

# **Growing Inner Resources For a Challenging World**

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**ITRC**

**Building Human Resilience  
For Climate Change**

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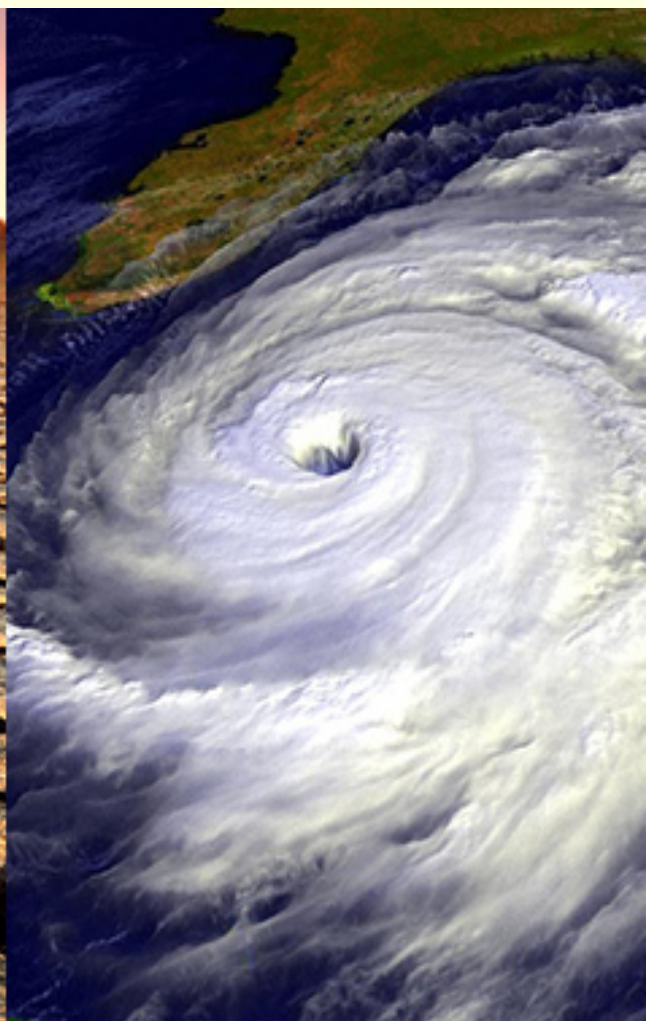


**It's Good to Grow the Good Inside**

# What Shapes a Person's Course?

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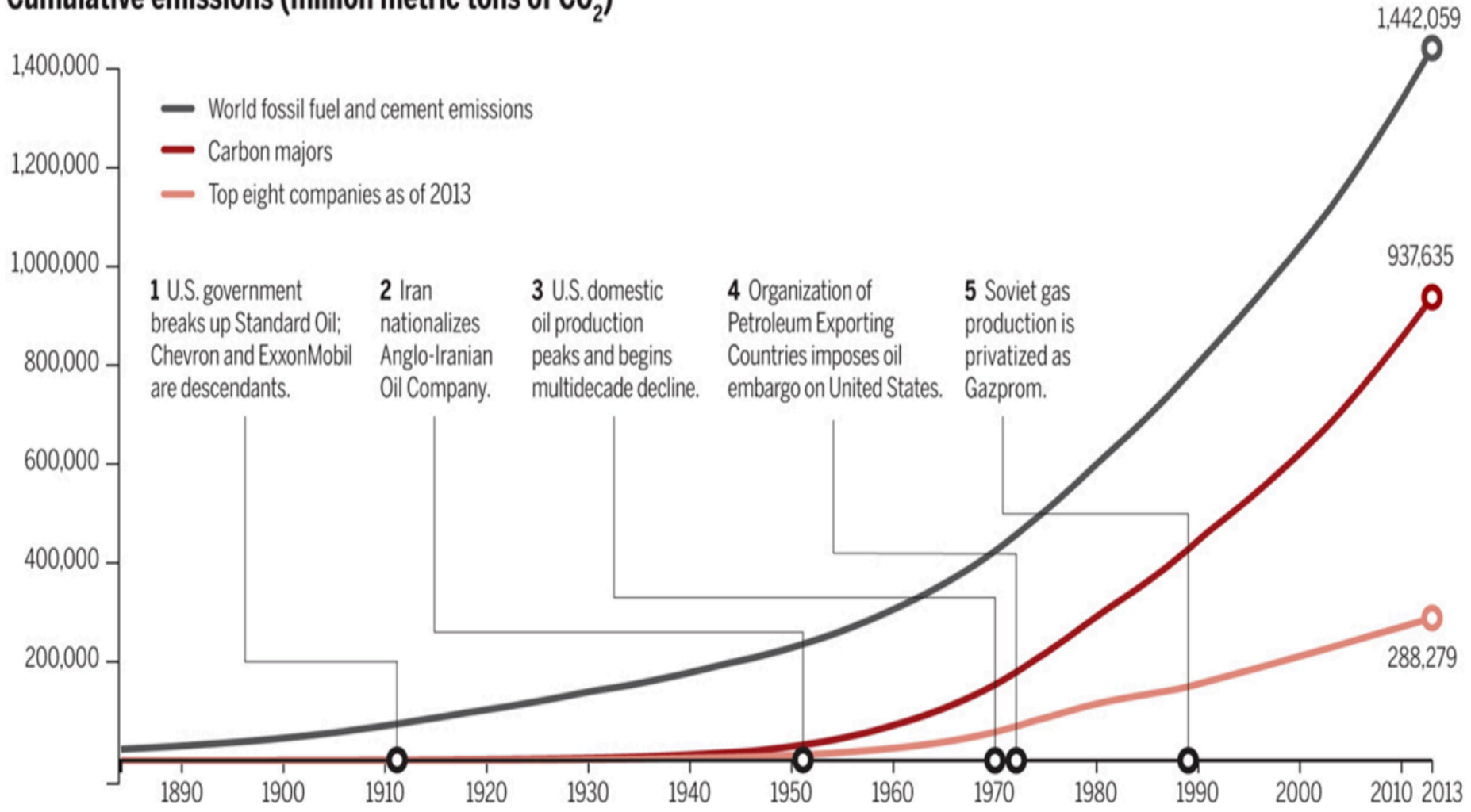
## Challenges



# Holding carbon producers accountable

Analyzing the amount of carbon that the fossil fuel and cement industries have extracted from the ground, Heede found that more than 60% of emissions since the Industrial Revolution can be traced to the “carbon majors”—companies producing at least 8 million tons of carbon a year.

## Cumulative emissions (million metric tons of CO<sub>2</sub>)



# What Shapes a Person's Course?

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**Challenges**

**Vulnerabilities**

# What Shapes a Person's Course?

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**Challenges**

**Vulnerabilities**

**Resources**

# Where Are Resources Located?

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**World**



# Where Are Resources Located?

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**World**

**Body**

# Where Are Resources Located?

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**World**

**Body**

**Mind**

# Some Mental Resources

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- **Understandings** – insight into self and others
- **Capabilities** – self-regulation, social skills
- **Positive emotions** – gratitude, love, delight
- **Attitudes** – confidence, optimism, tolerance
- **Motivations** – helping others, wanting to learn
- **Virtues** – patience, generosity, courage, kindness<sup>11</sup>

MENTAL HEALTH WORKERS  
ON THE FRONT LINES  
CLIMATE CHANGE=HUMAN DISTRESS


BUS  
LANE  
TOW &  
FINE  
\$205.00  
MINIMUM

BUSES  
ONLY  
4 mi - 7 mi  
MON - THU, FRI

CLIMATE CHANGE  
IS A HEALTH  
CRISIS

CLIMATE CHANGE  
IS A HEALTH  
CRISIS

Open 7 Days



**The harder a person's life,  
the more challenges one faces,  
the more important it is  
to grow inner strengths.**



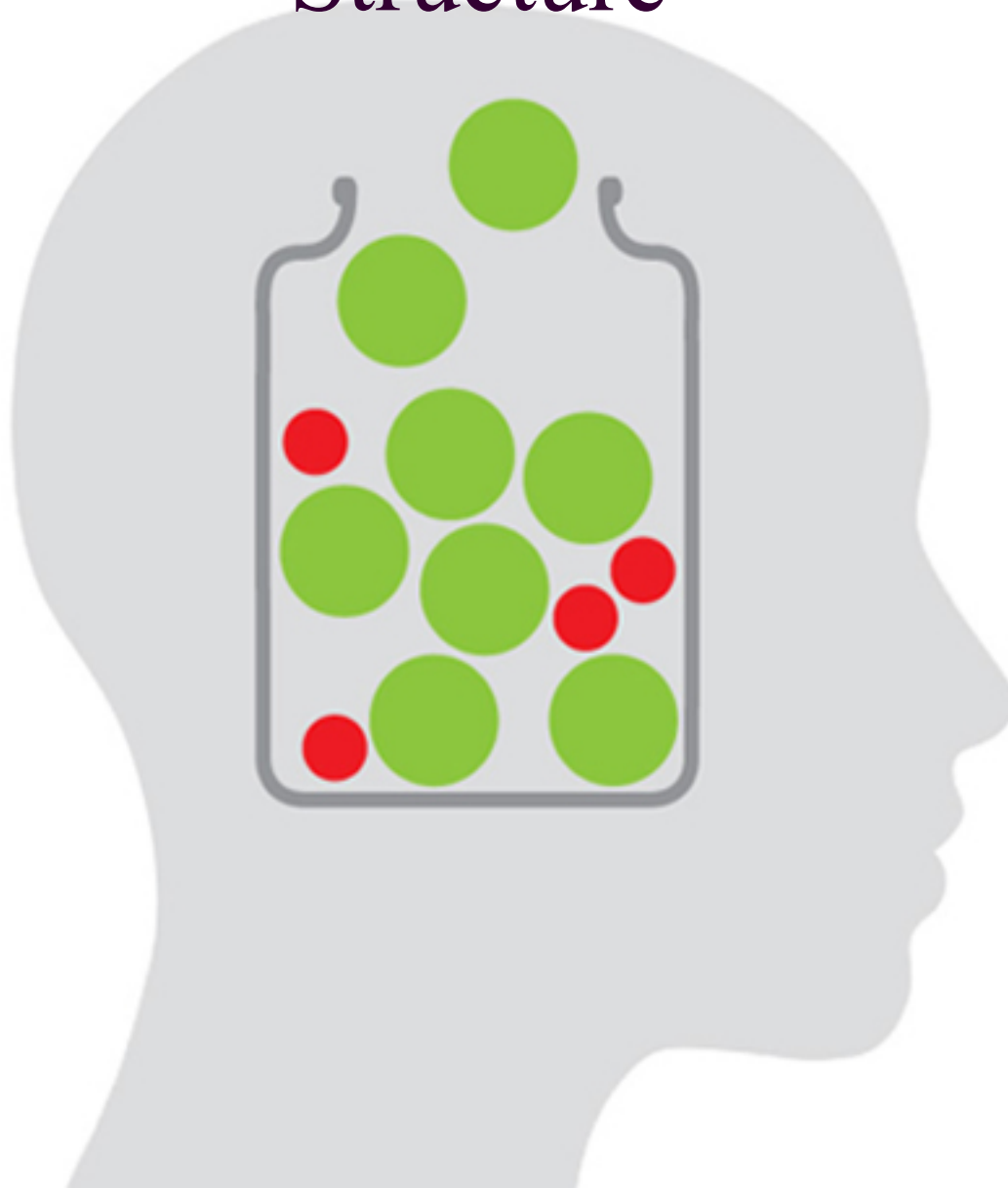


# How to do it?

The image is a split-screen composition featuring two wolves. The left half shows a wolf with light grey and white fur, looking slightly to the right with a calm, open-mouthed expression, showing its teeth. The right half shows a wolf with darker grey and brown fur, looking down and to the left with a more intense, slightly aggressive expression, also showing its teeth. The text "Two wolves in the heart" is centered across the middle of the image in a white, serif font.

# Two wolves in the heart

# Inner Strengths Are Built From Brain Structure







**How do you get these inner strengths  
into your brain?**



# **States and Traits**



Neurons that fire together,

wire together.

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**We grow beneficial traits -  
like resilience, compassion, and courage -  
by hardwiring experiences of them  
into the brain.**

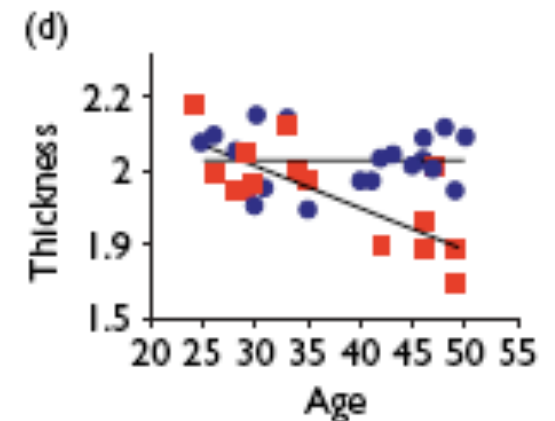
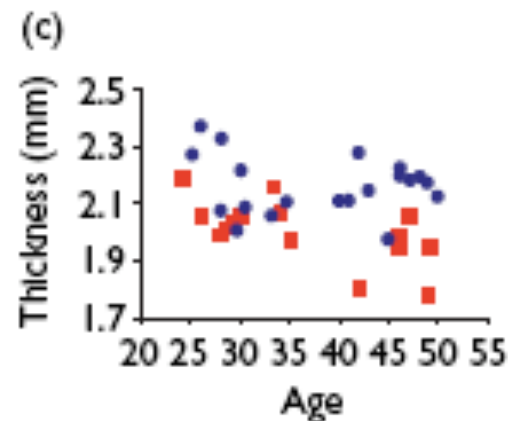
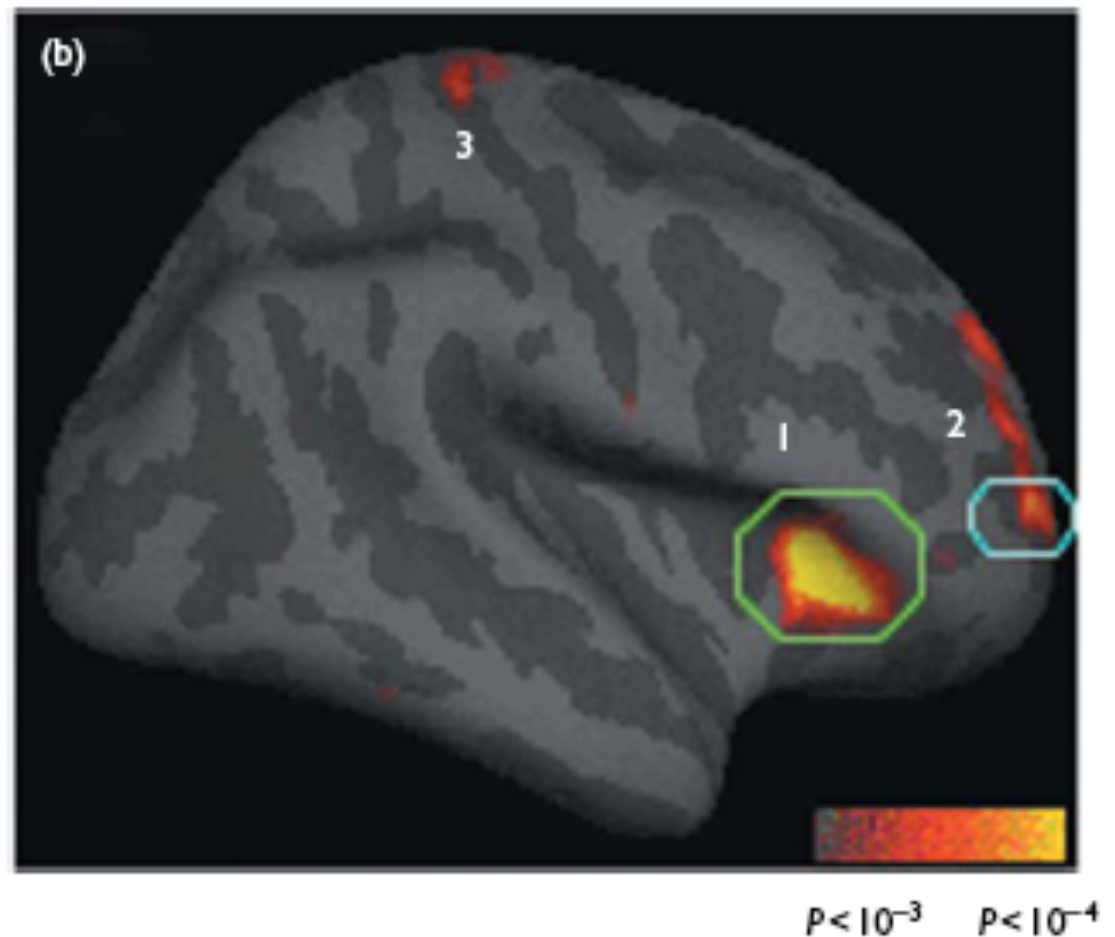
**From state to trait**

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**Traits** are more reliable than states.

**You take them with you wherever you go.**


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



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**The problem is,  
most people have many good states  
that never become good traits.**

**This is a limitation in much  
psychotherapy, human resources  
training, coaching, character education,  
and mindfulness programs.**



**Meanwhile,  
stressful, painful, harmful experiences  
are being rapidly converted  
into lasting changes  
in neural structure or function.**



# The Negativity Bias

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**During the 600 million year evolution of the nervous system, 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. Install it quickly in implicit memory,**
- 5. Sensitize the brain to the negative, and**
- 6. Create vicious cycles with others.**

# Velcro for Bad, Teflon for Good

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**The negativity bias**

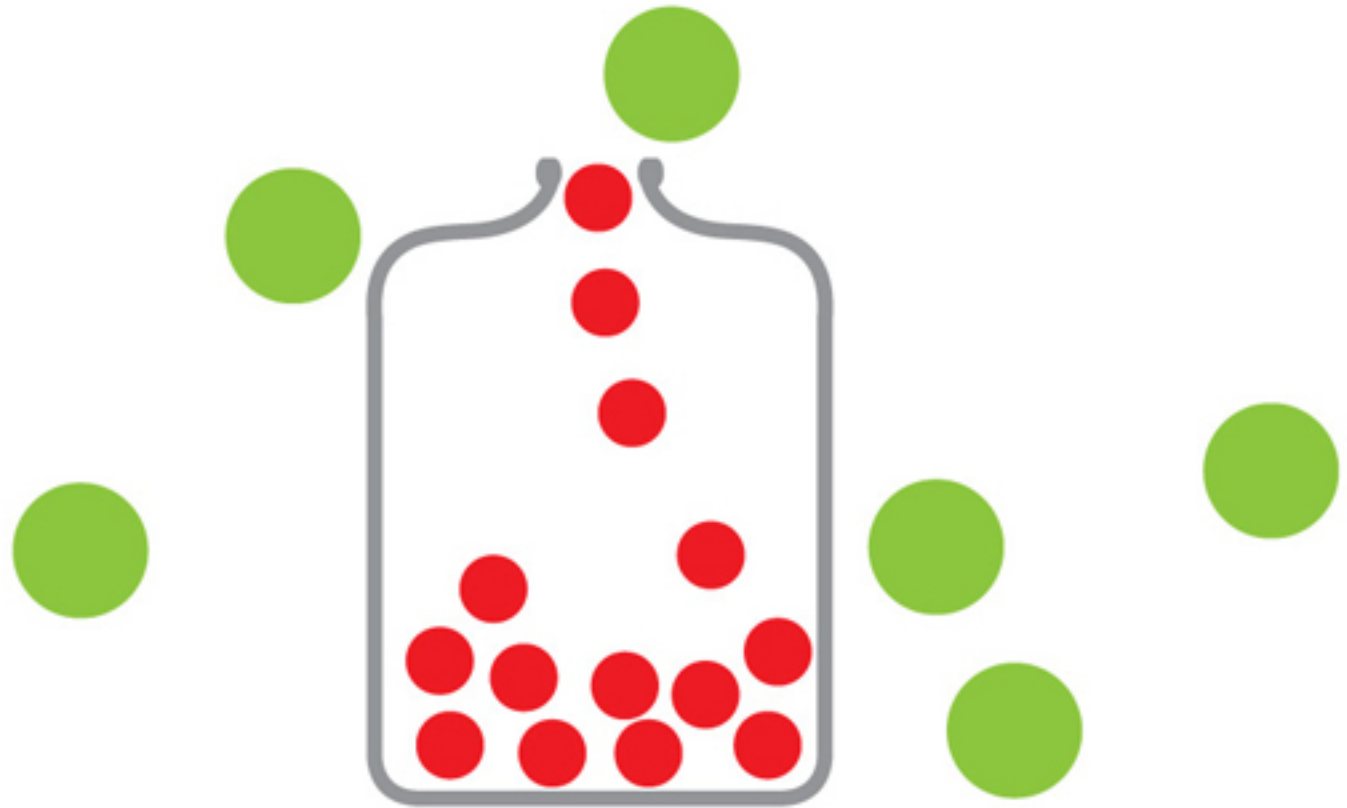
*bad experiences*

*good experiences*

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

**Even though  
learning from good experiences  
is what grows inner strengths.**



**The Negativity Bias**

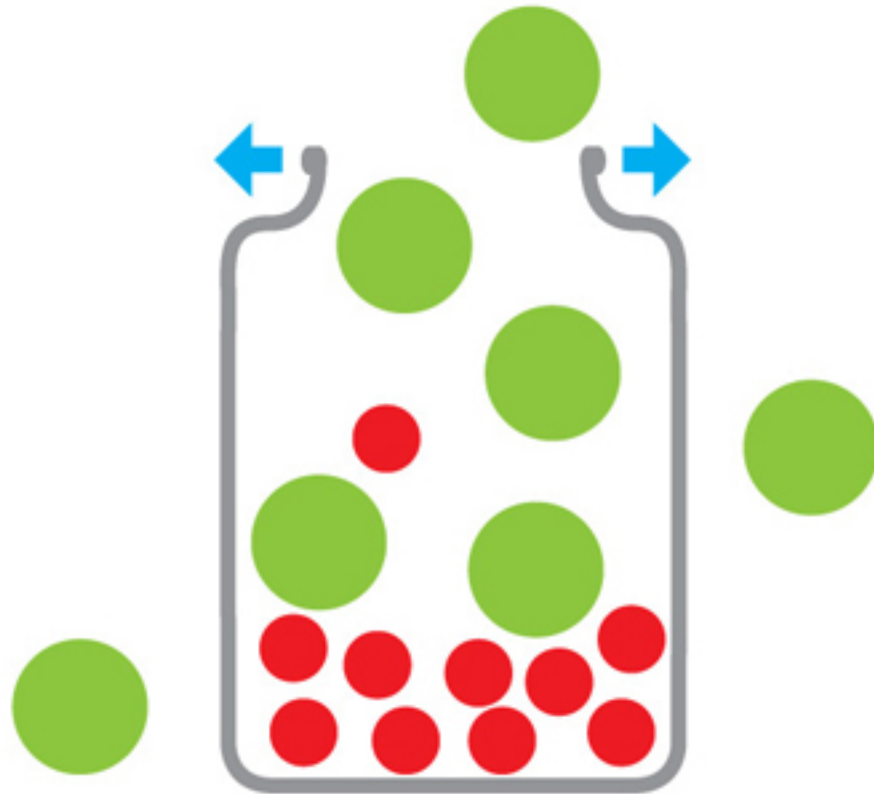


A composite image showing three Stone Age people in a modern city park. In the background, tall apartment buildings rise above a dense line of green trees. In the foreground, three people dressed in animal skins are sitting on a grassy lawn. The person in the center is looking directly at the camera, 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.

# Stone age brains in the 21st century



**What can we do?**



**Getting the Good Stuff into Your Brain**

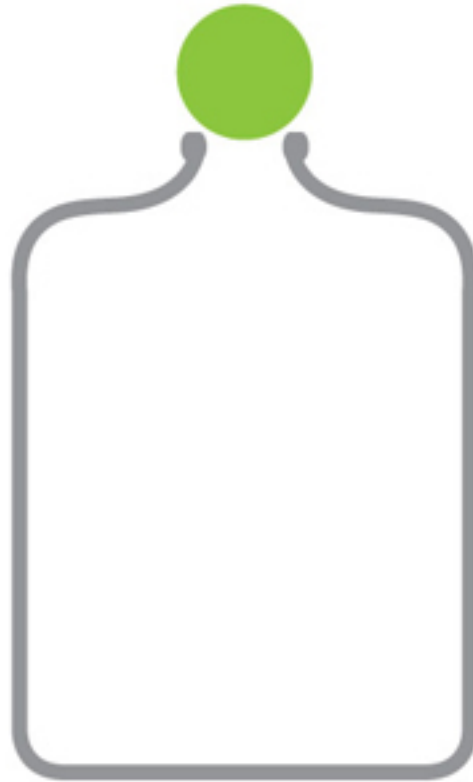
# Turning States into Traits



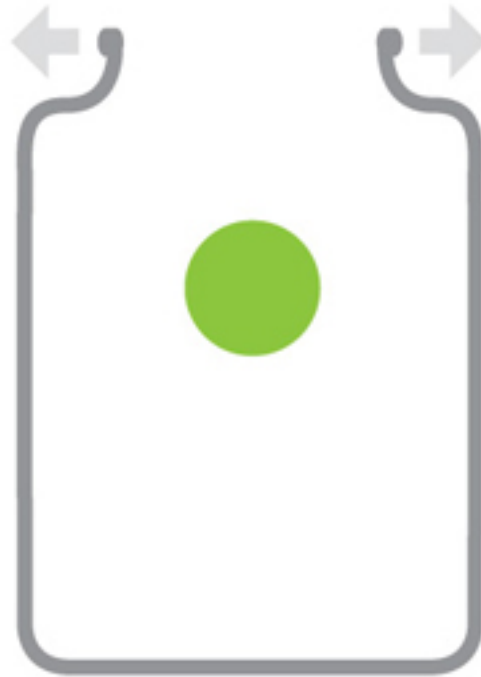
# Let's Try It

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- **Notice** that you are alright right now.
  - Have the experience.
  - Enrich it.
  - Absorb it.
- **Create** the experience of compassion.
  - Have the experience.
  - Enrich it.
  - Absorb it.



**Have a Good Experience**



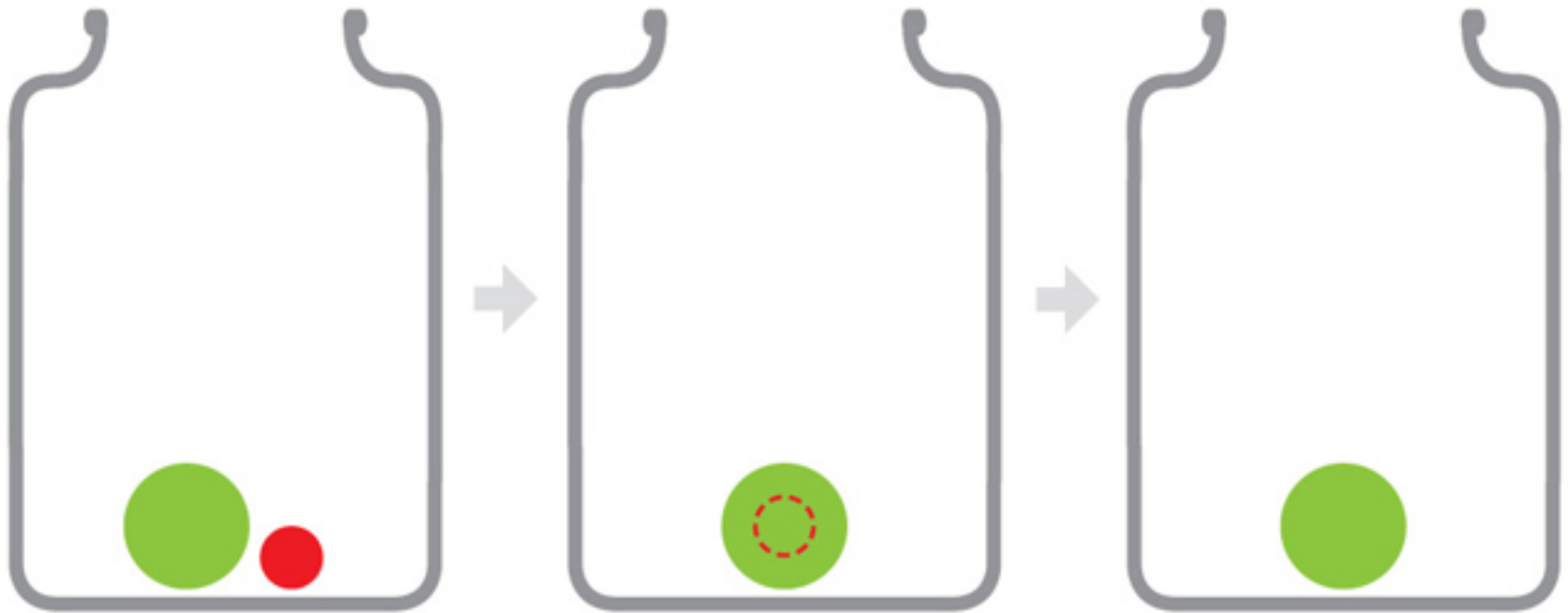
**Enrich It**



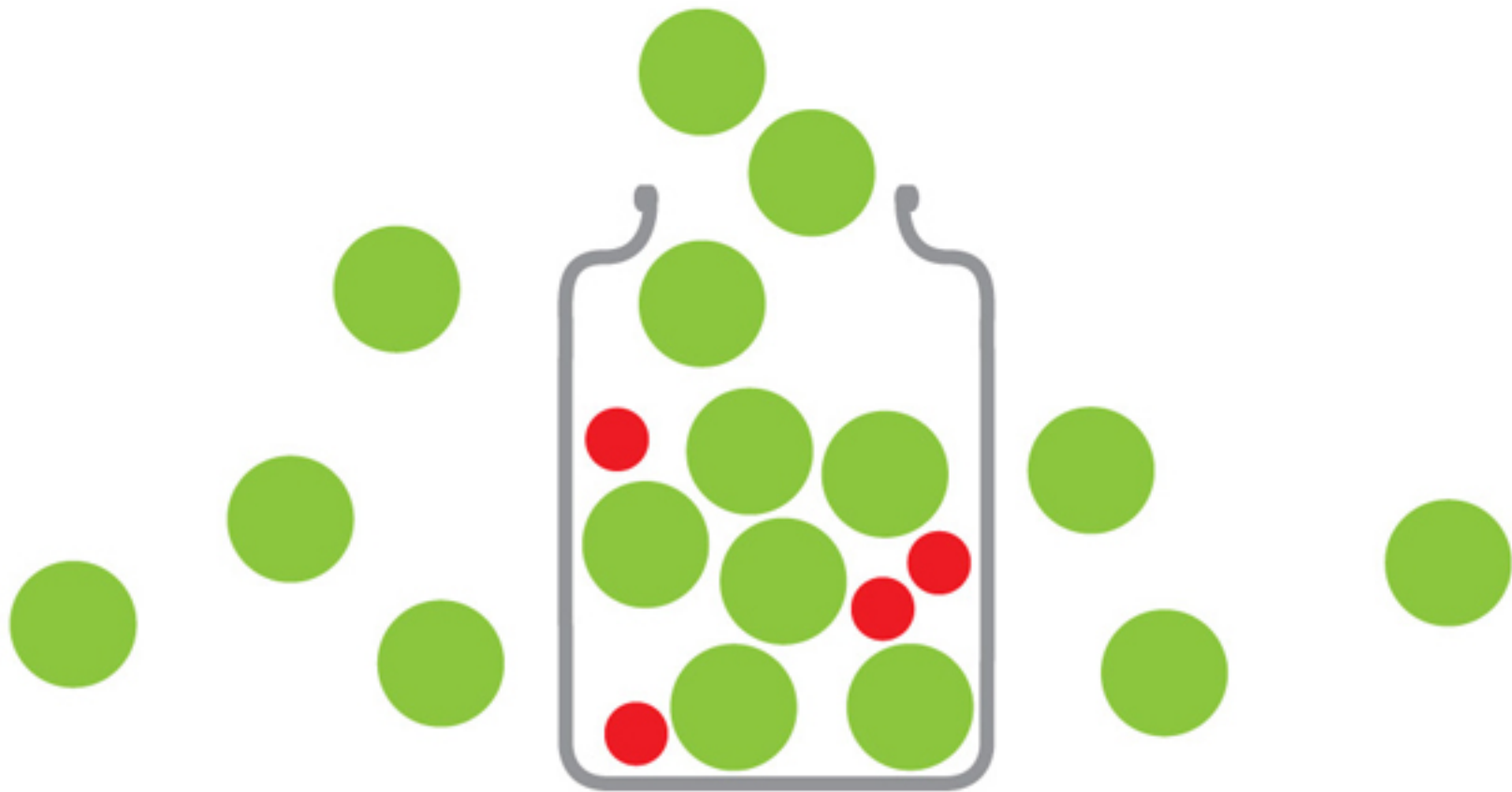
**A**bsorb It

# Like a Nice Fire





**Link Positive and Negative [optional]**



**Have It, Enjoy It**

# HEAL Yourself

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## Activation

1. **Have** a beneficial experience.

## Installation

2. **Enrich** it.

3. **Absorb** it.

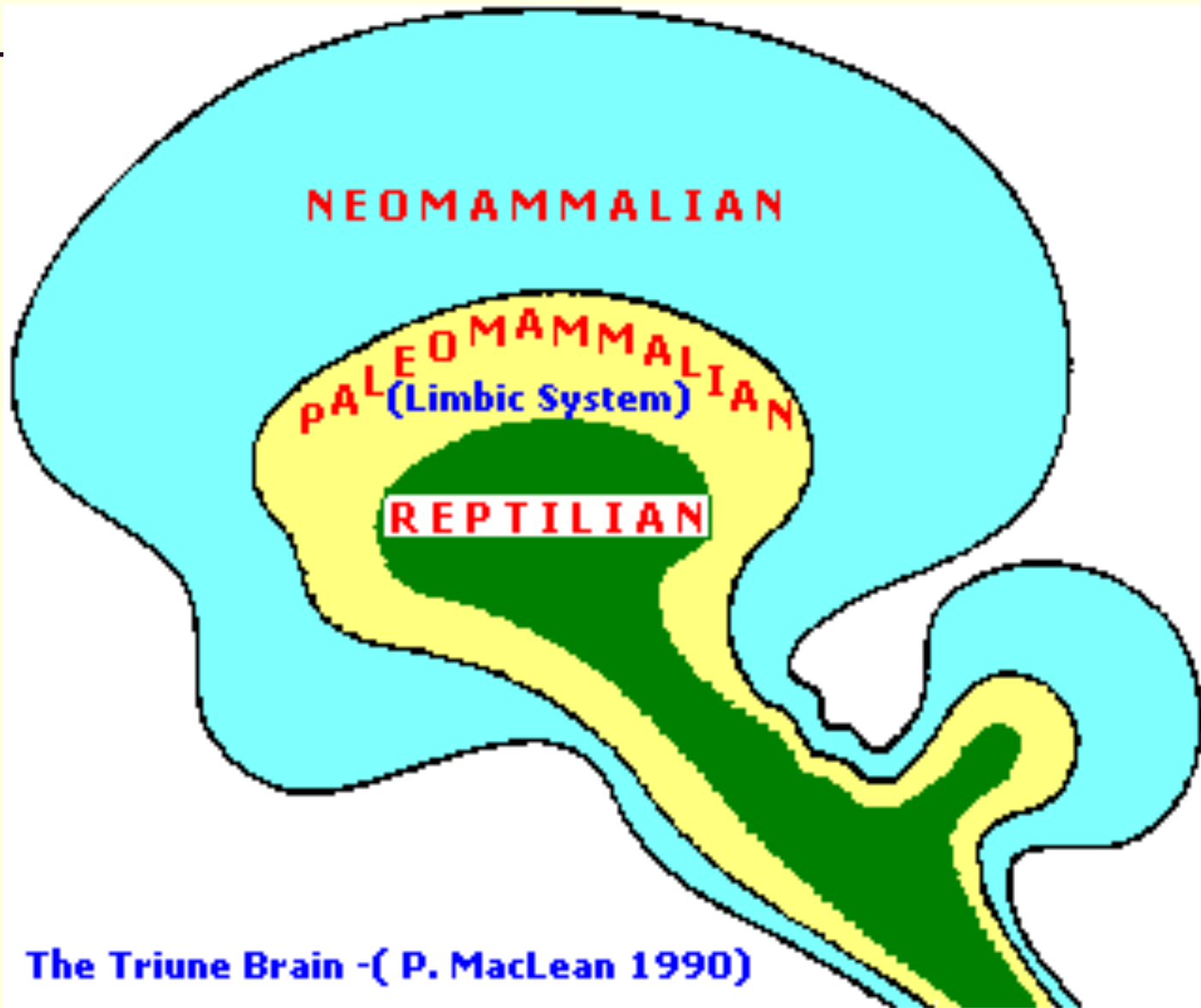
4. **Link** positive and negative material. [optional]





# **Core Strengths for Resilience**

# The Evolving Brain



The Triune Brain -( P. MacLean 1990)

# Meeting Our Three Core Needs

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**Avoiding harms for safety**

**Approaching rewards for satisfaction**

**Attaching to others for connection**

# Examples of Need, Challenge, Resource

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**Need**

**Safety**

**Satisfaction**

**Connection**

**Challenge**

**Helplessness**

**Frustration**

**Anger**

**Resource**

**Agency**

**Goal success**

**Compassion**

# Core Strengths

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**Peace**

**Contentment**

**Love**

# Pet the Lizard



# Feed the Mouse

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# Hug the Monkey





**It's Good to Take in the Good**

# Benefits

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- **Growing inner resources**
- **Sense of agency**
- **Kindness to yourself**
- **Sensitizing the brain to positive**
- **Creating positive cycles**

# Study on the HEAL Process


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- A randomized waitlist control study on the Taking in the Good course (46 subjects), not yet peer-reviewed.
- Course participants, compared to the control group, reported significantly more Contentment, Self-Esteem, Satisfaction with Life, Savoring, and Gratitude.
- After the 7-week course and at 2-month follow-up, pooled participants also reported significantly more Love, Compassion, Self-Compassion, Mindfulness, Self-Control, Positive Rumination, Joy, Amusement, Awe, and Happiness – and less Anxiety and Depression.

# Societal Benefits

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**As we develop inner resources  
including peace, contentment, and love  
we become harder to manipulate by  
fear and anger,  
greed and drivenness,  
and “us” vs. “them” rivalries.**



**In Closing**



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*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.*



Let good facts become good experiences.



A wide-angle photograph of the Grand Canyon at dusk or dawn. The foreground shows a steep, rocky cliff face with some green shrubs. In the background, the vast canyon stretches out with its characteristic layered rock formations and deep valleys. The sky is a mix of blue and orange hues. A stone railing and a few people are visible on the right side of the cliff.

Savor the experience





**Sense the experience sinking into you.**





*Taking in the good helps you.*

A low-angle shot of two hands reaching towards each other against a bright sun in a clear blue sky. The hands are silhouetted, and the sun creates a strong lens flare effect. The text "Taking in the good helps others." is overlaid in the center.

*Taking in the good helps* **others.**





*Taking in the good helps* **the world.**



**Thank you**



# **Additional Materials**

# Selected References - 1

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See [www.RickHanson.net/key-papers/](http://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.

# Selected References - 2

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- 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.

# Selected 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*, nsp034.
- 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<sup>65</sup>.

# Selected References - 4

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- 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.

# Selected References - 5

---

- 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.
- 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. & Beaugregard, 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.

# Selected References - 6

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- Rozin, P. & Royzman, E.B. (2001). Negativity bias, negativity dominance, and contagion. *Personality and Social Psychology Review*, 5, 296-320.
- Sneve, M. H., Grydeland, H., Nyberg, L., Bowles, B., Amlien, 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.



# The Four Ways to Offer a Method

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- 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

# HEAL in Classes, Trainings, Families

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- Take a few minutes to explain it and teach it.
- In the flow, encourage enriching and absorbing, using natural language.
- Encourage people to use HEAL on their own.
- Do HEAL on regular occasions (e.g., at the end of a therapy session, meals, just before bed).

# Resources for Avoiding harms

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## 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

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## 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

# Resources for attaching to others

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## 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<sup>3</sup>