Neural Factors of Mindfulness

Using Your Mind
To Change Your Brain for the Better

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Topics

- Grounding the mind in life
- Self-directed neuroplasticity
- Being on your own side
- Neural factors of mindfulness
Grounding the Mind in Life
Common - and Fertile - Ground

Neuroscience

Psychology

Contemplative Practice
[People] ought to know that from nothing else but the brain come joys, delights, laughter and sports, and sorrows, griefs, despondency, and lamentations.

Hippocrates
A Neuron
All cells have specialized functions. Brain cells have particular ways of processing information and communicating with each other. Nerve cells form complete circuits that carry and transform information.

Electrical signaling represents the language of mind, the means whereby nerve cells, the building blocks of the brain, communicate with one another over great distances. Nerve cells generate electricity as a means of producing messages.

All animals have some form of mental life that reflects the architecture of their nervous system.

Eric R. Kandel, 2006
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.
Key Brain Areas for Consciousness

(adapted from) M. T. Alkire et al., Science 322, 876-880 (2008)
We ask, “What is a thought?”

We don’t know,

yet we are thinking continually.

Venerable Tenzin Palmo
Self-Directed Neuroplasticity
Mental activity entails underlying neural activity.
Steadiness of Mind
Repeated mental activity entails repeated neural activity.

Repeated neural activity builds neural structure.
Neurons that fire together, wire together.
Self-Directed Neuroplasticity

We can use the mind

To change the brain

To change the mind for the better

To benefit ourselves and other beings.
Being on Your Own Side
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 root of compassion is compassion for oneself.

Pema Chodron
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
Neural Factors of Mindfulness
Basics of Meditation

- Relax; find a 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
Steadying the Mind

- Setting an intention
- Relaxing the body
- Feeling cared about
- Feeling safer
- Encouraging positive emotion
- Taking in the good
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
- Taking in the good - positive implicit memories
Cortical Midline Areas for Self-Referencing Thought

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)
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.
Penetrative insight
joined with calm abiding
utterly eradicates
afflicted states.

Shantideva
Suggested Books

See www.RickHanson.net for other suggestions.

See [www.RickHanson.net](http://www.RickHanson.net) for other scientific papers.


Key Papers - 2


- Hanson, R. 2008. Seven facts about the brain that incline the mind to joy. In *Measuring the immeasurable: The scientific case for spirituality*. Sounds True.
Key Papers - 3


Key Papers - 4


Where to Find Rick Hanson Online

Hardwiring Happiness: The New Brain Science of Contentment, Calm, and Confidence

www.rickhanson.net/hardwiringhappiness

Personal website: www.rickhanson.net

Wellspring Institute: www.wisebrain.org

youtube.com/drrhanson  facebook.com/rickhansonphd