

# ***Hardwiring Compassion:***

---

## ***Helping Clients Heal Wounds of the Heart***

***FACES***

***San Diego, February 26, 2015***

**Rick Hanson, Ph.D.**

**The Wellspring Institute For Neuroscience and Contemplative Wisdom** <sub>1</sub>

[www.WiseBrain.org](http://www.WiseBrain.org)

[www.RickHanson.net](http://www.RickHanson.net)

# Topics

---

- **Positive neuroplasticity**
- **Growing inner strengths**
- **The negativity bias**
- **Three ways to engage the mind**
- **Key resource experiences**
- **Healing old pain**
- **The law of little things**



# Positive Neuroplasticity

# Positive Neuroplasticity – How to Take in the Good: HEAL

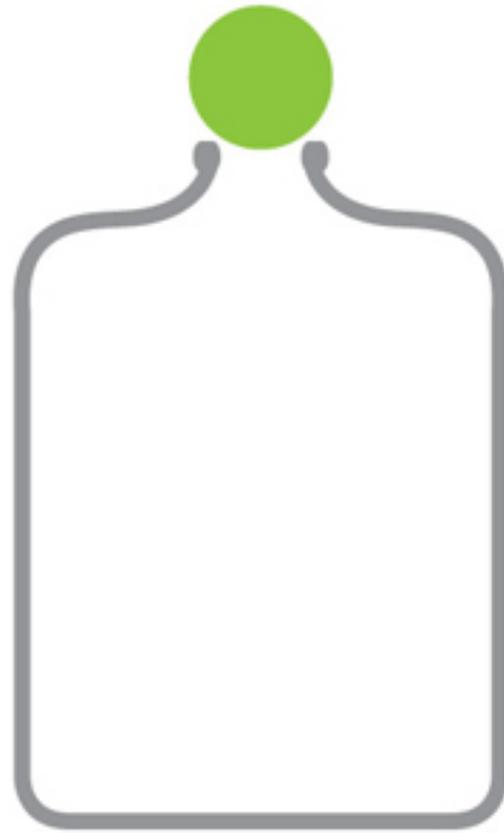
---

## Activation

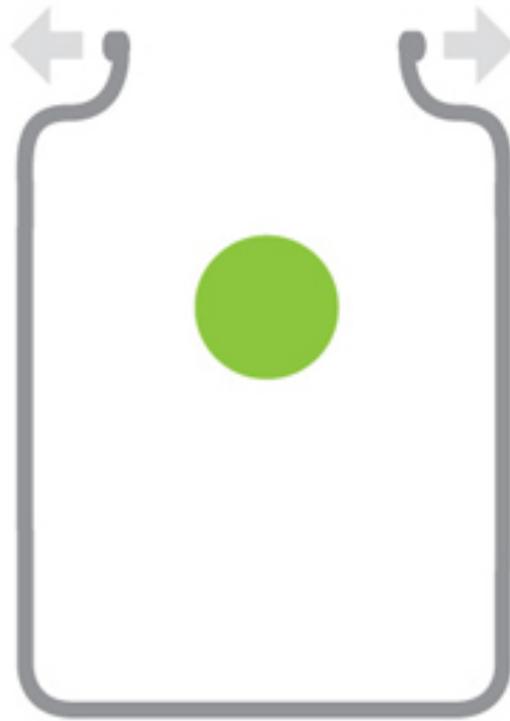
1. Have a beneficial experience.

## Installation

2. Enrich the experience.
3. Absorb the experience.
4. Link positive and negative material. [optional]



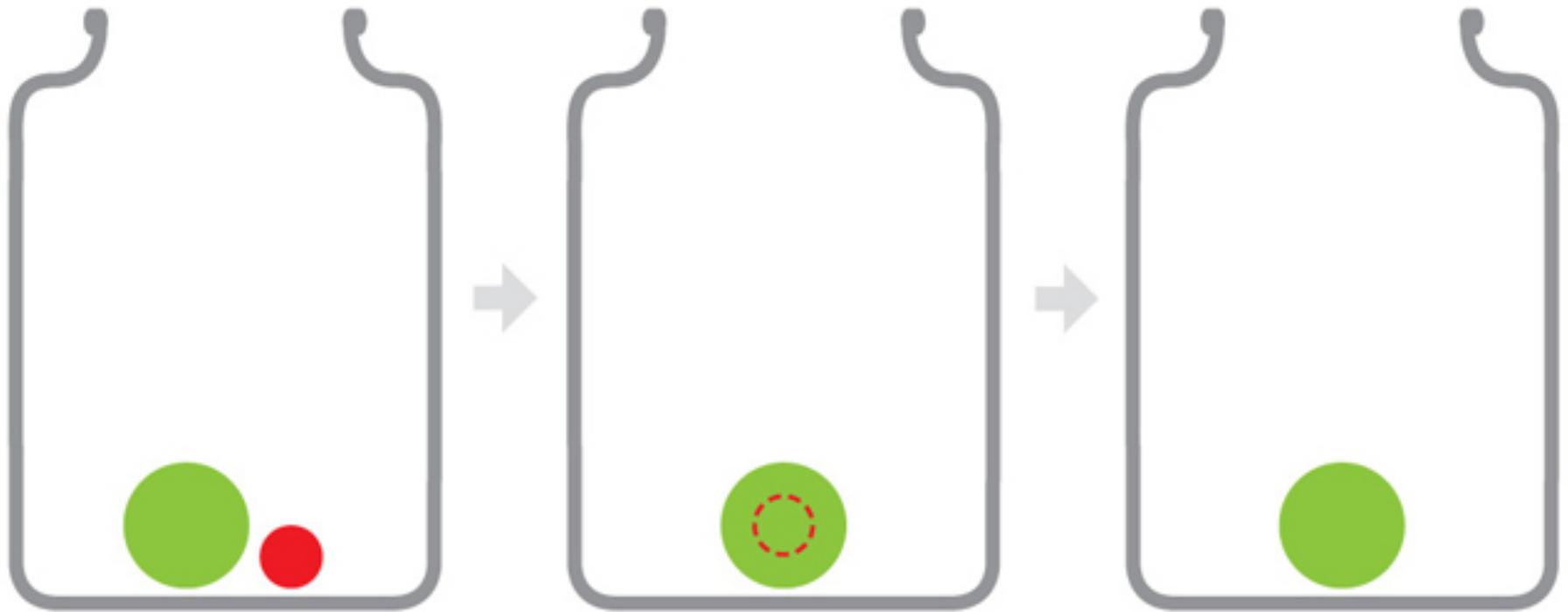
Have a Good Experience



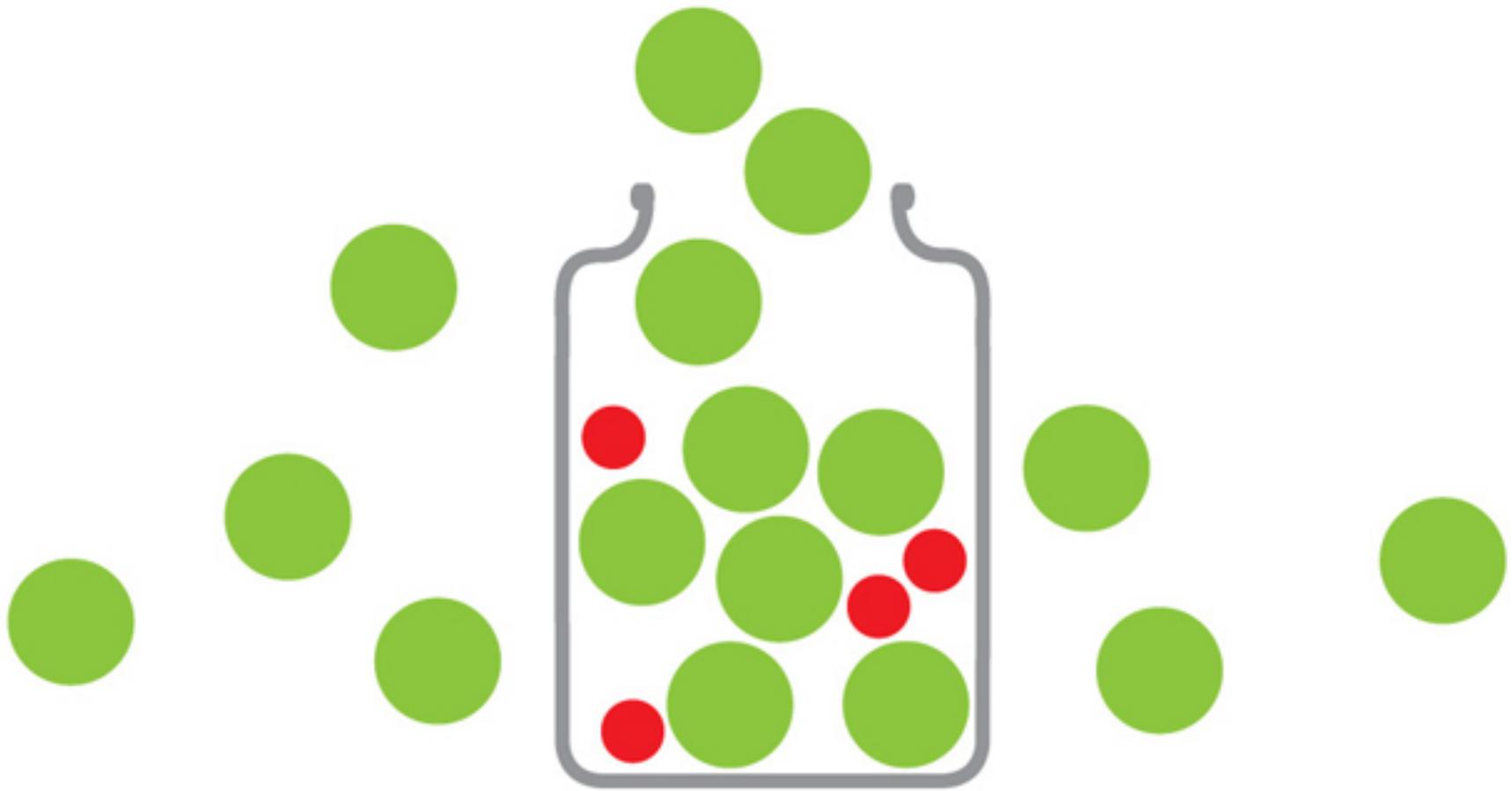
Enrich It



Absorb It



Link Positive and Negative Material



Have It, Enjoy It

# Let's Try It

---

- **Notice** something beneficial in awareness.
  - Have the experience – more in the foreground.
  - Enrich it – sustain it, feel it in your body.
  - Absorb it – receive it, imagine or sense it's sinking in.
  
- **Create** the experience of gladness or gratitude.
  - Have the experience.
  - Enrich it.
  - Absorb it.
  
- **Create** the experience of feeling cared about.
  - Have the experience.
  - Enrich it.
  - Absorb it.



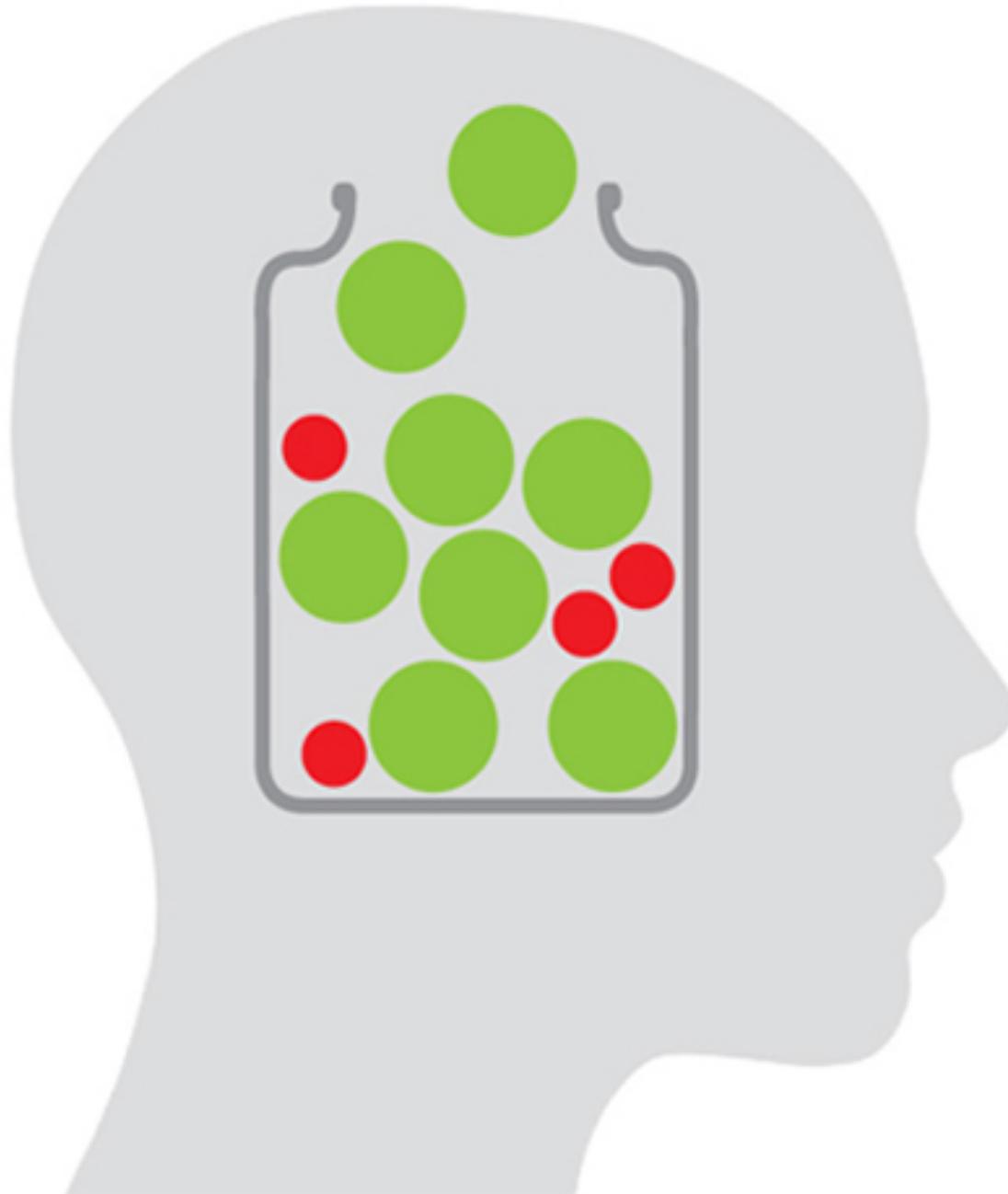
# **Growing Inner Strengths**

# Inner Strengths

---

- **Understandings**
- **Capabilities**
- **Positive emotions**
- **Attitudes**
- **Motivations**
- **Virtues**

# INNER STRENGTHS ARE BUILT FROM BRAIN STRUCTURE



A network of glowing yellow neurons with a central neuron highlighted in green. The neurons are interconnected by a dense web of fibers, creating a complex, interconnected structure. The background is dark, making the glowing neurons stand out. The text "Neurons that fire together," is overlaid on the top left, and "wire together." is overlaid on the bottom right.

Neurons that fire together,

wire together.

# The Neuropsychology of Learning

---

**Learning – changing neural structure and function – proceeds in two stages:**

**From state to trait**

**From activation to installation**

**From short-term memory buffers to long-term storage**

**Inner strengths are grown from experiences of them or related factors - activated states - that are installed as traits.**

---

**You become more compassionate  
by repeatedly installing experiences of compassion.**

**You become more grateful  
by repeatedly installing experiences of gratitude.**

**You become more mindful  
by repeatedly installing experiences of mindfulness.**

---

**Most experiences of inner strengths –  
resilience, kindness, insight,  
mindfulness, self-worth, love, etc. –  
are enjoyable.**

---

**Without installation – without turning passing mental states into enduring neural structure – there is no learning, no change in the brain.**

**Activation without installation is pleasant, but has no lasting value.**

**What fraction of your beneficial mental states ever become neural structure?**



# **The Negativity Bias**

# Velcro for Bad, Teflon for Good

---

The negativity bias

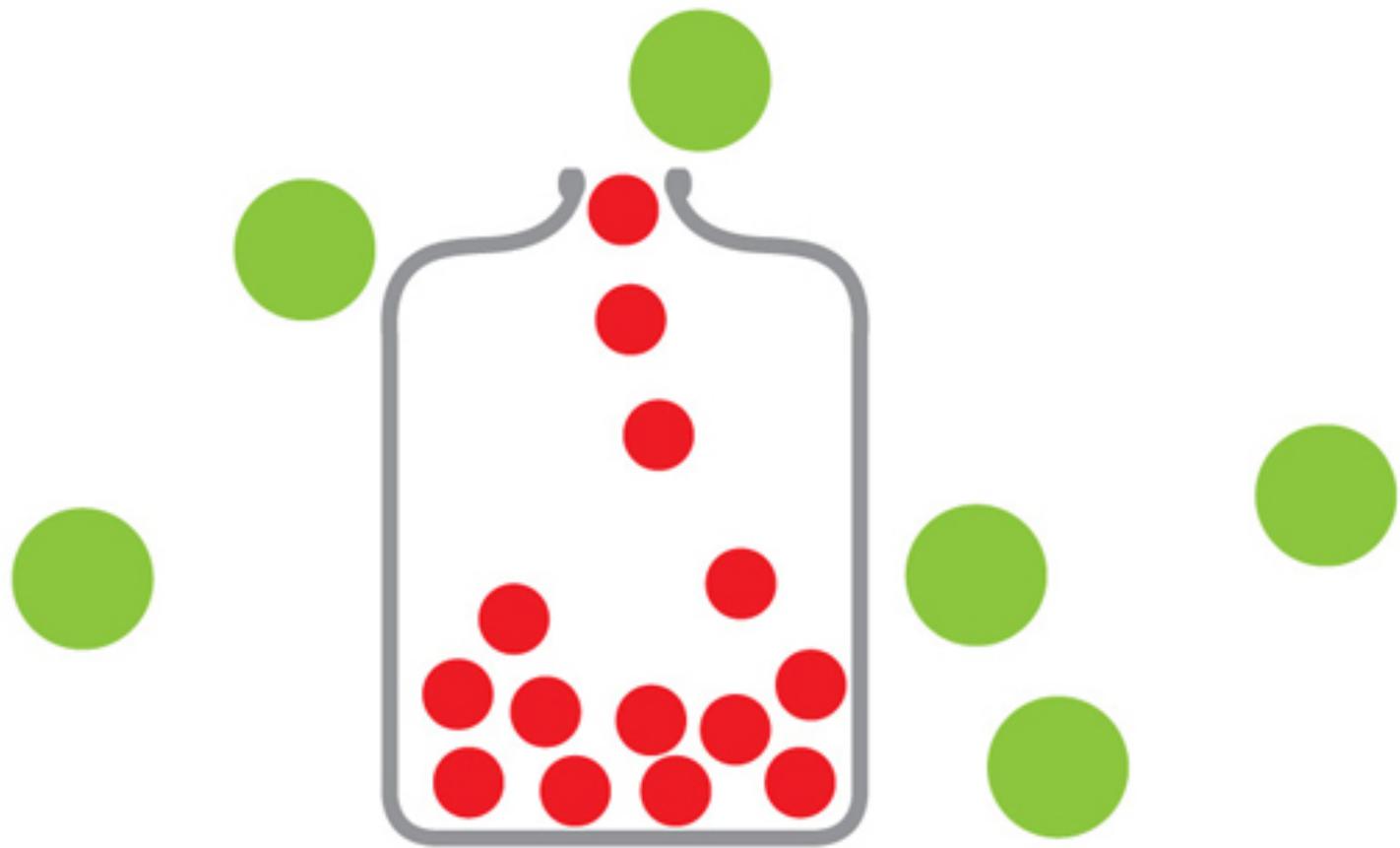
bad experiences

good experiences

# Negativity Bias

---

- As our ancestors evolved, avoiding “sticks” was more important for survival than getting “carrots.”
- Preferential encoding in implicit memory:
  - We learn faster from pain than pleasure.
  - Negative interactions: more powerful than positive
  - Easy to create learned helplessness, hard to undo
  - Rapid sensitization to negative through cortisol
- Most good experiences are wasted on the brain:  
lowers both the results of practice and motivation



The Negativity Bias

A composite image showing Stone Age people in a modern city park. In the background, there are tall, modern apartment buildings. In the foreground, three Stone Age people are crouching in a grassy field. The central figure is a man with long, dark hair and a beard, wearing a simple, dark, animal-skin garment. He is looking directly at the camera. To his left, another man is crouching, and to his right, a woman is crouching, both also wearing simple, animal-skin garments. The scene is set in a lush, green park with many trees and bushes. The overall image is a juxtaposition of ancient and modern environments.

# Stone age brains in the 21st century



# **The Three Ways to Engage the Mind**

# In the Garden of the Mind

---

1. Be with what is there
2. Decrease the negative
3. Increase the positive

Witness. Pull weeds. Plant flowers.

Let be. Let go. Let in.

Mindfulness is present in all three.

“Being with” is primary – but not enough.

We also need “wise effort.”

# Self-Compassion

---

- Compassion is the wish beings not suffer, with warm-hearted concern. Compassion is sincere even if we can't make things better.
- Self-compassion simply applies this to oneself.
- To encourage self-compassion:
  - Get the sense of being cared about.
  - Bring to mind beings you care about. Find compassion for them.
  - Shift the compassion to yourself.



# **Key Resource Experiences**

# Three Fundamental Motivational and Self-Regulatory Systems

---

- **Avoid Harms:**
  - Primary need, tends to trump all others
- **Approach Rewards:**
  - Elaborated via sub-cortex in mammals for emotional valence, sustained pursuit
- **Attach to Others:**
  - Very elaborated via cortex in humans for pair bonding, language, empathy, cooperative planning, compassion, altruism, etc.

# Some Types of Resource Experiences

---

## Avoiding Harms

- Feeling basically alright right now
- Feeling protected, strong, safe, at peace
- The sense that awareness itself is untroubled

## Approaching Rewards

- Feeling basically full, the enoughness in this moment as it is
- Feeling pleased, glad, grateful, satisfied
- Therapeutic, spiritual, or existential realizations

## Attaching to Others

- Feeling basically connected
- Feeling included, seen, liked, appreciated, loved
- Feeling compassionate, kind, generous, loving

# Pet the Lizard



# Feed the Mouse

---



# Hug the Monkey



# The Four Ways to Offer a Method

---

- Doing it implicitly
- Teaching it and then leaving it up to the person
- Doing it explicitly with the person
- Asking the person to do it on his or her own



# Healing Old Pain

# HEAL by Taking in the Good

---

1. **Have** a beneficial experience.
2. **Enrich** it.
3. **Absorb** it.
4. **Link** it with negative material. [optional]

# How Linking Works

---

- Activated negative material associates to whatever is also present in awareness.
- When negative material leaves awareness, these associations are reconsolidated in memory.
- This means that positive material can soothe, ease, put in perspective, and even replace negative material.
- Examples: pain held in spacious awareness; telling a friend about a problem; self-compassion for an upset; feeling cared about alongside feeling hurt

# Psychological Antidotes

---

## Approaching Opportunities

- Satisfaction, fulfillment --> Frustration, disappointment
- Gladness, gratitude --> Sadness, discontentment, “blues”

## Affiliating with “Us”

- Attunement, inclusion --> Not seen, rejected, left out
- Recognition, acknowledgement --> Inadequacy, shame
- Friendship, love --> Abandonment, feeling unloved or unlovable

## Avoiding Threats

- Strength, efficacy --> Weakness, helplessness, pessimism
- Safety, security --> Alarm, anxiety
- Compassion for oneself and others --> Resentment, anger

# Conditions for the Link Step

---

- Divided awareness; holding two things at once
- Not hijacked by negative; if so, drop negative
- Positive material is more prominent in awareness.

# Degree of Engagement with Negative

---

- The idea of the negative material
- A felt sense of the negative material
- The positive material goes into the negative material (e.g., soothing balm, filling up hollow places, connecting with younger layers of the psyche)

→ Throughout, the positive material remains more prominent in awareness.

# Skills with the 4<sup>th</sup> Step

---

- Be on your own side; you want the positive to win. Perhaps imagine inner allies with you.
- Be resourceful. It's OK to be creative, even playful.
- If the negative gets too strong, drop it; return to positive.
- Get a sense of receiving the positive into the negative.
- End with just the positive.
- Start with positive or negative material.

# The Tip of the Root

---

- For the fourth step of TIG, try to get at the youngest, most vulnerable layer of painful material.
- The “tip of the root” is commonly in childhood. In general, the brain is most responsive to negative experiences in early childhood.
- Prerequisites
  - Understanding the need to get at younger layers
  - Compassion and support for the inner child
  - Capacity to “presence” young material without flooding



# **The Law of Little Things**

---

*Think not lightly of good,  
saying, "It will not come to me."*

*Drop by drop is the water pot filled.*

*Likewise, the wise one,  
gathering it little by little,  
fills oneself with good.*

# Suggested Books

---

See [www.RickHanson.net](http://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](http://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.
- Braver, T. & Cohen, J. 2000. On the control of control: The role of dopamine in regulating prefrontal function and working memory; in *Control of Cognitive Processes: Attention and Performance XVIII*. Monsel, S. & Driver, J. (eds.). MIT Press.
- Carter, O.L., Callistemon, C., Ungerer, Y., Liu, G.B., & Pettigrew, J.D. 2005. Meditation skills of Buddhist monks yield clues to brain's regulation of attention. *Current Biology*, 15:412-413.

# Key Papers - 2

---

- Davidson, R.J. 2004. Well-being and affective style: neural substrates and biobehavioural correlates. *Philosophical Transactions of the Royal Society*, 359:1395-1411.
- Farb, N.A.S., Segal, Z.V., Mayberg, H., Bean, J., McKeon, D., Fatima, Z., and Anderson, A.K. 2007. Attending to the present: Mindfulness meditation reveals distinct neural modes of self-reflection. *SCAN*, 2, 313-322.
- Gillihan, S.J. & Farah, M.J. 2005. Is self special? A critical review of evidence from experimental psychology and cognitive neuroscience. *Psychological Bulletin*, 131:76-97.
- Hagmann, P., Cammoun, L., Gigandet, X., Meuli, R., Honey, C.J., Wedeen, V.J., & Sporns, O. 2008. Mapping the structural core of human cerebral cortex. *PLoS Biology*, 6:1479-1493.
- 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. 47

# Key Papers - 3

---

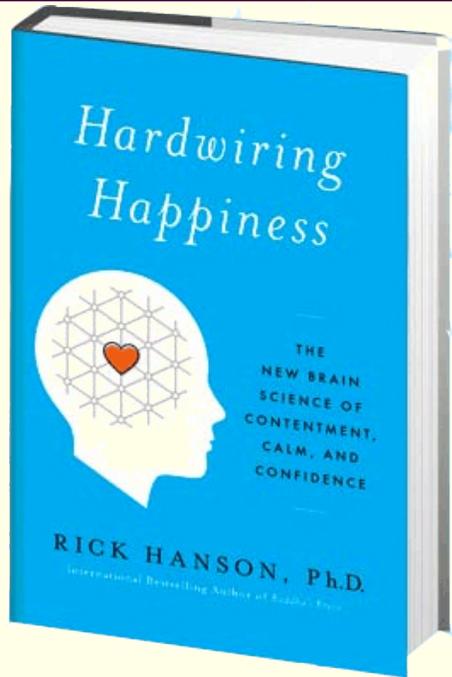
- Lazar, S., Kerr, C., Wasserman, R., Gray, J., Greve, D., Treadway, M., McGarvey, M., Quinn, B., Dusek, J., Benson, H., Rauch, S., Moore, C., & Fischl, B. 2005. Meditation experience is associated with increased cortical thickness. *Neuroreport*, 16:1893-1897.
- Lewis, M.D. & Todd, R.M. 2007. The self-regulating brain: Cortical-subcortical feedback and the development of intelligent action. *Cognitive Development*, 22:406-430.
- 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.

# Key Papers - 4

---

- Rozin, P. & Royzman, E.B. 2001. Negativity bias, negativity dominance, and contagion. *Personality and Social Psychology Review*, 5:296-320.
- 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.
- Walsh, R. & Shapiro, S. L. 2006. The meeting of meditative disciplines and Western psychology: A mutually enriching dialogue. *American Psychologist*, 61:227-239.

## *Where to Find Rick Hanson Online*



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

[www.rickhanson.net/hardwiringhappiness](http://www.rickhanson.net/hardwiringhappiness)

Personal website: [www.rickhanson.net](http://www.rickhanson.net)

Wellspring Institute: [www.wisebrain.org](http://www.wisebrain.org)



[youtube.com/drrhanson](https://www.youtube.com/drrhanson)



[facebook.com/rickhansonphd](https://www.facebook.com/rickhansonphd)