
*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.*

Dhammapada 9.122

Hardwiring Happiness:

Turning Passing Experiences Into Lasting Inner Strength and Peace

**New Zealand
January, 2015**

Rick Hanson, Ph.D.

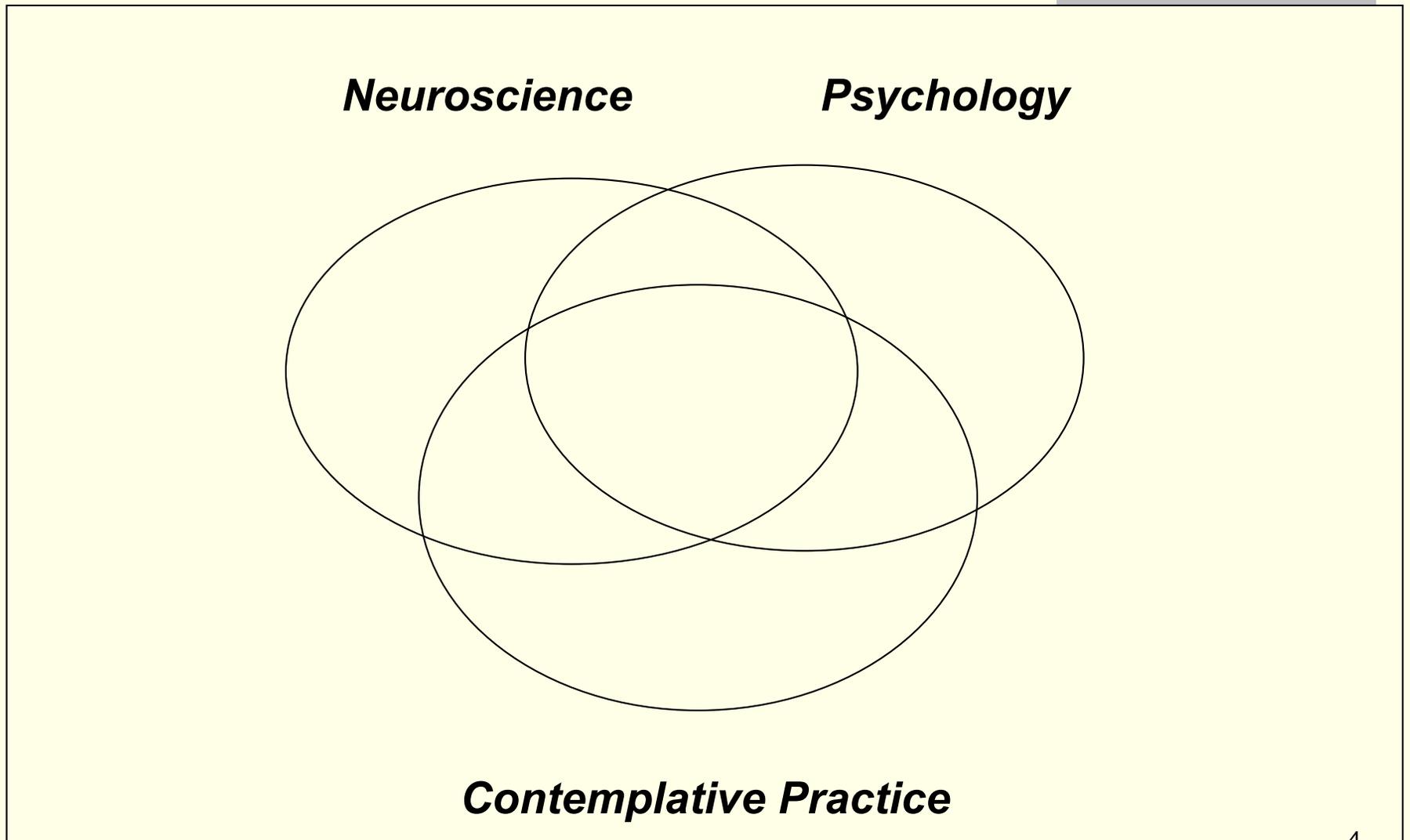
The Wellspring Institute for Neuroscience and Contemplative Wisdom

WiseBrain.org RickHanson.net

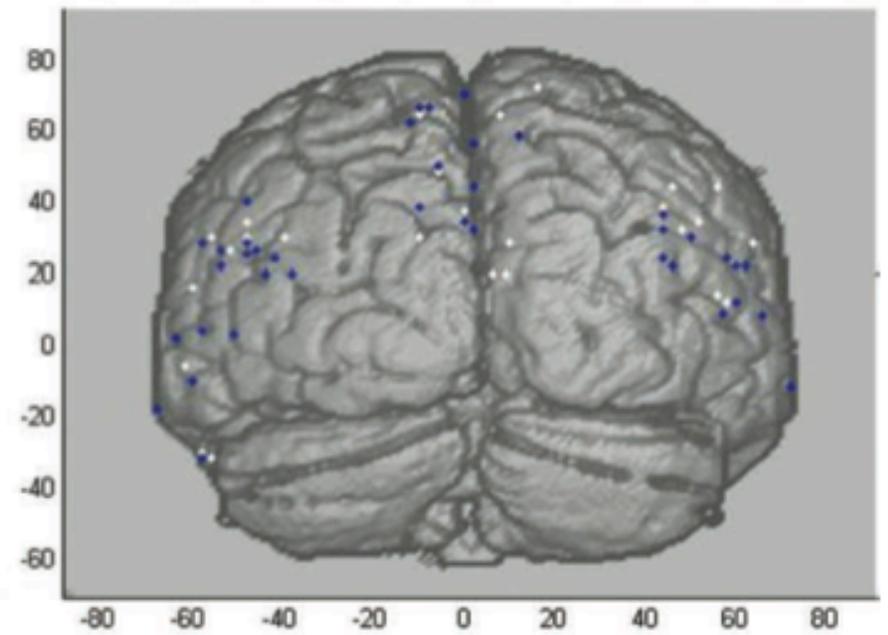
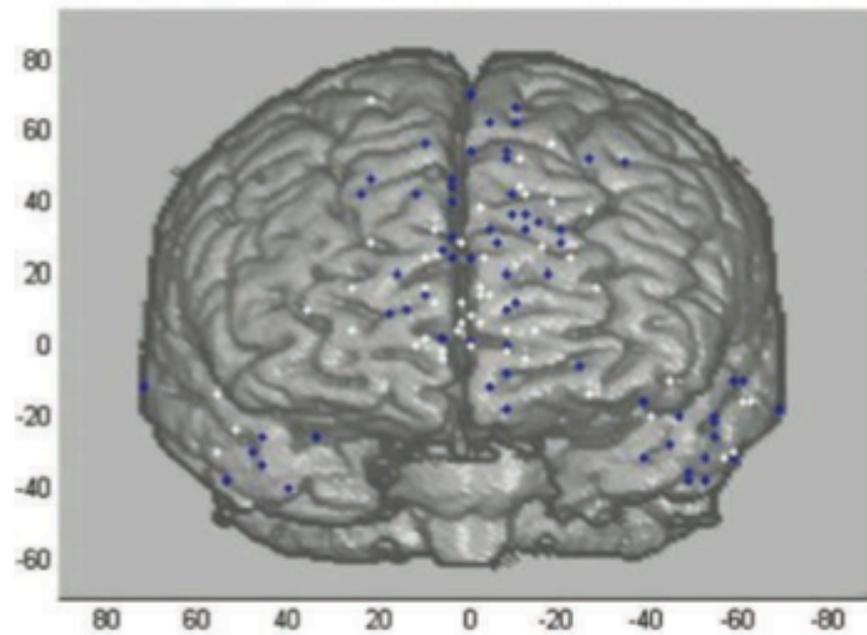
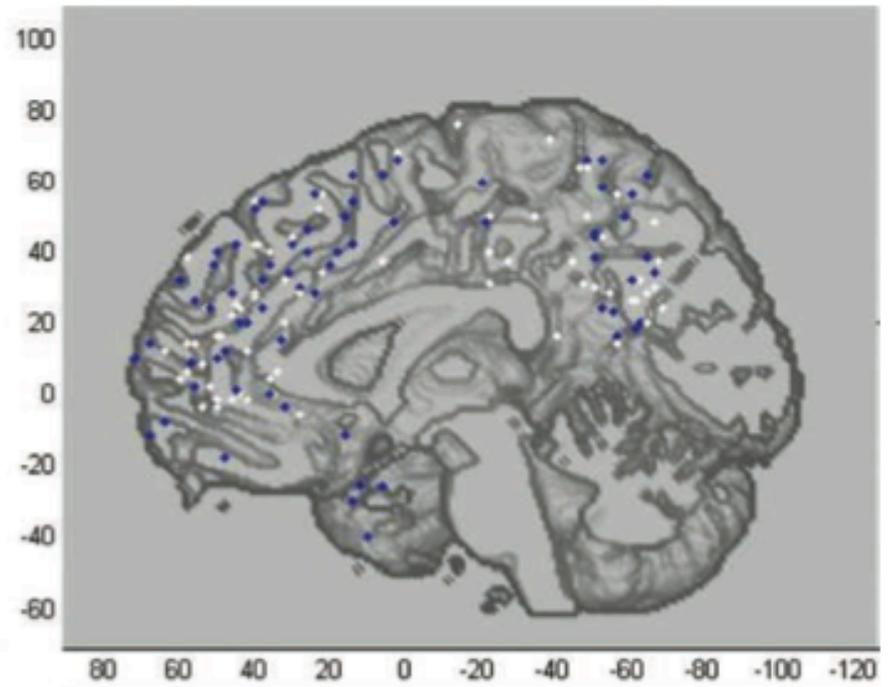
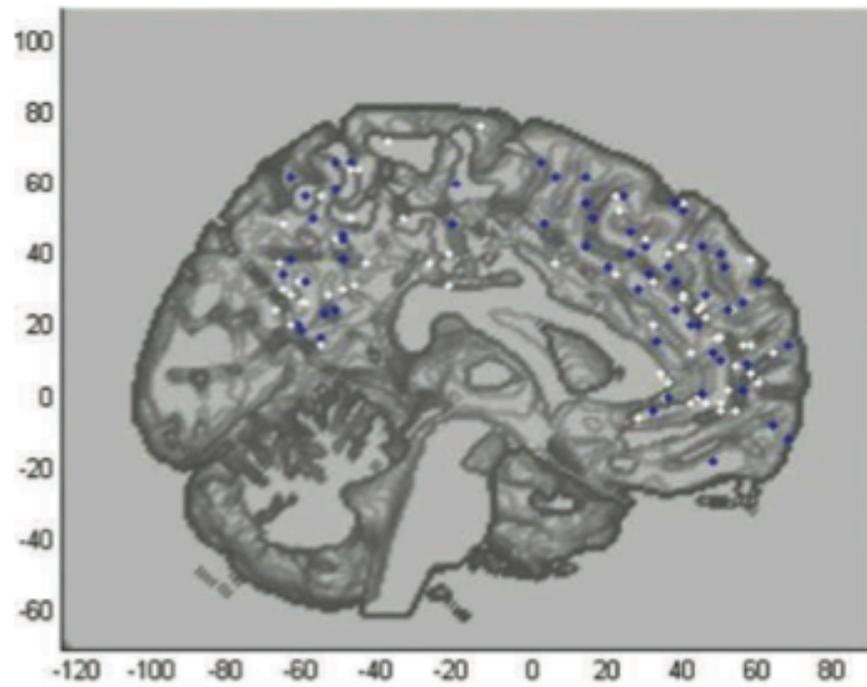


Grounding the Mind in Life

Common - and Fertile - Ground

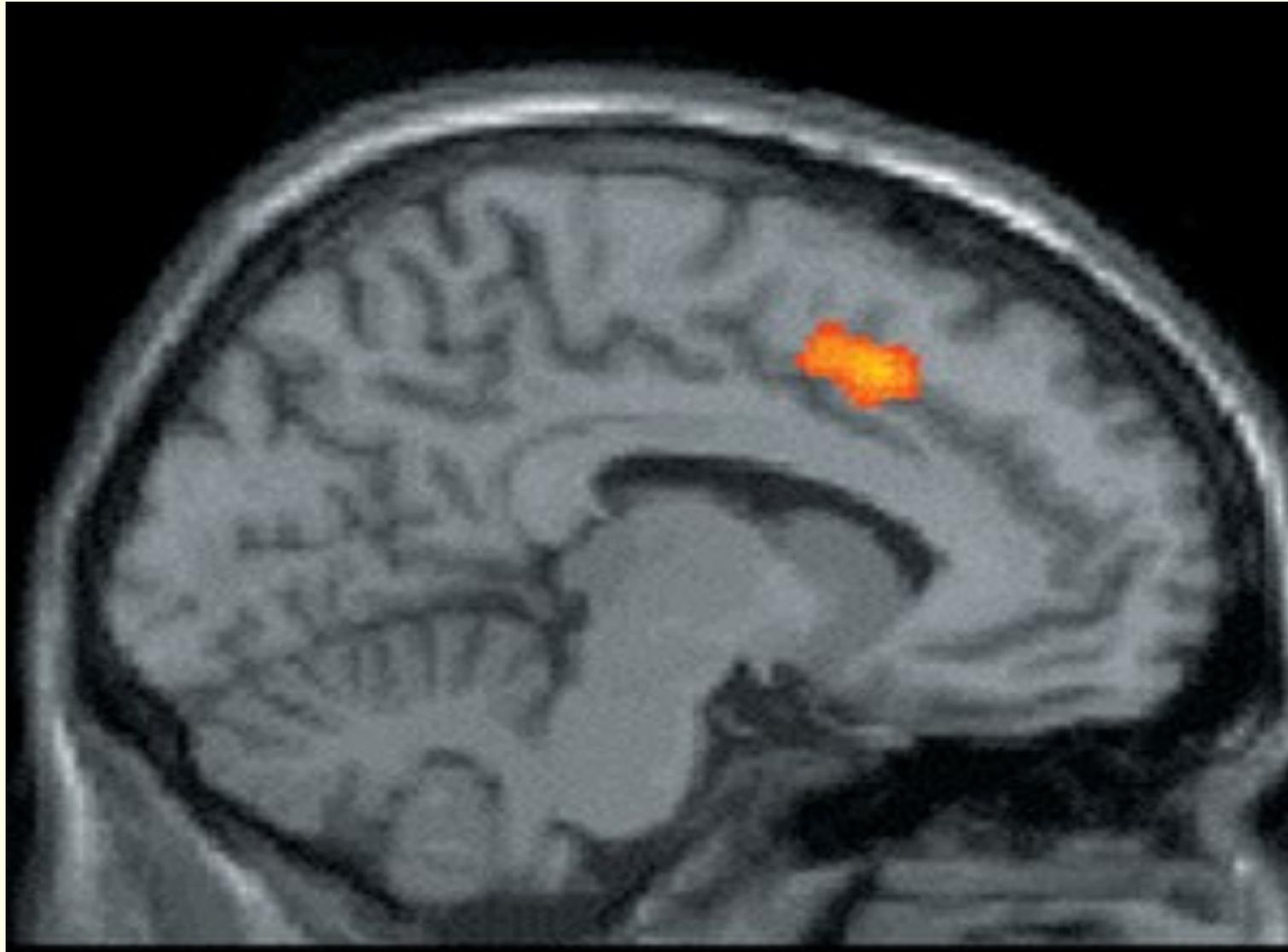






what is self-specific? Legrand and Ruby, *Psychological Review*, 2009.
 [White = self; blue = other]

Ardent, Diligent, Resolute, and Mindful

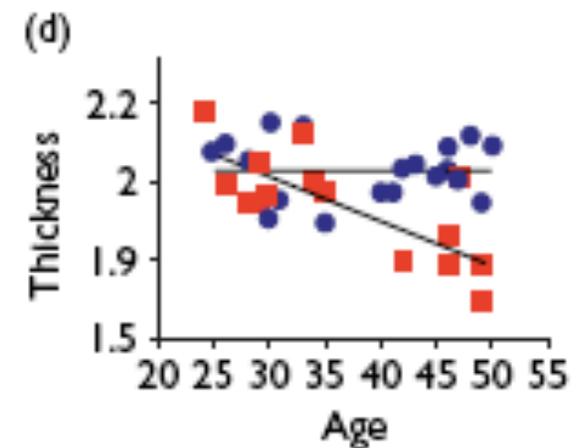
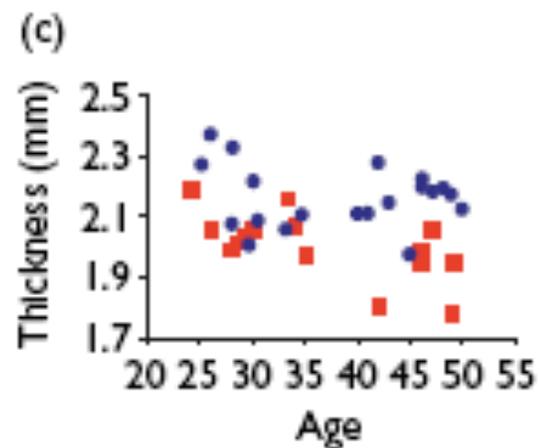
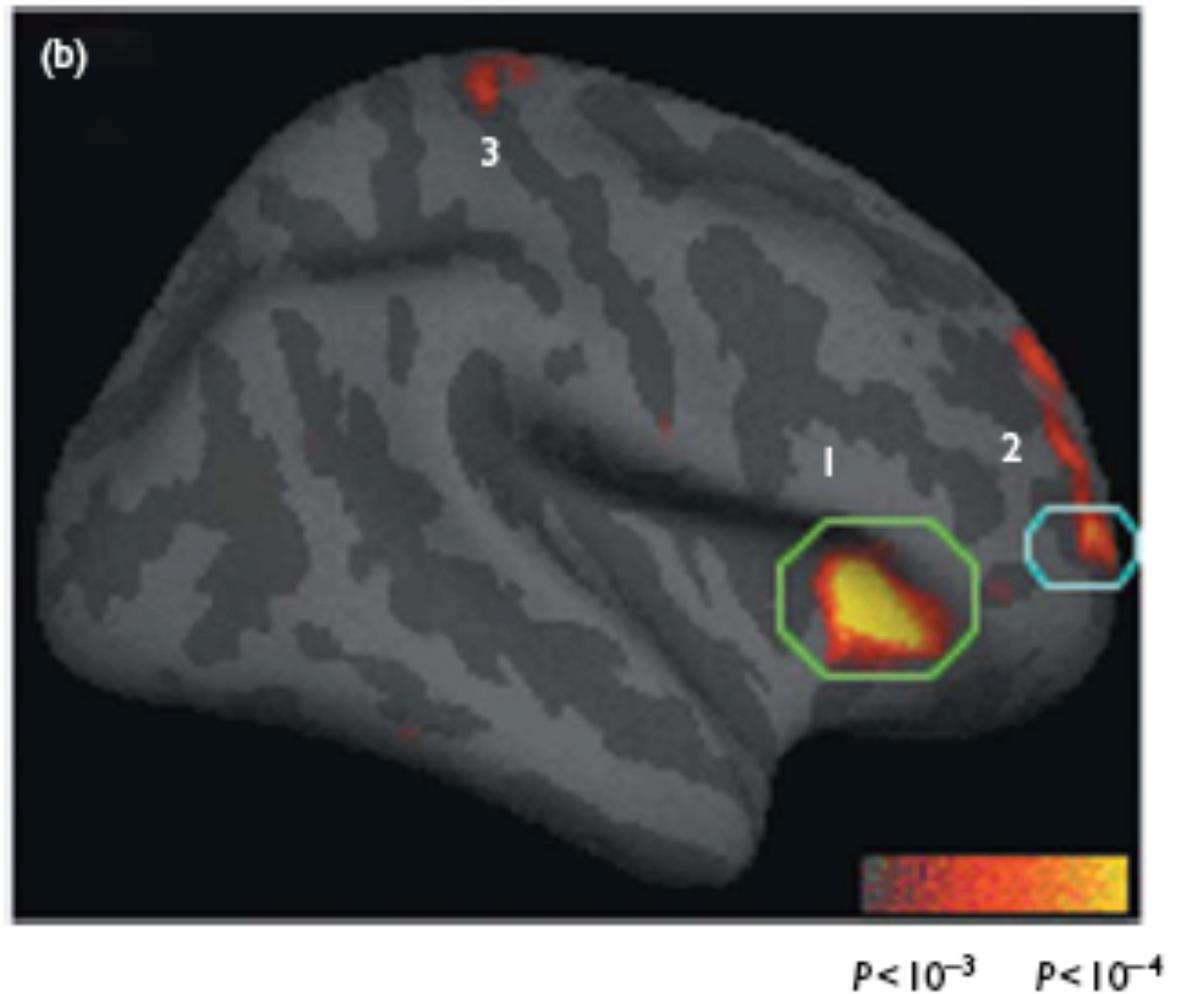


A network of glowing yellow neurons with a central neuron highlighted in green. The neurons are interconnected by a dense web of thin, yellow, fiber-like structures. The central neuron has a bright green nucleus and is surrounded by a network of yellow fibers. The background is dark, making the glowing 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.



The Natural, Immaterial 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.

*"We ask, 'What is a thought?'
We don't know,
yet we are thinking continually."*

Venerable Ani Tenzin Palmo

The Opportunity

We can use the mind

To change the brain

To change the mind for the better

To benefit ourselves and other beings.



Neurobhavana

The image is a split-screen comparison of two wolves. The left side shows a domesticated wolf, likely a husky, with a soft, white and grey coat and warm, brown eyes. It has a gentle, smiling expression with its mouth slightly open, showing its teeth. The right side shows a wild wolf, with a more rugged, grey and brown coat and darker, more intense eyes. It has a more serious, almost menacing expression with its mouth open, showing its sharp canine teeth. The text "Two wolves in the heart" is written in a white, serif font across the center of both images.

Two wolves in the heart

Major Buddhist Inner Strengths

Mindfulness

Compassion

View

Investigation

Kindness

Intention

Energy

Altruistic joy

Effort

Bliss

Tranquility

Virtue

Conviction

Concentration

Wisdom

Generosity

Equanimity

Patience

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

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.”



Know the mind.

Shape the mind.

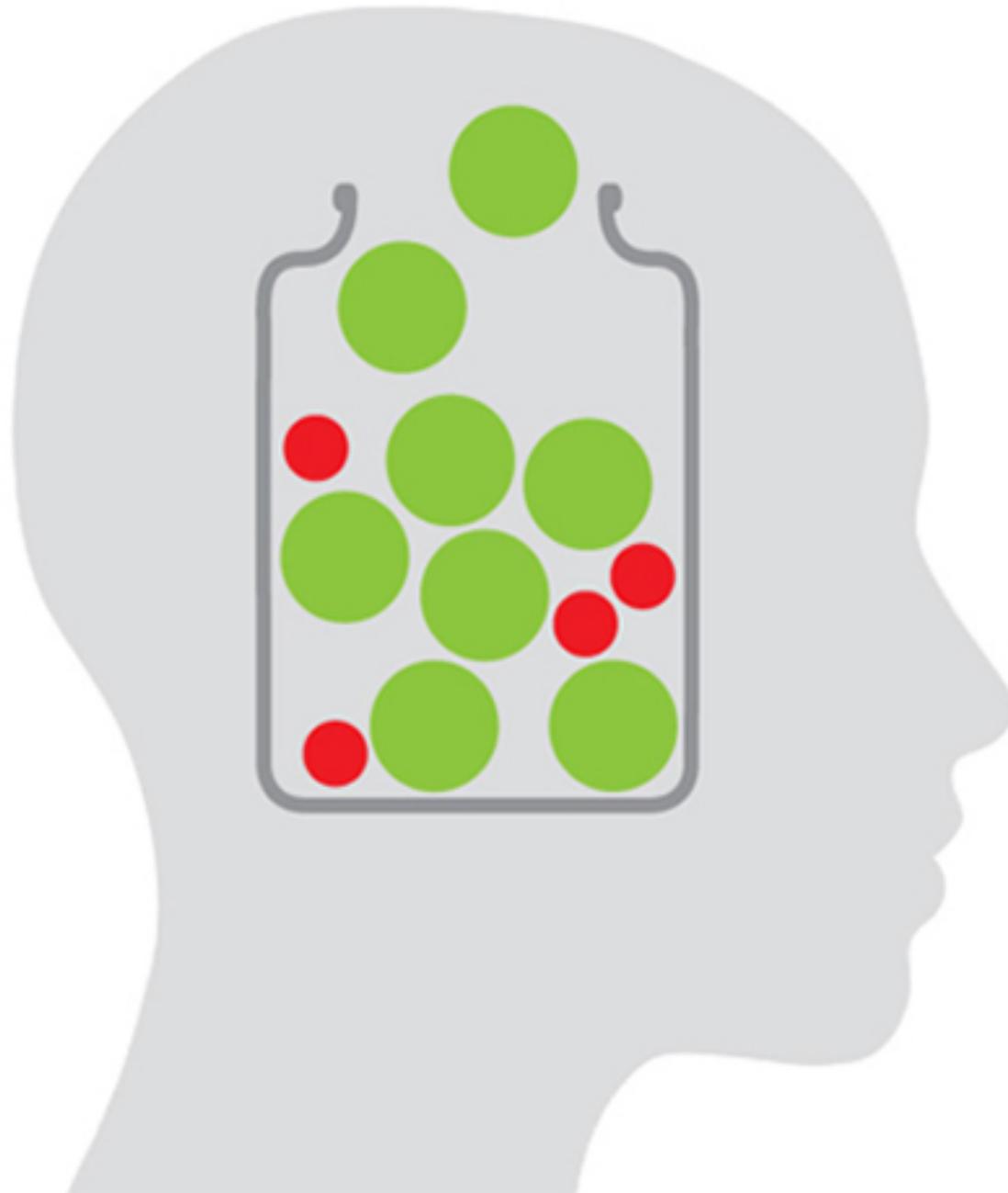
Free the mind.

Christina Feldman

Pick a partner and choose an A and a B (A's go first). Then you'll take turns, with one partner mainly speaking while the other person listens, exploring this question:

What psychological resources – inner strengths – would you like to grow or develop in yourself?

INNER STRENGTHS ARE BUILT FROM BRAIN STRUCTURE



The Neuropsychology of Cultivation

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

From state to trait

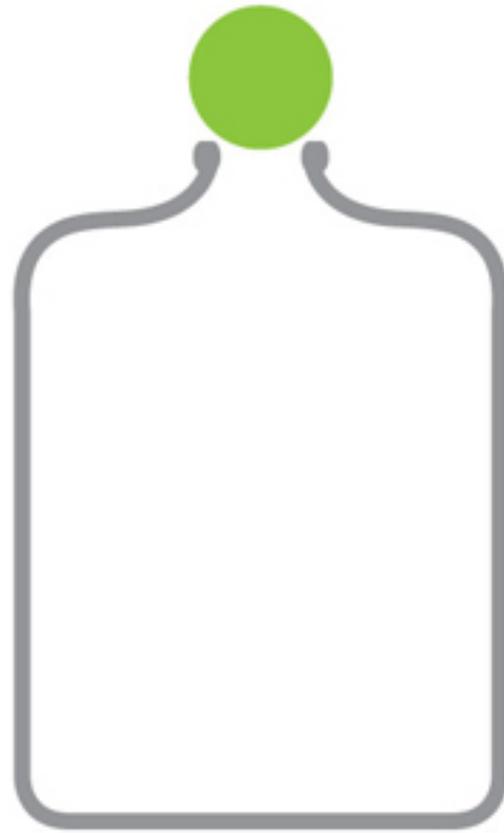
From activation to installation

From short-term memory buffers to long-term storage

**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.**



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.

How to Create A Beneficial Experience

Look for good facts in:

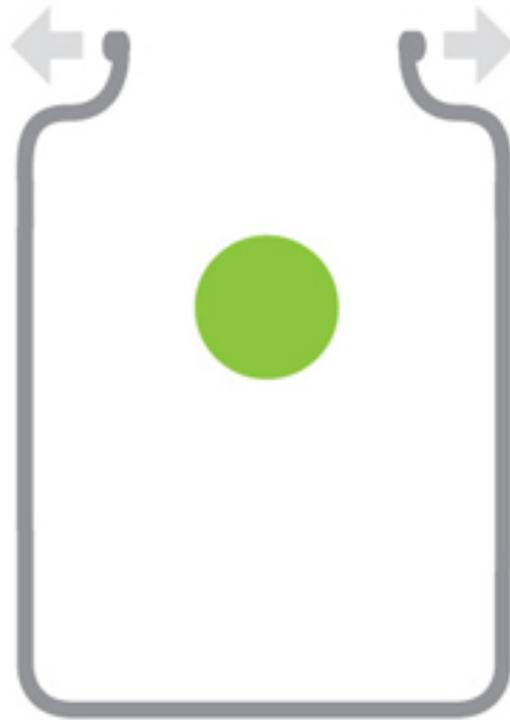
1. Immediate situation
2. Current or recent events
3. Stable conditions
4. Your character
5. The past
6. The future
7. Bad situations
8. The lives of others
9. Your imagination
10. Care about others
11. Directly evoke a beneficial experience
12. Produce good facts
13. Share about good facts with others

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

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.



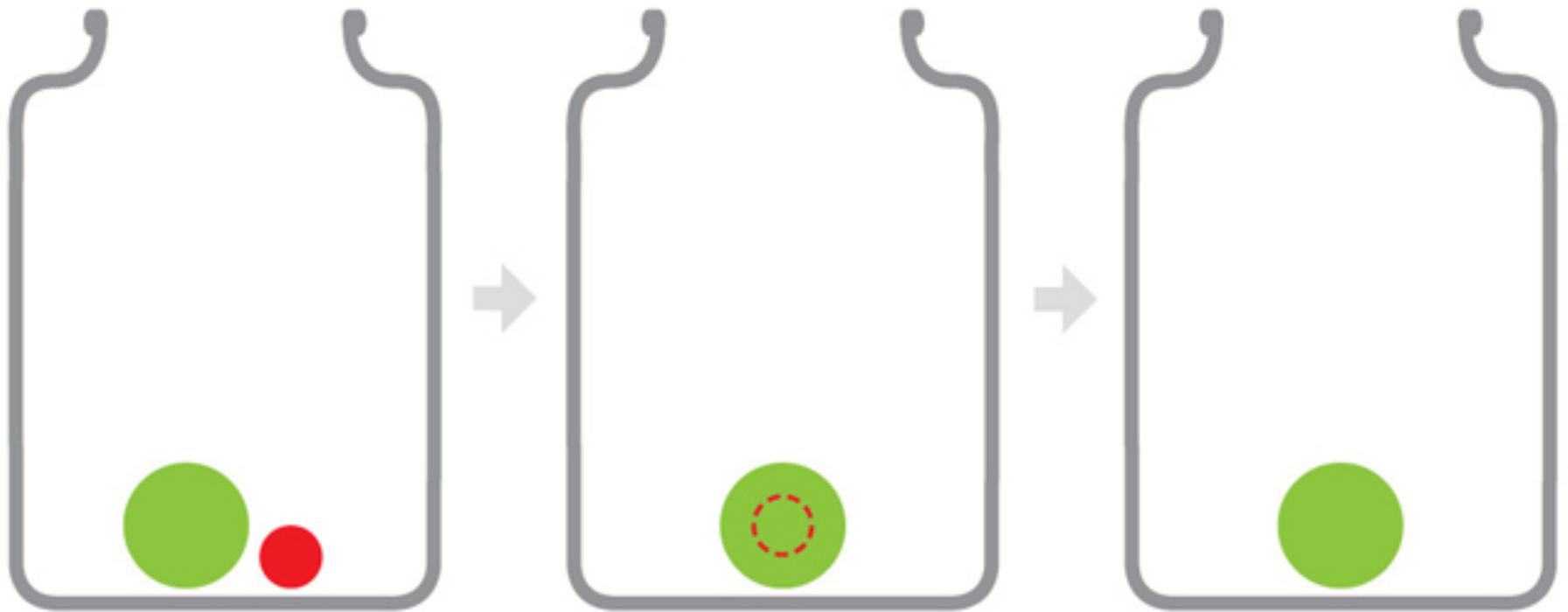
Enrich It

How to Enrich an Experience

- **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



Absorb It



Link Positive and Negative Material

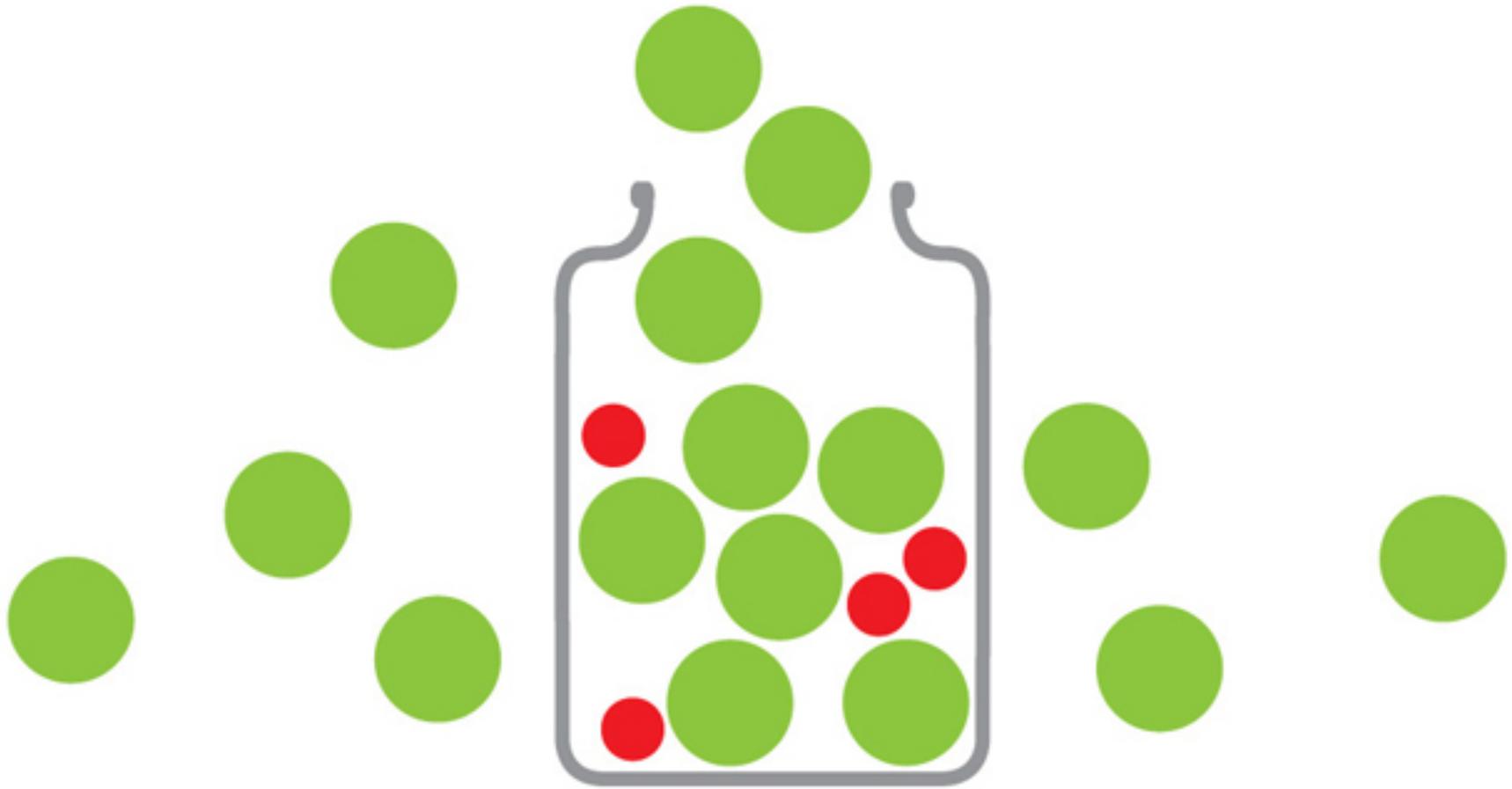
Positive Neuroplasticity – How to Take in the Good: HEAL

Activation

1. Have a beneficial experience.

Installation

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



Have 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.

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

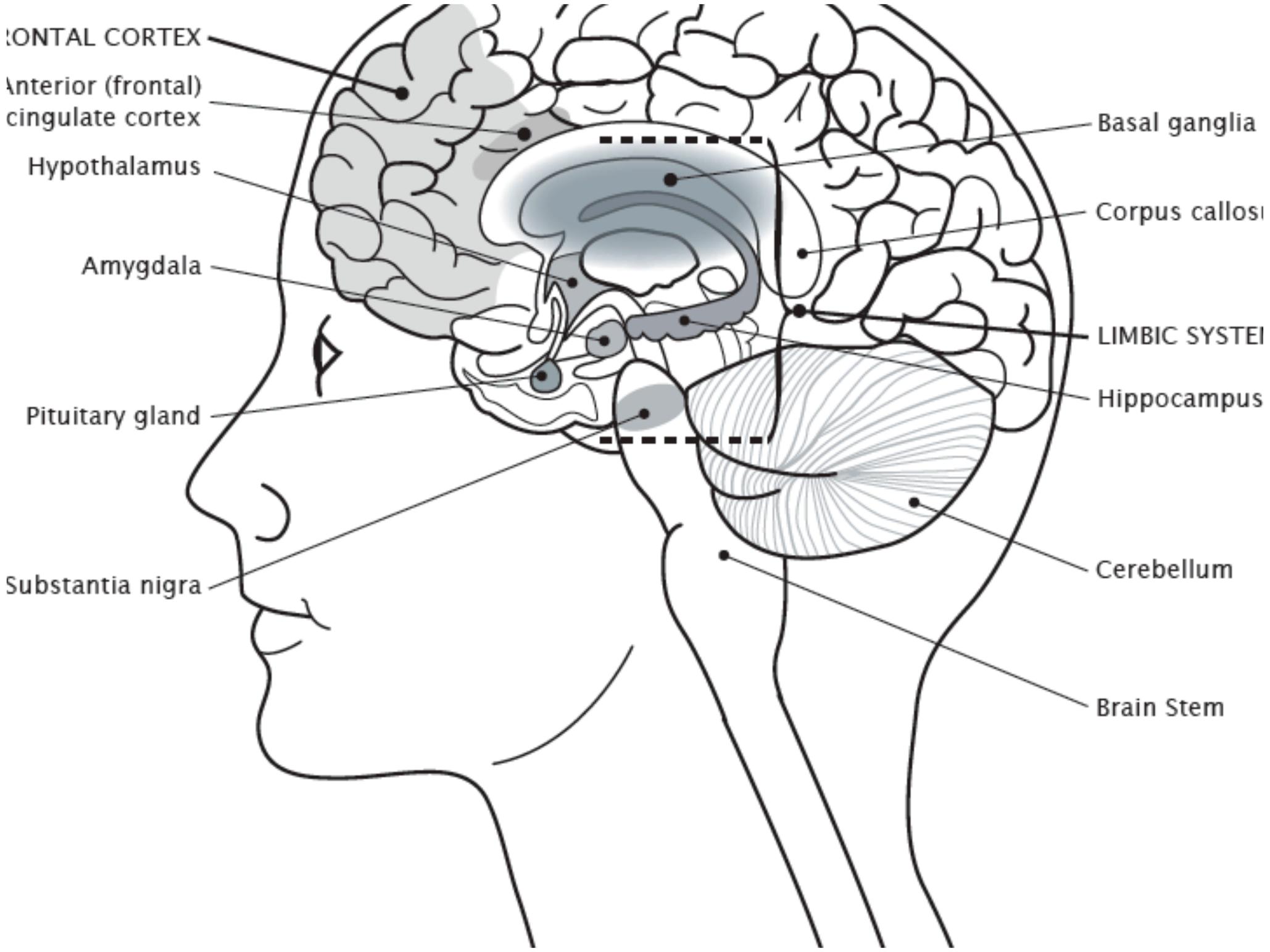
Unpleasant Experiences In Context

- Life contains unavoidable unpleasant experiences. Resisting them just adds to the stress, upset, etc.
- Some inner strengths come only from unpleasant experiences, e.g., knowing you'll do the hard thing.
- But unpleasant experiences have inherent costs, in their discomfort and stress.
- Many inner strengths could have been developed without the costs of unpleasant experiences.
- Most unpleasant experiences are pain with no gain.

The Brain's Negativity Bias

As our ancestors evolved, avoiding “sticks” was more important than getting “carrots.”

1. So 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



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Velcro for Bad, Teflon for Good

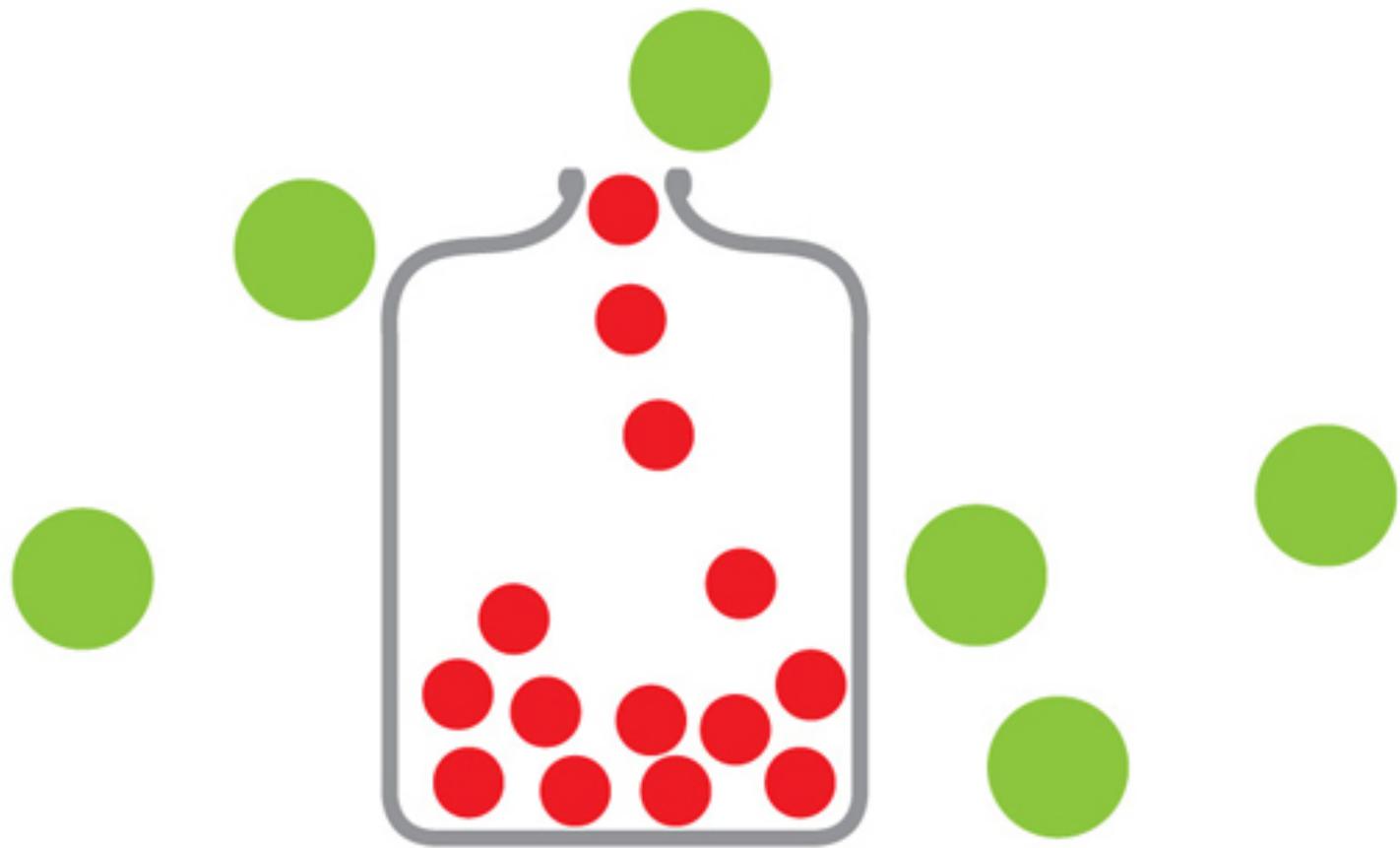
The negativity bias

bad experiences

good experiences

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 Negativity Bias

A composite image illustrating the contrast between modern urban life and Stone Age existence. In the background, several tall, modern apartment buildings with many windows rise above a dense line of green trees. In the foreground, three Stone Age people, dressed in animal skins and with long hair, are crouching in a grassy field. The central figure is looking directly at the camera, while the others are looking away. The text "Stone age brains in the 21st century" is overlaid in white serif font on a dark green horizontal band across the middle of the image.

Stone age brains in the 21st century

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

And – the negativity bias adds another reason for positive installation: to compensate for our over-learning from the negative.



SPIRIT ROCK MEDITATION CENTER



Join us for

**Cultivating Inner Strength - Monastic
Daylong [Dana - No Fee Day]**

with Ayya Anandabodhi
and Ayya Santacitta

on

Sunday, July 8

from 9:30 am - 5 pm.

(Photo by Ed Ritger)



Self-Compassion

*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 Buddhism is compassion,
and the root of compassion
is compassion for oneself.*

Pema Chodron

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.

“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



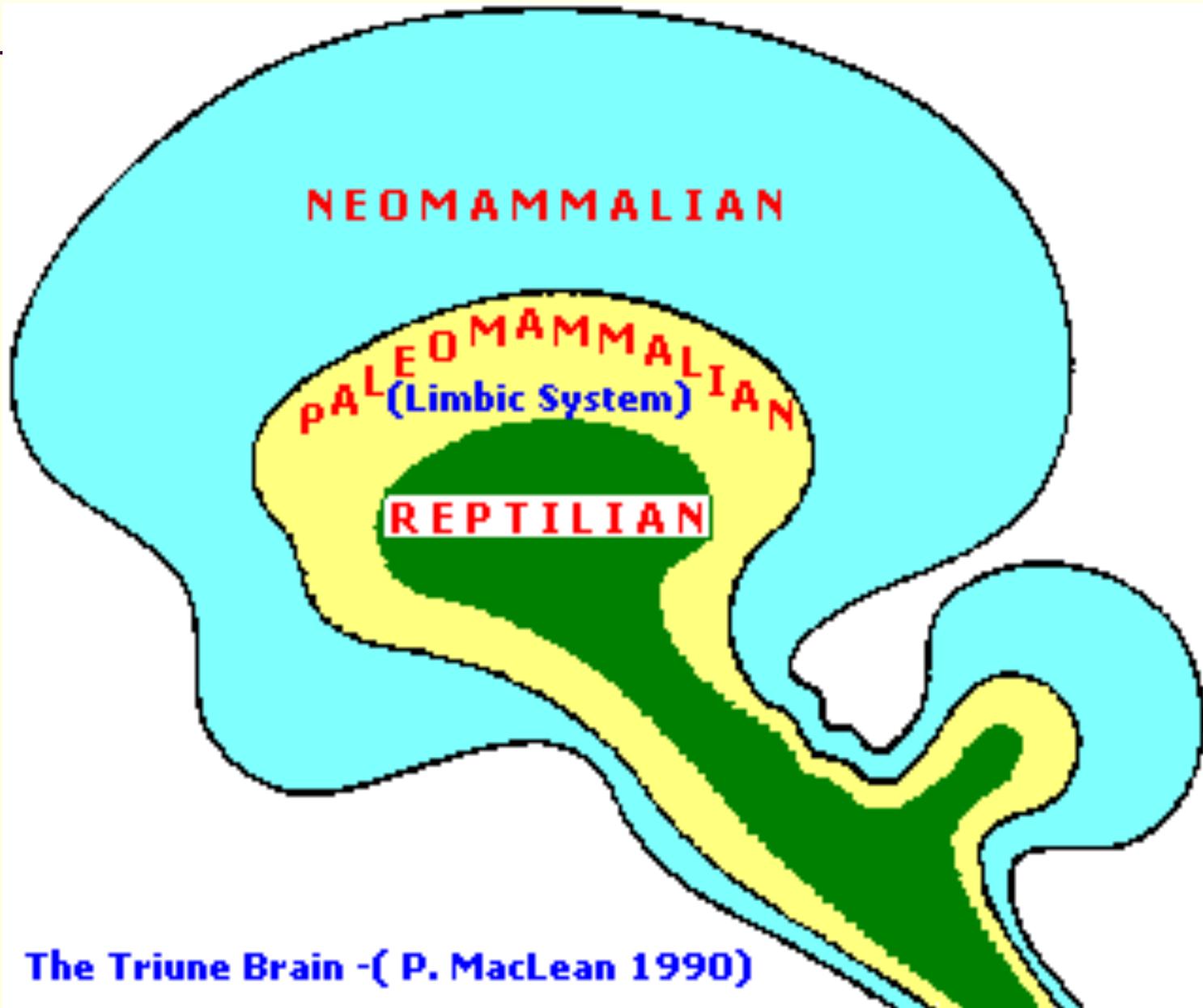
Craving and Its Causes

Buddhism is about processes and causes.

The Buddha taught the mental causes of suffering and its end: *tanha* and *nirodha*: “thirst, craving” and “cessation, release.”

2500 years later, we can explore the underlying, neurobiological causes of craving . . . and its release.

Evolutionary History



The Triune Brain - (P. MacLean 1990)

Needs

Need

Safety

Satisfaction

Connection

Needs, Activation

Need

Activation

Safety

Unpleasant

Satisfaction

Pleasant

Connection

Heartfelt

Needs, Activation, Coping

Need

Activation

Coping

Safety

Unpleasant

Avoiding harms

Satisfaction

Pleasant

Approaching rewards

Connection

Heartfelt

Attaching to others

Neurobiological Basis of Craving

When invaded by threat, loss, or rejection [felt deficit or disturbance of safety, satisfaction, or connection]:

The body fires up into the stress response; outputs exceed inputs; long-term building is deferred.

The mind fires up into:

- **Fear** (the Avoiding system)
- **Frustration** (the Approaching system)
- **Heartache** (the Attaching system)

This is the brain in allostatic, **Reactive**, *craving* mode. ⁵⁹

*Indeed, the sage who's fully quenched
Rests at ease in every way;
No sense desire adheres to him or her
Whose fires have cooled, deprived of fuel.*

*All attachments have been severed,
The heart's been led away from pain;
Tranquil, he or she rests with utmost ease.
The mind has found its way to peace.*

The Buddha

Neurobiological Basis of Not Craving

When not invaded by threat, loss, or rejection [no felt deficit or disturbance of safety, satisfaction, and connection]

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)
- **Contentment** (the Approaching system)
- **Love** (the Attaching system)

This is the brain in its homeostatic ***Responsive, minimal craving*** mode.

Can You Stay in the Green Zone When:

Things are unpleasant?

Things are pleasant?

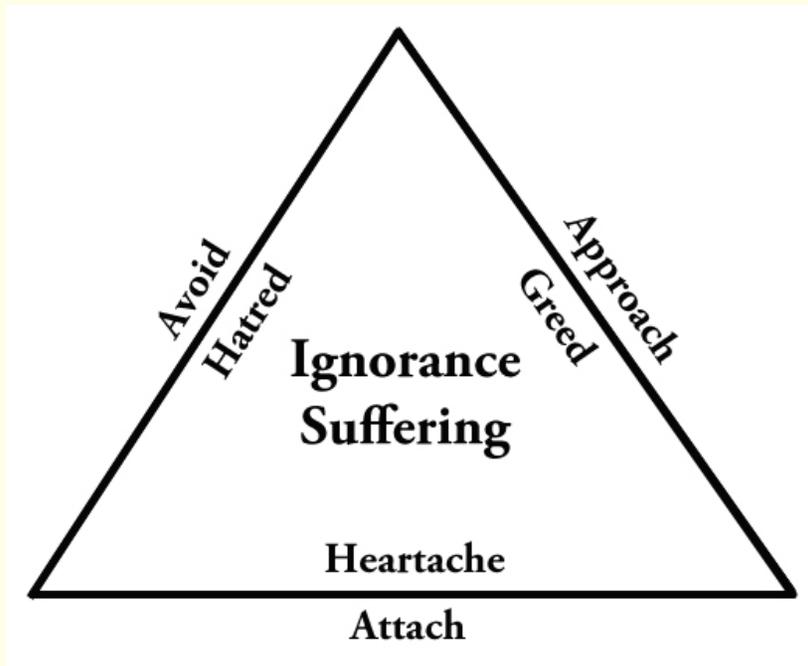
Things are heartfelt?

*In Buddhist practice,
we work to expand
the range of life experiences
in which we are free.*

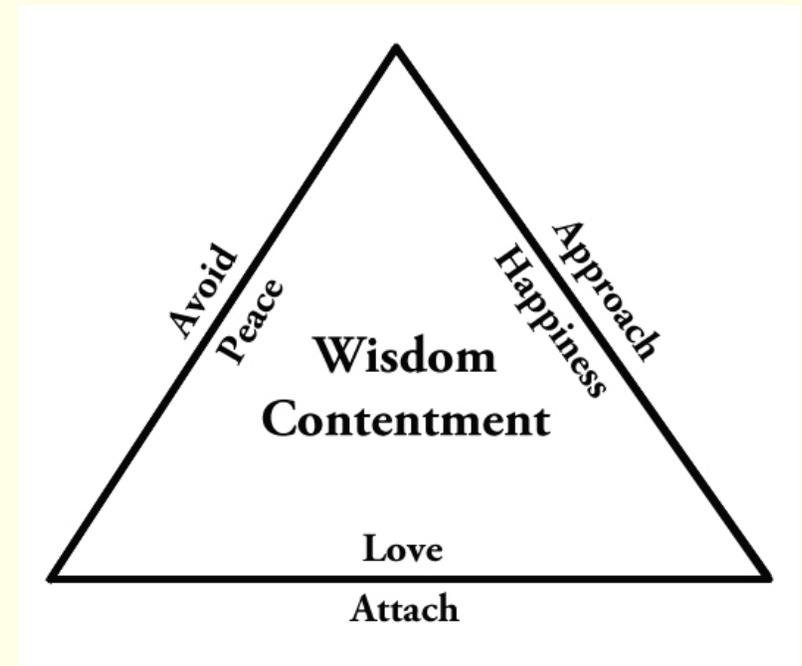
U Pandita

Choices . . .

Or?



Reactive Mode



Responsive Mode

Coming Home, Staying Home

Positive experiences of core needs met - the felt sense of safety, satisfaction, and connection - activate Responsive mode.

Activated Responsive states can become installed Responsive traits. Responsive traits foster Responsive states.

Responsive states and traits enable us to stay Responsive with challenges.

Pet the Lizard



Feed the Mouse



Hug the Monkey

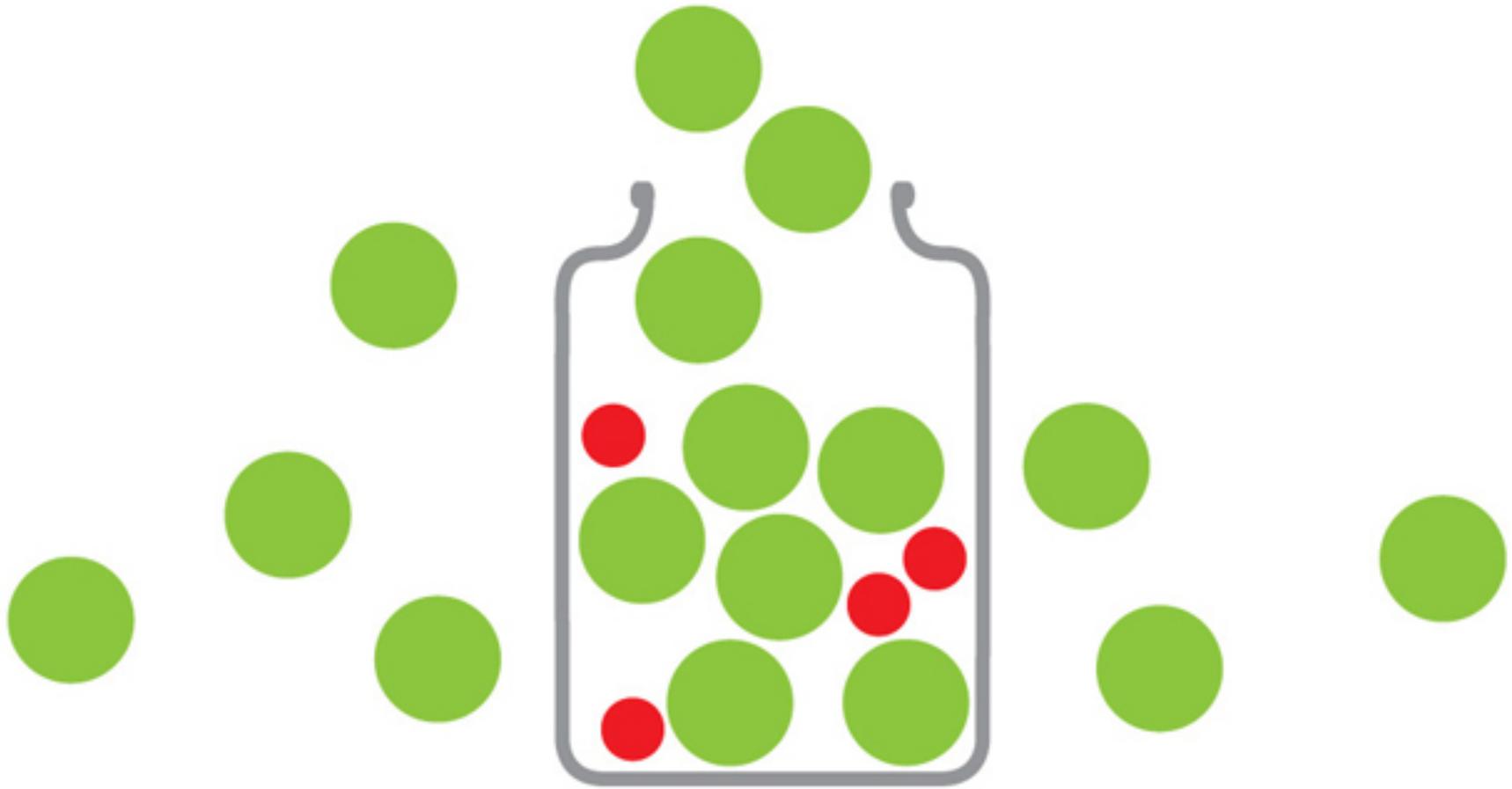


The Fruit as the Path

Peace

Contentment

Love



Have It, Enjoy It

Some Key Responsive Experiences

Avoiding Harms - Peace

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

Approaching Rewards - Contentment

- Sense of enoughness, fullness in emptiness
- Feeling pleased, glad, grateful, generous
- Therapeutic, spiritual, or existential realizations

Attaching to Others - Love

- Feeling basically connected
- Feeling included, seen, liked, appreciated
- Feeling compassionate, kind, happy at the happiness of others



Linking Positive and Negative Material

“Negative” Material

- “Negative” material includes pain, discomfort, worry, helplessness, anger, frustration, disappointment, drivenness, addiction, loneliness, insecure attachment, hurt, jealousy, resentment, inadequacy, shame
- Comes from the presence of the “bad” and the absence of the “good”
- Activated explicitly and implicitly

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

HEAL by Taking in the Good

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

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.

Some Key Responsive Experiences

Avoiding Harms - Peace

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

Approaching Rewards - Contentment

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Attaching to Others - Love

- Feeling basically connected
- Feeling included, seen, liked, appreciated
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Benefits of the HEAL Process

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

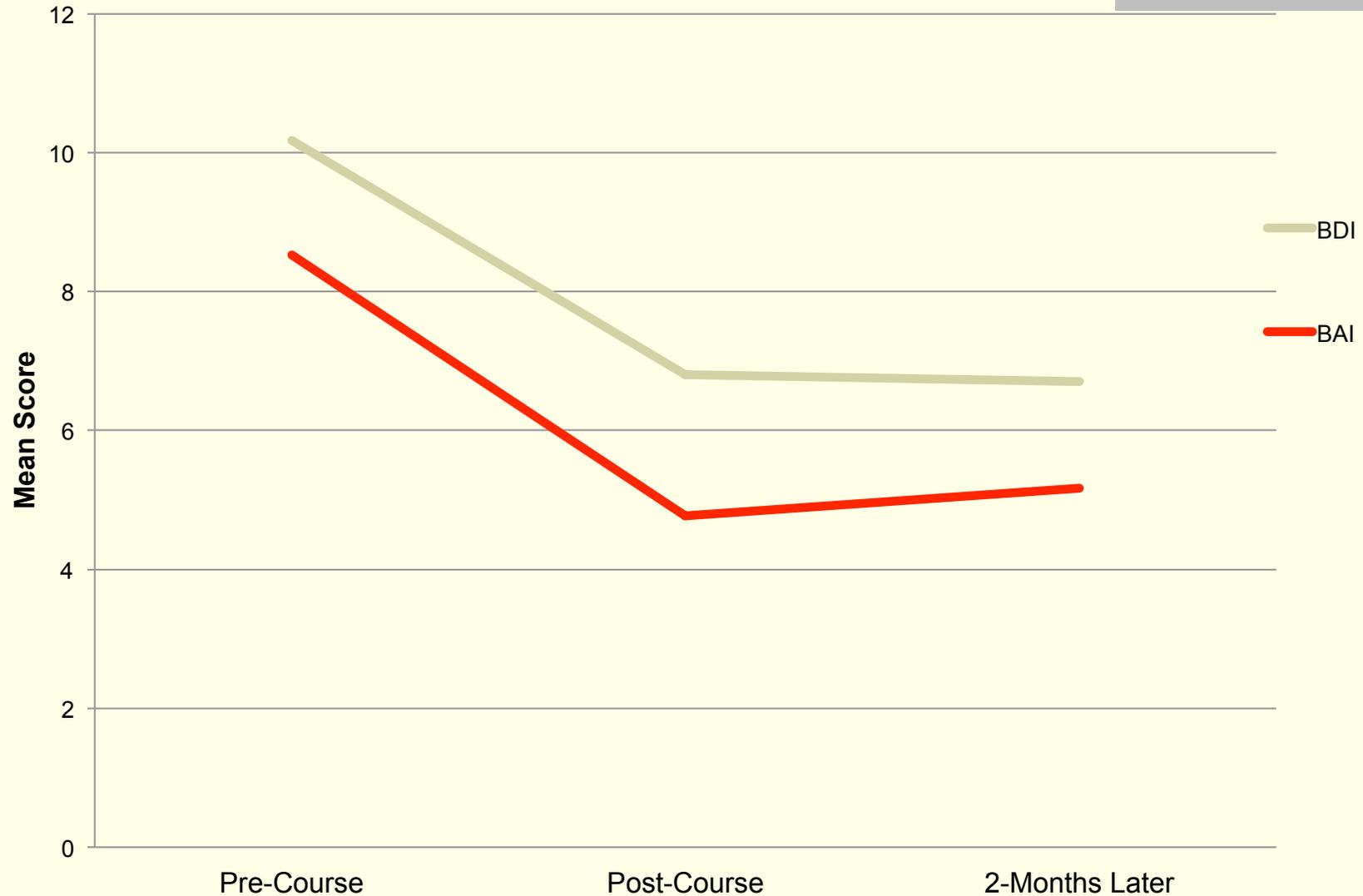
*Keep a green bough in your heart,
and a singing bird will come.*

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)





Taking in and Mindfulness

Synergies of TG and Mindfulness

- Improved mindfulness enhances TG.
- TG increases factors of mindfulness (e.g., self-compassion, determination, distress tolerance).
- TG heightens learning from mindfulness:
 - The sense of stable presence itself
 - Disidentifying from reactions
 - Deepening centeredness
 - Peace of realizing that experiences come and go

Using HEAL in Trainings

- Take five 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).



What do you think?



Reflections

Cultivation Undoes Craving

- All life has goals. The brain continually seeks to avoid harms, approach rewards, and attach to others - even that of a Buddha.
- It is wholesome to wish for the happiness, welfare, and awakening of all beings - including the one with your nametag.
- 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, happiness, 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.

A Fifth Yana?

The “Buddhastream” has developed through four major vehicles (*yanas*): Theravadan, Tibetan, Chan/Zen, and Pure Land.

Could we be helping develop an emergent Fifth Yana, with:

- Many householders engaging deep contemplative practice
- Multiculturalism as both a reality and a value
- Access to and eclectic use of the full array of Buddhist teachings
- Flattening hierarchies
- Naturalizing dharma practice; using science and psychology
- Skillful use of positive experiences; “Western tantra”
- Deconstructing and applying Buddhist practices in non-Buddhist settings (e.g., pain-control clinics, schools, psychotherapy)

Heartwood

This spiritual life does not have gain, honor, and renown for its benefit, or the attainment of moral discipline for its benefit, or the attainment of concentration for its benefit, or knowledge and vision for its benefit.

But it is this unshakable liberation of mind that is the goal of this spiritual life, its heartwood, and its end.

*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.
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Key Papers - 1

See www.RickHanson.net for other scientific papers.

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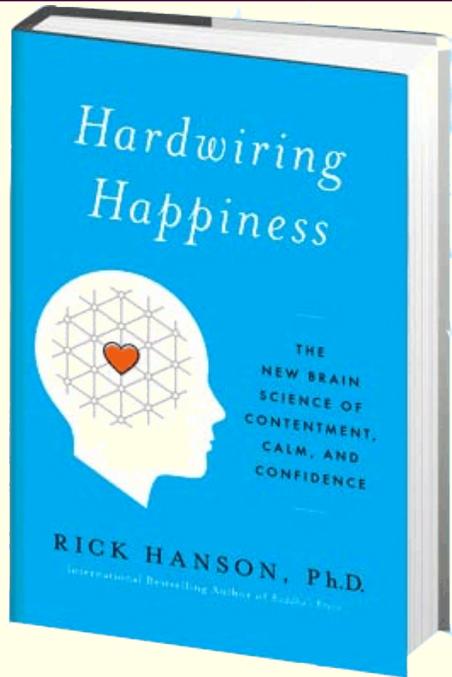
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