

Buddha's Brain:

Lighting up the Neural Circuits of Happiness, Love, and Wisdom

Esalen

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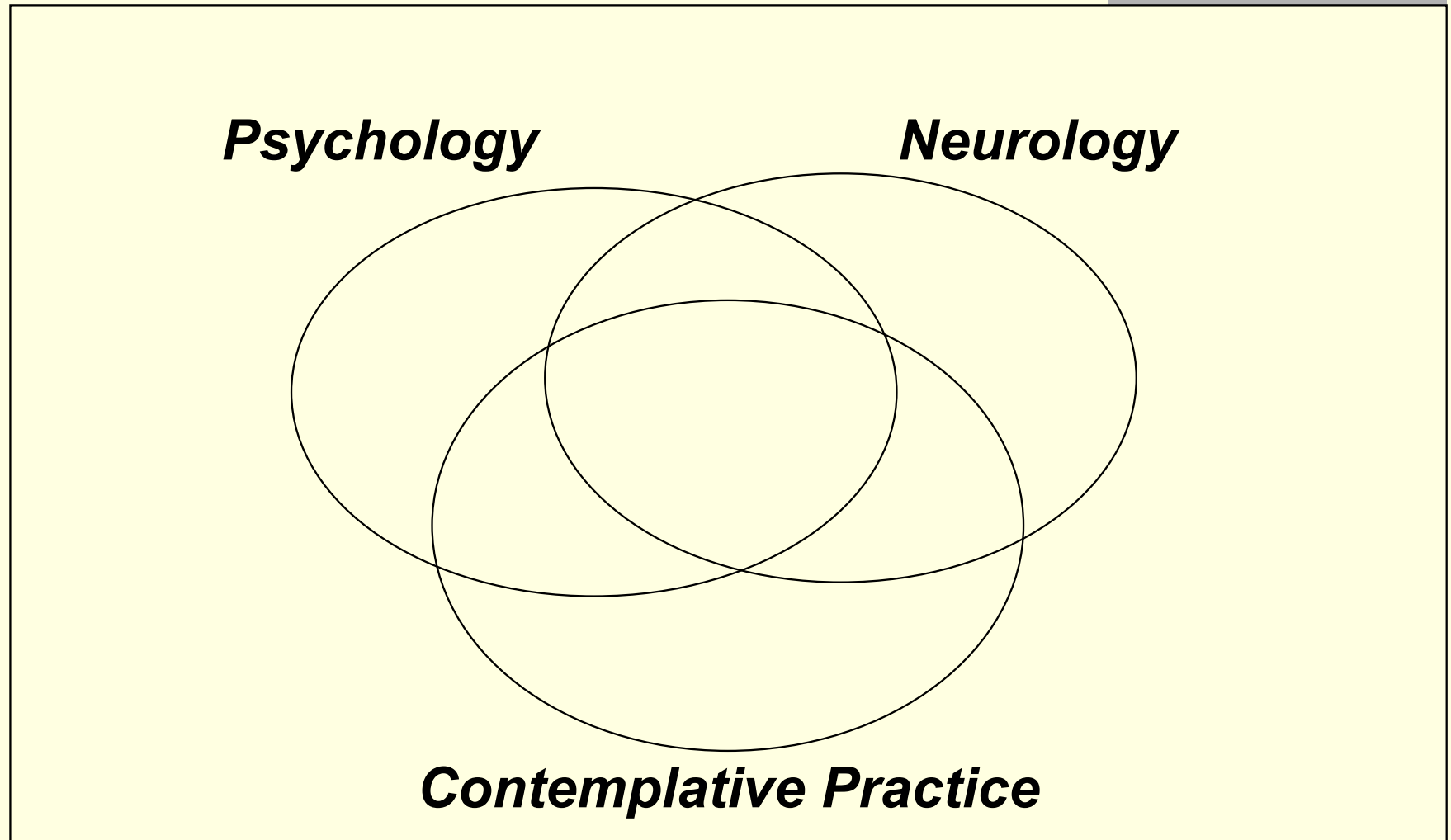
Topics

- **Self-directed neuroplasticity**
- **Self-compassion**
- **The power of mindfulness**
- **Inner strengths**
- **The evolving brain**
- **The negativity bias**
- **Being and doing**
- **Your loving nature**
- **Two wolves in the heart**
- **Equanimity**
- **Flowers pulling weeds**
- **Strength with heart**
- **Coming home**



Self-Directed Neuroplasticity

Common - and Fertile - Ground



*When the facts change,
I change my mind, sir.*

What do you do?

John Maynard Keynes

The Natural Mind

Apart from the hypothetical influence of a transcendental X factor . . .

Awareness and unconsciousness, mindfulness and delusion, and happiness and suffering must be natural processes.

Mind is grounded in life.

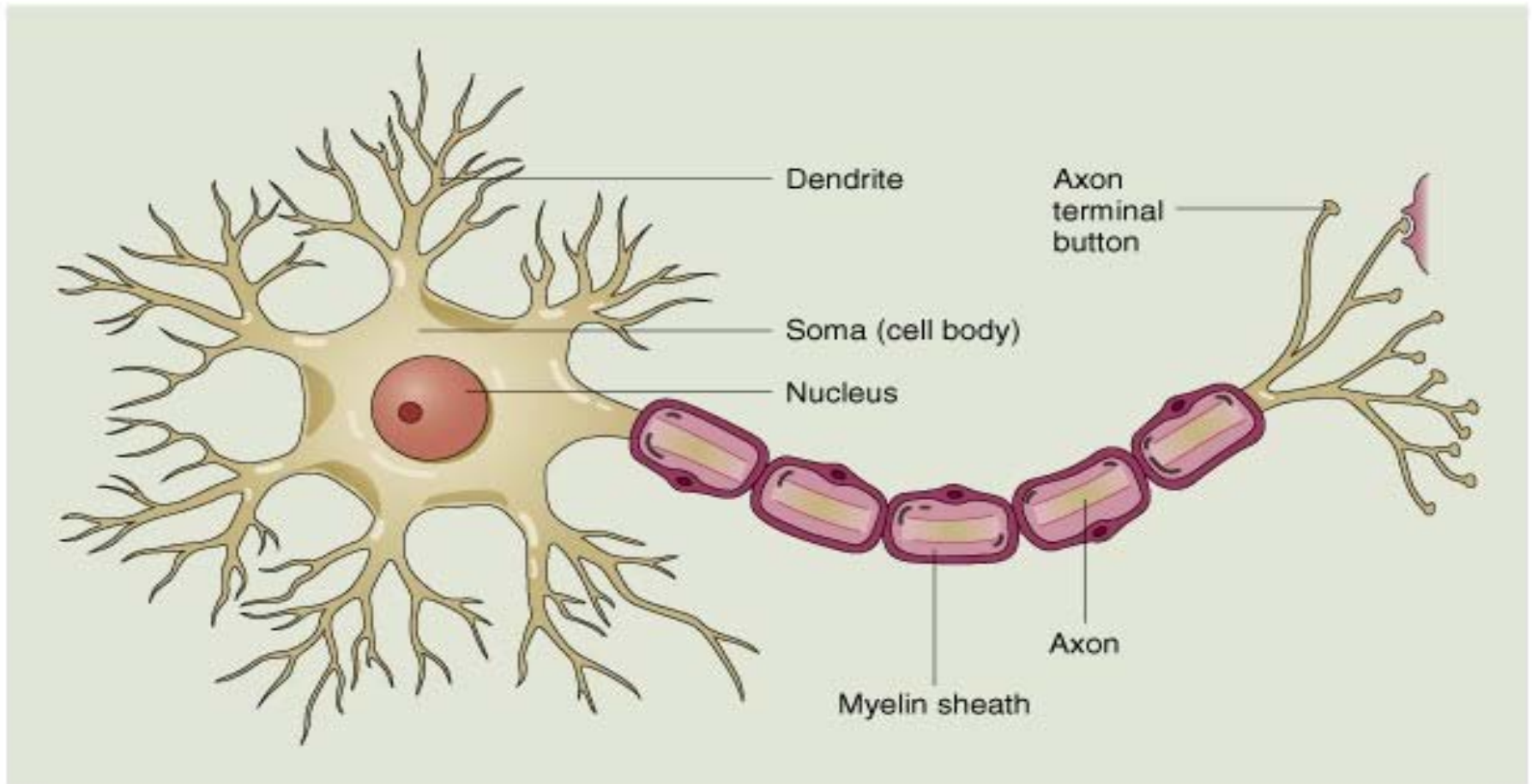
We ask, "What is a thought?"

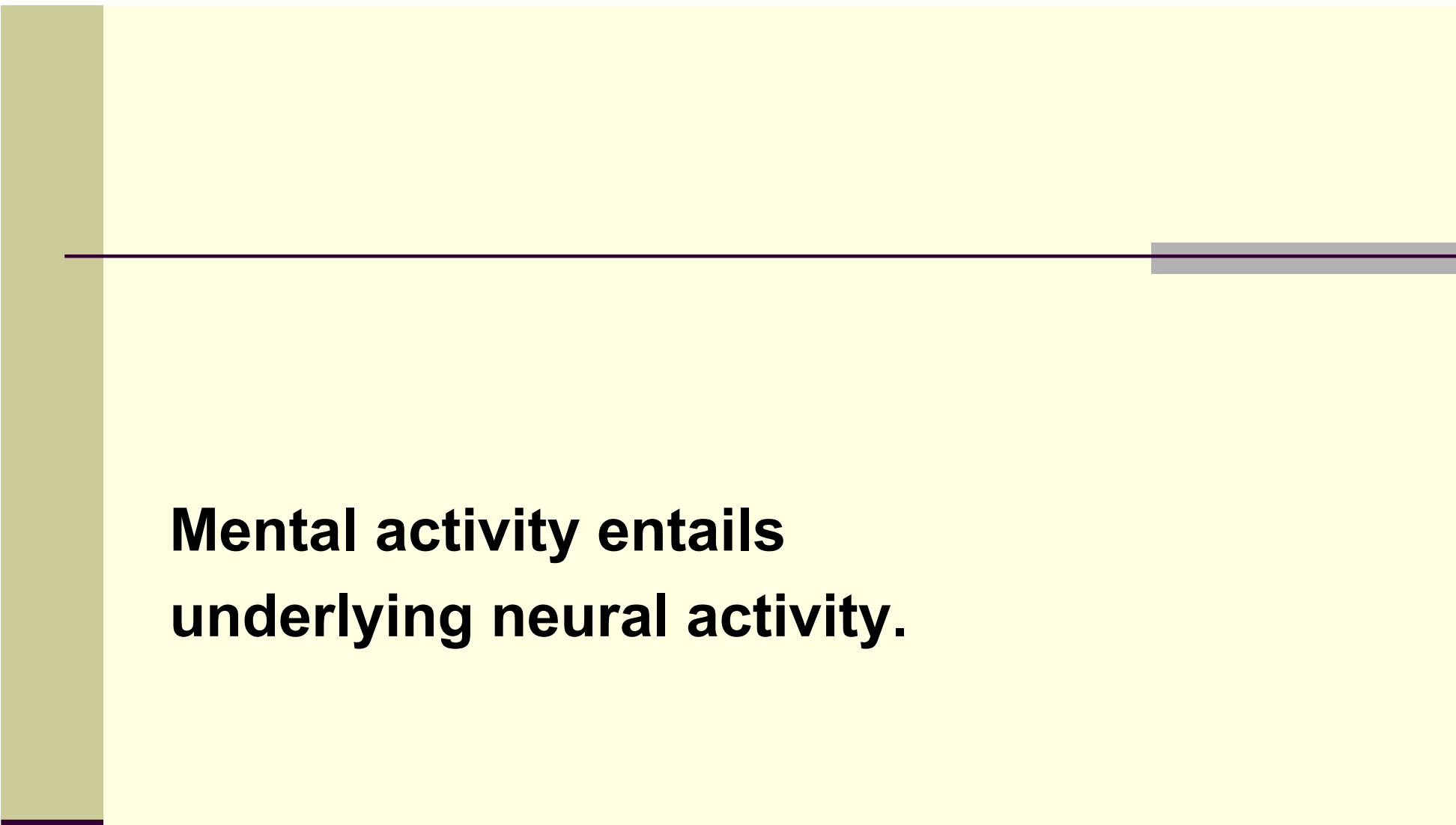
*We don't know,
yet we are thinking continually.*

Venerable Tenzin Palmo



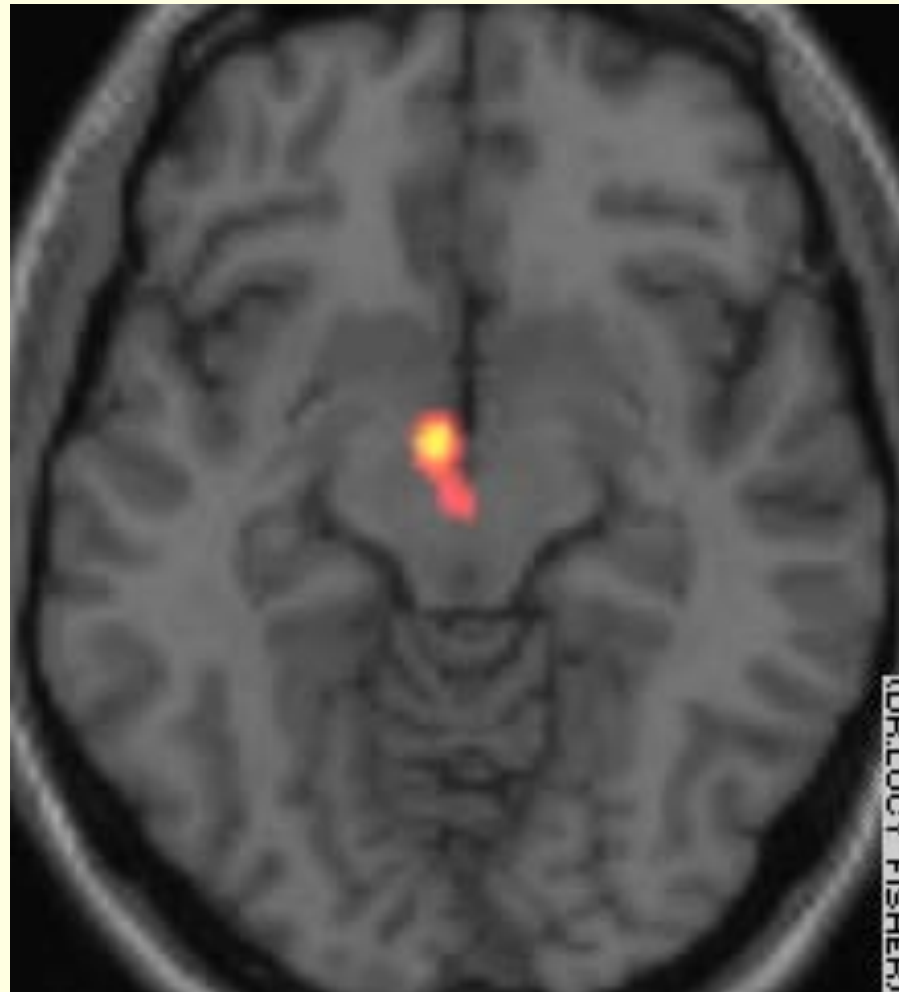
A Neuron



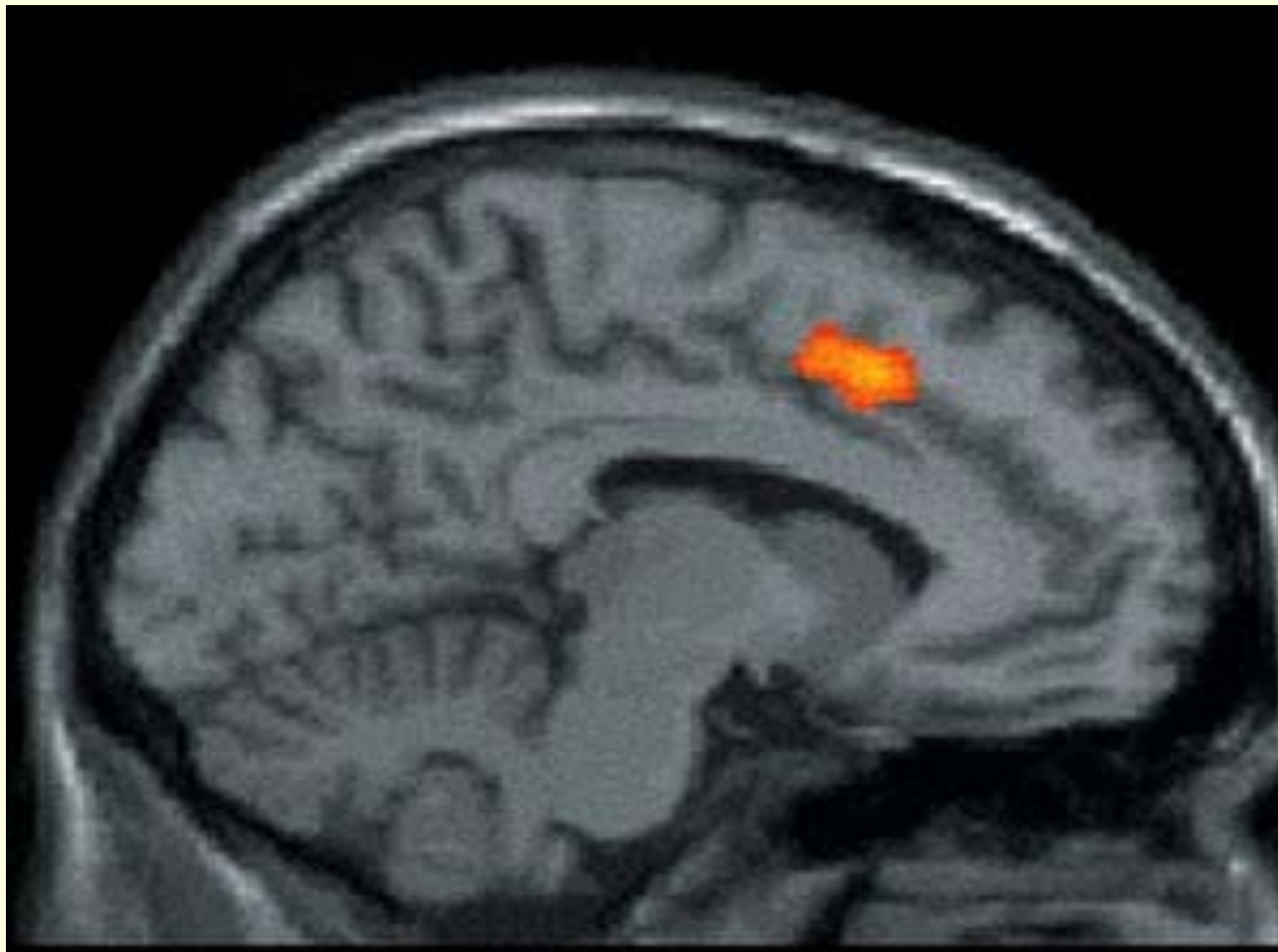


**Mental activity entails
underlying neural activity.**

The Rewards of Love

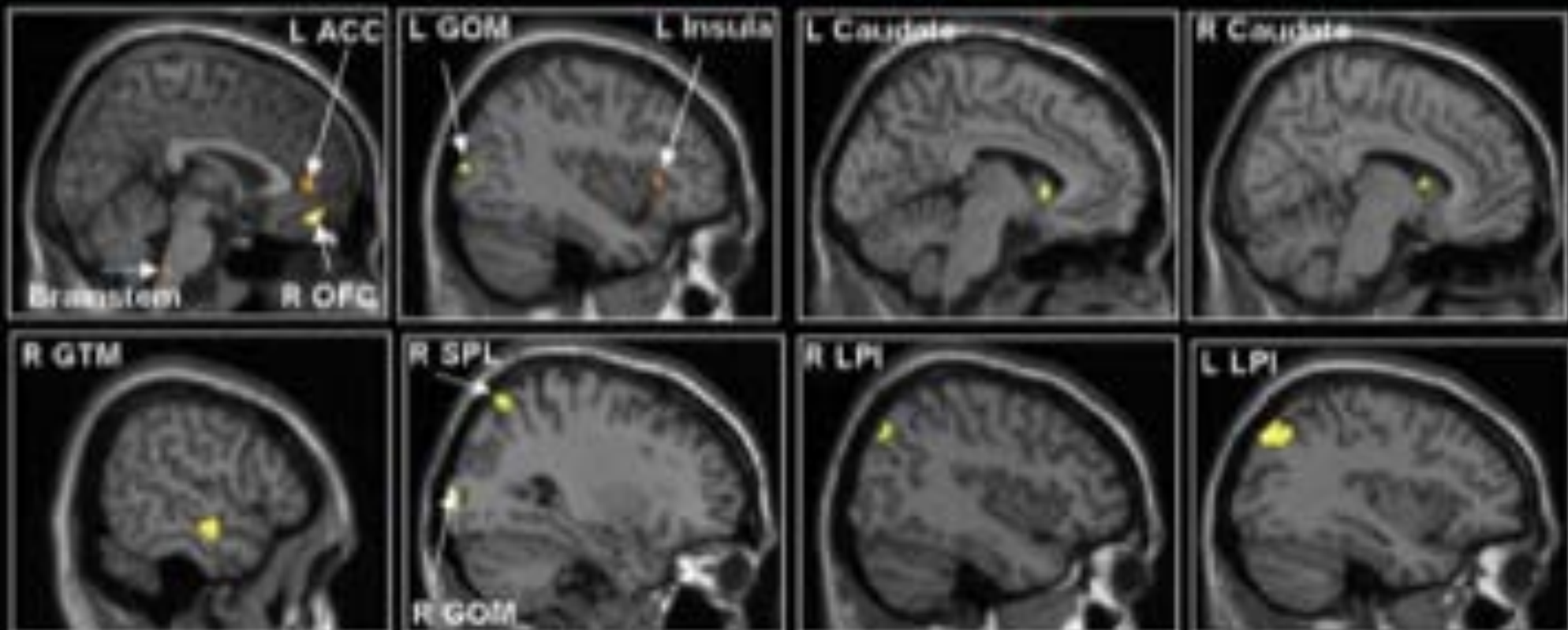


Ardent, Diligent, Resolute, and Mindful



Christian Nuns, Recalling a Profound Spiritual Experience

Mystical > Baseline



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

**Repeated mental activity entails
repeated neural activity.**

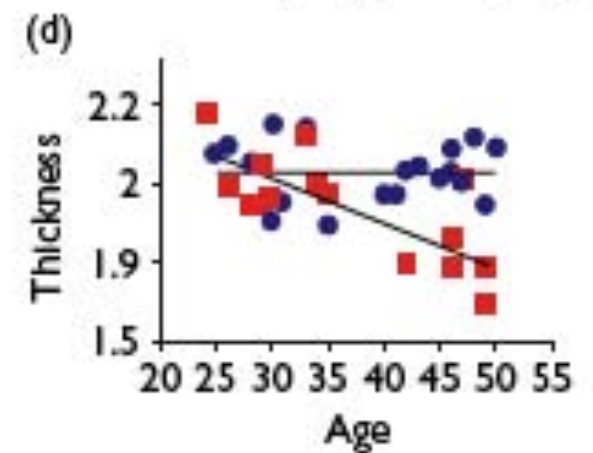
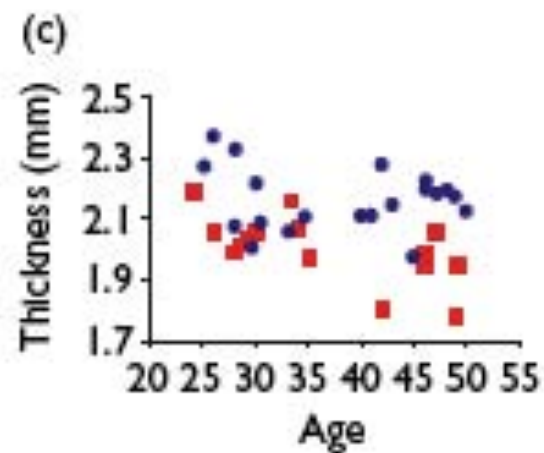
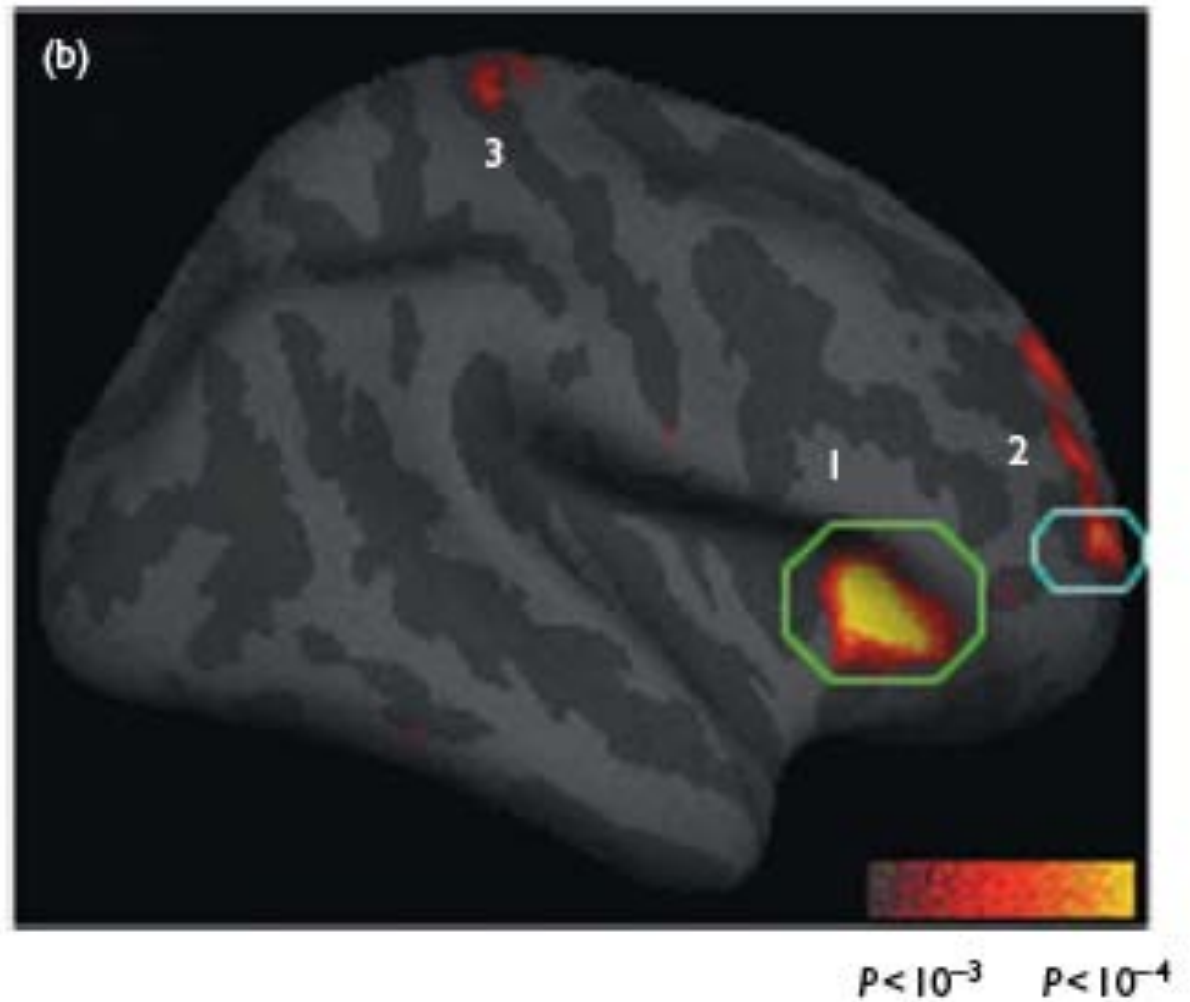
**Repeated neural activity
builds neural structure.**

A network of glowing yellow neurons with a central neuron highlighted in green. The neurons are interconnected by a dense web of thin, yellow fibers. The central neuron has a bright green nucleus and is surrounded by a complex network of yellow fibers. The background is dark, making the glowing neurons stand out.

Neurons that fire together,

wire together.

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



The Opportunity

We can use the mind

To change the brain

To change the mind for the better

To benefit ourselves and other beings.

Honoring Experience

Your experience *matters*.

**Both for how it feels in the moment
and for the lasting residues it leaves behind,
woven into the fabric of your brain and being.**



Self-Compassion

*If one going down into a river,
swollen and swiftly flowing,
is carried away by the current --
how can one help others across?*

The Buddha

*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

Self-Compassion

- Compassion is the wish that a being not suffer, combined with sympathetic concern. Self-compassion simply applies that to oneself. It is not self-pity, complaining, or wallowing in pain.
- Studies show that self-compassion 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 compassion to yourself, perhaps with phrases like: “May I not suffer. May the pain of this moment pass.”

“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



The Power of Mindfulness

Why Mindfulness Matters

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

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

William James

Basics of Meditation

- Relax; posture that is comfortable and alert
- Simple good will toward yourself
- Awareness of your body
- Focus on something to steady your attention
- Accepting whatever passes through awareness
- Gently settling into peaceful well-being

7 Neural Factors of Mindfulness

- **Setting an intention** - “top-down” frontal, “bottom-up” limbic
- **Relaxing the body** - parasympathetic nervous system
- **Feeling cared about** - social engagement system
- **Feeling safer** - inhibits amygdala/ hippocampus alarms
- **Encouraging positive emotion** - dopamine, norepinephrine
- **Panoramic view** - lateral networks
- **Absorbing the benefits** - positive implicit memories



Inner Strengths

Working with Causes and Effects

Mental and physical phenomena arise, persist, and pass away due to causes.

Causes in the brain are shaped by the mental/neural states that are activated and then installed within it. States become traits.

The neural traits of inner “poisons” (e.g., hatred, greed, heartache, delusion) cause suffering and harm.

The neural traits of **inner strengths** (e.g., virtue, mindfulness, wisdom, resilience, compassion, etc.) cause happiness and benefit for oneself and others.

The Causes of Inner Strengths

How do we build the neural traits of inner strengths?

Inner strengths: mainly built from positive experiences.

You develop mindfulness by repeatedly being mindful;
you develop compassion by repeatedly feeling
compassionate; etc.

The brain is like a VCR or DVR, not an iPod: you must
play the song to record it - you must experience the
strength to install it in your brain.

A Bottleneck For Growing Inner Strengths

The problem is that, for survival reasons, the brain is poor at turning positive states into neural traits.

It is bad at learning from good experiences compared to how good it is at learning from bad experiences.

This design feature of the brain creates a kind of bottleneck that reduces the conversion of positive mental states to positive neural traits.

HEAL by Taking in the Good

1. **Have** a positive experience. Notice it or create it.
2. **Enrich** the experience through duration, intensity, multimodality, novelty, personal relevance
3. **Absorb** the experience by intending and sensing that it is sinking into you as you sink into it.
4. **Link** positive and negative material.

Types of Good Experiences

Avoiding Harms

- Feeling basically alright right now
- Feeling protected, strong, safe, at peace

Approaching Rewards

- Everyday sensual pleasures
- Satisfactions in accomplishing goals
- Feeling glad, grateful, contented, fulfilled
- Therapeutic, spiritual, or existential realizations

Attaching to Others

- Feeling included, seen, liked, appreciated, loved
- Feeling compassionate, kind, generous, loving

Feeling Alright Right Now

- Tuning into bodily signals that you're OK
- Recognizing protections
- Not afraid of paper tigers
- Feeling strong

Feeling Already Full

- Sensing enoughness for the body
- Feeling buoyed and nurtured by the natural world
- Awareness of phenomena filling the mind
- Feeling filled by each moment's arisings even as they pass away.

Feeling Cared About

- As we evolved, we increasingly turned to and relied on others to feel safer and less threatened.
 - Exile from the band was a death sentence in the Serengeti.
 - Attachment: relying on the secure base
 - The well-documented power of social support to buffer stress and aid recovery from painful experiences
- Methods:
 - Recognize it's kind to others to feel cared about yourself.
 - Look for occasions to feel cared about and take them in.
 - Deliberately bring to mind the experience of being cared about in challenging situations.

It's Good to Take in the Good

- Development of specific inner strengths
 - “Antidote experiences” - “By love they will quench the fires of hate” (the Buddha)
- Implicit benefits:
 - Being active rather than passive
 - Treating yourself like you matter
 - Training of attention and executive functions
- Gradual sensitization of the brain to the positive: like Velcro for the good

Cultivation in Context

- Three ways to engage the mind:
 - Be with it. Decrease negative. Increase positive.
 - The garden: Observe. Pull weeds. Plant flowers.
 - Let be. Let go. Let in.
 - Mindfulness present in all three ways to engage mind
- While “being with” is primary, it’s often isolated in mindfulness-based practices.
- Skillful means for decreasing the negative and increasing the positive have developed over 2500 years. Why not use them?



SPIRIT ROCK MEDITATION CENTER



Join us for

**Cultivating Inner Strength - Monastic
Daylong [Dana - No Fee Day]**

with Ayya Anandabodhi
and Ayya Santacitta
on

Sunday, July 8

from 9:30 am - 5 pm.

(Photo by Ed Ritger)

Cultivation Undoes Craving


- All life has goals. The brain continually seeks to avoid harms, approach rewards, and attach to others - even that of a Buddha.
- It is wholesome to wish for the happiness, welfare, and awakening of all beings - including the one with your nametag.
- We rest the mind upon positive states so that the brain may gradually take their shape. This disentangles us from craving as we increasingly rest in a peace, happiness, and love that is independent of external conditions.
- With time, even the practice of cultivation falls away - like a raft that is no longer needed once we reach the farther shore.



Know the mind.

Shape the mind.

Free the mind.



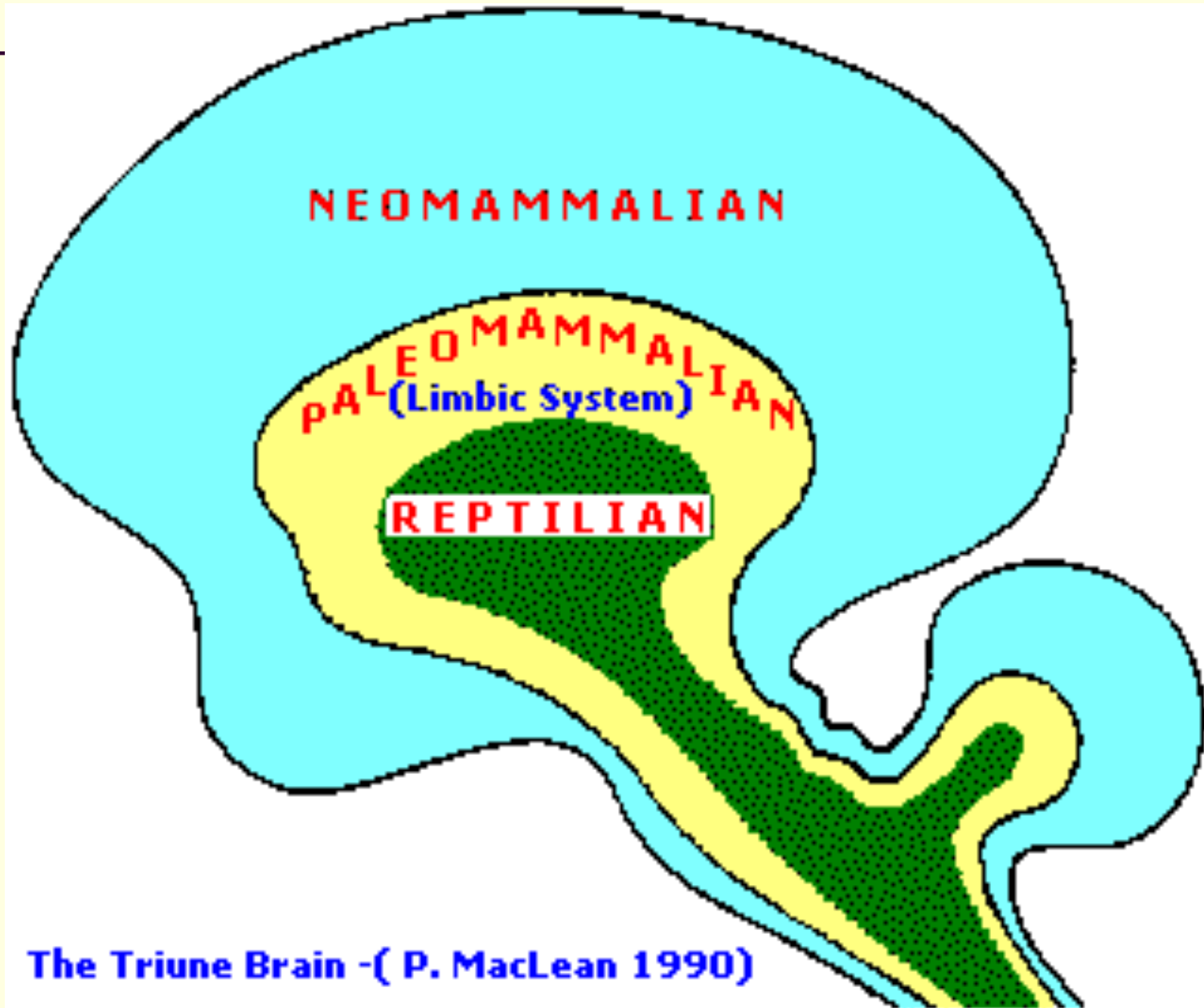


The Evolving Brain

Evolution

- ~ 4+ billion years of earth
- 3.5 billion years of life
- 650 million years of multi-celled organisms
- 600 million years of nervous system
- ~ 200 million years of mammals
- ~ 60 million years of primates
- ~ 6 million years ago: last common ancestor with chimpanzees, our closest relative among the “great apes” (gorillas, orangutans, chimpanzees, bonobos, humans)
- 2.5 million years of tool-making (starting with brains 1/3 our size)
- ~ 150,000 years of *homo sapiens*
- ~ 50,000 years of modern humans
- ~ 5000 years of blue, green, hazel eyes

Evolutionary History



The Triune Brain - (P. MacLean 1990)

Three Stages of Brain Evolution

■ Reptilian:

- Brainstem, cerebellum, hypothalamus
- Reactive and reflexive
- **Avoid** hazards

■ Mammalian:

- Limbic system, cingulate, early cortex
- Memory, emotion, social behavior
- **Approach** rewards

■ Human:

- Massive cerebral cortex
- Abstract thought, language, cooperative planning, empathy
- **Attach** to “us”

Three Fundamental Motivational and Self-Regulatory Systems

■ Avoid Harms:

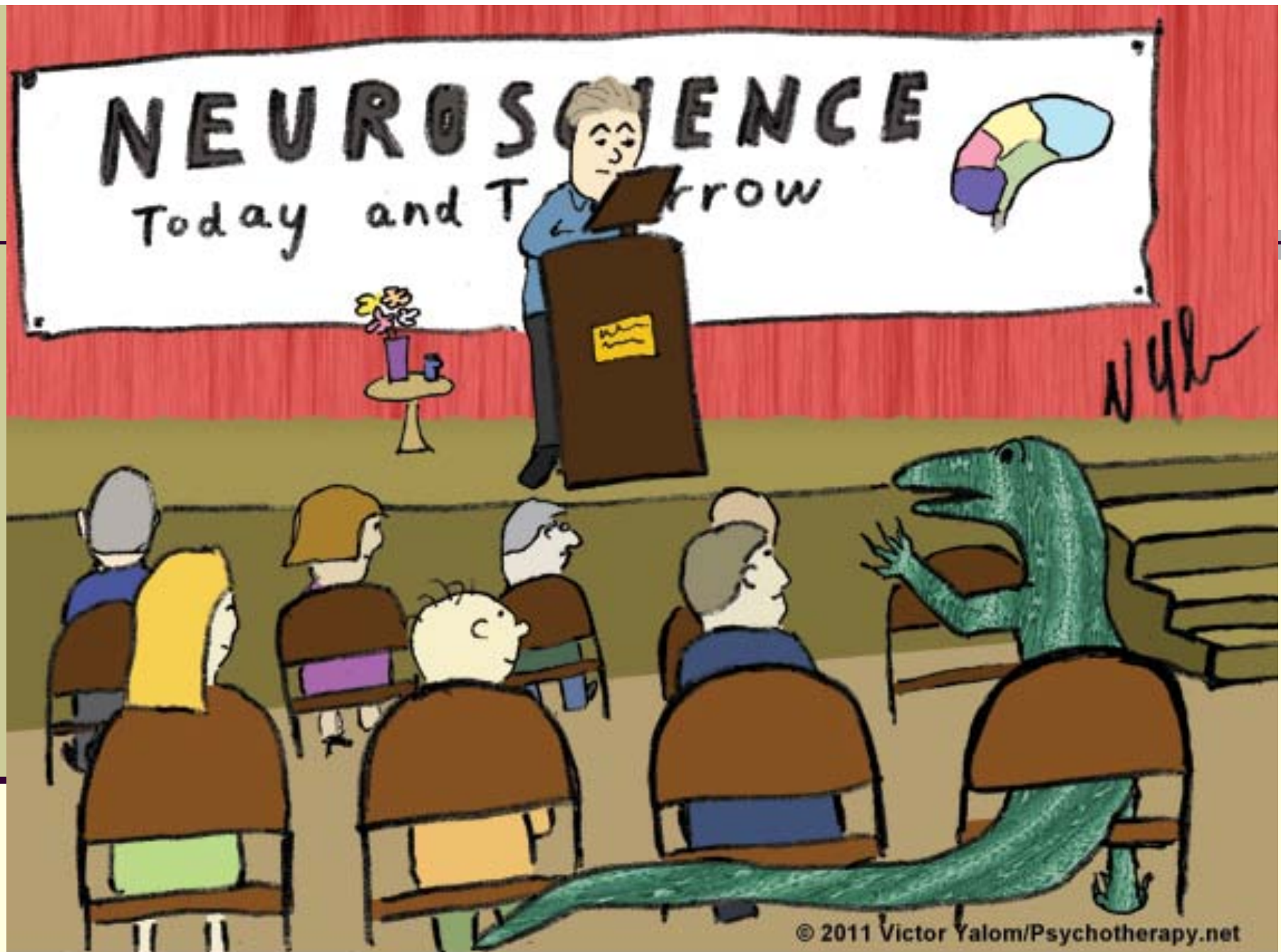
- Primary need, tends to trump all others
- Functional in first animals, in brainstem

■ Approach Rewards:

- Functional in first animals, in brainstem
- Elaborated via sub-cortex in mammals for emotional valence, sustained pursuit, etc.

■ Attach to Others:

- Functional in mammals and birds, in sub-cortex
- Very elaborated via cortex in humans for pair bonding, language, empathy, cooperative planning, compassion, altruism, etc.



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"With all due respects, I find your disparaging remarks about the 'reptilian brain' unnecessary"

Reverse Engineering the Brain

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

- In peak states of productivity or “flow?”
- Experiencing inner peace?
- Self-actualizing?
- Enlightened (or close to it)?

The Homeostatic Home Base

When not disturbed by threat, loss, or rejection [no deficit of safety, satisfaction, and connection]

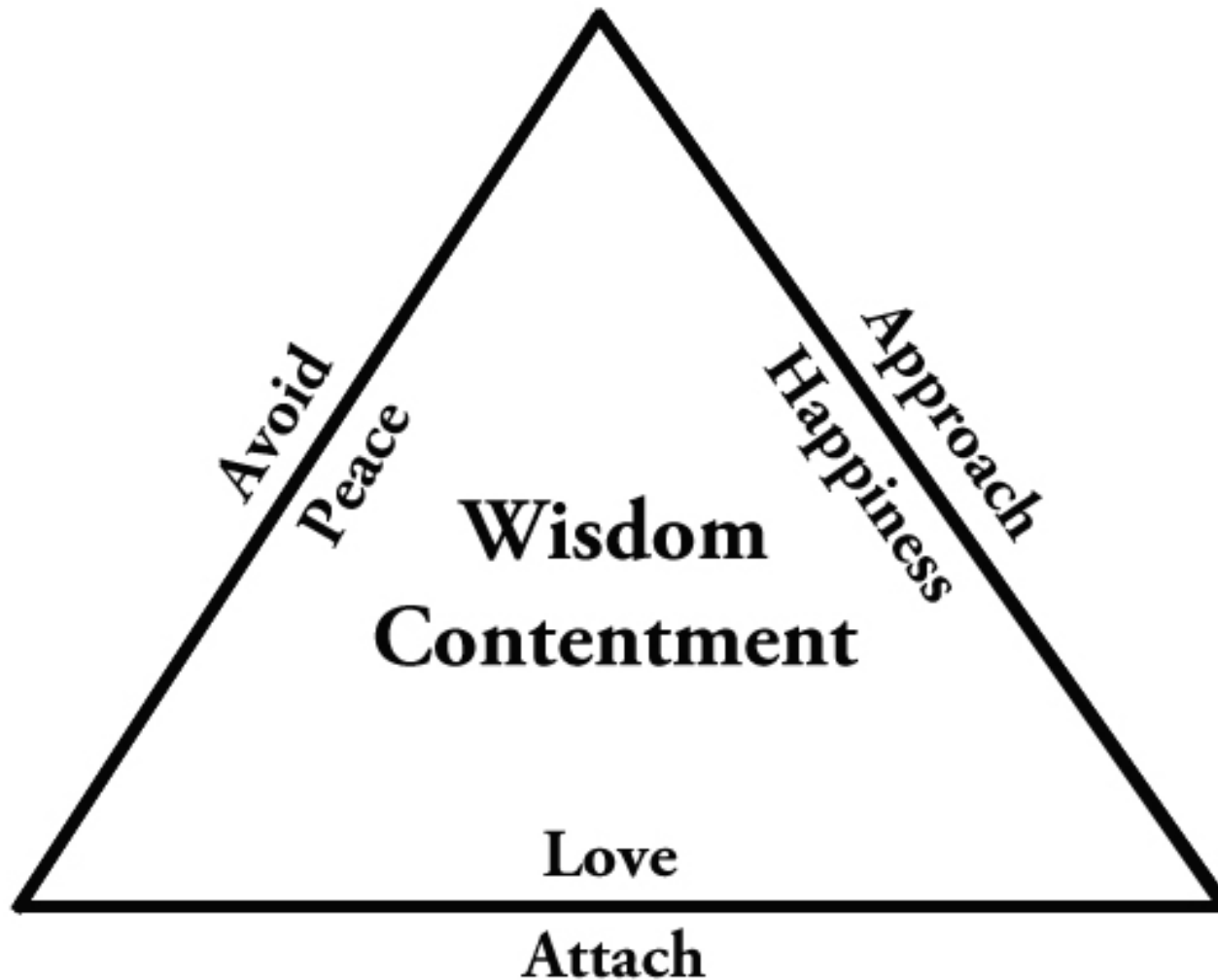
The body defaults to a sustainable equilibrium of refueling, repairing, and pleasant abiding.

The mind defaults to a sustainable equilibrium of:

- **Peace** (the Avoiding system)
- **Contentment** (the Approaching system)
- **Love** (the Attaching system)

This is the brain in its homeostatic ***Responsive, minimal craving*** mode.

The Responsive Mode





Behind the Obscurations

Sam sees *“peeping among the cloud-wrack . . . a white star
twinkle for a while.*

*The beauty of it smote his heart, as he looked up out of the
forsaken land, and hope returned to him.*

*For like a shaft, clear and cold, the thought pierced him that
in the end the Shadow was only a small and passing thing:
there was light and high beauty forever beyond its reach.”*

Tolkein, *The Lord of the Rings*

Key Benefits of Responsive Mode

- Fueling for Reactive mobilizations; recovery after
- Positive emotions, cognitions, and behaviors
- Positive cycles
- Promotes virtue and benevolence

*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

Coming Home . . .

Peace

Happiness

Love

Neurobiological Basis of Craving

When disturbed by threat, loss, or rejection [deficit of safety, satisfaction, or connection]:

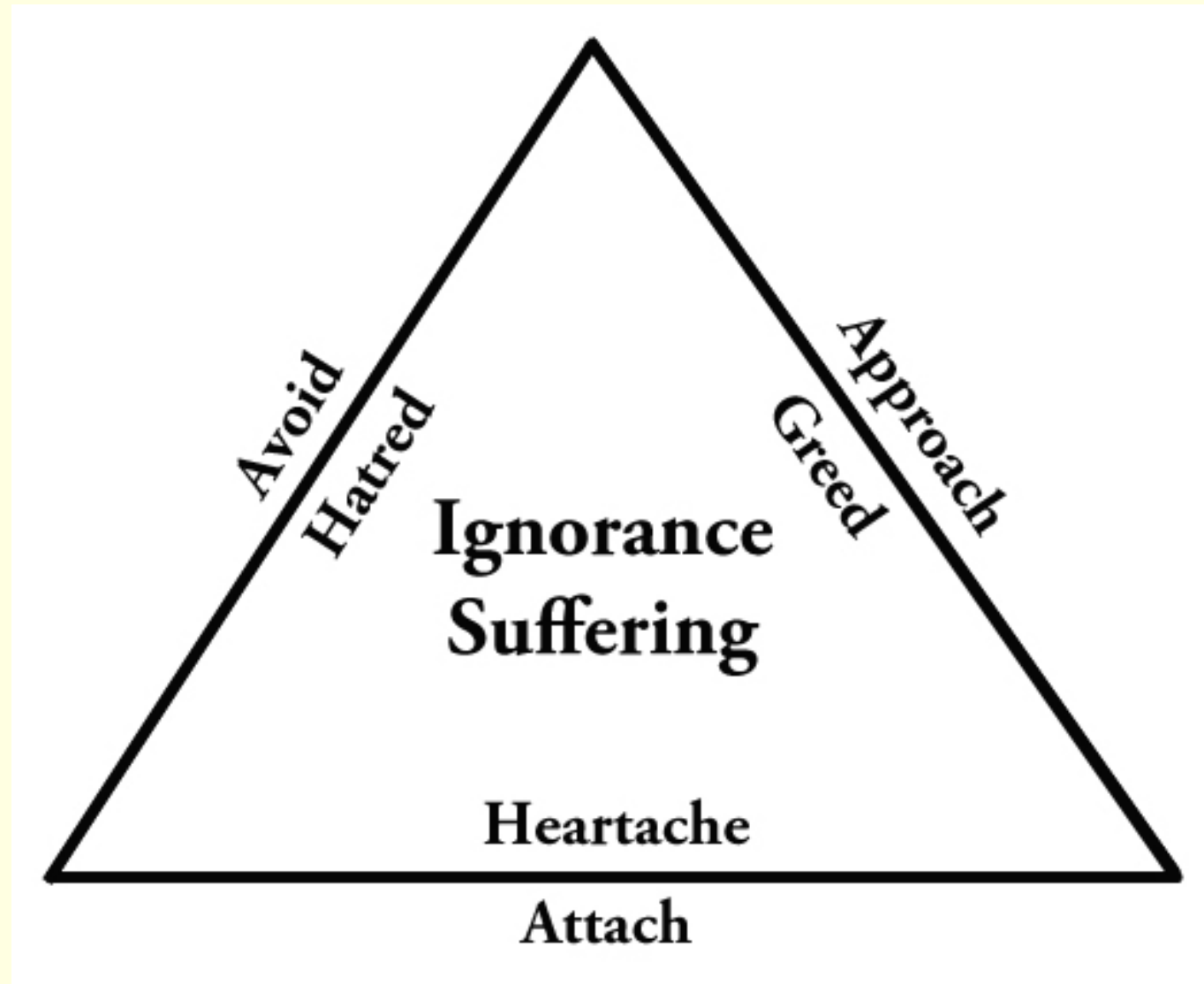
The body fires up into the stress response; outputs exceed inputs; long-term building is deferred.

The mind fires up into:

- **Hatred** (the Avoiding system)
- **Greed** (the Approaching system)
- **Heartache** (the Attaching system)

This is the brain in allostatic, **Reactive**, *craving* mode.

The Reactive Mode



Reactive Dysfunctions in Each System

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



The Negativity Bias

Negative Experiences Can Have Benefits

- 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

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 so for women)
- Primes aversion (due to SNS-HPAA negativity bias)

Evolution of the Negativity Bias

- **Harms** (“sticks”) - Predators, natural hazards, social aggression, pain (physical and psychological)
- **Rewards** (“carrots”) - Food, sex, shelter, social support, pleasure (physical and psychological)
- Avoiding “sticks” usually affects passing on genes more than approaching “carrots.”
 - Urgency - Usually, sticks must be avoided immediately while carrots allow a longer approach.
 - Impact - Often, the presence of a stick ends life while the absence of a carrot does not; if you fail to get a carrot today, you’ll likely have another chance tomorrow, but if you fail to avoid a stick today - whap! - no more carrots forever.

Negativity Bias: Some Consequences

- Negative stimuli get more attention and processing.
- We generally learn faster from pain than pleasure.
- People work harder to avoid a loss than attain an equal gain (“endowment effect”)
- Easy to create learned helplessness, hard to undo
- Negative interactions: more powerful than positive
- Negative experiences sift into implicit memory.

Velcro for Bad, Teflon for Good

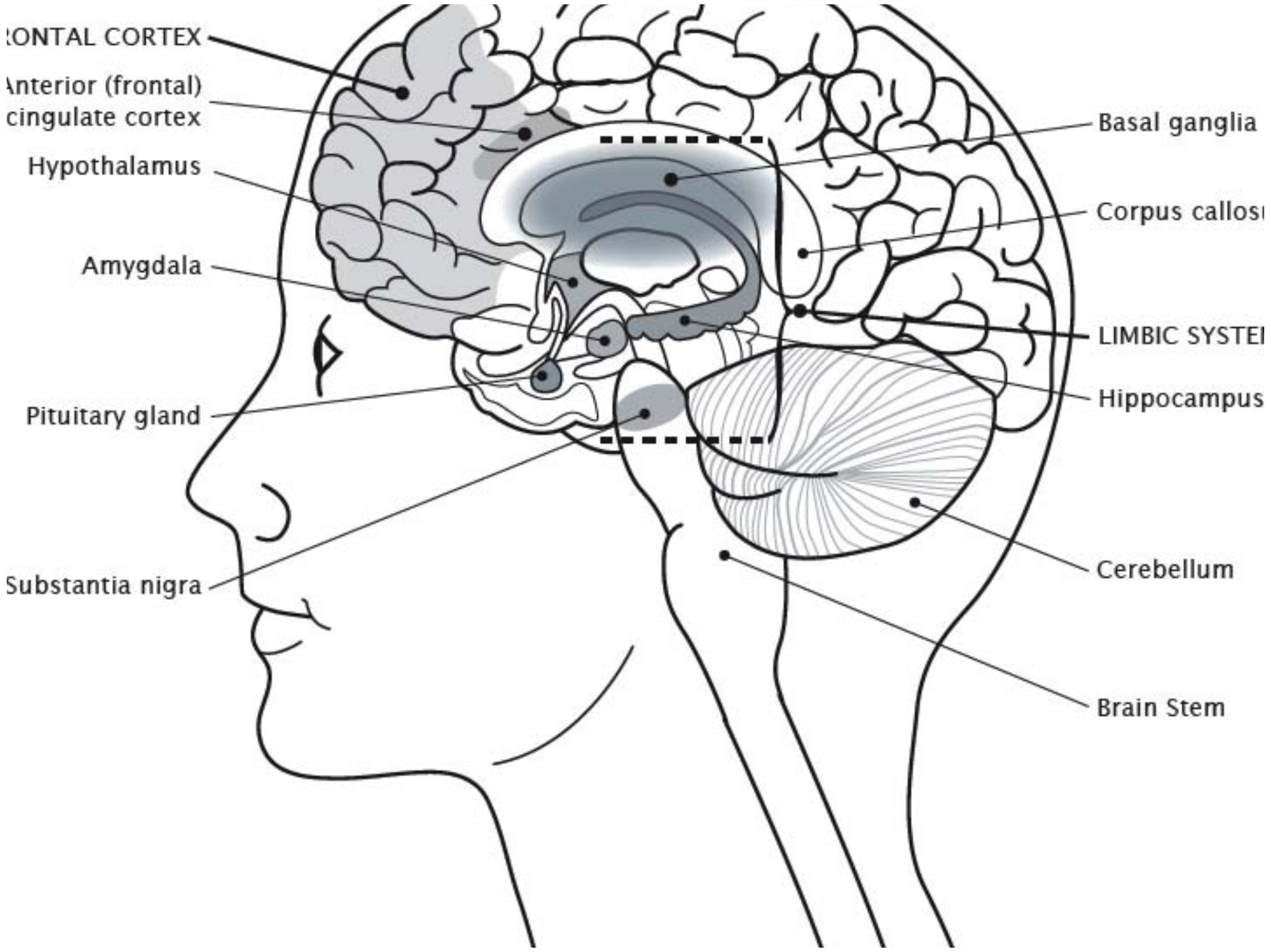
The negativity bias

bad experiences

good experiences

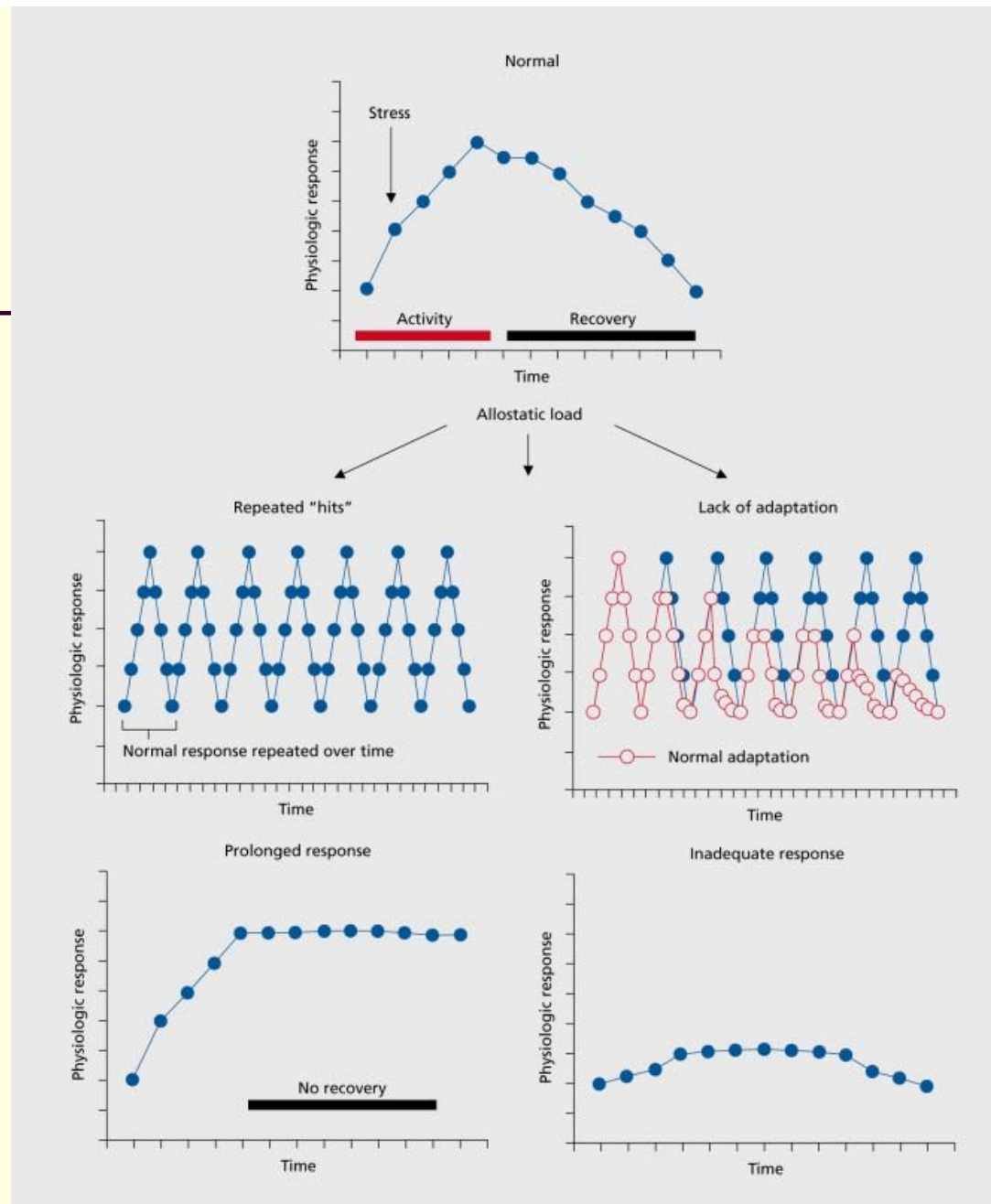
Vicious Cycles in the Brain

- 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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Adaptive and maladaptive responses to challenges

Top panel: adaptive stress response. Lower panels: Top left - repeated stressors, no time for recovery. Top right - adaptation wears out. Bottom left - stuck in stress activation. Bottom right - inadequate stress response.
 McEwen, 1998. New England Journal of Medicine, 338:171-179.

Considering the Costs and Benefits

- As we evolved, the short-term benefits of the negativity bias outweighed its long-term costs.
- But now - when we want to live long and well, and when we are exposed to chronic mild to moderate Reactive stressors with little time for Responsive recovery - this design feature is a kind of “bug” for human brains in the 21st century.
- This is also a key weakness of therapy, human potential trainings, and character education: many hard-won positive states are wasted on the brain.

Stone age brains in the 21st century



A Poignant Truth

Mother Nature is tilted toward producing gene copies.

But tilted against personal quality of life.

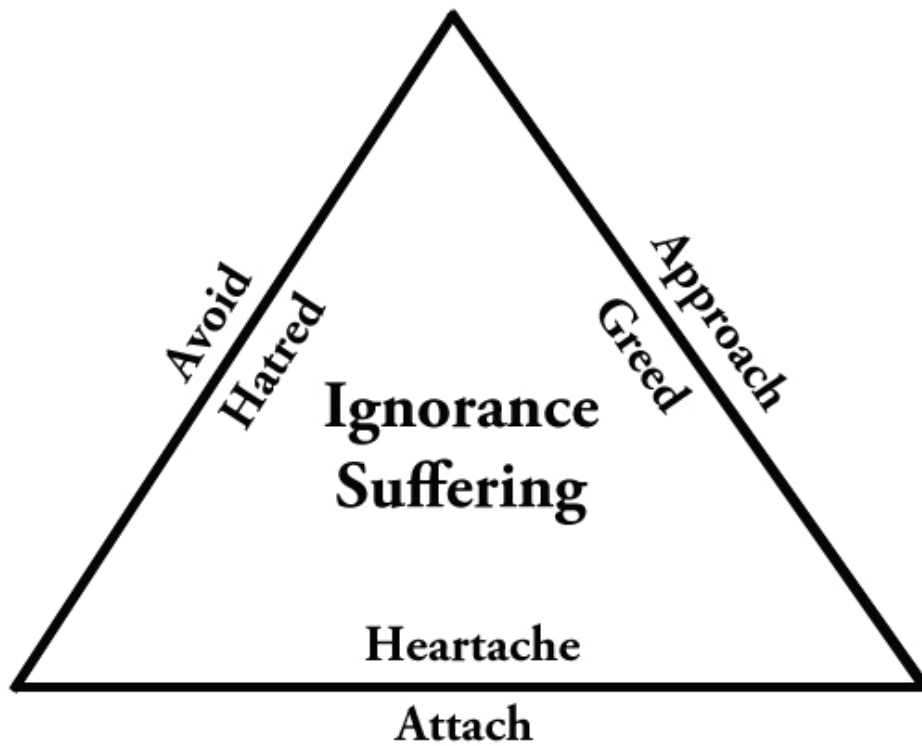
And at the societal level, we have caveman/cavewoman brains armed with nuclear weapons.

What shall we do?

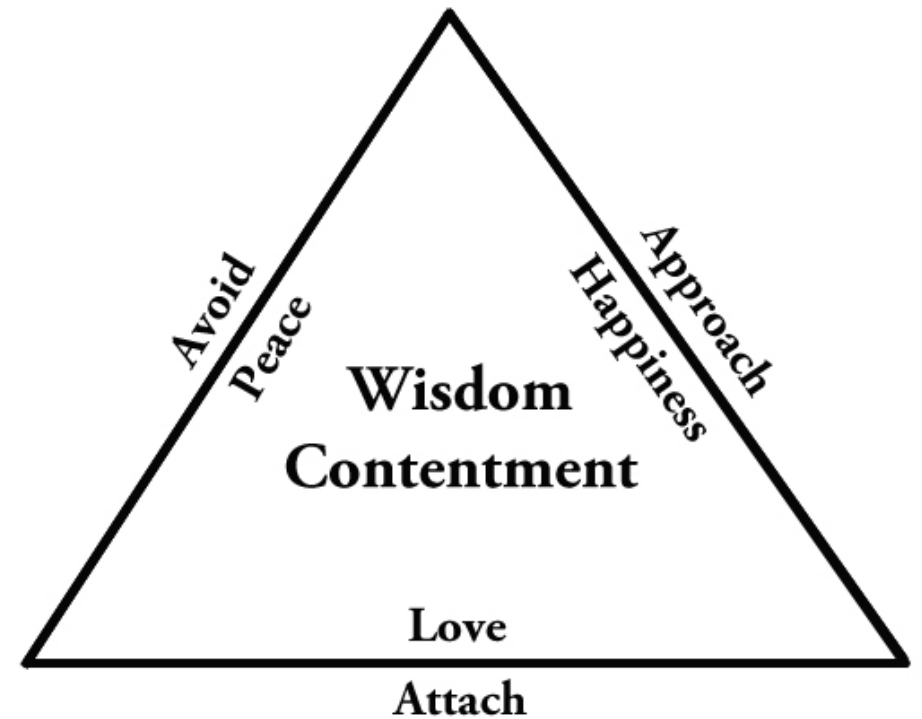
*We can deliberately use the mind
to change the brain for the better.*

Choices . . .

Or?



Reactive Mode



Responsive Mode



Being and Doing

Dual Modes

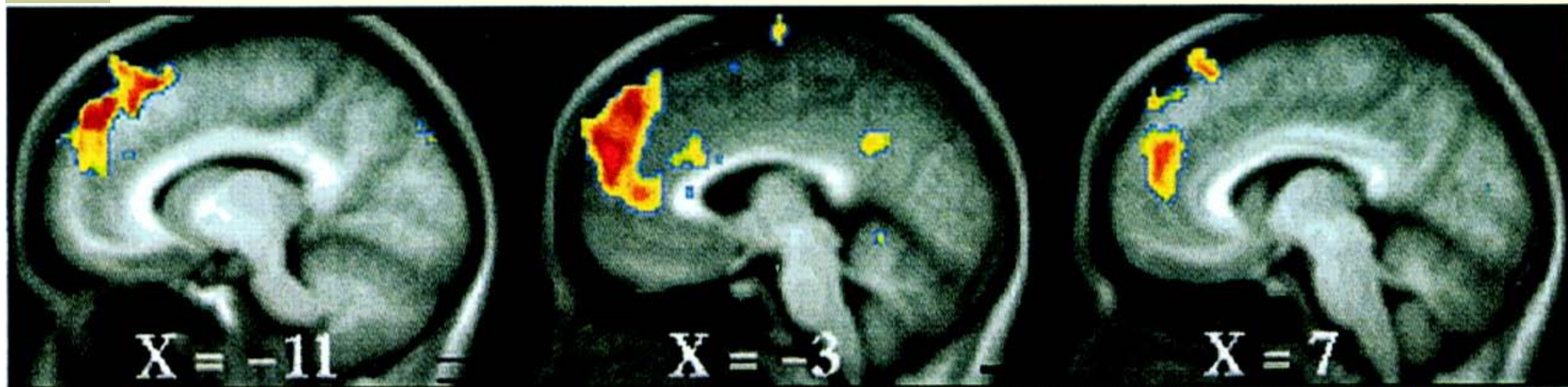
“Doing”

Mainly representational
Much verbal activity
Abstract
Future- or past-focused
Goal-directed
Sense of craving
Personal, self-oriented perspective
Focal view
Firm beliefs
Evaluative
Lost in thought, mind wandering
Reverberation and recursion
Tightly connected experiences
Prominent self-as-object
Prominent self-as-subject

“Being”

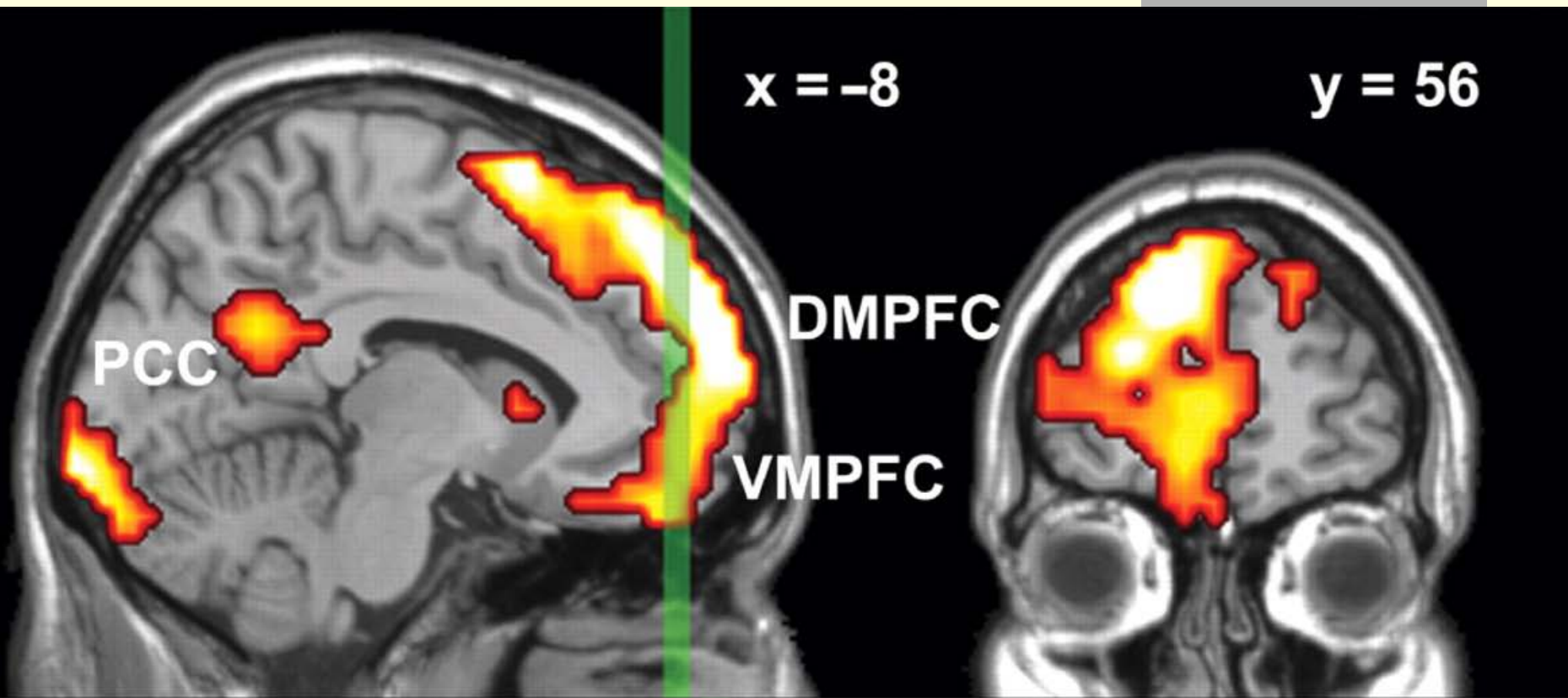
Mainly sensory
Little verbal activity
Concrete
Now-focused
Nothing to do, nowhere to go
Sense of peace
Impersonal, 3rd person perspective
Panoramic view
Uncertainty, not-knowing
Nonjudgmental
Mindful presence
Immediate and transient
Loosely connected experiences
Minimal or no self-as-object
Minimal or no self-as-subject

Increased Medial PFC Activation Related to Self-Referencing Thought



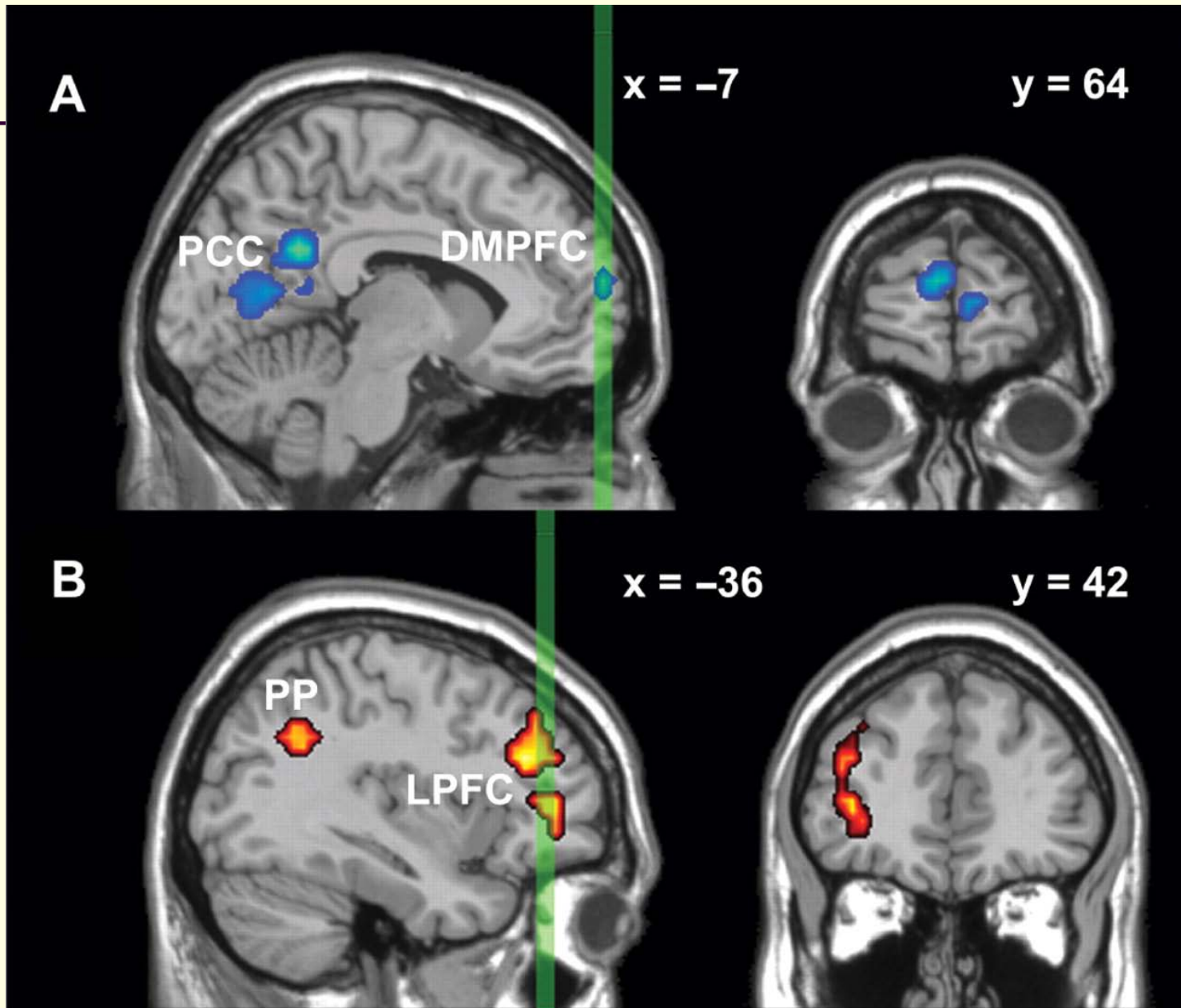
Gusnard D. A., et.al. 2001. *PNAS*, 98:4259-4264

Cortical Midline Areas for Self-Referencing Thought

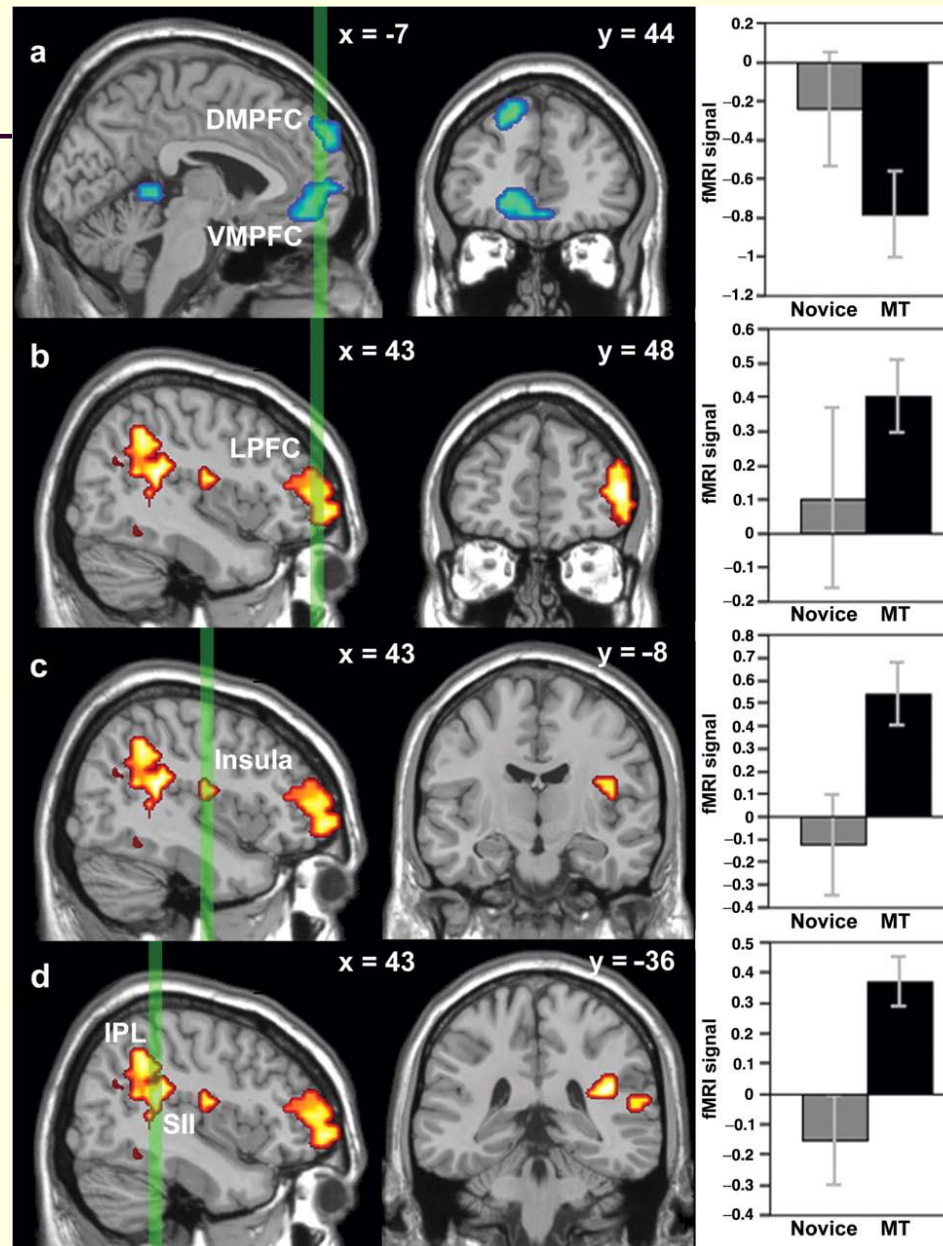


Farb, et al. 2007. *Social Cognitive Affective Neuroscience*, 2:313-322

Self-Focused (blue) and Open Awareness (red) Conditions (in the novice, pre MT group)



Self-Focused (blue) vs Open Awareness (red) Conditions (following 8 weeks of MT)



Dual Modes

“Doing”

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“Bahiya, you should train yourself thus.”

In reference to the seen, there will be only the seen. To the heard, only the heard. To the sensed, only the sensed. To the cognized, only the cognized.

When for you there will be only the seen in reference to the seen, only the heard in the heard, only the sensed in the sensed, only the cognized in the cognized, then, Bahiya, there's no you in that.

When there's no you in that, there's no you there. When there's no you there, you are neither here nor yonder nor between the two.

This, just this, is the end of all suffering.

The Buddha

Ways to Activate “Being” Mode

- Relax
- Focus on bare sensations and perceptions
- Sense the body as a whole
- Take a panoramic, “bird’s-eye” view
- Engage “don’t-know mind”; release judgments
- Don’t try to connect mental contents together
- Let experience flow, staying here now
- Relax the sense of “I, me, and mine”

Whole Body Awareness

- Sense the breath in one area (e.g., chest, upper lip)
- Sense the breath as a whole: one gestalt, percept
- Sense the body as a whole, a whole body breathing
- Sense experience as a whole: sensations, sounds, thoughts . . . all arising together as one unified thing
- It's natural for this sense of the whole to be present for a second or two, then crumble; just open up to it again and again.

Panoramic Awareness

- Recall a bird's-eye view (e.g., mountain, airplane)
- Be aware of sounds coming and going in an open space of awareness, without any edges: boundless
- Open to other contents of mind, coming and going like clouds moving across the sky.
- Pleasant or unpleasant, no matter: just more clouds
- No cloud ever harms or taints the sky.



Your Loving Nature

The Social Brain

- Social capabilities have been a primary driver of brain evolution.
- Reptiles and fish avoid and approach. Mammals and birds *attach* as well - especially primates and humans.
- Mammals and birds have bigger brains than reptiles and fish.
- The more social the primate species, the bigger the cortex.
- Since the first hominids began making tools ~ 2.5 million years ago, the brain has roughly tripled in size, much of its build-out devoted to social functions (e.g., cooperative planning, empathy, language). The growing brain needed a longer childhood, which required greater pair bonding and band cohesion.

All sentient beings developed through natural selection in such a way that pleasant sensations serve as their guide, and especially the pleasure derived from sociability and from loving our families.

Charles Darwin

















PTP Art - Copyright - P.T. Blue Moon























*In the cherry blossom's shade
there is no thing
as a stranger*

Issa

If there is anything I have learned about [people], it is that there is a deeper spirit of altruism than is ever evident.

Just as the rivers we see are minor compared to the underground streams, so, too, the idealism that is visible is minor compared to what people carry in their hearts unreleased or scarcely released.

(Hu)mankind is waiting and longing for those who can accomplish the task of untying what is knotted, and bringing these underground waters to the surface.

Albert Schweitzer











Two Wolves in the Heart

Us and Them

- Core evolutionary strategy: within-group cooperation, and between-group aggression.
- Both capacities and tendencies are hard-wired into our brains, ready for activation. And there is individual variation.
- Our biological nature is much more inclined toward cooperative sociability than toward aggression and indifference or cruelty. We are just very reactive to social distinctions and threats.
- That reactivity is intensified and often exploited by economic, cultural, and religious factors.
- Two wolves in your heart:
 - Love sees a vast circle in which all beings are “us.”
 - Hate sees a small circle of “us,” even only the self.

Which one will you feed?

Two wolves in the heart



*In between-family fights, the baboon's 'I'
expands to include all of her close kin;
in within-family fights,
it contracts to include only herself.*

*This explanation serves for baboons
as much as for the Montagues and Capulets.*

Dorothy Cheney and Robert Seyfarth

*If we could read the secret history
of our enemies,
we should find in each [person's] life
sorrow and suffering enough
to disarm any hostility.*

Henry Wadsworth Longfellow



The Wisdom of Connection

A human being is a part of a whole, called by us "universe," a part limited in time and space. He experiences himself, his thoughts and feelings as something separated from the rest... a kind of optical delusion of his consciousness.

This delusion is a kind of prison for us, restricting us to our personal desires and to affection for a few persons nearest to us.

Our task must be to free ourselves from this prison by widening our circle of compassion to embrace all living creatures and the whole of nature in its beauty.

Albert Einstein

The Buddha's Words on Lovingkindness

Wishing: In gladness and in safety, may all beings be at ease.

Omitting none, whether they are weak or strong, the great or the mighty, medium, short, or small, the seen and the unseen, those living near and far away, those born and to-be-born: May all beings be at ease.

Let none through anger or ill-will wish harm upon another. Even as a mother protects with her life her child, her only child, so with a boundless heart should one cherish all living beings; radiating kindness over the entire world: spreading upwards to the skies, and downwards to the depths, outwards and unbounded, freed from hatred and ill-will.

One should sustain this recollection.

This is said to be the sublime abiding.

Lovingkindness Practice

- Types of wishes

- Safety
- Health
- Happiness
- Ease

- Types of beings

- Self
- Benefactor
- Friend
- Neutral
- Difficult

- Continually “omitting none” in all directions

Feeding the Hungry Heart

- Healthy development requires caregivers to give a child extensive mirroring, attunement, and prizing; healthy adult relationships require much the same.
- These are normal “narcissistic supplies.” Deficits lead to:
 - Feelings of inadequacy, worthlessness, and shame
 - Tendencies toward extremes of clinging or distance
- As an adult, you can take in narcissistic supplies, gradually weaving them into your brain and your being.
- This is not clinging to praise, etc. It is filling the hole in your heart so your happiness is increasingly unconditional - not dependent on external events.

HEAL by Taking in the Good

1. Have a positive experience. Notice it or create it.
2. Enrich the experience through duration, intensity, multimodality, novelty, personal relevance
3. Absorb the experience by intending and sensing that it is sinking into you as you sink into it.
4. Link positive and negative material.

Feeling Prized

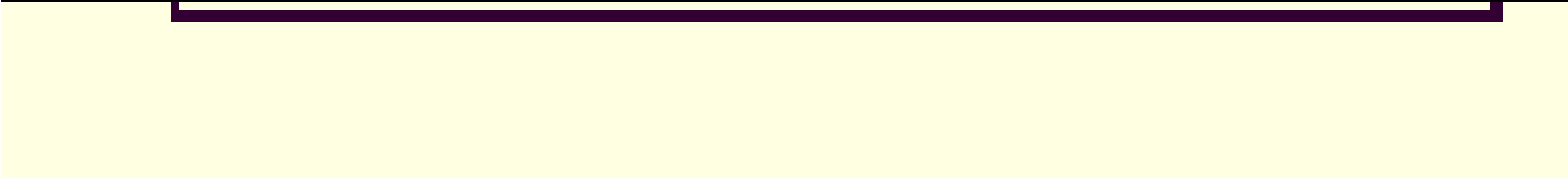
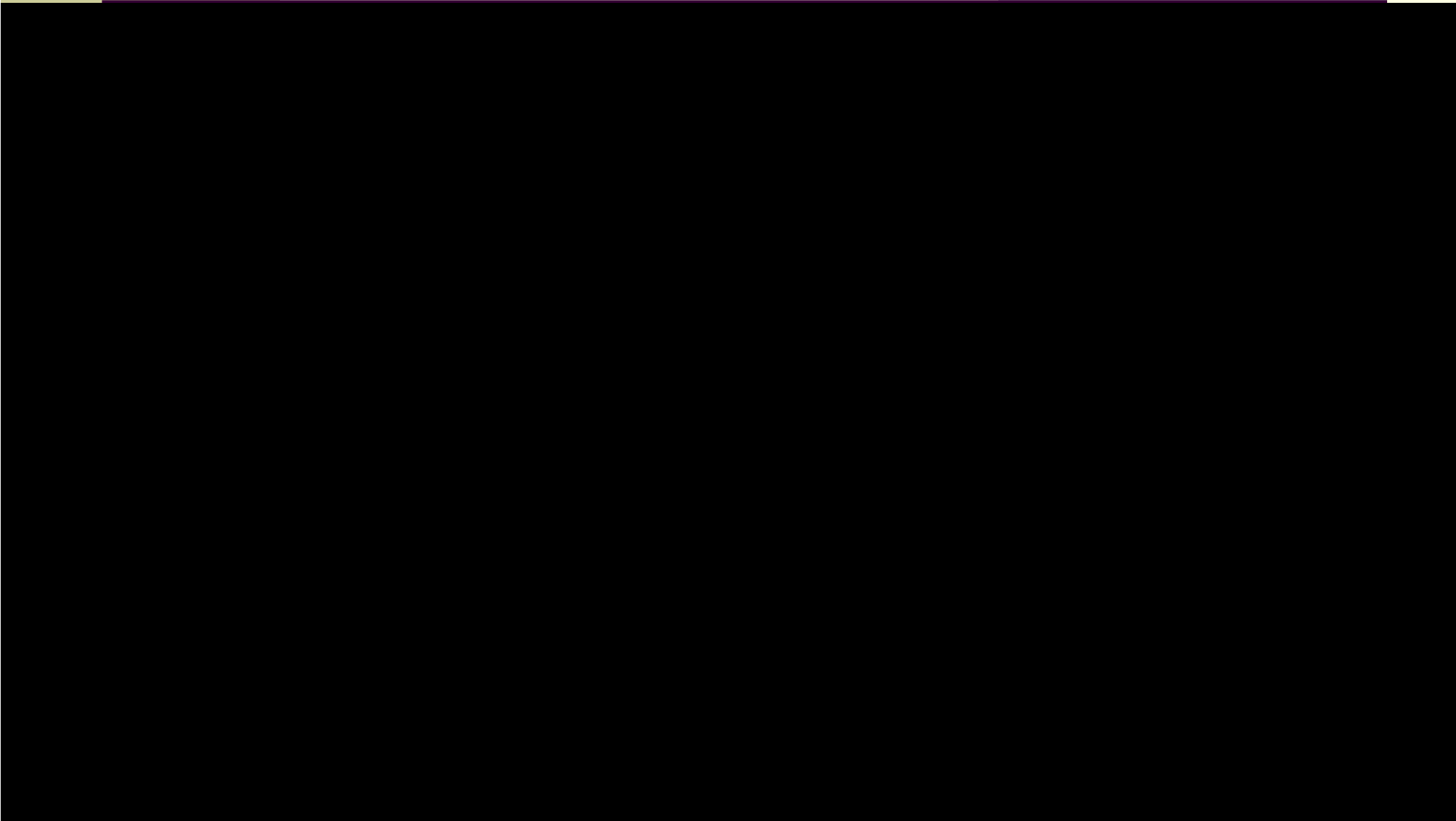
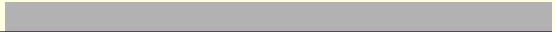
- It is natural and important to feel that your person is special to others: appreciated, acknowledged, respected, cherished, prized.
- Bring to mind experiences of:
 - Being praised, complimented, acknowledged
 - A time you knew you were appreciated, perhaps after some contribution or generosity
 - Being wanted by someone; wanted by a group
 - Feeling cherished by someone
- In daily life, look for experiences of being prized, including in small ways, and then savor them so they sink in.

Feeling Like a Good Person

- Everyone has good qualities. No halo is required to have patience, determination, fairness, honesty, kindness, etc.
- Recognizing these qualities in yourself is simply seeing reality with clear eyes, just like recognizing good food in your cupboard or good qualities in another person.
- Methods:
 - Pick a good quality that you know you have.
 - Pay attention to any obstructions to recognizing and appreciating this good quality. Let them be . . . then let them go and return attention to the good quality.
 - Gather evidence for this good quality in you (e.g., examples).
 - Be mindful of what the good quality feels like in your body and mind; let it sink in.
 - Consider how this good quality contributes to yourself and others.
 - Open to a simple gladness for this good quality; let it sink in.



Equanimity



Equanimity is a perfect, unshakeable balance of mind.

Nyanaponika Thera

With equanimity, you can deal with situations with calm and reason while keeping your inner happiness.

The Dalai Lama

Balanced, Steady, Present

- **Balance** - not reacting to fleeting experiences
- **Steadiness** - sustained through all circumstances
- **Presence** - engaged with the world but not troubled by it; guided by values and virtues, not reactions

The ancient circuitry of the brain continually triggers reactions. Equanimity is the circuit breaker that prevents the craving that leads to suffering.

The Chain of Suffering

- Contact: An external or internal stimulus
- Feeling: The “hedonic tone” of pleasant, unpleasant, or neutral; likes and dislikes
- Craving: Wanting what you like to continue and what you dislike to end; *tanha* - thirst - in Pali
- Clinging: The elaboration of craving
- Suffering: Discomfort related to wanting (e.g., tension, anxiety, pressure, frustration, disappointment, longing, sadness, remorse, anger)

The First and Second Dart

- The Buddha referred to unavoidable discomfort - including disease, old age, death, and sorrow at harms befalling others - as the “first dart.”
- Then we add our reactions to that first dart. For example, one could react to a physical pain with anxiety, then anger at oneself for feeling anxious, then sadness linked to not being comforted as a child.
- Sometimes we react with suffering when there is no first dart at all, simply a condition that there is no need to get upset about.
- And sometimes we react with suffering to positive events, such as a compliment or an opportunity.
- The Buddha called these reactions “second darts” - the ones we throw ourselves.

First Aid for Upsets

- Pause
- Self-compassion
- Get on your own side
- Make a plan
- Take action - thought, word, and deed

Parasympathetic Nervous System

- The “rest-and-digest” parasympathetic nervous system (PNS) balances and dials down the “fight-or-flight” sympathetic nervous system.
- It soothes, resets, renews the body-mind. Though the SNS gets more press, the PNS is more primary.

Cooling the Fires

- Recognize that stress is not good for you. Get on your own side to prevent and minimize it.
- Cultivate relaxation and calm in your resting state.
- When you get stressed, activating a PNS, “cooling” cascade:
 - Inhale super-fully; hold it; l-o-n-g exhalation; repeat
 - Relax the tongue
 - Touch the lips
 - Relax the body

HEAL by Taking in the Good

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4. Link positive and negative material.

Feeling Stronger and Safer

- Be mindful of an experience of strength (e.g., physical challenge, standing up for someone).
- Staying grounded in strength, let things come to you without shaking your roots, like a mighty tree in a storm.
- Be mindful of:
 - Protections (e.g., being in a safe place, imagining a shield)
 - People who care about you
 - Resources inside and outside you
- Let yourself feel as safe as you reasonably can:
 - Noticing any anxiety about feeling safer
 - Feeling more relaxed, tranquil, peaceful
 - Releasing bracing, guardedness, vigilance

Liking and Wanting

- Distinct neural systems for liking and wanting
- In the brain: feeling/hedonic tone --> enjoying (liking)
--> wanting --> pursuing
 - Wanting without liking is hell.
 - Liking without wanting is heaven.
- The distinction between *chandha* (wholesome wishes and aspirations) and *tanha* (craving)
- But beware: the brain usually wants (craves) and pursues (clings to) what it likes.

I make myself rich by making my wants few.

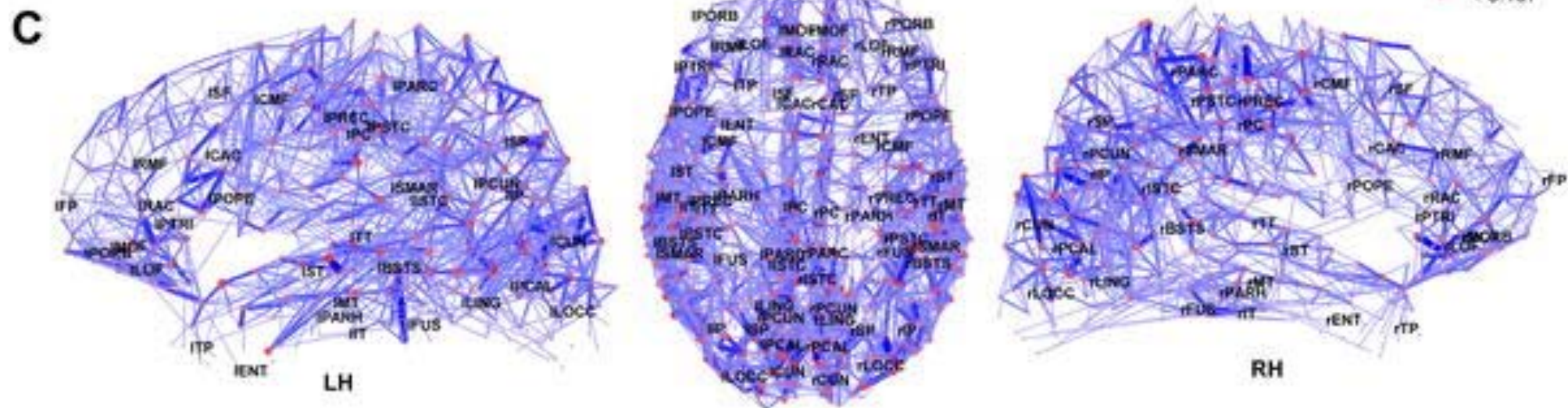
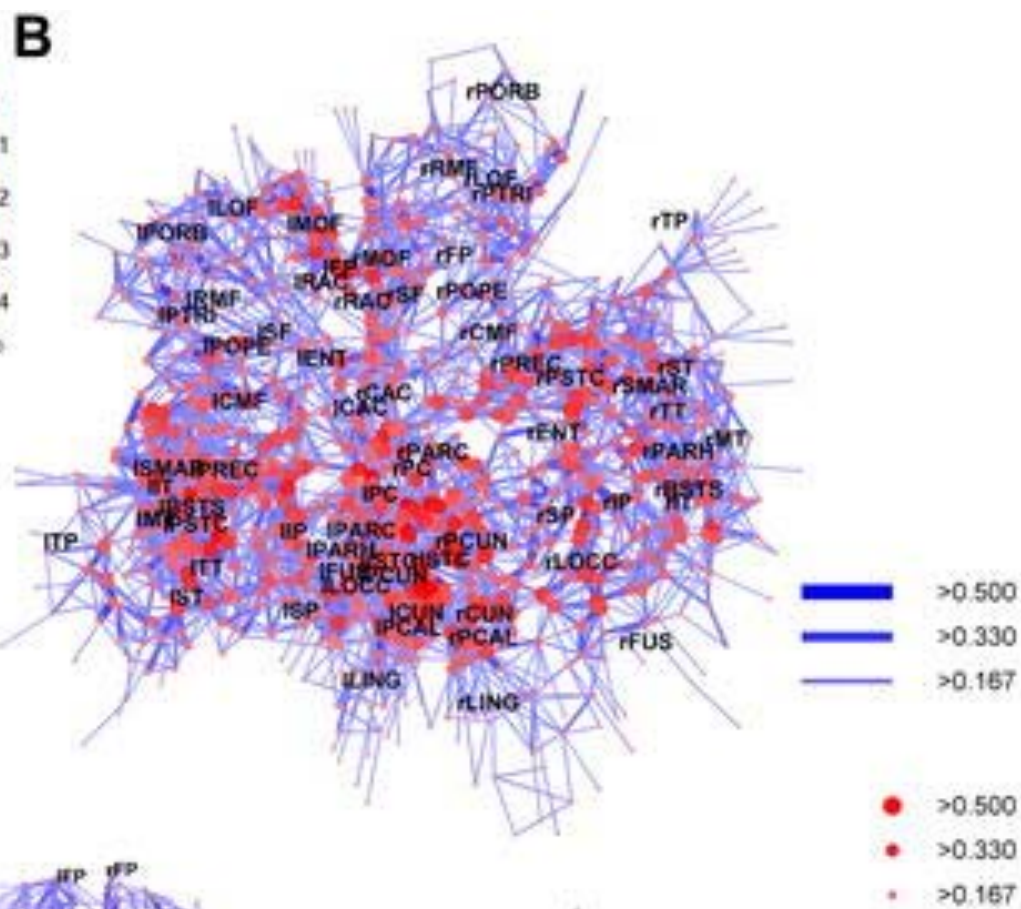
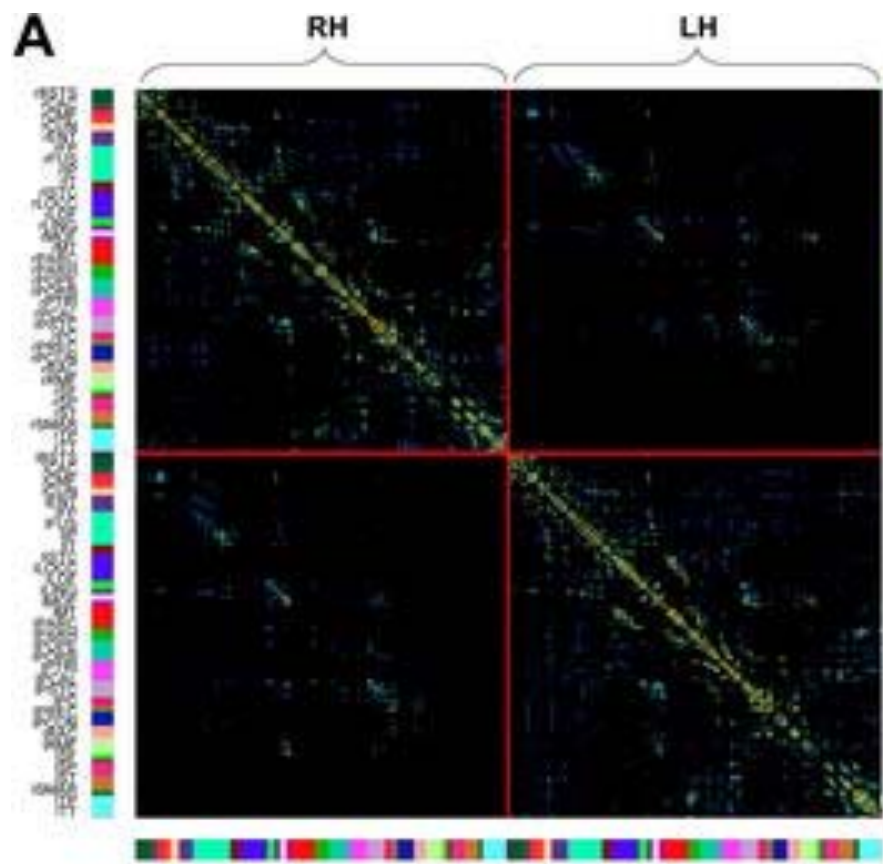
Henry David Thoreau

Practicing with Wanting

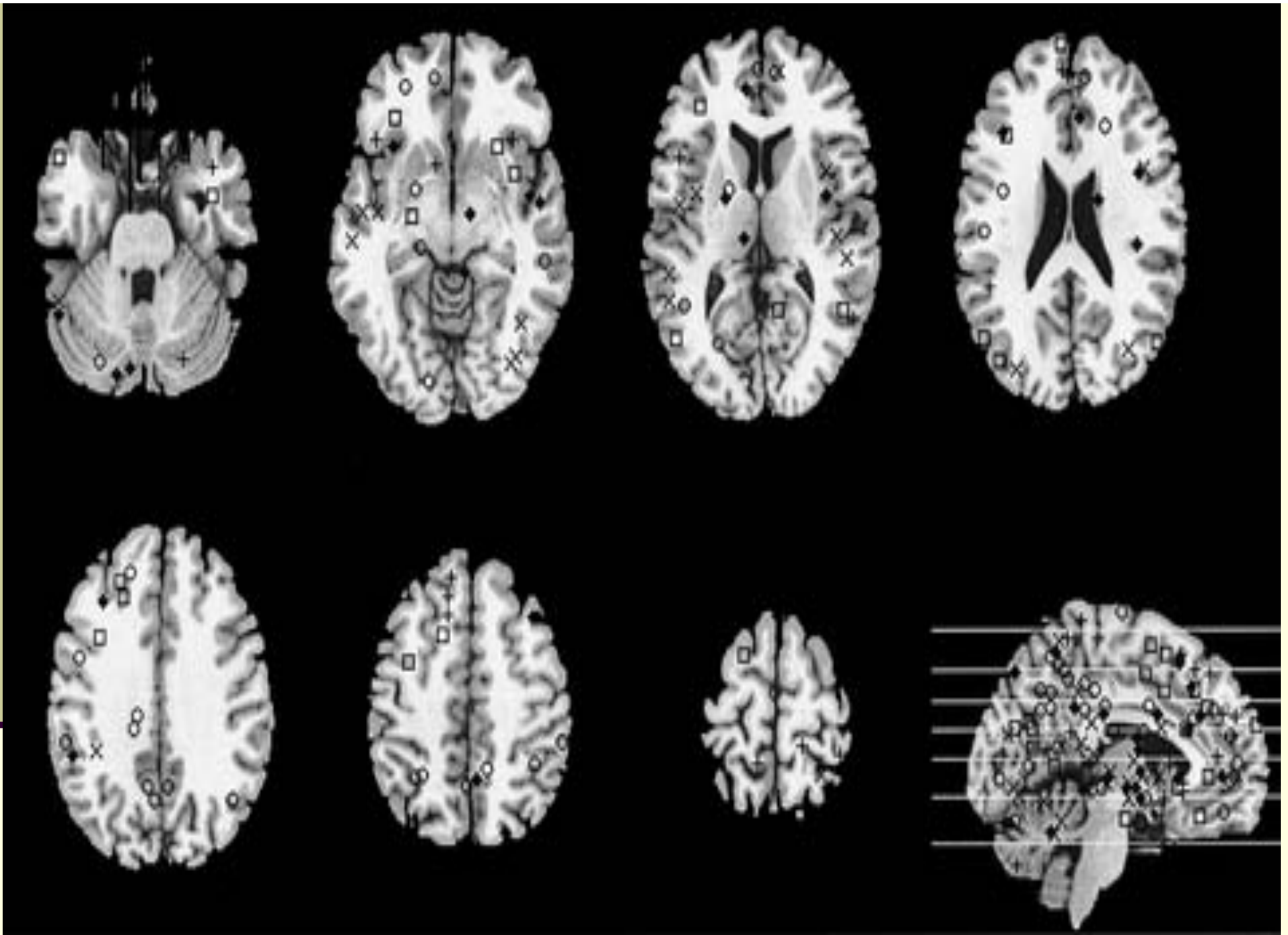
- Positive wants (e.g., practice, sobriety, love, aspirations) crowd out negative ones.
- Surround pleasant or unpleasant hedonic tones with spacious awareness - the “shock absorber” - without tipping into craving.
- Regard wants as just more mental content. Investigate them. Watch them come and go. No compulsion, no “must.”
- Be skeptical of predicted rewards - simplistic and inflated, from primitive subcortical regions. Explore healthy disenchantment.
- Pick a key want and just don't do it.

Disenchantment

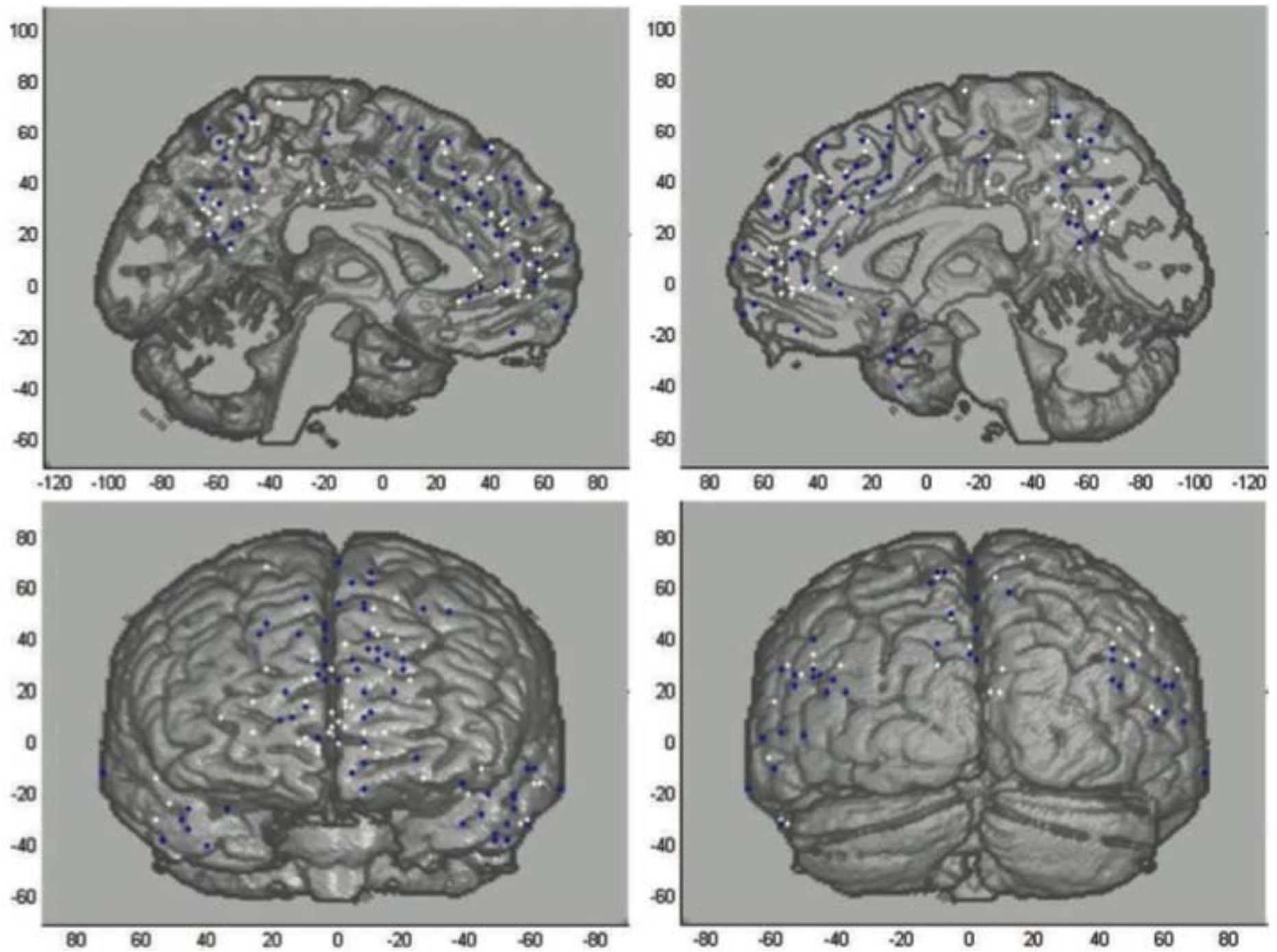
- The brain routinely simulates possible events and the experiences you could have if they occur. This was a major evolutionary accomplishment that promoted planning and learning.
- But this also makes you suffer: it “enchants” you with exaggerated anticipated pleasures and pains, and makes you invest in strategies to deal with these.
- Instead, recognize the truth of your experience: pleasures are usually not that great and pains are usually not that bad. Intend to wake up from the spell.




Hagmann, et al., 2008, *PLoS Biology*, 6:1479-1493



Brain activations of “selfing” - Gillihan, et al., *Psych Bulletin*, 1/2005



Legrand & Ruby, 2009. What is self-specific? [White = self; blue = other]



Flowers Pulling Weeds

Targets of TG

- **Bodily states** - healthy arousal; PNS; vitality
- **Emotions** - both feelings and mood
- **Views** - expectations; object relations; perspectives on self, world, past and future
- **Desires** - values, aspirations, passions, wants
- **Behaviors** - skills; inclinations

Types of Good Facts

- **Conditions** (e.g., food, shelter, fresh air, friends, dog loves you, flowers blooming, ain't dead yet)
- **Events** (e.g., finished a load of laundry, someone was friendly to you, this cookie tastes good)
- **Qualities within oneself** (e.g., fairness, decency, determination, good at baking, loving toward kids)

Obstructions to Taking in the Good

- General
 - Distractibility
 - Blocks to self-awareness in general
- Specific
 - Fears of losing one's edge or lowering one's guard
 - Sense of disloyalty to others (e.g., survivor guilt)
 - Culture (e.g., selfish, vain, sinful)
 - Gender style
 - Associations to painful states
 - Secondary gains in feeling bad
 - Not wanting to let someone off the hook
 - Thoughts that TG is craving that leads to suffering

Using Memory Mechanisms to Help Heal Painful Experiences

- The machinery of memory:
 - When explicit or implicit memory is reactivated, it is rebuilt from schematic elements, not retrieved *in toto*.
 - When attention moves on, the memory gets reconsolidated.
- The open processes of memory reactivation and reconsolidation create a window of opportunity for shaping your internal world.
- Reactivated material associates with other things in awareness, especially if they are prominent and lasting.
- When memory returns to storage, it takes associations with it.
- You can imbue 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

Avoiding Harms

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

Approaching Rewards

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

Attaching to "Us"


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

The Tip of the Root

- For the fourth step of TIG, try to get at the youngest, most vulnerable layer of painful material.
- The “tip of the root” is commonly in childhood. In general, the brain is most responsive to negative experiences in early childhood.
- Prerequisites
 - Understanding the need to get at younger layers
 - Compassion and support for the inner child
 - Capacity to “presence” young material without flooding

*Keep a green bough in your heart,
and a singing bird will come.*

Lao Tsu



Strength with Heart

What Is Empathy?

- It is sensing, feeling, and understanding how it is for the other person. In effect, you *simulate* his or her inner world.
- It involves (sometimes subtly) all of these elements:
 - Bodily resonance
 - Emotional attunement
 - Conceptual understanding
- Empathy is usually communicated, often tacitly.
- We can give empathy, we can receive it, and we can ask for it.

Neural Substrates of Empathy

- Three *simulating* systems:
 - Actions: “mirror” systems; temporal-parietal
 - Feelings: resonating emotionally; insula
 - Thoughts: “theory of mind”; prefrontal cortex
- These systems interact with each other through association and active inquiry.
- They produce an automatic, continual re-creation of aspects of others’ experience.

Empathy Skills

- Pay attention.
- Be open.
- Read emotion in face and eyes.
- Sense beneath the surface.
- Drop aversion (judgments, distaste, fear, anger, withdrawal).
- Investigate actively.
- Express empathic understanding:
 - Reflect the content
 - Resonate with the tone and implicit material
 - Questions are fine
 - Offer respect and wise speech throughout

Reflections about Empathy

- You're more likely to get empathy if you're:
 - Open, present
 - Honest, real, authentic
 - Reasonably clear
 - Responsible for your own experience
 - Taking it in when you feel felt
- Empathy can be negotiated:
 - Name it as a topic in the relationship
 - Follow NVC format: "When X happens, I feel Y, because I need Z. So I request _____."
 - Stay with it.

Wise Speech

- Well-intended
- True
- Beneficial
- Timely
- Expressed without harshness
- If possible: wanted

*There are those who do not realize that
one day we all must die.*

*But those who do realize this
settle their quarrels.*

The Buddha

*If you let go a little,
you will have a little happiness.*

*If you let go a lot,
you will have a lot of happiness.*

*If you let go completely,
you will be completely happy.*

Ajahn Chah

Benefits of Unilateral Virtue

- It simplifies things: all you have to do is live by your own code, and others will do whatever they do.
- It feels good in its own right; it brings peace of mind, “the bliss of blamelessness.”
- It minimizes inflammatory triggers, and encourages good behavior in others.
- It stands you on the moral high ground.
- It teaches you what you can ask for from others

Healthy Assertiveness

What it is: Speaking your truth and pursuing your aims in the context of relationships

What supports it:

- Being on your own side
- Self-compassion
- Naming the truth to yourself
- Refuges: Three Jewels, reason, love, nature, God
- Taking care of the big things so you don't grumble about the little ones
- Health and vitality

Healthy Assertiveness: How to Do It - 1

- Know your aims; stay focused on the prize; lose battles to win wars
- Ground in empathy, compassion, and love
- Practice unilateral virtue

Healthy Assertiveness: How to Do It - 2

- Communicate for yourself, not to change others
 - Wise Speech; be especially mindful of tone
 - NVC: “When X happens, I feel Y because I need Z.”
 - Dignity and gravity
 - Distinguish empathy building (“Y”) from policy-making

- If appropriate, negotiate solutions
 - Establish facts as best you can (“X”)
 - Find the deepest wants (“Z”)
 - Focus mainly on “from now on”
 - Make clear plans, agreements
 - Scale relationships to their actual foundations



Coming Home

The Fruit as the Path

Peace

Contentment

Love

Penetrative insight

joined with calm abiding

utterly eradicates

afflicted states.

Shantideva

Great Books

See www.RickHanson.net for other great books.

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See www.RickHanson.net for other scientific papers.

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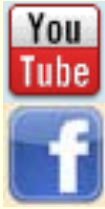
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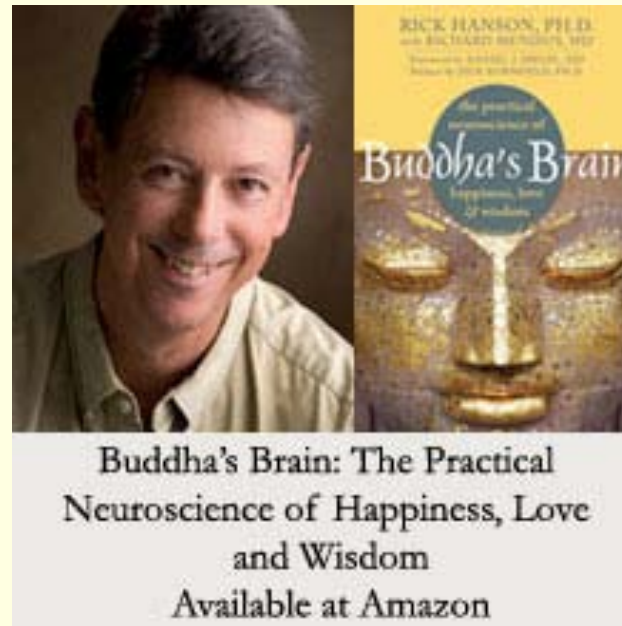
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Where to Find Rick Hanson Online



<http://www.youtube.com/BuddhasBrain>

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