The Buddha’s Words on Lovingkindness

Wishing: In gladness and in safety, may all beings be at ease.

Omitting none, whether they are weak or strong, the great or the mighty, medium, short, or small, the seen and the unseen, those living near and far away, those born and to-be-born: May all beings be at ease.

Let none through anger or ill-will wish harm upon another. Even as a mother protects with her life her child, her only child, so with a boundless heart should one cherish all living beings; radiating kindness over the entire world: spreading upwards to the skies, and downwards to the depths, outwards and unbounded, freed from hatred and ill-will.

One should sustain this recollection.

This is said to be the sublime abiding.
The Neurodharma of Love

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Topics

- Self-directed neuroplasticity
- Your loving nature
- Greed, hatred, heartache, and delusion
- Empathy
- Unilateral virtue
- Universal compassion
Perspectives
Common - and Fertile - Ground

Psychology

Neurology

Buddhism
The history of science is rich in the example of the fruitfulness of bringing two sets of techniques, two sets of ideas, developed in separate contexts for the pursuit of new truth, into touch with one another.

J. Robert Oppenheimer
Great questioning, great enlightenment; little questioning, little enlightenment; no questioning, no enlightenment.

Dogen
We ask, “What is a thought?”

We don’t know,

yet we are thinking continually.

Venerable Tenzin Palmo
Domains of Intervention

- We can intervene in three domains:
  - World (including relationships)
  - Body
  - Mind

- All three are important. And they work together.

- We have limited influence over world and body.

- In the mind:
  - Much more influence
  - Changes are with us wherever we go
Being for Yourself

- All the great teachers have told us to be compassionate and kind toward all beings. And that whatever we do to the world affects us, and whatever we do to ourselves affects the world.

- You are one of the “all beings!” And kindness to yourself benefits the world, while hurting yourself harms the world.

- It’s a general moral principle that the more power you have over someone, the greater your duty is to use that power wisely. Well, who is the one person in the world you have the greatest power over? It’s your future self. You hold that life in your hands, and what it will be depends on how you care for it.

- Consider yourself as an innocent child, as deserving of care and happiness as any other.
Mindfulness, Virtue, Wisdom

Mindfulness (or “concentration”), virtue, and wisdom are identified in Buddhism and other contemplative traditions as the pillars of practice.

In Western psychology, these are the foundations of mental health and well-being.

These three pillars map to three core functions of the nervous system:

- Receiving/learning
- Regulating
- Prioritizing/selecting
“Know the Mind, Shape the Mind, Free the Mind”

- **Mindfulness, virtue, and wisdom** - and their neural correlates - also map to three phases of practice:
  - Be aware of the garden, pull weeds, plant flowers.
  - Be mindful of, release, replace.
  - Let be, let go, let in.

- People vary in their inclinations and strengths with the phases.

- Sometimes we need to take in resources in the third phase in order to bear our own experience.

- Mindfulness is key to the second and third phase, sometimes curative on its own, and always beneficial in strengthening its neural substrates. But often it is not enough by itself.
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.
How to Take in the Good

1. Look for positive **facts**, and let them become positive experiences.

2. Savor the positive experience:
   - Sustain it for 10-20-30 seconds.
   - Feel it in your body and emotions.
   - Intensify it.

3. Sense and intend that the positive experience is **soaking** into your brain and body - registering deeply in emotional memory.
Can you feel alright, right now?
Why does the brain matter, on the path of awakening?
Self-Directed Neuroplasticity
Brain Basics

- **Size:**
  - 3 pounds of tofu-like tissue
  - 1.1 trillion brain cells
  - 100 billion “gray matter” neurons

- **Activity:**
  - Always on 24/7/365 - Instant access to information on demand
  - 20-25% of blood flow, oxygen, and glucose

- **Speed:**
  - Neurons firing around 5 to 50 times a second (or faster)
  - Signals crossing your brain in a tenth of a second

- **Connectivity:**
  - Typical neuron makes ~ 5000 connections with other neurons:
    - ~ 500 trillion synapses

- **Complexity:**
  - Potentially 10 to the millionth power brain states
A Neuron
Brain Basics

■ Size:
  ■ 3 pounds of tofu-like tissue
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The Mind/Brain System

“Mind” = flow of information within the nervous system
- Information is represented by the nervous system.
- Most mind is unconscious; awareness is part of mind.
- The headquarters of the nervous system is the brain.

In essence then, apart from hypothetical transcendental factors, your mind is what your brain does.

Brain = necessary, proximally sufficient condition for mind.
- The brain depends on the nervous system, which intertwines with and depends on other bodily systems.
- These systems in turn intertwine with and depend upon nature and culture, both presently and over time.
- And as we’ll see, the brain also depends on the mind.
Fact #1

As your brain changes, your mind changes.
Ways That Brain Can Change Mind

For better:
- A little caffeine: more alertness
- Thicker insula: more self-awareness, empathy
- More left prefrontal activation: more happiness

For worse:
- Intoxication; imbalances in neurotransmitters
- Concussion, stroke, tumor, Alzheimer’s
- Cortisol-based shrinkage of hippocampus: less capacity for contextual memory
Key Brain Areas for Consciousness

(adapted from) M. T. Alkire et al., Science 322, 876-880 (2008)
Fact #2

As your mind changes, your brain changes.

Immaterial mental activity maps to material neural activity.

This produces temporary changes in your brain and lasting ones.

Temporary changes include:

- Alterations in brainwaves (= changes in the firing patterns of synchronized neurons)
- Increased or decreased use of oxygen and glucose
- Ebbs and flows of neurochemicals
Rewards of Love
Pain network: Dorsal anterior cingulate cortex (dACC), insula (Ins), somatosensory cortex (SSC), thalamus (Thal), and periaqueductal gray (PAG).

Reward network: Ventral tegmental area (VTA), ventral striatum (VS), ventromedial prefrontal cortex (VMPFC), and amygdala (Amyg).

Tibetan Monk, Boundless Compassion
Christian Nuns, Recalling Profound Spiritual Experiences
Mind Changes Brain in Lasting Ways

- What flows through the mind sculpts your brain. Immaterial experience leaves material traces behind.

- Increased blood/nutrient flow to active regions

- Altered epigenetics (gene expression)

- “Neurons that fire together wire together.”
  - Increasing excitability of active neurons
  - Strengthening existing synapses
  - Building new synapses; thickening cortex
  - Neuronal “pruning” - “use it or lose it”
Honoring Experience

One’s experience matters.

Both for how it feels in the moment and for the lasting residues it leaves behind, woven into the fabric of a person’s brain and being.
Fact #3

You can use your mind to change your brain to change your mind for the better.

This is self-directed neuroplasticity.
The Power of Mindfulness

- **Attention** is like a spotlight, illuminating what it rests upon.

- Because neuroplasticity is heightened for what’s in the field of focused awareness, attention is also like a vacuum cleaner, sucking its contents into the brain.

- Directing attention skillfully is therefore a fundamental way to shape the brain - and one’s life over time.

*The education of attention would be an education par excellence.*

William James
Neuroplasticity in Context

- Neuroplasticity is not breaking news. It’s been long presumed that mental activity changed neural structure: what else is learning?

- The news is in how the mind changes the brain.

- Most neuroplasticity is incremental, not dramatic.

- Neuroplasticity is ethically neutral.

*How to use it for good?*
Can you feel connected?

Can you feel cared about?
Your Loving Nature
Evolution

- ~ 4+ billion years of earth
- 3.5 billion years of life
- 650 million years of multi-celled organisms
- 600 million years of nervous system
- ~ 200 million years of mammals
- ~ 60 million years of primates
- ~ 6 million years ago: last common ancestor with chimpanzees, our closest relative among the “great apes” (gorillas, orangutans, chimpanzees, bonobos, humans)
- 2.5 million years of tool-making (starting with brains 1/3 our size)
- ~ 150,000 years of *homo sapiens*
- ~ 50,000 years of modern humans
- ~ 5000 years of blue, green, hazel eyes
Evolutionary History

The Triune Brain

The Triune Brain - (P. MacLean 1990)
Three Stages of Brain Evolution

- **Reptilian:**
  - Brainstem, cerebellum, hypothalamus
  - Reactive and reflexive
  - Avoid hazards

- **Mammalian:**
  - Limbic system, cingulate, early cortex
  - Memory, emotion, social behavior
  - Approach rewards

- **Human:**
  - Massive cerebral cortex
  - Abstract thought, language, cooperative planning, empathy
  - Attach to “us”
Three Goal-Directed Systems Evolved in the Brain

- **Avoid** “sticks,” threats, penalties, pain
- **Approach** “carrots,” opportunities, rewards, pleasure
- **Attach** to “us,” proximity, bonds, feeling close

Although the three branches of the vagus nerve loosely map to the three systems, the essence of each is its aim, not its neuropsychology.

Each system can draw on the other two for its ends.
Love and the Brain

- Social capabilities have been a primary driver of brain evolution.

- Reptiles and fish avoid and approach. Mammals and birds attach as well - especially primates and humans.

- Mammals and birds have bigger brains than reptiles and fish.

- The more social the primate species, the bigger the cortex.

- Since the first hominids began making tools ~ 2.5 million years ago, the brain has roughly tripled in size, much of its build-out devoted to social functions (e.g., cooperative planning, empathy, language). The growing brain needed a longer childhood, which required greater pair bonding and band cohesion.
All sentient beings developed through natural selection in such a way that pleasant sensations serve as their guide, and especially the pleasure derived from sociability and from loving our families.

Charles Darwin
Oxytocin

- It promotes bonding between parents and children - and between mates and friends, keeping kids alive.

- In women, it triggers the let-down reflex in nursing, and tend-and-befriend behaviors during stress.

- In both sexes, it dampens the stress response; it feels pleasurable, relaxed, a “rightness.”

- It is stimulated by:
  - Physical contact (especially skin to skin)
  - Moving together harmoniously (e.g., dancing)
  - Warm feelings of rapport or love; devotion
  - Imagination of these
  - Nipple stimulation
  - Orgasm
Ananda approached the Buddha and said, “Venerable sir, this is half of the spiritual life: good friendship, good companionship, good comradeship.”

“Not so, Ananda! Not so Ananda!” the Buddha replied. “This is the entire spiritual life. When you have a good friend, a good companion, a good comrade, it is to be expected that you will develop and cultivate the Noble Eightfold Path.”

[adapted from In the Buddha’s Words, Bhikkhu Bodhi]
In the cherry blossom’s shade
there is no thing
as a stranger

Issa
If there is anything I have learned about [people], it is that there is a deeper spirit of altruism than is ever evident.

Just as the rivers we see are minor compared to the underground streams, so, too, the idealism that is visible is minor compared to what people carry in their hearts unreleased or scarcely released.

(Hu)mankind is waiting and longing for those who can accomplish the task of untying what is knotted, and bringing these underground waters to the surface.

Albert Schweitzer
If people knew, as I know, the results of giving and sharing, they would not eat without having given, nor would they allow the stain of niggardliness to obsess them and root in their minds.

Even if it were their last morsel, their last mouthful, they would not eat without having shared it, if there were someone to share it with.

The Buddha
Generosity Takes Many Forms

- Attention
- Heart
- Practice
- Time
- Patience
- Service
- Food
- Money
One] giving food, gives four things to those who receive it. What four?

She gives long life, beauty, happiness, and strength.

By giving long life, she herself will be endowed with long life, human or divine.

By giving beauty, she herself will be endowed with beauty, human or divine.

By giving happiness, she herself will be endowed with happiness, human or divine.

By giving strength, she herself will be endowed with strength, human or divine.

The Buddha
The “dana economy” is the original and natural economy, with its circular flow of freely given, unmonetized goods and services.
In what ways have you been generous?

Can you take in the rewards of being generous?

Can you wish others well?
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One should sustain this recollection.

This is said to be the sublime abiding.
Greed, Hatred, Heartache, Delusion
What is the nature of the brain when a person is:

Experiencing inner peace?

Self-actualizing?

Enlightened (or close to it)?
Home Base of the Human Brain

When not threatened, ill, in pain, hungry, upset, or chemically disturbed, most people settle into being:

- **Calm** (the Avoid system)
- **Contented** (the Approach system)
- **Caring** (the Attach system)
- **Creative** - synergy of all three systems

This is the brain in its *responsive* mode.
Responsive Mode

![Diagram](image-url)
Sam sees “peeping among the cloud-wrack . . . a white star twinkle for a while.

The beauty of it smote his heart, as he looked up out of the forsaken land, and hope returned to him.

For like a shaft, clear and cold, the thought pierced him that in the end the Shadow was only a small and passing thing: there was light and high beauty forever beyond its reach.”

Tolkein, The Lord of the Rings
Some Benefits of Responsive Mode

- Recovery from “mobilizations” for survival:
  - Refueling after depleting outpourings
  - Restoring equilibrium to perturbed systems
  - Reinterpreting negative events in a positive frame
  - Reconciling after separations and conflicts

- Promotes prosocial behaviors:
  - Experiencing safety decreases aggression.
  - Experiencing sufficiency decreases envy.
  - Experiencing connection decreases jealousy.
  - We’re more generous when our own cup runneth over.
The good life, as I conceive it, is a happy life.
I do not mean that if you are good you will be happy;
I mean that if you are happy you will be good.

Bertrand Russell
But to Survive, We Leave Home . . .

- **Avoid**: When we feel threatened or harmed
- **Approach**: When we can’t attain important goals
- **Attach**: When we feel isolated, disconnected, unseen, unappreciated, unloved

This is the brain in its *reactive* mode of functioning - a kind of inner homelessness.
The Reactive Mode

1. Approach "Greed"
2. "Ignorance Suffering"
3. "Hatred"

Heartache
Affiliate
**Us and Them**

- Core evolutionary strategy: within-group cooperation, and between-group aggression.

- Both capacities and tendencies are hard-wired into our brains, ready for activation. And there is individual variation.

- Our biological nature is much more inclined toward cooperative sociability than toward aggression and indifference or cruelty. We are just very reactive to social distinctions and 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?*
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.

*Baboon Metaphysics: The Evolution of a Social Mind*, by Dorothy Cheney and Robert Seyfarth
Choices . . .

Or?

Reactive Mode

Responsive Mode
Coming Home: Taking the Fruit as the Path

Gladness

Love

Peace
A human being is a part of a whole, called by us “universe,” a part limited in time and space. He experiences himself, his thoughts and feelings as something separated from the rest... a kind of optical delusion of his consciousness. This delusion is a kind of prison for us, restricting us to our personal desires and to affection for a few persons nearest to us.

Our task must be to free ourselves from this prison by widening our circle of compassion to embrace all living creatures and the whole of nature in its beauty.

Albert Einstein
The root of Buddhism is compassion,

and the root of compassion is compassion for oneself.

Pema Chodren
Self-Compassion

- Compassion is the wish that someone not suffer, combined with feelings of sympathetic concern. Self-compassion simply applies that to oneself. It is not self-pity, complaining, or wallowing in pain.

- Self-compassion is a major area of research, with studies showing that it buffers stress and increases resilience and self-worth.

- But self-compassion is hard for many people, due to feelings of unworthiness, self-criticism, or “internalized oppression.” To encourage the neural substrates of self-compassion:
  - Get the sense of being cared about by someone else.
  - Bring to mind someone you naturally feel compassion for
  - Sink into the experience of compassion in your body

- Then shift the focus of compassion to yourself, perhaps with phrases like: “May I not suffer. May the pain of this moment pass.”
Outstanding behavior,
blameless action,
open hands to all,
and selfless giving:

This is a blessing supreme.

The Buddha
Empathy
What Is Empathy?

- It is sensing, feeling, and understanding how it is for the other person. In effect, you simulate his or her inner world.

- It involves (sometimes subtly) all of these elements:
  - Bodily resonance
  - Emotional attunement
  - Conceptual understanding

- Empathy is usually communicated, often tacitly.

- We can give empathy, we can receive it, and we can ask for it.
Empathy in Buddhist Practice

- Empathy expresses Wise View, which sees how we are all related to each other.
  - Empathy is thus, in a deep sense, self-understanding.

- Empathy is sila in action, the restraint of reactive patterns to be present with others.

- Empathy involves non-attachment to view, dropping our “case,” entering into “don’t know mind.”

- Empathy embodies non-harming.

- Compassion is not enough; we need to feel the weight of the other person’s experience.
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:
- Reflect the content
- Resonate with the tone and implicit material
- Questions are fine
- Offer respect and wise speech throughout
Can you attend to the postures, facial expressions, and movements of another person?

Can you attune to and feel something of the emotions of another person?

Can you have some sense of the thoughts, hopes, and concerns of another person?
Reflections about Empathy

- You’re more likely to get empathy if you’re:
  - Open, present
  - Honest, real, authentic
  - Reasonably clear
  - Responsible for your own experience
  - Taking it in when you feel felt

- Empathy can be negotiated:
  - Name it as a topic in the relationship
  - Follow NVC format: “When X happens, I feel Y, because I need Z. So I request ______.”
  - Stay with it.
Unilateral Virtue
Wisdom is . . . all about understanding the underlying spacious and empty quality of the person and of all experienced phenomena.

To attain this quality of deep insight, we must have a mind that is quiet and malleable.

Achieving such a state of mind requires that we first develop the ability to regulate our body and speech so as to cause no conflict.

Venerable Ani Tenzin Palmo
Feeling Strong

- Feeling the strength in awareness itself, never sullied or rattled by what passes through it
- Sense the vitality in your body.
- Recall a time you felt really strong.
- Energy and strength in your breathing . . . in arms and legs . . . in your whole being . . .
- A spacious strength that lets others flow through
- In relationship and at peace
- Relaxed in a spacious world; no need for struggle
Buddhist Relationship Virtues

- These are aids to practice, not rules that are a sin to break.

- **The Five Precepts**: Do not kill, steal, create harms through sexuality, lie, or abuse intoxicants.

- **Wise Livelihood**: Do not trade in weapons, living beings, meat, intoxicants, or poisons.

- **Wise Speech**: Say only what is well-intended, true, beneficial, timely, expressed without harshness, and - ideally - wanted.

- The fundamental principle of non-harming . . . including oneself
There are those who do not realize that one day we all must die.

But those who do realize this settle their quarrels.

The Buddha
If you let go a little, you will have a little happiness.

If you let go a lot, you will have a lot of happiness.

If you let go completely, you will be completely happy.

Ajahn Chah
How Virtue Supports Relationships

- Brings peace of mind, “the bliss of blamelessness”
- Reduces interpersonal wrangles
- Encourages good behavior in others
- Teaches us what we can ask for from others
Benefits of Unilateral Virtue

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

- Feels good in its own right.

- Minimizes inflammatory triggers, evokes good treatment, empowers you to ask for it.

- Stands you on the moral high ground.

Remaining virtuous in the face of provocation is a profound expression of non-harming and benevolence toward all beings.
What is your own code of unilateral virtues?

How will it benefit you and others to undertake the training aspiration of living by that code?
Practicing with Rejection and Hurt

RAINBOW:
- **R**ecognize the experience
- **A**ccept that it is what it is
- **I**nvestigate it: textures and layers
- **N**ot-self it: observe it without identifying with it; see its compounded nature; see the vast stream of causes of it
- **B**reathe and let go; activate PNS; release “wrong views”
- **O**pen to new perspectives, feelings, and plans; find refuge
- **W**elcome that new wisdom into your being: take in the good so it becomes part of you
Universal Compassion
Feeding the Wolf of Love

- Focus on similarities between “us” and “them.”
- Consider others as young children.
- Notice good things about neutral or unpleasant people.
- Bring to mind the sense of someone who cares about you.
- Keep extending out the sense of “us” to include everyone.
- Consider others as your mother or dear friend in a past life.
- Sila/restraint about over-identifying with “us”
- Reflect on the suffering of so many people in the world.
- Self-generate feelings of kindness and love.
When others address you, their speech may be timely or untimely, true or untrue, gentle or harsh, connected with good or harm, and connected with a mind of loving-kindness or inner hate.

You should train thus: My mind will remain unaffected, and I shall utter no evil words; I shall abide compassionate for their welfare, pervading them with a mind of loving-kindness, and pervading the all-encompassing world with a mind that is abundant, exalted, immeasurable, without hostility and without ill will.

Even if bandits were to sever you savagely limb by limb with a two-handled saw, anyone giving rise to a mind of hate would not be carrying out my teaching.

You should train thus: My mind will remain unaffected, and I shall utter no evil words; I shall abide compassionate for their welfare, pervading them with a mind of loving-kindness, and pervading the all-encompassing world with a mind that is abundant, exalted, immeasurable, without hostility and without ill will.

The Buddha [adapted from The Simile of the Saw, trans. Bhikkhu Bodhi]
Can you extend the circle of “us” to include the whole wide world?
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Let none through anger or ill-will wish harm upon another. Even as a mother protects with her life her child, her only child, so with a boundless heart should one cherish all living beings; radiating kindness over the entire world: spreading upwards to the skies, and downwards to the depths, outwards and unbounded, freed from hatred and ill-will.

One should sustain this recollection.

This is said to be the sublime abiding.
So that all cubs are our own . . .
All beings are our clan . . .
All life, our relatives . . .
The whole earth, our home . . .
Great Books

See www.RickHanson.net for other great books.

Key Papers - 1

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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 - 4


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