion
- Internalized sense of affiliation

■ Skills:

- Internalizing “antidotes”
- Accessing “the tip of the root”

Self-Compassion

- Compassion is the wish that someone not suffer, combined with feelings of sympathetic concern. Self-compassion simply applies that to oneself. It is not self-pity, complaining, or wallowing in pain.
- Self-compassion is a major area of research, with studies showing that it buffers stress and increases resilience and self-worth.
- But self-compassion is hard for many people, due to feelings of unworthiness, self-criticism, or “internalized oppression.” To encourage the neural substrates of self-compassion:
 - Get the sense of being cared about by someone else.
 - Bring to mind someone you naturally feel compassion for
 - Sink into the experience of compassion in your body
- Then shift the focus of compassion to yourself, perhaps with phrases like: “May I not suffer. May the pain of this moment pass.”



Now let's consider how to apply taking in the good to particular populations and issues.



Promoting Client Motivation

- During therapy, but mainly between sessions, notice:
 - When learning from therapy works well
 - New insights
 - When things happen consistent with therapist's realistic view of you, the world, the future
 - Good qualities in yourself emphasized by therapist
- Then practice three, sometimes four, steps of TIG.
- Can be formalized in daily reflections, journaling
- Take small risks, notice the (usually) good results, and then take those in.

Potential Synergies of TIG and MBSR

- Improved mindfulness from MBSR enhances TIG.
- Increased positive experiences and resources from TIG support MBSR in general ways (e.g., reducing sympathetic nervous system arousal).
- Use TIG to heighten internalization of specific experiences during MBSR training (and thereafter), such as:
 - The sense of stable mindfulness itself
 - Confidence that awareness itself is not in pain, upset, etc.
 - Presence of supportive others (e.g., MBSR groups)
 - Peacefulness of realizing that experiences come and go

TIG and Trauma

- General considerations:
 - People vary in their resources and their traumas.
 - Often the major action is with “failed protectors.”
 - Cautions for awareness of internal states, including positive
 - Respect “yellow lights” and the client’s pace.
- The first three steps of TIG are generally safe. Use them to build resources for tackling the trauma directly.
- As indicated, use the fourth step of TIG to address the peripheral features and themes of the trauma.
- Then, with care, use the fourth step to get at the heart of the trauma.

First of all, do no harm.

TIG and Children

- All kids benefit from TIG.
- Special benefits for mistreated, anxious, spirited, LD children.
- Adaptations:
 - Brief
 - Concrete
 - Natural occasions (e.g., bedtimes)

Closing Reflections on the “Well-Being Brain”

What is the nature of the brain when a person is:

- Experiencing inner peace?
- Self-actualizing?
- Enlightened (or close to it)?

“Home Base” of the Human Brain

When not ill, in pain, hungry, upset, or chemically disturbed, most people settle into being:

- Conscious
- Calm
- Contented
- Caring
- Creative

Yet It's So Easy to Be Driven from Home . . .

- When we can't attain our goals
- When we feel threatened or harmed
- When we feel disconnected, unappreciated, unloved

What can we do about our biologically-based capacities for and inclinations toward:

- Frustration and disappointment?
- Fear and anger? Fighting, fleeing, and freezing?
- Heartache and shame?

- And using suffering as an engine of survival?

Three Motivational Systems

- **Approach** “carrots,” opportunities, rewards, pleasure
- **Avoid** “sticks,” threats, penalties, pain
- **Affiliate** with “us,” proximity, bonds, feeling close

- Reptiles and fish approach and avoid. Mammals and birds also *affiliate* - especially primates and humans. Affiliating is a breakthrough, co-evolving with emotion.

- Although the three branches of the vagus nerve loosely map to the three systems, the essence of each is its aim, not its neuropsychology. Each system can draw on another system for its ends.

Two Modes of Activating the Three Systems

- **Reactive:** Ignorance, disturbance, suffering, harm, high “selfing”
- **Responsive:** Wisdom, equanimity, happiness, benefit, low “selfing”
- It’s typical to shift between modes - though:
 - Sometimes both modes intertwine within a single action, interaction, or experience.
 - Some people stabilize in one mode.
- Internal and external factors determine which mode is active and how it’s expressed.

Reactive Mode

	<u>View</u>	<u>Action</u>	<u>Experience</u>
Approach	Scarcity, loss, unreliability, not expected rewards	Grasp, acquire	Greed, longing, frustration, disappointment
Avoid	Harms present or lurking	Fight, flight, freeze	Fear, anger, weakness
Affiliate	Separated, being “beta,” devalued	Cling, seek approval, reproach	Loneliness, heart-break, envy, jealousy, shame

Reactive Dysfunctions in Each System

- **Approach** - Addiction; over-drinking, -eating, -gambling; compulsion; hoarding; driving for goals at great cost; spiritual materialism
- **Avoid** - Anxiety disorders; PTSD; panic, terror; rage; violence
- **Affiliate** - Borderline, narcissistic, antisocial PD; symbiosis; *folie a deux*; “looking for love in all the wrong places”

The Reactive Triangle



Responsive Mode

	<u>View</u>	<u>Action</u>	<u>Experience</u>
Approach	Sufficiency, abundance, disenchantment	Aspire, give, let go	Glad, grateful, fulfilled, satisfied
Avoid	Resources, challenges-in- context	Govern/restrain, truth-to-power, forgive	Strength, safety, peace
Affiliate	Connection, belonging, social supplies	Open to others; join; be empathic, compassionate, kind, caring; love	Membership, closeness, friend- ship, bonding loved and loving

The Responsive Triangle



Coming Home . . .

Gratitude

Love

Peace

Some Ways to Take the Fruit as the Path

General factors: See clearly. Have compassion for yourself. Take life less personally. Take in the good. Deepen equanimity.

Approach system

- Be glad.
- Appreciate your resources.
- Give over to your best purposes.

Avoid system

- Cool the fires.
- Recognize paper tigers.
- Tolerate risking the dreaded experience.

Affiliate system

- Sense the suffering in others.
- Be kind.
- Act with unilateral virtue.

Choices . . .



Or?

Respo



Penetrative insight

joined with calm abiding

utterly eradicates

afflicted states.

Shantideva

Great Books

See www.RickHanson.net for other great books.

- Austin, J. 2009. *Selfless Insight: Zen and the Meditative Transformations of Consciousness*. MIT Press.
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Key Papers - 1

See www.RickHanson.net for other scientific papers.

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Key Papers - 3

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