
*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.*

The Professional Course:

In Positive Neuroplasticity

Rick Hanson, Ph.D.

The Wellspring Institute For Neuroscience and Contemplative Wisdom

www.RickHanson.net

www.WiseBrain.org



Foundations

What Is Positive Neuroplasticity?

**The deliberate internalization
of beneficial experiences
in implicit memory**

Informally called “taking in the good”

Welcome to the Professional Course

■ Aims

- **Explain. Guide. Embody.**
- **Deepen embodiment of positive neuroplasticity (PN)**
- **Understand theory and have practical skills**
- **Deepen supportive qualities**
- **Use PN with others, typically in occupational settings**

■ Methods

- **Internal practice, trying methods with a partner, small group discussion, whole group lecture and discussion**
- **Presumed capabilities to work with others, give and get feedback skillfully, and basic understanding of PN**

■ Questions?

Who Is Here?

- **Therapists and counselors?**
- **Coaches?**
- **Mindfulness trainers?**
- **Healthcare providers?**
- **Business consultants?**
- **Managers?**
- **Parents?**
- **Educators?**
- **Yoga teachers?**
- **Bodywork providers?**

Let's Practice

Centering and grounding yourself

Accepting your inner world as it is

Opening to and taking in a growing sense of:

- **Peace**
- **Contentment**
- **Love**

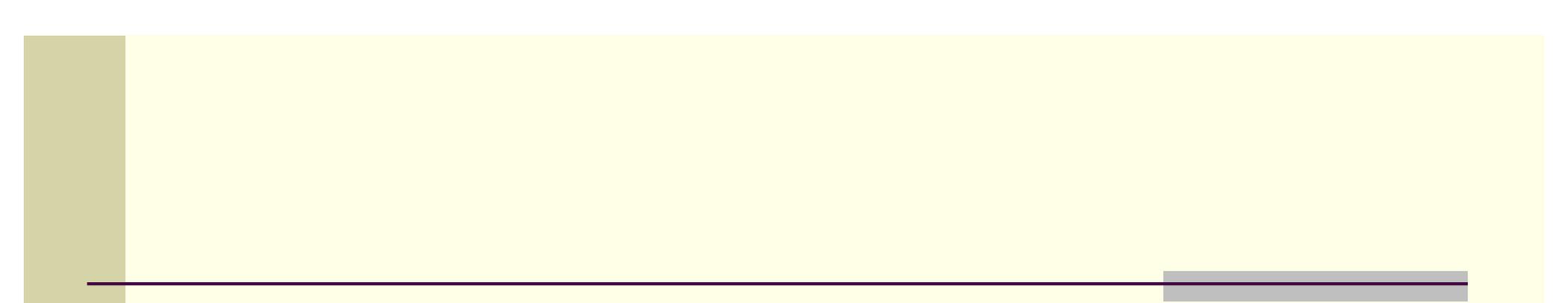
**Pick a partner and choose an A and a B (A's go first).
Then take turns, with one partner speaking while
the other person listens. I'll explain how you'll
switch roles.**

**Imagine that you have just done the Positive
Neuroplasticity Training and you are telling
an interested friend or colleague about it.**

**Who does not know about PNT and asks you
these questions (~ 2 min. each) . . .**

Could You Tell Me . . . ?

- 1. In a nutshell, what was it about?**
- 2. What did you gain personally?**
- 3. How can you use your mind to change your brain?**
- 4. Will this get you attached to happy moments?**
- 5. What's this HEAL process? (4 min.)**
- 6. Why is the 4th step optional?**
- 7. Can you use this approach for any special needs?**
- 8. Are there risks or cautions?**



How was that?

What was easy to explain?

What was harder?



Growing Strengths

Examples of Inner Strengths?

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

Move around the room, interacting briefly with others, one person at a time.

One person says: “One strength in me is X.”

The other person says: “I recognize X in you.”

Then switch roles.

Then find another person and do it again.

→ Keep it real. And take it in.

Move around the room, interacting briefly with others, one person at a time.

First person: “One strength I’m developing is X.”

Second person: “How are you developing X?”

First person: “I’m developing X by _____.”

Then switch roles.

Then find another person and do it again.

→ Keep it real. And take it in.

Challenges, Vulnerabilities, Strengths

How was that?

Course over time =

Challenges + Vulnerabilities + Strengths

What *inner* strengths would help with:

- **Anxiety**
- **Feeling hurt**
- **Addictions**
- **Needing to assert yourself**

Cultivation De-fuels Craving

- It is wholesome to wish for the happiness and welfare of all beings - including yourself.
- We rest the mind upon positive states so that the brain may gradually take their shape. This disentangles us from craving as we increasingly rest in a peace, contentment, and love that is independent of external conditions.
- With time, even the practice of cultivation falls away – like a raft that is no longer needed once we reach the farther shore.

We will soon form “pods,” groups of 3-5 people. We’ll start with pods containing diverse interests, and then see later if we should form special interest pods.

In your pod, address one question one person at a time, then do next question:

- **Background, intended applications of PN – and how do you feel about being open here among peers?**
- **What is **profound** about PN?**

Group Discussion

What is **profound** about positive neuroplasticity?

What Is Profound about PN? (1)

- Receptive intimacy with experiencing
- Recognizing the beneficial in experience
- Recognizing good facts all around
- Courage to change and be changed
- Benevolence toward yourself
- Autonomy inside your own mind – especially when pushed by forces
- Self-reliance; don't need therapeutic authorities

What Is Profound about PN? (2)

- **Recognizing challenges and suffering – for which we need inner strengths**
- **Appreciating soft longing heart of others**
- **Opportunities for rapid success, positive feedback**
- **Undoing underlying causes of “craving”**
- **“Cultural disobedience”**
- **Radical receptivity while letting go**
- **Gentle mastery in experiencing**



Review of HEAL [background]

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.

Recognizing. Releasing. **Resourcing.**

Mindfulness is present in all three.

“Being with” is primary – but not enough.

We also need wise effort: releasing & resourcing.²²

The Neuropsychology of Learning

**Learning – changing neural structure
and function – has 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.**

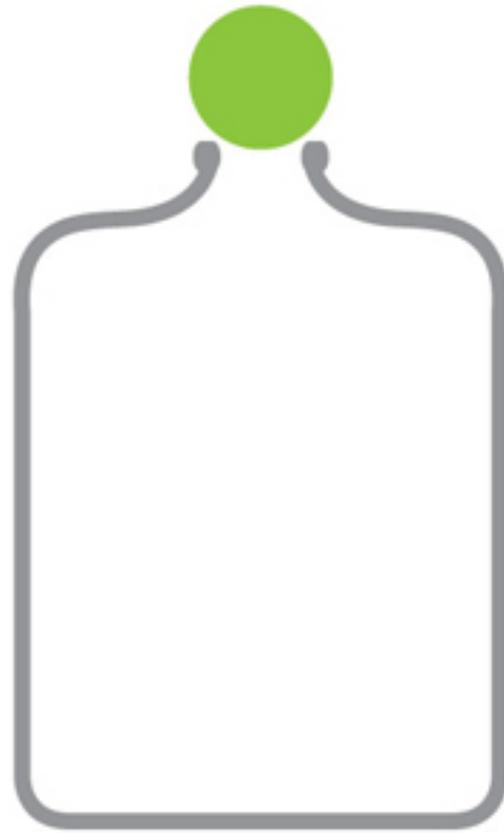
Positive Neuroplasticity – How to Take in the Good: HEAL

Activation

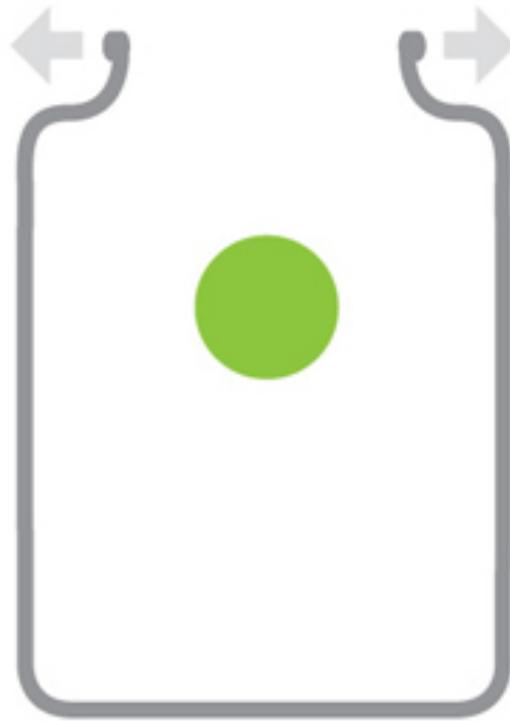
1. Have a beneficial experience.

Installation

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



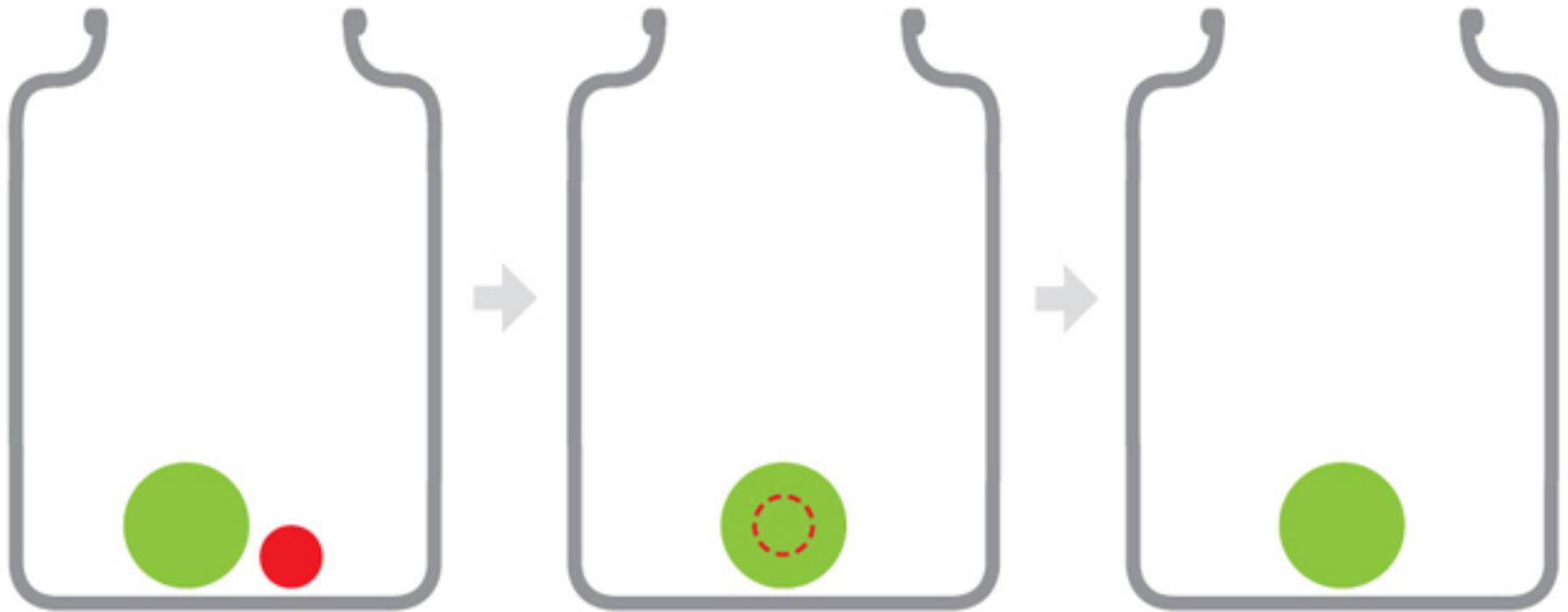
Have a Beneficial Experience



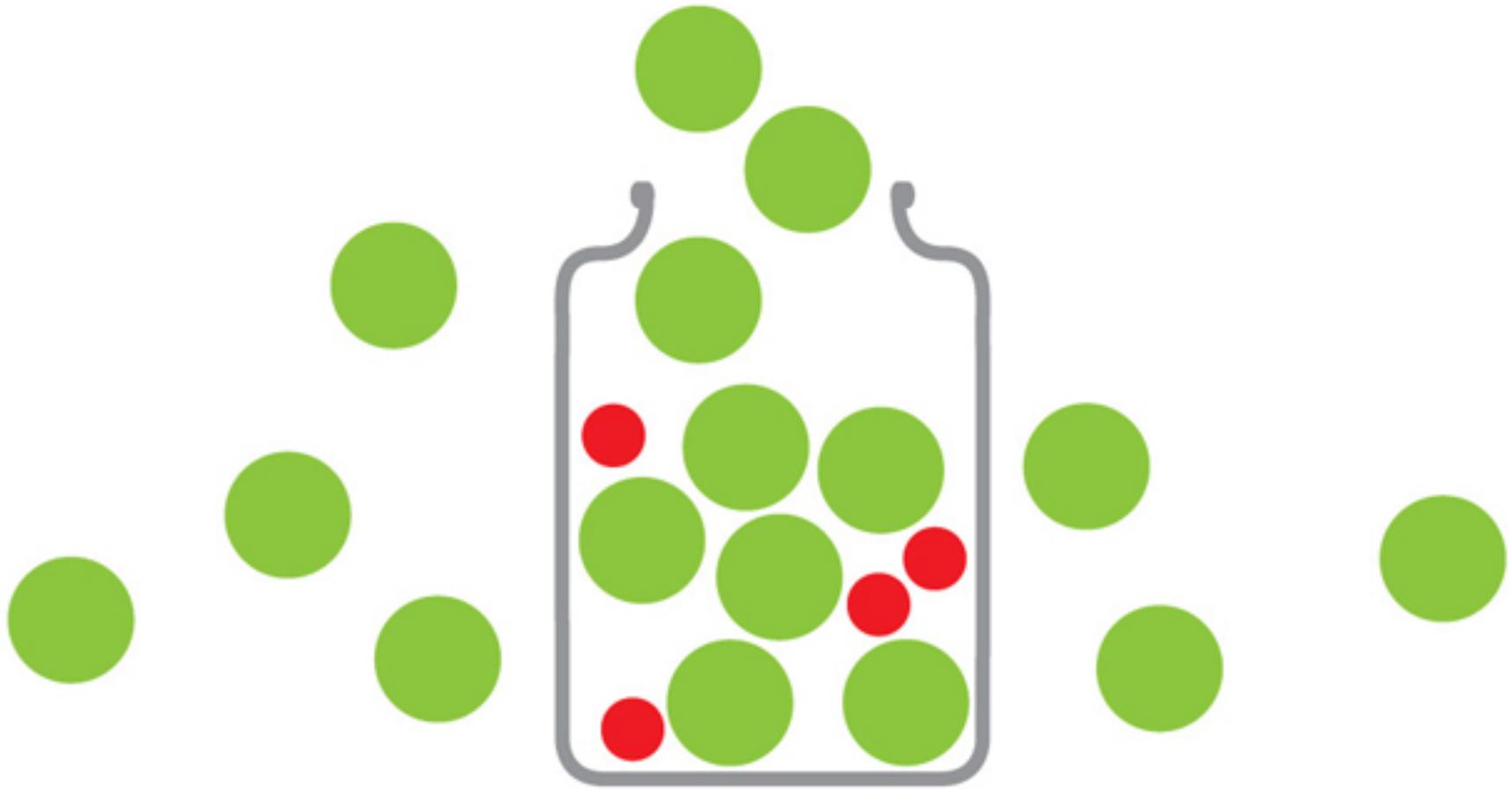
Enrich It



Absorb It



Link Positive and Negative Material



Have It, Enjoy It



Using HEAL with Others

Resources for HEAL

- Intention; willing to feel good
- Identified target experience
- Openness to the experience; embodiment
- Mindfulness of the HEAL steps to sustain them
- Working through blocks

The Four Ways to Offer a Method

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

Using HEAL in Trainings

- Take a few minutes to explain its rationale and teach it explicitly.
- In the flow, occasionally encourage enriching and absorbing, using natural language.
- Tell people they can use HEAL outside of class to deepen internalization of what they're learning.
- Don't use HEAL when it's inappropriate (e.g., radically choiceless awareness, highly self-critical about any kind of performance).

Synergies of HEAL and Mindfulness

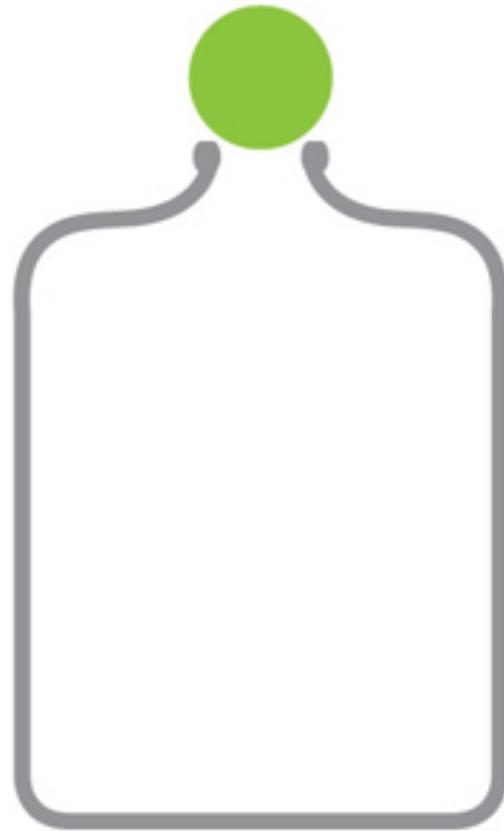
- Improved mindfulness enhances HEAL.
- HEAL increases factors of mindfulness (e.g., executive functions, self-compassion, determination, distress tolerance).
- HEAL heightens learning from mindfulness:
 - The sense of stable presence itself
 - Disidentifying from reactions
 - Deepening centeredness
 - Insight into nature of experience

A Demonstration

- A volunteer? Briefly: what's the issue?
- I'll focus on **resourcing**; with more time, there'd be more inclusion of letting be and letting go.
- Potential key points:
 - Natural process of many choices along the way
 - Getting to the challenge as it's experienced
 - Identifying useful state(s)/trait(s); picking one(s) that is/are accessible
 - Slowing it down; encouraging embodiment
 - Linking when it feels right



Skills with “Noticing”



Have a Good Experience

The Two Ways To Have a Beneficial Experience

Notice one you are already having.

- In the foreground of awareness
- In the background

Create one.

**It is remarkable that
there are always beneficial aspects
of ongoing experience.**

**There are always opportunities
for internalizing beneficial experiences.**

Elements of Experience

- **Thought** – belief; perspective; expectation; image; memory; idea
- **Perception** – sensation (e.g., relaxation, vitality); sight; sound; taste; smell
- **Emotion** – feeling; mood
- **Desire** – want; wish; hope; value; drive; motivation; purpose; dream; passion; determination
- **Action** – behavior; posture; knowing how to

**Pick a partner and choose an A and a B (A's go first).
Then take turns, with one partner speaking while the other person listens. Go all the way through (~ 10 minutes) and then switch roles.**

**A's choose one or more beneficial experiences.
B's, help A's identify the five aspects of experience: thoughts, perceptions, emotions, desires, and actions.**

As a bonus, you can take in these aspects of experience as you identify them.

Elements of Experience

- **Thought** – belief; perspective; expectation; image; memory; idea
- **Perception** – sensation (e.g., relaxation, vitality); sight; sound; taste; smell
- **Emotion** – feeling; mood
- **Desire** – want; wish; hope; value; drive; motivation; purpose; dream; passion; determination
- **Action** – behavior; posture; knowing how to



Skills with “Creating”

How to Create A Beneficial Experience

Look for good facts in:

1. Immediate situation
2. Current or recent events
3. Stable conditions
4. Your character
5. The past
6. The future
7. Bad situations
8. The lives of others
9. Your imagination
10. Care about others
11. Directly evoke a beneficial experience
12. Produce good facts
13. Share about good facts with others

Most of these involve

(1) recognizing good **facts and**

(2) having a good **experience.**

Both are challenging for many people.

Turning a Good Fact Into a Good Experience

- Bring awareness to your body.
- Soften and open yourself.
- Be a little active in your mind, recognizing aspects of the good fact that naturally elicit an experience.
- Imagine how another person might naturally feel in response to the good fact.
- Have kindness for yourself, encouraging yourself to have a beneficial experience.

Find a partner, pick A and B. Go back and forth about each type of good fact (~ 90 sec. each), then on to the next type:

- 1. Immediate situation**
- 2. Current or recent events**
- 3. Stable conditions**
- 4. His or her character**
- 5. The past**
- 6. The future**
- 7. Bad situations**
- 8. The lives of others**



Helping People with Blocks

Reflections on “Blocks”

- Blocks = mental factors that reduce, derail, inhibit, or defend against mental activities that would be beneficial for a person.
- Blocks are not bad. They are normal, a means of coping, often a “solution” that once made sense but is now a “problem.”
- Explore the benefits, payoffs, functions, purpose of the block. “Join with the defense.”
- Then see if there might be better ways to accomplish the same purpose.

Blocks to Any Inner Practice

- Distractibility
- Out of touch with experience
- Uncomfortable bringing attention inward
- Over-analyzing, pulling out of the experience

Blocks to Taking in the Good

- It's hard to receive, even a good experience
- Concern you'll lose your edge; fear you'll lower your guard
- Idea that feeling good is disloyal or unfair to those who suffer
- Belief you don't deserve to feel good
- Not wanting to risk disappointment
- As a woman, socialized to make others happy, not yourself
- As a man, socialized to be stoic and not care about feelings
- You've been punished for being energized or happy
- Good things in you have been dismissed
- Positive experiences associate to negative ones
- "What's the point in feeling good, bad things will still happen"
- Payoffs in not feeling good
- Not wanting to let others off the hook
- TG is craving that leads to suffering

A Demonstration

- A volunteer? Briefly: what's the block?
- Potential key points:
 - There's often poignance about the block: the pain it's been managing, how hard life has been. Sometimes the block becomes a major clinical focus.
 - Being attentive to: "you don't get it; easy for you to say; yes, but; I'm afraid to try something different"
 - Identifying the dreaded experience the block prevents; finding and installing resources to risk or cope with it
 - Identifying problematic beliefs; finding and installing new, true, and useful beliefs
 - Being matter-of-fact, normalizing

Return to your pods.

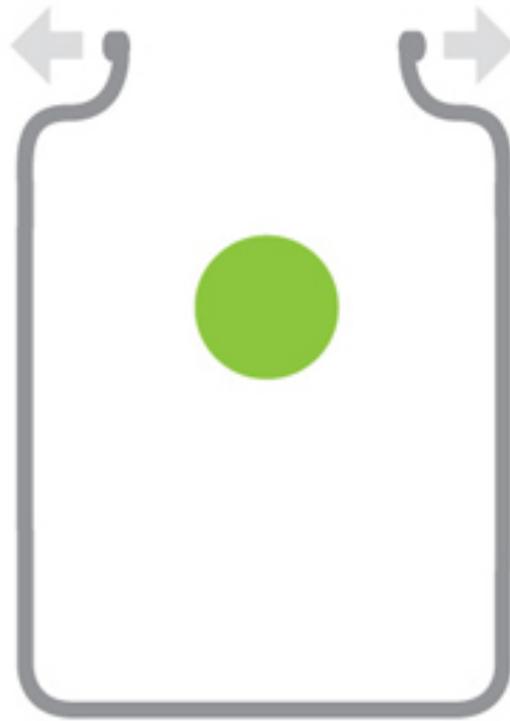
One person at a time, pick a block that is personally or professionally relevant. As a group, discuss ways to help with it.

Then the next person, usually with a different block.

→ When it's your turn, you're in charge.



Skills with Installing



Enrich It

Factors of Enriching

- **Duration** – 5+ seconds; protecting it; keeping it going
- **Intensity** – opening to it in the mind; helping it get big
- **Multimodality** – engaging multiple aspects of experience, especially perception and emotion
- **Novelty** – seeing what is fresh; “don’t know mind”
- **Salience** – seeing why this is personally relevant

What questions do you have about:

Duration?

Intensity?

Multimodality?

Novelty?

Salience?



Absorb It

Absorbing an Experience

- Enriching makes the experience more powerful.
Absorbing makes memory systems more receptive by priming and sensitizing them (e.g., dopamine).
- Intend and sense the experience is sinking into you.
 - Imagery – Water into a sponge; golden dust sifting down; a jewel into the treasure chest of the heart
 - Sensation – Warm soothing balm
- Giving over to the experience; letting it change you
- Letting go of resisting, grasping, clinging: “craving”

Pick a partner and choose an A and a B (A's go first).

B's, tell your partner about an important beneficial experience for you.

A's, take your partner through the first three steps of HEAL.

B's tell A's what worked well in what they did. (Take it in!) Then switch roles.

Then find another partner and repeat.



The Importance of Installation

**Without installation
there is no learning,
no change in the brain.**

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

*The same research that proves therapy works
shows no improvement in outcomes
over the last 30 or so years.*

Scott Miller

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

**What fraction of
your clients' or students'
beneficial mental states
ever become neural structure?**

Return to your pods.

Have a general discussion of:

- **Challenges to installation in your settings**
- **Approaches for increasing installation**

→ Make sure everyone gets to talk.



Benefits of Positive Neuroplasticity

[background]

It's Good to Take in the Good

- Development of specific inner strengths
 - General - resilience, positive mood, feeling loved
 - “Antidote experiences” - Healing old wounds, filling the hole in the heart
- Implicit benefits:
 - Shows that there is still good in the world
 - Being active rather than passive
 - Treating yourself kindly, like you matter
 - Rights an unfair imbalance, given the negativity bias
 - Training of attention and executive functions
- Sensitizes brain to positive: like Velcro for good

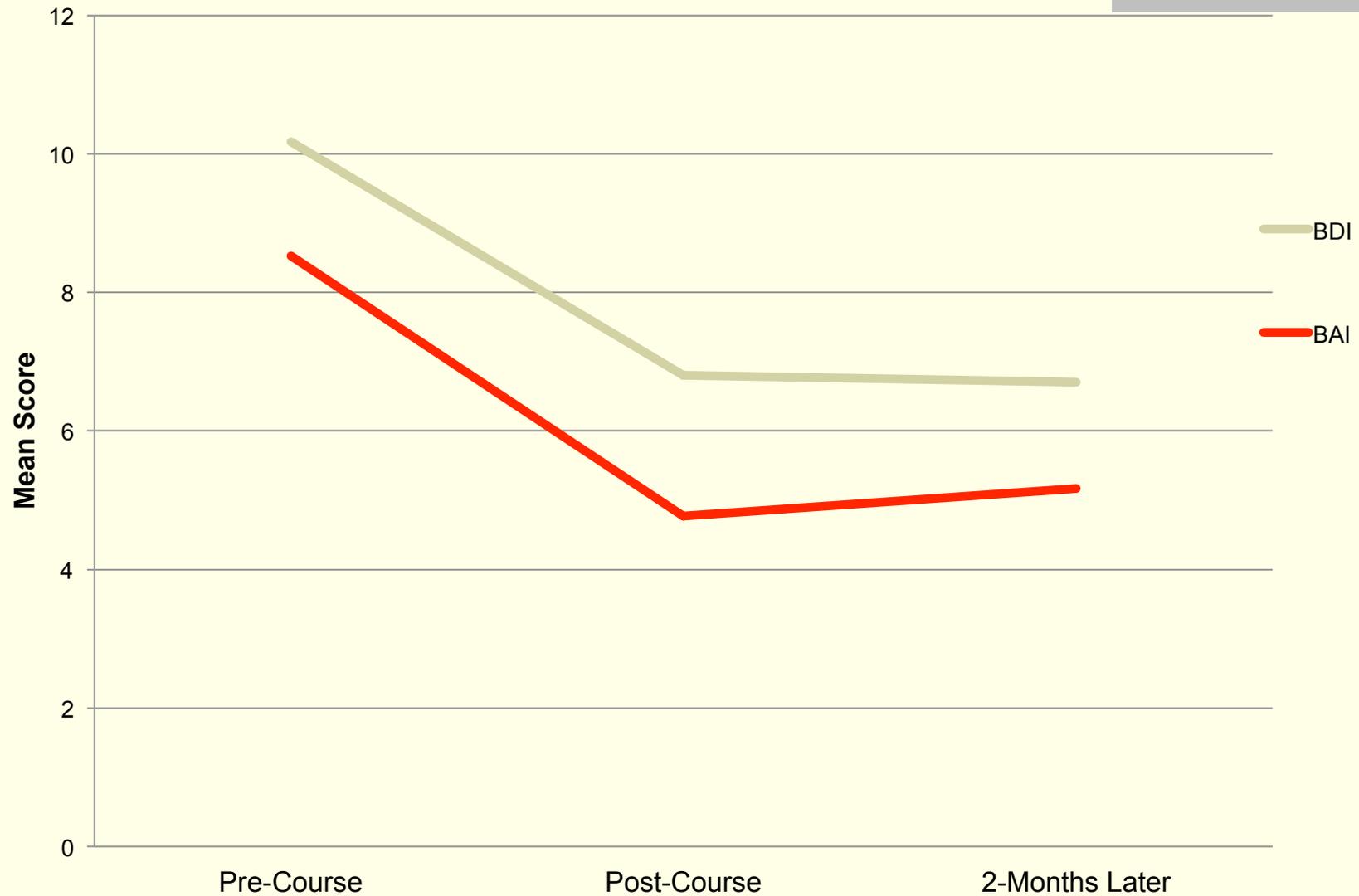
*Keep a green bough in your heart,
and a singing bird will come.*

Lao Tsu

Research on the HEAL Process

- With collaborators from the University of California, a 2013 study on the HEAL course, using a randomized waitlist control group design (46 subjects).
- Course participants, compared to the control group, reported more Contentment, Self-Esteem, Satisfaction with Life, Savoring, and Gratitude.
- After the course and at two month follow-up, pooled participants also reported more Love, Compassion, Self-Compassion, Mindfulness, Self-Control, Positive Rumination, Joy, Amusement, Awe, and Happiness, and less Anxiety and Depression.

Combined Sample: Depression (BDI) & Anxiety (BAI)





Experience-Dependent Neuroplasticity [background]



First, respect for mystery.

*The brain is wider than the sky,
For, put them side by side,
The one the other will include
With ease, and you beside.*

Emily Dickinson

We ask, “What is a thought?”

We don't know,

yet we are thinking continually.

Venerable Tenzin Palmo



Second, the hardware.



Your Brain: The Technical Specs

■ **Size:**

- 3 pounds of tofu-like tissue
- 1.1 trillion brain cells
- 85 billion “gray matter” neurons

■ **Activity:**

- Always on 24/7/365 - Instant access to information on demand
- 20-25% of blood flow, oxygen, and glucose

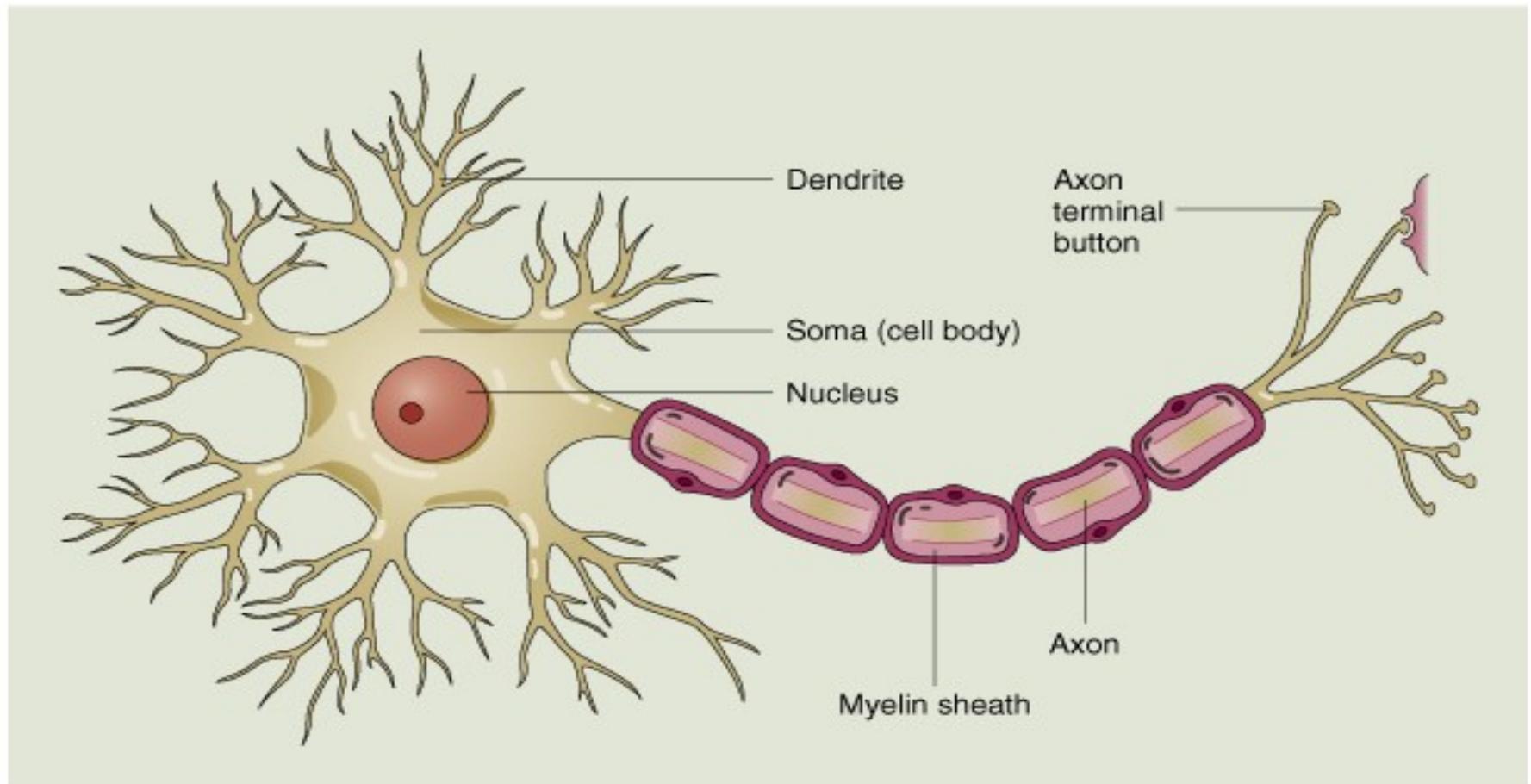
■ **Speed:**

- Neurons firing around 5 to 50 times a second (or faster)
- Signals crossing your brain in a tenth of a second

■ **Connectivity:**

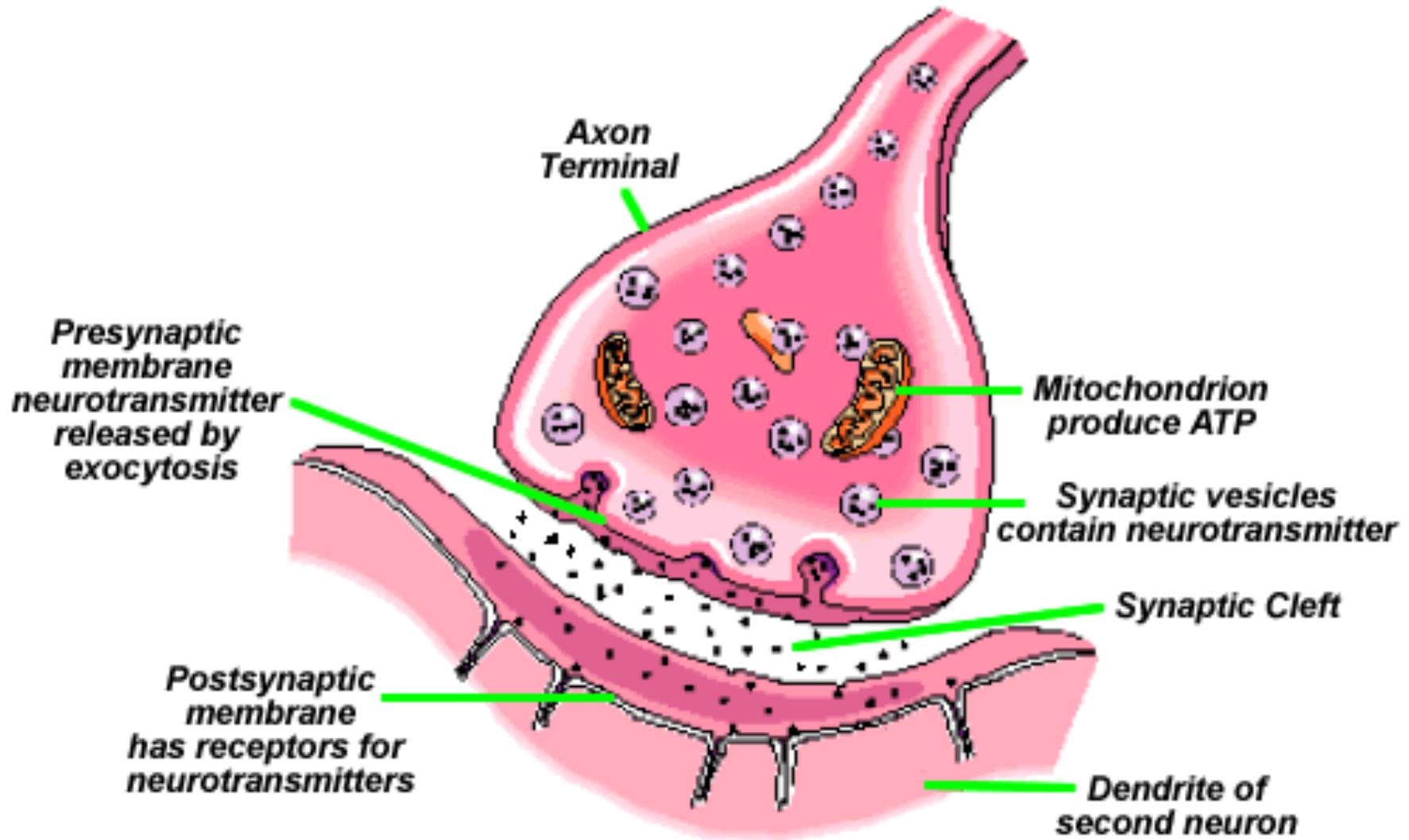
- Average neuron makes ~ 5000 connections with other neurons:
~ 500 trillion synapses

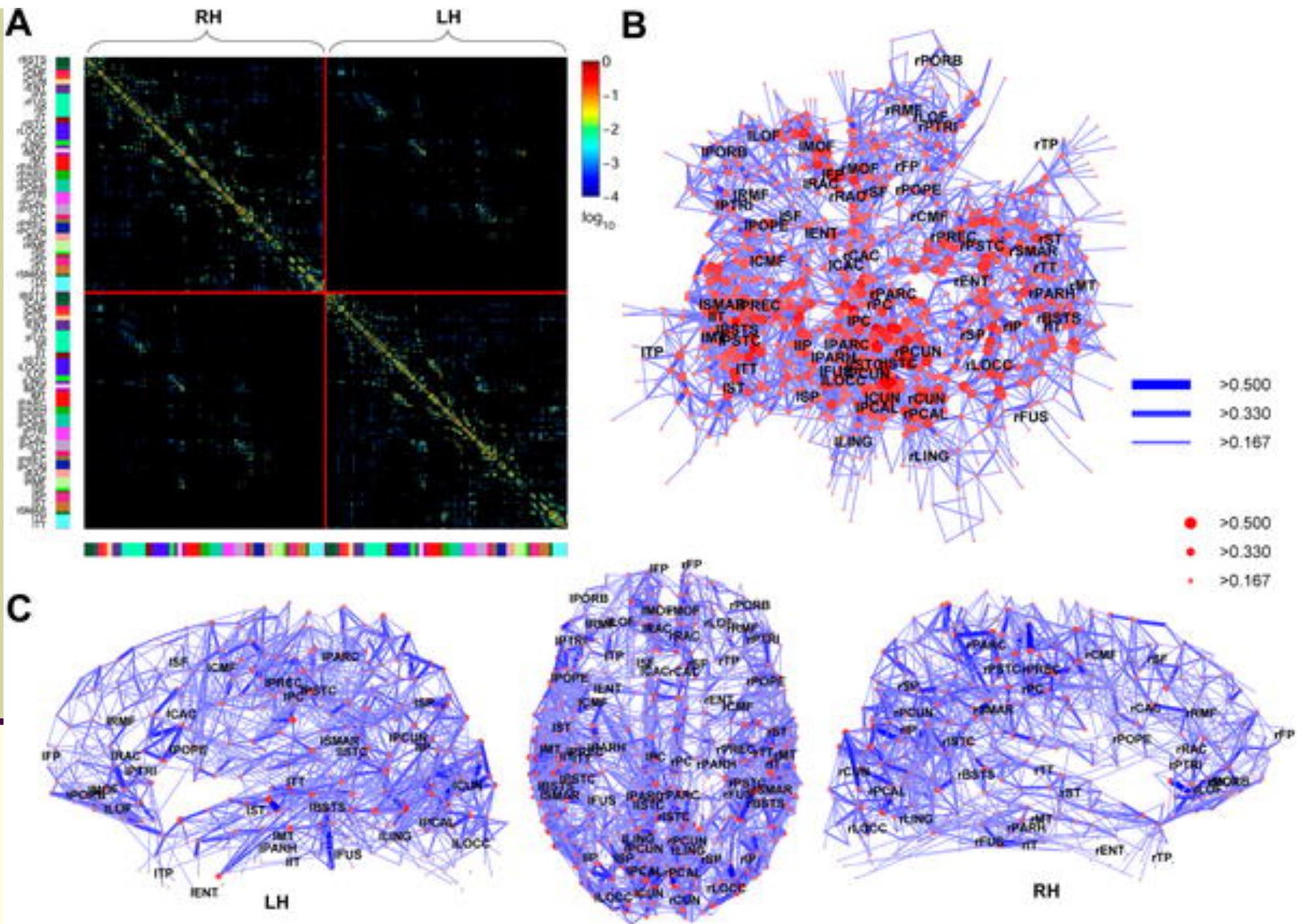
A Neuron



© 2000 John Wiley & Sons, Inc.

A SYNAPSE







Third, the mind.

What's the purpose of all this hardware?





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.

The Natural Mind

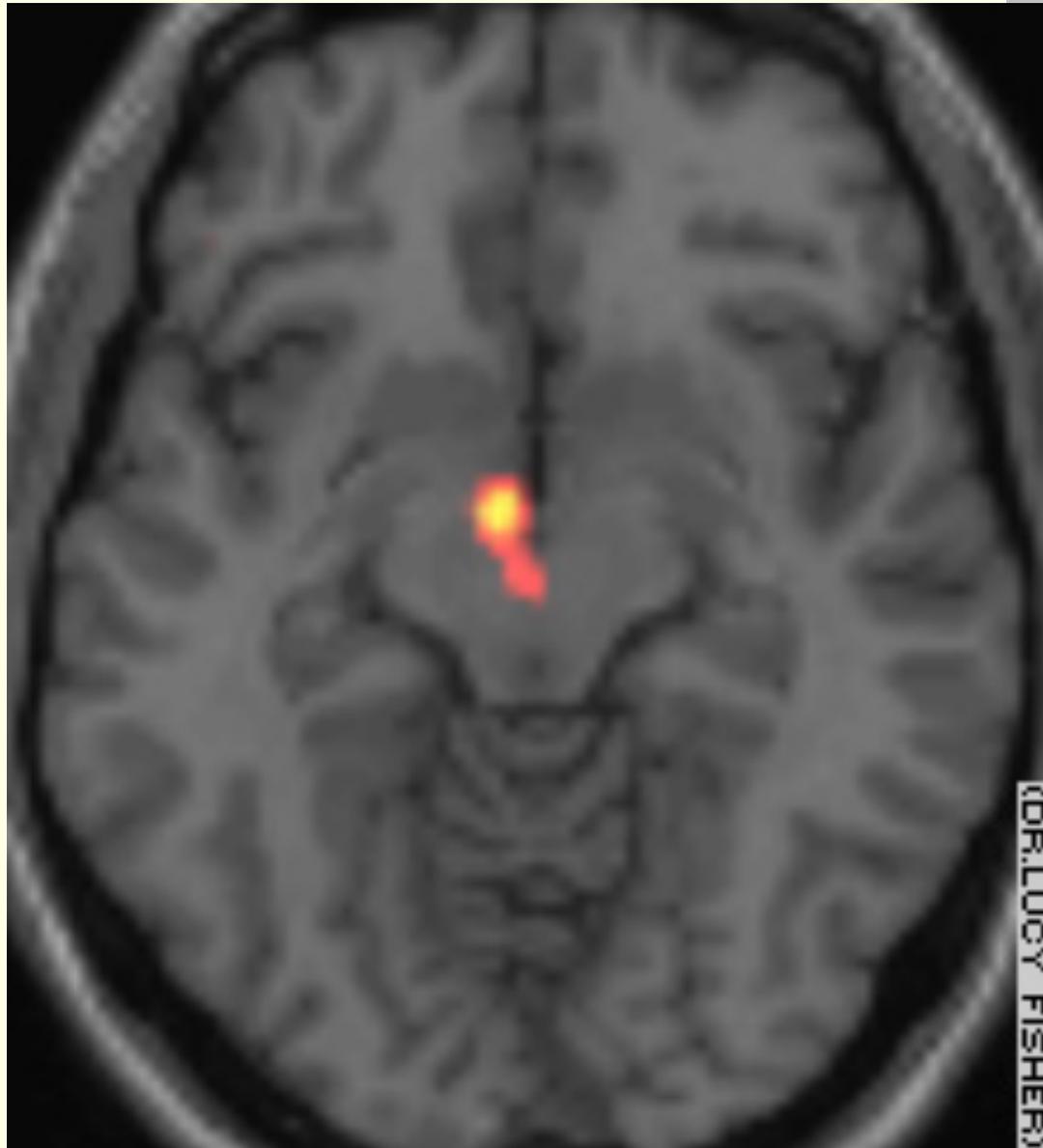
Apart from the hypothetical influence of a transcendental X factor . . .

Awareness and unconsciousness, mindfulness and delusion, and happiness and suffering must be natural processes.

Mind is grounded in life.

**Mental activity entails
underlying neural activity.**

Rewards of Love



(DR. LUCY FISHER)

**Repeated mental activity entails
repeated neural activity.**

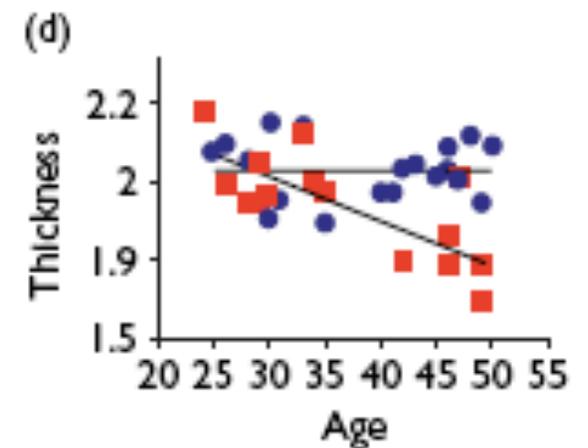
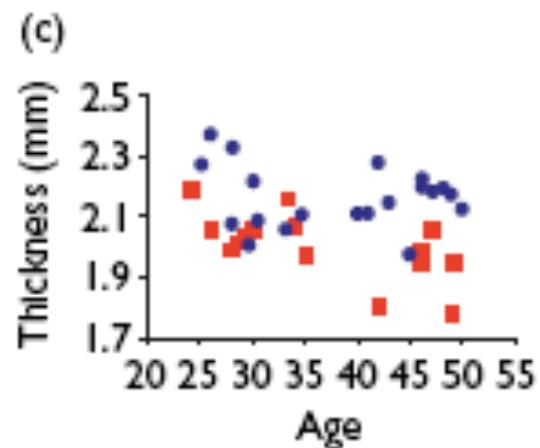
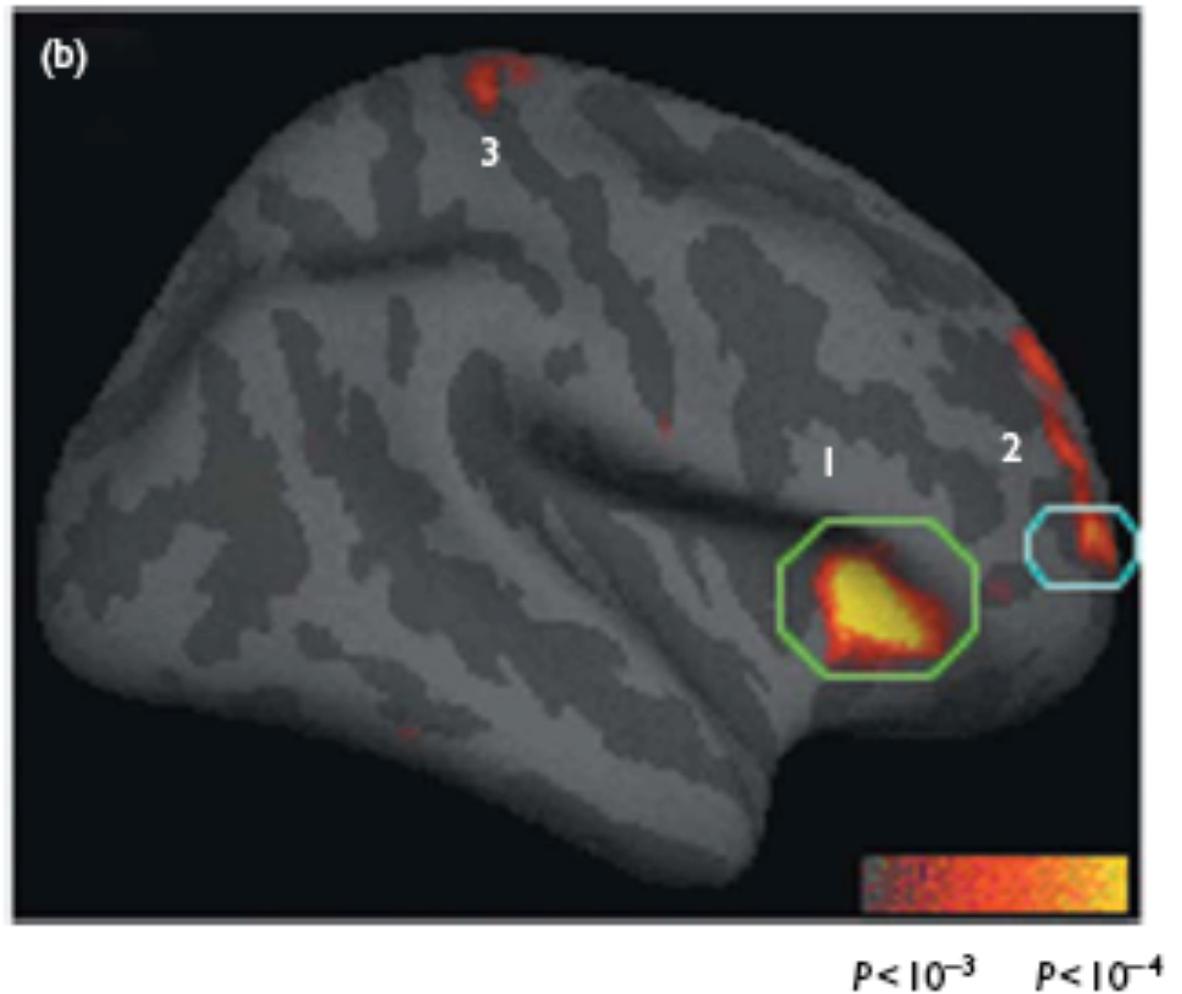
**Repeated neural activity
builds neural structure.**

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.

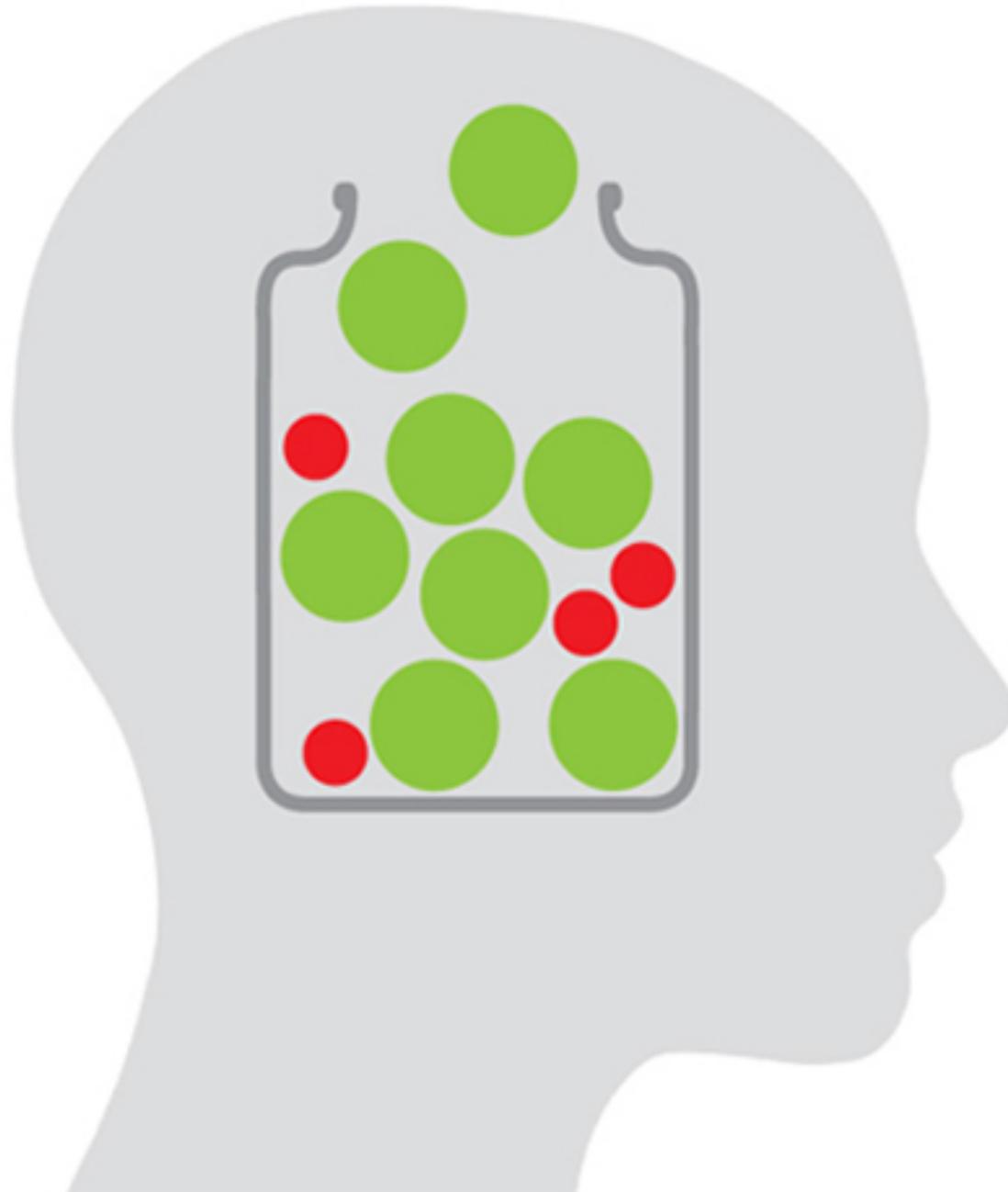
Neurons that fire together,

wire together.

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



INNER STRENGTHS ARE BUILT FROM BRAIN STRUCTURE





We can use the mind

To change the brain

To change the mind for the better

To benefit ourselves and other beings.



The Negativity Bias [background]

Negative Experiences In Context

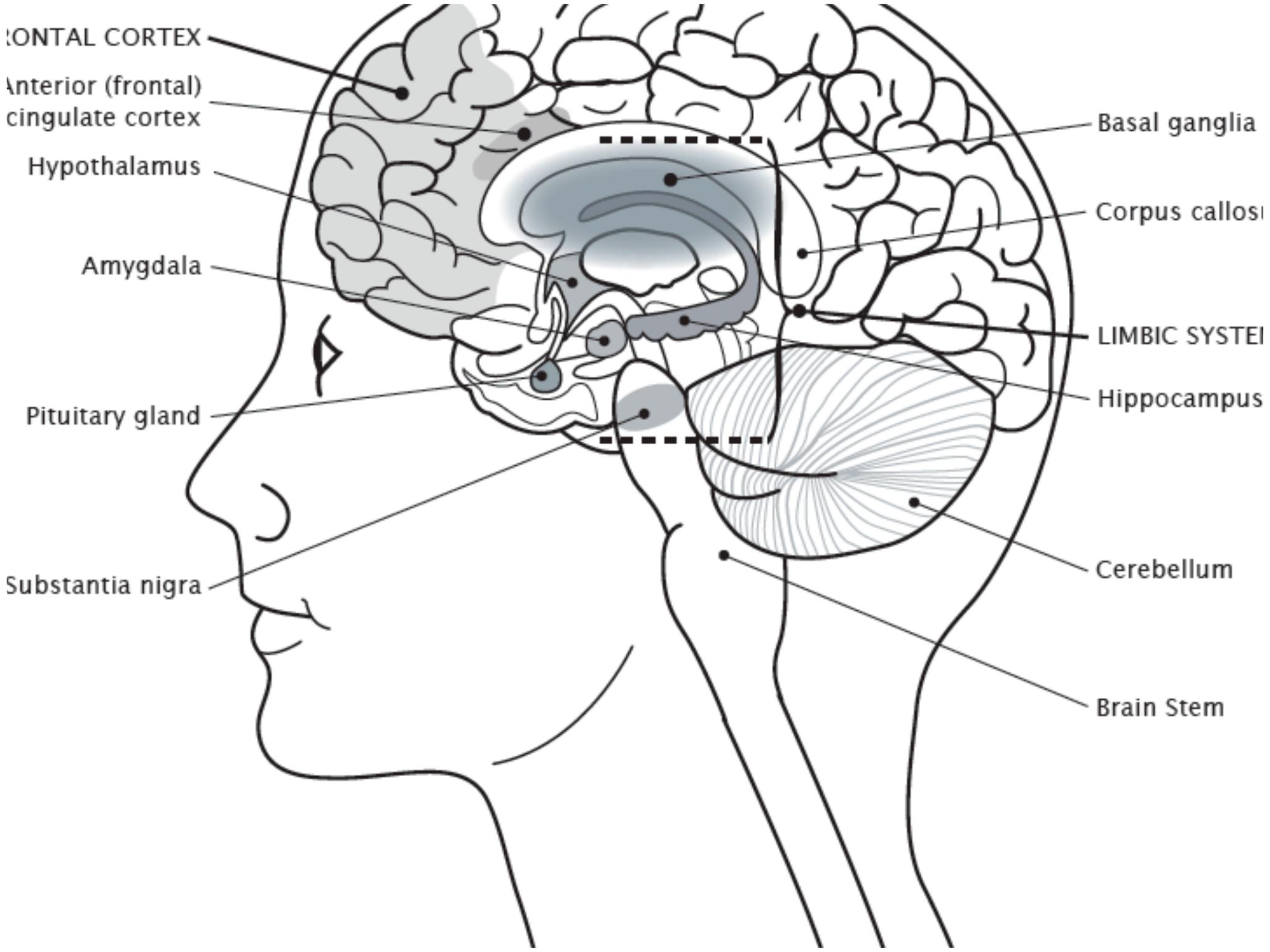
- Negative about negative → more negative
- Some inner strengths come only from negative experiences, e.g., “stress inoculation.”
- But negative experiences have inherent costs, in discomfort and stress.
- Could an inner strength have been developed without the costs of negative experiences?
- Many negative experiences are pain with no gain.⁹⁵

The Brain's Negativity Bias

As our ancestors evolved, “sticks” generally had more urgency and impact than “carrots.”

As one major feature of the brain:

1. We scan for bad news.
2. Over-focus on it, losing sight of the whole
3. Over-react to it (e.g., brain, loss aversion)
4. Install it rapidly in implicit memory (e.g., negative interactions, learned helplessness)
5. Sensitize the brain to the negative
6. Create vicious cycles



**The brain is good at
learning from bad experiences
but bad at learning from good ones.**

**Even though learning
from good experiences
is the primary way
to grow psychological resources.**

The installation of beneficial experiences is worth doing in its own right.

The negativity bias adds another reason: to compensate for our over-learning from the negative.



Key Resource Experiences

**We have three needs,
managed by three systems,
linked to three layers of the brain,
evolved in three stages.**

The three systems have two settings.

**One practice pulls us out of the red zone
and deepens our roots in the green zone.**

Any questions?!

RESOURCES FOR AVOIDING HARM

Challenge

Weakness

Helplessness

Freezing,
immobilization

Inflated threats

Alarm

Tension

Worry, fear

Irritation, anger

Resource

Strength

Agency

Action, venting

Accurate appraisal

Protection, calming

Relaxation

Feeling alright now,
making a plan

Big picture, peace

RESOURCES FOR APPROACHING REWARDS

Challenge

What I don't have

Scarcity

Disappointed, sad

Frustration, failure

Bored, numb

Grief

Giving up

Drivenness

Resource

What I do have

Enoughness,
fullness

Gratitude, gladness

Accomplishment

Pleasure, excitement

Loved and loving

Aspire, lived by good

Already satisfied ¹⁰³

RESOURCES FOR ATTACHING TO OTHERS

Challenge

Left out, excluded
Inadequacy, shame
Ignored, unseen
Lonely

Resentment
Envy, jealousy

Feeling stifled

Resource

Belonging, wanted
Appreciated, respected
Receiving empathy
Friendship, caring
to others and oneself
Recognize it hurts you
Self-compassion, take
action, good will
Skillful assertiveness

Questions for Identifying Resources

- What would have made all the difference in the world – in your childhood, first job, last relationship, etc.? (Focus on the **experience** of state or trait that would have resulted from better relationships, settings, events, etc.)
- What does your heart still long for?
- What's happening inside you when you are in a really good place?
- What's happening in the mind of someone you know who handles your issue well?

A Demonstration

- A volunteer? Briefly: what's the issue?
- I'll focus on **resourcing**.
- Potential key points:
 - Natural process of many choices along the way
 - Getting to the challenge as it's experienced
 - Identifying key resource(s); picking one(s) that is/are accessible
 - Slowing it down; encouraging embodiment
 - Linking when it feels right

Find a partner, pick an A and a B.

**A's guide B's: What is an external challenge?
What is a key inner strength that could
help? How could you have and take in
experiences of it in your life?**

**A's guide B's through HEA steps for this
strength.**

B's tell A's what worked.

Switch roles.

Find a new partner, pick an A and a B.

**A's guide B's: What is an internal issue?
What is a key inner strength that could
help? How could you have and take in
experiences of it in your life?**

**A's guide B's through HEA steps for this
strength.**

B's tell A's what worked.

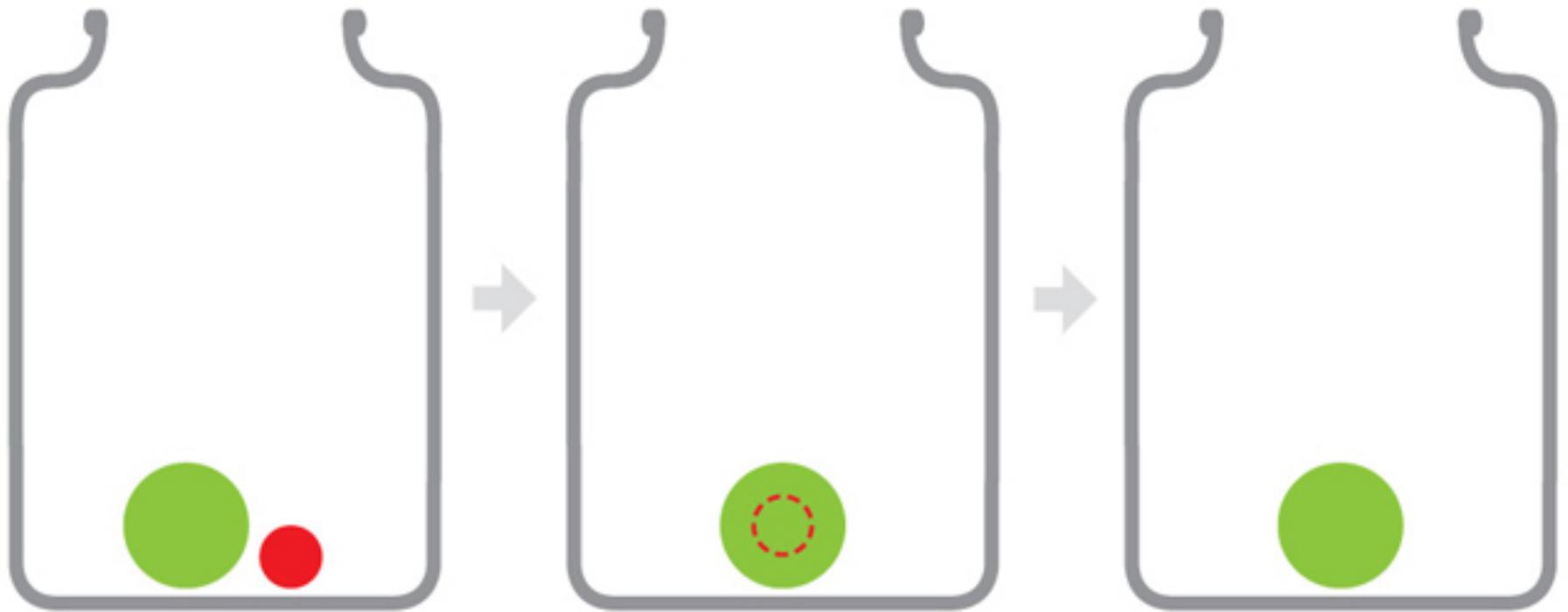
Switch roles.



Skills with “Linking”



A quick review . . .



Link Positive and Negative Material

What is “negative material?”

**Painful, harmful thoughts, perceptions,
emotions, desires, and actions**

Foreground of awareness

Background of awareness

Unconscious

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

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 4th 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.

Pick a partner, choose an A and a B (A's go first).

Take turns, with one partner guiding the other one through HEAL, especially the Link step.

Before starting, clarify the positive and (mild to moderate) negative material.

Next, do HEAL, about 10 minutes total.

Then debrief a few minutes, and switch roles.



How was that?

What went well?

What questions do you have?



Using HEAL in Psychotherapy



**These considerations for therapists
will be useful for nearly anyone
using HEAL with others.**

Implicit HEAL in Therapy

- Creating space for beneficial experiences
- Drawing attention to beneficial facts
- Encouraging positive experience of beneficial fact
- Drawing attention to key aspects of an experience
- Slowing the client down; not moving on
- Linking rewards to desired thoughts and actions
- Modeling taking in the good oneself

Explicit HEAL in Therapy

- Teaching the method
 - Background helps about brain, negativity bias
 - Emphasizing facts and mild beneficial experiences
 - Surfacing blocks and working through them
- Doing HEAL with client(s) during a session
 - To reinforce a key resource state
 - To link rewards to desired thoughts or actions
- Encouraging HEAL between sessions
 - Naming occasions
 - Identifying key beneficial facts and experiences

Promoting Client Motivation

- During therapy and between sessions, HEAL:
 - Key resource experiences
 - When learning from therapy works well
 - When realistic views of you, the world, etc. come true
 - Good qualities in yourself
 - New insights
- Can be formalized in daily reflections, journaling
- Risk the “dreaded experience,” notice the (usually) good results, and then take these in.

HEAL and Trauma

- General considerations:
 - People vary in their resources and their traumas.
 - Often the major action is with “failed protectors.”
 - Respect “yellow lights” and the client’s pace.
- The first three steps of HEAL are generally safe. Use them to build resources for tackling the trauma directly.
- Use the Link step to address peripheral features and themes of the trauma.
- With care, use Link to get at the heart of the trauma.

In Couples, Benefits of HEAL

- “Installs” key resources that support interactions (e.g., self-soothing, recognition of good intentions)
- Dampens vicious cycles
- Helps partner feel seen, credited for efforts
- Increases the sense of the good that is present
- Reduces clinginess, pursuing, or reproach that the other person withdraws from

Using HEAL with a Couple

- Basic steps (often informal):
 - Attention to a good fact
 - Evoking and sustaining a good experience
 - Managing blocks
 - Awareness of the impact on one's partner
 - Debriefing, often from both partners
- Pitfalls to avoid:
 - Seeming to side with one person
 - Unwittingly helping a person overlook real issues
 - Letting the other partner pile on

Pick a partner, choose A and B (A's go first).

**Then take turns talking about using HEAL
with 2-3 different adults.**



Using HEAL with Children

Uses for Children

- Registering curricular skills and other resources
- Motivation for learning; associating rewards
- Seeing the good in the world, others, and oneself – and in the past, present, and future
- Seeing life as opportunity
- Feeling like an active learner
- Developing child-specific inner strengths

Adaptations for Children

- Kids gain from HEAL – particularly mistreated, anxious, spirited/ ADHD, or LD children.
- Style:
 - Be matter of fact: this is mental/neural literacy.
 - A little brain talk goes a long way.
 - Be motivating: name benefits; “be the boss of your own mind.”
 - Down to earth, naturalistic
 - Scaffold based on executive functions, motivation, and need for autonomy.
 - Brief, concrete

Occasions for HEAL with Kids

- Explicit training in positive neuroplasticity
- Natural rhythms in the day (e.g., start of class, after a lesson or recess, end of day)
- When working with an individual child
- When dealing with classroom issues

Pick a partner and choose A and B (A's go first).

Then take turns talking about using HEAL with children. If HEAL with kids is not relevant to you, just talk about how you could use it with adults.



Wrapping Up

Return to your pods.

One person at a time (~ 5 min. each):

- **What did you get out of this training, personally?**
- **What are some ways you hope to apply what you've learned here?**

Societal Implications of Positive Neuroplasticity

- For most of the time our human and hominid ancestors have lived, it was not possible to meet the core needs of everyone. But now the resources and know-how exist to do this. How we handle this unprecedented opportunity will be the central theme of this century.
- Improving external conditions is vital – but not enough. Many affluent people dwell in anxiety and anger, frustration and drivenness, and hurt and ill will.
- Repeatedly internalizing Responsive experiences develops a “green brain” that is harder to manipulate with threats and fear, greed and consumerism, and “us” vs. “them” rivalries. A critical mass of “green brains” will bring a tipping point that changes the course of human history.

Coming Home

Peace

Contentment

Love

*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 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 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.
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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.
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- 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. 140

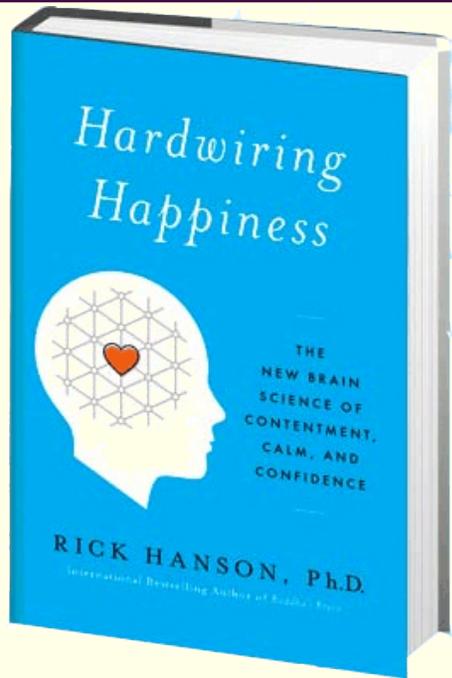
Key Papers - 3

- 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.
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- 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

Personal website: www.rickhanson.net

Wellspring Institute: www.wisebrain.org



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