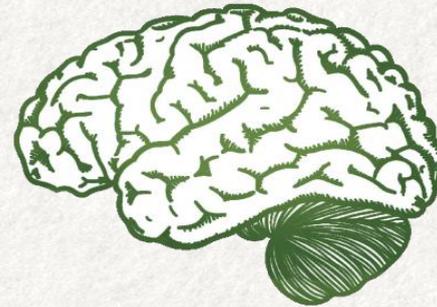


# Courage and Compassion: Living with a Strong Heart In Challenging Times



A Mindful Society Conference

May 2, 2020

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# A Resilient Heart

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To have lasting well-being  
in a changing world,  
we've got to be  
**resilient.**

To be resilient,  
we've got to have  
**inner resources.**

# Some Inner Resources

Wisdom, Concentration, Virtue

Compassion, Kindness, Love

Emotional Intelligence

Gratitude, Satisfaction, Happiness

Interpersonal Skills

Patience, Determination, Grit

The harder a person's life,  
the more challenges one has,  
the less the outer world is helping –

the more important it is  
to develop inner resources.





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# Cultivating Inner Resources

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The majority  
of our inner resources  
are acquired,

through emotional, somatic,  
social, and motivational  
**learning** –

which is fundamentally hopeful.

# Inner resources are acquired in two stages:

Encoding



Consolidation

Activation



Installation

State



Trait

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

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

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

**But – experiencing doesn't equal learning.**

**Activation **without installation****

**may be pleasant,**

**but no trait resources are acquired.**

What fraction of our

beneficial mental states lead to lasting  
changes in neural structure or function?



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

**Scott Miller**



# Velcro for Bad, Teflon for Good

**The negativity bias**

*bad experiences*

*good experiences*

Learning

is the strength of strengths,  
since it's the one we use  
to grow the rest of them.

Knowing how to learn

the things that are important to you  
could be the greatest strength of all.

# HEAL: Turning States into Traits

## Activation

1. **Have** a beneficial experience

## Installation

2. **Enrich** the experience

3. **Absorb** the experience

4. **Link** positive and negative material  
(Optional)

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# Me and We

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# Balancing Autonomy and Intimacy

Two great themes in life: separating/joining, independence/dependence, autonomy/intimacy, me/we

Autonomy helps us feel safe in the depths of intimacy. Intimacy nurtures self-worth and an internalized “secure base,” which foster exploration and self-expression.

When we feel strong and worthy, we are more able to pursue vulnerable needs and manage conflicts from within the “green zone” without going “red” into fear, immobilization, inadequacy, anger, or aggression.

# Challenges to a Strong Heart

It's straightforward just to be assertive, or just to be kind.

Bringing these together is a real art that takes practice.

We get challenged by fear and anger, feeling undeserving, or just not knowing how.

Someone could be brave physically or at work, but struggle with **interpersonal courage**.

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# Befriending Yourself

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# Being For Yourself

A brief practice . . .

Bringing to mind the feeling of being for another person . . . A sense of their burdens . . . Feeling caring . . . Loyal . . . An ally . . . Not against others but for them . . . Standing up for them . . . Know what it feels like to be on their side . . .

Then apply this feeling, this stance, toward yourself . . . Aware of something you are dealing with . . . Finding a sense of being determined on your own behalf . . . Recognizing what is fair and good for you . . . Warmth for yourself . . . Support . . . Both tender and muscular . . . On your own side . . .

# 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

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# A Boundless Heart

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# Benefits of Unilateral Virtue

It simplifies things: all you have to do is just live by your own code, and others will do whatever they do.

It feels good in its own right.

It minimizes inflammatory triggers, evokes good treatment, empowers you to ask for it.

It stands you on the moral high ground.

# Resting in Love

- Bring to mind beings you care about . . . Friends, family, pets, people who have helped you . . .
- Find compassion for their suffering . . .
- Find kindness and friendliness . . . The wish that they be happy . . . Feeling happy yourself about their happiness . . .
- Focus on feelings of caring and love . . . Let this experience sink into you as you sink into it.

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# The Circle of Us

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*In between-family fights, the baboon's 'I'  
expands to include all of her close kin;  
in within-family fights,  
it contracts to include only herself.*

*This explanation serves for baboons  
as much as for the Montagues and Capulets.*

~ Dorothy Cheney and Robert Seyfarth

# 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?*

# Feeding the Wolf of Love

- Don't over-identify with "us."
- Focus on similarities between "us" and "them."
- Have compassion for the suffering of "them."
- Consider "them" as young children.
- Recognize good things about "them."
- Keep extending out the sense of "us" to include everyone.

# 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” . . .

**So that all cubs are our own . . .**

**All beings are our clan . . .**

**All life, our relatives . . .**

**The whole earth, our home . . .**



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# References

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# Suggested Books

See **[RickHanson.net](http://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.

# Selected References - 1

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.

# 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*, 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.

# 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. & 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.
- 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., 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.

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# Supplemental Materials

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# 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.”

# 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.

# Neural Substrates of Empathy

- Three *simulating* systems:
  - Actions: “mirror” systems; temporal-parietal
  - Feelings: resonating emotionally; insula
  - Thoughts: “theory of mind”; prefrontal cortex
- These systems interact with each other through association and active inquiry.
- They produce an automatic, continual re-creation of aspects of others’ experience.

# Empathy Skills

- Pay attention.
- Be open.
- Read emotion in face and eyes.
- Sense beneath the surface.
- Drop aversion (judgments, distaste, fear, anger, withdrawal).
- Investigate actively.
- Express empathic understanding.

# 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.

# 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

# 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**

