Buddha’s Brain:
The Practical Neuroscience Of Happiness, Love, and Wisdom

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Topics

- Using your mind to change your brain
- Being on your own side
- Inner resources
- Taking in the good
- The Responsive mode
- The Reactive mode
- Taking the fruit as the path
Using Your Mind to Change Your Brain
Common - and Fertile - Ground

Neuroscience  Psychology

Contemplative Practice
Mental States Become Neural Traits

- The nervous system represents, stores, operates upon, and communicates *information*. This is the “mind,” which is mainly outside awareness.

- How neural activity becomes conscious experience remains a mystery - but there is no doubt that mental and neural activity co-arise.

- As the mind changes, the brain changes - both temporarily and in lasting ways.
Tibetan Monk, Boundless Compassion
Honoring Experience

Your experience *matters*.

Both for how it feels in the moment and for the lasting residues it leaves behind, woven into the fabric of your brain and being.
The Power of Attention

- Attention is like a spotlight, lighting what it rests upon.

- Because neuroplasticity is heightened for what’s in the field of focused awareness, attention is also like a vacuum cleaner, pulling its contents into the brain.

- Directing attention skillfully is therefore a fundamental way to shape the brain - and one’s life over time.

- One of the many benefits of mindfulness training is the development of skillful attention.
The education of attention would be the education *par excellence*.

William James
Neural Factors of Mindfulness
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
- Gently settling into peaceful well-being
Seven 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
- **Panoramic view** - lateral networks
- **Absorbing the benefits** - positive implicit memories
Self-Focused (blue) vs Open Awareness (red) Conditions (following 8 weeks of MT)

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.
Being on Your Own Side
If one going down into a river, swollen and swiftly flowing, is carried away by the current -- how can one help others across?

The Buddha
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
Taking in the Good
Causes and Effects

Mental and physical phenomena arise, persist, and pass away due to causes.

The brain is shaped by the mental/neural states that are activated, installed, and reactivated within it.

Inner “poisons” (e.g., hatred, greed, heartache, delusion) cause suffering, harm, and negative cycles.

Inner resources (e.g., peace, happiness, love, wisdom) cause contentment, welfare, and positive cycles.
Inner Resources Include

- **Virtues** (e.g., patience, energy, generosity, restraint)
- **Executive functions** (e.g., meta-cognition)
- **Attitudes** (e.g., optimism, compassion, kindness)
- **Capabilities** (e.g., emotional intelligence, resilience)
- **Positive emotions** (e.g., gratitude, love, joy)
- **Approach orientation** (e.g., curiosity, exploration)
How to Take in the Good (TG)

1. **Have** a good experience.
   - You are already having one.
   - You deliberately recognize a good fact and let it become a good experience.

2. **Extend** the good experience in:
   - Time - for 10-20-30+ seconds
   - Space - in your body and feelings
   - Intensity - help it become stronger

3. **Absorb** the good experience by intending and sensing that is becoming a part of you, woven into the fabric of your brain and being.
Components of a Good Experience

- **Bodily states** - healthy arousal; PNS; vitality

- **Emotions** - both feelings and mood

- **Views** - expectations; object relations; perspectives on self, world, past and future

- **Behaviors** - repertoire; inclinations
Types of Good Experiences

**Avoiding Harms**
- Feeling basically alright right now
- Feeling protected, strong, safe, at peace

**Approaching Rewards**
- Everyday sensual pleasures
- Satisfactions in accomplishing goals
- Feeling glad, grateful, contented, fulfilled
- Therapeutic, spiritual, or existential realizations

**Attaching to Others**
- Feeling included, seen, liked, appreciated, loved
- Feeling compassionate, kind, generous, loving
The Responsive Mode
Evolutionary History

The Triune Brain

The Triune Brain - (P. MacLean 1990)
Three Motivational Systems

- **Avoid Harms:**
  - Primary need, tends to trump all others
  - Functional in first animals

- **Approach Rewards:**
  - Functional in first animals
  - Elaborated in mammals via sympathetic arousal, limbic/emotional valence, sustained pursuit, etc.

- **Attach to Others:**
  - Functional in mammals and birds
  - Very elaborated in humans via pair bonding, language, empathy, cooperative planning, altruism, etc.
The Homeostatic Home Base

When not disturbed by threat, loss, or rejection:

The body defaults to a sustainable equilibrium of refueling, repairing, and pleasant abiding.

The mind defaults to a sustainable equilibrium of:

- **Peace** (the Avoiding system)
- **Happiness** (the Approaching system)
- **Love** (the Attaching system)

This is the brain in its homeostatic *Responsive* mode.
The Responsive Mode

- Avoid
- Peace
- Approach

Wisdom

Contentment

Love

Attach

Happiness
Key Benefits of Responsive Mode

- Fueling for Reactive mobilizations; recovery after
- Positive emotions, cognitions, and behaviors
- Positive cycles
- Promotes virtue and benevolence

*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 Reactive Mode
Fired up for Survival

*When disturbed by threat, loss, or rejection:*

The **body** fires up into the stress response; resources are expended for immediate needs while long-term building is deferred; outputs exceed inputs; unsustainable.

The **mind** fires up into:

- **Hatred** (the Avoiding system)
- **Greed** (the Approaching system)
- **Heartache** (the Attaching system)

This is the brain in its allostatic **Reactive** mode.
The Reactive Mode

- Avoid
- Hatred
- Greed

- Approach
- Ignorance
- Suffering

- Attach
- Heartache
Evolution of the Negativity Bias

- **Harms** ("sticks") - Predators, natural hazards, social aggression, pain (physical and psychological)

- **Rewards** ("carrots") - Food, sex, shelter, social support, pleasure (physical and psychological)

- Avoiding "sticks" usually affects passing on genes more than approaching "carrots."
  - **Urgency** - Usually, sticks must be avoided immediately while carrots allow a longer approach.
  - **Impact** - Often, the presence of a stick ends life while the absence of a carrot does not; if you fail to get a carrot today, you’ll likely have another chance tomorrow, but if you fail to avoid a stick today - whap! - no more carrots forever.
Negativity Bias: Some Consequences

- Negative stimuli get more attention and processing.
- Easy to create learned helplessness, hard to undo
- Negative interactions: more powerful than positive
- Negative experiences are internalized more efficiently into implicit memory than positive ones.
  - Like Velcro for the negative but Teflon for the positive
  - In life, therapy, meditation, and trainings, activated positive mental states routinely wash through the brain like water through a sieve without getting installed.
A Major Result of the Negativity Bias: Threat Reactivity

- Two mistakes:
  - Thinking there is a tiger in the bushes when there isn’t one.
  - Thinking there is no tiger in the bushes when there is one.

- We evolved to make the first mistake a hundred times to avoid making the second mistake even once.

- This evolutionary tendency is intensified by temperament, personal history, culture, and politics.

- Threat reactivity affects individuals, couples, families, organizations, nations, and the world as a whole.
Choices . . .

Reactive Mode

Responsive Mode

Or?
We can deliberately use the mind to change the brain for the better.
Taking the Fruit as the Path
Coming Home . . .

Peace

Happiness

Love
Know the mind.

Shape the mind.

Free the mind.
Great Books

See www.RickHanson.net for other great books.

Key Papers - 1

See www.RickHanson.net for other scientific papers.


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


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