Wiring Happiness
Into Your Brain

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Topics

- Self-directed neuroplasticity
- Self-compassion
- Natural happiness
Self-Directed Neuroplasticity
A Neuron

![Diagram of a neuron showing parts such as Dendrites, Soma (cell body), Nucleus, Axon, Axon terminal button, and Myelin sheath.](image)
Experience-Dependent Neuroplasticity

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
The Rewards of Love
Tibetan Monk, Boundless Compassion
Christian Nuns, Recalling a Profound Spiritual Experience

Beauregard, et al., Neuroscience Letters, 9/25/06
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”
The principal activities of brains are making changes in themselves.

Marvin L. Minsky
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 self.
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?*
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
Self-Compassion
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
Natural Happiness
Evolutionary History

The Triune Brain

The Triune Brain - (P. MacLean 1990)
Three Stages of Brain Evolution

- **Reptilian:**
  - Brainstem, cerebellum, hypothalamus
  - Reactive and reflexive
  - **Avoid** hazards

- **Mammalian:**
  - Limbic system, cingulate, early cortex
  - Memory, emotion, social behavior
  - **Approach** rewards

- **Human:**
  - Massive cerebral cortex
  - Abstract thought, language, cooperative planning, empathy
  - **Attach** to “us”
Reverse Engineering the Brain

What’s the nature of the brain when a person is:

- In peak states of productivity or “flow?”
- Experiencing inner peace?
- Self-actualizing?
- Enlightened (or close to it)?
Home Base of the Human Brain

When not threatened, ill, in pain, hungry, upset, or chemically disturbed, most people settle into being:

- **Calm** (the Avoid system)
- **Contented** (the Approach system)
- **Caring** (the Attach system)
- **Creative** - synergy of all three systems

This is the brain in its natural, *responsive* mode.
The Responsive Mode
Behind the Obscurations

Sam sees “peeping among the cloud-wrack . . . a white star twinkle for a while.

The beauty of it smote his heart, as he looked up out of the forsaken land, and hope returned to him.

For like a shaft, clear and cold, the thought pierced him that in the end the Shadow was only a small and passing thing: there was light and high beauty forever beyond its reach.”

Tolkein, The Lord of the Rings
Some Benefits of Responsive Mode

- Recovery from “mobilizations” for survival:
  - Refueling after depleting outpourings
  - Restoring equilibrium to perturbed systems
  - Reinterpreting negative events in a positive frame
  - Reconciling after separations and conflicts

- Promotes prosocial behaviors:
  - Experiencing safety decreases aggression.
  - Experiencing sufficiency decreases envy.
  - Experiencing connection decreases jealousy.
  - We’re more generous when our own cup runneth over.
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
But to Survive, We Leave Home . . .

- **Avoid**: When we feel threatened or harmed
- **Approach**: When we can’t attain important goals
- **Attach**: When we feel isolated, disconnected, unseen, unappreciated, unloved

This is the brain in its *reactive* mode of functioning - a kind of inner homelessness.
The Reactive Mode
Health Consequences of Chronic Stress

- **Physical:**
  - Weakened immune system
  - Inhibits GI system; reduced nutrient absorption
  - Reduced, dysregulated reproductive hormones
  - Increased vulnerabilities in cardiovascular system
  - Disturbed nervous system

- **Mental:**
  - Lowers mood; increases pessimism
  - Increases anxiety and irritability
  - Increases learned helplessness (especially if no escape)
  - Often reduces approach behaviors (less for women)
  - Primes aversion (SNS-HPAA negativity bias)
Reactive Dysfunctions in Each System

- **Approach** - Addiction; over-drinking, -eating, -gambling; compulsion; hoarding; driving for goals at great cost; spiritual materialism

- **Avoid** - Anxiety disorders; PTSD; panic, terror; rage; violence

- **Attach** - Borderline, narcissistic, antisocial PD; symbiosis; *folie a deux*; “looking for love in all the wrong places”
Choices . . .

- Reactive Mode
  - Approach "Greed"
  - "Hatred"
  - Ignorance
  - Suffering
  - Heartache
  - Affiliate

- Responsive Mode
  - Approach Gratitude
  - Avoid Peace
  - Love
  - Wisdom Contentment
  - Affirmit
Ways to “Take the Fruit as the Path”

**General factors:** See clearly. Have compassion for yourself. Take life less personally. Take in the good. Deepen equanimity.

**Approach system**
- Be glad.
- Appreciate your resources.
- Give over to your best purposes.

**Attach system**
- Sense the suffering in others.
- Be kind.
- Act with unilateral virtue.

**Avoid system**
- Cool the fires.
- Recognize paper tigers.
- Tolerate risking the dreaded experience.
Coming Home . . .

Gladness

Love

Peace
Great Books

See www.RickHanson.net for other great books.

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.


Where to Find Rick Hanson Online

http://www.youtube.com/BuddhasBrain
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