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:
The New Brain Science
Of Contentment, Calm, and Confidence

Insight Meditation South Bay
January 14, 2014

Rick Hanson, Ph.D.
The Wellspring Institute for Neuroscience and Contemplative Wisdom
WiseBrain.org  RickHanson.net
Topics

- Neurodharma
- Craving and its end
- Taking in the good
- The fruit as the path
Neurodharma
Two wolves in the heart
Inner Strengths Include

- **Virtues** (e.g., patience, energy, generosity, restraint)
- **Executive functions** (e.g., meta-cognition)
- **Attitudes** (e.g., optimism, openness, confidence)
- **Capabilities** (e.g., mindfulness, emotional intelligence, resilience)
- **Positive emotions** (e.g., gratitude, self-compassion)
- **Approach orientation** (e.g., curiosity, exploration)
Major Buddhist Inner Strengths

- Mindfulness
- Investigation
- Energy
- Bliss
- Tranquility
- Concentration
- Equanimity
- Compassion
- Kindness
- Altruistic joy
- Virtue
- Wisdom
- View
- Intention
- Effort
- Conviction
- Generosity
- Patience
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.
Inner Strengths Are Built From Brain Structure
Mental activity entails underlying neural activity.
Ardent, Diligent, Resolute, and Mindful
Repeated mental activity entails repeated neural activity.

Repeated neural activity builds neural structure.
Neurons that fire together,
wire together.
States are temporary, traits are enduring.

States foster traits, and traits foster states

Activated states --> Installed traits --> Reactivated states --> Reinforced traits

Negative states --> Negative traits --> Reactivated negative states --> Reinforced negative traits

Positive states --> Positive traits --> Reactivated positive states --> Reinforced positive traits
The Opportunity

We can use the mind
To change the brain
To change the mind for the better
To benefit ourselves and other beings.
Cultivation in Context

Three ways to engage the mind:
- Be with it. Decrease negative. Increase positive.
- Let be. Let go. Let in.
- Mindfulness present in all three ways to engage mind

While “being with” is primary, it’s often isolated in mindfulness-based practices.

Skillful means for decreasing the negative and increasing the positive have developed over 2500 years. Why not use them?
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)
Craving and Its End
Evolutionary History

The Triune Brain - (P. MacLean 1990)
Three Fundamental Motivational and Self-Regulatory Systems

- **Avoid Harms:**
  - Primary need, tends to trump all others

- **Approach Rewards:**
  - Elaborated via sub-cortex in mammals for emotional valence, sustained pursuit

- **Attach to Others:**
  - Very elaborated via cortex in humans for pair bonding, language, empathy, cooperative planning, compassion, altruism, etc.
The Homeostatic Home Base

When not disturbed by threat, loss, or rejection [no deficit 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.
The 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.
Neurobiological Basis of Craving

When disturbed by threat, loss, or rejection [deficit 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 [“hatred”] (the Avoiding system)
- Frustration [“greed”] (the Approaching system)
- Heartache (the Attaching system)

This is the brain in allostatic, Reactive, craving mode.
The Reactive Mode

- Avoid
- Hatred
- Ignorance
- Suffering
- Heartache
- Attach
- Approach
- Greed
Choices . . .

Or?

Reactive Mode

Responsive Mode
The Brain’s Negativity Bias

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

  Negative stimuli:
  - More attention and processing
  - Greater motivational focus: loss aversion

  Preferential encoding in implicit memory:
  - We learn faster from pain than pleasure.
  - Negative interactions: more impactful than positive
  - Easy to create learned helplessness, hard to undo
  - Rapid sensitization to negative through cortisol
Velcro for Bad, Teflon for Good

The negativity bias

bad experiences

good experiences
A Bottleneck
For Growing Inner Strengths

Unfortunately, the brain is inefficient at turning positive experiences into neural structure.

This design feature of the brain creates a kind of bottleneck that reduces the conversion of positive mental states to positive neural traits.

Most positive experiences are wasted on the brain.

This is the fundamental weakness in psychotherapy, mindfulness training, character education, human resources training, and informal efforts at growth.
The Negativity Bias
Stone age brains in the 21st century
We can deliberately use the mind to change the brain for the better.
Taking in the Good
Just **having** positive experiences is not enough.

They pass through the brain like water through a sieve, while negative experiences are caught.

We need to engage positive experiences actively to weave them into the brain.
Take in the Good
Have a Good Experience
Enrich It
Link Positive and Negative Material
HEAL Yourself

Have a positive experience.
Enrich it.
Absorb it.
Link positive and negative material. (optional)
Have It, Enjoy It
Let’s Try It

- **Notice** the experience already present in awareness that you are alright right now
  - Have the experience
  - Enrich it
  - Absorb it

- **Create** the experience of compassion
  - Have the experience - bring to mind someone you care about . . . Feel caring . . . Wish that he or she not suffer . . . Open to compassion
  - Enrich it
  - Absorb it
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
Synergies of TG and Mindfulness

- Improved mindfulness enhances TG.

- TG increases general resources for mindfulness (e.g., heighten the bodily calming that supports stable attention).

- TG increases specific factors of mindfulness (e.g., self-acceptance, self-compassion, tolerance of negative affect)

- TG heightens internalization of key mindfulness experiences:
  - The sense of stable mindfulness itself
  - Confidence that awareness itself is not in pain, upset, etc.
  - Presence of supportive others (e.g., meditation groups)
  - Peacefulness of realizing that experiences come and go
The Fruit as the Path
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.
Some Types of Resource Experiences

Avoiding Harms
- Feeling basically alright right now
- Feeling protected, strong, safe, at peace
- The sense that awareness itself is untroubled

Approaching Rewards
- Feeling basically full, the enoughness in this moment as it is
- Feeling pleased, glad, grateful, satisfied
- Therapeutic, spiritual, or existential realizations

Attaching to Others
- Feeling basically connected
- Feeling included, seen, liked, appreciated, loved
- Feeling compassionate, kind, generous, loving
Pet the Lizard
Feed the Mouse
Hug the Monkey
The Fruit as the Path

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.

Dhammapada 9.122
Great Books

See www.RickHanson.net for other great books.

Key Papers - 1

See www.RickHanson.net for other scientific papers.


Key Papers - 2


- 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.
Key Papers - 3


Key Papers - 4


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

youtube.com/drrhanson  facebook.com/rickhansonphd