A Neuropsychology of Awakening: Cultivating Resilience and Wellbeing With the Brain in Mind

Australian Clinical Psychology Association
November 14, 2020

Rick Hanson, Ph.D.
Greater Good Science Center, UC Berkeley
www.RickHanson.net
Inner Strengths
For a Challenging World
Resilience is the capacity to recover from adversity and pursue your goals despite challenges.

It helps you survive the worst day of your life and thrive every day of your life.
Lasting well-being in a changing world requires resilience.

And resilience requires inner strengths – grounded in the living body.
Some Key Inner Strengths

- Grit, patience, determination
- Gratitude and other positive emotions
- Secure attachment, compassion, love
- Mindfulness, self-knowledge
- Social and emotional intelligence
- Executive functions, distress tolerance
The harder a person’s life, the more important it is to have inner strengths.
The majority of our inner strengths are acquired, through emotional, somatic, social, and motivational learning – which is fundamentally hopeful.
And Which Means Changing the Brain For the Better
Experience-Dependent Neuroplasticity

Mental activity involves neural activity.

Repeated patterns of mental activity involve repeated patterns of neural activity.

Repeated patterns of neural activity can produce lasting changes in neural structure and function.
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.”
In the Garden of the Mind

1. Be with what is there
   Let be. Let go. Let in.
   Mindfulness is present in all three.

2. Decrease the negative
   “Being with” is primary — but not enough.

3. Increase the positive
   We also need “wise effort.”
We can know ourselves in two ways:
- From the outside in, objectively, informed by science, particularly by our neurobiology
- From the inside out, subjectively, informed by modern psychology and perennial wisdom

In this workshop, we’ll explore where these two meet.
Positive Neuroplasticity
Three Breaths

Breathing while feeling your chest as a whole

Breathing while feeling caring

Breathing while feeling cared about
Mental resources are acquired in two stages:

- Encoding → Consolidation
- Activation → Installation
- State → Trait
We become more **compassionate** by repeatedly installing experiences of compassion.

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

We become more **mindful** by repeatedly installing experiences of mindfulness.
Neurons that fire together, wire together.
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
Every day gives us opportunities to heal a little bit, to grow a little bit, to become wiser and stronger and happier and more loving.

This requires not just having experiences, but learning from them.
Experiencing does not equal learning. Activation **without installation** may be pleasant, but no trait strengths are developed.

What fraction of our beneficial mental states lead to **lasting** changes in neural structure or function?
We focus more on activation more than installation.

This reduces the gains from psychotherapy, coaching, human resources training, mindfulness programs, and self-help activities.
The same research that proves therapy works shows no improvement in outcome over the last 30 or so years.

Scott Miller
The Negativity Bias
Stone age brains in the 21st century
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.
Velcro for Bad, Teflon for Good

The negativity bias
The brain is good at learning from bad experiences but relatively bad at learning from good ones.

Even though learning from good experiences of inner strengths is how to grow them and have them with you every day.
The Negativity Bias
How can we increase the conversion rate of beneficial states to beneficial traits?
Self-Directed Neuroplasticity
Learning Factors

Environmental – setting, social support

Behavioral – activities, repetition

Mental – motivation, engagement
## Types of Mental Learning Factors

<table>
<thead>
<tr>
<th>Contextual</th>
<th>Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openness</td>
<td>Personal relevance</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>Alertness, sense of novelty</td>
</tr>
<tr>
<td>View of positive experience</td>
<td>Arousal, enactment</td>
</tr>
<tr>
<td>Growth/learning mindset</td>
<td>Sense of reward</td>
</tr>
<tr>
<td>Motivation</td>
<td>Emotion</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Granularity of attention</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>Interoception</td>
</tr>
<tr>
<td>Feeling supported</td>
<td>Maintenance, repetition</td>
</tr>
<tr>
<td>Sense of safety</td>
<td>Meaning, elaboration</td>
</tr>
</tbody>
</table>

- Openness
- Mindfulness
- View of positive experience
- Growth/learning mindset
- Motivation
- Self-efficacy
- Self-esteem
- Feeling supported
- Sense of safety
Benefits of Mental Learning Factors

Benefits of both types of factors:
• Increase learning from the present experience
• Prime NS for future beneficial experiences
• Heighten consolidation of past experiences

Engagement factors have additional benefits:
• Regulate experience directly
• Increase initial processes of consolidation
• Are under volitional control
Turning States into Traits: HEAL

Activation
1. Have a beneficial experience

Installation
2. Enrich the experience
3. Absorb the experience
4. Link positive and negative material (Optional)
Have a Beneficial Experience
Enrich It
Link Positive & Negative Material
Have It, Enjoy It
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 the beginning, nothing came.

In the middle, nothing stayed.

In the end, nothing left.

Milarepa
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?
It’s Good to Take in the Good

Develops psychological resources:
• General – resilience, positive mood, feeling loved, etc.
• Specific – matched to challenges, wounds, deficits

Has built-in, implicit benefits:
• Training attention and executive functions
• Treating oneself kindly, that one matters

May sensitize the brain to the positive

Fuels positive cycles with others
Keep a green bough in your heart, and a singing bird will come.

Lao Tzu
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.
Whew – that’s a lot. Let’s pause to talk about it with a partner.

What implications do you see for how you do psychotherapy?

What implications do you see for yourself?
Seven Strengths
In Wisdom Traditions
In wisdom traditions, including secular mindfulness, we find the development of seven qualities of being that I summarize (poetically) in these practices:

Steadying the mind
Warming the heart
Resting in fullness
Being wholeness
Receiving nowness
Opening into allness
Finding timelessness
Steadiness, Warmheartedness, and Fullness
Basics 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
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”
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.
Bring to mind one or more beings who are suffering . . . Have empathy for their suffering . . . Find the wish and the feeling that they not suffer . . .

Perhaps with soft thoughts such as, “May you not suffer . . . May you be at peace with this pain . . . May your sorrow ease . . . “

Receive the sense of compassion into yourself . . . Know what compassion feels like . . .
Meeting Our Three Fundamental Needs

Safety
Avoiding harms
(threat response)

Satisfaction
Approaching rewards
(goal pursuit)

Connection
Attaching to others
(social engagement)
The Evolving Brain
Pet the Lizard
Feed the Mouse
Hug the Monkey
Coming Home

Peace

Contentment

Love
Being Wholeness
The Parts and the Whole

Suffering is parts struggling with parts. Meanwhile, there is always mind as a whole. Mind as a whole simply is, not a problem. When you experience your mind as a whole, suffering falls away.
What helps us experience the mind as a whole?
Self-Focused (blue) and Open Awareness (red)

Focus on the present moment. Don’t problem-solve, fantasize, or ruminate. Relax the sense of “me” and “I.” Widen into a panoramic view. Rest in “don’t know mind.” Sense your body as a whole.
Sensing Your Body as a Whole

Be aware of sensations of breathing all over your body.

Pick an area (e.g., chest) and include all the sensations there as a single whole.

Relax and receive sensations.

Gradually include more of your body.

Abide as a whole body breathing
Receiving Nowness
Enlightenment is to forget this moment and grow into the next.

Suzuki Roshi
Now is the great mystery: infinitely thin temporally, yet containing everything.

Imagine super-slow motion mindfulness of the emergent edge of Now, coming into being as it passes away.
The neural networks of alerting track the leading edge of the windshield of consciousness.

These alerting networks are involved with the continual updating of consciousness – which is supported by the sense of wholeness and allness.
If you let go a little, you’ll have a little peace.

If you let go a lot, you’ll have a lot of peace.

If you let go completely, you’ll be completely peaceful.

Ajahn Chah
Opening into Allness
To learn about oneself is to forget oneself.

To forget oneself is to perceive oneself as all things.

Dogen
The apparent psychological self is presumed to be enduring, unified, and independent.

Yet when we observe the mind, we see that self-related experiences are \underline{impermanent}, \underline{compounded}, and \underline{dependently arising}.

When we observe the brain, we find exactly the same thing.
As the sense of “self” eases, there is a growing opening into everything.
When we try to pick out anything by itself, we find it hitched to everything else in the universe.

John Muir
Allocentric Framework

Based on more ancient regions of the brain
Being-ness; alrightness already
What it is, independent of “me”; impersonal
Upper visual field
Egocentric Framework

Based on more recent regions of the brain
Doing-ness; goal-directed
Where it is, related to “me”; personal
Lower visual field
The Allocentric/Egocentric Dance

Alternately normally
As one increases, the other decreases
With new stimuli – thus, alerting –
allocentric increases briefly, then
egocentric response shaped by the
hedonic tone
Factors of Allocentrism

Fullness – nothing missing or wrong
Wholeness – wide inclusive awareness
Nowness – alerting, openness
Tranquility – GABA-regulated switches
Recognizing interconnectedness – you’re a local ripple in the vast ocean of causes
Opening, in Peace

Feeling at ease . . . tranquil and alert
Your gaze or imagination extend out to the horizon and beyond
Experiences flowing, edges softening
Knowing you are lived by everything
Opening into allness
Intimations of Timelessness
What is it that is true?
Three Kinds of “Unconditioned”

Disengaging from conditioned patterns of suffering while experiencing “effectively unconditioned” awareness, spaciousness, and stillness

Entering extraordinary states of mind within ordinary reality in which all conditioned experiences cease

Recognizing what may be transcendentally unconditioned, distinct from conditioned reality
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.

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


• Dudai, Y. (2004). The neurobiology of consolidations, or, how stable is the engram?. Annu. Rev. Psychol., 55, 51-86.


Meditation experience is associated with increased cortical thickness.

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.
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
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
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.
“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
Letting Go

Rest in a sense of alrightness . . . peaceful, contented, warmhearted.

Be mindful of this moment continually emerging . . . so it’s alright to let go.

Let go while exhaling.

Be mindful of sensations, all experiences changing . . . letting them pass away.
Softening All the Edges

Relaxing, abiding as a body breathing
Sensations softening together
Heart softening
Everything in the mind softening together, a single mind process, awareness included
Edges softening between you and everything
The Buddha: “Bahiya, you should train yourself thus: In reference to seeing, there will be only seeing. In hearing, only hearing. In sensing, only sensing. In cognizing, only cognizing.

When for you there is only seeing in seeing, only hearing in hearing, only sensing in sensing, only cognizing in cognizing – then, Bahiya, there is no you in connection with that.

When there is no you in connection with that, there is no you there. When there is no you there, you are neither here nor yonder nor between the two.

This, just this, is the end of suffering.”
The entire world is in flames, the entire world is going up in smoke; the entire world is burning, the entire world is vibrating.

But that which does not vibrate or burn, which is experienced by the noble ones, where death has no entry – in that my mind delights.

The Buddha
Only Allness

Much as the mind is a whole, the material universe is a whole.

The allness that includes every sort of mind and matter is also a whole.

Allness as allness is always allness.

Much as mind as a whole is never a problem, allness as allness is never a problem.
Being aware of various conditioned experiences in the streaming of consciousness
Getting a sense of awareness as an effectively unconditioned field
Also spaciousness . . . edges softening . . .
And stillness . . . unchanging . . . timeless . . .