

The Wise Brain Bulletin

News and Tools for Happiness, Love, and Wisdom
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Featured Article:

Eddies in the Stream

© By Rick Hanson, Ph.D.

1

Rivers flow and eddies form.

An eddy is a relatively stable pattern whose elements continually change. It is “standing-streaming,” a term from Evan Thompson’s marvelous book, *Mind in Life*.

All eddies disperse eventually.

2

In a river, an eddy depends on many conditions. These include:

- The state of the eddy itself just one moment ago.
- The shape of the riverbed, nearby boulders, water flows immediately upstream, and the amount of snowfall last winter. Going back and back, those conditions depend on the history of the earth, the solar system, the universe.
- Countless molecules of water.

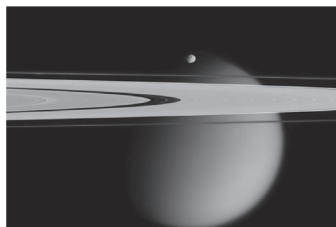
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Molecules depend on atoms, such as hydrogen and oxygen.

All atoms heavier than helium depend on the stars which made them, mainly while exploding.

A river is fluid stardust.

A particle of any size is congealed energy; energy is dispersed particles.

A river is a flow of light.

4

Atoms depend on subatomic particles made from quarks.

Quarks are made from even smaller entities – perhaps infinitesimal vibrating strings – that comprise the substrate of the physical universe.

The substrate of the universe depends on the conditions present in the Big Bang. Like all the patterns within it, the substrate is conditioned by preceding causes.

Greetings

The Wise Brain Bulletin offers skillful means from brain science and contemplative practice—to nurture your brain for the benefit of yourself and everyone you touch.

The Bulletin is offered freely, and you are welcome to share it with others. Past issues are archived at www.WiseBrain.org.

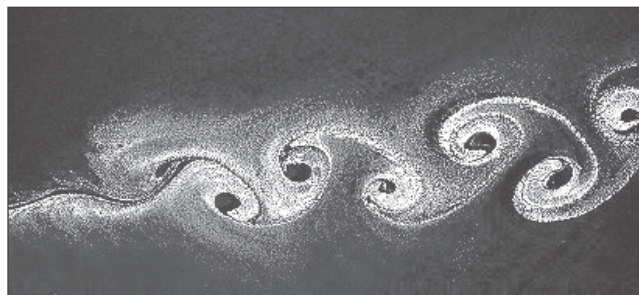
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This substrate is not well understood. Scientists speak of a “quantum foam” where currents of matter and energy continually swirl together and disperse. The substrate of our universe seems to be turbulent at every infinitesimally small point.

Nonetheless, at any larger scale and under almost all conditions, the substrate seems to have stable properties and capacities. (Exceptions – which won't be mentioned again – include the changing rate of expansion of the universe, and possibly black holes.) Patterns continually change, but the substrate remains the same.

Eddies are patterns of a river. Similarly, all forms of matter and energy – from quarks to galaxies, from microvolts to lightning bolts – are patterns of the substrate of the universe.



5

Twirling electrons, dancers in a club, friends on the sofa, dishes in the sink, freeway traffic, international coalitions, moons and stars, predators and prey, clouds, bulldozers, breakfast, projects, problems, solutions, a human body, a human life, clusters of galaxies, our own blossoming universe surrounded by mystery.

Eddies in the stream.

Every eddy is compounded of parts, dependent upon causes, and impermanent.

Clinging to eddies is suffering.

6

The substrate enables an infinite variety of patterns, as a river enables an infinite variety of eddies. Eddies fleetingly pattern the substrate of the universe without ever altering its capacity to be patterned.

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As soon as a pattern forms, its multiple possibilities have converged on a single actuality.

The substrate is a space of effectively infinite freedom in which actualities emerge into unfreedom and then disperse.

7

It is always now.

How long is now? Its duration seems to be infinitely small. Yet somehow it contains the causes from the past that will create the future.

At the leading edge of now, the quantum foam of the substrate is rampant with possibilities. For example, a single particle can exist in two different places at the same time before its location is resolved. Some particles are so entangled that the coalescing nature of the one instantly establishes, faster than the speed of light, the nature of the other.

Just before quantum potentiality coalesces into actuality, the eternally emergent edge of now is as free as anything can ever be.

8

Information is a reduction of uncertainty, a signal against a backdrop of noise.

Information is represented by patterning a suitable substrate. For example, the information of Beethoven's Ode to Joy can be represented by a musical score on paper, frequency modulations of electromagnetic waves, pulsations in stereo speakers, and patterned firings of neural networks.

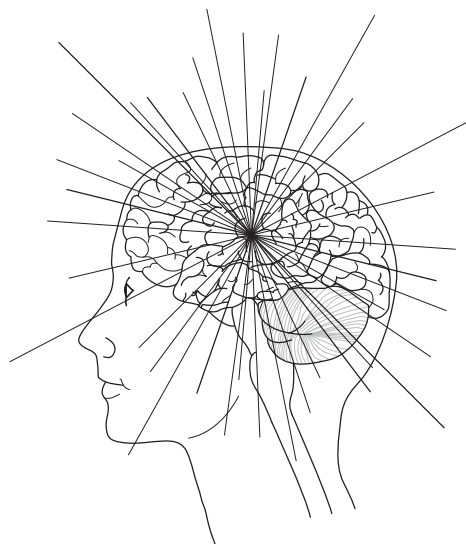
The mind, broadly defined, is all the information represented by the nervous system. Most of the mind is forever unconscious. The movements of the mind through the nervous system shape it like water through a channel.

Apart from possible transcendental factors, the brain is the necessary and proximally sufficient condition for the mind.

It is only proximally sufficient because the brain depends on the nervous system, the body as a whole, the natural world, evolution, culture, and the mind itself.

Mental activity entails neural activity. When the mind changes, the brain changes. When the brain changes, the mind changes. Therefore, you can use your mind to change your brain to change your mind.

No one knows how neural activity becomes conscious mental experience.



9

The brain contains 100 billion neurons making 100 trillion synaptic connections with each other. Neurons typically fire 5-50 times a second. Every second, a quadrillion synaptic activations occur inside your head.

This activity creates a background of fertile noise that is transiently patterned to form the signals – the information – that comprise the mind.

The number of potential patterns in the brain is bounded by the number of possible combinations of neurons firing or not. That quantity is 10 to the millionth power – one followed by a million zeros. The estimated number of atoms in the universe is one followed by just eighty zeros.

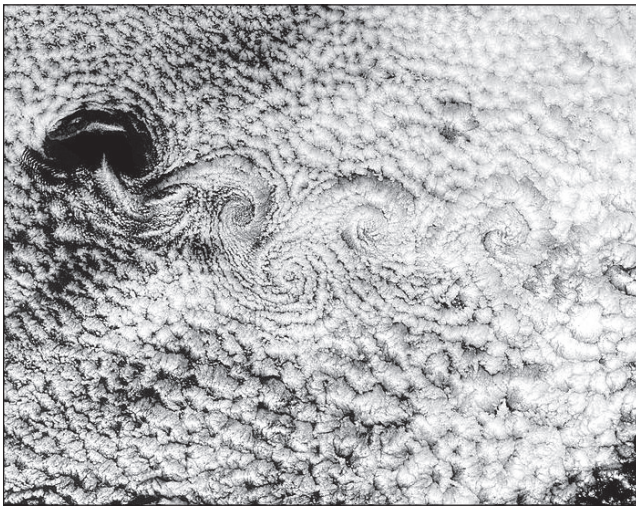
The neural substrate can hold an effectively infinite variety of mental patterns.

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Conscious mental activity—let’s call this “thought”—seems to be enabled by a neural substrate that is centered in the midline of the brain, with extensions into the upper-outer regions of the prefrontal cortex and down into the brain stem.

A thought depends on a neural pattern: a momentary coalition of millions, sometimes billions of synapses.

A thought is an eddy of information mapped to an eddy of neural activity.



11

For any thought to emerge, there must be unused neural capacity to represent it.

It takes at least 50-100 milliseconds to form the coherent assembly of synapses that underpins a thought. During that window of formation, the underlying substrate of noisy neural activity is fertile with potential.

Once a neural assembly eddies into existence, it is conditioned and unfree. The thought remains what it is, determined, until its synaptic pattern disperses, usually within a second or two. Then those synapses become available for representing new eddies of thought.

Thoughts rise out of and fall back into a field of effectively infinite possibility.

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At any moment, there is always some unused neural capacity, firing noisily, quivering to become a signal. Not yet patterned, manifest, conditioned, and unfree.

In meditation, we become increasingly intimate with that not-yet-patterned capacity to hold any mental content. As the eddies of thought within it diminish – as the surface of the pond grows still – the fertile capacious noise of the neural substrate becomes itself more available to awareness. We abide increasingly as the open space of awareness – abiding increasingly as neural representing rather than as patterns that are represented.

We abide less as the eddies and more as the stream.

Informational possibility can be sensed directly. Quantum possibility can be intuited through its analogue in informational possibility – and perhaps sensed directly as well.

As contemplative practice deepens – along with virtue and wisdom – we become increasingly aware of and centered in the neural, and perhaps quantal, freedom that exists prior to thought.

Aware of mental/neural eddies emerging and dispersing. None of them a reliable basis for lasting happiness.

Abiding in mental/neural possibility before patterns are pinned to it like butterflies to a poster.

If there are indeed transcendental influences, the eternal space of possibility at the leading edge of now is an opportune window for Grace.

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In the teachings of the Buddha (In the *Buddha's Words*, Bhikkhu Bodhi, 2005), Nirvana is described as:

- The unborn, unaging, unailing, deathless, sorrowless, and undefiled supreme security from bondage (p. 55)
- The stilling of all [mental] formations, the relinquishing of all acquisitions, the destruction of craving, dispassion, cessation (p. 70)
- The destruction of lust, hatred, and delusion (p. 364)
- The unconditioned, uninclined, taintless, truth, far shore, subtle, very difficult to see, stable, undisintegrating, unmanifest, unproliferated, peaceful, sublime, auspicious, secure, destruction of craving, wonderful, amazing, unafflicted, dispassion, purity, freedom, nonattachment, island, shelter, asylum, refuge, and the destination and the path leading to the destination (p. 365)

In the words of Bhikkhu Bodhi: What lies beyond the round of rebirths is an unconditioned state called Nibbana [the Pali term for Nirvana]. Nibbana transcends the conditioned world, yet it can be attained within conditioned existence, in this very life, and experienced as the extinction of suffering . . . The realization of Nibbana comes with the blossoming of wisdom and brings perfect peace, untarnished happiness, and the stilling of the mind's compulsive drives. Nibbana is the destruction of thirst, the thirst of craving. It is also the island of safety amid the raging currents of old age, sickness, and death. (p. 183)

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The Buddha described a progressive process of contemplative absorption that moves through eight non-ordinary states of consciousness—the “form” and “formless” jhanas—to the indescribable: Nirvana.

Nirvana itself may have no neural correlates. But the states of consciousness which precede it must. They are quite well specified (*Bodhi*, pp. 397-398):

- The first jhana “is accompanied by thought and examination [sometimes translated as consciously applied and sustained attention], with rapture and happiness.” In the second jhana, thought and examination subside. In the third, rapture fades away. The fourth has “neither-pain-nor-pleasure and . . . equanimity.”
- At this point, the individual sees “form, feeling, perception, volitional formations, and consciousness . . . as impermanent . . . as nonself. He turns his mind away from those states and directs it toward the deathless element” (i.e., Nirvana), and does so again in each of the next four states of consciousness.
- “With the complete transcending of perceptions of forms, with the passing away of perceptions of sensory impingement” the individual “enters upon and dwells within . . . the base of the infinity of space . . . the base of the infinity of consciousness . . . the base of nothingness” . . . the base of neither-perception-nor-nonperception . . . and then cessation, Nirvana.

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In this progressive process, thought, effortful attention, pleasure and pain, perception and even non-perception – all disperse.

The heart keeps beating and assemblies continue to form in the deep architecture of the nervous system. But in the neural substrate of awareness, eddies of information swirl apart, along with the neural assemblies that represent them. Signals drop out, stage by stage, leaving only fertile noise. Conditioned, unfree patterns disintegrate.

At the ultimate point, there is nothing conditioned at all. There are no signals, no eddies, in the neural substrate of consciousness. The pond is utterly still.

There is only unconditioned mental and neural possibility. Whose nature is the same as unconditioned quantum possibility: always present, infinitely open, ultimately indescribable.

There is only abiding in the nature of the mind and the universe.

Which is always present. Before eddies form and after they disperse. Before birth and after death. Your original nature.

Sometimes called Buddhanature.

15

When eddies of information begin to gather again in the neural substrate of awareness, there is knowing and conviction.

That the eternal ground of mind and universe is open, fertile, and free. That it neither arises nor passes away.

That eddies do arise. A whirlpool, memory, relationship, gesture, galaxy. And always pass away.

That eddies are worthy of care and encouragement, but not craving and suffering.

That the stream itself is our true ground and refuge.

In the stream.

Skillful Ways to Deal with Stress and Trauma

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As the national economy tanks, as jobs are lost after 10 and 20 years, as relationships are strained, as safety nets of retirement and health care unravel, I see more and more distress, fear, agitation among clients, colleagues, friends, even myself when I'm tired and vulnerable.

How do we stay resilient and resourceful when national disasters threaten to swamp our boat? When insecurity and distress seep through our circles of families and friends, how do we, in the words of dharma teacher Phillip Moffett, let ourselves be “affected but not infected”?

This article offers practical tools and resources for coping with stress and trauma. May you and your circle find them helpful and useful.

What Happens in the Body-Brain to Cause a Stress Response?

Stress is the body-mind's unconscious response to perceived threat or danger. The amygdala—our body-brain's 24/7 fear-alarm center and also our emotional meaning center—instantaneously processes input from our senses about external events and our internal physical-emotional states. The amygdala draws on its own implicit emotional memories—have we seen anything like this before?—to discern “This is OK or even good.” or “This is bad or even dangerous.” This sifting of experience is lightning fast, mere milliseconds; it never stops, not even in our sleep, and it operates completely unconsciously, outside of our awareness. So the stress response is rooted not in any particular event but in the meaning our brain attributes to that event and our response to that perceived meaning.



When the amygdala, instantly comparing experience in this moment to implicit memories of past experience, does sense danger, it signals the hippocampi—the structures of explicit memory that link our unconscious limbic system with our conscious cortex. In 3-5 seconds the frontal lobes of our “higher” cortex of our brain come on line in response to that event or series of events. We can consciously compare our associations of explicit memories—records of experience we are aware of—to assess and interpret, reality test, and come up with realistic action plans. If we've been resourceful in coping in the past, and are accessing the more positive explicit memories of that coping, this conscious cortical system works well to avoid stress and trauma in the present.

But the early warning system of the amygdala is designed to keep us alive above all, and it has a fast track to do so that remains unconscious. This faster track makes us jump out of the way of a speeding car or catch a falling child or turn away from someone who gives us the creeps ten times faster than our “higher” brain can register anything has even happened.

The amygdala makes us act so quickly by activating the sympathetic or arousal side of the nervous system. The SNS is the gas that fuels our fight-flight response. We react reflexively, we take action quickly, without thinking at all, to protect ourselves and others. The arousal of the SNS is fueled by cortisol, the stress hormone that gets us moving and saves our lives. That's the good news.

The two downsides are:

1) the fast track of the amygdala relies entirely on implicit (unconscious) memories which, depending on earlier, past experiences, are more likely to be biased toward the negative and slant the meaning of an event toward a stress response, perceiving threat or danger where there may not be any.

2) cortisol destroys brain cells. That's the price we pay for our survival.

Cortisol suppresses our immune system; that's why, with chronic stress, we become physically ill.

Cortisol destroys new cells and new synaptic connections among cells. The hippocampi, whose entire job is to create new cells and new connections among cells to create new explicit memories (i.e., learning), are especially vulnerable to damage by cortisol.

Too much cortisol flooding our brain can de-rail the capacities of the cortex to down-regulate the amygdala. With no signal coming from the higher executive centers of the brain—"It's OK; we're safe." Or "It's OK; we can handle this." The amygdala doesn't turn off the cortisol that keeps us aroused, alarmed, agitated, stressed. We're in danger of going out of our "window of tolerance" into trauma.

It's activating the parasympathetic wing of the nervous system, the PNS brakes of the SNS gas, that brings us back into balance, homeostasis, equanimity. And we must keep on line the integrated functioning of many parts of the cortex, especially the pre-frontal cortex that is only cell layers away from the amygdala, to accurately assess the true extent of any danger and to quell the fear response once any real danger has passed. We learn ways below to activate the

PNS and strengthen the power of the pre-frontal cortex to quell the response of the amygdala, thus de-stressing our responses to any event, threatening or not.



What Happens in the Body-Brain to Cause a Trauma Response.

When a flood of too much cortisol, too much stress response, damages the explicit memory circuits of the hippocampi and de-rails the functioning of the cortex, even temporarily, reality testing becomes impaired, judgment becomes compromised, discernment and planning are pre-empted by impulsive reactivity. There is no quelling of the fear response by any explicit memories of resilient coping. The brain begins to record new stressful experiences in implicit memory only, with no accurate explicit memory of them. "Something happened; I'm not sure what, but I'm really upset." These implicit fear-based memories become self-reinforcing negative loops of trauma, isolated from any other parts of the brain that could consciously process the experience differently, more positively. This is why a traumatic memory can appear "out of the blue", dissociated from anything else.

Trauma, by definition, is the body-mind's record of any external or internal experience that overwhelms our normal capacities to process and cope.

Capital T trauma is an experience that would overwhelm anyone's capacities, at least temporarily—losing a home or a family member in the floods of Katrina, watching a buddy die under friendly fire while deployed in Iraq, crushing a young child or dog under the wheels of our car.

Small T traumas are experiences that overwhelm some of us some of the time but not all of us all of the time: losing a home to a mortgage foreclosure, acting foolishly in front of strangers, witnessing a fatal car accident

Once a trauma loop has started, any new stimulus can be pulled unconsciously into an implicit association with past negative experiences. Any sudden braking in a car becomes a trigger of implicit memories of a car accident. Any banging door becomes a trigger of implicit memories of daddy coming home drunk. Any bounced check becomes a trigger of implicit memories of running out of money to pay the bills.

What To Do When There Is Stress

As the crash of the national economy continues, affecting and “infecting” so many, I’m reminding more and more clients, colleagues, friends. (myself!) to practice the techniques below to reduce stress and recover our resilience.

1. Activate the PNS, put the brakes on the arousal, slow down and BREATHE

a. Breathing. Deep belly breathing works because it activates the PNS and slows down our reactivity. Breathing slowly, deeply, can de-escalate a full-blown panic attack in a matter of minutes. Remembering to breathe throughout the day de-stresses us throughout our day, and helps us install calm as our real baseline, not stress as the new normal.

b. Hand on the heart. Neural cells around the heart activate during stress. A warm hand on the chest, in the area of the heart center, calms those neurons down again, often in less than a minute. It works, especially if paired with warm thoughts, feelings, images at the same time.

c. Poetry. Because poetry is metaphorical, imagistic, emotion and sense based, reciting poetry activates the right hemisphere of the brain which processes experience in a holistic,

imagistic, emotion-sense based mode. Because the right hemisphere of the brain is rich in neuronal connections to the limbic system, including the alarm center and emotional meaning center of the amygdala, snuggling with a partner or a pet, drinking a warm cup of tea, and reading poetry can soothe and calm our nerves in about ten minutes.

The Peace of Wild Things

*When despair for the world grows in me
and I wake in the night at the least sound
in fear of what my life and my children's lives may be,
I go and lie down where the wood drake
rests in his beauty on the water, and the great heron feeds.
I come into the peace of wild things
who do not tax their lives with forethought
of grief. I come into the presence of still water.
and I feel above me the day-blind stars
waiting with their light. For a time
I rest in the grace of the world, and am free.*

~Wendell Berry, *Collected Poems*

d. Meditation. Sylvia Boorstein’s book *Don’t Just Do Something: Sit There!* speaks to our instinctive and socialized tendencies to do, to act (fight-flight). Following her instructions on compassionate mindfulness meditation is a gentle way to calm the mind and body, over time generating a steady inner calm that sustains us over the long haul.

2. Calm Jittery Neurons Through Touch

Modern neuroscience is validating what compassionate people have always known: we are hardwired to be soothed by touch. Skin-on-skin touch is a stress reducer because it primes the brain to release oxytocin, the hormone that helps activate the PNS and cause cortisol levels to plummet. Touch heals.

Placing our hand on our own heart brings our heart rate variability into a calm rhythm, according to researchers at HeartMath Institute.

Holding hands with someone we feel safe with primes the brain to be less reactive to stress when disturbing events happen, according to Phil Shaver at U.C.Davis.

Holding hands with someone we feel safe with overrides anxiety and sensations of pain, even in situations stressful to others, according to James Coan of Duke University.

A 20-second full body hug releases oxytocin in the brain, according to Stan Tatkin at UCLA, reducing stress in couples.

People can distinguish a touch of compassion from touches of anger, fear, grief, etc., with 80% accuracy, according to Dacher Keltner at U.C. Berkeley.

Finding ways to “stay in touch” with loved ones is the best possible antidote to stress and a great buffer against trauma.

Find a friend or co-worker to exchange 5-minute head rubs with, sensual without being sexual. The gentle massage of fingers on the scalp, the forehead, the nose, the jaw, the ears can lower your blood pressure and calm your racing thoughts. The touch, warmth, movement releases the oxytocin in your brain, calming the fear center, allowing a few moments respite from stress and pressure.

3. Count to Ten Before Reacting. The folk wisdom of counting to ten before reacting works because counting to ten gives our brain the few precious seconds it needs for the cortex to focus and reflect on an event before we respond. The cortex is the part of our brain that can most powerfully over-ride the stress response and quell the firing of the amygdala. It is also the only part of our brain that operates consciously, with awareness. We need our cortex to be functioning so we can reflect on our experiences before we respond to them.

Among mindfulness practitioners, counting to ten is known as the Pause. The Pause works because we get to draw on conscious explicit memories in our assessment of what to do. Our conscious explicit memories tend to be more positive than the earlier implicit-only memories of our amygdala. We break the automaticity of our old reactive patterns when we pause long enough to become aware of what’s actually, truly happening. Seeing clearly, accurately, what we are experiencing, without reactivity, without distortion, allows us to respond to any event more flexibly, more wisely, more resiliently.

4. Access Memories of Resilient Coping. Once the cortex is on line, we can access networks of explicit memories of times in the past when we have coped with disturbing events well. The brain creates self-reinforcing loops of memories that can spiral up into resilience or spiral down into trauma. If we have a memory of having love, even with the loss of a relationship, we can trust we’ll have love again. If we have a memory of having gotten a job before, even with lay-offs in rough times, we can trust we’ll have a job again. If we have a memory of coping well with distressing events before, even when circumstances become more dire, we can persuade ourselves we can cope well again.

Even if you have to go back to the third grade to find a moment where you met a moment of distress or disappointment with pluck and determination, find even that one moment and nurture it. Nurture a sense of yourself as resilient, brave, resourceful. Take it in as part of your true nature, your innate capacities to cope with the stresses of life, so you can draw on it as you face new stressors now.



5. Take Time to Smell the Roses. Spending time in nature could be part of slowing down, breathing, coming back to the big picture, re-grouping to cope better. Recent research proves even the smallest increments of being in nature nurtures our brains, thus our functioning, thus our coping.

Researchers at University of Michigan have found that people who have just spent even 10 minutes walking through a park consistently out-perform other people, who have just spent equal amounts of time walking around a city's downtown, on mental tasks involving attention and working memory. People perform better on the same mental tasks when looking out an apartment window onto a garden than other people looking out the window onto a parking lot.

Other research shows that people with major health problems or depression improve their functioning more quickly when they are responsible for taking care of plants than when they are not. Office workers increase their productivity when plants are part of the office environment.

All of this research on the nurture of nature was brought home to me when my friend David went for a walk through a local park after what could have been a life-saving financial deal fell through. He was greatly despondent as he headed out the door. Several hours later he returned, his internal state quite changed. He said simply in his quiet Texas drawl, "That was the most peaceful half hour --- I have ever spent ---- in my entire life." Problems not yet solved, but face-able.

6. Forgive Yourself for Mistakes. With the current financial crisis impacting everyone directly or indirectly, I find people are kicking themselves all over the place. "I should have done this" or "I shouldn't have done that." It's important to show up for the challenges of life, take responsibility, learn the lessons, yes. Absolutely. But once that's done, perpetuating the guilt simply perpetuates the stress. And stress inhibits the functioning of the parts of the brain that could wisely discern what to do now.

"Finish each day and be done with it. You have done what you could; some blunders and absurdities have crept in; forget them as soon as you can. Tomorrow is a new day; you shall begin it serenely and with too high a spirit to be encumbered with your old nonsense."

~Ralph Waldo Emerson

Self-forgiveness is essential for the inner serenity that is essential to cope wisely in the future. And —*"Without forgiveness, there is no future."*

~Desmond Tutu



What to Do When There is Trauma

When stress is layered upon previous trauma, the dissociated and unconscious trauma memories can block the speedy resolution of present day stress without our even knowing why. Uncovering un-integrated memories of previous trauma often works best with the skillful collaboration of a therapist trained in healing trauma. The websites below link to empirically validated modalities for healing trauma and national directories of therapists trained in those modalities.

www.emdria.com

Eye Movement Desensitization and Reprocessing (EMDR) is a set of standardized protocols proven effective for the treatment of trauma. EMDR, now becoming known as Adaptive Information Processing, allows the brain to re-process traumatic events and re-integrate them into a conscious sense of self.

www.sensorimotorpsychotherapy.com

Sensorimotor Psychotherapy is a mindfulness based, body-oriented trauma therapy that integrates verbal techniques with body-centered interventions in the treatment of trauma, attachment, and developmental issues.

Somatic Experiencing employs the awareness of body sensation to help people “renegotiate” and heal their traumas rather than relive them. With appropriate guidance with the body’s instinctive “felt sense,” individuals are able to access their own built-in immunity to trauma, allowing the highly aroused survival energies to be safely and gradually discharged. When these energies are discharged, people frequently experience a dramatic reduction in or disappearance of their traumatic symptoms.



Working with trauma, loss, and the painful consequences of the limitations of human relatedness, Accelerated Experiential Dynamic Psychotherapy is a transformation-based, healing-oriented model of psychotherapy and trauma therapy. AEDP fosters the emergence of new and healing experiences through the in-depth processing of difficult emotional and relational experiences.

*This article was revised from the March 2009 newsletter *Healing and Awakening into Aliveness and Wholeness*, archived on www.lindagraham-mft.com. Linda Graham, MFT, is a psychotherapist in full-time private practice in San Francisco and Corte Madera, offering consultation and trainings on the integration of relational psychology, mindfulness and neuroscience.*

San Rafael Meditation Group

Open to beginners and experienced practitioners, we meet on Wednesday evenings at the A Sante day spa in downtown San Rafael at the corner of Brooks and 3rd. “Early-bird” meditation starts at 6:45 with formal instruction at 7:00; meditation ends at 7:30, followed by a brief break, and then a dharma talk and discussion, ending at 8:30. It is led by Rick Hanson, and for more information, check out www.WiseBrain.org/sanrafaelmeditation.html. Newcomers are always welcome!

Perspectives on Self-Care

Be careful with all self-help methods (including those presented in this Bulletin), which are no substitute for working with a licensed healthcare practitioner. People vary, and what works for someone else may not be a good fit for you. When you try something, start slowly and carefully, and stop immediately if it feels bad or makes things worse.

From Our Readers...

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Pantoum on the Neurodhamma Course at the Barre Center for Buddhist Studies

© Poem by Steve Kohn 2009

Conditions have changed
Since last I was here.
Punctuated disequilibrium
No doubt.

Since last I was here
The old farmhouse is new.
No doubt
A function of practice.

The old farmhouse is new;
More structures for study;
A function of practice,
Maturing endowments.

More structures for study,
Electronic hookups,
Maturing endowments,
In the flesh of an instant.

Electronic hookups
External, internal
In the flesh of an instant
An instance of flash.

External, internal
Alma dura mater
An instance of flash
Forms the last.

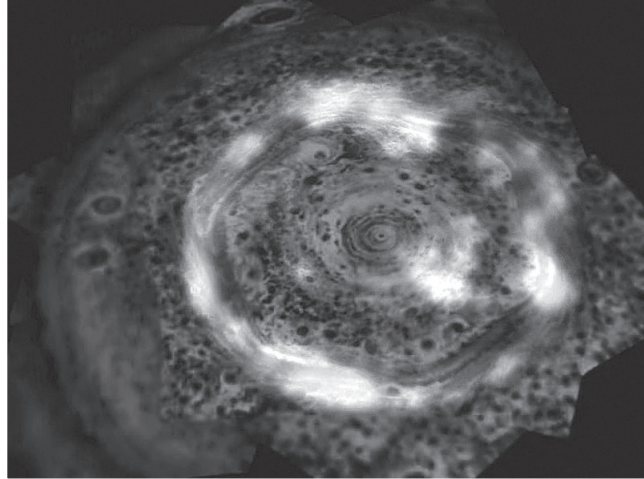
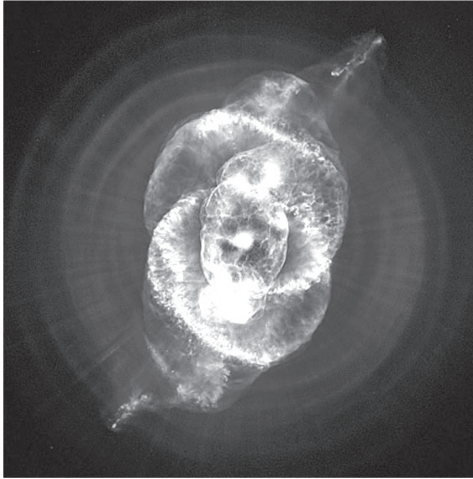
Alma dura mater
Borders on now.
Forms don't last.
Not the first not the last.

Boarders on now
Eventual, eternal,
Not the first nor the last.
Or the muddle of middle.

Ephemeral, eternal
Both happening now.
Ore the muddle of middle.
Mine the moment, not mine.

All happening now.
Conditions are changing.
Since last we were here.
Mine the moment, not mine.

Grateful Wonder



Eddies in Space

Everything changes. Perhaps including change itself.

- The earliest explosion in the history of the universe (we know about so far): <http://antwarp.gsfc.nasa.gov/apod/ap090429.html>
- The Hubble repairman: <http://www.nytimes.com/interactive/2009/04/14/science/20090414-prof-audioos/index.html?th&emc=th>
- Aurora over Saturn's North pole: <http://antwarp.gsfc.nasa.gov/apod/ap081119.html>
- The Cat's Eye Nebula: <http://antwarp.gsfc.nasa.gov/apod/ap080804.html>
- A halo around a halo—four light-years across: <http://antwarp.gsfc.nasa.gov/apod/astropix.html>
- When “mice” (two galaxies) eddy together: <http://antwarp.gsfc.nasa.gov/apod/ap090426.html>
- A cosmic bubble. 60 light-years across: <http://antwarp.gsfc.nasa.gov/apod/ap090423.html>



Offerings

Rick Hanson, PhD, and Rick Mendius, MD

1. Sounds True offers *Meditations for Happiness* by Rick Hanson, Ph.D. It's 3 CD's worth of talks and brain-savvy exercises for increasing your happiness, with an emphasis on experiential practices and practical tools. It is offered as an inexpensive download to your computer, where you can listen to it or burn it to CD's or transfer it to an iPod.

This program truly turned out to be pretty great, and here's a comment about it from the author, Annie Spiegelman:

On his new "Meditations for Happiness" program, benevolent Rick Hanson guides me to sit down and face my inner critic – and then actually see it as a form and shrink it. Being a Master Gardener, I see the critic as a gnome who tiptoes into my brain when no one is looking, with those tiny pointy shoes, and makes me doubt myself. I shrink him down to the size of a snail and toss him out. He knows nothing. The shoes are a dead giveaway.

Here's the link to this program at Sounds True: <http://shop.soundstrue.com/shop.soundstrue.com/SelectProd.do?prodId=1715&manufacturer=Sounds%20True&category=Exploring%20the%20Psyche&name=Meditations%20for%20Happiness>

2. Rick also has a chapter, "7 Facts about the Brain That Incline the Mind to Joy," in *Measuring the Immeasurable* – which is chock full of essays from luminaries like James Austin, MD, Larry Dossey, MD, Daniel Goleman, PhD., Candace Pert, PhD, Marilyn Schlitz, PhD, Dan Siegel, MD, Charles Tart, PhD, and Cassandra Vieten, PhD. Check it out at <http://www.amazon.com/Measuring-Immeasurable-Scientific-Case-Spirituality/dp/1591796547>.

3. At Spirit Rock, in 2009, these daylongs with Rick Hanson and Rick Mendius are scheduled:

- **Equanimity**, on Sunday, May 17. Equanimity is the key to freedom from emotional reactions, and to cutting the chain of craving and clinging that leads to suffering. This workshop will also address the neuropsychology of difficult emotions, as well as trauma, and neurologically-informed methods for dealing with those. (www.spiritrock.org/calendar/display.asp?id=RR2D09)
- **The Neurodharma of Love**, on Saturday, July 12. The emphasis will be on relationships in general and love in the broadest sense, integrating deep teachings on compassion and lovingkindness with a clear-eyed understanding of how we evolved to be caring toward "us" and often wary and aggressive toward "them." (www.spiritrock.org/calendar/display.asp?id=RR3D09)
- **Resting in Emptiness: The Evolution of Awareness and the Transcendence of the Self**, on Saturday, November 7. This workshop will address the thorny and fundamental question of . . . "me, myself, and I." The self – with its tendencies to grasp after possessions and take things personally – is perhaps the premier engine of suffering. We'll explore the evolution of the apparent self in the animal kingdom, and the ways in which the self is real and is also not real at all, coming to rest more and more in the underlying spacious awareness in which self appears and disappears. (www.spiritrock.org/calendar/display.asp?id=RR4D09)
- **The Hard Things That Open the Mind and Heart: Practicing with Difficult Conditions**, led with James Baraz, on Sunday, December 13. This is for people grappling with difficult conditions – both internal and external – and for caregivers and friends who support those individuals. These include challenges with the body, mind, and life circumstances. We'll cover Buddhist perspectives and practices for difficult conditions;

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offerings continued...

lovingkindness for oneself and for any being who suffers; brain-savvy ways to strengthen your capacity to be with the hard stuff; and methods from the intersection of the dharma and neuroscience for lifting mood and cultivating joy. (www.spiritrock.org/calendar/display.asp?id=JB3D09)

4. Also at Spirit Rock, Fred Luskin, Ph.D. and Rick Hanson, Ph.D. will offer a daylong benefit on Sunday, August 23 on **"Forgiveness and Assertiveness."** These two subjects, which are often seen as at odds with each other, actually support each other. This workshop will cover how we form grievances, healthy forgiveness, and healthy assertiveness. Dr. Luskin is a world-renowned expert on forgiveness, and we will get into the nitty-gritty of how to work through difficult issues with others. (www.spiritrock.org/calendar/display.asp?id=RF1D09)

Also in 2009, there are these additional offerings:

5. At the Insight Meditation Community of Washington, DC, on June 13, Rick Hanson and Tara Brach will present **"The Neurodharma of Love."** See www.imcw.org/non-residential-retreats for more information.

6. With the Dharma Zephyr Insight Meditation Community in Nevada, Rick will be leading a two day workshop September 12 and 13 on using brain-savvy methods to steady the mind, quiet it, bring it to singleness, and concentrate it, following the road map of the Buddha. See www.nevadadharm.net/zephyr.html for more information.

7. Through R. Cassidy Seminars, Rick will be teaching continuing education workshops to mental health professionals in San Francisco and Oakland (September 25 & 26), and in Los Angeles and San Diego (November 13 & 14). The workshops will focus on translating neuroscience research, informed by contemplative practice, into tools and skills that therapists can offer their clients. See www.ceuregistration.com for more information.

8. At the **Science and Nonduality Conference** in Marin County, California, during October 23-25, Rick will be a major speaker as well as chair a panel on nonduality from the perspective of the three main Buddhist lineages: Theravadan, Tibetan, and Zen. See www.scienceandnonduality.com for more information

9. At the University of East London, the conference on **Mindfulness and Well-Being: From Spirituality to Cognitive Neuroscience** will be held on November 20 and 21. Rick will be giving several talks and a workshop. Contact Dr. Patrizia Collard at drcollard@stressminus.co.uk for more information.

The Wellspring Institute for Neuroscience and Contemplative Wisdom

The Institute is a 501c3 non-profit corporation, and it publishes the Wise Brain Bulletin. The Wellspring Institute gathers, organizes, and freely offers information and methods – supported by brain science and the contemplative disciplines – for greater happiness, love, effectiveness, and wisdom. For more information about the Institute, please go to www.WiseBrain.org.

Fare Well

~ May you and all beings be happy, loving, and wise ~