

Steadying the Mind

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Topics

- **Foundations**
- **Challenges to a steady mind**
- **Neural factors of mindfulness**



Foundations

Distinctions . . .

- **Awareness** is the field in which neural activity (mysteriously) becomes conscious experience.
- **Attention** is a heightened focus - a spotlight - on a particular content of awareness.
- **Mindfulness** is sustained attentiveness, typically with a metacognitive awareness of being aware.
- **Concentration** is deep absorption in an object of attention - sometimes to the point of non-ordinary states of consciousness.

*Concentration is
the proximate cause of wisdom.*


*Without concentration, one cannot even secure
one's own welfare, much less the lofty goal of
providing for the welfare of others.*

Acariya Dhammapala

Heartwood

This spiritual life does not have gain, honor, and renown for its benefit, or the attainment of moral discipline for its benefit, or the attainment of concentration for its benefit, or knowledge and vision for its benefit.

But it is this unshakable liberation of mind that is the goal of this spiritual life, its heartwood, and its end.



Challenges to a Steady Mind

Challenges to a Steady Mind

- We evolved continually scanning, shifting, wide focus attention in order to survive: “monkey mind.”
- This general tendency varies due to the adaptive value of neurological diversity in temperament, from “turtles” to “jackrabbits.”
- Life experiences - in particular, painful or traumatic ones - can heighten vigilance and distractibility.
- Modern culture - with its fire hose of information and routine multi-tasking - leads to stimulation-hunger and divided attention.

How the Brain Pays Attention

- Key functions:
 - Holding onto information
 - Updating awareness
 - Seeking stimulation
- Key mechanisms:
 - Dopamine and the gate to awareness
 - The basal ganglia stimostat

Individual Differences in Attention

| | <u>Holding Information</u> | <u>Updating Awareness</u> | <u>Seeking Stimulation</u> |
|-------------|-----------------------------------|---|--|
| High | Obsession Over-focusing | Porous filters Hyperactive Distractible Overload | Thrill-seeking |
| Mod | Concentrates Divides attention | Flexible Assimilation Accommodation | Enthusiastic Adaptive |
| Low | Fatigues w/Conc. Small WM | Fixed views Oblivious Low learning | Stuck in a rut Apathetic Lethargic |

Thus the importance of training the mind - and thus the brain - over time to become increasingly mindful and concentrated.

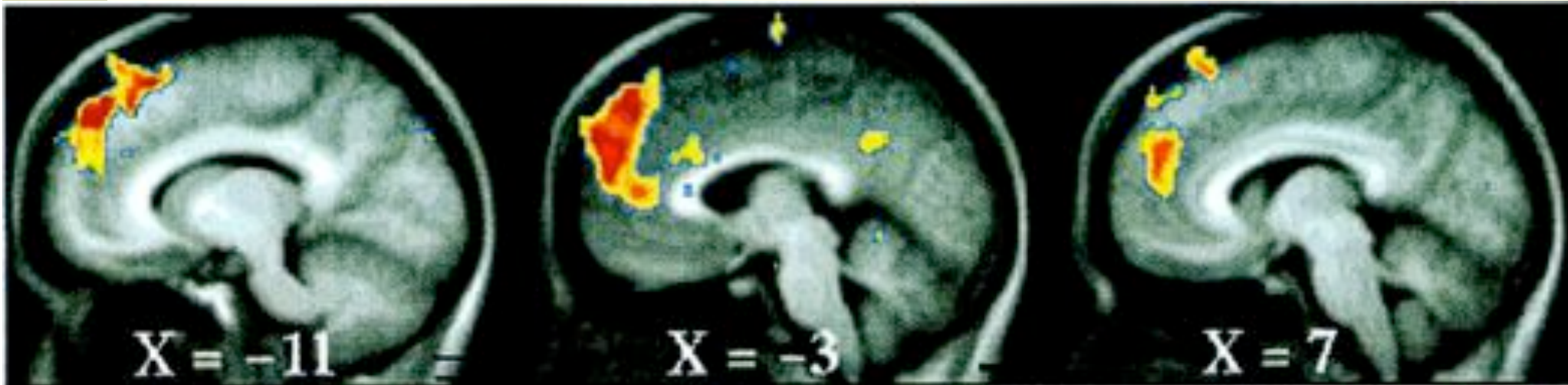


Neural Factors of Mindfulness

Some Neural Factors of Mindfulness

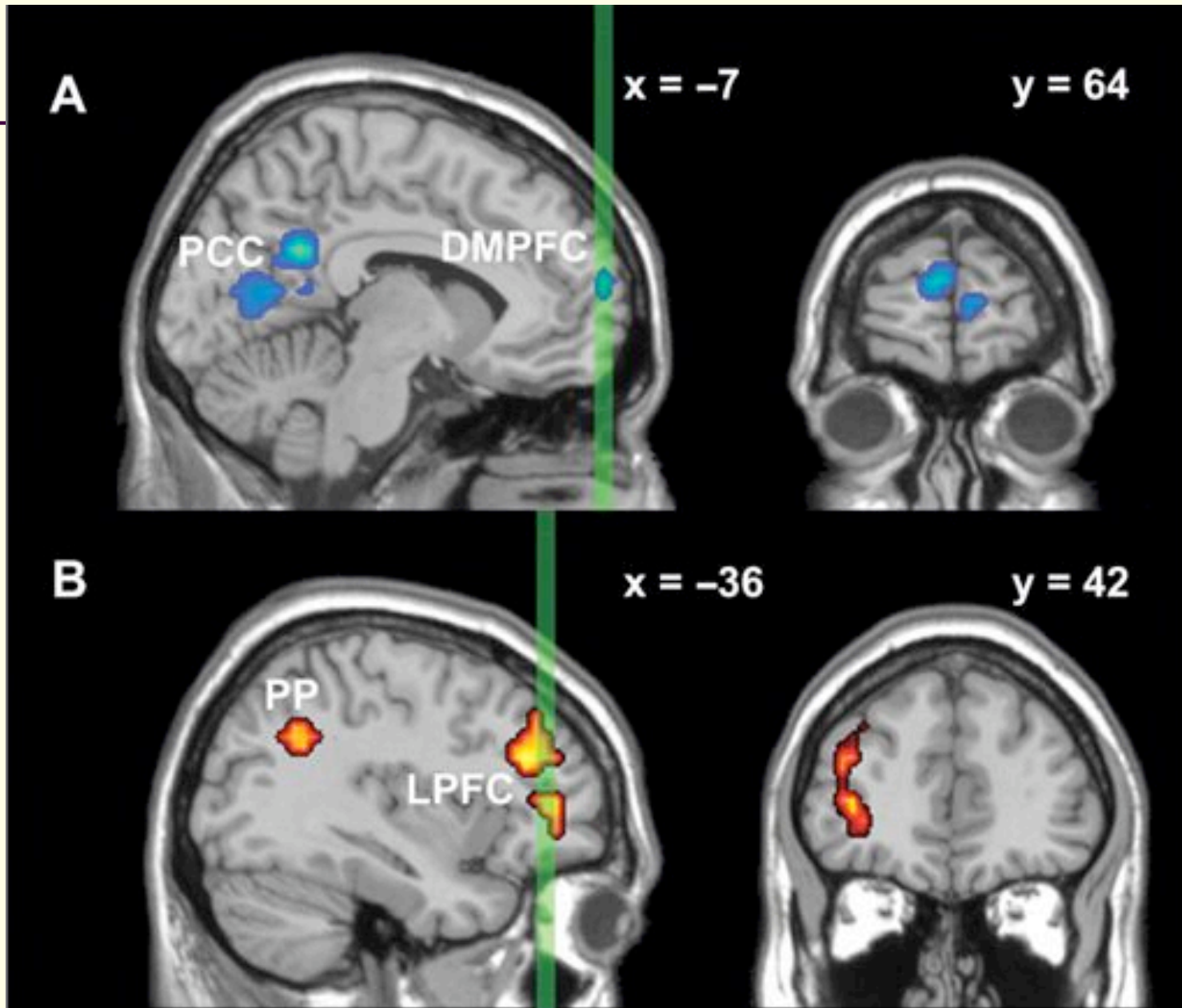
- **Setting an intention** - “top-down” frontal, “bottom-up” limbic
- **Relaxing the body** - parasympathetic nervous system
- **Feeling cared about** - social engagement system
- **Feeling safer** - inhibits amygdala/ hippocampus alarms
- **Encouraging positive emotion** - dopamine, norepinephrine
-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

Increased Medial PFC Activation Related to Self-Referencing Thought



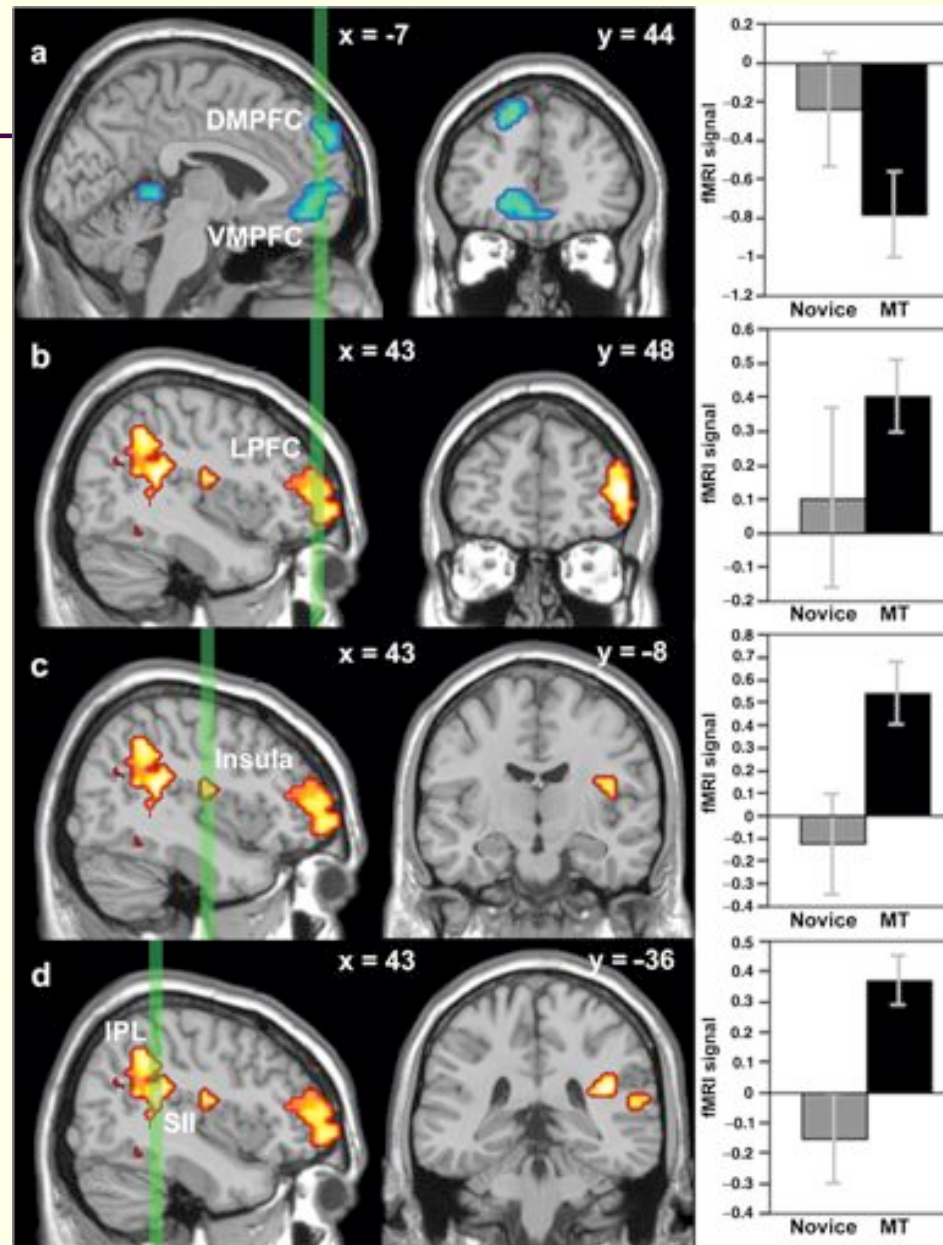
Gusnard D. A., et.al. 2001. *PNAS*, 98:4259-4264

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)



Ways to Activate Lateral Networks

- 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

Concentration

“And what, friends, is right concentration? Here, quite secluded from sensual pleasures, secluded from unwholesome states, a person enters upon and abides in the first jhana, which is accompanied by applied and sustained thought, with rapture and pleasure born of seclusion.

With the stilling of applied and sustained thought, the person enters upon and abides in the second jhana, which has self-confidence and singleness of mind without applied and sustained thought, with rapture and pleasure born of concentration.

With the fading away as well of rapture, the person abides in equanimity, and mindful and fully aware, still feeling pleasure with the body, enters upon and abides in the third jhana, on account of which noble ones announce: 'He or she has a pleasant abiding who has equanimity and is mindful.'

With the abandoning of pleasure and pain, and with the previous disappearance of joy and grief, he or she enters upon and abides in the fourth jhana, which has neither-pain-nor-pleasure and purity of mindfulness due to equanimity. This is called right concentration.”

- The Buddha

*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.

Great Books

See www.RickHanson.net for other great books.

- Austin, J. 2009. *Selfless Insight*. MIT Press.
- Begley, S. 2007. *Train Your Mind, Change Your Brain*. Ballantine.
- Carter, C. 2010. *Raising Happiness*. Ballantine.
- Hanson, R. (with R. Mendius). 2009. *Buddha's Brain: The Practical Neuroscience of Happiness, Love, and Wisdom*. New Harbinger.
- Johnson, S. 2005. *Mind Wide Open*. Scribner.
- Keltner, D. 2009. *Born to Be Good*. Norton.
- Kornfield, J. 2009. *The Wise Heart*. Bantam.
- LeDoux, J. 2003. *Synaptic Self*. Penguin.
- Linden, D. 2008. *The Accidental Mind*. Belknap.
- Sapolsky, R. 2004. *Why Zebras Don't Get Ulcers*. Holt.
- Siegel, D. 2007. *The Mindful Brain*. Norton.
- Thompson, E. 2007. *Mind in Life*. Belknap.

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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- Lieberman, M.D. & Eisenberger, N.I. 2009. Pains and pleasures of social life. *Science*. 323:890-891.
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Key Papers - 4

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- Takahashi, H., Kato, M., Matsuura, M., Mobbs, D., Suhara, T., & Okubo, Y. 2009. When your gain is my pain and your pain is my gain: Neural correlates of envy and schadenfreude. *Science*, 323:937-939.
- Tang, Y.-Y., Ma, Y., Wang, J., Fan, Y., Feng, S., Lu, Q., Yu, Q., Sui, D., Rothbart, M.K., Fan, M., & Posner, M. 2007. Short-term meditation training improves attention and self-regulation. *PNAS*, 104:17152-17156.
- Thompson, E. & Varela F.J. 2001. Radical embodiment: Neural dynamics and consciousness. *Trends in Cognitive Sciences*, 5:418-425.
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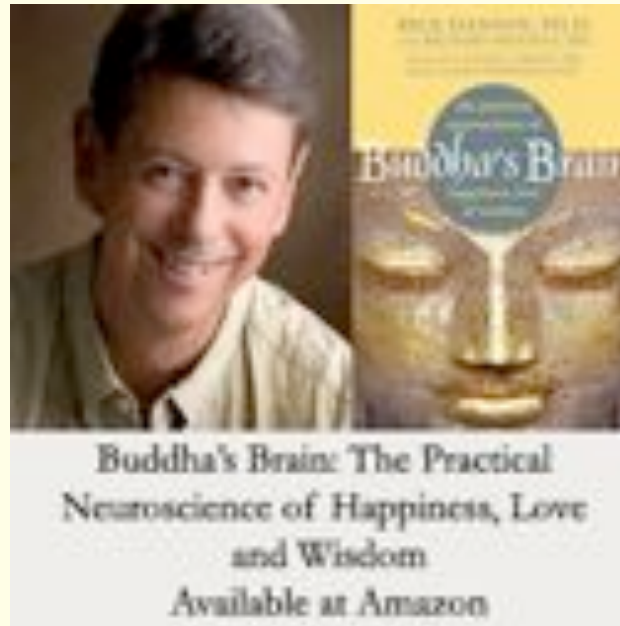
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