

THE NEUROSCIENCE OF INTEGRATING MINDFULNESS AND EMPATHY TO STRENGTHEN RESILIENCE

Developing the 5 C's of Coping: Calm, Compassion, Clarity, Connections to Resources, and Competence.

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All the world is full of suffering; it is also full of overcoming. – Helen Keller

FOUR PATHS TO OVERCOME SUFFERING

Our interest in the integration of mindfulness and empathy is to alleviate suffering, to move into healing and growth, into resilience and well-being.

Resilience is the capacity to cope well with life's inevitable challenges and disasters, to meet the stressors and storms of life with adaptive and skillful responses. Capacities of resilience - to rebound from a setback, bounce back from trauma, triumph over adversity – are innate in the brain and develop in interactions with other resilient brains.

Neuroscience - the 20 year old technology that can “peek inside the black box” and learn how the brain functions in real time - helps explain how our innate capacities for resilience develop in the first place, even how the brain develops and integrates the structures needed to encode our responses in our neural circuitry. The discovery of neuroplasticity – the lifelong capacity of the brain to rewire its circuits and even rebuild itself - gives us great hope that we can rewire less-than-optimal coping strategies when we need to.

Mindfulness and Empathy do rewire our habitual responses to outer stressors *and* strengthen the functioning of the brain to do so. Modern brain science shows mindfulness and empathy to be two of the most powerful agents of brain change known to humankind.

The 2,500 year old Buddhist wisdom tradition offers an 8-fold path to alleviate suffering. Mindfulness is a key component of that path. Steady mindfulness practice cultivates an awareness and acceptance of experience, unfolding moment by moment, that allows us to pause, step back, reflect, shift perspectives, discern options, and choose wise resilient courses of action. Science shows that even 8 weeks of mindfulness training creates measurable changes in the structures of the brain we use for focused attention, interoception (knowing what's happening in our bodies), integration of the processing of the two hemispheres of the higher brain, and that it helps us access a mental play space of neural flexibility and receptivity that allows our brain to more easily rewire.

Western psychology, for at least 150 years, has offered practices to alleviate suffering of mind and heart and psyche and realize our full human potential. Within that tradition, I see empathy as an entire resonance circuit in the brain that supports *resonance* – picking up the “vibe” of

other people; *attunement* – feeling your way into another person’s experience and feeling felt by them; *empathy* as one component of the larger umbrella of empathy – making sense of experience, yours or another’s, and communicating a shared understanding of that meaning to yourself or to another; sensing that your experience is completely understood and accepted; *compassion* – literally “feeling with,” keeping the heart open and caring in the face of suffering; *self-acceptance* – coming to terms with what is or has been so you can cope going forward. This circuit also creates a safety net of trust and equanimity that allows the brain to learn from new experiences more easily and rewire old patterns.

Neuroscience is providing a bridge between these two paradigms that understand the causes of suffering and the value of self very differently, demonstrating that a synergy of tools from the two paradigms is what will work best to fully recover our resilience. Enthusiasm must be tempered by caution. The field of neuroscience is so new; research findings are still incomplete; what we don’t know far outweighs what we know. As clinicians apply new discoveries to our work in the trenches, we must remember to, as my colleague Richard Mendius, M.D. says, “be comfortable not only venturing into the unknown, but into error.”

5 C’s OF COPING

In my own 20 years of study and practice, I have come to identify 5 C’s of coping:

Calm

The brain learns best when the body is in a physiological state of equilibrium – calm and relaxed, yet engaged and alert. Mindfulness practice and resonant connections with others allow us to rest steadily in this state of equilibrium.

Compassion

Using both mindfulness and empathy to keep the mind and heart open in times of confusion, suffering, and sorrow, and engaged with what needs addressing right in front of us, compassion allows us to come to terms with what has happened before:

- a) this is what happened;
- b) this is what I did to survive (understandable, even brilliant);
- c) this has been the cost (compassion making it safe enough to even look at that);
- d) this is what I have learned (a new narrative of self that allows us to live with, even be proud of, ourselves);
- e) this is how I can respond to life now (be resilient going forward).

Clarity

Mindfulness – as steady, non-judgmental awareness and acceptance of experience – and empathy – as an accurate acceptance of our self - lead to the clarity of self-awareness and shifts in our perspectives that allow us to see clearly what’s happening, respond to triggers and traumas with

far more open-mindedness, and tolerate choosing what needs to change with far more flexibility than before.

Connections to Resources

Clarity about options includes connecting to the refuges and resources that are the wellsprings of skillful coping: the people, places and practices that support our being responsive and resilient. When we anchor in the re-Source of our true nature as our true home, we can remain open to the “plane of open possibilities.” The insights from this plane inform our view of the capacities of our personal self and choices of actions.

Competence

Wise effort is essential to the skillful alleviation of suffering. Mindfulness and learning from others as role models allow us to “crack the code,” to discern the wholesome from the unwholesome, to perceive and let go of trauma from the past *as* past, to cultivate the qualities of loving kindness, compassion, generosity, gratitude, blamelessness, awe that broaden and build resources in the immediate and long-term.

Exercise: Hand on the Heart

(and the neuroscience of why that works)

HOW CAPACITIES FOR RESILIENCE DEVELOP IN THE BRAIN

Capacities to develop the 5 C’s of coping are innate in brain. Since resilience begins with survival, our capacities are evolutionarily hard-wired in; some even begin in utero.

Capacities develop as we mature, as our brains mature, on a developmental timetable. Those responses and the maturation of the brain itself are shaped, for better or worse, by the earliest interactions with other human brains. Attachment theory and research, and the new field of interpersonal neurobiology, give us a window into how resilience develops as the brain develops, not just in terms of learned patterns, both our survival responses and our skillful strategies, but also how the brain itself becomes resilient - able to be both stable *and* flexible. Not stuck in neural swamp or neural cement, but reliably and efficiently able to stabilize our responses and retain the flexibility to be able to change them.

Our coping patterns are both gelled and altered by the executive center of our brain – the pre-frontal cortex. I call the pre-frontal cortex the CEO of resilience. It performs many functions, coordinates many functions of other structures, and integrates all this complex functioning into mental health, pre-requisites for resilience and well-being, and the platform for our spiritual healing and awakening.

Nine Functions of the Pre-Frontal Cortex that Support Resilience (deep bows to Dan Siegel)

1. Regulating the body and the stress response of the autonomic nervous system

2. Quelling the fear response of the amygdala (24/7 alarm center) so the higher brain can decide how to act
3. Managing emotions; modulating extreme emotions
4. Attunement: tuning into the felt sense of another's reality or our own
5. Empathy: the thinking-feeling-imagining-discerning that makes sense of what's happening, in ourselves or in another
6. Insight and self-knowing; developing a coherent narrative of self
7. Response flexibility: the ability to pause, step back, reflect, shift perspectives, create options, and choose wisely
8. Intuition: "gut" knowing; inner wisdom, felt rather than thought
9. Morality: behaviors based on empathy for the common good

Exercise: Sharing Kindness

(and the neuroscience of why that works)

Integration of 7 realms of brain functioning by the pre-frontal cortex (deeper bows to Dan Siegel)

1. Body sensations and emotions (lower brain) with thoughts, reflections, and conscious decisions (higher brain)
2. Right hemisphere (felt sense of feelings and social-emotional self) with left hemisphere (logic, rational thought, and verbal narrative of self)
3. Implicit (unconscious) with explicit (conscious) memories
4. Past, present and future, creating a continuity of self
5. Ego states of "parts" or voices of the personal self into a whole self
6. Interpersonal – the resonant influence of one human brain upon another
7. States of consciousness: the flow among doing and being, among focus and spaciousness, among self and non-self

Louis Cozolino calls the pre-frontal cortex a masterpiece of evolution.

HOW TO USE PRE-FRONTAL CORTEX TO HARNESS NEUROPLASTICITY TO CHANGE THE BRAIN

The brain learns from experience. Any experience causes neurons in the brain to fire. Repeated experiences, repeated firings that stabilize into neural pathways and circuits. That is true lifelong. In the traditional terms of conditioning, repeated experiences stabilize patterns of response in brain. All of us as therapists work with glitches in that conditioning, either neural patterns that are locked into defenses, too much rigidity, or not enough neural stability, too much chaos.

The brain itself develops from experience. There is genetic loading (nature) but maturation depends on experiences to kindle neural firing and growth (nurture). Because the brain is a social organ, it develops primarily from experiences with other brains; that is also true lifelong. Depending on how that early conditioning in early attachment relationships goes, early

conditioning can de-rail the development of the brain as well as learned patterns of coping, thus de-railing our resilience.

Neuroplasticity can change those patterns, we can choose new experiences that will create new pathways and circuits in the brain, and that is also true, lifelong. Neuroplasticity and conditioning work hand-in-hand, always. Neuroplasticity allows our brain to learn something new, or even build new neural structure; conditioning, the repetition of experience, stabilizes those patterns and structures; neuroplasticity allows the brain to change again, lifelong.

SELF-DIRECTED NEUROPLASTICITY

What we want to know is how to harness the neuroplasticity of the brain to change patterns, and strengthen the structures of the brain that can change those patterns. What Jeffrey Schwartz at UCLA calls self-directed neuroplasticity. One of our leading neuroscientists in the country, Richie Davidson, says, “Based upon everything we know about the brain in neuroscience, change is not only possible, but is actually the rule rather than the exception. It’s really just a question of which influences we’re going to choose for our brain.”

There are three processes of self-directed neuroplasticity we learn through this workshop:

New conditioning: New experiences, and repeating those new experiences, cause neurons in our brains to fire in ways that create new neural pathways. We are deliberate in our choices for that new learning because we are carefully choosing experiences that will best use our neuroplasticity to create new, more resilient automatic habits of coping. With practice over time, these new strategies can become so steady, so reliable, that they can completely override prior habits of coping, even problematic ones. We behave resiliently without having to think about it anymore. And the more we practice new conditioning, the more we are strengthening those structures in the brain that do that conditioning and help us learn.

De-conditioning creates the receptivity and flexibility in your neural circuitry that re-opens our brains to learning and change. De-conditioning uses the awareness and acceptance that comes from a compassionate mindfulness practice to shift the processing of our brains to a diffuse, “soft” focus that allows us to more easily “un-learn” or “drop” old strategies that don’t work so well anymore, even those patterns learned unconsciously and deeply embedded. De-conditioning creates a new mental “play space” in our brains, making it far easier to wire in the new strategies as we choose to.

Re-conditioning helps us pro-actively re-wire the neural circuitry of an existing strategy by “re-pairing” that strategy with a new more effective one. When the strategies are paired in our conscious awareness, the simultaneous firing of neurons encoding both strategies allows them to de-consolidate (fall apart), then re-consolidate (re-wire) *together* a fraction of a second later. The neural firing pattern of the new strategy can “trump” the old, re-wiring it completely, often immediately, often permanently.

These three processes of rewiring the brain use the many, many tools of mindfulness and empathy that will both strengthen the functioning of the pre-frontal cortex and support the new conditioning, de-conditioning and re-conditioning of patterns to increase our resilience.

EXERCISES TO REWIRE THE BRAIN FOR MORE RESILIENCE

I'm no longer afraid of storms, for I'm learning to sail my ship. – Louisa May Alcott

New Conditioning

Shit happens. Shift happens. Examples of creating new patterns, noticing and naming, monitoring and modifying, replacing automatic negative thoughts (ANTS) with automatic positive thoughts (APTS), new pattern of Wiser Self

Exercise: Deep Listening

Why this rewires the brain

De-conditioning

Mental play space. Examples of daydreams, reveries, spacious awareness, true nature

Exercises: Dropping into Plane of Possibilities; Honoring the Goodness in Self and Others

Why this rewires the brain

Re-conditioning

Re-wire by pairing old with new; simultaneous dual awareness or toggle back and forth
Examples of movement opposite, parts party

Exercise: Wished for Outcome

Why this rewires the brain

Learning Model to Recover Resilience

Unconscious incompetence
Conscious incompetence
Conscious competence
Unconscious competence

Tools to Take Away

Sure I can!

Hang Out with other Healthy Brains

Take in the Good

Do One Scary Thing a Day

Find the Gift in the Mistake (learn to find ease in risk)

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