
The Whole Holy Brain

Bay Area Integral

April 7, 2011

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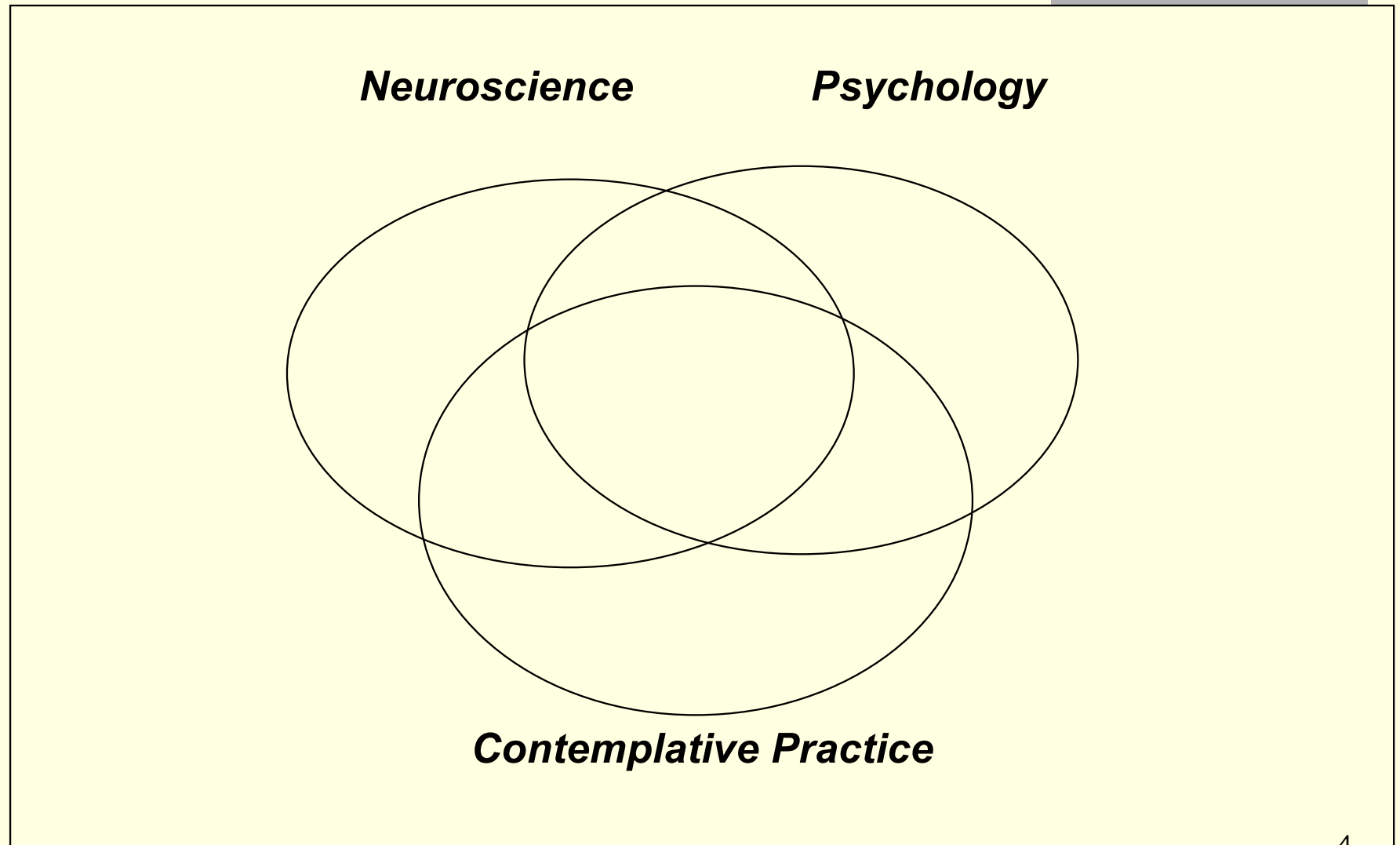
Topics

- **Self-directed neuroplasticity**
- **The integral brain: differentiation and integration**
- **Key integrative processes:**
 - **Allocentric processing**
 - **Lateral network activation**
 - **Equanimity**



Self-Directed Neuroplasticity

Common - and Fertile - Ground



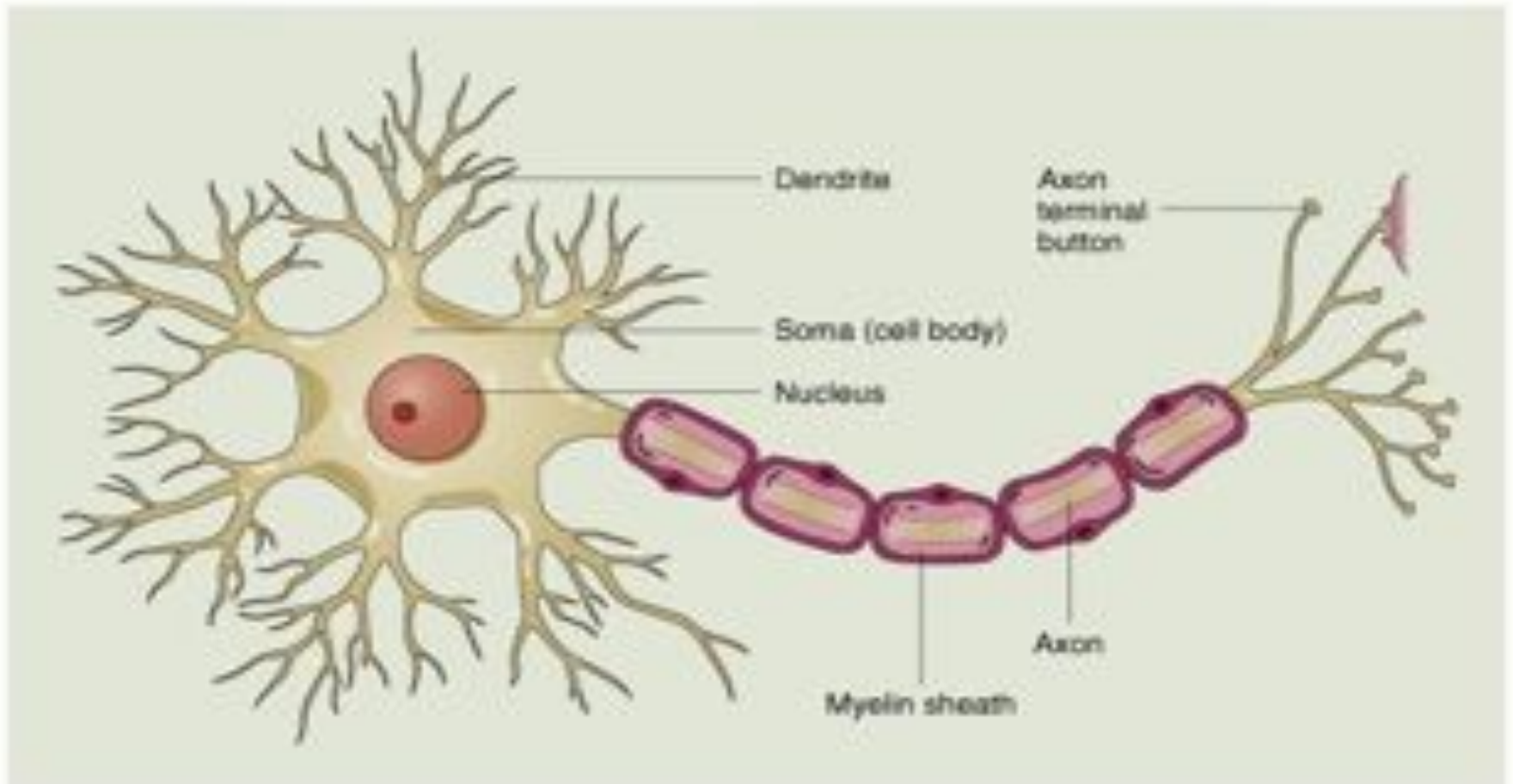
*When the facts change,
I change my mind, sir.*

What do you do?

John Maynard Keynes

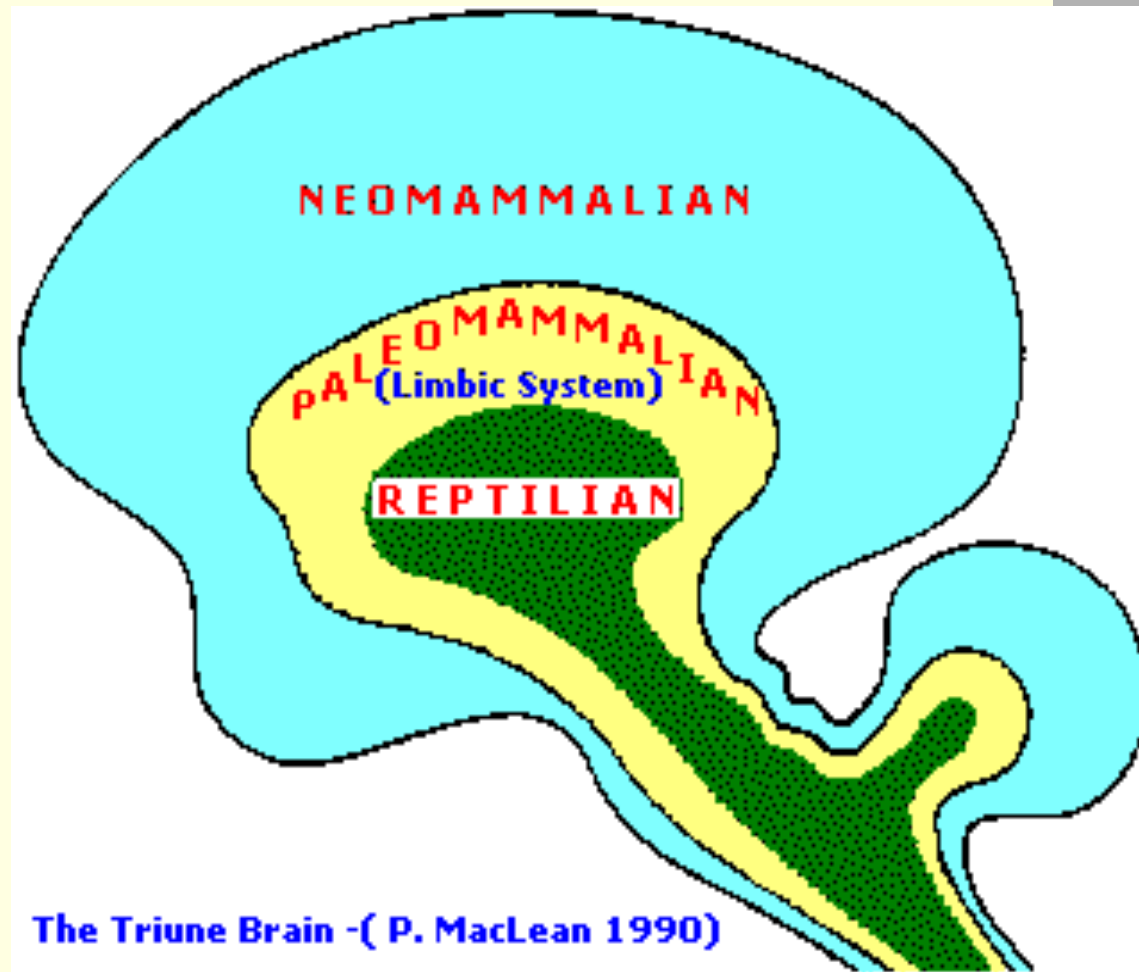


A Neuron



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Evolutionary History

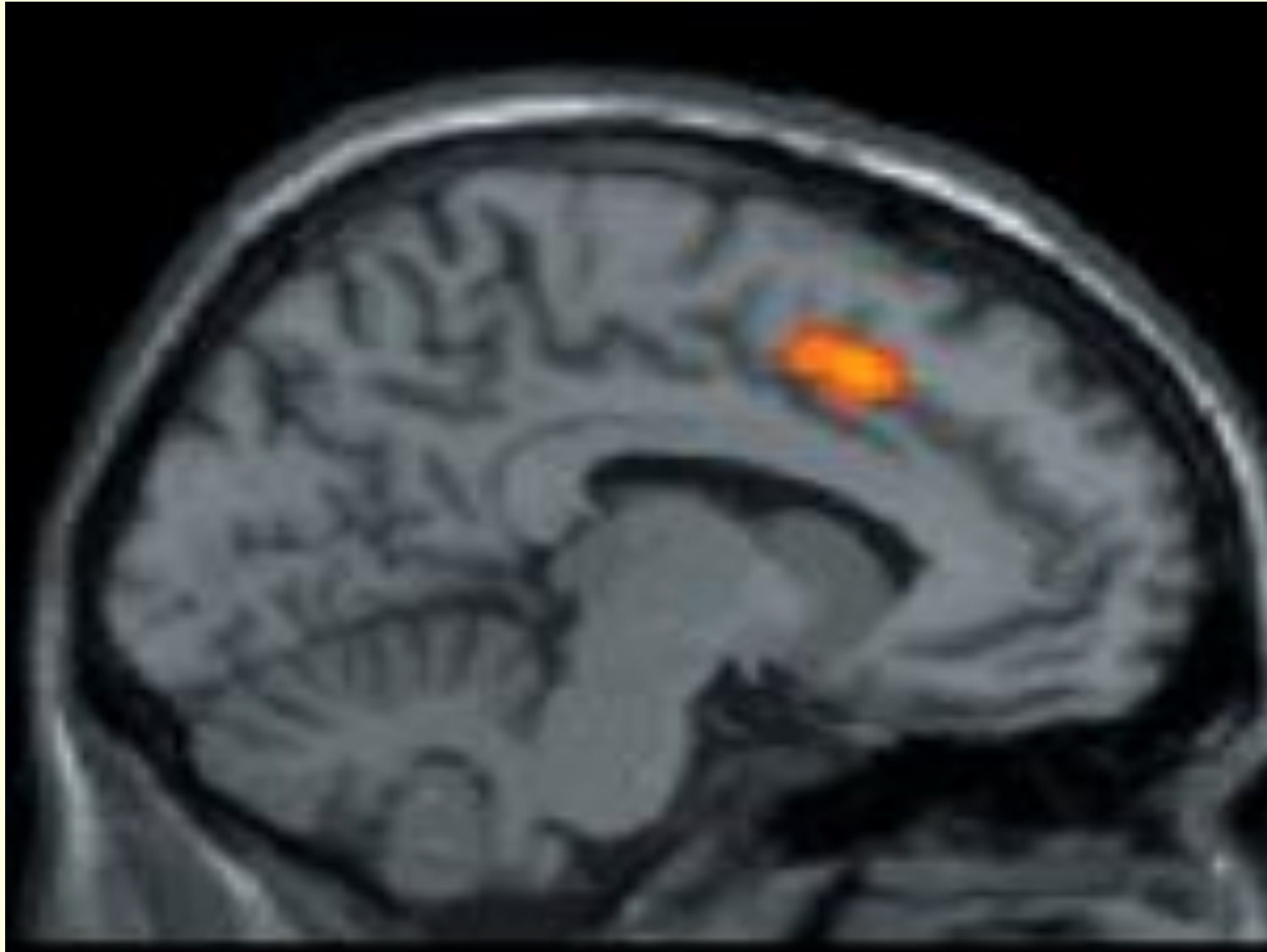


The Triune Brain

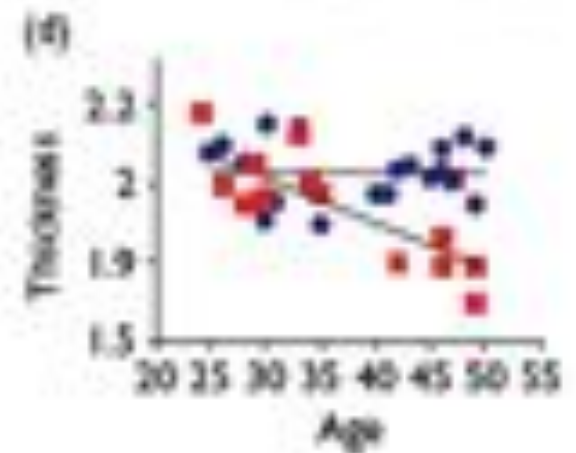
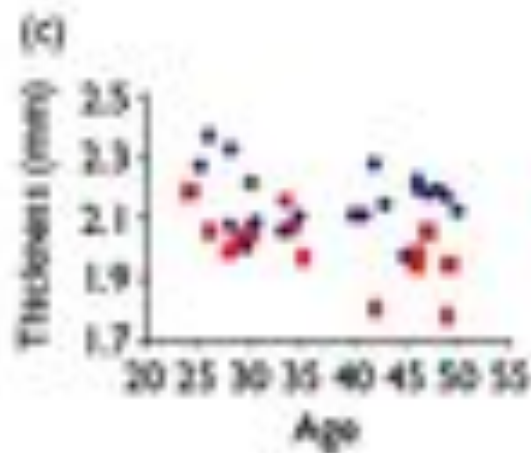
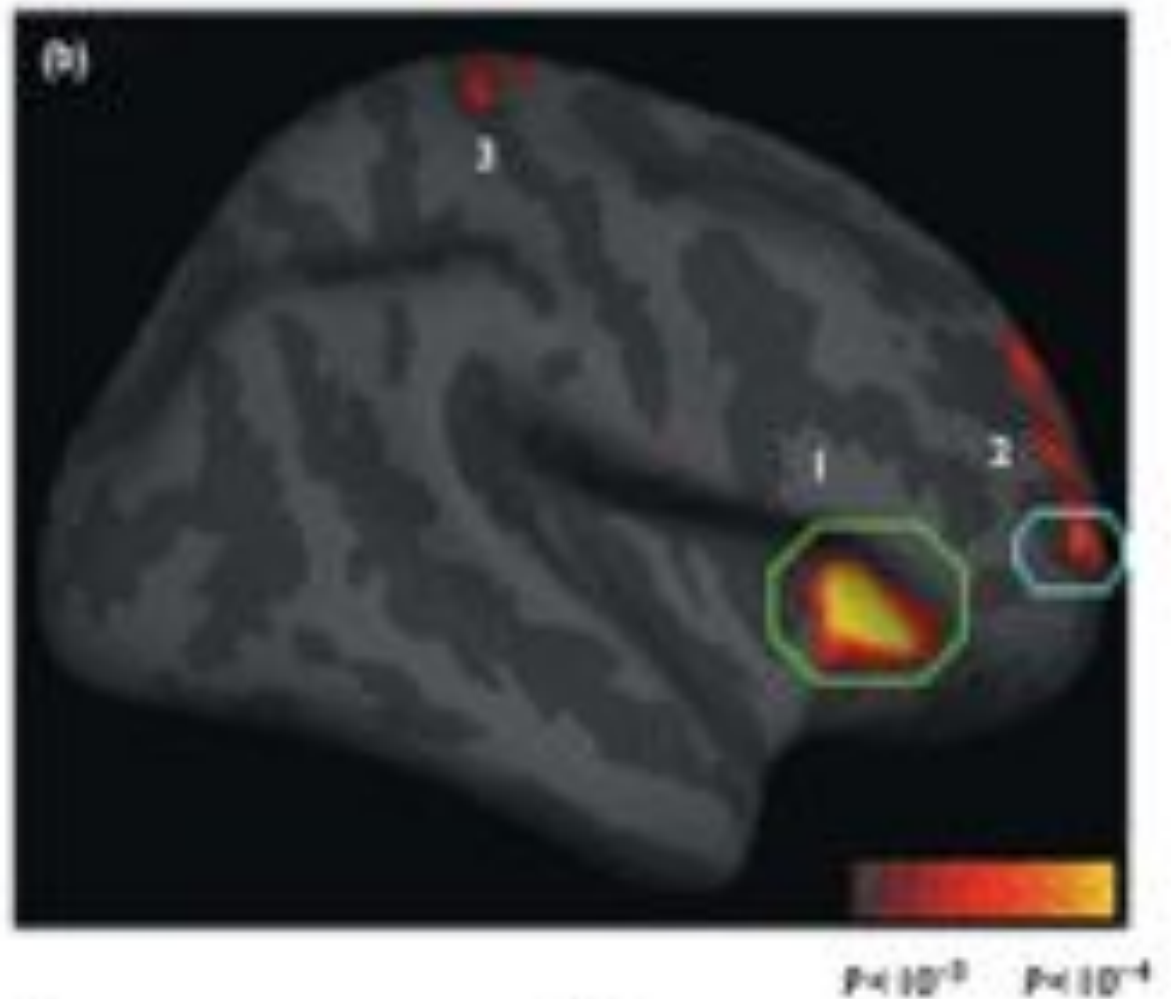


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Tibetan Monk, Boundless Compassion



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



Being with, Releasing, Replacing

- There are three phases of psychological healing and personal growth (and spiritual practice):
 - Be mindful of, release, replace.
 - Let be, let go, let in.
- Mindfulness is key to the second and third phase, sometimes curative on its own, and always beneficial in strengthening its neural substrates. But often it is not enough by itself.
- And sometimes you need to skip to the third phase to build resources for mindfulness.

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.

“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

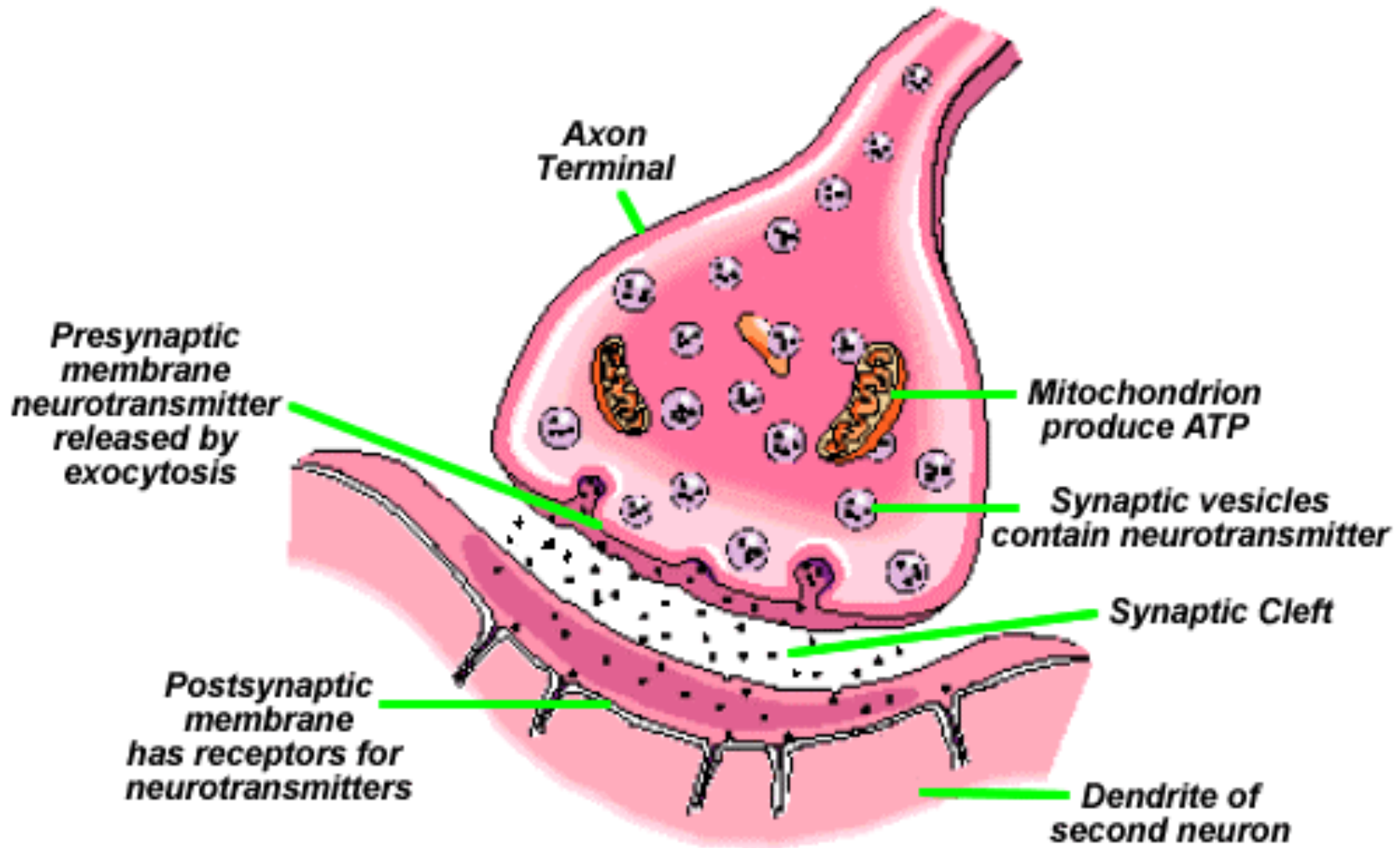
*The good life, as I conceive it, is a happy life.
I do not mean that if you are good you will be happy; I
mean that if you are happy you will be good.*

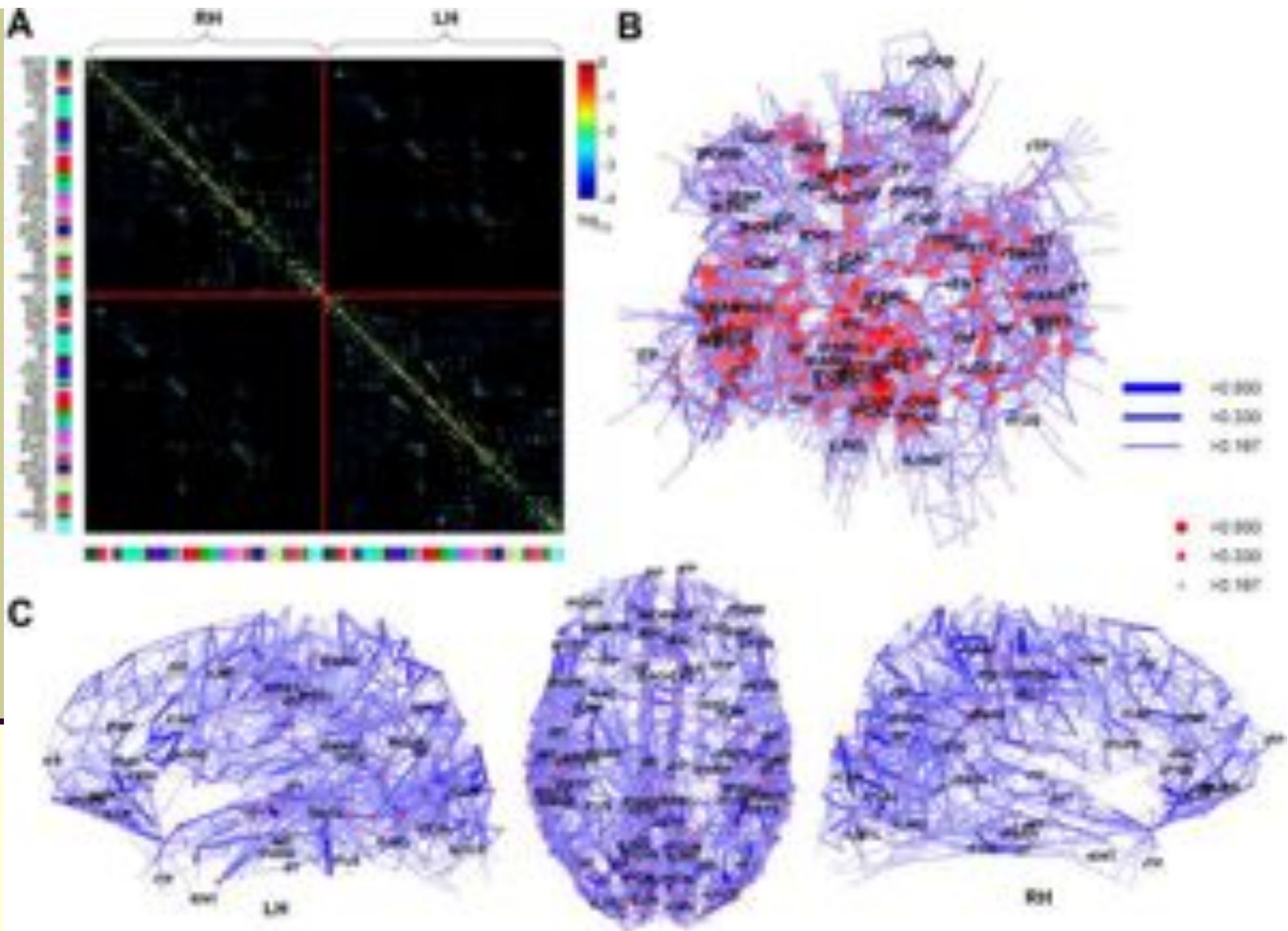
Bertrand Russell

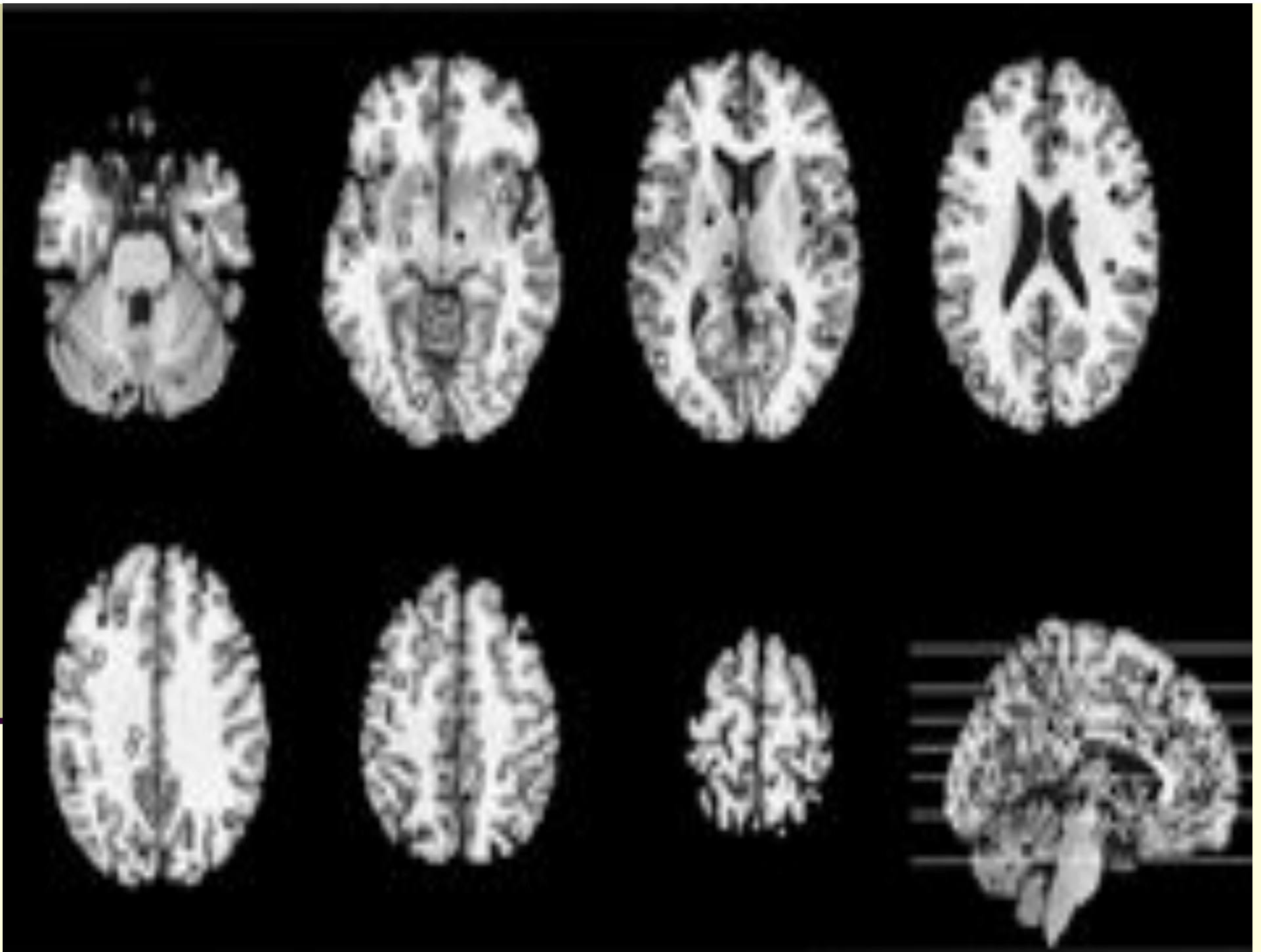


The Integral Brain

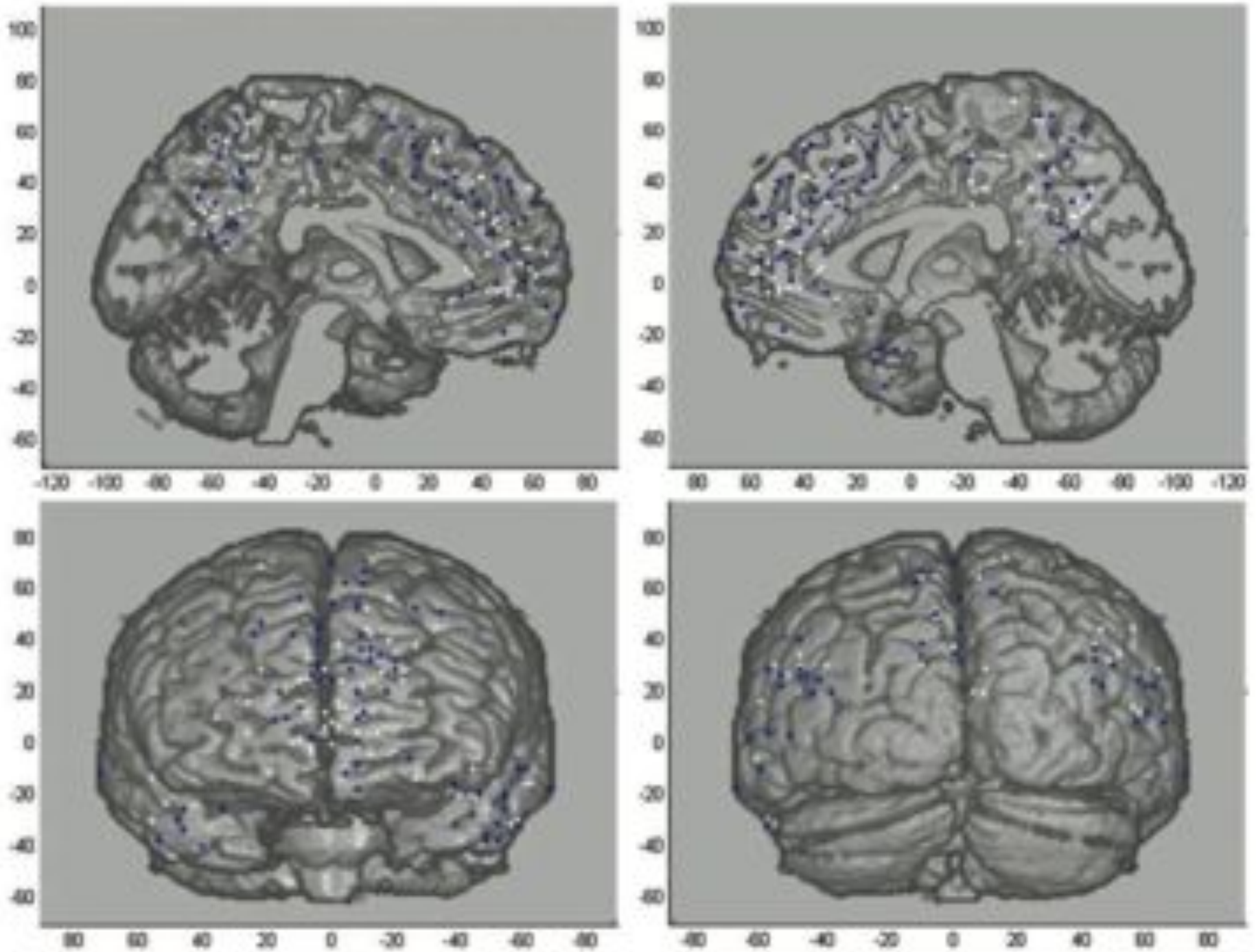
A SYNAPSE



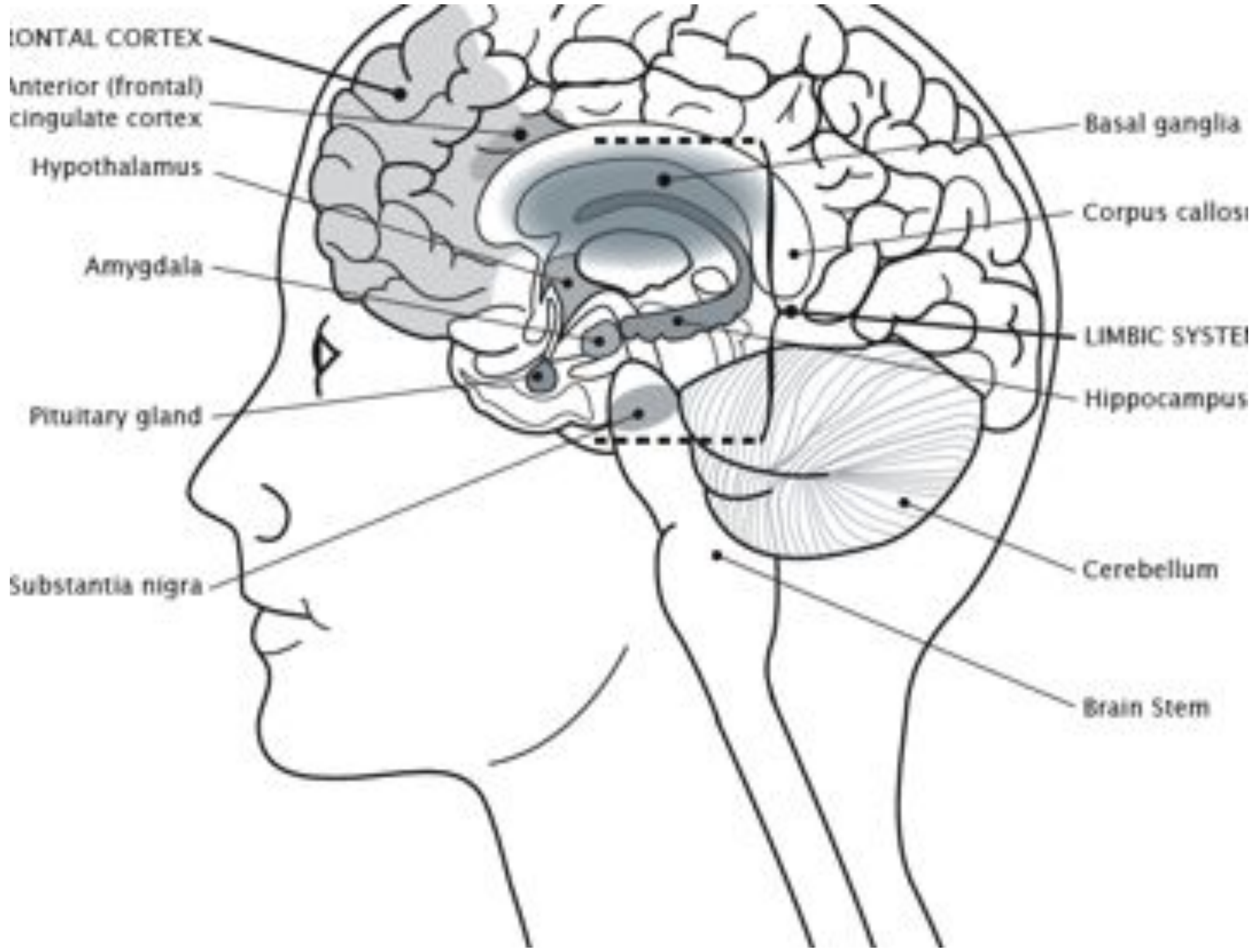




Brain activations of “selfing” - Gillihan, et al., Psych Bulletin, 1/2005



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





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.

*No self,
no problem*



Lateral Networks

Dual Modes

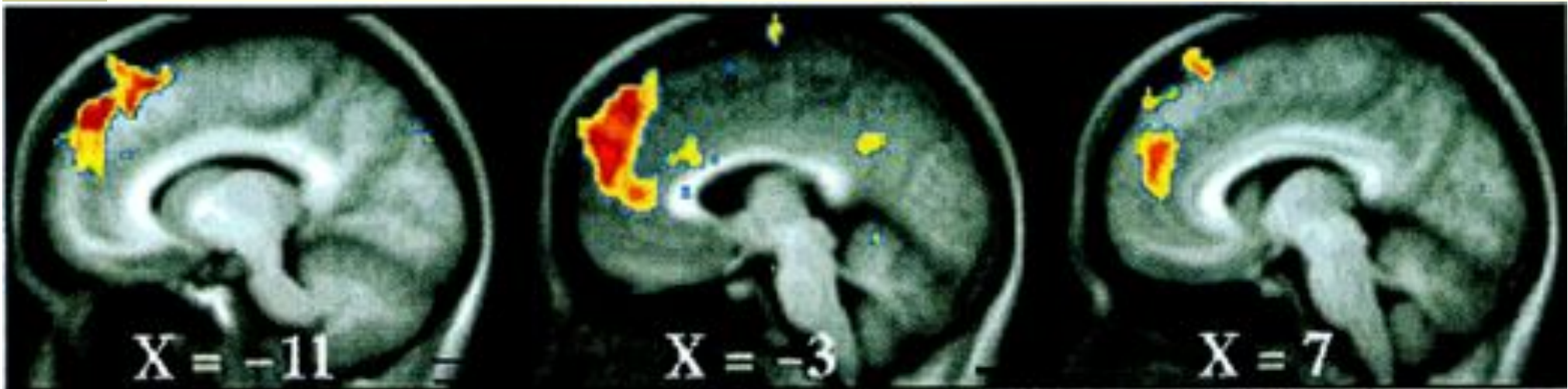
“Doing”

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

“Being”

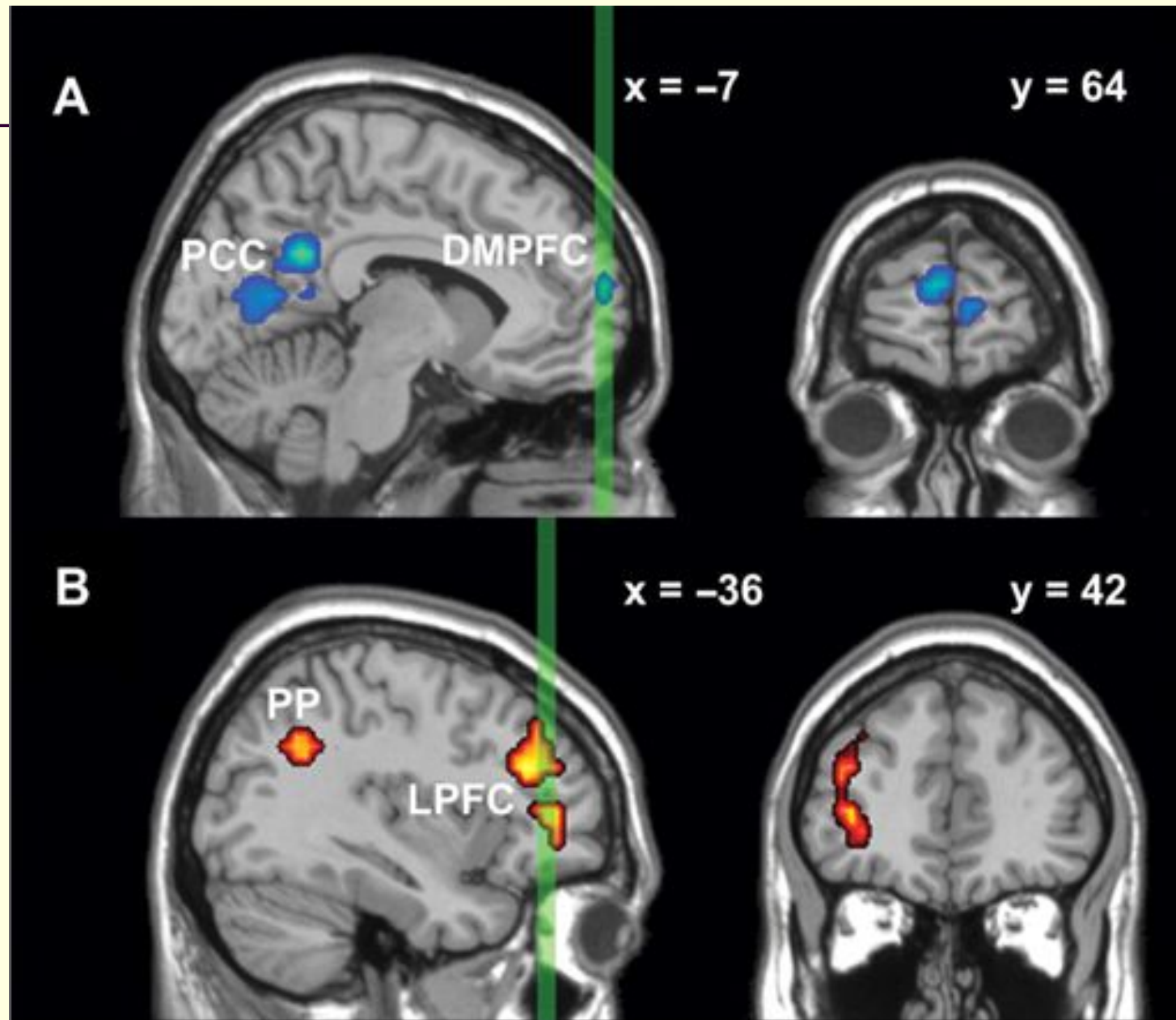
Open awareness
Nothing to do, nowhere to go
Sense of peace
Impersonal, 3rd person perspective
Mindful presence
Sensory
Now-focused
Little verbal activity
Uncertainty, not-knowing
Nonjudgmental
Transient contents of mind
Loosely connected experiences
Panoramic view
Minimal or no self-as-object
Minimal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

Increased Medial PFC Activation Related to Self-Referencing Thought



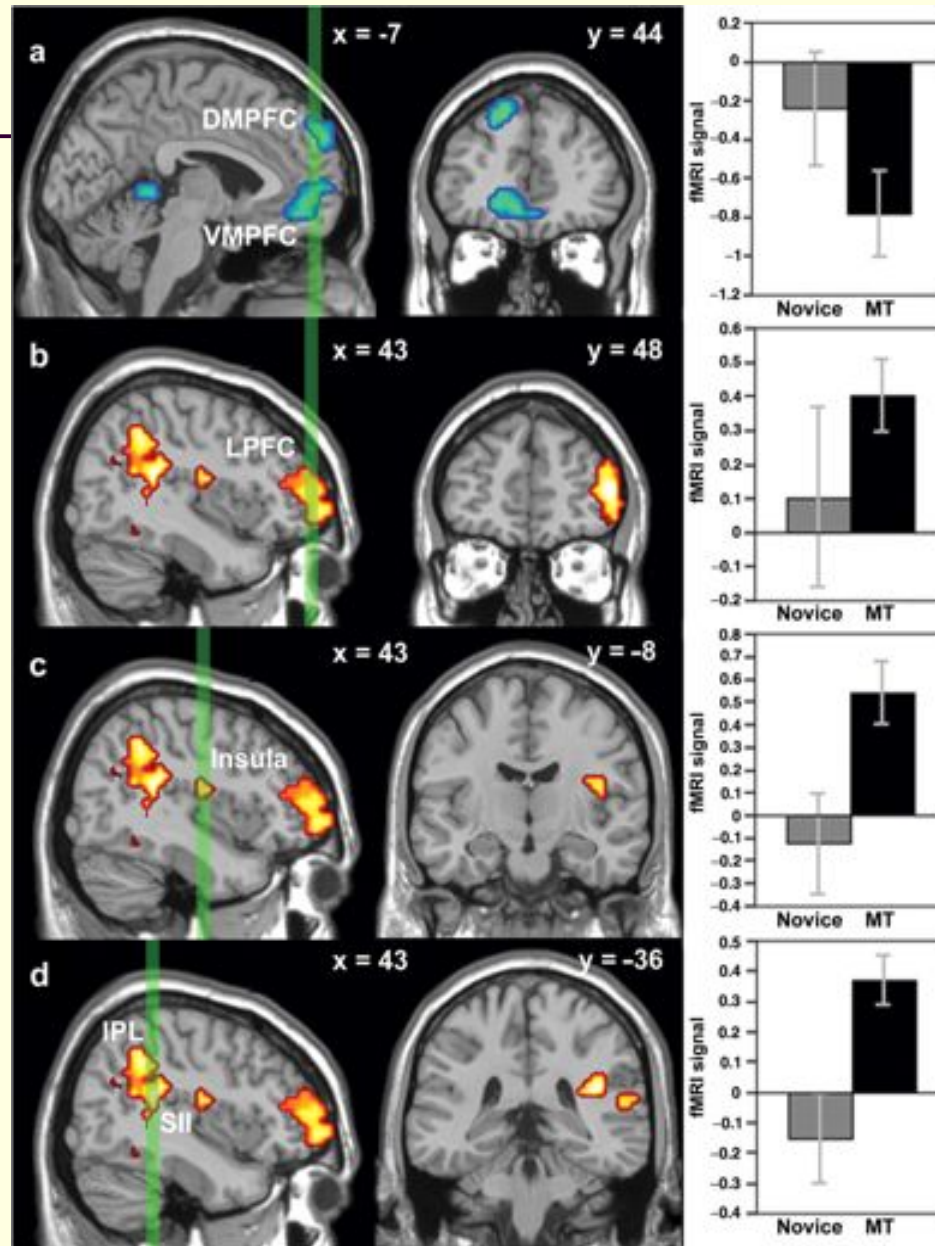
Gusnard D. A., et.al. 2001. *PNAS*, 98:4259-4264

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)



Dual Modes

“Doing”

Focused attention
Goal-directed
Sense of craving
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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

- Involves insula and mesial (middle) parietal lobes, which integrate sensory maps of the body, plus right hemisphere, for holistic (gestalt) perception
- Practice
 - 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
- This sense of the whole may be present for a second or two, then crumble; just open up to it 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



Equanimity

“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.

*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

The morning question, What good shall I do this day?	5	Rise, wash, and address <i>Pow- erful Goodness</i> ; contrive day's busi- ness and take the resolution of the day; prosecute the present study; and breakfast.
	6	
	7	
	8	
	9	
	10	
	11	
	12	
	1	
	2	
	3	
	4	
Evening question, What good have I done today?	5	Put things in their places, sup- per, music, or diversion, or con- versation; examination of the day.
	6	
	7	
	8	
	9	
	10	
	11	
	12	
	1	
	2	
	3	
	4	

Ben Franklin's Daily Schedule

Empathy?



"Empathy? I wish I saw my face when I could be ugly!"

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

I am only one; but still I am one.
I cannot do everything, but still I can do something.
I will not refuse to do, the something I can do.

Helen Keller

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.
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- Sapolsky, R. 2004. *Why Zebras Don't Get Ulcers*. Holt.
- Siegel, D. 2007. *The Mindful Brain*. Norton.
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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.
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Key Papers - 2

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Key Papers - 3

- Lazar, S., Kerr, C., Wasserman, R., Gray, J., Greve, D., Treadway, M., McGarvey, M., Quinn, B., Dusek, J., Benson, H., Rauch, S., Moore, C., & Fischl, B. 2005. Meditation experience is associated with increased cortical thickness. *Neuroreport*, 16:1893-1897.
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- Lieberman, M.D. & Eisenberger, N.I. 2009. Pains and pleasures of social life. *Science*, 323:890-891.
- Lutz, A., Greischar, L., Rawlings, N., Ricard, M. and Davidson, R. 2004. Long-term meditators self-induce high-amplitude gamma synchrony during mental practice. *PNAS*, 101:16369-16373.
- Lutz, A., Slager, H.A., Dunne, J.D., & Davidson, R. J. 2008. Attention regulation and monitoring in meditation. *Trends in Cognitive Sciences*, 12:163-169.

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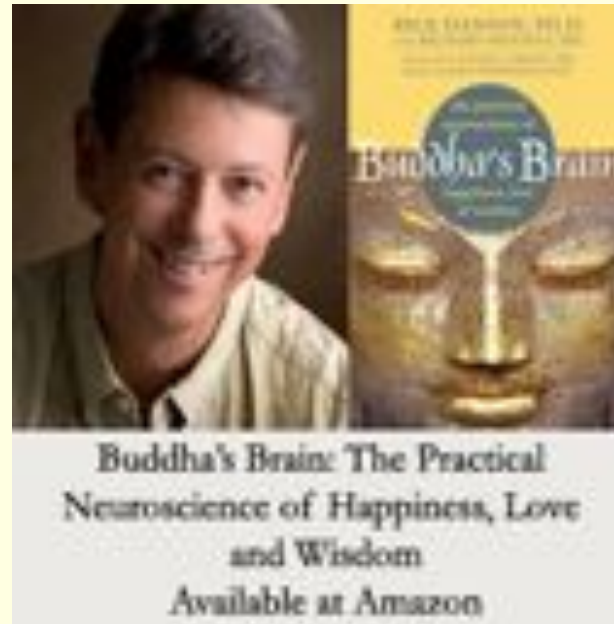
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