Walking Evenly Over Uneven Ground:
Using Positive Neuroplasticity to Cultivate Resilient Well-Being

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Resilience and Well-Being
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.

Resilience requires mental resources.
Mental Resources Make Us Resilient
Some Mental Resources

Executive Functions
Character Strengths
Secure Attachment
Positive Emotions
Interpersonal Skills
Patience, Determination, Grit
How stress changes the brain
This accumulation of allostatic load is intensified by the brain’s negativity bias.
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 Negativity Bias
Mental resources are good, period, plus they’re eroded by the stresses we need them for.

So, how do we get them?

People focus on identifying and using resources such as character strengths – but what about developing them in the first place?
The majority of our mental resources are acquired, through emotional, somatic, social, and motivational learning – which is fundamentally hopeful.
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.
Which Means Changing the Brain For the Better
Acquiring Mental Resources
Half or more of the variation in psychological attributes, including mental resources, is due to non-heritable factors.

This means there are large individual differences in the acquisition of mental resources.
Four Learning Curves

Mental Resources vs. Time

- Decline

(1)
Four Learning Curves

- 1. Decline
- 2. No growth

Mental Resources vs. Time
Four Learning Curves

- (1) Decline
- (2) No growth
- (3) Linear growth
Four Learning Curves

1. Decline
2. No growth
3. Linear growth
4. Exponential growth; learning how to learn
What can people do to steepen their growth curves?
The Neuropsychology Of Learning
Mental resources are acquired in two stages:

- Encoding → Consolidation
- Activation → Installation
- State → Trait
Neurons that fire together, wire together.
Mechanisms of Neuroplasticity

- (De)Sensitizing existing synapses
- Building new synapses
- Altered gene expression
- Building and integrating new neurons
- Altered ongoing activity in a region
- Altered connectivity among regions
- Altered neurochemical activity
- Information from hippocampus to cortex
- Modulation by stress hormones, cytokines
- Slow wave and REM sleep
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.
Meditation experience is associated with increased cortical thickness.

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?
We tend to focus on activation more than installation.

This reduces the gains from psychotherapy, coaching, human resources training, mindfulness programs, and self-help activities.
Educators have systematically focused on mental factors of academic learning, including teaching them explicitly.

Therapists, coaches, trainers, etc. have generally not systematically focused on mental factors of social, emotional, and somatic learning – and rarely teach these explicitly.
How can we increase the conversion rate from positive states to beneficial traits?

What learning factors could improve installation?
Changing Your Brain
For the Better
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)
Have a Beneficial Experience
Enrich It
Absorb It
Link Positive & Negative Material
Have It, Enjoy It
<table>
<thead>
<tr>
<th><strong>Notice</strong></th>
<th><strong>Create</strong></th>
<th><strong>Create</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Being all right right now</td>
<td>Gratitude, gladness</td>
<td>Compassion, kindness</td>
</tr>
</tbody>
</table>

**For each of the above:**
Have the experience. Enrich it. Absorb it.
It’s Good to Take in the Good

Develops psychological resources:

• General – resilience, positive mood, feeling loved
• Specific – matched to challenges, wounds, deficits

Has built-in, implicit benefits:

• Training attention and executive functions
• Being active rather than passive
• Treating oneself kindly, that one matters

May sensitize 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.
Growing Key Resources
Resilience is required for challenges to our needs.

Understanding the need that is challenged helps us identify, grow, and use the specific mental resource(s) that are best matched to it.
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

Cortex
(“primate/human”)

Subcortex
(“mammalian”)

Brainstem
(“reptilian”)

Cerebellum
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?
### Matching Resources to Needs

<table>
<thead>
<tr>
<th>Safety</th>
<th>Satisfaction</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>See actual threats</td>
<td>Gratitude</td>
<td>Empathy</td>
</tr>
<tr>
<td>See resources</td>
<td>Gladness</td>
<td>Compassion</td>
</tr>
<tr>
<td>Grit, fortitude</td>
<td>Feel successful</td>
<td>Kindness</td>
</tr>
<tr>
<td>Feel protected</td>
<td>Healthy pleasures</td>
<td>Wide circle of “us”</td>
</tr>
<tr>
<td>Alright right now</td>
<td>Impulse control</td>
<td>Assertiveness</td>
</tr>
<tr>
<td>Relaxation</td>
<td>Aspiration</td>
<td>Self-worth</td>
</tr>
<tr>
<td>Calm</td>
<td>Enthusiasm</td>
<td>Confidence</td>
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</tbody>
</table>

**Peace**

**Contentment**

**Love**
As people acquire resources for a particular need, the mental/neural systems that manage this need are able to do so without toxic stress — and with the positive thoughts and feelings of capable coping.
People experience an underlying sense of deficit and disturbance that produces the “craving” 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
Coming Home

Peace

Contentment

Love
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.
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
References


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


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