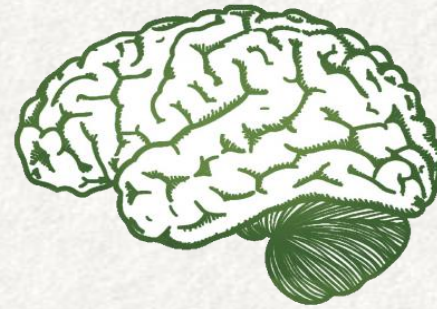


Already Home: Resting in Peace, Contentment, and Love



New York Insight

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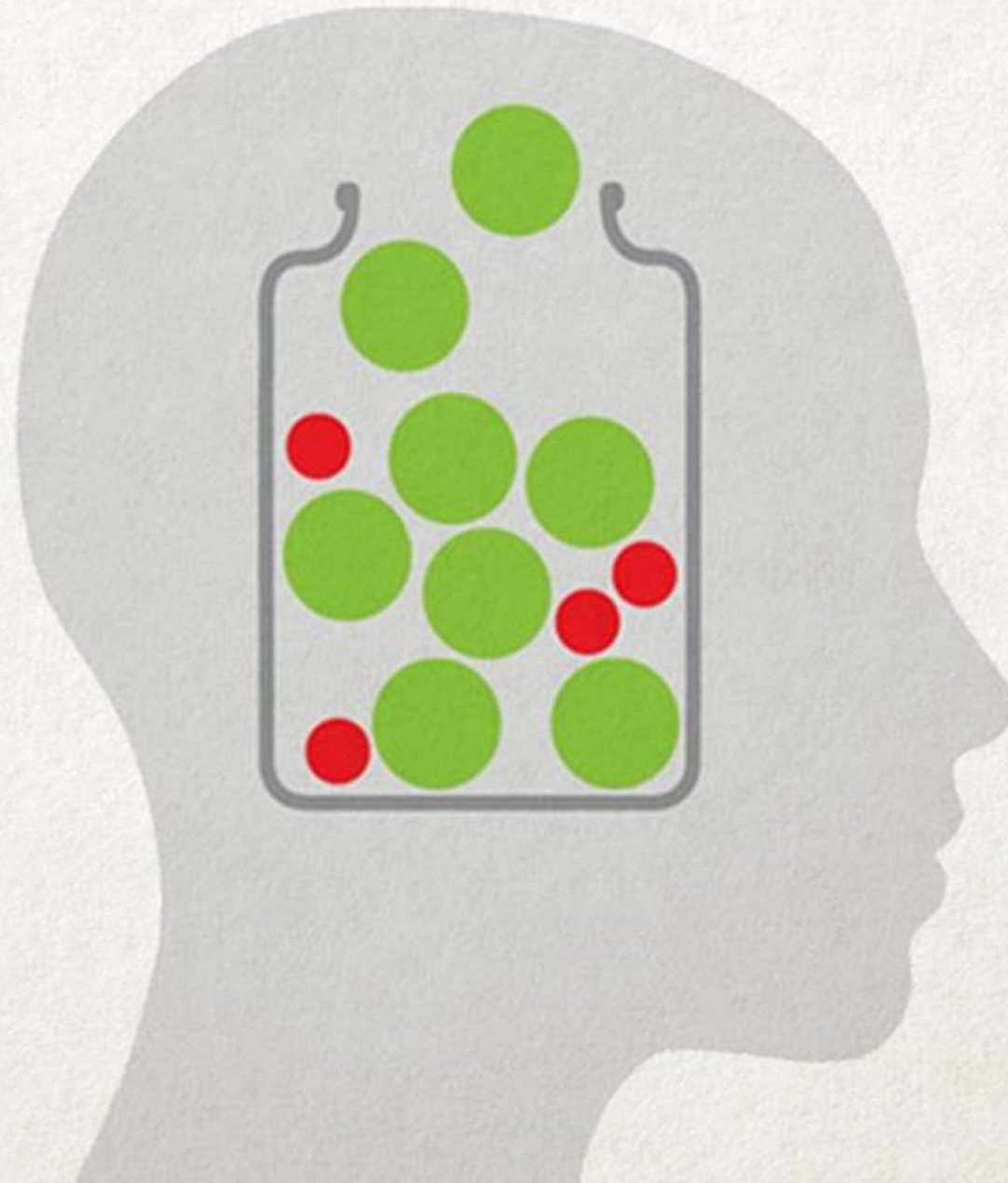
Mind in Life

We can know ourselves in two ways:

- From the outside in, objectively, informed by science, particularly by neurobiology
- From the inside out, subjectively, informed by modern psychology and perennial wisdom

“Neurodharma” is where these two meet.

Which Means Changing the Brain For the Better

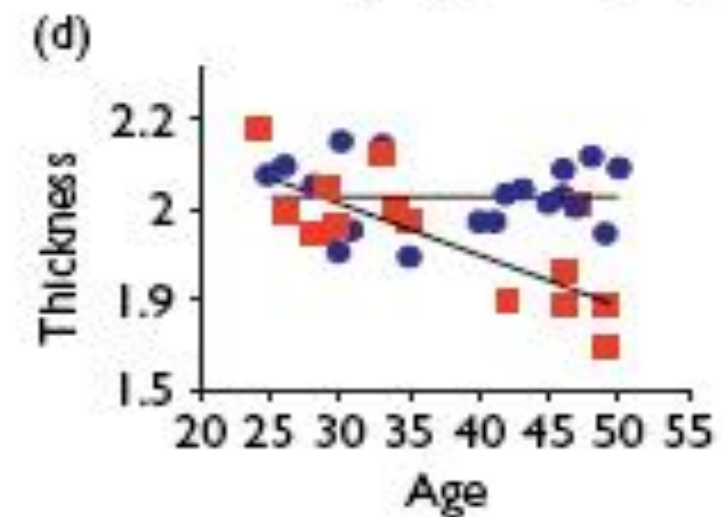
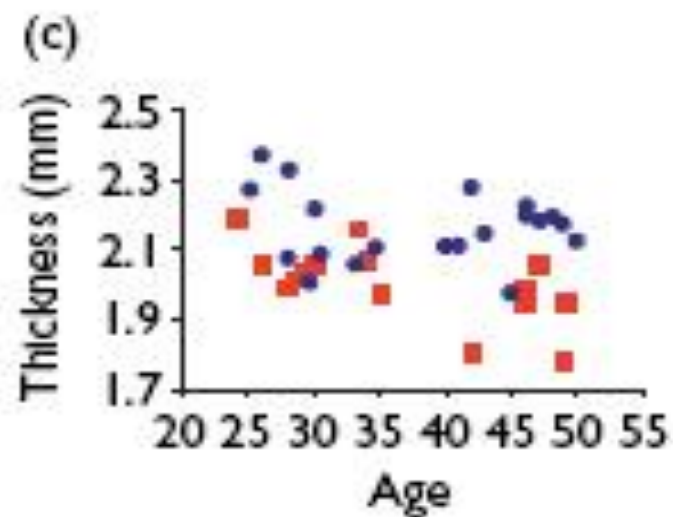
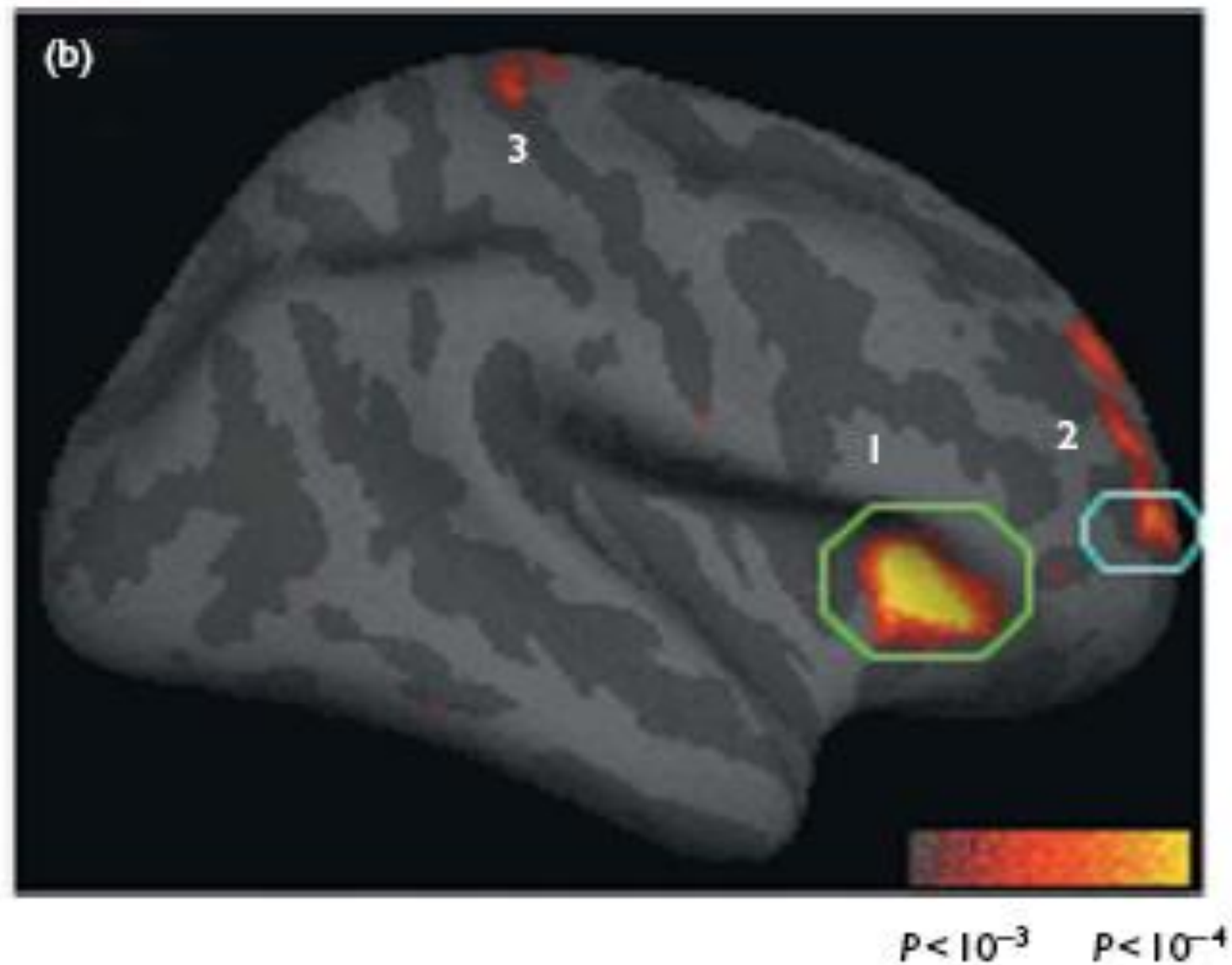




Neurons that fire together,

wire together.

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

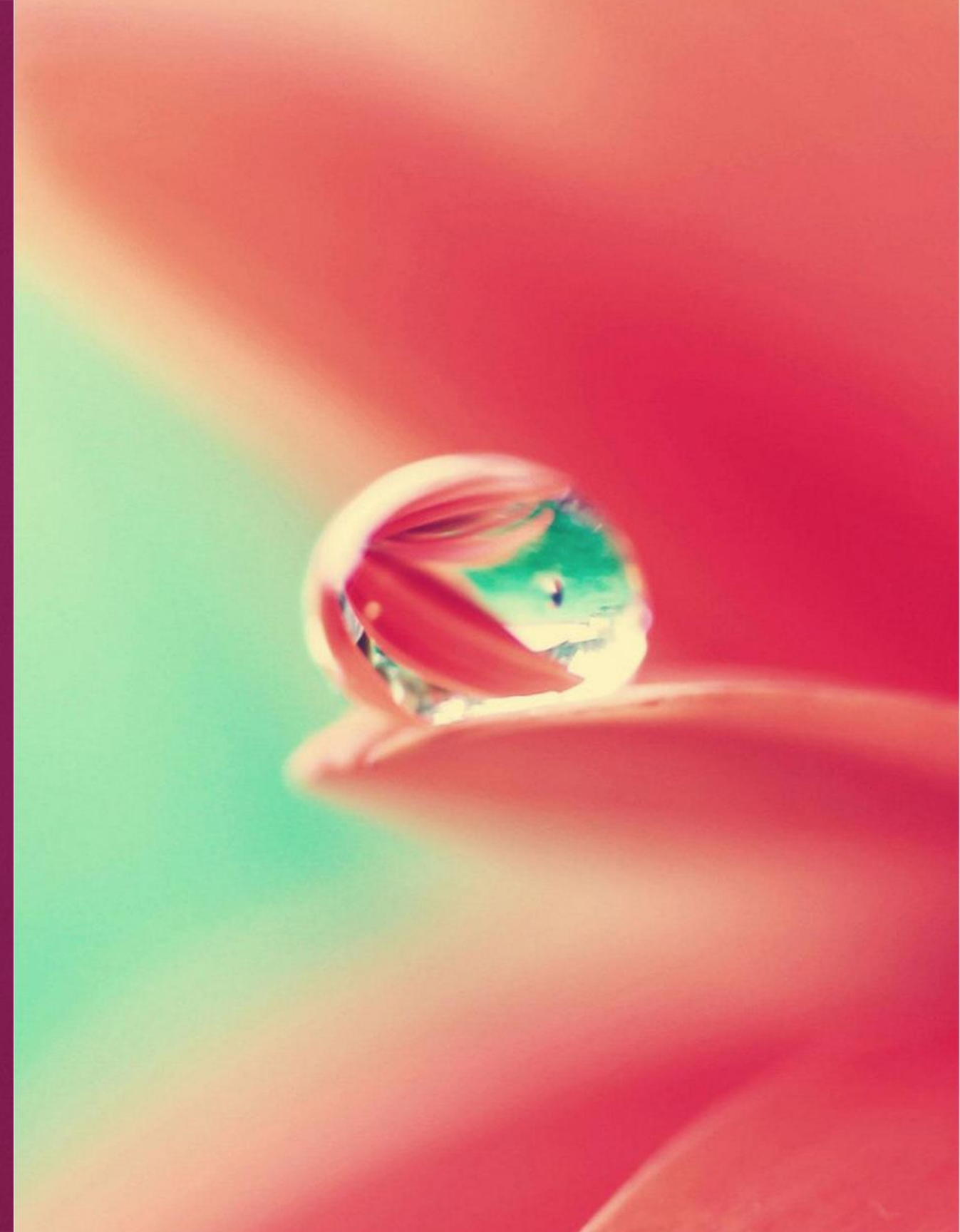


*Think not lightly of good, saying,
“It will not come to me.”*

*Drop by drop is
the water pot filled.*

*Likewise, the wise one,
Gathering it little by little,
Fills oneself with good.*

Dhammapada 9.122



In these ways, we can develop seven aspects
and *factors* of the highest happiness:

Steadiness

Warmheartedness

Fullness

Wholeness

Nowness

Allness

Timelessness

In the beginning, nothing came.

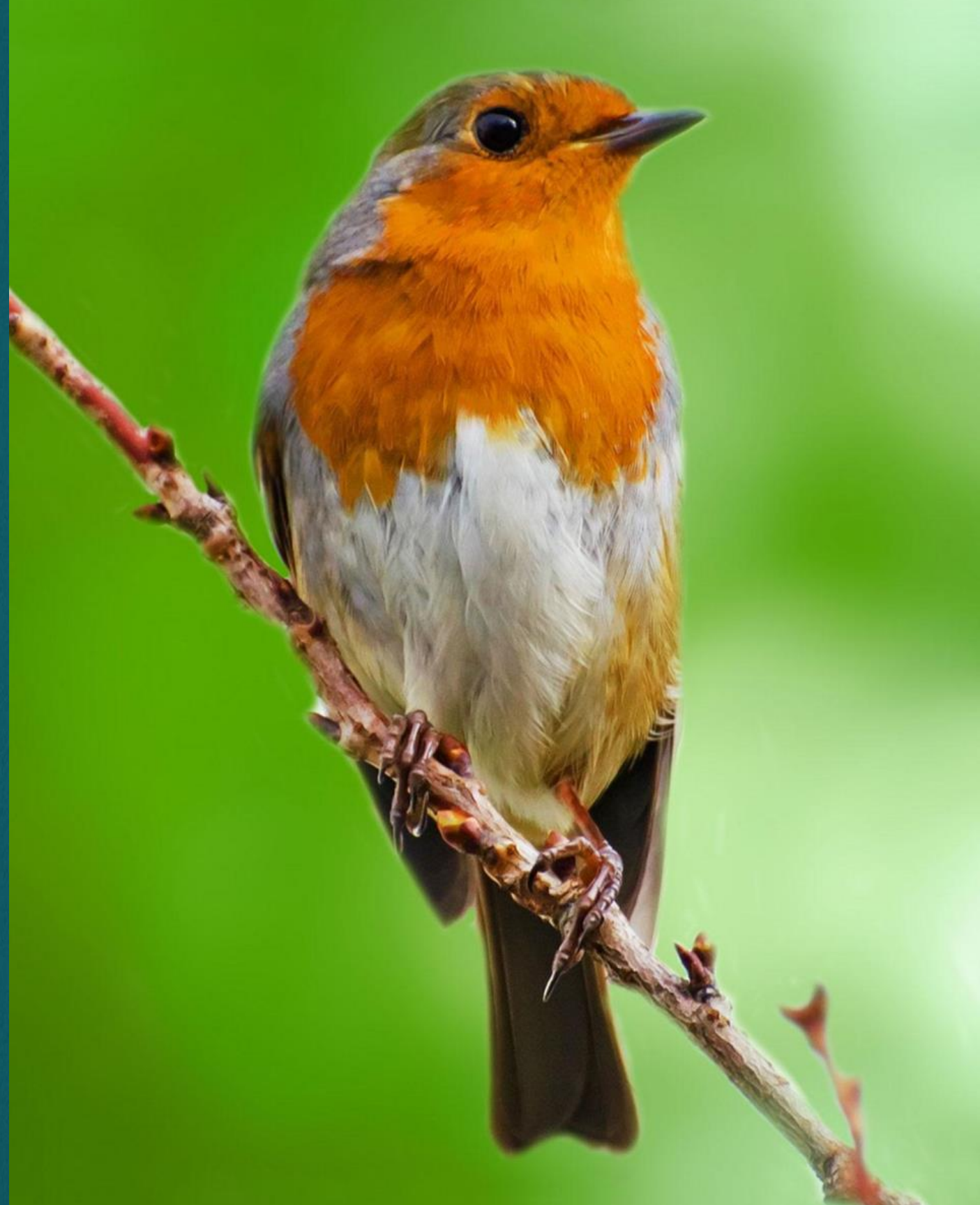
In the middle, nothing stayed.

In the end, nothing left.

Milarepa

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

Lao Tzu



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.”

Foundations of Meditation

- Good will toward yourself
- Posture that is comfortable and alert
- In the present; aware and letting go
- Stable object of attention
- The mind settling and coming to rest

Green Zone, Red Zone

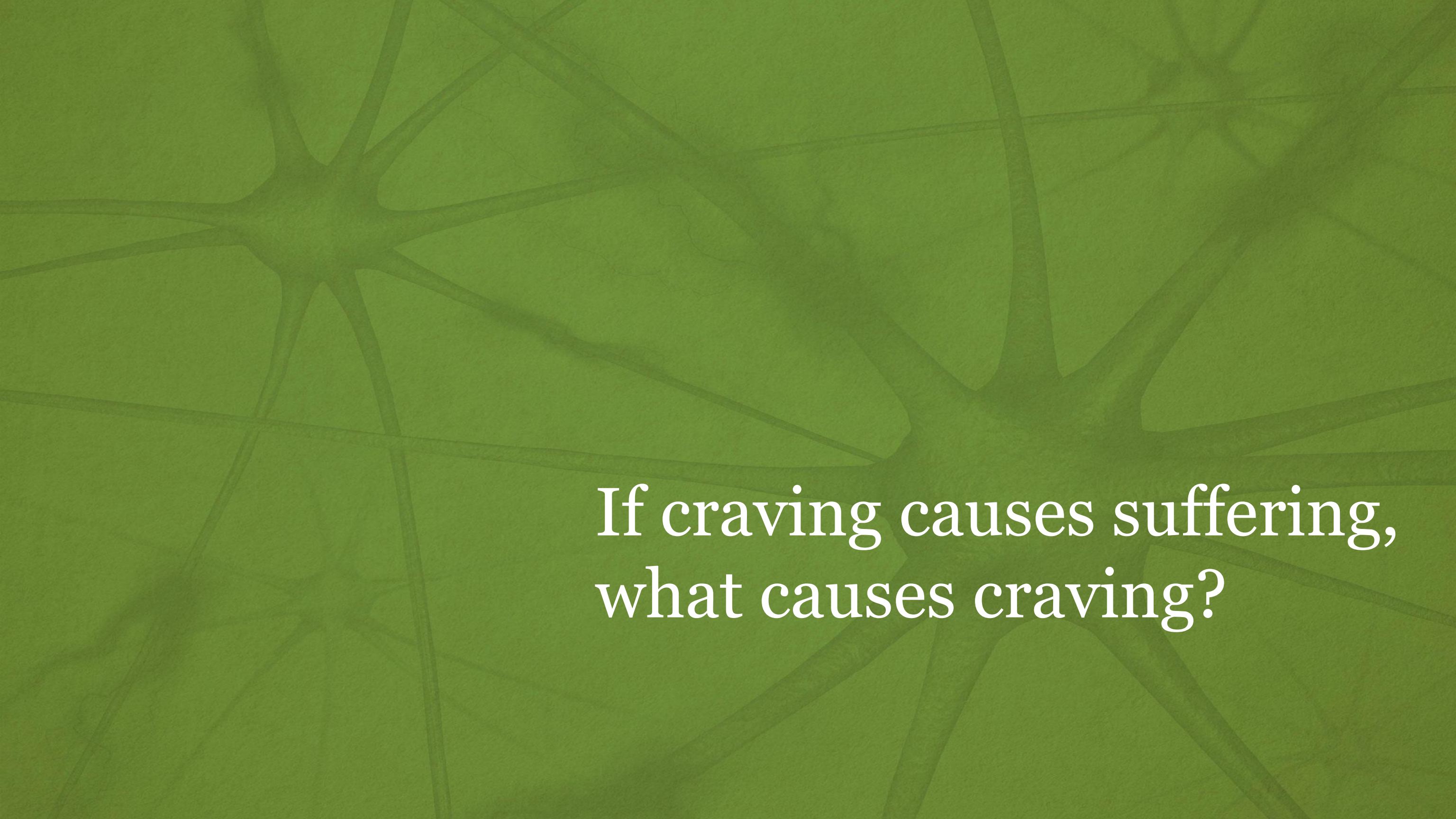
Four Ennobling Truths

There is suffering.

As craving increases, so does suffering.

As craving decreases, so does suffering.

There is an eight-part path that embodies
and leads to the ending of craving.



If craving causes suffering,
what causes craving?

Craving is **embodied**.

It arises in relationship to
an animal's **needs** –
including a complicated
animal like us.

So, what do we need?

Our Three Fundamental Needs



Safety



Satisfaction



Connection

Meeting Our Three Fundamental Needs



Safety

Avoiding
harms

(threat response)



Satisfaction

Approaching
rewards

(goal pursuit)

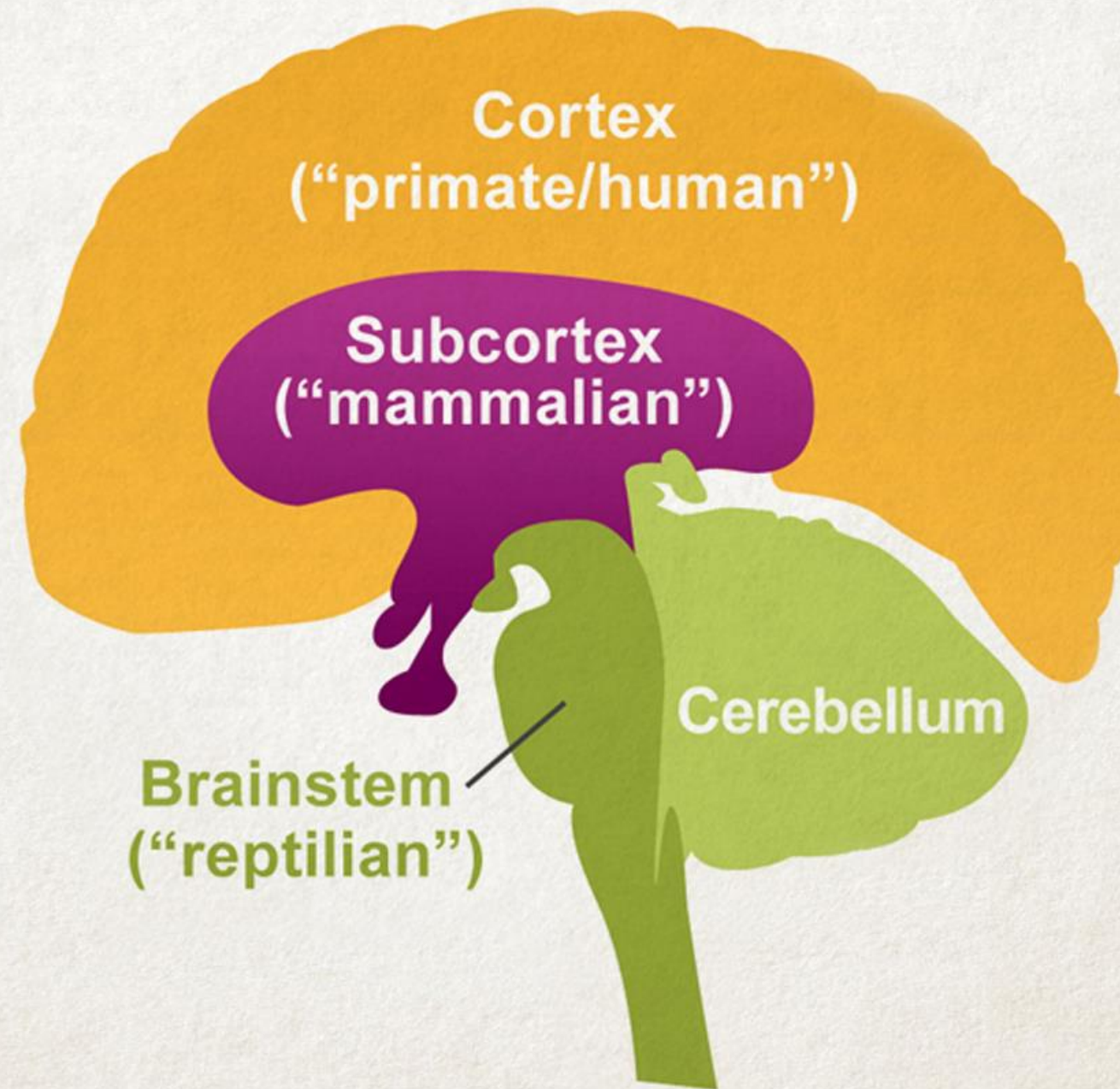


Connection

Attaching
to others

(social engagement)

The Evolving Brain



Can You Stay in the Green Zone When:

Things are
unpleasant?

Things are
pleasant?

Things are
relational?

What – if it were more present
in the mind of a person –
would really help?

How could a person have and
install more experiences of
these mental resources?

Some Resources Matched to Needs

Safety

See actual threats
See resources
Grit, fortitude
Feel protected
Alright right now
Relaxation
Calm

Peace

Satisfaction

Gratitude
Gladness
Feel successful
Healthy pleasures
Impulse control
Aspiration
Enthusiasm

Contentment

Connection

Empathy
Compassion
Kindness
Wide circle of “us”
Assertiveness
Self-worth
Confidence

Love

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.)

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?

People commonly experience
an underlying sense of deficit and disturbance
that produces the “craving” – broadly defined –
which causes suffering and harm.

Internalizing experiences of needs met
builds up a sense of fullness and balance –
so we can meet the next moment and its challenges
feeling already strong, happy, compassionate,
and at peace.

Pet the Lizard



Feed the Mouse



Hug the Monkey



Peace

Calming the Visceral Core

- A brief explanation of heartrate variability
- Relax.
- Gently lengthen exhalations . . . As long as or longer than inhalations . . . Then letting breathing be soft and natural.
- Bring attention into the chest and area of the heart.
- Be aware of heartfelt feelings . . . Perhaps love flowing in and flowing out in rhythm with the breath.

Calm Strength

Calming in the body and mind

Feeling strong

What feels good about calm strength?

Calm strength while aware of others

Calm strength with goodwill for others

Contentment

Gratitude and Gladness

- Bring to mind some of the things you have received and are thankful for . . . Good fortune, the kindness of others, the gift of life . . . The universe itself . . . Letting gratitude sink into you and spread inside you.
- Bring to mind some of the things you are glad about . . . Happy times with friends, challenges put behind you, recent successes, good things happening for others . . . Letting gladness sink into you and spread inside you.

Enoughness Already

- Focus on the sense of having received so much already . . .
- Get a sense of the fullness in the present moment . . . So much texture, so many sensations, sights, thoughts, feelings . . . Almost overwhelming, why seek anything more . . .
- Find a contentment in the moment as it is, moment after moment . . . Not wishing it to be different than it is . . . Drivenness and grasping and discontent falling away . . . Already satisfied.

Love

Self-Compassion

Bring to mind beings who care about you . . . Focus on feeling cared about. . . Use HEAL to take in this experience.

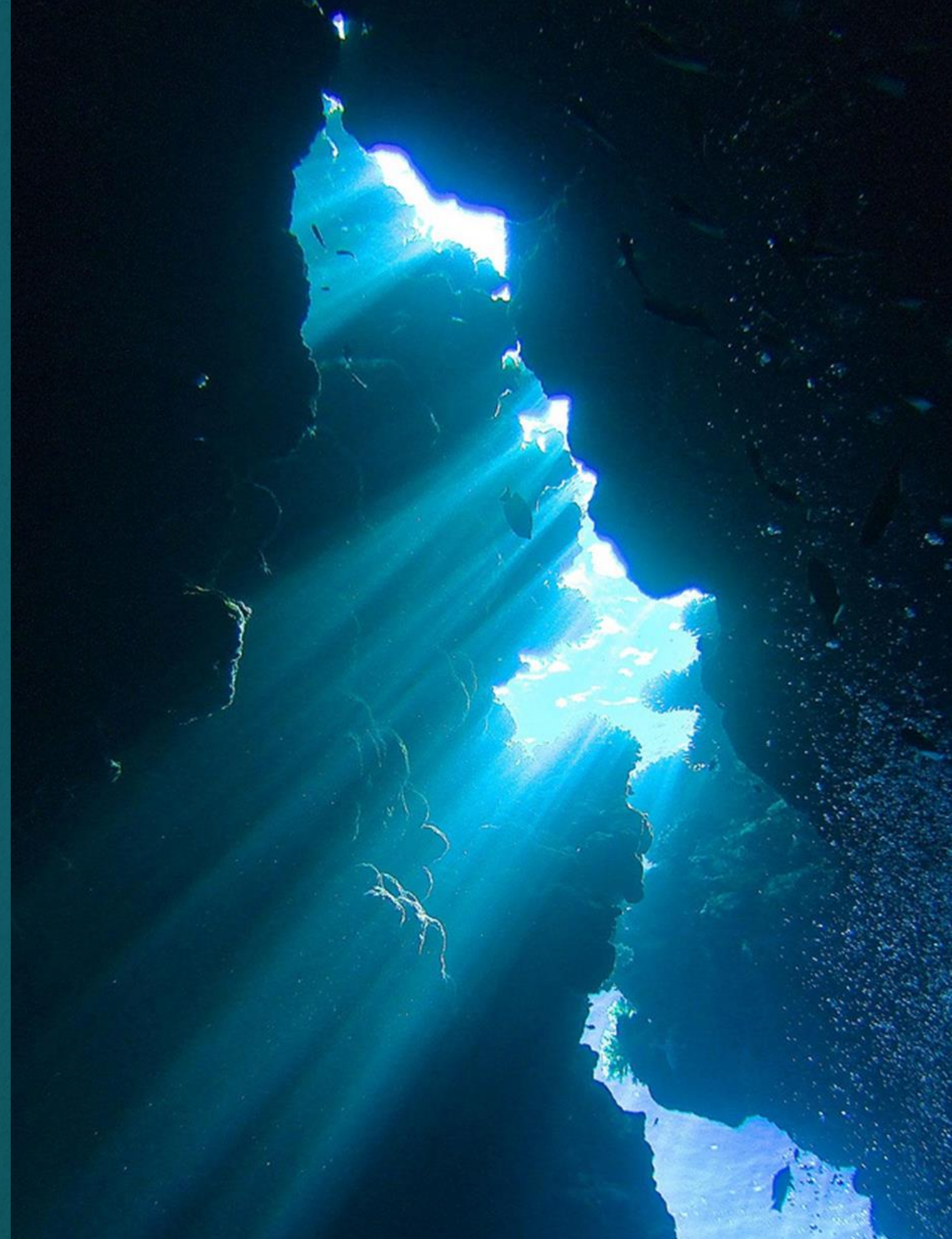
Bring to mind beings for whom you have compassion . . . Receive the sense of compassion into yourself . . . Know what compassion feels like.

Be aware of your own burdens, stresses, and suffering – and bring compassion to yourself . . . Get a sense of caring, warmth, support, compassion sinking deeply into you.

“Anthem”

*Ring the bells that still can ring
Forget your perfect offering
There is a crack, a crack in everything
That's how the light gets in*

Leonard Cohen



Us and Them

Within-group cooperation, and between-group aggression.

Our biological nature is much more inclined toward cooperation than aggression. But we are very reactive to threats.

That reactivity is intensified and often exploited by economic, cultural, and religious factors.

Two wolves in your heart:

Love sees a vast circle in which all beings are “us.”

Hate sees a small circle of “us,” even only the self.

Which one will you feed?

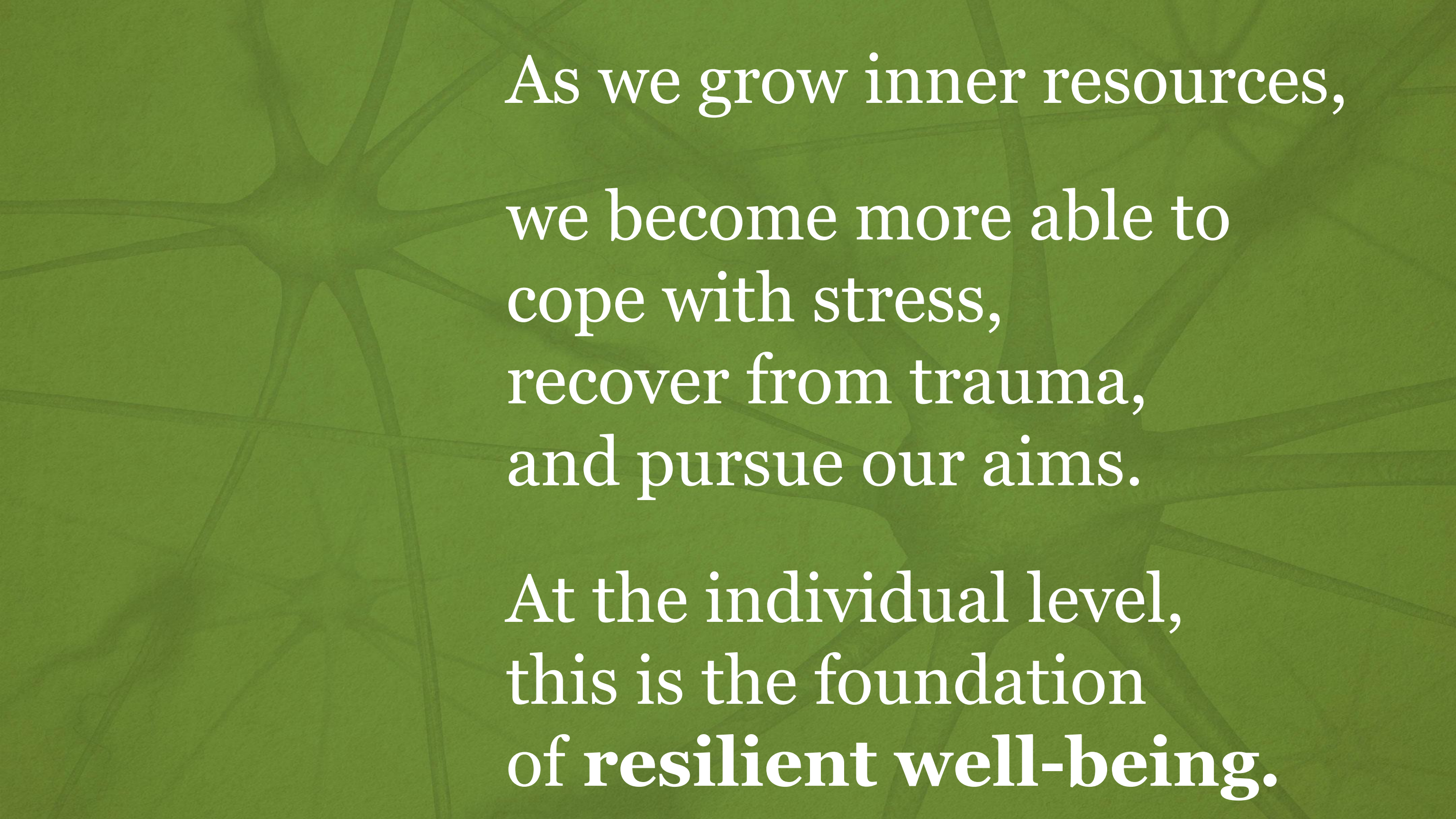




A Widening Circle

- Bring to mind beings you care about . . . Friends, family, pets, people who have helped you . . .
- Get a sense of “us” . . . Then bring more and more beings into that circle . . .
- Finding common ground . . . Widening the circle of “us” . . .
- Resting in the largest sense of “us” . . .

The Wider World

The background is a solid green color with a faint, abstract pattern of intersecting lines that create a starburst or web-like effect. The lines are a slightly darker shade of green than the background.

As we grow inner resources,
we become more able to
cope with stress,
recover from trauma,
and pursue our aims.

At the individual level,
this is the foundation
of **resilient well-being.**

As they grow an unshakable core
of peace, contentment, and love,
people become less vulnerable to
the classic manipulations of
fear and anger,
greed and possessiveness,
and “us” against “them” conflicts.

Which has big implications for our world.

Coming Home

Peace

Contentment

Love

References

Suggested Books

See **RickHanson.net** for other good 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.

Suggested References - 1

See www.RickHanson.net/key-papers/ for other suggested readings.

- Atmanspacher, H. & Graben, P. (2007). Contextual emergence of mental states from neurodynamics. *Chaos & Complexity Letters*, 2, 151-168.
- Bailey, C. H., Bartsch, D., & Kandel, E. R. (1996). Toward a molecular definition of long-term memory storage. *PNAS*, 93(24), 13445-13452.
- Baumeister, R., Bratlavsky, E., Finkenauer, C. & Vohs, K. (2001). Bad is stronger than good. *Review of General Psychology*, 5, 323-370.
- Bryant, F. B., & Veroff, J. (2007). *Savoring: A new model of positive experience*. Mahwah, NJ: Erlbaum.
- Casasanto, D., & Dijkstra, K. (2010). Motor action and emotional memory. *Cognition*, 115, 179-185.
- Claxton, G. (2002). Education for the learning age: A sociocultural approach to learning to learn. *Learning for life in the 21st century*, 21-33.
- Clopath, C. (2012). Synaptic consolidation: an approach to long-term learning. *Cognitive Neurodynamics*, 6(3), 251-257.

Suggested References - 2

- Craik F.I.M. 2007. Encoding: A cognitive perspective. In (Eds. Roediger HL I.I.I., Dudai Y. & Fitzpatrick S.M.), *Science of Memory: Concepts* (pp. 129-135). New York, NY: Oxford University Press.
- Davidson, R.J. (2004). Well-being and affective style: neural substrates and biobehavioural correlates. *Philosophical Transactions of the Royal Society*, 359, 1395-1411.
- Dudai, Y. (2004). The neurobiology of consolidations, or, how stable is the engram?. *Annu. Rev. Psychol.*, 55, 51-86.
- Dweck, C. (2006). *Mindset: The new psychology of success*. Random House.
- Fredrickson, B. L. (2013). Positive emotions broaden and build. *Advances in experimental social psychology*, 47(1), 53.
- Garland, E. L., Fredrickson, B., Kring, A. M., Johnson, D. P., Meyer, P. S., & Penn, D. L. (2010). Upward spirals of positive emotions counter downward spirals of negativity: Insights from the broaden-and-build theory and affective neuroscience on the treatment of emotion dysfunctions and deficits in psychopathology. *Clinical psychology review*, 30(7), 849-864.

Suggested References - 3

- Hamann, S. B., Ely, T. D., Grafton, S. T., & Kilts, C. D. (1999). Amygdala activity related to enhanced memory for pleasant and aversive stimuli. *Nature neuroscience*, 2(3), 289-293.
- Hanson, R. 2011. *Hardwiring happiness: The new brain science of contentment, calm, and confidence*. New York: Harmony.
- Hölzel, B. K., Ott, U., Gard, T., Hempel, H., Weygandt, M., Morgen, K., & Vaitl, D. (2008). Investigation of mindfulness meditation practitioners with voxel-based morphometry. *Social cognitive and affective neuroscience*, 3(1), 55-61.
- Hölzel, B. K., Carmody, J., Evans, K. C., Hoge, E. A., Dusek, J. A., Morgan, L., ... & Lazar, S. W. (2009). Stress reduction correlates with structural changes in the amygdala. *Social cognitive and affective neuroscience*, ns034.
- Jamrozik, A., McQuire, M., Cardillo, E. R., & Chatterjee, A. (2016). Metaphor: Bridging embodiment to abstraction. *Psychonomic bulletin & review*, 1-10.
- Kensinger, E. A., & Corkin, S. (2004). Two routes to emotional memory: Distinct neural processes for valence and arousal. *Proceedings of the National Academy of Sciences of the United States of America*, 101(9), 3310-3315.

Suggested References - 4

- Koch, J. M., Hinze-Selch, D., Stingele, K., Huchzermeier, C., Goder, R., Seeck-Hirschner, M., et al. (2009). Changes in CREB phosphorylation and BDNF plasma levels during psychotherapy of depression. *Psychotherapy and Psychosomatics*, 78(3), 187–192.
- 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.
- Lee, T.-H., Greening, S. G., & Mather, M. (2015). Encoding of goal-relevant stimuli is strengthened by emotional arousal in memory. *Frontiers in Psychology*, 6, 1173.
- Lutz, A., Brefczynski-Lewis, J., Johnstone, T., & Davidson, R. J. (2008). Regulation of the neural circuitry of emotion by compassion meditation: Effects of meditative expertise. *PLoS One*, 3(3), e1897.
- Madan, C. R. (2013). Toward a common theory for learning from reward, affect, and motivation: the SIMON framework. *Frontiers in systems neuroscience*, 7.
- Madan, C. R., & Singhal, A. (2012). Motor imagery and higher-level cognition: four hurdles before research can sprint forward. *Cognitive Processing*, 13(3), 211-229.

Suggested References - 5

- McEwen, B. S. (2016). In pursuit of resilience: stress, epigenetics, and brain plasticity. *Annals of the New York Academy of Sciences*, 1373(1), 56-64.
- McGaugh, J.L. 2000. Memory: A century of consolidation. *Science*, 287, 248-251.
- Nadel, L., Hupbach, A., Gomez, R., & Newman-Smith, K. (2012). Memory formation, consolidation and transformation. *Neuroscience & Biobehavioral Reviews*, 36(7), 1640-1645.
- Pais-Vieira, C., Wing, E. A., & Cabeza, R. (2016). The influence of self-awareness on emotional memory formation: An fMRI study. *Social cognitive and affective neuroscience*, 11(4), 580-592.
- Palombo, D. J., & Madan, C. R. (2015). Making Memories That Last. *The Journal of Neuroscience*, 35(30), 10643-10644.
- Paquette, V., Levesque, J., Mensour, B., Leroux, J. M., Beaudoin, G., Bourgouin, P. & Bearegard, M. 2003 Change the mind and you change the brain: effects of cognitive-behavioral therapy on the neural correlates of spider phobia. *NeuroImage* 18, 401-409.
- Rozin, P. & Royzman, E.B. (2001). Negativity bias, negativity dominance, and contagion. *Personality and Social Psychology Review*, 5, 296-320.

Suggested References - 6

- Sneve, M. H., Grydeland, H., Nyberg, L., Bowles, B., Amlie, I. K., Langnes, E., ... & Fjell, A. M. (2015). Mechanisms underlying encoding of short-lived versus durable episodic memories. *The Journal of Neuroscience*, 35(13), 5202-5212.
- Talmi, D. (2013). Enhanced Emotional Memory Cognitive and Neural Mechanisms. *Current Directions in Psychological Science*, 22(6), 430-436.
- Thompson, E. (2007). *Mind in life: Biology, phenomenology, and the sciences of mind*. Harvard University Press.
- Wittmann, B. C., Schott, B. H., Guderian, S., Frey, J. U., Heinze, H. J., & Düzel, E. (2005). Reward-related FMRI activation of dopaminergic midbrain is associated with enhanced hippocampus-dependent long-term memory formation. *Neuron*, 45(3), 459-467.
- Yonelinas, A. P., & Ritchey, M. (2015). The slow forgetting of emotional episodic memories: an emotional binding account. *Trends in cognitive sciences*, 19(5), 259-267.

Supplemental Materials

Simple Practices

Look for beneficial experiences to take in.

Stay with them for a breath or longer.

Feel them in your body.

Focus on what feels good or is meaningful.

An Overview of Current Research

Much research on people that psychological practices lead to psychological benefits, presumably via changing their brains.

Much research on other animals that various stimuli lead to many kinds of changes in their brains.

Some research that psychological practices change people's brains.

Scattered research on deliberate internal mental factors that lead to individual differences in gains from experiences.

“The absence of evidence is not evidence of absence.”

Key Mechanisms of Neuroplasticity

- (De)Sensitizing existing synapses
- Building new synapses between neurons
- Altered gene expression inside neurons
- Building and integrating new neurons
- Altered activity in a region
- Altered connectivity among regions
- Changes in neurochemical activity (e.g., dopamine)
- Changes in neurotrophic factors
- Modulation by stress hormones, cytokines
- Slow wave and REM sleep
- Information transfer from hippocampus to cortex

The Negativity Bias

As the nervous system evolved, avoiding “sticks” was usually more consequential than getting “carrots.”

1. So we scan for bad news,
2. Over-focus on it,
3. Over-react to it,
4. Turn it quickly into (implicit) memory,
5. Sensitize the brain to the negative, and
6. Create vicious cycles with others.

Feeling Alright Right Now

- Aware of the body going on being . . . Enough air to breathe . . . The heart beating fine . . . Basically alright . . . Now
- You may not have been basically alright in the past and you may not be basically alright in the future . . . But now you are OK . . . Still basically OK . . . Now
- Letting go of unnecessary anxiety, guarding, bracing
- Reassurance, relief, calming is sinking into you . . . Still basically alright . . . Now

The Responsive Mode is Home Base

In the **Responsive “green zone,”** the body defaults to a sustainable equilibrium of refueling, repairing and recovering.

The mind defaults to a sustainable equilibrium of:

Avoiding

Peace

Approaching

Contentment

Attaching

Love

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

The Reactive Mode is Leaving Home

In the **Reactive “red zone,”** the body fires up into the stress response: fight, flight, or freeze; outputs usually exceed inputs; long-term building projects are deferred.

The mind fires up into:

Avoiding

Fear

Approaching

Frustration

Attaching

Heartache

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

Neural Factors of Steadiness

- Intention – Top-down and bottom-up
- Relaxation – Parasympathetic NS
- Heartwarming – Social engagement sys.
- Safer – Calms sympathetic NS
- Positive emotions – Steadies attention,
reduces “craving”