

“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.

Not-Self in the Brain

East Bay Open Circle
February 26, 2011

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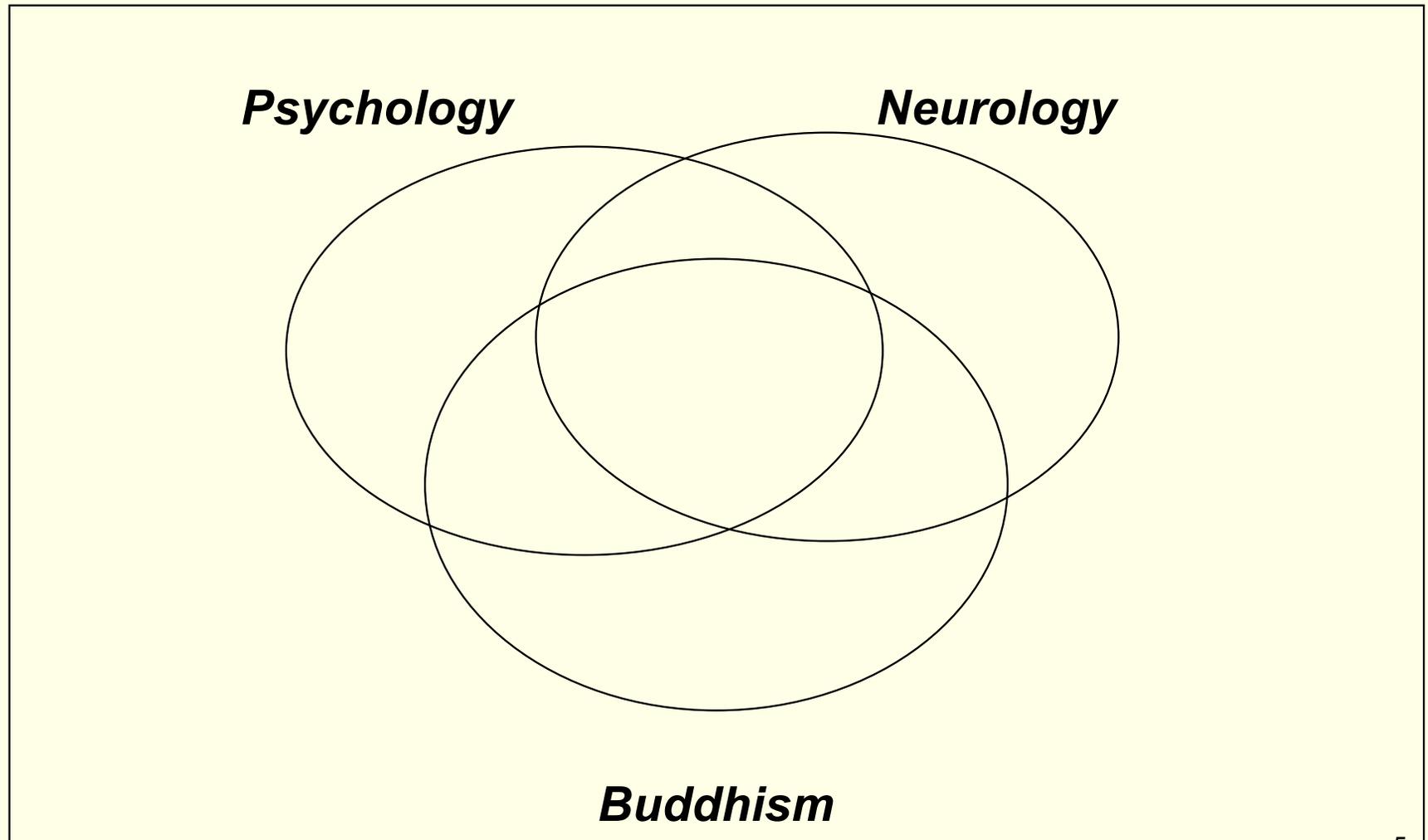
Topics

- **Perspectives**
- **Self-directed neuroplasticity**
- **“Self” in the mind**
- **“Self” in the brain**
- **Egocentric and allocentric**
- **“Only the seen in the seen . . .”**



Perspectives

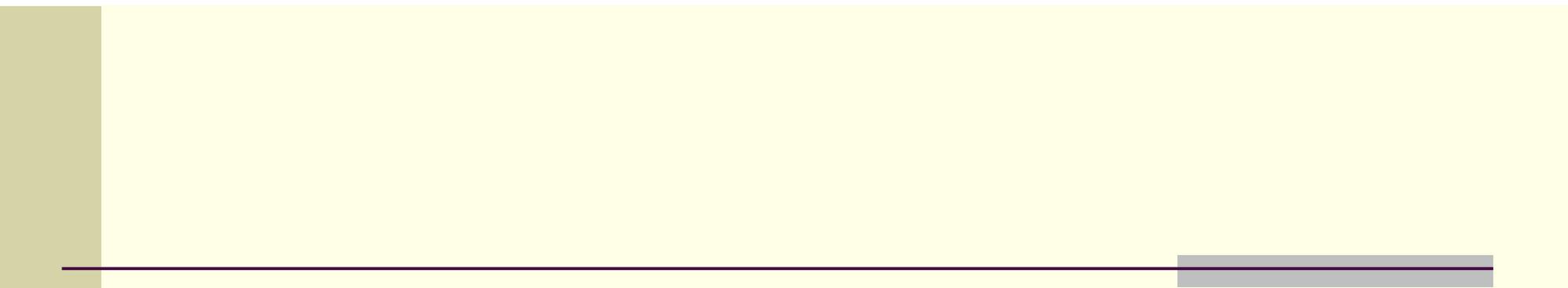
Common - and Fertile - Ground



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

What do you do?

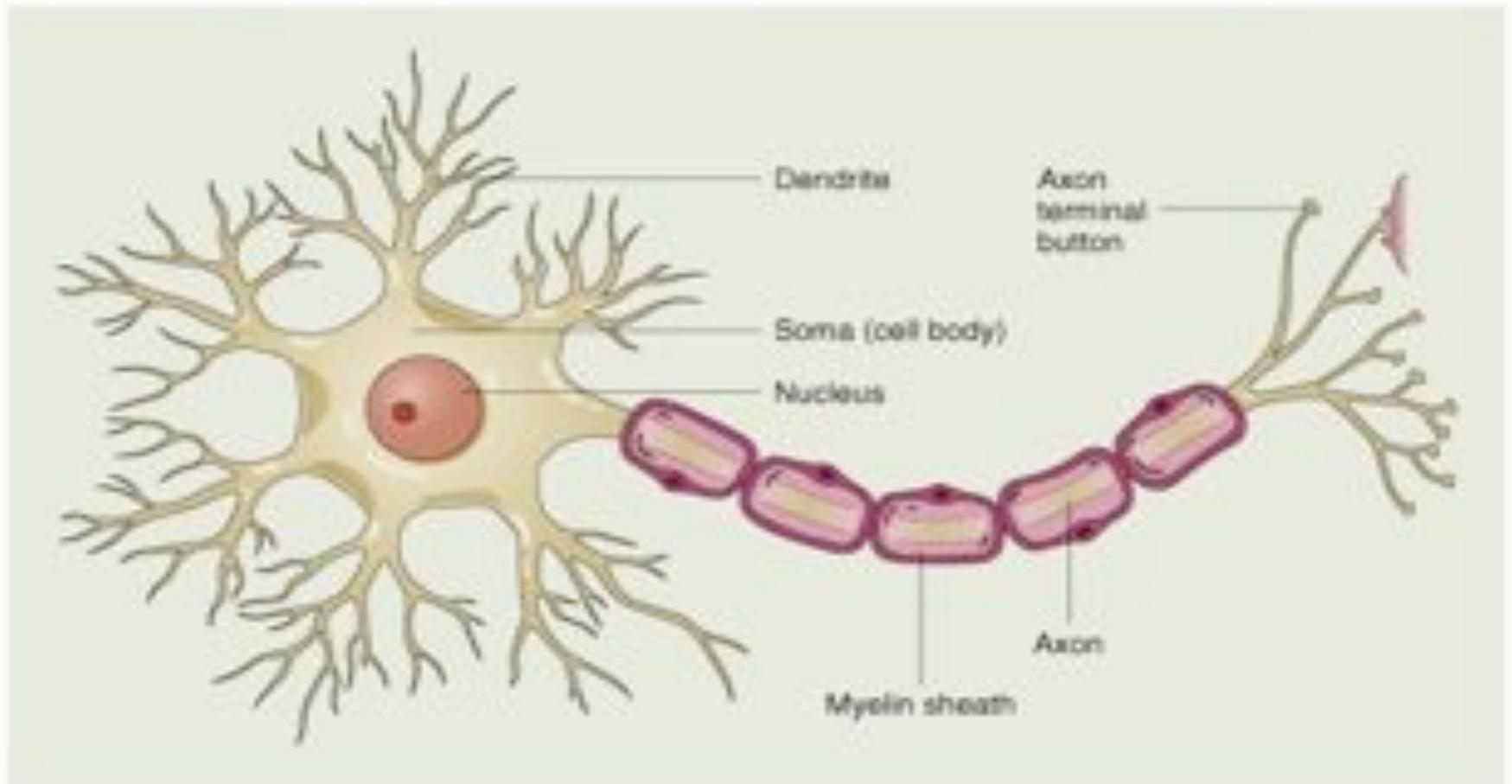
John Maynard Keynes



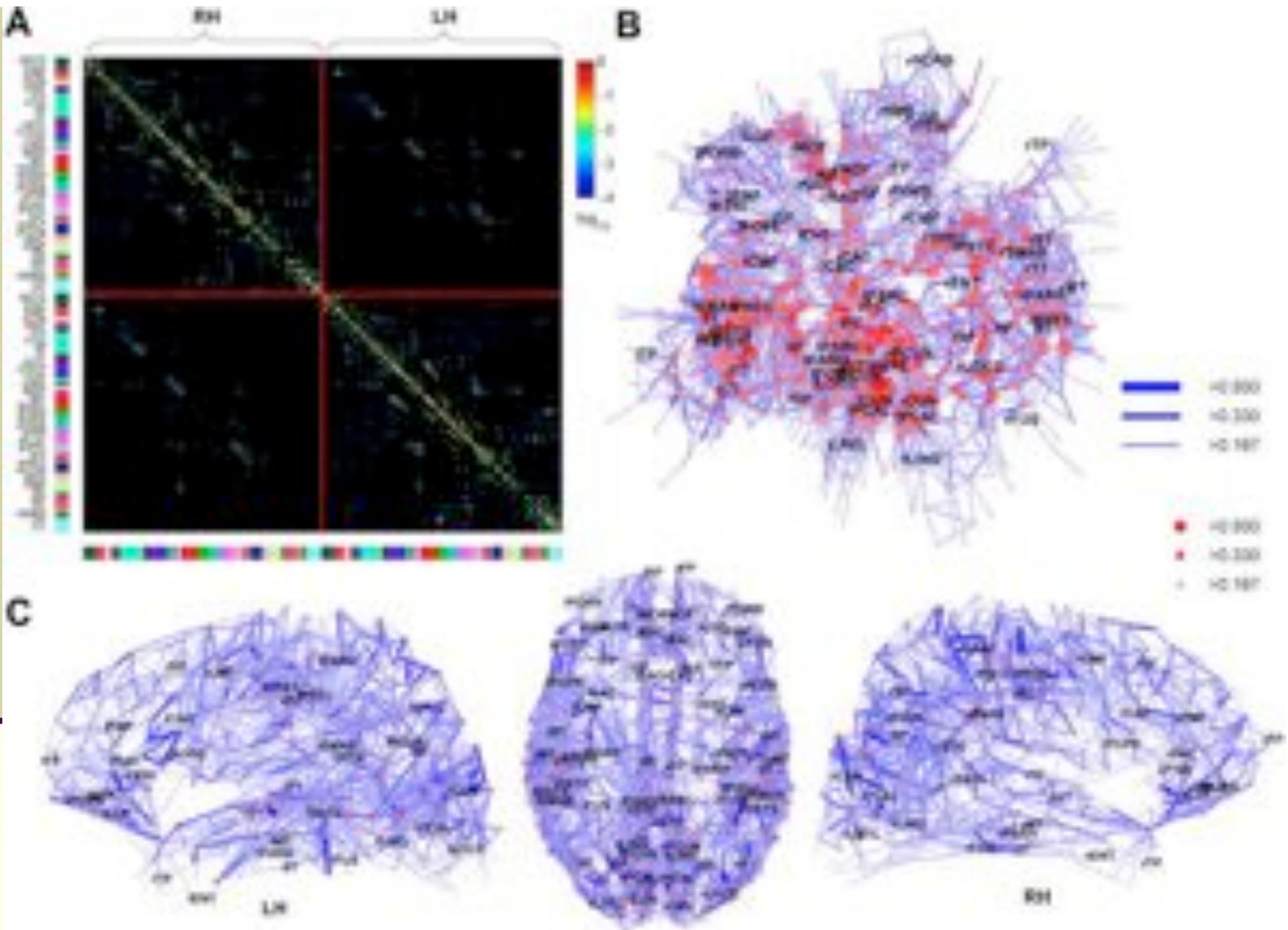
Self-Directed Neuroplasticity



A Neuron



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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 connects with 5000 neurons: ~ 500 trillion synapses
- During one breath, a quadrillion-plus signals coursed through your head.

■ **Complexity:**

- Potentially 10 to a millionth power brain states

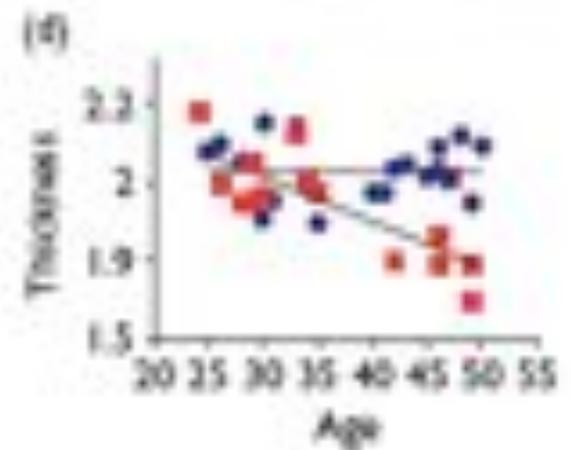
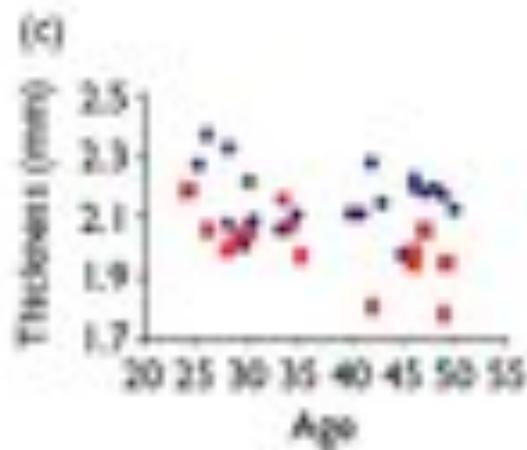
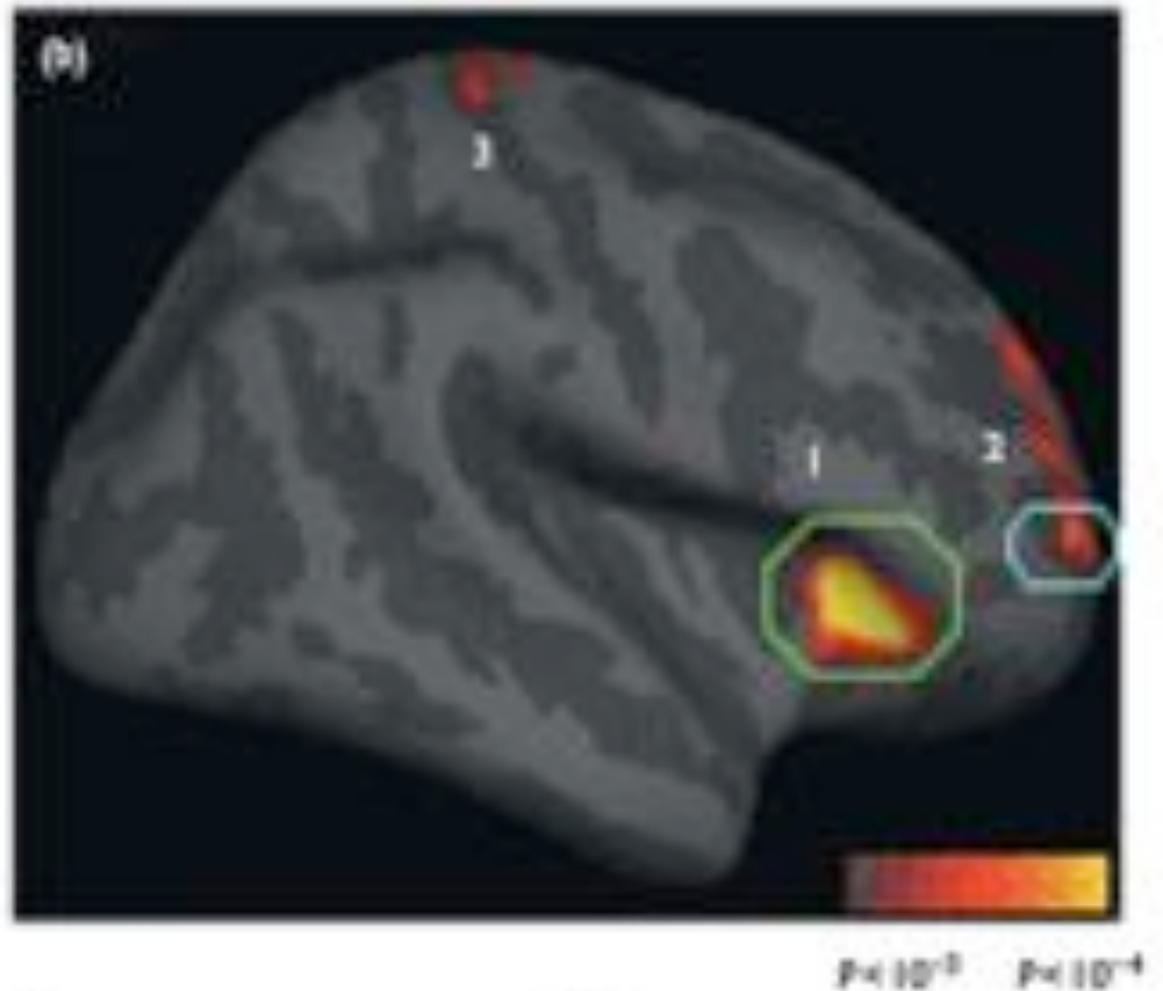
The Mind/Brain System

- “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.

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”

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



Honoring Experience

One's 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.

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, not resisting it or chasing it
- Gently settling into peaceful well-being

Foundations of Meditation

- Setting an intention
- Relaxing the body
- Feeling cared about
- Feeling safer
- Encouraging positive emotion
- Absorbing the benefits

Neural Basis of Meditation Foundations

- **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
- **Absorbing the benefits** - positive implicit memories



“Self” in the Mind

Definitions

- **Person** - The body-mind as a whole
 - Contains knowledge, personal memories, skills, temperament, personality tendencies, mood, etc.
 - Has considerable consistency over time
 - Deserves kindness and justice; is morally culpable

- **Self** - “I, me, and mine”
 - The psychological self; the “I” in “I am happy, I want a cookie, I know $2+2=4$, I am for justice”; the “me” in “Do you love me?”
 - Sense of being the owner of experiences and the agent of actions

- **Awareness** - The field in which the mind (as yet mysteriously) represents aspects of the mind to itself
 - The “global workspace” in which representations of the person, self-related functions, and subjectivity arise and pass away

Conventional Notions of “Self”

- **Unified** - coherent; just one; a being, an entity; some one looking out through your eyes.
- **Stable** - unchanging in its fundamentals; the core self as a child still feels present in you today
- **Independent** - things happen to the self, but it remains free of their effects in its essence.
- **Identity** - That which one is; that with which there is the greatest identification

Actual Experience of “Self”

- **Compounded** – Made up of many parts; one self vows to exercise early, another self turns off the alarm clock
- **Impermanent** – More or less present at different times; different aspects come forward at different times
- **Dependent** – Developed in interactions with caregivers and peers and encounters with the world; grounded in evolution; activating and deactivating as a means to the ends of the organism; especially responsive to opportunities and threats; self organizes around clinging; there is a process of *selfing* rather than a static, fixed, unchanging entity.
- **Part of the person** – There is awareness of aspects of self as contents within awareness like any others

The dualistic ego-mind is essentially a survival mechanism, on a par with the fangs, claws, stingers, scales, shells, and quills that other animals use to protect themselves.

By maintaining a separate self-sense, it attempts to provide a haven of security.

Yet the very boundaries that create a sense of safety also leave us feeling cut off and disconnected.

Actual Experience of “Self”

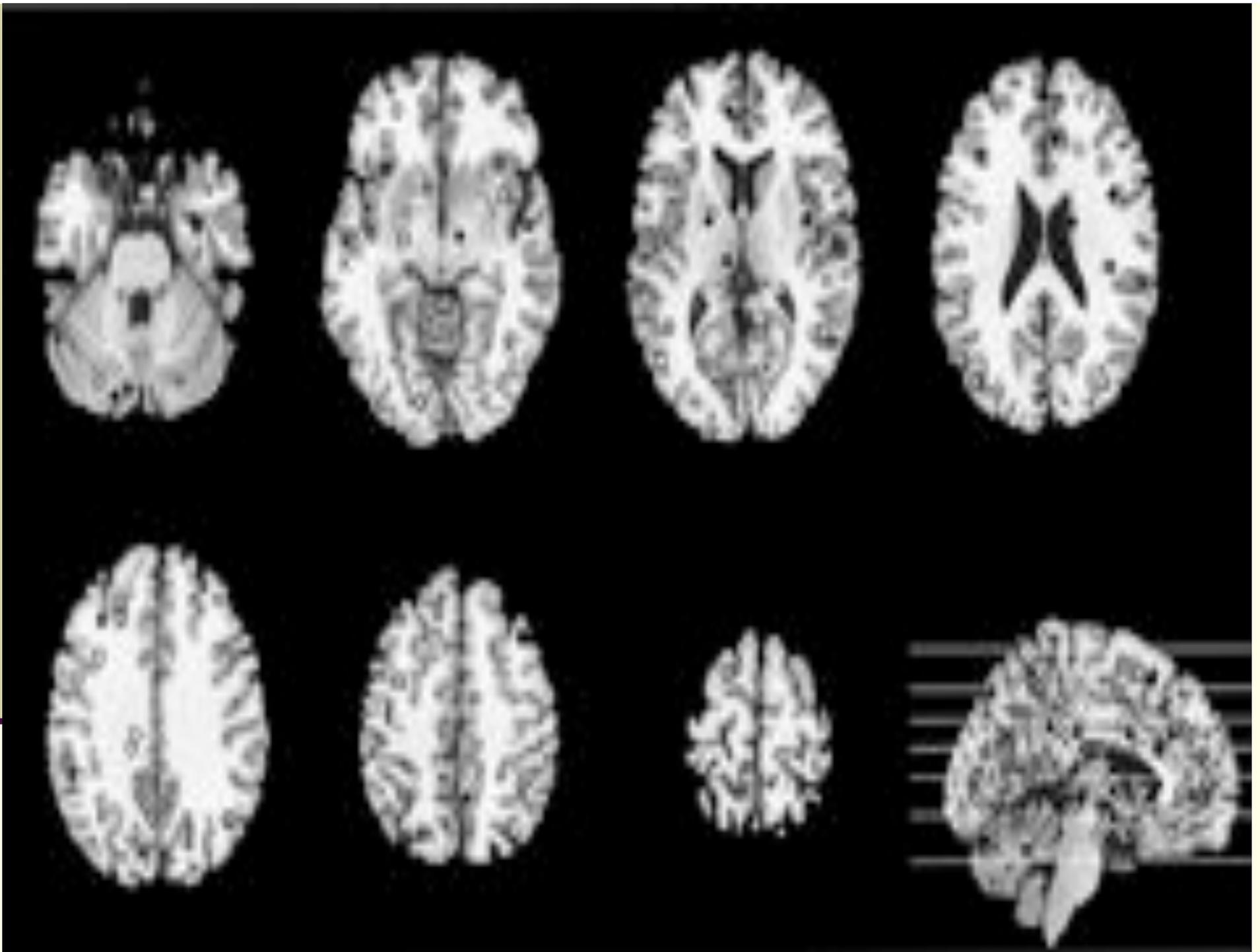
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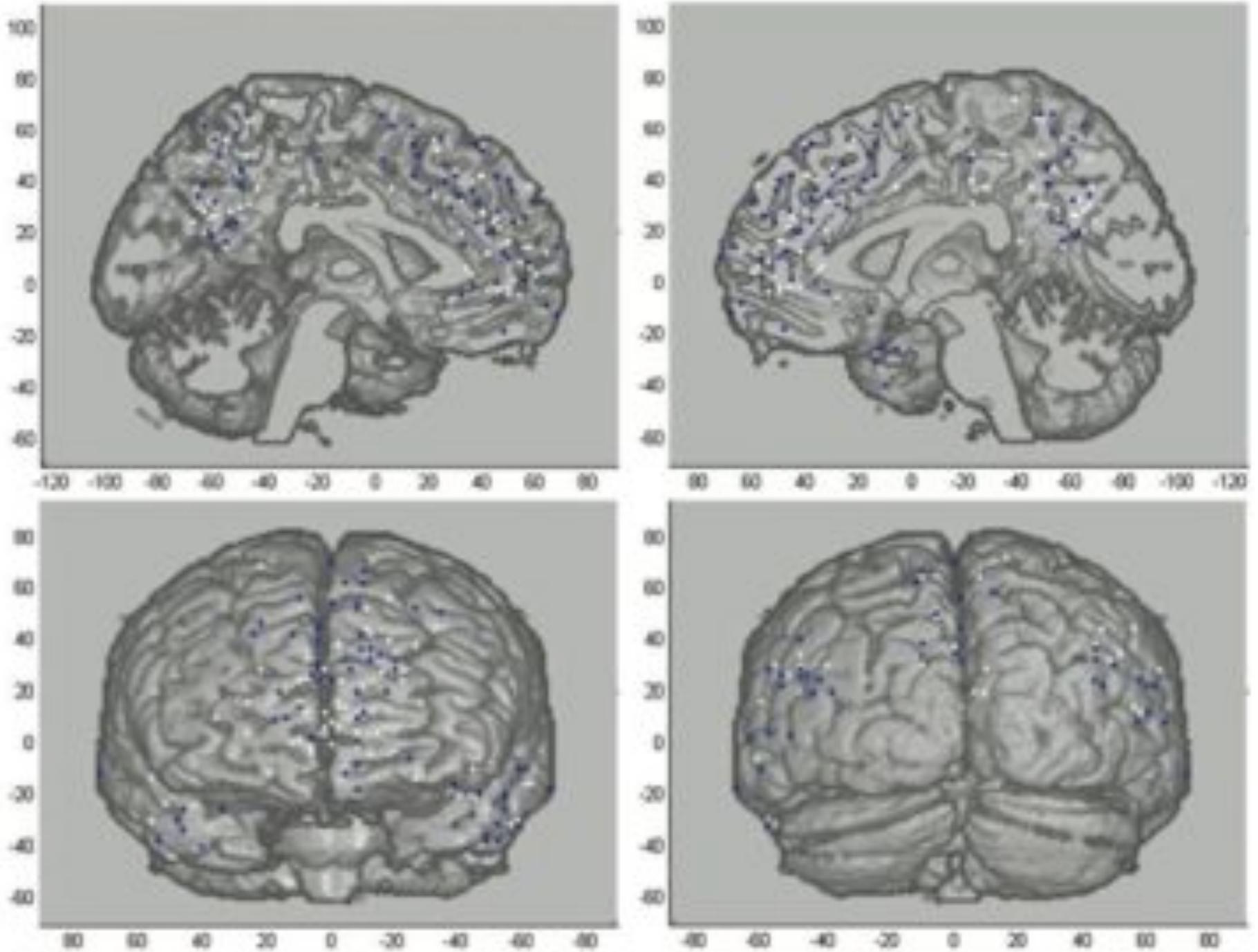
“Self” in the Brain

Properties of Self in Your Brain

- **Compounded** – Distributed systems and sub-systems; no homunculus looking through your eyes
- **Impermanent** – Circuits light up and deactivate; fluid, transient
- **Dependent** – Dependent on neural structures and processes; dependent on the evolution of specialized neural tissues (e.g., spindle cells); responsive to stimuli;
- **Part of the person** – Self-related activations in neural circuitry are just a tiny fraction of the total activations in the brain
 - The neural circuitry associated with self representations or functions also performs many other activities unrelated to self.
 - In the brain, self is not special.



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



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

Subjectivity Doesn't Equal a Subject

- Ordinary awareness has an inherent subjectivity, a localization to a particular perspective (e.g., to my body, not yours).
- The brain indexes across experiences of subjectivity to create an apparent subject.
- That apparent subject is elaborated and layered through the maturation of the brain, notably regions of the prefrontal cortex.
- But there is no subject *inherent* in subjectivity!
- Awareness requires subjectivity, but not a subject.

What Self?

In sum, from a neurological standpoint, the everyday feeling of being a unified self is an utter illusion:

- The apparently coherent and solid “I” is actually built from many neural subsystems, with no fixed center.
- The apparently stable “I” is produced by variable and transient activations of neural circuits.
- The apparently independent “I” depends on neural circuitry, the evolutionary processes that built them, critical interactions with others to shape those circuits, and the stimuli of the moment.

Neurologically, self is “empty” - without absolute, inherent existence.

Selflessness is not a case of something that existed in the past becoming nonexistent. Rather, this sort of “self” is something that never did exist. What is needed is to identify as nonexistent something that always was nonexistent.

The Dalai Lama

When we recognize that the things we identify as our self are impermanent and bound up with suffering, we realize they lack the essential marks of authentic selfhood and we thereby stop identifying with them.

Bhikkhu Bodhi

Self Is Like a Unicorn

- Self-related patterns of information and neural activity are as real as those that underlie the smell of roses.
- But that which they point to – a unified, enduring, independent “I” – just doesn’t exist.
- Just because we have a sense of self does not mean that we are a self. The brain strings together heterogenous moments of self-ing and subjectivity into an illusion of homogenous coherence and continuity.
- Real representations in the brain of a horse point to something that is also real. But the real representations of a unicorn in the brain point to something that is not real.
- The real representations of the self in the brain point to another mythical creature: the apparent self.

“Self” Has Its Uses

- A convenient way to distinguish one person from another
- Brings a sense of continuity to life’s experiences
- Adds verve and commitment to relationships
- People without self structures have impaired relationships.
- Self-related processes helped our ancestors succeed in increasingly social hunter-gatherer bands in which interpersonal dynamics played a strong role in survival.
- The evolution of relationships fostered the evolution of self and vice versa; the benefits of self have thus been a factor in the evolution of the brain.
- Self has been stitched into human DNA by reproductive advantages slowly accumulating across a hundred thousand generations.

Selfing Leads to Suffering

- When “I, me, and mine” are mental objects like any other, there’s no problem.
 - For example, the Buddha routinely used “I” and “you.”
- But when we privilege self-representations through identifying with them or defending or glorifying them . . . Then we suffer, and create suffering for others.
- The key is to be able to move dextrously into and back out of self-representations; that’s skillful means.

*No self,
no problem*

*Blissful is passionlessness in the world,
The overcoming of sensual desires;
But the abolition of the conceit I am --
That is truly the supreme bliss.*

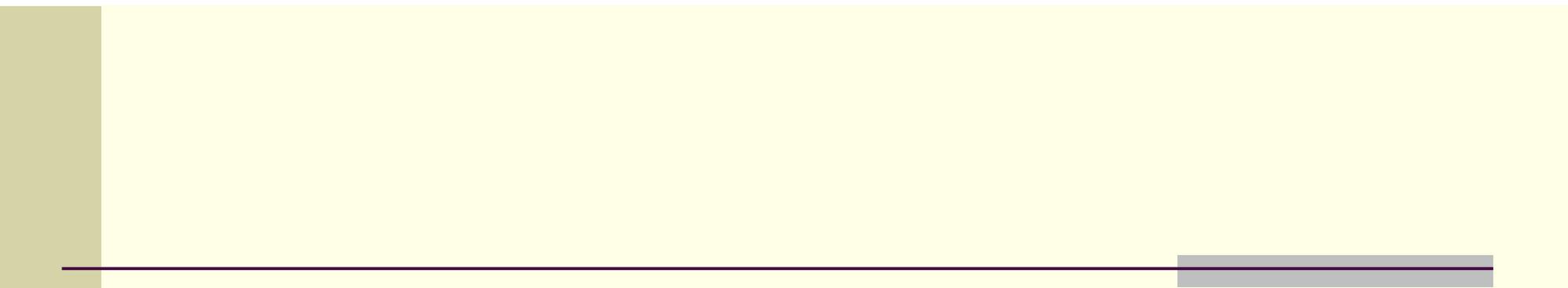
The Buddha, Udāna 2.11

To study the Way is to study the self.

To study the self is to forget the self.

*To forget the self is
To be enlightened by all things.*

Dogen



Takng Life Less Personally

Relaxing Selfing: Perspectives

- You need a coherence of person to relax selfing.
- Cautions: dissociative disorders; borderline personality disorder; “spacey, airy” people
- Distinguish between the person (the body-mind as a whole) and the apparent self (the supposedly unified, stable, and independent owner of experiences and agent of actions).
- Enjoy the peace of less selfing.

Using Mindfulness to Relax Selfing

- Notice how little “I” there is in many activities (e.g., reaching for salt, cuddling); take in that sense of minimal selfing combined with life being OK.
- Notice how “I” changes; see how it grows in response to threats, opportunities, and contact with others; consider the apparent “I” as a process rather than as an being.
- Focus on present moment experience as a process.
- Be mindful of yourself as the protagonist in the “mini-movies” running in the mind.
- Be careful about attributing intentions to others that are about you personally.



**In addition to mindful investigations of the apparent “self,”
what experiential practices could help relax selfing?**



Egocentric and Allocentric

Egocentric Perspective

- Based on upper processing streams in the brain that involve: upper portions of the thalamus that confer “self” salience; rear regions of the “default network” (e.g., precuneus, posterior cingulate cortex); parietal regions that construct an enduring and unified sense of “my body in space”
- Establishes “where it is in relation to me”; lower visual field
- Develops earliest in childhood
- “Subjective” - Things exist in relation to me.
- Action-oriented - Focus on reacting to carrots and sticks

Allocentric Perspective

- Based on lower processing streams in the brain that involve: lower regions of the thalamus that confer “world” salience;
- Establishes “what it is independent of me”; upper visual field
- Begins developing around age four
- “Objective” - Things exist in a physical space in which their location is impersonal, not in reference to the viewpoint of an observer.
- This perspective pervades *kensho* and other forms of non-dual awareness. It is strengthened in open awareness meditations that draw heavily on the alerting, lower attentional system.
- Being-oriented

Strengthening Allocentric Processing

- As one perspective increases, the other decreases. Normal ego/allo fluctuations occur ~ 3-4/minute.
- With “contact,” allocentric processing increases briefly as the new stimulus is considered in its own right; then egocentric processing surges forward as one figures out what to do about the “feeling tone” (pleasant, unpleasant, neutral) of the stimulus.
- Open awareness practices in which there are many moments of new contact could incline the brain toward allocentric modes.
- Lower regions of the thalamus and its reticular cap - with concentrations of GABA neurons - inhibit egocentric processing.
- Reducing wanting reduces egocentric processing.

Liking and Wanting

- Distinct neural systems for liking and wanting
- In the brain: feeling 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

The Great Way is easy.

For one with no preferences.

Third Zen Patriarch

*For one who clings motion exists, but for one who does not cling
there is no motion.*

Where no motion is, there is stillness.

Where stillness is, there is no craving.

Where no craving is, there is neither coming nor going.

*Where no coming or going is there is neither arising nor passing
away.*

*Where neither arising nor passing away is, there is neither this
world, nor a world beyond nor a state between.*

This verily, is the end of suffering.

Gone Beyond Wanting

*Indeed, the sage who's fully quenched
Rests at ease in every way;
No sense desire adheres to him or her
Whose fires have cooled, deprived of fuel.*

*All attachments have been severed,
The heart's been led away from pain;
Tranquil, he or she rests with utmost ease.
The mind has found its way to peace.*

The Buddha

“Only the Seen in the Seen . . .”

“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.

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But the abolition of the conceit I am --
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The Buddha, Udāna 2.11

Ways to Activate “Being” Mode

- Relax
- Focus on bare sensations and perceptions
- Open to liking, disengage from wanting

- **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.

*Trust in awareness, in being awake,
rather than in transient and unstable conditions.*

Ajahn Sumedho

*Be wisdom itself,
rather than a person who isn't wise
trying to become wise.*

*Trust in awareness, in being awake,
rather than in transient and unstable conditions.*

Ajahn Sumedho

Thank you

Be still

Listen to the stones of the wall

Be silent, they try

To speak your

Name.

Listen to the living walls.

Who are you?

Who

Are you? Whose

Silence are you?

Thomas Merton

Great Books

See www.RickHanson.net for other great books.

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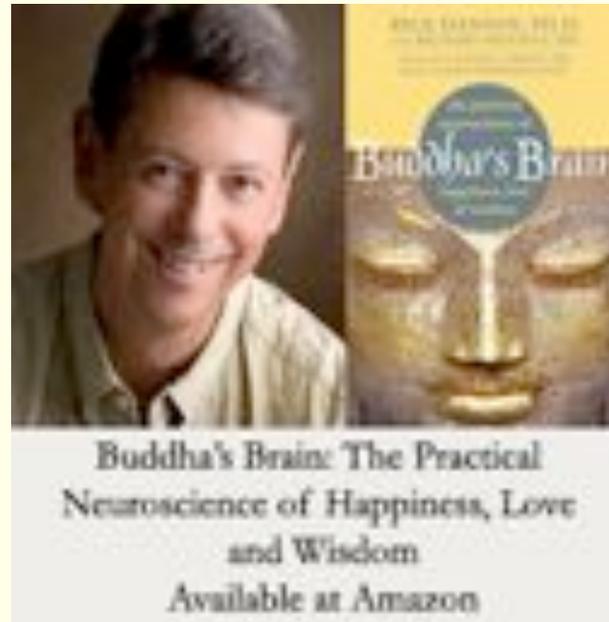
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Where to Find Rick Hanson Online



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