

Being and Doing:

Activating Neural Networks Of Mindful Presence

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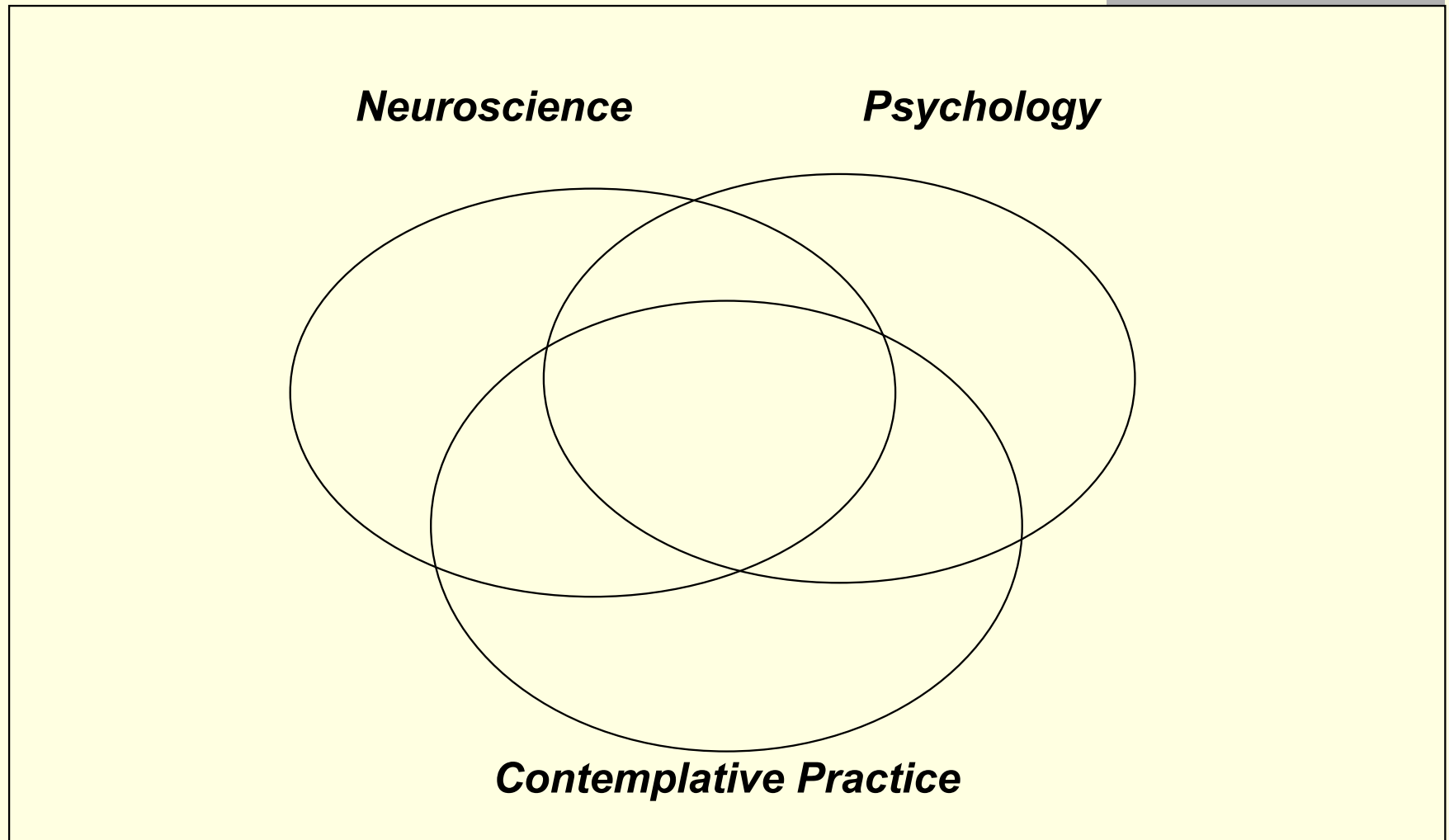
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Topics

- **Self-directed neuroplasticity**
- **“Doing” and “being”**
- **Spacious awareness**

Common - and Fertile - Ground



*The history of science is rich in the example
of the fruitfulness of bringing
two sets of techniques, two sets of ideas,
developed in separate contexts
for the pursuit of new truth,
into touch with one another.*

J. Robert Oppenheimer

"We ask, 'What is a thought?'

We don't know,

yet we are thinking continually."

Venerable Ani Tenzin Palmo



Self-Directed Neuroplasticity

Brain Basics

- **Size:**
 - 3 pounds of tofu-like tissue
 - 1.1 trillion brain cells
 - 100 billion 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 of a second
- **Connectivity:**
 - Typical neuron makes ~ 5000 connections with other neurons:
~ 500 trillion synapses
- **Complexity:**
 - Potentially 10 to the 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 an aspect of mind.
 - The headquarters of the nervous system is the brain.
- In essence then, apart from hypothetical transcendental factors, the mind *is* what the 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.

Fact #1

As your brain changes, your mind changes.



Fact #2

As your mind changes, your brain changes.

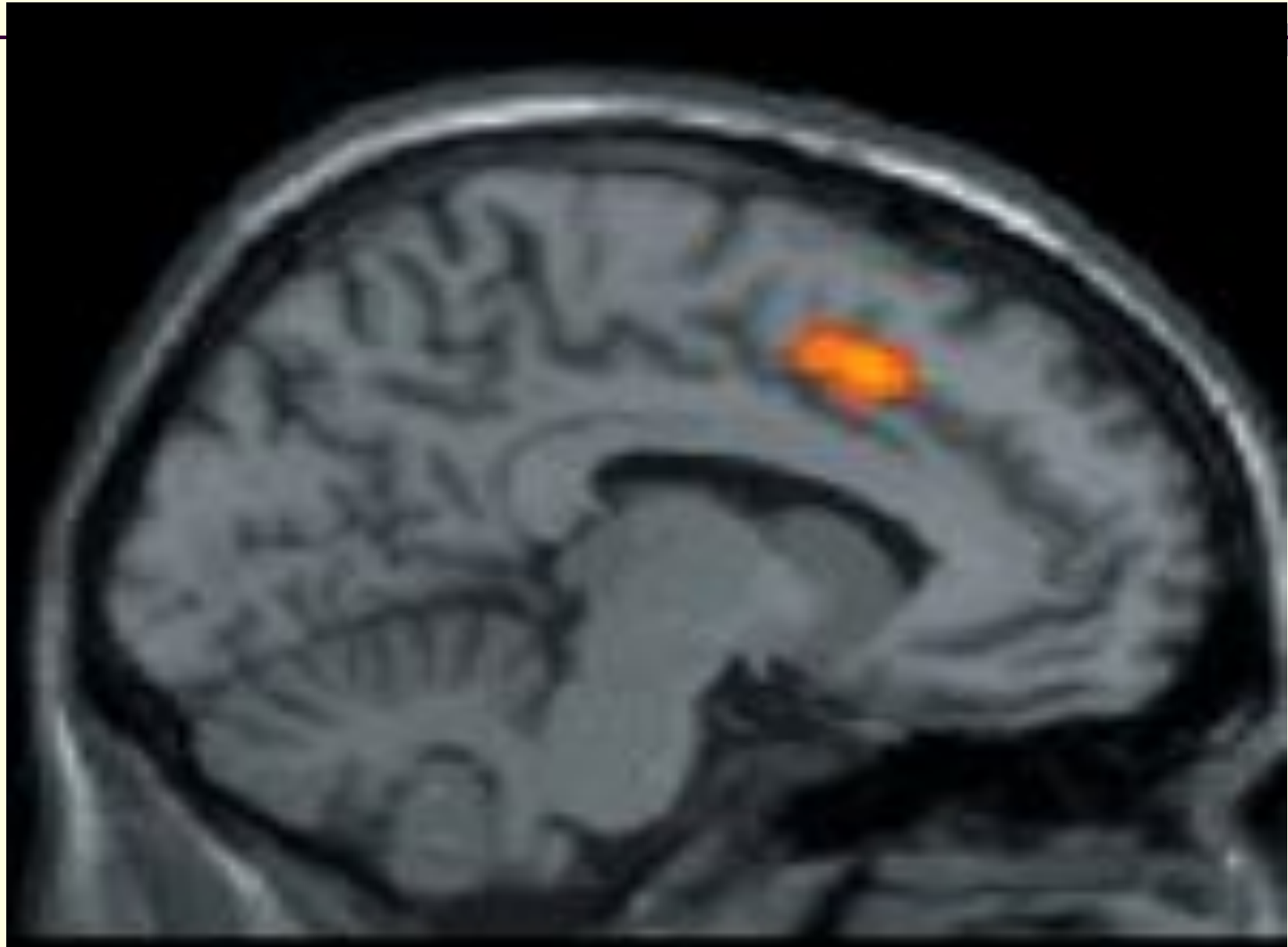
Immaterial mental activity maps to material neural activity.

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

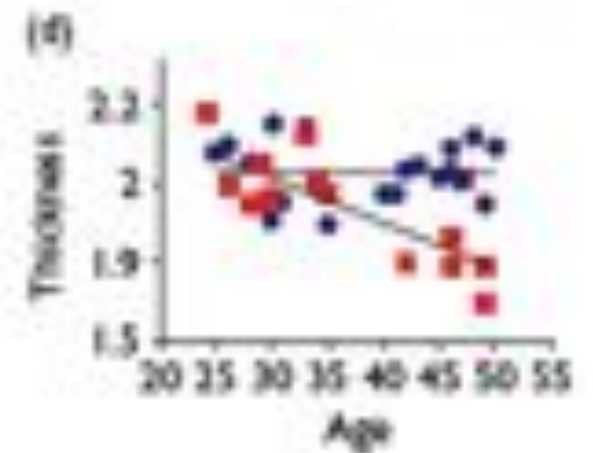
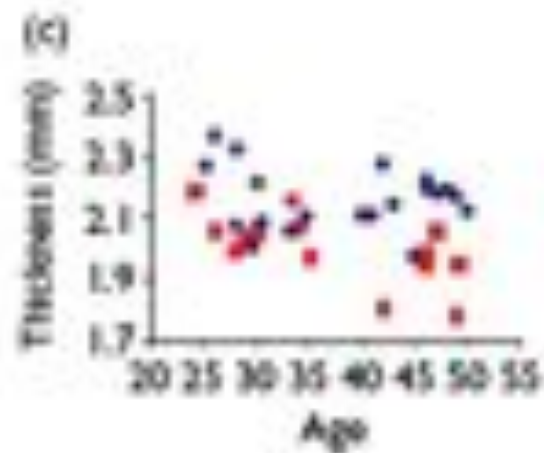
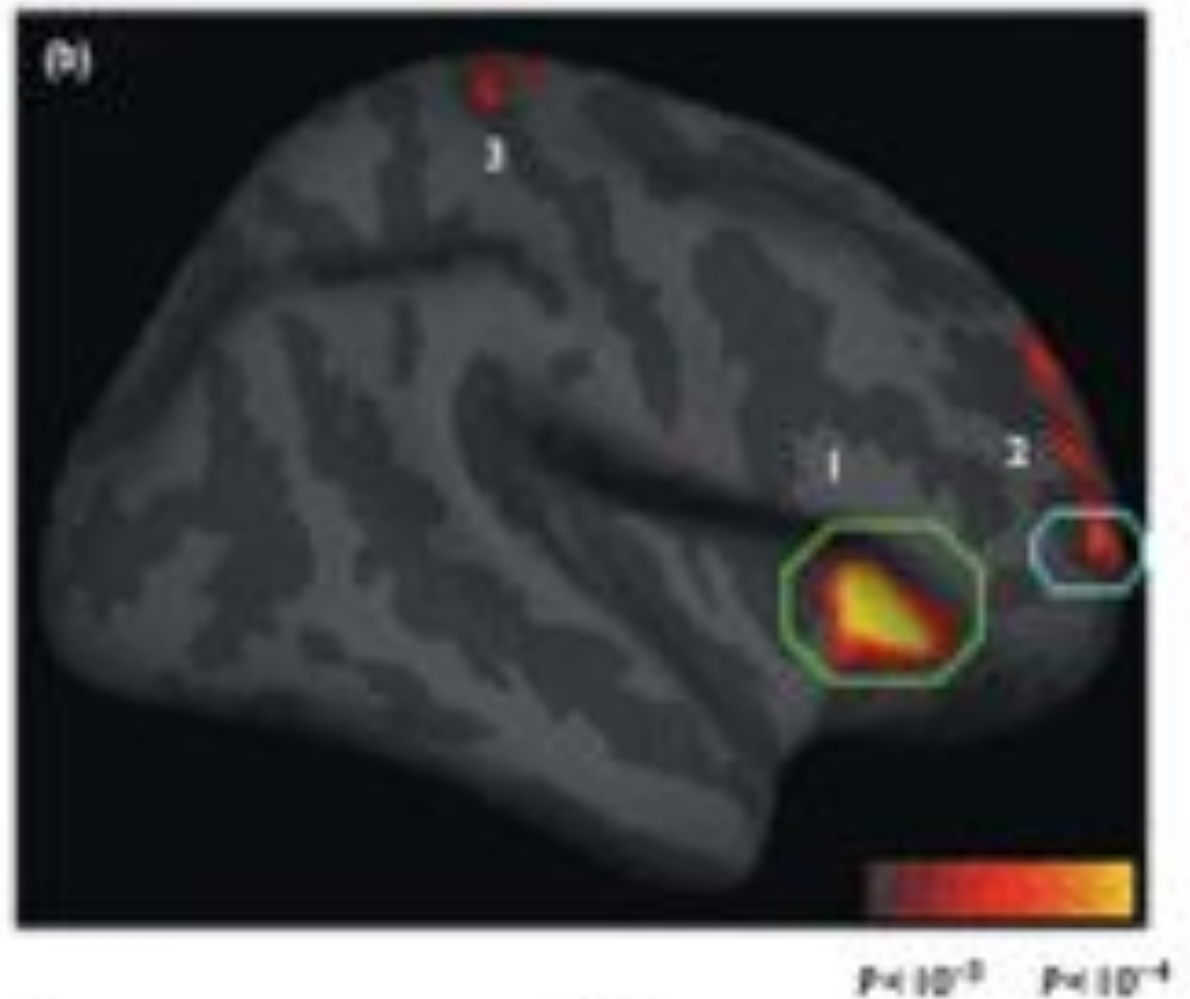
Tibetan Monk, Boundless Compassion



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.

Fact #3

You can use your mind
to change your brain
to change your mind for the better.

This is self-directed neuroplasticity.

How to do this, in skillful ways?

The Power of Mindfulness

- 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

Neuroplasticity in Context

- Neuroplasticity is not breaking news. It's been long presumed that mental activity changed neural structure: what else is learning?
- The news is in how the mind changes the brain.
- Most neuroplasticity is incremental, not dramatic.
- Neuroplasticity is ethically neutral.

How to use it for good?

Grounding in the Brain - Benefits

- Organizing framework
 - Evolutionary neuropsychology
 - Common ground across theories and methods
- Motivating to clients, clinicians, policy-makers
 - Concrete, in the body, *physical*
 - Status of medicine, hard science
- Highlighting key principles and practices
 - Implicit memory
 - Nonverbal processes
- Innovating with truly new methods
 - Neurofeedback
 - Fear extinction

Grounding in the Brain - Pitfalls

- Adding little new meaning
 - Replacing psych terms with neuro (“amygdala made me do it”)
- Over-simplifying
 - Over-localizing function (e.g., empathy = mirror neurons)
 - Exaggerated terms (“God-gene,” “female brain”)
 - Materialistic reductionism, though brain and mind co-arise
- Claiming authority
 - Using neuro data to argue a political or cultural case
 - Using the secular religion of science to elevate status
- Underestimating the mind
 - Most big changes in psyche involve tiny changes in soma; mental plasticity holds more promise than neural plasticity.
 - Overlooking the insights and effectiveness of psychology
 - Ducking existential choices in values



“Doing” and “Being”

Dual Modes

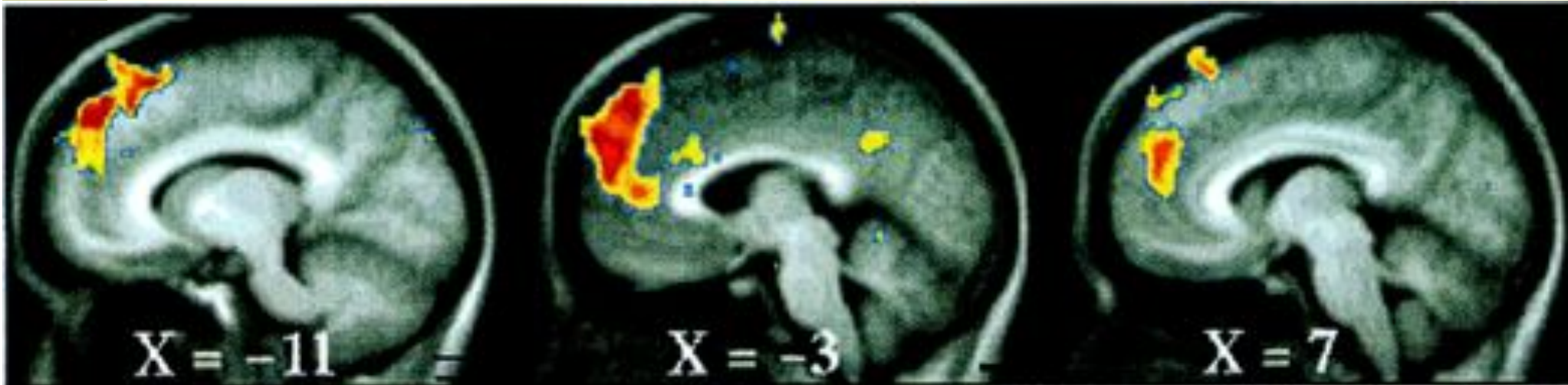
“Doing”

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

“Being”

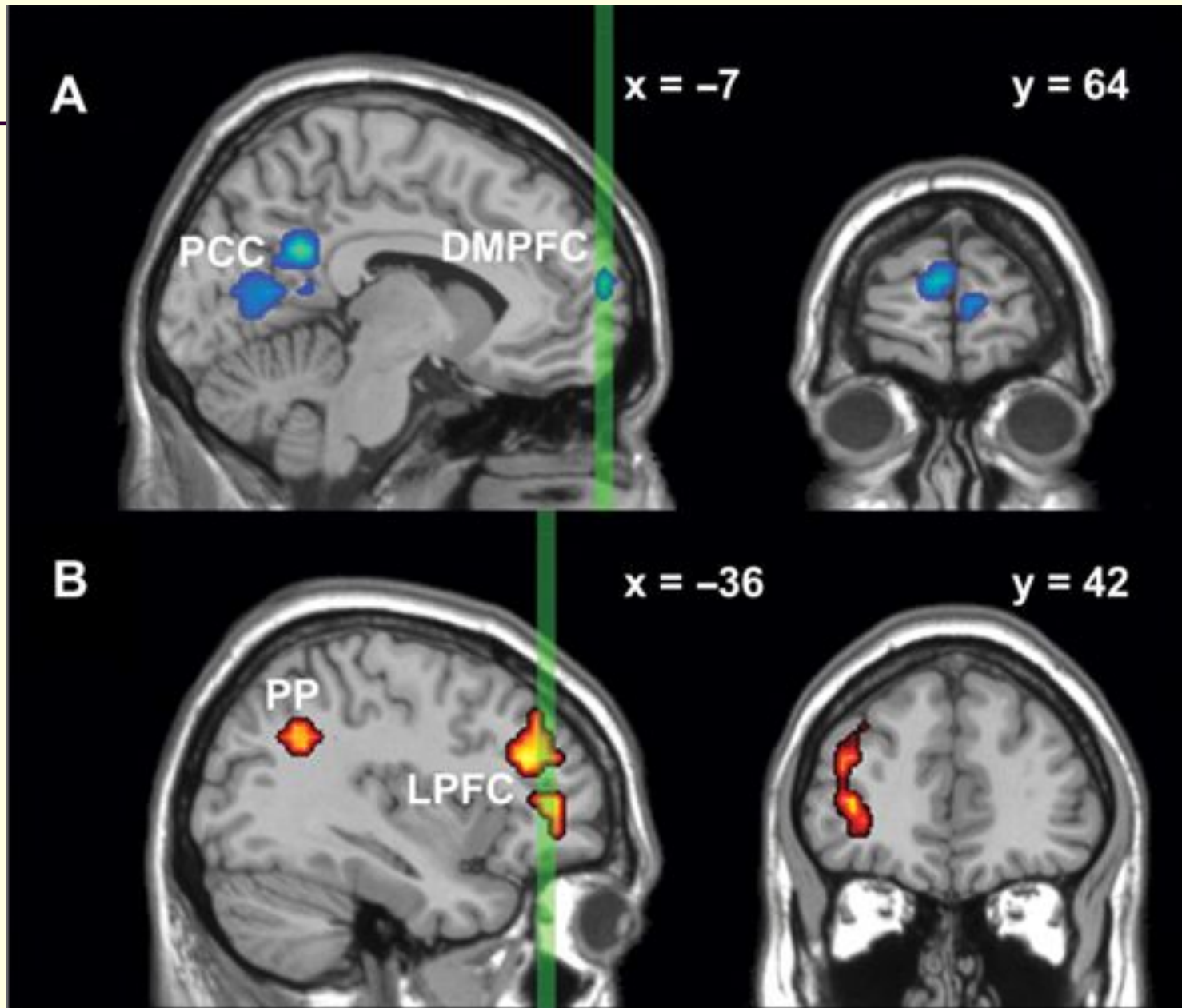
Mainly sensory
Little verbal activity
Concrete
Now-focused
Transient contents of mind
Nothing to do, nowhere to go
Sense of peace
Impersonal, 3rd person perspective
Uncertainty, not-knowing
Nonjudgmental
Mindful presence
Loosely connected experiences
Panoramic view
Minimal or no self-as-object
Minimal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

Increased Medial PFC Activation Related to Self-Referencing Thought



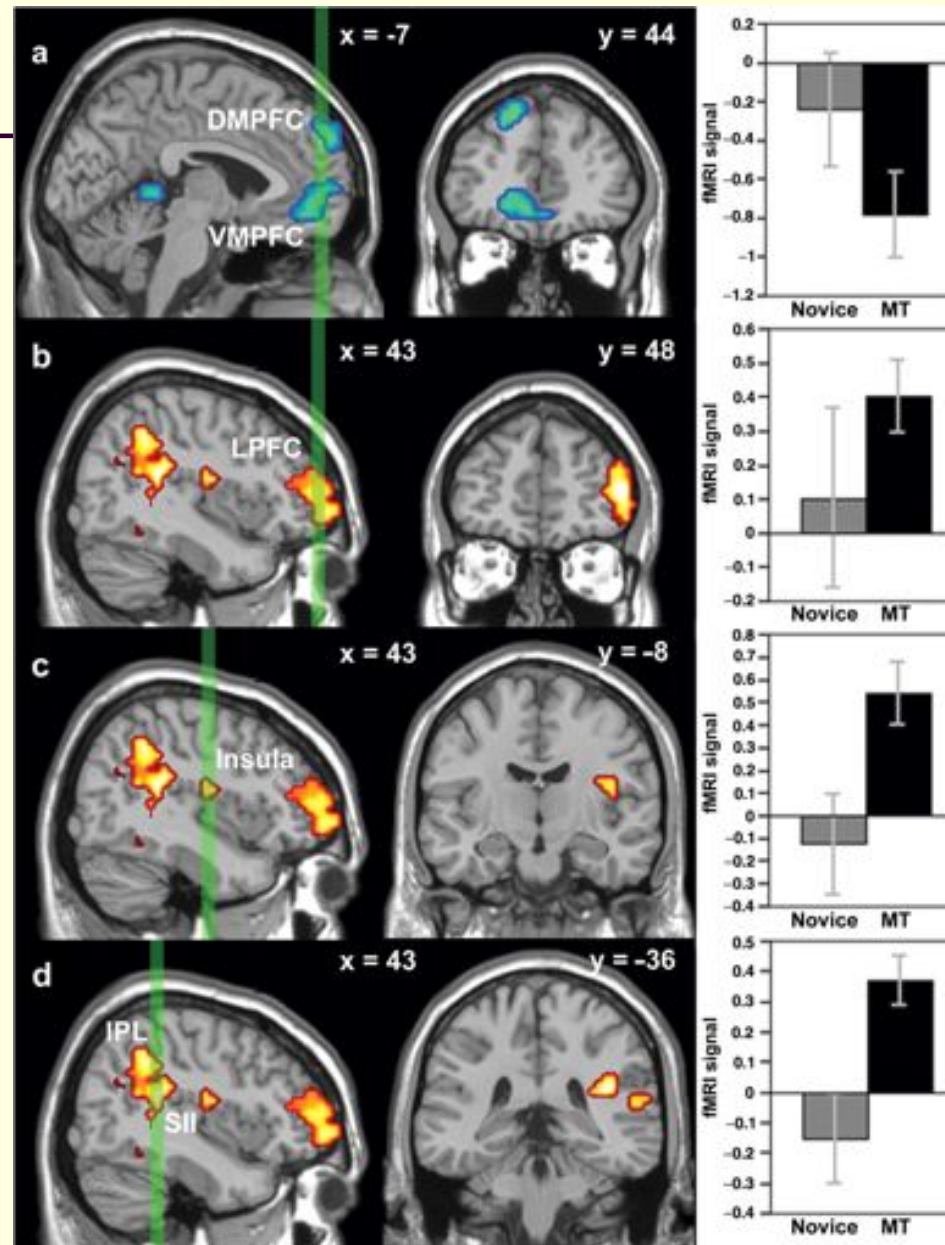
Gusnard D. A., et.al. 2001. *PNAS*, 98:4259-4264

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



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

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



Mindfulness, Virtue, Wisdom

- **Mindfulness, virtue, and wisdom** are identified in both Western psychology and the contemplative traditions as key pillars of mental health.
- These map to three core functions of the nervous system: receiving/learning, regulating, and prioritizing. And map to the three phases of psychological healing and personal growth:
 - Be mindful of, release, replace.
 - Let be, let go, let in.
- Mindfulness is vital, but not enough by itself.

Dual Modes

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Spacious Awareness

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.

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

Ajahn Sumedho

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

Relaxing the Sense of Self

- Cautions: dissociative disorders, borderline PD
- 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).
- Notice that many activities need little if any sense of “I” (e.g., reaching for salt, cuddling).
- 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 entity: “selfing.”
- Focus on present moment experience itself, continually dropping any story of “I, me, and mine.”
- Enjoy the peace of less selfing.

*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

“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.

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.
- Begley, S. 2007. *Train Your Mind, Change Your Brain: How a New Science Reveals Our Extraordinary Potential to Transform Ourselves*. Ballantine.
- Hanson, R. 2009 (with R. Mendius). *Buddha's Brain: The Practical Neuroscience of Happiness, Love, and Wisdom*. New Harbinger.
- Johnson, S. 2005. *Mind Wide Open: Your Brain and the Neuroscience of Everyday Life*. Scribner.
- Kornfield, J. 2009. *The Wise Heart: A Guide to the Universal Teachings of Buddhist Psychology*. Bantam.
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- Sapolsky, R. 2004. *Why Zebras Don't Get Ulcers*. Holt.
- Siegel, D. 2007. *The Mindful Brain: Reflection and Attunement in the Cultivation of Well-Being*. W. W. Norton & Co.
- Thompson, E. 2007. *Mind in Life: Biology, Phenomenology, and the Sciences of Mind*. Belknap Press.

Key Papers - 1

See www.RickHanson.net for other scientific papers.

- Atmanspacher, H. & Graben, P. 2007. Contextual emergence of mental states from neurodynamics. *Chaos & Complexity Letters*, 2:151-168.
- Baumeister, R., Bratlavsky, E., Finkenauer, C. & Vohs, K. 2001. Bad is stronger than good. *Review of General Psychology*, 5:323-370.
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Key Papers - 2

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- Gillihan, S.J. & Farah, M.J. 2005. Is self special? A critical review of evidence from experimental psychology and cognitive neuroscience. *Psychological Bulletin*, 131:76-97.
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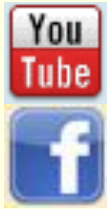
Key Papers - 3

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- Lewis, M.D. & Todd, R.M. 2007. The self-regulating brain: Cortical-subcortical feedback and the development of intelligent action. *Cognitive Development*, 22:406-430.
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Key Papers - 4

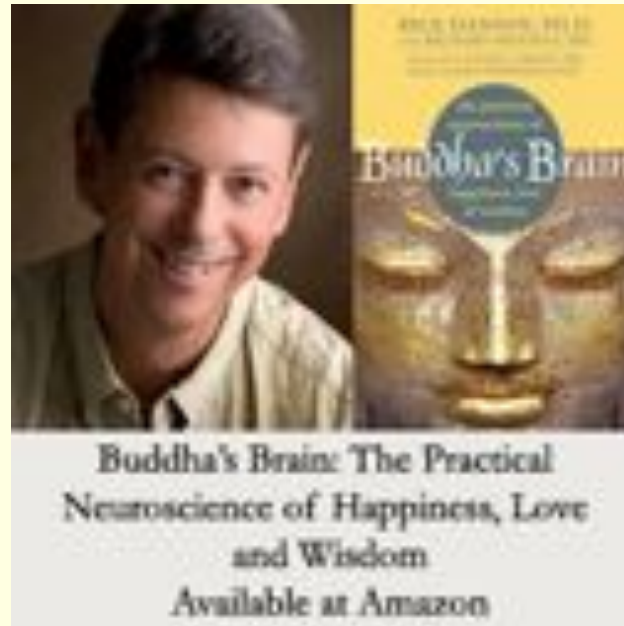
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Where to Find Rick Hanson Online



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