

## ***Resting in Emptiness:***

### **The Evolution and Transcendence Of the “Self”**

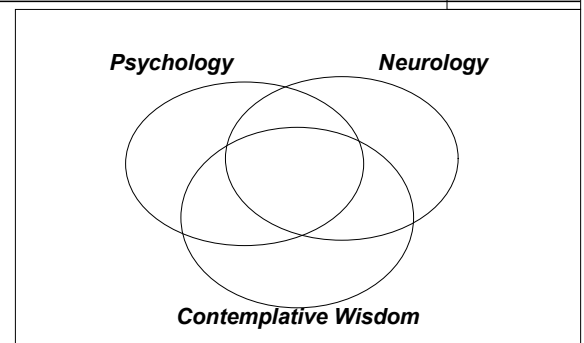
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## **Common - and Fertile - Ground**



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## **Heartwood**

*This spiritual life does not have gain, honor, and renown for its benefit, or the attainment of moral discipline for its benefit, or the attainment of concentration for its benefit, or knowledge and vision for its benefit.*

*But it is this unshakable liberation of mind that is the goal of this spiritual life, its heartwood, and its end.*

The Buddha

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## **Plan**

- Setting the Stage
- Foundations of Meditation
- The Integration of Mind and Brain
- Taking Refuge
- Your Amazing Brain
- Happiness and Awareness
- “Self” in the Brain and in Evolution
- Ways to release “Self”

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## **Basics of Meditation**

- Relax
- Posture that is comfortable and alert
- Simple good will toward yourself
- Awareness of your body
- Focus on something to steady your attention
- Accepting whatever passes through awareness, not resisting it or chasing it
- Gently settling into peaceful well-being

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## **Foundations of Meditation**

- Setting an intention - “top-down” frontal lobes, “bottom-up” limbic system
- Relaxing the body - parasympathetic nervous system
- Feeling safer - inhibits amygdala/ hippocampus vigilance circuits
- Evoking positive emotion - dopamine, norepinephrine
- Absorbing the benefits - primes memory circuits throughout the brain

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## The Integration of Mind and Brain

- "Mind" = flows of information within the brain.
- Most mental activity is forever outside awareness.
- The standard neuropsychological view:

Most, if not all, subjective, immaterial states of mind have a 1:1 correspondence with objective, material states of brain. The mind *is* what the brain *does*.

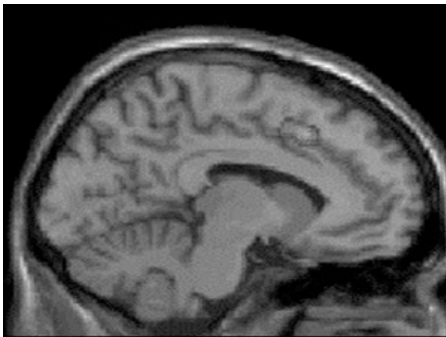
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## Three Implications of the Integration of Mind and Brain

1. As your mind changes, your brain changes, both temporarily and permanently.  
*"Neurons that fire together, wire together."*
2. As your brain changes, your mind changes.
3. You can use your mind to change your brain to benefit your whole being.

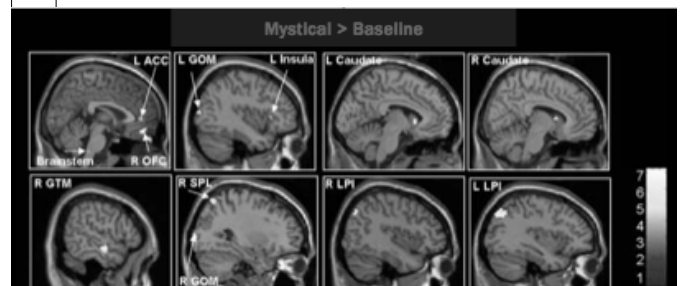
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## "Ardent, Resolute, Diligent, and Mindful"



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## Nuns in Prayer



Beauregard, et al., *Neuroscience Letters*, 9/25/06

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## Mind Does Not Reduce to Brain

- Patterns of information are represented by patterns of matter.
- The mind (information) is represented by the brain (matter).
- When information can be represented by any suitable matter, it is functionally independent of its physical substrate.
- Much mental information can be represented by any suitable neural circuit (e.g., association cortices). Therefore:  
Much mental activity is functionally independent of the brain.
- This independence enables thoughts to cause other thoughts; the brain *carries* thoughts but does not necessarily *cause* them.
- Mind can change matter (brain) through its embedding in the matter that represents it (e.g., thoughts of gratitude lower stress hormones).<sup>11</sup>

## Your Amazing Brain

### Major Features

- **Size:**
  - 3 pounds of cottage cheese
  - 1.1 trillion total cells
  - 100 billion "gray matter" neurons
- **Activity:**
  - Always on 24/7/365 - Instant access to information on demand
  - 2% weight - But 20% of blood flow, oxygen, and glucose
- **Speed:**
  - Neurons firing 10 to 100 times a second
  - Signals crossing your brain in a tenth or hundredth of a second
- **Connectivity:**
  - On average, a neuron gets inputs from about 1000 neurons . . . . and sends its outputs to 1000 more . . . . giving you about one hundred trillion synapses.

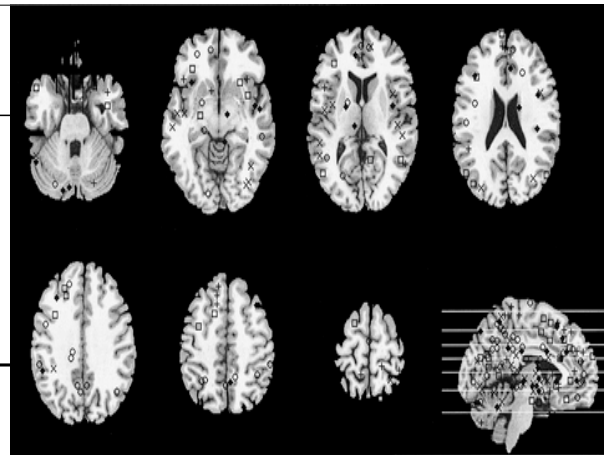
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## Specialization and Teamwork

- Specialized functions
  - Speech production differs from comprehension
  - Face recognition
- Working in harmony as a network
  - Network "noise" facilitates individual signals
  - "Specialization is for insects." - Robert Heinlein
  - Distributed information - "Holographic"
  - One part can compensate for damage to another
- No localized self - system, not the cells

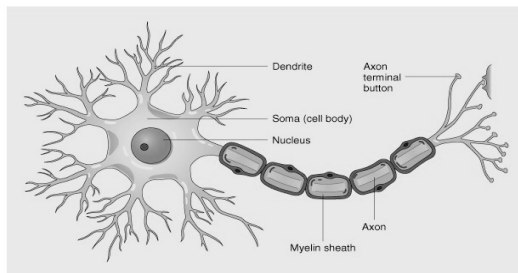
"Self" is in the

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## One Simple Neuron . . .



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## . . . Multiplied by Billions of Neurons

- A giant network with 100 trillion nodes (synapses) chattering away at each other 5 - 50 times a second
- Possible brain states: 1 followed by a million zeros
- Circular loops:
  - Recursion and self-observation
  - Dynamic, "chaotic" effects: determined, but unpredictable
  - Shared circuitry triggers wandering stream of consciousness

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## . . . A Profoundly Complex System

*YOUR BRAIN IS THE MOST COMPLEX OBJECT KNOWN IN THE UNIVERSE.*

*MORE COMPLEX THAN THE CLIMATE, OR A SUPERNOVA*

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## Evolution Grinding Away

- 3.5 billion years of life on this planet
- 650 million years of multi-celled animals
- 80 million years of mammals
- 10 million years of ape-like ancestors
- 2.5 million years of stone tool-using relatives
- 100,000+ years of our own species

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## The 2% Difference

- Chimpanzee DNA is 98% identical to our own.
- Most of that crucial 2% difference codes genes for the brain - especially the relationship functions.
- Human evolution is about mainly one thing: Brain. Brain. Brain.
- Which means relationships, empathy, and cooperation.

*All for what purpose?*

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## Grandchildren!



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## Natural Resting State of Your Brain

- Brain waves:
  - Emphasize delta (1 - 3 Hz) and theta (4 - 7 Hz), with some beta (14 - 30 Hz) mixed in
  - Increased integration and coherence
- Parasympathetic nervous system activation
- Pleasant, rewarding hormones and neurotransmitters: Norepinephrine, oxytocin, dopamine, endorphins

*Awake, even-keeled, interested, benign, contented*

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## Friendly Attention to the Brain

*Nurturing the causes of:*

- The arising, increase, and continuance of the wholesome
- The prevention, decrease, and fading away of the unwholesome

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*Know the mind.*

*Shape the mind.*

*Free the mind.*

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*Be wisdom itself,  
rather than a person who isn't wise  
trying to become wise.*

*Trust in awareness, in being awake,  
rather than in transient and unstable conditions.*

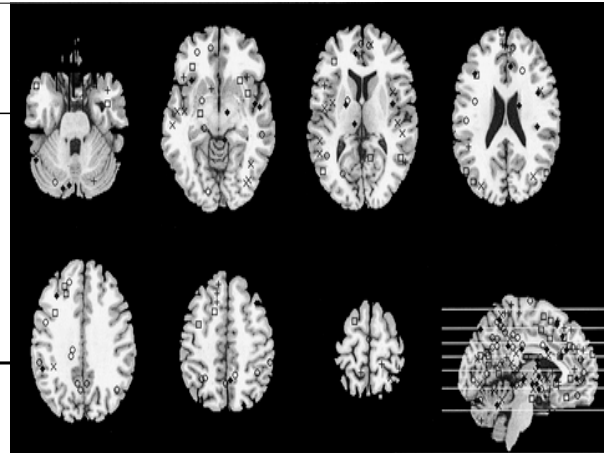
Ajahn Sumedho

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## Properties of “Self” as Experienced

- Object of awareness, not awareness itself
- Associated with a particular body and its history
- Activates and deactivates to help organism survive - a process
- Especially triggered by greed and hatred - by clinging
- Variable, inconstant - impermanent
- Made up of parts - compounded and “empty”
- Carries a sense of tension and contraction - suffering

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Brain activations of “selfing” - Gillihan, et al., Psych Bulletin, 1/2005 26

## Properties of Self in the Brain

- Self functions are distributed; no homunculus
- Self is information represented in matter; in that sense, self is as real as a memory, love, values, and the smell of a rose.
- Self is built up from many sub-systems: compounded.
- Self-in-brain is thus dependent upon conditions; it's not separate from the neural circuits that constitute it.
- Selfing activates fluidly and transiently: impermanent.
- Selfing is i, in response to feeling tone:
  - Pleasant -> Approach -> Greed
  - Unpleasant -> Avoid -> Hatred

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*No self,  
no problem*

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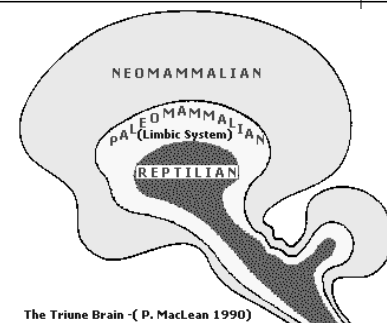
## Evolution of Rudimentary Self

1. Representation of state of body: experience
2. Representation of repeated experiences: history
3. Implicit associated reference to a particular body
4. Representation of repeated bodily references: existence
5. Architecture of representations: thus, a specific physical identity
6. Identity aids intentions: avoid pain, seek pleasure: agency
7. States of mind get represented, also intentions
8. Physical, mental states are linked: mental-physical identity
9. Steady awareness of variable states: awareness identity
10. Awareness linked to physical, mental states; an architecture of representations: physical-mental-awareness identity, with intentions and agency

And thus the self is born . . .

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## Evolutionary History



The Triune Brain - (P. MacLean 1990)

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## Evolution of Complex Self

- Based on layers of new neural structures
- New capabilities: Territory, possession, etc.
- Beginnings of identification
- Mammalian and primate brain: empathy, self in relation to others, basic personal identity
- Human brain: past and future self, predicting reactions of oneself, constructing narratives, act to change oneself, etc.

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*The dualistic ego-mind is essentially a survival mechanism, on a par with the fangs, claws, stingers, scales, shells, and quills that other animals use to protect themselves. By maintaining a separate self-sense, it attempts to provide a haven of security . . . Yet the very boundaries that create a sense of safety also leave us feeling cut off and disconnected.*

John Welwood

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*To study the Way is to study the self.*

*To study the self is to forget the self.*

*To forget the self is  
To be enlightened by all things.*

Dogen

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*Penetrative insight*

*joined with calm abiding*

*utterly eradicates*

*afflicted states.*

Shantideva

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## Supports for Self-Release

- Understanding and conviction
- Activate parasympathetic system
- Minimal desire
- Blurred self boundaries
- Surrender agency
- Actively undermine sense of self
- Taking refuge
- Joining with others

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## Understanding and Conviction

- An "I" must be solid, unchanging, and in control. But . . .
- The "self" is compounded from many parts, with no fixed center.
- "Me" and "mine" rise and fall, continually changing.
- "I" has little control over the contents of mind.
- Self is a useful fiction. But no more.

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*Selflessness is not a case of something that existed in the past becoming nonexistent. Rather, this sort of "self" is something that never did exist. What is needed is to identify as nonexistent something that always was nonexistent.*

The Dalai Lama

*When we recognize that the things we identify as our self are impermanent and bound up with suffering, we realize they lack the essential marks of authentic selfhood and we thereby stop identifying with them.*

Bhikkhu Bodhi

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## Parasympathetic Activation

- Full breaths, especially exhalation
- Deep relaxation
- Balancing heart-rate variability; HeartMath
- Mindfulness of the body
- Yawning
- Meditation

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## Fading of Desire

- Equanimity:
  - Not reacting to one's reactions - especially the "feeling tone" of pleasant/unpleasant/neutral: breaks chain of "contact-feeling-craving-clinging-suffering"
  - Frontal lobe influence over limbic system
  - Desensitization and calming of limbic system (e.g., attention to the neutral feeling tone)
- Fulfillment of core needs
- Reasonable goals and no addictions
- Profound acceptance

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## Abiding as the Whole

- Be the whole body, not the head
- Be a body embedded in the world
- Be matter and energy flowing through and as you.
- Let mind be body and world.

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## Whole Body Awareness

- The insulae:
  - Interoceptive awareness
  - Emotions of internal states (e.g., disgust, fear of pain)
  - Activate with pain of others: empathy
  - Integrate whole body awareness
- Right hemisphere:
  - Specialized processing of bodily sensations
  - Gestalt awareness
  - Pulls activation away from verbal chatter of left brain
- Track breath as a whole, then body as a whole, then settle into spacious choiceless awareness

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## Surrendering Agency

- Receiving the breath
- Giving oneself over to precepts and practices
- Surrender to "the better angels of one's nature" or to wholesome purposes
- Devotional practices
- Devotion to a teacher or guru

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*In the deepest forms of insight,  
we see that things change so quickly  
that we can't hold onto anything,  
and eventually the mind lets go of clinging.*

*Letting go brings equanimity.  
The greater the letting go, the deeper the equanimity.  
In Buddhist practice, we work to expand  
the range of life experiences in which we are free.*

U Pandita

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## Undermining the Sense of Self

- Treating self as unimportant
  - Dedication of merit; karma yoga
  - Tonglen practices in Tibetan Buddhism
  - Vows of poverty; other renunciation
- Embrace narcissistic injuries for practice
- Orient to experience as “not-me”
- Meditations that deconstruct “self”
  - Vipassana, contemplations of aggregates
  - Charnel ground
  - “A year to live”

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*With dewdrops dripping,  
I wish somehow I could wash  
this perishing world*

Basho

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## Taking Refuge

- Identify with God, True Self, Bodhicitta, True Self . . . Or simply with the beingness that is a fundamental property of the nervous system: aware, peaceful, benign, and content.
- Find those refuges, register them in memory, and learn how to evoke or enter them again.
- Conviction and community help.

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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 for ever beyond its reach.”

Tolkein, *The Lord of the Rings*

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## Joining with Others

- Empathy, cooperation are deep in our nature
- Human intimacy; presence; sangha
- True nature in others is a mirror to that in ourselves: “*What is intrinsic within me is by nature intrinsic within you.*” (Adyashanti)
- Virtue; sila

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*Outstanding behavior,  
blameless action,  
open hands to all,  
and selfless giving:*

*This is a blessing supreme.*

The Buddha

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## Wisdom and 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 Tenzin Palmo

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*Indeed, the sage who's fully quenched  
Rests at ease in every way;  
No sense desire adheres to him or her  
Whose fires have cooled, deprived of fuel.*

*All attachments have been severed,  
The heart's been led away from pain;  
Tranquil, he or she rests with utmost ease.  
The mind has found its way to peace.*

The Buddha

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Thank you

*Be still  
Listen to the stones of the wall  
Be silent, they try  
To speak your*

*Name.  
Listen to the living walls.  
Who are you?  
Who  
Are you? Whose  
Silence are you?*

Thomas Merton

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