

The Biology of Kundalini

Sense Of Self

During periods of accelerated spiritual growth when there is a rapid shift in the sense of self the main adjustments we need to make are adaptation to the:

- Loss of a rigid sense of the known
- Loss of the sense of sure identity
- The sense of infinity, space, groundlessness and emptiness
- Loss of routine habits
- Amplification of sensory acuity
- Magnification of or loss of appetites
- Increased psychic and subtle abilities
- Greater range and depth of emotion and feeling
- Changes in one's sense of energy and embodiment
- Distortions in the sense of time

Kundalini scares the shit out of the safety addicted conditioned self because there is no place to hide from truth, for the brightened eye of God is within us. Depending on ones ability to let go of the past, and to be restructured in each moment (cellular forgiveness) this determines ones progress via substantiation. However the irony is that, supersensory ability withstanding, one has to become megaadapted to

a spiritually corrupt world--this is the challenge, to not react negatively to negativity, or in other words to fear no evil. If we listen very carefully Kundalini teaches us how to do this, but we have to be willing to experience earth shattering bliss and the full implications of our higher purpose and place in the whole.

Unfortunately kundalini has been associated with symbols such as the serpent and so non-awakeners might relegate it to the mere physical domain. But one is never so close to Spirit than during a kundalini awakening. Kundalini is an amplification of Spirit in flesh. This is one of the reasons why post-awakening life seems so lack luster for the tide of Spirit has nearly returned to the socially conditioned acceptable level. And the individual still feels the echo of the calling to a sense of humanity that is beyond our wildest dreams, but there is nowhere to put this in our consensus "fallen" world. On feeling the depths of ones fear and helplessness there is less need to prevent these in others, one realizes that it's all good and it's all ok.

To the degree that we get rid of the parasite of the defense system (the safety addicted conditioned self) that we created from day zero, this is the degree to which we can access our higher self. Kundalini is involuntary parasite killing, for it dissolves our pupael defensive self, yet it doesn't automatically mean that we suddenly have the skills to deal with our world in a higher fashion, we essentially have to grow those through deeper insight.

"To not be identified with our egoity is not about existing in some impersonal state bereft of idiosyncrasy and individuality, but rather is about being present both as our unique somebody-

ness and as self-transcending Being. Even at the same time. The point is not to negate or minimize our selfhood - which is less a noun than a verb (selfing) - but to permit it such rich transparency relative to our fundamental nature that it cannot help but colorfully and fittingly represent us, however superficially.

*However, when we let "I" do the driving, we usually end up wandering like hungry ghosts through the I-gotta-be-me malls of distorted or overfed desire, shopping until we're broke, sated, or diverted elsewhere. Even so, it's crucial to not prematurely cease such wanderings. It's so easy - as when we are in the spineless throes of spiritual correctness - to make an ideal out of being "good" or "spiritual" and a villain or scapegoat out of our darker impulses. To transcend yourself, be yourself." D Robert Augustus Masters, *Darkness Shining Wild*, p. 179*

We can endure anything if there is a goal and a reason. This belief in a larger purpose is the most important factor in people keeping it together under crisis. In the dissolution of the ego, bliss too is sensed as a kind of hell. Kundalini awakenings are the burning away of the pain-body and the creation of a new template. What we do with that template constitutes our spiritual attainment or not. With kundalini we get a second birth, a second chance. But without skillful means, we could very well just create another pain-body in replace of the old.

During the flux of kundalini the holy Presence (witness) rises up and the little ego would like to pop in and give running commentary and inane musings. And we notice the drop in energy as we put on the ego's cloak for a sentence or two, just to see if our old self is still there, and we feel the loss of the

Beloved that we are, when we stoop down that way. We can't get rid of thought, getting rid of thought is not what is called for. It's becoming an observer of one's thought, master of one's thought, and pointing one's thought in a larger direction than self-defense and ego-survival that is really the key to spiritual attainment.

The spiritual gains of equanimity, detachment and disidentification resulting from a kundalini awakening, comes about through years of being strung all over the emotional map, having ones archetypal images and psychic material blown up billboard size and in ones face. By having our interiors so radically heightened and exposed and having to live intimately with our projections, obsessions and demons. After about 3 years of this, when the chemistry starts backing off, the suspicious, mythic, grasping bodymind is clearly transparent to us. The risen lifeforce of kundalini creates an amplification and heightened sensitivity to both our interiors and our external world. Thus we have no choice but to face into our condition because to avoid doing so is tantamount to spiritual suicide. The bliss and Grace of kundalini make it almost impossible to deny consciousness and love and forfeit our existence.

CHANGES IN SELF-ORIENTATION

DISSOLUTION: Mental confusion. Difficulty concentrating. Old anchors and safety nets no longer hold. Freefall in surreal limbo. Disorientation in sense of self. Sense of fading, of not really being here. Loss of coordination and motor control during the shock and inner-conjunctions. Loss of affective memory, a flattening of memory. Loss of egoic self-continuity and focus. Preoccupation with symbols, archetypes and myth.

Panic in those with no meditation experience who feel they need to control rather than surrender. Emotional outbursts, rapid mood swings, unprovoked episodes of grief, fear, rage or depression, all within a background of bliss. Desire for quiet, meditation, baths and solitude in nature. The symptoms and experience of kundalini are also so preoccupying as to make all else disappear in one's perception.

Leading up and during the peak there is a sense of one's life coming to a nexus; a convergence of dream and daily experience by breaking through of the walls of one's conscious "I" to experience more of the sub and super conscious levels as well.

SUBSTANTIATION: Eventual loss of cyclic reactive mental patterns that dissolve along with the body armor. That is the mind becomes more silent. The body holds less tension and is calm and relaxed. Loss of compulsive and self destructive habits. After the blocks are cleared and the structures changed to convey more prana flow there is a permanent equanimity of the transcendental state. Less ambivalence, more centered. More single-mindedness of purpose. Clearer, deeper perception of reality. Distance from symbols, myths, stories and superstitions. Increased ability to embrace paradox, concreteness with abstractness. Able to unify focal and peripheral perception. Sense of seeing with an inner eye. More spontaneity and openness to experience. Increased gratitude and appreciation. Increased integration and wholeness. Increased autonomy and uniqueness. Increased detachment, objectivity and transcendence. Increased diplomacy and sensitivity. Impervious to enculturation. Establishment of true moral

intuition rather than mere abeyance to law. Ability to love, improved relationships. Oneness with the world. Detachment, objective witnessing, separation from thought and emotion.

Symptoms List

The spontaneous symptoms of kundalini awakening can be arranged into the various practices of yoga. Yoga practice or *Sadhana*, is essentially the speeding up of the flow of consciousness.

KRIYA YOGA

Any work "kri," is being done by the power of the indwelling soul "ya."

Muscle twitching, cramps or spasms, shaking, trembling, limpness, rigid-contraction, facial contortions. Itching, vibrating, pricking, tingling, effervescent bubbles of bliss. Tingling/throbbing in left foot and leg is one of the main signs that kundalini is active. Hot or cold changes in body temperature. Shooting currents of energy or heat. Zigzag or double helix of energy up the spine. Prana flow in the central nervous system. Pulsating sensation in the sacrum. Involuntary laughing or crying, deep sighs. Abdomen may flatten toward the spine. Contraction of visceral organs. The anus contracts

and is drawn up (bandhas). Purging or constipation. Bad digestion. Chin may press down against the neck (neck lock posture). Eyeballs roll upwards or rotate. Eyelids may not open despite effort to open them. Left eyelid flickers, then towards the end of the awakening the right eye may flicker. Tongue rises to the roof of the mouth or stretches back. Repetitive popping sensation in the sinus above the palette. Body may twist in all directions. Body may bend forward or back, or roll around on the floor. Spontaneous asanas and mudras. Breathing constriction, heaviness or contraction of diaphragm. Unusual breathing patterns, tendency to belly breathe, emphatic out-breath. Racing heart, expansion pains in heart. Feeling of levitation or intensified gravity, radical grounding and associated lethargy, Chronic Fatigue. Body sense might expand to feel huge or small. Strange aches and head pressures, headaches. Clenching jaw. Yawning, excessive sleep. Inability to sleep during hyperactivation; Hyperactivity, need to constantly walk or exercise. Dry throat, great thirst. Feeling headlessness, mindless, giddy, heaviness of head like one is wearing a helmet. Build up of pressure at the head, neck, spine, thorax and eyes. Paralysis during Samadhi or hypnogogic states. Numbness and pain in limbs, especially the left foot and leg. Numbness on the left scalp and down into left face, with drooping of the left eyelid. Years of pain in the throat (thyroid) or in the left foot or shin prior to the awakening. Loss of strength in the arms during rapture and heart expansions. Psychokinetic interference with electrical equipment. Smell of roses or peaches emanating from the skin.

LAYA YOGA

Inner visions and lights, flames, geometric shapes. Visions of deities, or saints. Dream-scenes. Inner sounds, celestial music, bird sounds, animal sounds. Buzzing or humming in the ears. Inner voices. Spontaneous mantras. Speaking in tongues or foreign languages. Smell of perfume arises. Transcendental vision, everything illuminated scintillating, vibrating. Dreams and visions in transcendental vision. Atom bomb dreams. Temporary loss of eyesight.

BHAKTI YOGA

Love with no object arises. Devotion. Sublime gratitude. Uncommon compassion and understanding. Tolerance and patience for "What Is." Enormous faith accompanies the bliss. Transcendence of reactive patterns, social conditioning and egoic habits. Intense sexual arousal without provocation. Intensified sexual and sensoral pleasure. Feeling of gaseous bubbles arising from reproductive organs, champagne pelvis. Feeling of radiating ambrosial bliss, an aura of nectar. Heat, sweat. Strange activity and bliss in different areas of the head at different times. Sensations of blissful honey moving through brain, spine and connecting heart to other parts of the body. Traveling bliss, or pervasive bliss, rapture. Spontaneous sexual ecstasy with no stimulation. Increased ESP, precognitive dreams, telepathy. Bio-location of loved one through heart's navigation. Alchemical preparation for future unknown events, ie: translocal transtime development. Linear time transcended. Feeling of entire life reaching a nexus point in time. Heightened senses. Hyper-sensitive. Field of self widens, peripheral awareness increases. Exquisite awareness of one's environment and others. Ability to affect energetic states and promote heart

expansion in others via sympathetic resonance.

JNANA YOGA

Deep questions and answers arise. Spontaneous mystic poetry that writes itself. Important insights, eureka's. Scientific and creative solutions. The Herald of the Muse appearing as a sound or voice in the upper right-brain field prior to the emergence of information. Increased creativity and expression. Intensified understanding. Finer focus on "the most important thing." Compulsive need to write.

Exploring the Symptoms

The unconscious nervous system is the autonomic nervous system...which yogis do have some control over. Many of the kundalini symptoms arise from the brainstem, which consists of the medulla, pons, cerebellum and midbrain...that is the majority of kundalini symptoms originate from areas of the brain that are beyond our normal control. Hence many of the symptoms and feelings arise directly from physiological events triggered by specific neural circuits. The ultimate outcome of kundalini awakenings is a reduction in background fear, body armor and emotional volatility.

Over the period of peak awakening sex hormones and other pituitary hormones are raging; the heart is radically expanded and engorged with blood, and the digestive system venting due

to parasympathetic hypertonicity; skeletal muscles are ready for action and hypervigilance is up due to the flight/fight activation of the sympathetic nervous system. Thus during a kundalini awakening there is a simultaneous hyperactivity of the 4F-Responses: *censored*/freeze/fight/flight. It is not all tongue in cheek when I say that this **4F Response Theory** basically explains all the kundalini symptoms and health consequences.

"In response to threat, the organism can fight, flee or freeze. These responses exist as parts of a unified defense system. When fight and flight responses are thwarted, the organism instinctively constricts as it moves toward its last option, the freeze response. As it constricts, the energy that would have been discharged by executing the fight or flight strategies is amplified and bound up in the nervous system..."

*"If the organism is able to discharge the energy by fleeing or defending itself and thus resolve the threat, trauma will not occur...In humans, trauma occurs as a result of the initiation of an instinctual cycle that is not allowed to finish. When the neocortex overrides the instinctual responses that would initiate the completion of this cycle, we will be traumatized." Peter A. Levine, Ann Frederick, *Waking the Tiger: Healing Trauma: The Innate Capacity to Transform Overwhelming Experiences**

The fact that the freeze response occurs during the hypertonicity of both sympathetic and parasympathetic NS has profound implications. I used to think the **paralysis** that occurs during extreme events was due to overloading of the sensorimotor cortex with kundalini energy. This may play a part in it, but now I think the paralysis is due to the brainstem stimulating an extreme parasympathetic response to meet the extreme

sympathetic activity that is occurring...thus both on and off switches are at full bore. To prevent any further escalation of this duel between the on and off systems the body turns on a massive **freeze response** via the dorsal vagal complex. The **dorsal vagus complex** (DVC) is a cluster of connected neurons in the brainstem medulla that slows down the energy-expending processes. It is the primitive unmyelinated vagus related to the conservation of metabolic resources.

This freeze response is experienced as paralysis and as far as I know the paralysis only happens during inner-conjunction events when the energy is pouring at maximum voltage up the spine itself. One of the reasons why paralysis occurs during the full flux up the spine is that the spine must be straight at this time--people always talk about their spine becoming as rigid as a stick during the spinal inner-conjunction. This might be a similar thing to sleep paralysis that prevents the body moving during REM sleep, and also to the state of immobilization without fear that occurs during sexual activity in the female mammal.

During the peak heart expansion event (Heart Nova or Solar Heart) again the sympathetic and parasympathetic are dueling at their maximum and the dorsal vagal complex again kicks in bringing on a freeze response. But in this particular situation instead of paralysis a **Dive Reflex** occurs, essentially pulling the individual into the ground and making them lie flat. That way the heart that is already laboring at max due to the expansion doesn't have to work at pumping against gravity to get the blood around the body. In other words the intense grounding where the body is forcibly pulled into the ground during a heart

expansion event, may be due to the "dive reflex" stimulated by the **dorsal vagus complex (DVC)** during a freeze response. The DVC governs the dive reflex in reptiles, where they remain submerged for long periods of time to pursue prey or escape predators. Research on the human dive reflex suggested that it does involve concurrent sympathetic and parasympathetic activation.

Perhaps both the heart expansion and the dive reflex will always go together as the body tries to tone down the expansion of the heart. For this hyper expanded heart may stimulate the vagus to initiate a dive reflex to prevent the organism from overexertion when the cardiovascular system is so engorged, dilated and overworking. By lying down the heart does not have to work so hard against gravity to pump blood. Since the blood vessels and the heart itself are hyperdilated blood pressure would fall, so lying down would both reduce the toll of low blood pressure and having to work against gravity. Low blood pressure reduces oxygen in the brain and this would force the body into a faint, with acute fatigue and bring on the compulsion to lie down.

The **heart expansions** themselves might occur when the parasympathetic gains dominance in the cascade of kundalini activity. They occur during periods of intense bliss, right-brain consciousness and are associated with intense grounding and extreme lethargy. This dive reflex makes more sense than my first explanation, which was the extra grounding needed by the hearts field pulling one into the ground during the massive heart expansion periods that occur. Whatever the cause of the grounding, it must be noted that the extreme pull on the body is

relieved by lying for half an hour on the grass or bare earth with ones spine on the ground. The nervous system can switch from sympathetic (contraction) to parasympathetic (opening) and you feel this as shifts in gravity. The nitric oxide (and vasopressin) opening your heart and blood vessels will produce shock because it is a free radical gas of very short duration and so the nervous system can flip into a white contraction after a massive opening. During the opening phase your blood pressure will fall because your vessels are so expanded...so lie down, preferably on the grass for 1/2 hour at least. When you can, run a warm (not hot) bath with Epsom salts if you have them and soak for an hour, drinking 2 quarts of unchlorinated water. Whatever antioxidants you have (Vitamin C, Omega 3, A,E, Magnesium, etc)...pop them every hour and continue your water drinking. Put on some relaxing music and stay calm, get into nature and/or retreat into a cocoon environment. Heart expansions are one of the most exciting and impactful events in kundalini awakening...you will probably have many prior to the more electrical firings up the spine associated with inner conjections. No Matter What always relax into it, regard it as "normal," enjoy the ride and be aware that there is at least 2 weeks recovery time for a major heart expansion. If you do go into a white shock...don't worry about that either just treat yourself like you have just had a car accident and do stretching, breathing and bodywork...and eat your greens.

The **gravity warping** sensation could be a fluxing in the nerve sheath between sympathetic and parasympathetic dominance. Since they are both in a highly activated state this shifting might be more noticeable than usual and give the sensation of gravity crushing (sympathetic) or gravity expanding (parasympathetic).

The expansion/contraction sensation would arise mostly from the heart, and blood vessels and relate to the level of Nitric Oxide generation. Increased vasodilation would give an expanding gravity effect, while a turn toward vasoconstriction would give one the sense of gravity crushing, or implosion.

It is apparent that when both sides of the nervous system are radically hyperactivated then the freeze response automatically comes on to modulate the overactivity, essentially to protect the brain from excessive stimulation and damage by nitric oxide, glutamate, adrenaline, norepinephrine and cortisol. Thus there must be a freeze in effect throughout a kundalini awakening to varying degrees, culminating in total paralysis during the inner-conjunction.

Given the right circumstances stress could trigger a full-on kundalini awakening. It appears that the awakening of kundalini means the prolonged hyperactivation and dance between both sides of the nervous system with periodic dominance of the freeze response during extreme inner-events. It could be that after a certain period of this extreme nerve activity the immune system goes into a radical catabolic condition, what I call a die-off. Part of the function of a die-off could be the resetting of the nervous system equilibrium, breakdown of axions and restructuring to a more mature/advanced functioning. It does seem that the sense of being overwrought and out of our depths disappears after a die-off for we have assimilated our metamorphic progress to date and have a new lease on life. The timing of the die-off must correspond to both the intensity and duration of nerve activity. A more acute phase of neurological chemistry is followed more quickly by a die-off to help bring

the rest organism up with the refinement or growth that has occurred in the nervous system.

Sleep Paralysis with its complete or partial atonia, most likely is the result of hyper-parasympathic activation of the DVC. Sleep paralysis is experienced when the individual bypasses directly to REM dream sleep with its Beta-wave cortical activity. The REM sleep phenomena is associated with the inhibition of certain motor neurons; inhibition of sensory input; rapid eye movements; activation of brainstem neurons that control the movement of facial muscles; and important to the hallucinatory experiences associated with sleep paralysis, the activation of visual pathways. These events normally occur when neurons in the pons (a medullar structure) become active after a period of non-REM sleep (slow-wave, synchronized sleep).

Sleep paralysis is an evolutionarily old function to keep animals still while they are sleeping and prevent them falling off cliffs, trees or attracting predators. Certainly it must have emerged simultaneous with REM dream state to prevent motor response to dream imagery. The most obvious neurotransmitter agents to sleep paralysis would be inhibitors GABA and glycine, but it probably more complex than that. Those that become "aware" of being paralyzed descend to hypnogia/Theta without going through the normal phases that kick in the loss of consciousness, so they are conscious while paralyzed, usually with amazing visions to account for their journey. The lucid perception of sleep paralysis can give one the sensation of compression on the chest and suffocation as energy is removed from the diaphragm. It is the sympathetic side of the nervous

system that stimulates breathing activity and thereby raises blood oxygen.

Besides Robert Scaers idea of the dorsal vagus complex causing freeze paralysis another possible cause of paralysis during extreme spiritual energy states could be the hyperactivation of the limbic system and brainstem and its consequent effects on incapacitating the motor-sensory cortex. Rhawn Joseph at Brain-mind.com says that freezing is brought about by both the overload/overwhelm of the motor and frontal lobes and the consequent burnout of dopamine and serotonin in these areas. Freezing is a life preserving reaction in nature that is apparently mediated by the amygdala and striatum. He writes the amygdala under conditions of extreme fear and arousal, can induce catatonic-like frozen panic states--resulting in a inability to initiate a voluntary movement, and the "Will" to move or vocalize may be completely negated. Given the extensive interconnections of the medial frontal lobes, corpus and limbic striatum with amygdala, it appears that when exceedingly aroused or emotionally stressed, the amygdala is able to *inhibit* (by overactivation) the frontal-striatal motor centers. When this occurs, the organism may fall and cease to move, blink or even breathe, thus appear to be dead and in a state of rigor mortis.

Rawl Joseph suggests the **numbing** during the fear response is caused by a massive secretion of opiates within the amygdala and basal ganglia, while the **rigidity** and loss of Will is a consequence hyper-amygdala influences on the medial frontal lobe and corpus and limbic striatum. The amygdala is able to induce these catatonic states, via interconnections with the basal ganglia, brainstem, as well as the medial frontal lobes. Under

extremely stressful conditions the striatal, frontal lobe and amygdala, are simultaneously undergoing dopamine depletion, which in turn results in hyperactivation of these areas.

In the Eastern traditions there is a catatonic deathlike state called **Nirodha** "meaning "prior to the arising of ignorance and volitional impulse." Like deep Samadhi, Nirodha is a very high non-meditative meditative state. During Nirodha there is no time sense, heartbeat and metabolism are slow and practically cease so very little energy is burned, and body temperature drops well below normal. In fact this spiritual catatonia is so deathlike that there is the danger of being mistaken as dead and so buried alive. It is said that Nirodha is a precursor to Ego Death. **Nigredo** in Western alchemy is the death-like withdrawal of the soul from the body.

"The Gnani (the Enlightened) continually enjoys uninterrupted, transcendental experience, keeping his inner attention always on the Source, in spite of the apparent existence of the ego, which the ignorant imagine to be real. This apparent ego is harmless; it is like the skeleton of a burnt rope--though it has form, it is of no use to tie anything with." Sri Ramana Maharshi

Tingles are felt especially on the left side of the body from the base of the foot up, and bubbles like champagne in the pelvis. Tingles and bubbles are always associated with increased kundalini flow, heat and bliss, so this phenomena is probably an effect of the nervous system and opiate receptors. There is some indication that the tingly feeling of kundalini may be associated with an increased amount of nitric oxide, perhaps in the nerves themselves.

Pulsating Brainstem—There is often a pumping sensation in the brain stem...you can aid this by lying on the ground. Doing the primal release pose on the grass. Or putting one hand on the base of the spine and one hand on the back of the neck, while engaging in nasally breathing. Doing the inner smile with the mind's eye focused on the back of the skull at the notch where the spine enters will unblock and organize the energy.

The **left-brain freeze** was one of the first radical symptoms to arise at the beginning of my July'2000 awakening. This symptom includes a pressure-clamp and numbness covering the left side of the scalp that extends down the forehead and into the eye socket. This numbness started peaking 3 days “before” I met my initiator, so my body-soul already knew exactly when the meeting was to happen. Or rather the alchemy was occurring despite the temporal and geographical distance between us. And my condition proceeded in direct response to when we would meet and be in each others presence, though my conscious mind had no idea we would meet at all. For me the left-brain freeze continued in varying intensity throughout the 3 years that kundalini was highly active, though it was most severe during the 6 month apex. Since this neuroinhibiting clamp only occurs on the left side of the brain, this is another factor leading to the conclusion that the overexcitation of nerves by kundalini energy mostly occurs in the left hemisphere and left side of the body. Although why this is I do not know.

I assumed that this numbing clamp was due to the neuroinhibitors GABA, Glycine and endorphins. In the google video by Robert Sapolsky “Stress, neurodegeneration and Individual Differences,” he said the neuronal defenses against

over excitation by glutamate include substances such as adenosine, GABA and taurine. The neuroinhibitor Adenosine plays an important role in biochemical processes, such as energy transfer—as adenosine triphosphate (ATP) and (ADP); as well as in signal transduction as cyclic adenosine monophosphate (cAMP). Caffeine's stimulatory effects are primarily (although not entirely) credited to its inhibition of adenosine by binding to the same receptors. This reduction in adenosine activity leads to increased activity of the stimulatory neurotransmitter dopamine. Adenosine also acts as a vasodilator of the arteries through the relaxation of smooth muscle, thus might be a factor in both the heart expansions and the red eyelid effect. By blocking adenosine receptors caffeine on the other hand is a vasoconstrictor; 250 milligrams of caffeine can decrease central blood flow by 20-30%. With the information currently available we can assume that the leftbrain freeze is caused by both vasodilation and neuroinhibition.

One can see that the **left eyelid** is droopy, the pupil is dilated and a strange new consciousness is apparent in the eye itself. During sun meditation as I looked at the sun I found my left eyelid was lit red from the increased blood supply due to dilated blood vessels. (Eyelids are closed during sun meditation as it is not good to actually "look" at the sun.) Understanding the experience of the **red eyelid** capped off my entire investigation, for once I understood the presence of increased nitric oxide during kundalini and started reading about the freeze response. I realized that the paralysis, the left-brain freeze and red eye lid were not accompanied by the "contraction" of tissues but by their dilation, even if the numbing clamping effect "feels" like a contraction. And that the paralysis during the inner-conjunction

may not be due to the over stimulation of the motor-sensory cortex, but due to the freeze response that operates on the brainstem and the dorsal vagus complex.

The neurological cause of the left-brain freeze is probably rather simply explained. Since most of the "electrical" activity is experienced on the left body and left-brain I assume that the numbing of the scalp of the left side of the head is simply the result of massive beta endorphin (opiate) production in an effort to inhibit the excessive nerve firing in the left side of the brain.

This left-brain clamp/crab gives new meaning to the term "numb-skull." Doing mathematics in the head is almost impossible. One has to watch out that one doesn't do silly things, or rather one watches oneself "do" silly things. The effect of having the left-brain function suspended results in the body-soul claiming its own time and space for metamorphosis to occur. The ego and one's life becomes subordinate to the metamorphic crisis as it totally takes over one's existence. With these awesome forces the ego soon learns that it is not in the drivers seat, that it is kundalini that is living us. The numbing effect of the left-brain freeze can reach such acute proportions that I was reduced to a radically "right-brained consciousness" on the day that I met Mr. Universal. On that day my left-brain freeze reached its zenith and right-brain consciousness became more prominent in general during the entire period of the awakening.

The night after leaving my initiators presence I had the most ecstatic divine experience of my life. I had lapsed into a paralyzed, rapturous trance as soon as I had gone to bed. Although time is incalculable during such events, it seemed like

for perhaps half an hour or more a blissful electric penis was entering me while ecstatic energy poured upwards through every cell of my body. I call this experience **Sex with Eros**. It wasn't anything I "did" and it only happened once, sex on that level is not sex, it's some kind of God communion activity of the cells. I felt like Jesus Christ after the first awakening in 1988, but with this Sex-with-Eros thing, I was God his-very-self and she was a woman. Sex with Eros involves spontaneous prolonged full body orgasm during an inner conjunction, without a partner or any stimulation. However "orgasm" in no way describes the sense of divinity and absolute unity that occurs. I think this is what mythic traditions might have interpreted as having sex with the Gods, or with angels. It might even correspond to the idea of being impregnated by God and consequently the virgin birth. Stimulation of these contractions is probably due to a combination of vasopressin, oxytocin, prostaglandins, nitric oxide and histamine; within the context of generally upgraded sex hormones that occurs during the heating and peak kundalini stages.

As night follows day, the morning after this complete opening I woke to find myself in its opposite. A massive autonomic shock that I call the **White Death**. This involved an involuntary contraction of my entire body. The skin turns white as adrenaline causes blood to leave the surface tissues and into the vasodilation of the skeletal muscles to be ready for action. My face was white and my hair stuck out like I had been electrocuted and my intestines, liver, spleen and other viscera curled up and were contracted for days. Motor control was impaired and the freeze response, endorphin numbing, (and possible nitric oxide damage) leaves us with the dissociated

feeling of "not being in our body." In fact I was so disembodied that morning that I had a Hakomi session (body-centered psychotherapy) to try and put myself back in my body. The Hakomi exercises worked to a degree, at least to help me feel less like a car crash victim or dissociated robot. After any such autonomic shock it is imperative to shake, dance, run, to push against walls with arms, back and legs and make expressive noises to eliminate the stored tension of the **freeze response** from the body. Dr. Robert Scaer's book *The Trauma Spectrum* is a great source of information on the freeze response, trauma and PTSD. <http://www.trauma-pages.com/scaer-2001.htm> (See Nitric Oxide in *Septic Shock of the White Death* for a biochemical explanation.)

After this radical expansion and contraction the full conflagration of **kundalini heat** came on, along with intense heart pressure and mystic ecstasies. My left-brain continued to be so contracted that my left scalp, extending into the face and neck was radically numb. The numbness becoming more prominent when the flow of kundalini increased during its monthly progressions. I didn't experience a lot of pain but I did have discomfort and intolerance for the overpowering intensity of the energy. Of course going "with it" rather than resisting or running from it is the answer. To breathe into it and raise the energy up, without fear.

Philip St. Romain in "*Kundalini Energy and Christian Spirituality*," says that his kundalini symptoms of **the crab**, the pincers and the sword on his head, became more painful when he deviated from spiritual alignment into various things like TV, reading, writing, certain foods etc...This pain kept him on

track to more fully enter his surrender. Philip St. Romain attributed great significance in the tucking in of the chin to facilitate the free flow of energy between the body and the head, and thought his symptom of the Crab was due to not practicing this neck-lock posture during prayer. He assumed the Crab effect was the result of pressurized cerebrospinal fluid in the ventricles.

Vasoactive Amines, that is nitrogen containing substances that dilate blood vessels, include histamine and serotonin, which are strongly vasoactive; and tyramine and dopamine which are also quite vasoactive. Mood elevating Ginkgo Biloba increases the brain uptake of serotonin. Serotonin (5-HT) is a vasodilator. A deficiency of serotonin would therefore decrease blood flow due to relative vasoconstriction. Amines are normally rapidly deaminated after they enter the body by monoamine oxidase (MAO), which is present in many tissues. This mitochondrial enzyme catalyses oxidative deamination of almost all vasoactive amines. So normal consumption of such amines not normally a threat. Banana peel is richest source of dopamine 700 mg/g, while the pulp has much less at 10 mg/g.

Since the **left-brain freeze** always occurs along with radical heart expansion, the numbness might be related to the vasodilators: histamine, nitric oxide, serotonin and acetylcholine. But whatever it is it must be pretty substantial chemistry to exist for more than 3 years at varying intensity. As I mentioned, since the left eyelid was redder on looking toward the sun, suggesting the vessels were dilated, this leads me to assume that the expanded state of the heart and associated dilated blood vessels is a major contributor to the left-brain

freeze effect. Could the lowered blood pressure caused by the expanded vessels create this numbness, and why only on the left side if the effect is neurotransmitter based. The numbness actually occurs along with what feels like pretty intense head pressures especially in the prefrontal lobes. The logical answer is that the numbness is endorphin based, but there again why only on the left side of the brain.

Initially I thought that the Left-Brain Freeze (the Crab, Philip St. Roman) was due to the increase in the Heart's electromagnetic field, because the heart expansion is such an overarching, omnipotent affect. But another cause could be related to initiation of spleen and immune activity, from the hyper-activation of the sympathetic nervous system during the acute phase of the awakening. In which case histamine would factor into the mix. The left-brain numbness and contraction probably starts at the same time that the spleen contracts releasing its store of blood. Thus the spleen, bone marrow and the immune system reboot to change from normal function to metamorphic mode, in order to break down and dissolve the pupael body. It could be that as long as the spleen is functioning in its metamorphic capacity there may be some left-brain freeze.

If indeed the spleen and macrophages are set into hyperdrive by the expansion and contraction of the nervous system (rapid flipping between hyper-sympathetic to hyper-parasympathetic) then the white blood cells would be producing a lot of nitric oxide (free radicals) and this liberal dosing of vasodilator would keep the hyperactivation of the nervous system going, coupled with the radically increased heart expansion and associated

amplified heart electromagnetic field. Within the heightened heart field the entire body would be dissolved and reformed in alignment with the higher template of the expanded heart. The end result of the effect of sustained heart expansion over many years results in the dissolving of body armor and traumatic memory in the brain--thus reducing neurosis, tension and body pain.

During fight flight first the inflammatory response is activated, then when acute danger is over the immune system is activated. This stimulates the spleen to contract, releasing much of its blood into circulation, as well as the liberation of glycogen stores from the liver. It seems all the visceral organs go into a major contraction at the onset of the acute kundalini phase in preparation for the shift to the self-dissolution work. Thus blood leaves the spleen, liver and digestive system and travels to the skeletal muscles to prepare the organism for action in the face of danger and possible injury. At this point histamine metabolism in the bone marrow probably sets off the mechanism of using energy stored in the Calcium bonds in the bones. This provides extra energy for the kundalini conflagration and produces heat.

The acute phase of kundalini seems to largely consist of both fight/flight response and freeze response. That is the body is in a state of hyper-vigilance (go) coupled with a freeze (stop) and this burns a lot of energy without any "work" being done, thus we can loose a lot of weight this way. People often report rapid weight loss during their first awakening especially when this radical shock is more in effect than in latter awakenings. Remember this shock is autonomic, we have no control over it,

except perhaps if we are an advanced yogi.

The brain is a hologram of the body, so the condition of various tissues throughout the body is reflected in the nature of the brain. An occluded dead pelvis for instance would have its corresponding occlusion and deficiency in the brain structure and chemistry. Thus when we have kundalini moving through the pelvis it is simultaneously moving through a particular pathway in the brain. The end result of this chemistry seems to be an unlocking of connective tissue, a loosening of the entire body armor and reduction in the pain of the pain-body.

Kriyas are seizure type impulses related to certain neurotransmitters and areas in the brain. Traditionally it was thought kriyas were purifying movements or cleansing actions revealing blocks to the flow of kundalini. They say that yoga arose through observing the various spontaneously arising positions (asanas) created by kriyas. I think this might be partly the case...whether a voluntary complying with the way the energy wants to go, or involuntary compulsory asanas.

It was assumed that kriyas, or the spontaneous convulsions and contorted movements produced by kundalini are stress being released in order to unblock and restructure the tissue to convey greater consciousness. However kriyas are best explained in terms of neurochemistry such as the "overexcitation or disinhibition" of the body's glycine and GABA-producing neurons in the brain centers that coordinate movement. So that the nervous system is all "go" and the inhibiting off-switch is incapacitated. I think they are probably convulsive discharges of the letting go of the freeze response and from spontaneous firing through the motor areas in the brain. The convulsions are

more likely to be the result of kindling type brain chemistry that perpetuates itself and slowly changes nerves, brain and cells-- until the whole body is transformed to a higher rev state.

Kriyas might be painful with the spontaneous contraction of muscles, not everyone experiences kriyas though. Mostly kundalini is not associated with pain because of the extreme levels of opiates produced. Traditionally the spinal knots that kundalini penetrates are called **grathis**. In the East they say the root chakra, heart and third eye charkas are the greatest obstacles to the rising of kundalini. However, the process is not linear, it moves with the seasons, returning again and again to the same spot to work at a deeper level each time.

Visual acuity (**transcendental vision**) goes up in the heating and peak phases of kundalini due to stimulation to the occipital lobe where the visual cortex lies, and to increased pituitary hormones, nitric oxide, histamine, phenylethelamine, dopamine, norephinephrine...and increased blood flow to the brain.

Because transcendental vision is very much like being on the drug Ecstasy, which is a dopamine drug, I suspect that it is phenylethylamine and dopamine that gives us the radical shift in vision as though every atom were scintillating and super-alive...ie: the eyes of love. Whatever the neurotransmitter mix one can assume that more energy passing through the optic brain center leads to scintillating transcendental vision.

Kundalini itself is not hallucinogenic, so although there is a high level of opiates being produced, endogenic euthogens are probably not in affect as a general rule.

The increase in psi and telepathy is harder to explain but is probably something equally as simple such as nonlocal primary

perception or superconduction of consciousness. The EMF of the human body is probably greatly magnified during kundalini and the brain might be able to pick up the "radio signal" of a significant other. The other alternative is that consciousness doesn't "travel" in any kind of wave, but that it is a "nonlocal" phenomena; but I think we need new physics to explain that one; especially as it relates to precognition.

Psychic and bioenergetic phenomena doesn't actually mean anything other than the *meaning we give it*. It is only we humans that apply "meaning" to things...Psi, subtle and causal effects are simply a revelation or confirmation of the way the universe is put together. However because it is extrasensory and transcends the mind we tend to think that it is more important than the consensus reality that is based on the cognitive interpretation (prefrontal lobe) of information from the five senses. Just because something is beyond the five senses we think it has greater holy significance and we tend to be drawn hither and tither by our spiritual ambition to "get more God."

Immune System And Transmutation

Although the first impulse of fight-flight activation does decrease immune response in order to conserve energy for the immediate danger, after this the immune system kicks in to prepare for bodily injury. *Candice Pert* discovered that receptors for neuropeptides and neurotransmitters are on the

cell walls of the immune system, showing that the immune and endocrine systems are modulated not only by the brain but also by the central nervous system. The meta-activation of the sympathetic nervous system of course would profoundly facilitate changes in the immune system and endocrine system. It is fascinating that the immune system is activated with the fight or flight response during danger to prepare for possible damage to the body.

What probably happens is that during the years of kundalini cycling there are periods of increased immunity followed by periods of reduced immune activity. Immune suppression resulting from prolonged high adrenaline/cortisol levels must occur for different reasons in both the peak and the exhaustion phases and that although there are periods of radical immune activity during die-offs and restructuring, the majority of the awakening probably involves immune overload if not outright immune suppression because of hyper-nervous system activity. This immune suppression is somewhat masked by increased mitosis (cell division) and the illuminating "glow" that occurs which makes the bodymind seem supernaturally vital.

Macrophages are large, phagocytic cells that engulf foreign material that enters the body and the dead and dying cells of the body. I am convinced that it is largely the macrophages which do the catabolic breakdown of tissues in preparation to building the (more) spiritualized body capable of carrying deeper consciousness. General hyperactivation of the sympathetic nervous system stimulates immune response factors such as interferon, which in turn elicit new nitric oxide synthase (NOS)

protein synthesis.

"Macrophages, certain cells of the immune system, produce nitric oxide in order to kill invading bacteria. Under certain conditions, this can backfire: fulminant infection (sepsis) [or toxic shock] causes excess production of nitric oxide by macrophages, leading to vasodilatation (widening of blood vessels) and probably being one of the main causes of hypotension (low blood pressure) in sepsis." [Wikipedia.org](https://en.wikipedia.org)

The spleen symptoms of the Left-Brain-Freeze and the self-digestion (autolysis) sensation during the die-offs, convince me that it is the highest function of the immune system to dissolve the pupael body. This catabolysis probably through the activation of the **reticuloendothelial system (RES)**, part of the immune system, consists of the phagocytic cells located in reticular connective tissue, primarily monocytes and macrophages. These cells accumulate in lymph nodes and the spleen. The Kupffer cells of the liver and tissue histiocytes are also part of the RES.

To fulfill their many functions macrophages in their activated state are able to produce more than one hundred different substances.

"Macrophages secrete not only cytotoxic and inflammation controlling mediators but also substances participating in tissue reorganization. They include enzymes, as hyaluronidase, elastase, and collagenase, inhibitors of some of them (antiproteases), regulatory growth factors and others. Hyaluronidase, by destroying hyaluronic acid, an important component of connective tissue, reduces viscosity and thus

permits greater spreading of material in tissue spaces. Hyaluronidase is therefore sometimes designated the "spreading factor." Elastase and collagenase are enzymes capable to spit collagen and elastin, the basic members of connective proteins."

<http://nic.sav.sk/logos/books/scientific/node23.html>

The above quote explains how the body loses its fossilized tension and heaviness as the work of dissolving the pupael structures proceeds. In fact the body after a kundalini awakening is so much more opened, painless and flexible than the former body, that it seems that only an awakening could produce such effects by melting former hyper-contracted connective tissue associated with the ego-personality. One wonders why this dissolving of the connective tissue patterns happens. But it is pretty obvious that if the ego and its tension holding patterns has been overruled by a deeper consciousness, then those tension patterns would unravel. Considering that the body is now essentially inhabited by a "new" host, the immune system now adheres to the commands of the new more powerful ruler--The Self.

The macrophage is the evolutionary oldest and most competent immune cell. Macrophage means "big eater." They patrol, scavenge, attack and destroy invaders, send for help and remove debris. They clear abnormal cells and cellular debris and remove aged dead cells. Although macrophages are found all over the body they are found in the largest quantities in the spleen, lymph nodes, tooth sockets and in the alveoli in the lungs.

It seems that the more the macrophage eats the more active they

get. They stimulate a balanced response of the whole immune cascade. Macrophages play a major role in acquired cell-mediated immunity. These phagocytic cells are activated and mobilized by T-cells to the site of infection where they kill invading organisms. Macrophages can also function in processing and presenting antigens to lymphocytes to neutralize.

Various immune cells cycle in and out of the **spleen** and bone marrow for special conditioning and possible nourishment and instruction. This immune system trafficking follows the cortisol cycle. The spleen receives blood from an artery off of the aorta. After passing through an intricate meshwork of tiny blood vessels, the blood continues to the liver. As blood flows slowly through the spleen, any disease organisms within it are likely to come into contact with lymphocytes in the spleen tissue. This contact activates the lymphocytes, which can then attack the foreign invaders. The spleen blood vessels are also lined with macrophages that swallow and digest debris in the blood such as worn out red blood cells and platelets. Because a great deal of blood circulates through the spleen, this organ serves as a kind of reservoir for blood.

You can experiment with this theory of metamorphic catabolic breakdown by macrophages by eating something noxious to the body like processed cheese or processed meats which will activate the immune system. If you eat enough of the immune activator, within an hour you will notice* that a small left-brain-freeze (with numbness in the left eye-socket and forehead) will occur as the immune system activates to deal with the offending substances. (*Note that I may have sensed this only because I

have been through major dissolution and have experienced the left-brain freeze sensation before. I was able to distinguish the connection to immune activation only because my metamorphic cycles have drastically waned so did not confuse the digestive-immune response with the metamorphic-immune response. A person without awakened kundalini might not be sensitive to the percipience of immune activation or left-brain freeze.)

"Although any number of factors can trigger the adrenocortical stress reaction, the response itself is always the same. It involves the release from the adrenal glands of specific hormones, mainly the corticosteroids, which in turn mobilize the body against invading germs or foreign proteins. Thus the stress response always activates the immune system." 292, The Body Electric, Robert Becker M.D. and Gary Selden.

During a kundalini awakening the symptathetic nervous system and adrenals are perpetually activated during the peak phase. Acute kundalini events are similar to the immediate threat response and produce adrenalin and histamine. Following this cortisol release and immune activation occur. Thus an awakening is kind of like a hyper-activation of the self-defining and self-preservation systems of the body. However, instead of an invasion by a foreign pathogen or noxious substance, the body is simply dissolving and rebuilding a new or more refined version of the self.

Macrophages can live up to 2-3 years and it is probably due to this that the main awakening phase also corresponds to this duration. The macrophages that were grown and activated during the metamorphic initiation chemistry probably have a very different nature and purpose than those produced by the

body under normal chemistry. So when those specially activated metamorphic macrophages die out, the main transmutation period also finishes.

The metamorphic cycles are a reflection of the growth and activity of the immune cells involved. The cells are activated, grow, carry out their function and die-off. In metamorphosis the immune system increasingly becomes a full-body brain, generating peptides, catabolic enzymes, dissolving and transforming tissue. This immune activation would explain some of the heat involved with kundalini and many of the symptoms, especially those during the die-offs.

One of the most extraordinary metamorphic phenomena is the **sweating of blood**. This may be explained by the catabolic enzymes (hyaluronidase, elastase and collagenase) produced by the macrophages. If they act to make the vessel walls more permeable during the height of an acute cycle then its conceivable that blood could ooze out of the skin through the sweat glands. Skin, and blood vessel walls are made from elastin, collagen and hyaluronic acid after all and during a certain phase of an awakening the tissues of the body could become so permeable that red blood corpuscles could squeeze out of the capillaries. The base of each sweat gland is surrounded by capillaries. The capillary wall is only one cell thick, composed largely of collagen and can be as little as 3-4 mm in diameter, and red blood corpuscles are 7.5 thousandths of a mm. One can see how collagenic catabolic enzymes could increase the permeability of the capillaries such that red blood corpuscles could squeeze through the capillary walls surrounding the sweat glands.

"Tears of Blood and Bloody Sweat. During times of intense kundalini heat, when emotions are being eliminated through tears, it is possible that blood vessels near the surface of the skin and in the tear ducts would rupture, reddening the sweat and tears. St. Lutgard, Blessed Christina, and several others are listed as recipients of this "gift." Christ at Gethsemane also experienced bloody sweat." P.112 Philip St. Romain, Kundalini Energy and Christian Spirituality.

Interestingly during an awakening we have the hyper-activation of the sympathetic nervous system creating the physiology of "stress" and this increases the permeability of the blood vessels. While there is also an increase in endorphins and NO which reduces smooth muscle contraction, thus causing the smooth muscles in the arteries to dilate, increasing blood flow.

The blood sweating phenomena is also undoubtedly due to the increase in **histamine** release during extreme stress. Although increased histamine is probably common throughout an awakening, and if there was also an extreme threat to life then a greater amount of histamine might be released; creating the bloody sweat of Jesus. Histamine produces larger pores in the blood vessels as the first step in launching an inflammatory response. The increased blood vessel porosity improves brain nutrition in times of emergency, when high performance is imperative to survival. The release of histamine in the brain and the consequent improvement of blood supply is probably one of the main reasons for the increased sensory and extrasensory perception during kundalini. Brain nutrition and oxygen supply would be greatly enhanced by the dilated and porous blood vessels.

Body elongation is another change the body can undergo during metamorphosis. This no doubt is related to the permeability and relaxation of the connective tissue brought about by these collagen and elastin splitting enzymes. Romain sites Stephana Quinzani and St. Catherine of Siena as examples of body elongation. I imagine that the connective tissue of the pupael self and the connective tissue of the transmuted Self are quite different in structure. The calibration of such subtle changes might still be impossible to detect with our present science. One can assume that the transmuted connective tissue has greater strength, while having less molecular density. Perhaps even a change in composition.

Lysosomes-Becoming Unglued

Lysosomes are acid-containing vesicles that enable cells to digest unwanted material. They are characterised by specific hydrolases which are most active at low pH. Sometimes called "suicide bags," lysosomes are organelles used for the digestion of macromolecules from phagocytosis (ingestion). They form the cell's recycling process, where old components such as worn out mitochondria are destroyed and replaced by new ones, and receptor proteins are recycled. Other functions include digesting foreign bacteria that invade a cell and helping repair damage to the plasma membrane by serving as a membrane patch to heal the wound in the cell membrane. Protein processing in the lysosome system is modulated heat-shock proteins (HSP).

The nervous system, with its long-lived neurons, is vitally dependent on an effective lysosomal waste disposal system. Unlike other cell types, neurons cannot divide to replace cells that have died through the accumulation of indigestible material. Lysosomes are responsible for this catabolism of damaged cells and are particularly prominent in nerve cells, as an efficient way of turning over proteins and dealing with any abnormal proteins.

The products of metabolic breakdown are acidic, and this acid breaks the membranes of lysosomes spilling hydrolytic enzymes into the area to digest the damaged cytoplasm. The release of hydrolytic enzymes from lysosomes may be a primary cause of neuronal damage. Aged neurons have more difficulty processing proteins and the reduced efficiency of the lysosome-related system may be implicated in ageing and many diseases including Alzheimers.

Lysosomes also are also responsible for cell-self-digestion during autophagic cell death, a form of programmed self-destruction, or autolysis. As well as the clean cellular recycling that occurs through apoptosis, there is obviously some occasional messy autolysis that occurs during metamorphosis. As I mentioned before occasionally the sweating of blood happens during peak kundalini intensity of some saints such as Jesus, St. Lutgard and Blessed Christina. This is probably brought about when the body's capacity for programmed cell death is overwhelmed and a more necrotic form of cell death takes over. Due perhaps to a simultaneous activation of the HPA

axis from an acute shock, during a normal die-off immune activation. Such as when **Jesus bled through his pores in the Garden of Gethsemani**, before being carted off for crucifixion. At this time free radical oxidation damage to the lysosomal sacs in his cells was so great they punctured, releasing enzymes into the cell. Whereupon they proceed to eat through that cell, and neighboring cells producing more free radicals as they go. Lysosomal activity is responsible for the accelerated rate of muscle protein breakdown during and after exercise.

A successfully adapted metamorphosis results in a more subtle, efficient body and youthful appearance. If increased free radicals means that the collagen of the body will invariably be attacked and cross-linked then why is it that kundalini leads to a relaxing of the connective fibers of the body? The answer may come from cancer research: “An increase of free radicals could break down the barriers that hem cancer cells in. In most areas of the body, cells and tissues are held together by collagen—a fibrous material made of protein. The University of California’s Bruce Ames theorizes that free radicals and ROS could activate latent collagenases—enzymes that break down collagen. As these enzymes dissolve the collagen glue, local cells and tissues would separate. Cancer cells could escape and move easily to other areas of the body.” 91 Hari Sharma, M.D., Freedom From Disease. Both high free radical and high acid conditions would tend to break the membranes of lysosomes spilling their catabolic enzymes into the surrounding tissue. This could be what Bruce Ames is observing.

Note that in the above quote by Hari Sharma the body becomes “unglued” under the influence of increased free radicals and

collagenases. This undoubtedly would make the blood-brain-barrier more porous, plus increase diffusion of chemicals between the central nervous system, cerebrospinal fluid and the blood.

After the initial fight-flight response of the HPA axis backs off the immune system comes on with vengeance. The immune cells spew free radicals into the surrounding tissue as well as using them internally in their job as janitor. The immune cells engulf and digest the inferior cells that cannot cope with this increased free radical load. This removal of the weak and old makes way for the new cells to be constructed at a higher energy level, using the building blocks of the old cells. The butterfly is thus metamorphosizes from the gestating pupae.

The release of free radicals and collagenases (collagen digesting enzymes) from macrophages and neutrophils can result in widespread cell damage, amounting to widespread cellular inflammation. Also while fighting the macrophages release interleukin-1 which travels to the hypothalamus and increases the body temperature, this mechanism for creating fever disables bacterial reproduction. The increased heat helps to eliminate the body's microbe population to free up the immune system for the work of reconstruction.

Eric Van Winkle (Toxic Mind Theory) says that these lysosome enzymes degrade proteins, nucleic acids, mucopolysaccharides, fats and glycogen, but they do not degrade catecholamines, serotonin, GABA and amino acids, and that during the detoxification crisis these substances flood the synapses.

(See more on how the body catabolically dissolves and recycles itself in Autolysis—Self Digestion)

Heart Expansions

"Thinking hard about subtle energy seems to lessen its influence while just being seems to make its influence stronger." Paul Pearsall, *The Heart's Code*

The heart then the nervous system are the first things to form in a human embryo. At 5-9 days the heart begins to form and the foundations for the foetal brain, spinal cord, and entire nervous system are set in place. By 10 weeks the heart is completely developed--the organism is developed within the field of the heart. As the dissolution progresses one can assume that the heart muscle itself is relaxed and made more permeable to energy to the same degree that the neuromuscularskeletal system is decontracted. The heart being a holographic representation of the entire neuromuscularskeletal system. As the heart starts to experience this "new space" it would go through contractions and expansions which in effect feel like gravity warping and crushing.

Joseph Chilton Pearce says that the EMF of the heart can be measured up to 15 feet from the body. Yet the "unmeasurable" scalar-healing energy field emerging from the heart would perhaps also be formed in

a toroidal shape, but this field would be many times larger than the electromagnetic field itself. The metamorphic heart is more sensitive and responsive to the vibratory condition of the body and environment. And as I repeated say, the bodymind is dismantled and rebuilt within this greatly expanded and amplified heart field.

Heart expansions occur along with intense love, bliss and weakness in the arms. The heart expansions and grounding are also associated with fatigue because the heart's field becomes so huge seems like it pulls one into the ground. This grounding is actually caused by temporary parasympathetic dominance and can be so severe that it is really difficult to put one foot in front of the other in order to walk. This fatigue is dealt with through grounding the entire spine by lying on one's back on grass. Also by walking on grass, repolarizing around running water and in nature, eating greens and avoiding stimulants. Whatever aids grounding and repolarization will reduce the fatigue!

At this time one is intuitively called to spend as much time as possible outside under the open sky and in nature because the electromagnetics of this event need to occur in communion with the planetary field and nature's energy fields. Being inside buildings at this time you will feel cut off for your true nature--the heart expansions will demand that you be outside. The metamorph proceeds when we are connected to the earth's energy and the sun. You could say that we lose our soul in buildings.

After the body has grounded, the heart now freed, sours out of the body as though painfully breaking through the chest. To relieve the pain of expansion one needs to thump the thymus

gland on the sternum like an ape, and this relieves the pressure. The thymus gland under the sternum wakes up significantly; this could be part of the huge expansion and energetics of the chest that is felt during an awakening. I have yet to scientifically verify this, but I am sure that the thymus is retraining white blood cells in their transmutational function.

Entrainment represents the integration or harmonization of various oscillators, creating a blending of various rhythms. The amplified heart field and the associated heart-brain entrainment is probably the cause of the increase in ESP, insight, higher states of awareness and supersensorial abilities that are prevalent at this time. The amplified heart and the opening of new areas of the brain, or the new synergy of parts working in greater unison, leads to a melting of the former being and a surrender to the bliss of transmutation.

The morphic field around us that is generated at this time of transformation is probably the largest it will ever be in our lifetime. This may be a major factor in outer body experiences and ESP. Extrasensory means that the senses are so amplified that it "seems" like ones consciousness is "out there." Ones sense of self is so radically different during kundalini I call it "super-sensorial" or experiencing the supernal realm. There is such an unprecedented relaxation of heart, muscle and nervous system that one no longer feels confined to the body, and ones feeling self seems to extend beyond the body allowing us to "feel" others from a distance. I could never figure out if the remote sensing of people in our home range was due to these supernal senses or whether it was due to the amplified precognition of our own timeline.

In a healthy individual a delicate balance between vasoconstriction and vasodilation is maintained by endothelin, calcitonin and other vasoconstrictors on the one hand and nitric oxide, prostacyclin and other vasodilators on the other. These two modes of expansion and contraction constitute the kundalini path as it hyperboles from one extreme to the other.

It is apparent that expansion phases where there is an influx of spirit, a relaxation and euphoria are associated with the circulation of vasodilators in the body. The dilation of the blood vessels lowers blood pressure and this increases fatigue—heart expansion and gravity expansion periods are always associated with fatigue and the urge to go to ground. Some of the agents that facilitate this vasodilation would be histamine, serotonin, acetylcholine, nitric oxide and even endorphins themselves. Studies found that arteries in an actively contracted state were dilated in a dose dependent manner by enkephalins and morphine, due perhaps to the presence of opiate receptors in the vessel walls. Another vasodilator is Adenosine, which plays an important role in biochemical processes, such as energy transfer - as adenosine triphosphate (ATP) and adenosine diphosphate (ADP) - as well as in signal transduction as cyclic adenosine monophosphate, cAMP. If energy production goes up in the mitochondrias during kundalini, Adenosine might be an important promoter of the expansion phase. When adenosine enters the circulation, it causes an increase in coronary vasodilatation.

In order to bring the body back to equilibrium after the expansion phase the sympathetic nervous system kicks in to bring about vasoconstriction. This contraction phase is

associated with gravity crushing, panic, hypervigilance, desire for movement, and emotional stress. The agents of this phase include vasopressin, adrenaline, the catecholamines: epinephrine, norepinephrine and dopamine; antihistamines and caffeine. This serves to increase heart rate, blood pressure and raise blood glucose. Endothelin is a vasoconstricting peptide that plays a key part in vascular homeostasis. It is one of the strongest vasoconstrictors currently studied. Found in smooth muscle and endothelial cells and is instrumental in increasing the discharge of sodium through urine and the production of urine by the kidney. It also stimulates Nitric oxide (NO) release to redilate vessels and mediate vascular homeostasis. Overproduction of endothelin can cause lung artery hypertension. Prostacyclin is a prostaglandin produced in the walls of blood vessels that acts as a vasodilator and inhibits platelet aggregation. It is used in the treatment of primary pulmonary hypertension.

Prostaglandins are another important factor in the regulation of vascular homeostasis. Prostaglandins are a large group of fatty acids that regulate cellular processes, where they are produced. They are not stored but are produced as needed by cell membranes in virtually every body tissue. They may also act as messengers for hormones, in that the hormone binds to the cell, increasing the levels of prostaglandins, which activate a specific cell process. They participate in a wide range of body functions such as the contraction and relaxation of smooth muscle, the dilation and constriction of blood vessels, control of blood pressure, modulation of inflammation and glandular secretion. One such substance, which stimulates contraction of the uterus, is used clinically to induce labor. Prostaglandins also control the

substances involved in the transmission of nerve impulses, participate in the body's defenses against infection, and regulate the rate of metabolism in various tissues. Several prostaglandins have been shown to induce fever, possibly by participating in the temperature-regulating mechanisms in the hypothalamus. The fact that aspirin and other nonsteroidal anti-inflammatory drugs have been shown to inhibit prostaglandin synthesis may account for their usefulness in reducing fever and inflammation.

HOW TO HANDLE ECSTASY

Dealing with the Angst of Extreme Pleasure

The ecstasy of Kundalini occurs as extreme pleasure (love) in the heart region mostly, and left brain, in the belly, down the left side of the body. Accompanied by a general all over ecstasy, bliss and satiation. There is the feeling of saturation of the tissues with mana juice flowing like ambrosial honey through the veins. It is like constant nongenital sex with God. The brain is lit up with kundalini (light) and you can see it in the irises, the skin glows with the bliss energy flowing through then nerves. When it starts backing off the parasympathetic comes on and so the vessels are so widened blood pressure is low, the arms loose strength, movement is slower and you feel pulled to the ground.

Ecstasy means 'to stand outside the ordinary self' through unification with God-numinous, via the direct experience of Divinity. The experience of divine union is not translatable into words, but it is the basis of all religion and spirituality the world

over. We can in describing this ineffable event only communicate in symbol, word and metaphor...and thus we create our religions and myths. People have been trying to express the ecstasy of Divine Union ever since they encountered it. Here is some words that attempt to describe ecstasy: Grace, beatitude, blessed, delirium, ebullience, elation, enchantment, euphoria, exaltation of the cells, full-gladness, glad-fullness, complete, gone, happiness, heaven, inspiration, intoxication, joy, paradise, rapture, ravishment, rhapsody, trance, transport, twilight zone, scintillating transcendence.

I had quite a significant bout of ecstasy for 4-5 days around full moon in November 2006. This heart expansion happened as the climax of the revelatory chemistry I had in September and the two months of high level intellectual work I was doing. But really I think it was so intense because Mr. Universal came to town for a book talk on Saturday, and apparently my physiology still responds greatly to him, even though I never got closer than 2 miles from him.

This Heart expansion period was somewhat more lucid than most; no loss of cognition and my math even improved which is weird, because I am so used to getting a loss of brain function with the bliss. At the beginning of this ecstasy period I was feeling poor-me and isolated with the condition; locking myself away to prevent inflicting ecstasy on the world or getting jabbed at while so blown open. Finally as it started to back off I asked myself, well just how IS one supposed to deal effectively with ecstasy, instead of suffering from the awesome power of so much pleasure? Even though all spiritual drive, practice, progress, and motivation is a step in the ecstatic direction, no

where are we told just how to tolerate the "prize" when we do receive it.

I realized there is only really a problem if I try to stay as small as my normal egoic self. You see, that much energy and Presence trying to fit into the tiny vessel of my defended-wounded self is what causes the angst of ecstasy. The small self tries to hang on for dear life as the current of bliss is blasting it away.

The ecstasy of the incarnation of Presence is difficult if approached with an unconscious lack of piety or ungrateful attitude. It might be that each successive Heart expansion period renders the ego less and less resistant to Spirit's force simply through progressive loss of the habit of unconsciousness. The intensity of the pleasure literally commands surrender, and it is very apparent that conscious-will must be "actively" engaged throughout the Heart expansion period to accept both the pleasure sensation of ecstasy and the presence of Presence in the bodymind as well. During such periods of rapid incarnation we cannot simply passively open to Spirit and be filled by it, but we must be "actively" bailing out in order to make room within us. Plus we must apply conscious-will to "WELCOMING" Spirits descent into us. Accepting ecstasy becomes therefore an agentic act of devotion and gratitude; in fact devotion might simply BE the active allowing of ecstasy.

It is when we meet Spirit with hesitation, agenda, resistance, divisiveness, rebellion, lust, usury or any other ulterior motive that the tension of extreme pleasure becomes intolerable. Just as when we greet another person with these kinds of egoic

attitudes. To avoid this we must maintain the correct stance (koroko gamae)...to actively voluntarily surrender to the pleasure of consciousness...to embrace it and not back away from it or attempt to use it for lower purposes. If we are passive toward the enormous overwhelming influx of Love and Light during ecstasy then we will feel self pity even in extreme rapture...until we take up an active Will in order to receive this unbridled pleasure. Self-pity is not bad, it is just the weaker side of compassion; it is the first sensing of the harm or deprivation prior to taking up ones Will to doing something about it. If however you simply stay in self-pity as a general state then you are stagnating the natural growth process and are living in bad faith.

Other than the obvious practical methods for the metabolization of extreme chemistry such as breathing, circulating energy, grounding, taking baths, drinking plenty of water and such, there is a need to widen the size of the vessel by circulating the energy to others. If we try to keep the ecstasy contained within the narrow confines of our body and normal personality we run into great difficulty. As soon as we make an effort to widen the circumference of self then we have more room in which the energy can flow and the pressure and isolation of extreme states of ecstasy are relieved. Anything is endurable if we widen the vessel enough. Though I am still not brave enough to ask "Bring it ON Spirit, I can take all you've got to give."

Alberto: "I also see my ego's attempts to return to its former life, borne out of a desire to blend in with society as a whole (suddenly I feel like a superhero, or one of the X-Men!). At times, being normal never felt so sweet. My ego tries to make me

forget my awakening, lulling me in to thinking that my life can revert to what it was previously."

Rather than going the lower road of unconscious conformity to society in order to feel a-part-of, what this ecstasy period showed me was that we can actually be more gregariously intimate with Other through embracing our Presence and extending it "out" by sharing the Juice! That is the source of our social being changes from the mask and shield of the automaton with its projection of attraction and aversion, to the sharing of a prior unity and a joint participation in the Mystery.

We can only find ourselves and be ourselves in relation with others...we are socially wired creatures; but at the same time we must be differentiated and transcendent of the social realm through divine umbilical to the universal. If we were not adequately bonded with our initial primary caregivers a kundalini awakening gives us the opportunity to die and regrow toward a higher form of bonding with humanity at large, through progressive loss of the barriers of pain and deprivation. With Heartfield expansion we can become wired for spiritual communion and community.

"When Spirit descends, it's not solely for the benefit of our small selves. Spirits descends so that it can flow through our being and out to others -- pushing through boundaries and fortifying Self." Mary

That the ecstasy of incarnation is not solely for us gives a new spin on the meaning of responsibility...responding to Spirit. Spirit keeps turning up the volume on the bliss dial until we get

it. That we are a "vehicle" for Spirit and that Spirit is driven to merge with itself through amplification of its force. If the "work" of Spirit is for the collective anyway, then at some point we should be able to say "Yea Spirit, bring it on, give me all you've got so I can spread it around!"

In the bookstore where I work I shared a question I had written down for my boss with two sage women customers: "In all your years of reading, have you ever encountered anything on how to handle and metabolize ecstasy?" These two women grokked the question, thought it cool and then promptly left. I thought perhaps the reason for their hasty retreat was because it is not "normal" for someone to be in radical ecstasy in a daily life setting. The non-ordinary freaks people out; so generally while we are actively sharing the pleasure of our ecstasy and Presence with others we cannot "let on" to Other what it is that we are actually doing. We cannot put a crack the cosmic egg and expect others to still participate...thus we must bridge worlds!

Despite the fact that Divine Union is the reason and goal of all religions, even so ecstasy is still apparently a dangerous subject when it comes to establishing and maintaining the power differential in the workplace and community. For ecstasy constitutes social emancipation and freedom from destructive social codes and power structures. Ecstatic love undoes all that the ego tries to protect and sustain itself with.

Continuous Breathing— A type of regenerating breath that is good for energy integration during panic attacks, ecstasy and heart expansions is Fish Breathing. The mouth is completely relaxed and open like a fish; you breathe gently at medium pace

in and out of the mouth without a pause between in and out breath. This is especially effective while walking. This continuous, nonpause breathing can be done through the nose also when needing more focus and brain power during peak kundalini activity; make the inbreath nasally and the outbreath throaty.

As the Solar Heart first starts its circuitry connections you can get pain in the thyroid throat area for several years...breathing is the key to handling and facilitating this. Use CMR on the area placing one hand on the right side of the Heart and the other on the throat. Send consciousness into the area through the brainstem and mindseye, with the breath slightly throaty while focusing on "Joy" at the nostrils. Doing this will facilitate growth of the Solar Heart even if you do not have the throat pain. Work on the solar plexus a little as well while doing this throat work. As the heart-brain connection is stabilized our periods of ecstasy no longer disrupt cognitive function, but enhance it to the point where you are "living your genius or one with the Muse". At this point it means we are basically an Adept...however living up to that enormous Grace is the next challenge and doing something substantial in the world other than mere theorizing.

I decided that doing massage on other people while you are in radical heart expansion-ecstasy is generally not a good idea, for the blood pressure is too low with the expansion of all the blood vessels and heart...and there is no strength in the arms anyway, coupled with the slowing and fatigue generated by this expansion period.

A funny thing happened during a massive 4 day ecstasy period

around the full moon in January 2007 (when the earth was closest to the sun). I was in a hardware store floating around in ecstasy looking for things and an Australian sheep dog barked at me. I made a joke that it was because the dog is Australian and I am a New Zealander, but really I knew he was barking at the ecstasy energy, which vicariously inflates the heart fields of lifeforms within its reach. The owner eyed me suspiciously however...perhaps I could have told the owner that the dog was barking due to my radically magnified heart field...but that would be just too much information for a non-initiate (trancer).

While there is some volition and cooperation needed, mostly as “surrender to Grace,” it is the "alchemy" itself that does all the "work." Altho people have been trying for centuries, you cannot really force the heart to open, it opens of its own accord in its own time, and in its own pace...and it doesn't have a lot to do with our will, volition or ego control. When the cerebrospinal fluid is adequately ionized, and the amrita substances filter into the blood+lymph that goes to the right side of the heart...then the heart goes solar and circuitry in the brain is transformed at a faster rate...the whole body is transfigured within the magnified heart field. The ecstatic heart is obviously palpable to the person who owns it, and also at an unconscious level by those who come within the heart's field. I think eventually scientists are probably going to call this energy scalar energy, if the research done at Heartmath institute is any indication.

After coming down from a period of ecstasy you might feel a withdrawal-like hangover. Comprising of a sense of disorientation, clouding and sense of loss in the brainstem area. Baths, walking, stretching, rebounding, breathing, drinking

water, toning and meditating with the mindseye on the brainstem will help metabolize the down-cycle.

http://www.appliedmeditation.org/The_Heart/articles_joseph_chilton_pearce.shtml

“Wisdom arises when the vibratory capacity of an individual, or a group, increases to a point of direct apprehension of the underlying pattern, or unity of phenomenon is possible. This capacity is modulated through a sequence of subtler planes of experience and seems to best be achieved when the heart opens. We see with this kind of opening that the root of wisdom is to be found in what we truly care about.” David La Chapelle

http://www.collectivewisdominitiative.org/files_people/LaChapelle_David.htm

The hardest thing to actually handle is the "pleasure" of our own emergence.

Kundalini Through the Diaphragm

Breathing is the key to the benign integration of kundalini. It's hard to breath sometimes perhaps due to hyper or hypo-activity in the vagus nerve, especially during heart expansion periods. Also histamine release during panic prompts nitric oxide to plump up the air passages making breathing laborious. The breathing difficulty always arose at the same time as the panic states for me. But rather than find it a source of "pathology" I interpreted it as Spirit forcing me out of the house to go for very

long fast walks. One walk I encountered a form a fish breathing in which I kind of breathed in and out at the same time. God knows how I accomplished that, I can't remember.

When you get the tightness in the chest you might try to put a heavy weight on your diaphragm area and breath into it, and also a hot water bottle...to try and shift the chemistry. Also the Primal Release Pose in the Kundalini Skills section relaxes both the psoas and the diaphragm at the same time, this might be just what you need, it is truly remarkable as is CMR. But the most natural solution for me was walking and breathing "in nature," preferably around some flowing water.

As kundalini passes through the diaphragm muscle in the transmutation phase (in the major cycle), one can feel the tension between the former contraction and the relaxation that has begun in the connective tissue of the diaphragm. This change strikes at the core of one's being and every breath during this ordeal is a reminder of "love or death," surrender or decay. I felt it as a host of heavy black bats hanging from my diaphragm for several days; and I got through it by walking long distances while deep breathing and chanting "love or death."

In the initial stages of an awakening you might find yourself fall into an "attack" of spontaneous breath of fire; that is rapid panting breath for half an hour or so. While during the peak kundalini moving through the diaphragm usually is associated with a panic attack. This is no doubt a period in which the sympathetic nervous system becomes dominant, considering it

determines breathing rate and oxygen consumption. The sympathetic activation forces a faster breathing rate but the histamine release reduces the free intake of air.

These breathing-panic events occur during each metamorphic cycle of the peak years. Then once substantiation has progressed this breathing angst disappears and breathing deepens with the relaxation and sensitization of the diaphragm muscle. Breathing thereafter feeds the Self and not the ego and thus tends to stabilize the evolutionary changes. Then movement of kundalini through the diaphragm creates profound joy and a bubbly, tingly laughing effect. Usually in association with kundalini moving through the digestive system around the months of September-November.

Activity can be modulated in the brain hemispheres by breathing through the opposite nostril. If you want to increase left-brain function close the right nostril, or to increase right-brain function close the left nostril. Specifically for the lungs you could try Alpha Lipoic, L-carnitine, Essential Fatty Acids, N-Acetyl-Cysteine (NAC). Use the leaves, flowers and seeds of borage and you will find it to be a Godsend for normalizing and calming. Make teas of borage, chamomile, elderflower, lemon balm, marshmallow, mullein and peppermint. Eat bioflavinoid rich foods...spinach, berries, elderberries, red peppers...think max color.

Loosening the Grip

The Primal Release Pose and the Cardio-Muscular Release technique will help take contraction out of the diaphragm and rewire the vagus nerve/medulla area. Besides these any

emotional release work would help, and breathing techniques such as Holotropic breathing.

Also you could try what I call “flying,” which is to lie on your back on a bolster about 8" thick put under the back of the chest—put your arms out and relax your breathing into the pose.

A consistent practice of singing, toning, chanting, mantra, humming and growling will help to loosen the diaphragm—and detoxify the brain as well. Running and other aerobic exercise will give you more lung volume and give the diaphragm mechanism more energy to relax itself with. Books with exercises and treatments in them include Allan Saltzman's two wonderful books *The Healing Way* and *The Belly and Its Power*. Mantak Chia's *Chi nei Tsang: Internal Organs Chi Massage*. You might also try the new book *Primal Healing* by Dr. Arthur Janov.

Our vegetative and social faculties are tied together through the old and new vagus nerves. So retraining the vagus needs to incorporate a form of social-therapy and what is social-therapy if not loving-relationship. Because it is obvious from the healing results of health relationship, we can assume that "intimacy" with others retrains the vagus. Thus some sort of social/relationship training that helps us to form loving bonds with others will reform our social wiring and relax the breathing mechanism. Because us apes tend to get more stressed out over relationships than anything, learning how to relate in a healthy manner is fundamental to good health and longevity. Also keeping adequately hydrated will relax the diaphragm because then the diaphragm is not trying to conserve loss of water from the lungs.

Inner-Conjunction

"As Kundalini moves up through the sushumna, She transforms the body and makes it fit for spiritual sadhana; it is only after the body has been purified that the Shakti can work with full force." P. 28 Swami Muktananda, Kundalini, The Secret of Life.

The **inner-conjunction** is the most intense kundalini experience when it feels like thousands of volts are tearing through one's system. There are many ecstatic experiences during a kundalini awakening, but the shooting up the spine and its associated "Silver Cord" or "Sex with Eros" is the most extreme experience one can endure energetically. I haven't found a name for it in Western literature and no corresponding Eastern name so I call it the inner-conjunction.

I liken it to 10,000 orgasms pouring through every cell of one's body and gushing out the top of the crown, threatening to explode one's head. I say that it is **10,000 orgs** up the spine to convey its huge quantum jump from the normal experience of our body. Thus in this book you will see me refer to the charge of the Inner-conjunction as 10,000 orgs. But if someone did actually have the equivalent of 10,000 orgasms all at once it would kill them instantly. The degree of ecstasy is unexpressible, other than to say that every cell in the body is lit up with

God...with bliss in the extreme.

Both males and females experience the inner-conjunction as the "peak event" of an awakening or a lifetime. I have had 4 of them...one spontaneous blast out of the blue completely not knowing what it was, one dark night version corresponding to this first one. One Sex With Eros inner-conjunction with womb contractions as well, and the last one included the silver cord.

In Eastern traditions the inner-conjunction might be confused with men ejaculating up their spine. Obviously the men are not actually ejaculating up the spine, though for some reason the Easterners interpret the event as that. What they are experiencing is the inner-conjunction...others might call this samadhi, although samadhi is usually associated with a lot of other stuff which is not the inner-conjunction. (See [Kundalini Gland](#) for more on this)

The peak inner-conjunction of my lifetime happened during the transmutation phase of my 2000 awakening, 12 days after the start of the peak-influx. This was when enough purification had occurred such that the crown pole and the sacral pole united in what felt like a sword or silver cord penetrating the center of the spine. It is hard to say how long it lasted for time disappears; yogis work to prolong the duration of this union. After my short union I felt more my Self and more alien than I have ever been, and the irises in my eyes were shining bright blue with an inner light. I have blue irises, which have normally more brown-grey in them. But during ecstasy or inner conjunctions there is more light photons coming through the irises themselves, so they are lit up from the inside...making them almost iridescent light

blue...like spice eyes in the movie Dune. This peak inner conjunction was the only one that I had looked in the mirror within half an hour.

It happened on my birthday when I was up the hill in nature, lying on the ground putting sun heated rocks on my body. During the previous 5 days I had run through a series of **spontaneous chakra voicing** poems on the reconciliation of the sexes--starting at the power chakra (solar plexus) and moving up the chakras one poem a day. This focus on the reconciliation of the sexes helped to reconcile the positive/negative, left/right, male/female sides of myself to bring on the peak inner-conjunction of my lifetime.

During acutely active kundalini it feels like there is white light flowing inside the body and illuminating the world--a pervading sense of white even though one cannot actually see it as white--it's like we see white with our whole body. This sense of whiteness may be due to a general increase in nerve action potential and the increased ionization of cerebrospinal fluid. Then the energy collects and nitric oxide permeates through to the central channel of the spinal column creating the principle charge itself.

The principle charge of energy is experienced as the **Silver Cord**, which lasts perhaps less than a minute, while the entire inner-conjunction lasts around half an hour. This main charge has been referred to as Excalibur as well, because it "feels" like a solid metallic shaft descending into the crown at the same time as massive energy is pouring up the body and out the top of the head. The body is paralyzed and the spine stiffened throughout the experience and this paralysis might add to the sensation of

this main charge of energy actually being a solid object. Of all the metamorphic events it is obvious to the experiencer that the silver cord is the highest or most extreme. The silver cord is the "most out there" peak event of the peak event.

Time disappears during inner-conjunctions so one can't really say if it was half an hour or 4 hours. But this climax cannot be compared to a 30 minute orgasm. The word orgasm doesn't really relate to these full body inner-conjunctions of absolute bliss, setting the body on fire with ecstasy that is experienced in every cell of the body. One's entire body is orgasmic with many times more energy than a normal orgasm. In fact so much energy one thinks the brain is about to fuse or explode. There may or may not be orgasm like contractions of the sex organs it depends on the type of inner-conjunction one is having. I call the one with contractions **Sex with Eros**.

Here is an example of a male experiencing such an event: *"The wave goes down to the groin in the sexual organs. It becomes very sexual, at the same time maintaining an essence of purity and spirituality. When the wave reaches the sexual organs, I feel a push to the lower back, that is pressed towards the sky and I reach some sort of very intense "orgasm". The penis is not erected and no semen is ejaculated. But the pleasure is a thousand times more intense than a normal sexual experience."*

GS, a Scientist listed on the website: [Archives of Scientists' Transcendent Experiences](#) (TASTE)

There is no vocalization, moaning, screaming or cooing in bliss. There is no ego available to jump up and look at the clock and start cataloging what happened. One is incapacitated in bliss for hours after the event. After the inner-conjunction one literally

feels and behaves like Jesus Christ. When motor coordination returns any stored charge or tension in the neuromuscular system has been expended so there is a great relaxation of the tissues. Hours after this hyper-relaxation we could however flip into a radical contraction, almost like it's a response to being opened too much, but it's simply the aftermath and counter play of the chemicals.

During extreme events such as an inner-conjunction (10,000 orgs) you cannot consciously direct energy because you are paralyzed and have no ego, but you can direct the normal flow of kundalini energy. For example, by drawing it up the back to avoid wimping out, or by focusing with the mind's eye coupled with breathing on the solar plexus to recover some will and clarity and overcome excessive bliss.

Note you can also have the chemistry of an inner-conjunction experience that involves extreme terror rather than extreme bliss. This Electric-Dark Night is the same intensity of energy rushing through the body and exploding the head, but in a "bad trip" sense. We may not have a "bad trip" inner-conjunction with every awakening. I only had one during my first because of a pre-conscious body knowledge of my father's upcoming death, coupled with the fact that I had no idea what kundalini or awakenings were at the time. The shock of kundalini in a neophyte body might predispose us to having a dark-night inner-conjunction.

I don't think that "bad trip" inner-conjunctions often occur in normal healthy individuals (in benign circumstances) because of the years of priming prior to the event and because the climax only happens during a period of maximum heart expansion

when the psycho-somatic resistance that normally prevents a conjunction has been removed. An inner-conjunction sparked off by a drug experience, or by stressful circumstances, however, could turn nasty because the bodymind has simply not prepared itself for this zenith chemistry.

In the evolutionary model kundalini is the mechanism of the ongoing maturation and development of the nervous system. Traditionally the symptoms are equated with detoxification, the release of accumulated nervous stress and the overcoming friction or resistance. However I think we need a comprehensive rethinking of this assumption that almost turns the idea of kundalini into a trial of punishment by fire. We normally do not think of romantic love, childbirth or death as stress release, detoxification and overcoming resistance--however these experiences do contain components of these. There are so many factors involved in the actual outcome of one's kundalini experience including: genetics, cellular strength, reservoirs of nutrients, social conditioning, exposure to spiritual practices etc...

In the pathological model it is assumed that the symptoms of kundalini may be mild or intense depending on how much stress has accumulated in the organism. Stress is said to create "noise" in the system that prevents the attainment of higher functional states. That is, noise prevents the sublime syncopation of sympathetic resonances in the bodymind. The stress of say child abuse or war can create **Post Traumatic Stress Disorder** (PTSD), but if it was not for this extreme perturbation of consciousness by trauma, chances are that the individual would not experience a kundalini awakening. Thus what is seemingly

"bad" can lead to great "good." This is an example of the paradoxical and complex nature of spiritual evolution.

[Lee Sannella](#) was an advocate of the detoxification model.

"In its rise, kundalini causes the central nervous system to throw off stress. The stress points will usually cause pain during meditation. When kundalini encounters these stress points or blocks, it begins to act on its own volition, engaging in a self-directed, self-limited process of spreading out through the entire physio-psychological system to remove these blocks. Once a block is removed, kundalini flows freely through that point and continues its upward journey until the next stress area is encountered. Further, the kundalini energy diffuses in this journey, so that it may be operating on several levels at once, removing several different blocks. When the course is completed, the energy all becomes focused again at the top of the head. The difference between this final state and the initial state is not simply that kundalini is focused in a different place, but that in the meantime it has passed through every part of the organism, removing blocks and awakening consciousness there. Thus, the entire process of kundalini action can be seen as one of purification or balancing." P.11 Lee Sannella, M.D.

[Kundalini, Psychosis or Transcendence](#).

Awakening is all about increased flow...the higher the flow of consciousness, the greater the stage/state. When there is a high degree of energy flowing in the system, ie: when the cells are producing a lot of energy, and the nerves are conveying high energy, there is concurrently a great deal of energy flowing in the body's electromagnetic field (EMF). The EMF surrounds the body like an egg, with one pole at the crown and the other at the

base of the spine.

One has to consult Rawls and Davis's book *Magnetism* to get a more sophisticated version of the configuration of the EMF, but for simplicities sake we can imagine it as an egg. According to [Itzhak Bentov's 'Stalking the Wild Pendulum'](#) the two poles of the EMF egg find the shortest distance between them and unite through the sushumna. Rawls and Davis 1974, say that the line of force comes out of say the right side of the north pole, goes through the equator and enters the left side of the south pole. Thus all lines of force in these field systems are in a figure of 8. And they would spiral around also, giving the appearance of spinning vortexes. Their poles are probably aligned positive-negative on the axis of the spine.

The years of kundalini priming activity purifies and strengthen the organism to allow this inner-conjunction to take place. Somehow the evolution of the nervous system inexorably leads up to this climatic event and our ongoing evolution requires it. The inner-conjunction occurs when the "noise" or diffusion of nerve energy is temporarily suspended such that all the oscillating systems can entrain and fall into sync. As everything from atom, to cell to organ organizes into a perfect symphony of vibration, all energies are heightened and ordered to facilitate the spark of lasered prana/plasma through the center of the spinal cord (sushumna).

It's not as though the organism needs to be completely opened and stress (noise) free in order for the two poles to conjunct, but there needs to be a sufficient reprieve from stress, combined with sufficient charge built up, to surmount the inertial forces accumulated in the system. Once the zap occurs the higher EMF

sets about dissolving whatever stress and disorganization are embodied in the organism so that a greater current of energy is able to flow freely. This temporary reprieve from stress (noise), plus excited charge is probably one of the main reasons why fasting, raw diet, falling in love, being in the presence of a Guru or taking certain drug trips can spark off a kundalini awakening.

"The whole body is rooted in the spine. If the spine is young, you are young. If the spine is old, you are old. If you can keep your spine young, it is difficult to become old. Everything depends on your spine. If your spine is alive, you will have a very brilliant mind. If the spine is dull and dead, you will have a very dull mind. The whole of yoga tries in many ways to make your spine alive, brilliant, filled with light, young and fresh." Osho, Meditation: The First and Last Freedom

Another possible explanation or component of the inner-conjunction comes from the work of Michael Persinger on **interhemispherical penetration**. Where a interhemispherical penetration of energy between the brain hemispheres may amplify and change the fields and flow whereby a charge is released up the spinal cord. His work is found in the book *Neurotheology* and www.innerworlds.50megs.com

THE FUTURE OF INNER-CONJUNCTIONS

There is probably no limit to detoxifying-strengthening-opening the body to kundalini.

My friend Willy, who in his 40's, gives himself daily inner-conjunctions with the aid of his own binural music. He is able to

sustain an inner-conjunction for several hours with no harmful effects and thereby keep his metamorphic (spiritual/revelatory) chemistry moving along at a rapid rate of ascendancy. His frequent inner-conjunctions are not debilitating perhaps because he autostimulates them with his music, and perhaps since he is a musician his system is already detoxed and integrated!

What Willy shown me is that if we cleanse and strengthen our instrument with the music of kundalini and with careful use and understanding of the energy, we can indeed transform ourselves and our lives. There is no limit or lid on our potential with kundalini. Normally I would not encourage others to escalate their kundalini, but to focus on strengthening the organism toward the natural progression of awakening to greater cosmic-unity (popping). Willy's experience makes me realize that with continued alignment and sympathetic resonance the nervous system can go into a permanent high rev state without burnout or damage. This is I think the information we have been waiting for.

<http://www.willfortune.com/> —Willy makes great tonal music by which he gives himself inner conjunctions and permanent bliss.

Inner Conjunctions (spinal orgasms) happen naturally as part of the awakening sequence of chemistry, but I am sure they can be cultivated, eg: Willy uses his binaural music. Running, rebounding, fasting, nude sunbathing, hot and cold, lying on the ground/grass, meditating on iron rich rocks, sungazing (sunrise/sunset), inverted-hanging, dancing, chanting, sex and Cranial Electrotherapy Stimulator (www.cesultra.com) along with binaural music are some methods that may help to induce

inner conjunctions. You just have to be sure you are well detoxed, remineralized and have plenty of phytochemical antioxidants, especially Vitamin C for the cerebrospinal fluid.

Inner Conjunctions are associated with the ionization of the cerebrospinal fluid. If you desire to have more "fireworks" in your awakening you need to reinstate your ionic balance in the body. However the focus should be on strengthening all systems, re-enzymating and remineralizing and immersion in nature's electromagnetic and subtle energies. Basically in cooked culture we have a lot of calcium and fatty plaques, heavy metals, acids, weak reserves and fragile organs and vulnerable nerves...coupled with mineral and plant-antioxidant deficiencies. We need to address these and be determined to come more alive in order for the body's energy spark up the spinal ionizing Inner Conjunctions.

(See more on the influence of nitric oxide in the inner-conjunction in the [Nitric Oxide](#) section.)

The Nervous System

More than half of the estimated 100,000 genes in human DNA seem to be dedicated to building and maintaining the nervous system.

Within the brain, the autonomic nervous system regulates and adjusts baseline body function and responds to external stimuli. It consists of two mutually inhibitory subsystems: those nerves which activate tissues-- the sympathetic or arousal system, and

those which slow structures down for rest and repair--the parasympathetic or quiescent system. The sympathetic is *ergotropic* that is releases energy, and the parasympathetic is *trophotropic*, that is conserving energy. The two sides of our autonomic system reflect the two main processes in life "growth" or "protection." These two mechanisms cannot operate optimally at the same time. Consider that our nervous system is either wired for eating (parasympathetic) or running away from being eaten ourselves (sympathetic). So the two systems generally act in opposition to each other; yet where dual control of an organ exists, both systems operate simultaneously although one may be operating at a higher level of activity than the other.

Energy expended in fueling defense takes it way from the process of growth. The consequent inhibition of growth reduces energy generation. The Hypothalamus-Pituitary-Adrenal Axis mobilizes defense against threat and when it is not activated growth flourishes. Hence chronic stress is enervating and debilitating. Thus we can see that children who grow up in stressful homes are deprived in cellular nutrition and growth, in cellular energy generation itself and consequently in mental-emotional-social development. Adrenal hormones constrict blood flow to the forebrain and stress hormones repress the prefrontal cortex activity, thus diverting energy and consciousness to the hind-brain survival faculties. The hyperactivity of the HPA axis and sympathetic nervous system is perhaps one of the reasons why high kundalini activity can make us dumb, that and the

excessive production of opiates of course.

SYMPATHETIC

The arousal system is the source of our fight or flight response, and is connected to the adrenal glands, the amygdala. The dominant (analytical) mind is connected to the arousal system and reaches into our **left cerebral hemisphere**. It is sometimes called the "ergotropic" system because it releases energy in the body to react to the environment.

The **sympathetic** system comprises of paravertebral sympathetic trunks which run up the front side of the spine from the cranial base to the coccyx. Sympathetic nerves run mostly from the thoracic and lumbar region and are longer and less direct than the parasympathetic nerves thus their effect is more diffuse. Instead of separate ganglion for each vertebrae certain segments collect together to form a single large ganglion eg: the cervical ganglion in the neck and the stellate ganglion in the upper thoracic region. Connected to the ganglion are plexus that pass to the organs. The cardiac plexus via the stellate ganglion supplies the heart and lungs. The solar plexus is connected with the lower thoracic spinal nerves and supplies sympathetic fibers to the stomach, intestines, adrenals and other viscera. The heart is supplied by sympathetic nerves arising mainly in the neck, because the heart develops initially in the cervical region and later migrates into the thorax taking its nerves down with it.

The neurotransmitter of the preganglionic sympathetic neurons is acetylcholine (ACh). It stimulates action potentials in the postganglionic neurons, affecting their targets through adrenergic receptors. The neurotransmitter released by the

postganglionic neurons is noradrenaline (also called norepinephrine). The action of noradrenaline on a particular gland or muscle is excitatory in some cases, inhibitory in others. (At excitatory terminals, ATP may be released along with noradrenaline.)

The release of noradrenaline stimulates heartbeat, raises blood pressure, dilates the pupils, dilates the trachea and bronchi, stimulates the conversion of liver glycogen into glucose, shunts blood away from the skin and viscera to the skeletal muscles, brain, and heart, inhibits peristalsis in the gastrointestinal tract, inhibits contraction of the bladder and rectum and inhibits the immune system to save energy.

Stimulation of the sympathetic branch of the autonomic nervous system prepares the body for fight or flight. This emergency response is controlled by the hypothalamus and amygdala through the HPA axis. Activation of the sympathetic system is quite general because a single preganglionic neuron usually synapses with many postganglionic neurons; the release of adrenaline from the adrenal medulla into the blood ensures that all the cells of the body will be exposed to sympathetic stimulation even if no postganglionic neurons reach them directly.

One important exception to the activating response of the sympathetic system is that the alimentary adrenergic nerves "inhibit" the activity of the gastrointestinal tract while activity in the cholinergic (parasympathetic) supply results in "activation" of the gastric and intestinal systems. This is because during the adrenaline induced fight or flight response

or during demanding activity, the blood and energy is needed by the brain and muscles, leaving digestive and eliminative functions until times of rest and relaxation.

Hormones produced by the outer region of the **adrenal cortex** regulate the body's metabolism, blood composition, and even body shape. The inner region produces hormones that are the body's first line of defense against stress, whether it be physical or emotional. This inner region of the adrenals is called the adrenal medulla and is considered to be part of the sympathetic nervous system. Adrenaline and norepinephrine act as neurotransmitters when they are released by neurons, and as hormones when they are produced by suprarenal glands.

PARASYMPATHETIC

The parasympathetic or reposing side of the autonomic nervous system promotes relaxation, sleep, growth and repair. It is sometimes called the "trophotropic" system because it conserves energy. It includes the endocrine glands, parts of the hypothalamus and the thalamus, and reaches into the right cerebral hemisphere. Thus the non-dominant, holistic mind is connected with the quiescent system and involves the hypothalamus and hippocampus. After the activity of sympathetic stimulation the parasympathetic system reverses the changes when the danger is over and returns the body functions to normal.

The main nerves of the parasympathetic system are the tenth cranial nerves, the **vagus nerves**. They originate in the medulla oblongata with separate branches going to the heart and respiratory system, and there are branches throughout the

abdomen after passing through the oesophageal opening of the diaphragm. Other preganglionic parasympathetic neurons also extend from the brain as well as from the sacral end of the spinal cord. The ganglia of this system are located near the structures to be innervated or actually in the walls of the organ, therefore the postganglionic fibers are much shorter than those of the sympathetic system. This is one of the reasons why sympathetic effects are usually more diffuse than parasympathetic effects. The sacral parasympathetic fibers supply the rectum, bladder and reproductive organs; and nerves from the two lowest ganglia enter the kundalini gland. Cranial fibers run with the vagus nerve supplying enervation to the heart, stomach and small intestines. True parasympathetic nerves are all motor. Sensory nerves within the parasympathetic system are general visceral sensory nerves that simply run with the parasympathetic fibers and are not strictly part of the system. There is not parasympathetic supply to the limbs or gonads.

Acetylcholine (ACh) is the neurotransmitter at all the pre- and many of the postganglionic neurons of the parasympathetic system. However, some of the postganglionic neurons release nitric oxide (NO) as their neurotransmitter. In the parasympathetic nervous system, the postganglionic neurons' ACh is received by muscarinic ACh receptors. Acetylcholine (ACh) opens cation channels for Na⁺ and Ca⁺ to flow into and K⁺ to flow out of a cell. ACh is an example of a direct messenger.

Parasympathetic stimulation causes the heartbeat to slow, lowers blood pressure constricts pupils and changes the lens for

near vision, increases blood flow to the skin and viscera, stimulates glands to secrete saliva and mucus, stimulates gut peristalsis. Contracts the bladder and uterus, causes erection of penis and *censored*oris,

Plexus are complex webs of nerves and ganglia that affect the internal organs, particularly by controlling arterial blood flow, hence oxygen and nutrient supply. The location of the plexus are associated with the chakra system. The cervical plexus contains nerves mainly connected to the skin and muscles of the head and neck, but it also contains the phrenic nerve which runs to the diaphragm. The cardiac plexus directly affects the heart and lungs. The solar plexus is the largest in the body. It is involved in the flight or flight activation of the redirection of blood from the digestive organs to the brain and muscles. The solar plexus stimulates the production of adrenaline and activates the kidneys. The pelvic plexus has lumbar and sacral spinal connections and is concerned with elimination and sexuality. Kundalini can be felt as bliss, tingle and heat moving through these plexus at various times.

The **Medulla oblongata** is part of the brainstem at the top of the spinal cord. The central canal of the spinal cord continues into the fourth ventricle of the medulla. It is in the medulla that the nerves from the two hemispheres cross over and head down the spine to control the opposite sides of the body. The parasympathetic nerves that feed all the visceral organs down to the intestines leave the spinal cord from this cranial area. However the colon, urinary organs and the sex organs are parasympathetically fed by nerves leaving the sacrum area at

the bottom of the spine.

The **Substantia gelatinosa** is the H shaped gray matter in the spinal cord which surrounds the central canal. This is where the nerve fibers carrying information from the peripheral to the central nervous system terminate. The Substantia gelatinosa is made up of unmyelinated neurons, some of which inhibit pain signals by producing opioids. Since kundalini invariably involves the sensation of bliss part of the endorphin releases could be from the gray matter in the spinal cord itself. Avram Goldstein, one of the first discoverers of endorphins proposed that endorphins in the amygdala create the tingling down the spine, and the shuddering discharge of emotion that we experience as a thrill. In the brain a thin outer shell of cellular gray matter, (the cortex) covers the cerebral hemispheres and clusters of cellular gray matter in the center of the brain form the deep nuclei. A nucleus is a mass of nerve cell bodies and dendrites inside the CNS. Clusters of nerve cells outside the CNS are referred to as ganglion.

The **Locus ceruleus** in the floor of the fourth brain ventricle is an alarm center which helps attentiveness, and governs arousal, fear, anxiety and terror. It has extensions of its *noradrenergic neurons reaching into nearly every part of the cortex*, and is thought to be instrumental in directing the attention of the cortex. Researchers have found both the Locus ceruleus and the amygdala and other regions of limbic system to be practically saturated with short lived opioid peptides (chained amino acids) called enkephalins.

Opiates--In response to physical injury, terror, and severe

emotional stress, the amygdala, hypothalamus, brainstem, striatum and related limbic system nuclei secrete **enkephalins**. Like corticosteroids, enkephalins are released as part of the fight or flight response, and insure that an animal or human can continue to do battle, or to successfully run away, although severely injured. Enkephalins are a five amino acid protein chain, the smallest opioid to be used by the body. Although the enkephalin combination of aminos is found within endorphins they actually come from different precursors and have dissimilar distribution patterns. When stained endorphin regions show up as definite streaks, pathways or fibers while enkephalins tend to show up as discrete dots. The strongest of the opioids is the 17 chained amino acid dynorphin. Dynorphin in the spinal cord helps in processing sensory information. As well as the spinal cord it is also found in parts of the pituitary gland, the hypothalamus, medulla, pons and the mid brain.

The three genera of opioid peptides endorphins, dynorphins and enkephalins are used as hormones in the body and something more like neurotransmitters in the brain. They are *inhibitory neurotransmitters*, making it more difficult for the neuron membrane to become depolarized and fire off an electrical signal. In this way the endorphin system of nerves acts to inhibit other neuronal systems in the brain. The effect of opiates is to inhibit the reaction of tissue to electrical stimulation. Without this inhibitory action to slow down neuron firing, the racing electric activity would result in convulsions and death. Endorphins slow breathing, reduce blood pressure and decrease sensitivity to pain. Endorphins reduce smooth muscle contraction, thus causing the smooth muscles in the arteries to dilate increasing blood flow. Hypoxia or low oxygen creates

acidosis stress which increases beta-endorphins as part of the parasympathetic response to achieve balance.

Long-term potentiation (LTP) is the long-lasting strengthening of the connection between two nerve cells. Like corticosteroids, **enkephalins** abolish LTP and theta activity, disrupt learning and memory, and induce hippocampal seizure activity without convulsions, which is accompanied by abnormal, high voltage EEG paroxysmal waves which can last from 15 to 30 minutes. Enkephalins can also trigger hyperactivation of hippocampal pyramidal cells--neurons which normally display synaptic growth and dendritic proliferation in response to new learning. Enkephalins can also alter the pre- and post-synaptic substrates, thereby injuring hippocampal neurons and producing a hippocampal amnesia as well as a state dependent memory loss.

Myelination of the nerves proceeds from the bottom to the top, back to front and from left to right. Kundalini generally also follows this path of flow and development over the period of an awakening. We tend to get right body and right-brain kundalini effects occurring in December and towards the end of ones awakening. Myelin is a fatty substance that includes acetylcholine. When we overwork the other neurotransmitters we burn out our acetylcholine as well. Since the myelin sheath is what facilitates 'speed' in the transmission of a nerve impulse, the impairment of our myelin slows down our brain...this is obviously a major contributor to the spiritual burn-out effect from excessive nerve activity during an awakening.

Kundalini awakening is a method that the body uses to promote new growth, because after myelination finishes it's harder to change or evolve the nervous system. Kundalini is so outrageously pervasive that I am sure that not only is there a lot of neurons dying off, there is also demyelination and remyelination that occurs. Research will probably prove that there are major changes in the pattern of myelination resulting from a kundalini awakening, and the function we are left with in the end is a result of these changes. This serves as a good case for AQAL developmental practices and experiences during an awakening because if we "fail to use it, we lose it." In other words "substantiation" equals agency, praxis or use.

GLIAL CELLS

Glial cells perform a variety of functions in the central nervous system and make up 50% of CNS by volume, and 95-98% by numbers. Neurons are the "active" or functional cells of the nervous system and carry electrical signals. Glial cells are small supporting cells that do not carry electrical signals. *In support of neurons glial cells offer:*

Nourishment--Glia attach neurons to blood vessels and supply nutrients and oxygen to neurons, maintain ionic balance and help control the chemical composition of fluid surrounding neurons. The L-arginine for NO production is mainly supplied mainly from glial cells. They produce cerebrospinal fluid!

Insulation--Glia produce the fatty insulating myelin sheath around axons to insulate one neuron from another, to form a matrix surrounding neurons and hold them in place, this matrix serves to isolate synapses limiting the dispersion of transmitter

substances released.

Phagocytosis--Glia act as scavengers, removing debris after injury or neuronal death and to destroy and remove the carcasses of dead neurons. Phagocytosis occurs when an astrocyte contacts a piece of neural debris with its processes (arm of the astrocyte) and then pushes itself against the debris eventually engulfing and digesting it.

Glycoysis--Aerobic glycolysis in the CNS involves interactions between neurons and astrocytes. The entrance of glucose into the central nervous system from the capillaries occurs primarily through astrocytes. Astrocytes are strategically placed between capillaries and neurons and play an essential role in neuronal energy metabolism and brain glycogen is localized in astrocytes in brain tissue. Astrocytes provide nourishment to neurons by receiving glucose from capillaries, Astrocytes first metabolize glucose to its metabolic intermediate lactate and secrete lactate, releasing it into the extra cellular fluid surrounding the neurons. The neurons receive the lactate from the extra cellular fluid and transport it to their mitochondria to use as a primary substrate for oxidative metabolism to create energy. In this process astrocytes store a small amount of glycogen, which stays on reserve for times when the metabolic rate of neurons in the area is especially high.

Neuronal activity regulates the rate of aerobic glycolysis by a mechanism involving glutamate release from neurons and glutamate uptake into astrocytes. Glutamate is the primary neurotransmitter released by excitatory synapses in the CNS. Glutamate is taken up by astrocytes by a Na⁺ cotransporter.

Na⁺ influx into astrocytes stimulates the astrocytic sodium pump which produces ADP. *Increased levels of astrocytic ADP will stimulate glycolysis and lactate transport into neurons.* Lactate uptake by neurons will stimulate neuronal oxidative ATP production. Glucose can be incorporated into lipids, proteins, and glycogen, and it is also the precursor of certain neurotransmitters such as g-aminobutyric acid (GABA), glutamate, and acetylcholine.

Schwann cells support the peripheral nervous system, while the central nervous system is supported by glial cells. As the peripheral nerves form, the Schwann cells migrate peripherally from the spinal ganglia, parallel to the axons, and encase them with their cytoplasm. The myelin sheath is created by a synthesis and wrapping of Schwann cell plasma membrane around the axon. During the breakdown of damaged axons Schwann cells participate in **myelin phagocytosis** prior to the recruitment of macrophages. They produce heat shock protein, only when they have transformed into these myelin-"eating" cells from myelinating cells. I am convinced that during the die-off some axons do die and Schwann cells would change to their phagocytic mode in order to absorb the dead axons. Research might find that whole neurons die-off at this time, rather than just certain dendrite connections.

The Enteric Brain--The stomach or enteric brain comprises of 100 million nerves surrounding the esophagus, stomach and intestines and many of its structures and chemicals parallel those of the main brain. It has sensory and motor neurons, information processing circuits, and the glial cells (defined). It uses the major neurotransmitters: dopamine, serotonin,

acetylcholine, nitric oxide and norepinephrine. Both the brain in the skull and the enteric brain originate from a structure called the neural crest, which appears and divides during fetal development.

GLUTAMATE

Glutamate is a major excitatory amino acid neurotransmitter accounting for an estimated 40% of all nerve signals in the human brain, and involved in phenomena such as neural development, learning, and memory formation. Glutamate is ordinarily released under close cellular biochemical control and re-uptake, for in excess amounts it is an intense excitant of nerve cells and potentially toxic. The neurotransmitters glutamate and aspartate act as excitatory signals, while glycine and GABA inhibit the firing of neurons. The activity of GABA is increased by Valium and by anticonvulsant drugs. Glutamate or aspartate activates N-methyl-d-aspartate (NMDA) receptors, one of three major classes of glutamate receptors, which have been implicated in activities ranging from learning and memory to the specification and development of nerve contacts in a developing animal. Nitric Oxide (NO) can diffuse across the synaptic cleft back into the synapse that originally released the glutamate. This **retrograde** transport of NO is thought to reinforce **long term potentiation** and thus is considered to be a possible molecular mechanism promoting long term memory and learning.

Glutamate may play the central role in kundalini awakening. The prolonged firing of kindling releases glutamate which

activates the N-methyl-D-aspartate (NMDA) receptors in the spinal cord, which may sensitize the spinal cord neurons to become more responsive to all inputs, resulting in **perpetual hyperexcitability**.

When glutamate is produced and released by a synapse it activates the NMDA receptor leading to an influx of calcium ions; which in turn bind to calmodulin (CaM), activating the enzyme that synthesizes Nitric Oxide (NOS). Calmodulin is a calcium-binding protein that is considered a major transducer of calcium signals.

Glutamate receptors are selective for calcium ions. **Prolonged activation of glutamate** receptors stimulates eNOS via Ca/CaM complex binding to the synthetase. NO can only be synthesized, however, if the amino acid arginine is available. Thus neuronal NOS critically depends on arginine, which is mainly synthesized in adjacent glial cells and is transported into neurons. Arginine uptake into neurons is controlled by non-NMDA **glutamate** receptors. This became evident when these receptors were blocked by arginine-uptake inhibitors such as L-lysine which functions as antagonist to glutamate receptors.

The N-methyl-D-Aspartate (NMDA) receptor is a subtype of glutamate-activated ionotropic channels, that is implicated in synaptic mechanisms underlying learning, memory and the perception of pain. It is also believed to be a target of the intravenous general anesthetic agent ketamine and possibly nitrous oxide. Because it is affected by anesthetic agents, the NMDA receptor is probably key to the "conscious" aspect of consciousness.

Presumably, glutamate acts at NMDA receptors on NOS terminals to stimulate the formation of NO, which diffuses to adjacent terminals to enhance neurotransmitter release. In the cerebellum NOS occurs in the **glutamate**-containing granule cells as well as in the **GABA** containing basket cells. Many of the cerebral cortical NOS neurons also contain GABA. Release of both acetylcholine and dopamine from the nerve cells is blocked by NOS inhibitors and enhanced by plentiful L-arginine.

One possible reason why there is such a hemispheric difference in the flow of kundalini could be the different placement of glutamate receptors between the left and right side of the brain. According to Isao Ito and his team they found more NMDA receptors on dendrites at the tip of neurons in the right hemisphere and in the left-brain they were found at the base of neurons. This may explain why the left is more kundi-excitable, active, analytic, logic, language, focus, decision oriented. The right represents a more parasympathetic nature, involved in emotion and memory.

The overall excited condition of kundalini arousal is probably mainly carried both on norepinephrine nerves and via glutamate receptors. Nitric Oxide and Ca²⁺ levels being the rate mediating factors in the maintenance of the charge through the glutamate system. After the body recycling periods of the die-offs are finished, the slow depletion of arginine will reduce NO and Growth Hormone production...thus reducing both hyperneural activity and regeneration of tissue and the awakening will very gradually come to a close. For reduced concentrations of NO will down regulate the NMDA receptors

reducing the excitation of the neurons. Also since calcium resources of the body would be used to buffer the acidic products from the increased metabolic rate, calcium availability might eventually become a limiting factor bringing the hyper-excitation of neurons to an end.

Since glutamate can be made from any sugar, carbohydrates or even from proteins or fats, it is always somewhat readily available as an excitatory neurotransmitter. However since a low-glycemic diet does reduce kundalini and seizures, it is apparent that glutamate levels are also a mediating factor in the firing rate of neurons.

Neuron Oxygen Use—Inhibitory neurons block information by releasing GABA (gamma aminobutyric acid), which counteracts the effect of the stimulating neurotransmitter glutamate by excitatory neurons. Glutamate opens the synaptic gates, while GABA holds the gates closed. The astrocytes or glial cells, consume large amounts of oxygen mopping up and recycling the GABA and the glutamate, which is a neuro-excitotoxin. More oxygen requires more blood flow, which is one of the reasons why exercise improves brain function and mood by detoxifying/recycling the brain chemistry. The expense of oxygen use to clean up the extra glutamate and GABA produced during heightened kundalini activity may be one of the main reasons why **fatigue** occurs during the downside of an active kundalini event or awakening.

GLUTAMATE TOXICITY

Glutamate neurotoxicity can cause neuronal cell death. Reactive oxygen species are mediators of delayed neuronal degeneration

caused by activation of ionotropic glutamate receptors. Oxidative stress was also shown to precipitate programmed cell death or apoptosis. The linkage between these two phenomena relate to the facts that the mitochondria are the source of 80% or more of the oxyradicals generated in the neuron and that Ca^{2+} dysregulation causes excessive activation of glutamate ionotropic receptors, disrupting the mitochondrial electron transport system.

The immediate effect of glutamate on neurons is its role in activating glutamate receptors, (NMDA is a methylated derivative of aspartate). The stimulation of NMDA receptors may promote beneficial changes in the brain, whereas overstimulation can cause nerve cell damage or cell death during seizure, trauma and stroke. When neurons are damaged, glutamate pours out, builds up in the synapses, and kills them by overexciting them, enlarging the area of brain damage. Both oxygen deprivation and overexcitation of neurons can create an abnormal buildup of glutamate that kills neurons by overstimulating them.

Glutamate works by attaching to N-methyl-D-aspartate (NMDA) receptors, proteins on the cell surface. The action of NMDA receptors appears particularly important because they have the special ability to **let large amounts of calcium into** neurons. When the brain suffers an injury such as a stroke, neurons release glutamate onto nearby neurons which become excited, causing excess calcium release to activate enzymes which eventually leads to destruction of the cell. Because of their "gatekeeper" role, NMDA receptors are important targets for developing therapies to reduce glutamate action. Drugs that

block these proteins, called **NMDA receptor blockers**, can prevent glutamate from harming neurons and stop the enhanced glutamate excitatory activity typically seen in epilepsy.

NO is associated with the main excitatory neurotransmitter **Glutamate** and the generation of action potentials in the nerves. Small amounts of it open up the calcium ion channels of the nerves (along with glutamate, an excitatory neurotransmitter) sending a strong excitatory impulse. Larger amounts of NO can force the calcium channels to fire more rapidly which can lead to apoptosis or programmed cell death. Thus NO mediates the neurotoxicity of glutamate through the formation of cGMP by activation of glutamate receptors. As stated in the section on Nitric Oxide, cGMP participates in signal transduction within the nervous system.

In the brain a stimulus (such as glutamate) acting at NMDA receptors triggers Ca^{2+} influx which binds to calmodulin, thereby activating NOS. This mode of activation explains how glutamate neurotransmission stimulates NO formation in a matter of seconds. In blood vessels, acetylcholine acting at muscarinic receptors on endothelial cells activates the phosphoinositide cycle to generate Ca^{2+} , which stimulates NOS to produce NO for blood vessel dilatation.

The influx of Ca^{2+} into the neuron activates an enzyme called calcium-calmodulin-dependent kinase II (CaMKII). Kinases attach phosphate groups to proteins and altering their functioning. In this case, CaMKII phosphorylates a second type of **Glutamine** receptor called **AMPA receptors**, which makes them more permeable to sodium ions (Na^{+}) thus lowering the

resting potential of the cell and making it more sensitive to incoming impulses. In addition, there is evidence that the activity of CaMKII increases the number of AMPA receptors at the synapse.

PROTECTING GLUTAMATE RECEPTORS

Studies found that alpha-lipoic acid improves memory in aged mice, probably by a partial compensation of NMDA receptor deficits. It is thought that its free radical scavenger properties preserve cell membrane and so protect loss of NMDA receptors. It also protects membranes and receptors through improved sugar and insulin metabolism. Alpha lipoic acid is a unique antioxidant because it prevents and may even reverse the attachment of sugar to protein, a process known as **glycation** or **crosslinking**. Alpha lipoic protects cells from AGEs by allowing better metabolism of sugar in the cell, this prevents its buildup and also by allowing the body's natural repair mechanisms to work better.

A team of researchers led by Bruce N. Ames, professor of molecular and cell biology at UC Berkeley, fed older rats acetyl-L-carnitine and alpha-lipoic acid. They found that the combination of the two supplements effectively reduce aging by tuning up the mitochondria, rejuvenating and energizing cells and both spatial and temporal memory, and reduced the amount of oxidative damage to RNA in the brain's hippocampus, an area important in memory. It is advisable therefore for those undergoing kundalini to take L-carnitine and alpha-lipoic supplements as well as adopt a low glycemic diet.

Apparently the glutamate receptors in the brains of drug addicts

retreat into the cell membrane perhaps to try and prevent the cell from becoming over stimulated by all the chemical stimulants. I was thinking that during the peak when the sympathetic NS is fired up and endorphins are blasting full bore the brain would exhibit conditions "similar" to a drug addicts brain. Perhaps in kundalini initiates the glutamate receptors also retreat into the cell, thus adding to the burn out and lengthy recovery period after the peak. *"One of the problems in addiction is that neurons in some parts of the brain lose glutamate receptors from the cell surface, and those receptors are important for communication between neurons. The researchers have sidestepped this problem by crafting a peptide that mimics a portion of the tail of the glutamate receptor and, once inside a neuron, serves as a decoy to prevent the loss of glutamate receptors."* eurekalert.org/pub_releases/2005-11/hhmi-gab112305.php

STRESS RESPONSE CYCLE

Wilhelm Reich observed that life has a four beat bioenergetic formula: tension--charge--discharge--relaxation.

Kundalini occurs in nested cycles that follow the basic stress response pattern that Hans Selye outlined in the 1950's. First there is "adaptation" a person intermittently secretes slightly higher levels of the fight or flight hormones in response to a slightly higher level of stress. Secondly "alarm," begins when the stress is constant enough, or great enough, to cause sustained excessive levels of certain adrenal hormones. Lastly "exhaustion," sets in as the body's ability to cope with the stress becomes depleted. But we now know that rather than the stress-

response hormones and transmitters “running out” during the exhaustion phase. It is the stress response itself that is damaging, because the body spends so many resources on stress adaptation that it causes the allostatic economy of the body to become bankrupt.

During an awakening all the neurotransmitters and hormones move through the phases of:

1.Adaptation: HEATING--homeostatic balance, strengthening and preparation. Building of hormonal and neurological resources.

2.Alarm: PEAK--similar to immediate threat response; heightened use of both on/off facilitating an expanded state of being. Adrenalin and histamine production.

3.Exhaustion: BURNOUT—depletion of resources for dealing with metabolites and free radical damage and production of hormones and neurotransmitters. As adrenal levels plummet this adrenal exhaustion sometimes accompanies, or is mistaken for low thyroid. Prolonged release of high cortisol leads to adrenal exhaustion. Decline in the immune system.

4.Recovery: SUBSTANTIATION--repair and building up resources again once the hypertonicity has died down. Growth on a new level reflecting the psychosomatic "space" that has been created from the die-off and self-digestion.

Adrenal hormones constrict blood flow to the forebrain and stress hormones repress the prefrontal cortex activity diverting energy and consciousness to the hindbrain and survival

faculties. Besides stress being enervating, prolonged hypothalamic-pituitary-adrenocortical activation also makes us dumber. *"The longer you stay in protection, the more you compromise your growth."* 147, Bruce Lipton, *The Biology of Belief*.

NEUROTRANSMITTERS

In the body there are at least 50 known neurotransmitters which convey a rich selection of possible messages between neurons, and many of these neurotransmitters have over a dozen different types of receptors.

Neurotransmitters, the brains messenger molecules come in two forms, monoamines and neuropeptides.

1. Small-molecule neurotransmitters--The key monoamines are:

Serotonin is made from the amino acid Tryptophan. It calms, elevates pain threshold, promotes sleep and feeling of well being, reduces aggression and compulsive behavior.

Dopamine is made from the amino acids Phenylalanine and Tyrosine. It increases feelings of well-being, alertness, sexual excitement and aggression; and reduces compulsive behavior.

Norepinephrine is made from Dopamine it also increases well being and reduces compulsivity

GABA is made from the amino acid Glutamic acid (Glutamine or Glucose). It reduces anxiety, elevates the pain threshold reduces the blood pressure and heart rate and reduces

compulsive behavior.

As well as glutamate, aspartate, glycine, biogenic amines, ATP & NO, histamine and prostaglandins.

2. Neuropeptides:

Amino Acids made in cell body and transported to synaptic terminals. They share opiate receptors and regulate pain (analgesics) and pleasure. Neuropeptides are manufactured in the endoplasmic reticulum and are called opioid peptides because they behave in the brain like opiates such as morphine. Their functions include regulating immune response, raising pain threshold stimulating feeling of well being, regulating sexual activity, promoting emotional balance and enhancing learning. As well as reducing compulsive behavior. There are three groups of neuropeptides--*Endorphins, Enkephalins and Dynorphins* and substance P (pain)

The thing to keep in mind is that excessive use of the on-switch neurotransmitters burns out the off-switch neurotransmitters. While peaking we are so neuro-hormonally pumped up that we do not actually feel the true consequences of the free radical damage until after the hormones and neurotransmitters run out. When one is pumped up on Spirit you simply can't imagine that burnout and damage will occur. It is apparent that kundalini cycles through the various nerve/receptor systems at different times reflecting both lunar and seasonal rhythms.

During the peak it is probably focused more on the norepinephrine nerves, moving first through the limbic system and then through the norepinephrine net that traces through the

cortex. Epinephrine (adrenaline) and the closely related norepinephrine are the chief neurotransmitters at the post ganglion terminations of the sympathetic nerves.

Norepinephrine is made from dopamine which in turn is derived from the amino acids Phenylalanine and Tyrosine. It increases feelings of well-being, alertness, sexual excitement and aggression; and reduces compulsive behavior.

When it moves through the digestive system it is probably focused on the serotonin system. When in a collapse phase such as a die-off or exhaustion then GABA, acetylcholine and serotonin would be more prominent during this parasympathetic dominant phase. GABA is most common inhibitory transmitter in a third of all synapses. ACh (acetylcholine) inhibits the heart via the vagus. Opiate and endocannabinoid receptors and nerve centers are highly active during all kundalini activity even in the exhaustion phase. Acetylcholine is generally associated with the parasympathetic effects, however it is thought that acetylcholine is probably the chief neurotransmitter for the preganglionic fibers of both systems.

Contenders for the neuro-excitatory substances involved in kundalini include the primary excitatory neurotransmitter glutamate in combo with Nitric Oxide and histamine, prostaglandins even the body's fuel molecule ATP. When ATP is split apart a great deal of energy is released to power the cell. This involves the conversion of ATP into its stepped down product cAMP. Then cAMP activates a protein called **Kinase** which makes the neuron membrane more excitable. Thus the whole neuron becomes less inhibited and more easily "turned

on" by neurotransmitters fitting into the receptor sites.

Each person is different of course and will exhibit either dopamine, serotonin, GABA or acetylcholine dominance, and so the ability to withstand a kundalini awakening differs as does their experience of the awakening itself. There are infinite factors involved in how readily we will be depleted of neurochemicals, hormones and other bodymind resources during the exhaustion phase: season/sunlight hours, emotional resourcefulness, heredity, trauma history, infancy-conditioning, diet-supplements-antioxidants, emotional processing ability, life circumstances, social community, intimate companionship, life purpose-vocation, education level, urban or rural, latitude, exercised or sedentary, life habits-samskaras...and much more.

The effectiveness of our spiritual practices obviously has a profound impact both on the awakening of kundalini and the rate that resources are depleted. While meditation makes the awakening of kundalini more likely to happen it also eases its passage and reduces the depletion-crash effect, by making the HPA axis less volatile. It does this by synchronizing neural nets to fire in more in sync thereby reducing energy wastage and improving nervous efficiency. It also stabilizes and amplifies the hormone production of the pituitary gland and reduces the spiking of the sympathetic fight flight response. Because various brain areas are neurologically enriched by meditation there is also more prefrontal control over the limbic system. Meditation makes up for some of the deficits we may have in our primary matrix neuron growth.

The central functions of **norepinephrine (NE)** are: regulation

of alertness and of the wakefulness/sleep cycle, maintenance of attention, memory and learning, cerebral plasticity and neuroprotection. Norepinephrine (NE) stimulates neural growth, significantly influences neuronal maturation and promotes neural plasticity and synaptic development during the early stages of fetal and infant development. NE is neuroprotective and when it's depleted, neurons are exposed to the debilitating effects of **enkephalins and stress hormones** released during the fight or flight response. In the infant NE may destabilize in response to even mild stress such as temporary separation from the mother. Consequently wildly fluctuating NE levels can lead to atrophied neural growth and aberrant neural networks (neuronal pools). These dysfunctional, deprivation and stress induced aberrant networks are especially pronounced within the amygdala, septal nuclei, and the hippocampus, and can lead to the propensity toward abnormal seizure-like activity, such as **kindling**. Neurons in the CNS are organized into definite patterns called neuronal pools; each pool differs from all others and has its own role in regulating homeostasis. A neuronal pool may contain thousands or even millions of neurons.

As well as abnormal growth of nerves unbalanced neurotransmitter levels can lead to inferior firing patterns. Stress induced depletion of NE coupled with excessive secretion of corticosteroids and enkephalins can **hyperactivate hippocampal pyramidal** neurons and eliminate hippocampal theta and long term potentiation, thereby interfering with learning and memory. Depletion of neurotransmitters is countered by the use of Monoamine oxidase inhibitors. These relieve depression by preventing the enzyme monoamine oxidase (MAO) from breaking down the neurotransmitters

norepinephrine, serotonin and dopamine in the brain. As you can imagine with such exaggerated activation of the adrenal/dopamine/cortisol systems we need to focus on building up our serotonin, GABA and acetylcholine systems, which get burnt out during the hyper-phase.

Current research on depression indicates increased deep limbic system activity and shut down in the prefrontal cortex, especially on the left side. In depression, the most important pathways are those of the serotonergic and noradrenergic neurons projecting to the prefrontal cortex, from the raphe nucleus and locus coeruleus, respectively. Extracellular Dopamine in the prefrontal cortex, as well as in the other cortices, may depend on Noradrenaline rather than Dopamine innervation and activity. High dopamine is involved in forebrain functions of thinking, planning, and problem solving. It is antidepressant and produces optimism and confidence, so is probably a key factor in one's sexual attractiveness and scoring ability. Dopamine has a major role in procreation also for it keeps one positive, focused and intent on the job of sex...thus ensure the continuation of the race. During the heating and peak phases dopamine is obviously high along with the sex hormones and growth hormone. It probably factors into both increased psychic and increased creative genius at this time, not to mention the increase sexual desire.

Suffers from anxiety or depression exhibit increased activity in their hypothalamic-pituitary-adrenocortical (HPA) axis. In these disorders there is a proposed link between noradrenaline and glutamate NMDA receptors. The NE system has alpha and beta types of adrenergic receptors. There is evidence that chronically

depressed people have dysfunctional and atypical noradrenergic systems, particularly their alpha 2- and beta-adrenoceptors. It has also been suggested that noradrenaline (norepinephrine) is crucial in certain cognitive functions associated with the frontal lobes, particularly the prevention of distractibility by irrelevant stimuli (ADD/schizophrenia). The alpha 2-receptors of the prefrontal cortex appear to be of particular importance in this respect. In those who are depressed the "safety memory" mechanism of the prefrontal lobes might not be working well chronically overworking the HPA axis/fear response and burning out the catecholamines, adrenals, cortisol and thyroid, thereby generating depression.

As you will read in the Toxic Mind section the pilot of the limbic system is the orbitofrontal system, especially in the right hemisphere. Without adequate prefrontolimbic control our emotional regulatory system can become destabilized which in turn interferes with rational thought and thinking, planning, and problem solving. Without a balanced emotional system and healthy socioemotional life we are likely to burn out our HPA axis become depressed, put on weight and head toward contracting some sort degenerative disease. (See the [Neuroendocrine Theory of Aging](#))

NERVE TRANSMISSION

Potential energy is stored in separated electrical charges of opposite polarity. Separation of opposite charges requires energy and uniting of opposite charges liberates energy for "work." Voltage the measure of potential difference generated by separated charges, and current is the flow of electrical charge

from one point to another.

Insulators like fatty cell membranes have high electrical resistance while conductors such as membrane channels have low resistance to current flow. A higher current is achieved by either increasing voltage or decreasing resistance. In the body, charges are carried on charged particles or ions. Thus separation of charges in the body means separation of ions. The amount of current that can be produced depends on the voltage difference across the membrane and the resistance to flow of ions.

The cell membrane is a good insulator and can separate and maintain ions or electrical charges of different values. The difference of ions inside and outside of cells is controlled by channels, gates, and transport proteins. Higher concentration of Na^+ outside than inside and higher $[\text{K}^+]$ inside than outside, but overall there is more Na^+ outside than K^+ inside. This makes the inside of nerve cells is negatively charged and the outside is positively charged.

The insulating capacity of the cell membrane allows for the production of an electrical or chemical concentration difference or **gradient** from one side of the membrane to the other. Current in the body is the flow of ions toward their opposite charge. Cations (+ ions) flow toward a negative charge, and anions (- ions) flow toward a positive charge.

Ions will flow down either their concentration or electrical gradients. Both types of gradients provide potential energy to power the movement of ions (charged particles) and thus produce an electrical current. An electrochemical gradient combines the effects of an electrical difference with a

concentration difference.

Ion Channels: There are two basic types of ion channels by which ions flow through cell membranes, leakage channels and gated channels.

1. *Passive Leakage channels* (nongated) do not require energy and flow rate and directions is determined by electrical or concentration gradient direction and size. Leakage channels are more open to K^{+2} than to Na^{+} . Since the electrical and concentration electrochemical gradients go up during kundalini we can assume that Leakage channels become more permeable.

2. *Active Gated channels* require ATP energy and open and close in response to some sort of stimulus such as *voltage* changes; specific *chemical* stimulus eg: neurotransmitters, ions, or hormones; and *mechanical* pressure. We can also expect gated channels to be more active during kundalini for voltage, chemical and mechanical reasons.

Synaptic Transmission occurs first with an action potential arriving at presynaptic membrane. A depolarizing phase then opens Na^{+} and Ca^{+2} channels and Ca^{+2} flows into synaptic terminal. The increase of intracellular Ca^{+2} produces exocytosis of synaptic vesicles, releasing transmitter into synaptic cleft. Then Ca^{+2} is removed from the cell by mitochondrial uptake with a Ca^{+2} pump. The transmitter then diffuses across cleft to postsynaptic membrane and binds to membrane receptors.

Excitatory neurotransmitters are those that can depolarize or make *less* negative the postsynaptic neuron's membrane,

bringing the membrane potential closer to threshold, (ie: a depolarizing postsynaptic potential.) Although a single excitatory postsynaptic potential normally does not initiate a nerve impulse, the postsynaptic neuron does become more excitable (sensitized). Thus it is already partially depolarized and more likely to reach threshold when the next excitatory postsynaptic potential occurs.

Inhibitory neurotransmitters hyperpolarize the membrane of the postsynaptic neuron, making the inside *more* negative and generation of a nerve impulse more difficult, (ie:inhibitory postsynaptic potential). A hyperpolarizing potential can decrease the excitability of a resting neuron or counteract the effects of an excitatory postsynaptic potential.

Synaptic Potentiation Sensitization occurs as repeated release of neurotransmitter makes the postsynaptic cell more sensitive to neurotransmitters producing larger excitatory postsynaptic potentials. Thus repeated use of a synapse makes it more efficient thus contributing to conditioning and learning. Synaptic potentiation may also be produced by back propagating action potentials from the cell body to the dendrites. *Synaptic sensitivity is also increased by NMDA (N-methyl-D-aspartate) receptors in the postsynaptic membrane that increase Ca^{+2} entry.* Elsewhere I mentioned that Isao Ito found more of a specific type of NMDA receptor on the *tip of neurons* in the right hemisphere of mice and in the left hemisphere these were on the *base of the neurons*.

Pitfalls on the Path

This is a summary of some obstacles we might encounter on our journey toward supreme consciousness. We are each a spectrum of various degrees of the pitfalls that make up our shadow side. The shadow playing into the light and the light playing into the shadow. Love-consciousness would be the light side that is half of who we are, would it not? The darkside would be the recalcitrant neglect of cues from body-mind-soul-muse regarding the appropriate care and love-consciousness for self or other. Shadow is perhaps the separate-self-sense's blind concern and focus on that which stops the heart from expanding to infinity.

Kundalini and our beliefs about God and spirituality are not important. What is of ultimate value to us is Life, love and relationship. If our kundalini and our beliefs are interfering with our Life, love and relationship then we must do everything within our power of awareness to rectify this situation.

1-Pathological Regression

Retreat into infantile prerational uroboric fusion. Indulgence in dissolution and fragmentation; often due to lack of modeling, support, structure or clearly defined developmental framework of ascent that covers all sides of the whole human (survival, somatic, emotional, social, spiritual). Desire to let one's life collapse in the hope of being rescued. Retreat into depression and grief to escape more expansive perception and profound sense of being

2-Running Away

Retreat and evasion through dissociation and denial. Inertial holding back to former modes of perception and being. Effort to pull energy down, back and in through substance addictions, heavy food, sedentary lifestyle and through avoidance of "opening" practices and therapy. Secondary fear chemistry due to negative interpretation of kundalini events resulting in panic, paralysis, stagnation, isolation and avoidance. Even running away from bliss and increased wellbeing with various forms of anaesthetization, self-repression and self-destruction.

3-Oblivion

Bliss obsession is a preoccupation and addiction to blissful energy, using it as a form of narcotic anaesthetization to avoid real world obligations, survival and development imperatives. Hazy, diffuse, forgetful, preoccupied, heedlessness, day dreaming, castle building, directionless. Lost in fantasy, trance, myth, symbol, story, meaning making, synchronicities and connections. Creativity at the expense of survival, through avoidance of rational discernment.

4-Diffusion

Loss of left-brain focusing and hierarchical prioritization. Chain of Being collapsed. Codependency, dependency, false security in catering to the egos of others, coupled with lower-order giving through forms of slavery whereby ones highest contribution is lost in obscurantism, confusion, ambiguity, paradox, double-binds due to the collapse of the hierarchical prioritizing faculty. Indistinct, labyrinthine, vague, leaky boundaries, jumbled, enigmatic.

5-Fixation on Internal Processes

Overly fascinated, morbidly curious, distracted by and absorbed in kundalini symptoms, psychic phenomena and newfound spiritual powers (siddhas). This compulsive obsession with symptoms and phenomena feeds inflation and interferes with relationships and functional utility. Possible secondary fear or depression over the temporary loss of adaptive functions and left-brain sharpness. Inability to disembody to perceive emotional storms as psychosomatic events of alchemical cycles. Excessive reactivity to conditions both internal and external.

6-Chasing the Dragon

Blindly engaging in practices, stimulants, relationships and events with the aim of rapidly increasing the intensity and speed of the trajectory of kundalini opening. Thereby increasing the danger of more extreme peaks and valleys, which could result in tissue damage, depression, regression and burnout. Self destructive use of the alchemy for thrills, novelty and status.

7-Inflation

Expanded psychic ability, high energy and siddhas inflate the ego to feel overly special, superior and unique. This feeds into the separate-self-sense's illusion of an independent existence and promotes selfishness or "my enlightenment for me." World savior, grand mission, martyr, new religions, global ideas, evangelical crusade. Visionary over-estimation of reality and potential, generating the propensity to forcibly impose ones will on the world.

8-Internal Exploitation

Turning the sacred into the profane. Lack of integration between the levels, coupled with disillusionment about achieving "higher goals." Hence exploitation of sex/kundalini/muse energy for "worldly goals" of power, status or monetary gain. "Using" oneself is an introverted symptom of inflation. The more we exploit ourselves the more others exploit us. Treating ourselves as a resource without regard for our spiritual welfare.

9-External Exploitation

Using powerful psychic and siddha powers to exploit others in order to fulfill one's own drive for power, status or monetary gain. Lust, usurpation, manipulation, dominator-hierarchies. Power mongering is an extraverted symptom of inflation. The more we exploit others, the more we exploit ourselves through turning the sacred into the profane. Treating others as a resource without regard for their spiritual welfare.

10-Projecting Spirit

Transference onto Gurus, lovers, alien or channeled entities, angels, saints etc...in disownership of one's own alchemical process, soul and muse. Feels like a powerful force enacting on us from outside, sometimes seeming too great for mortal endurance. Externalization of internal archetypal aspects (Great Attractors) ultimately resulting in our reclaiming them as our own through the pain generated by the projection.

11-Formalism

Entrenched preoccupation with appearances, rules, forms, formulas, dogmas, details, rituals and traditions of religious sects. Fanaticism, orthodoxy, fundamentalism, letter of the word, conservatism, conventional, spiritual materialism, elitism/exclusion, need to "belong." Feeds into power, pride and defense systems of the psyche.

12-Perpetual Seeker

Looking for wholeness and Self outside oneself. Fragmentation due to lack of coherent integration, individuation and boundary definition. Spirit always over the horizon, without serious intention of achieving Self, due to resistance to sovereignty and autonomous choice. Tendency toward projecting Spirit and formalism. Need for parental figures as there is an unconscious commitment to remain immature, obsequious and surrender one's personal power. Bottom dog trying to gain power through connection to a Guru or power figure.

13-Addiction to Cognition

Inability to relax into the spaciousness of the transrational due to tenacious drive of the mind to "know." Unwilling to let go of focal, associative, analytic mind in order to transcend and include it in "whole-seeing" and full spectrum consciousness. Resistance to relinquishing the myopia of the representational mind and thus avoid uniting the relative will with the Absolute Will; perhaps due to lack of faith or knowledge that there is anything higher than intellect.

14-Absolute Knowledge

Loss of growth potential by closing off to new information due to the hubris of a premature claim to enlightenment. Rigidified bubble of the known as a defense against chaos, dynamism, dissolution and breakdown--thereby preventing resurrection to a higher order. Bombastic grandiose omniscience. Cults, obdurate, implacable, inflexible, rigid, unshakable, stagnant. Arrogance, self-righteousness, self-justification, vanity, pride, top of the heap. Forgets beginners mind due to inflation hence is ignorant of ones ignorance.

15-Spiritual Bypass

"Premature transcendence--high level denial. Avoiding painful psychological issues by immersing oneself in a rigorous spiritual practice, or focusing on experiences of transcendence within the Kundalini phenomena to the exclusion of processing trauma from the past." - Michael Dubois

16-Abiding in the Absolute

"Holding the absolute dimension so tightly that we can't see all the relative learning that we still have to do. Trivializing the sense of relative impermanence amidst the artificial perfection of what can seem like a permanent awakening." - Michael Dubois

17-Blinded by Clarity

"When inner Vision and Intent become so clarified and overpowering, that the clarity itself fixates attention on a limited range of perceptions/interpretations/possibilities. Polishing the interpretive lens so thoroughly, that the lens itself

becomes invisible as an object of perception." - Michael Dubois

18-Cosmic Paradox

Rigid religious forms kill the human spirit or stop it evolving, because religions, churches and ashrams are attempts to legitimize that which needs no legitimization (I am That). And in so doing, a defense against illegitimacy (evil) is set up, which perpetuates evil (self/other separation). Rather, what needs to occur is education in inclusivity, global embrace, win/win, We-thinking and the observation that the ego will always try and separate and elevate itself above the crowd in an attempt to acquire legitimacy (good), power and significance.

19-Karma Slinging

One of the last vestiges of the dying paradigm of the culture of fear is the idea of karma as being punitive. This karma slinging is the latest version of monkey shit propagated by those who have not yet penetrated the matrix (non-initiate). Karma is not about punishment, it is simply the law of cause and effect. The idea that we are punished for sins is a man-made form of social control propagated by patriarchal religions. However, in a culture of original blessing, all happenstance both good and bad provide an equal opportunity for creativity and growth. In this way we propagate the meme of proactive human agency and basic human decency, and recover the sense of innate nobility, which the culture of fear has all but beaten out of us.

20-Spiritual Escapism

Forget about spirituality as such...it is a red herring. Consider remineralization, rawfood, exercise, right-livelihood, community building, permaculture, art, philosophy and science...then spirituality is taken care of naturally without any unnatural focus. That is focus on the causes of our physical, mental, emotional pain...and then we are bought into alignment spiritually. We tend to use spiritual ideology as an aspirin instead of doing the actual work of living a human life that needs to be done. Inspiring Teachers on youtube include David Wolfe, Gabriel Cousens, Brian Clement, Nassim Haramein, Dan Winter, Andrew Faust, David Holgrem.

21-Transcending Negativity

Since the world still largely operates on original sin, cup-half-empty, and power-over, we must center our self-worth and emotional equilibrium in a frequency of cosmic well-being and Gaian attunement that is transcendent of the human domain and socialization. This is how we can have a positive spiritual awakening while exposed to the negativity in our community and in the current zeitgeist. Through the power of the mind illuminated by the heart we must steer our whole being toward the Light.

22-Projection of Spirit

If you don't get that the inner Beloved is YOU, then you may literally bleed your awakening away pining for Other...and may be misdirected by the energy away from a true life partner...following this energetic figment projection within.

Once you know in your heart that this huge awesome energy and vast intelligence IS you, then you know how to understand the pulls and tides of the sun and moon and how they relate to pulling actual human lovers together to meet in time and space. You can ask the full moon when you will meet your true lover and the silent voice within may tell you when and where. Once properly directed the Inner Marriage is so complete and satisfying that it is of little consequence if you don't actually meet a life partner for the biological "need" for another is reduced.

Bliss

Bliss is synonymous with kundalini

Before starting this section on bliss I wish to clarify that the experience of spiritual awakening is not "just" a bunch of chemicals. Just because a particular subjective experience can be the "cause of" or "caused by" a particular release of chemical or electrical phenomena, doesn't mean to say that the subjective experience can be reduced "down" to that physical chemistry. All manifestation has its atomic, chemical and electrical component. The apperception of "interiors" realized in the subjective experience of phenomena is what makes us human.

During and forever after a kundalini awakening there is constant bliss to varying degrees. Some of the chemicals involved in bliss include the

endorphins, endogenous cannabinoids, sex hormones, nitric oxide, dopamine, oxytocin, ionized cerebrospinal fluid, dopamine, phenylethylamine and possibly the ATP molecule itself. The concentrations of these various bliss agents change with the different kundalini events, the stages and the seasonal and lunar variations in the flux of kundalini.

Normally we just hum along in our conditioned everyday consciousness, and then life seems to perturb this throwing us into heaven or hell depending on the circumstances. Hell...the death of a loved one, a breakup, losses of various kinds can be a direct route to Heaven. Any arousal of the Hypothalamic-Pituitary-Adrenal Axis will cause increased activation of the opiate systems, whether the arousal be stress, shock, trauma, freeze, sports activity or sexual attraction. Kundalini represents perhaps the greatest ongoing efflux of opiates. Sometimes the bliss is so acute that it makes rational thought all but impossible. The point is not to fight the bliss, or fall into compulsive degradation using the bliss as though it were a drug or alcohol binge. While undergoing excessive bliss there is indeed a need to rehabilitate ones faculties by pursuing challenging cognitive tasks. If this is not done chances are one could remain a spiritual bum for the rest of ones life, riding on the high of ones own internal chemistry.

Bliss might be directly associated with healing energy for it does dissolve the pain-body and impact of past trauma on the body and it does dissociate one from ones past pain, however it doesn't automatically create happiness. One can be blissed out and simultaneous be in ennui and depression due to cortisol burnout and hyper-parasympathetic activity. Kundalini can

leave one both less functional and with a reduction in spiritual faculty while at the same time being blissed out of our tree. So the whole thing is very complex and to navigate such waters we need to stay focused on the creation and integration of the Whole Human.

Although there may be a deepening or change of flavor of the bliss and a rounding out of other functions to rise above the dysfunction of being blissed out, I don't think one could classify bliss in stages and lines of consciousness, other than to say that bliss affects all states, lines and stages. The good news is that when we are well into our substantiation phase we can have our bliss and our high cognitive function too.

Bliss appears to be kundalini phenomena especially related to heart expansion and is a consequence of increased energy flow in the nerves. One of the functions of spiritual bliss is to incapacitate the higher cortical functions rendering the individual "childlike" soft, malleable, changeable, open and to conserve energy and internal resources for the metamorphosis of the physical body that occurs. Normally our conditioned "I" is kept so busy, hypervigilant and preoccupied by the tasks of daily life and obligations that this "fall" into the spiritually receptive state doesn't occur. Hence the preponderance of unpoped humans populating the planet, all vigilantly remembering who they are.

Memory takes tremendous energy. The energy used in an effort to maintain the sense of who we are right now prevents us from discovering what we might become. Thus the normal tight hold (neurosis) we have over who we are, our place in the world, and

our past...keeps kundalini at bay. Once lit however kundalini dissolves our neurosis, our pain-body, accumulated stress and trauma, and does so by essentially flooding the limbic brain with bliss making us somatically forgetting our past. All parts of the body can experience the flow of bliss, I have had bliss move through the digestive system, spleen, liver, pelvis, lungs etc... I have experienced bliss throughout the entire body, but I don't ever remember my adrenal-kidney area being in bliss

The loss of memory and mental faculty experienced from bliss, expanded states and kundalini occurs because the body's forgetting chemicals: anandamide, enkephalins, endorphins are produced in large amounts in the hippocampus and amygdala, and hypothalamus (limbic system). The increase in charge through these areas heightens the body's cannaboid and opiate systems. This acts in a healing fashion, to help our Pavlov's dog brain to forget past trauma, but it can incapacitate one to varying degrees. Thing to do is to not get anxious on top of the loss of faculty because that will only increase the stress, thereby increasing the "numbing/forgetting" chemistry.

To balance out the bliss, overcome the diffusion and lack of focus and recover our edge we need to drink lots of water, reduce food intake, breath into the belly, jump into cold water to regain lucidity, take long walks in nature, get around falling water, take doses of spirulina and yerba mate etc... The Nootropic Formula listed in the supplement section might help with overcoming the bliss by stimulating higher cortical function. But I think that a serious attempt at addressing bliss overload requires more environmental stimulation, like radical sports, radical nature or radical social events to produce

endogenous wakeup chemicals. I think there might be something in pinching the end of the nose, for during evolution the limbic system grew out of the olfactory system, giving the end of the nose a sharp pinch seems to wake the brain up a little.

There is a tendency while in ecstasy to think: "I better not meditate or I will increase the bliss and become a total basketcase." This is a very common situation with active kundalini. Whereas forms of meditation or focusing the energy in different parts of the brain and heart really helps us to cope with excessive bliss. You see the bliss can put one into a narcotic sleep--a mythic uroboric dreamland in which we are no longer functional to ourselves or others. One can also automatically resist the bliss and then it becomes just another thing to run from with our addictions or small-nature. However by drawing the energy up, maintaining a seat in the **Mind's Eye** and deep breathing one can essentially ride the dragon, (like riding the spice worms in Dune). Meditation while already blissed out with active kundalini is the most effective period for growth. There is a chance of regression, brain damage and resorting to addictions and distractions if we do not "actively cultivate" the Force. (See Mind's Eye in Down Is Up).

WITHDRAWAL SYMPTOMS

Neuroadaptation is the principle element of physical addiction and drug tolerance. When the brain is frequently exposed to a drug it adapts to compensate for the presence of the drug; so that if the drug is stopped, it leaves the brain 'overcompensating' and in disequilibrium in an unaccustomed way. Whatever pain

or anxiety condition the drug was masking returns with a vengeance in a "rebound" experience. During kundalini ecstatic peak events and stages our brain would become neuroadapted to excessive levels of "up" chemicals, so that when that cycle is over and chemistry flips the other way we can go through an extreme withdrawal. Hence both the Dark Night experience and the exhaustion phase are often accompanied by withdrawal symptoms such as anxiety, depression, memory problems, lack of motivation, and feelings of emptiness. Because of both neuroadaptation and neuron damage kundalini awakenings can be just as much a downer trip as a high, especially to the uninformed.

Nathan Luno has an amazing website on the use of the drug Ecstasy; especially check out his neurotoxicity section. Kundalini researchers might be interested in this as an info source. Specifically in the area of how like Ecstasy, kundalini might create excess dopamine release that could damage serotonin receptors in the brain. Kundalini is likely to increase the release of transmitters from synapses because of the increased charge in nerves, increased Ca^{2+} , NO and ATP, heightened adrenaline and norepinehrine. The enzyme monoamine oxidase (MAO) breaks down the neurotransmitters norepinephrine, serotonin and dopamine in the brain. MAO's occur in high concentrations in the blood, liver, stomach, brain and intestines. During Kundalini or Ecstasy use however the brain may be so loaded with neurotransmitters that the available MAO may be insufficient to deal effectively with them. So during the extreme ecstasy (up) and dark night (down) events there is likely to be dopamine damage to the serotonin receptors, similar to that which occurs on the drug Ecstasy.

"The dopamine, once in the serotonin cell, gets broken down by the monoamine oxidase into hydrogen peroxide which oxidizes a healthy cell into a deformed and no longer fully functioning one." ~ thedeia.org/neurotoxicity.html

KUNDALINI AND THE MUNCHIES

Kundalini can stimulate **compulsivity**, until we reach the point where we can dive into the bliss and Emptiness without resistance. It's like the blissed brain is seeking to drown itself in more and more bliss. There is less self-control somehow, probably through limbic override of the prefrontal cortex.

Since raised kundalini means an activation of the sympathetic nervous system the demand for energy generation goes up, just as it does with the fight flight response. Besides the use of glucose and fat for energy, Dr. Batmanghelidj says that that body uses water for the generation of hydroelectric energy, especially in the neurotransmission mechanisms. Thus the demand for water increases during kundalini. If however we do not drink extra water, we may read the cues for thirst as the desire for the energy to be obtained from sugar and carbohydrates. If we take in simple sugars instead of water, we will get a temporary energy boost, followed by a depletion of energy reserves. Plus since the immune system is compromised by hypertonal sympathetic activation, this means the sugar is likely to feed yeast and pathogen growth. The solution is to read Dr. Batmanghelidj's *Your Body's Many Cries for Water...and drink 5 pints (10 cups) of water a day, and perhaps even more during peak events.*

There are natural cannabinoids in the brain (eg:anandamide), as part of the bliss, pleasure-reward, and anaesthetizing/numbing function. I suspect the extra kundalini firing through the brainstem, limbic system, amygdala etc... turns on the bliss making chemistry pretty permanently. This has many consequences: modulating the raw, unrepressed emotionality that occurs on kundalini, giving a background of bliss to all kundalini events and phenomena. But it can also reduce motivation, make one lose one's sense of self, and could promote a false sense of security while one's life tumbles down around one. Considering the loss of normal adaptive left-brain functions that can occur with kundalini, the bliss gives a background of equanimity and grace, and helps to reduce the terror, worry and anxiety that would normally arise in association with incapacitation of our faculties. The world could be going to hell in a hand-basket, but it all looks wonderful to us.

The level of cannabinoids in the hypothalamus is controlled by a fat-regulating hormone, called leptin. This hormone keeps tabs on the energy status of the body and helps regulate body weight. Leptin is the primary signal through which the hypothalamus senses nutritional state and modulates food intake and energy balance. Leptin reduces food intake by upregulating appetite-reducing neuropeptides, and downregulating appetite-stimulating factors. When leptin levels are low, cannabinoid levels rise to stimulate appetite. Marijuana overwhelms the normal system and swamps the receptors, making pot smokers want to eat everything in sight.

There are three groups of opiate neuropeptides--*Endorphins*,

Enkephalins and Dynorphins. It is the levels of these neurotransmitters in your brain that governs your mood and degree of compulsive behavior. Anything that disrupts their natural balance will interfere with character, will, morality and resolve. Insufficient enzymes available for the manufacture of these neurotransmitters will reduce their number in the brain. An increase in blood acidity decreases the permeability of the Blood Brain Barrier, this reduces the supply of the amino acids that are the precursors to these neurotransmitters. Remember body acidity rises with too much animal protein, fats and processed foods, too much coffee and soda, too little vegetables and alkaline mineral reserves, too little exercise and oxygen. Fear, anger and other negative emotions also increase body acidity. Positive ions (H+) in the air such as during a thunderstorm, in urban environments and in hot winds like the Santa ana or Chinook also increase body acidity, this explains the increase of violent behavior under these conditions.

Genetically obese people and binge eaters release abnormally large amounts of these opioid neurotransmitters in response to food. These opioids mediate the cravings for foods high in fats and sugars. The opioid receptors in the brains of these people are probably working overtime resulting in an artificially high need for these opioids. Like heroine these opioids are addictive. Substances which block the opioid receptors or prevent the breakdown of the opioids can help reduce the craving for foods high in fat and sugar. Very high doses of vitamin C such as 6000 gms per day may reduce the addictive withdrawal symptoms of dieting or caffeine because it slows down the breakdown of the opioids in the brain. The amino acids D-phenylalanine and D-leucine both retard the breakdown of opioids in the brain so

can be used to reduce food cravings and drug addiction.

I wish to add a caution against using cannabis while in active kundalini. Using dope on top of the huge increase in opiates would probably add to the general anaethetization. Leading to an inability to form a self-center of focused-ego and personal-drive. Personally I think there is so much unusual stuff going on in the transmuting body I would want to get a clear witness to the natural phenomena and unfoldment of symptoms. I however still drink coffee, which is grounding and helps the energy to return to the egoic-prefrontal lobe function in order to "fend" for oneself in the world. But even coffee on a nervous system that is in sublime reconstruction is not a good idea.

Until we stop resisting the Kundalini we may try to stimulate ourselves with sugar, caffeine and/or drown ourselves in fat and protein. Because we are more limbicly and sensorally activated we could have problems with run away urges. The increased compulsivity is the result of both the egoic self-seeking comfort for the loss of "self-ground" and running from the larger sense of being; but it is also caused by the changes that go on in the brain. We need to study this intently and work out what needs to be done in order to support our growth without becoming radically compulsive. Deliverance of our appetites to a higher power and purpose like the 12 step program might work. When we stop resisting we learn to thrive on the pure energy of our Self, and to clarify, purify, and deepen our experience of Being.

ERASING FEAR

Endocannabinoids made by the body, extinguish the memory of adverse stimulation. Studies found that a process involving

activation of endocannabinoid receptors is essential in the extinction of conditioned fear. The release of such opiates during the excessive firing of kundalini is one of the main ways that the brain is eventually rewired to a less hypertonal and less defensive (reptilian) nature. The synaptic plasticity to change fear related memories requires activation of *NMDA receptors*.

The 'endocannabinoid' system is involved in the *extinguishing fear-related memories*. The amygdala, is crucial in acquiring and, possibly, storing the memory of conditioned fear. The extinction of the memory of fear requires neurons in the basolateral amygdala, and changes in the strength of their connection with other neurons ('synaptic plasticity') that depend on the NMDA glutamate receptors. There seems little doubt that activation of these glutamate receptors in the basolateral amygdala is somehow required for extinction.

The receptors for the endocannabinoids *anandamide* and *2-arachidonylglycerol*, are some of the most abundant neuromodulatory receptors in the central nervous system and are expressed at high levels in the limbic system, cerebellum and basal ganglia. The classical behavioral effects of exogenous cannabinoids such as sedation and memory changes have been correlated with the presence of these receptors in the limbic system and striatum. Endocannabinoid release serves to increase synaptic plasticity and inhibition of neuron firing.

The depolarization of neurons by repetitive activity led to the release of endocannabinoids, which diffused to the terminals of other neurons and inhibited neurotransmitter release. This effect was found to be transient in the hippocampus and

cerebellum and long lasting in the striatum. The endocannabinoids reduce GABA release in *interneurons* of the basolateral amygdala, thereby helping to extinguish the fear-conditioned response. Not sure why inhibiting GABA release will reduce fear memory, although GABA which is normally inhibitory, sometimes works in cahoots with glutamate as an excitatory neurotransmitter. GABA release is active in the immobilization of the freeze mechanism, and the calming down after flight-fight, so GABA might serve to lock nerves into a certain fear conditioning and reduce synaptic plasticity.

ANANDAMIDE THE SELF TRANSCENDENCE CHEMICAL

Anandamide is a recently discovered messenger molecule that plays a role in pain, depression, appetite, memory, and fertility. Its name comes from *ananda*, the Sanskrit word for "bliss." Anandamide is synthesized enzymatically in areas of the brain that are important in memory and higher thought processes, and in areas that control movement. This implies that anandamide's function is not just to produce bliss.

The ability of brain tissue to enzymatically synthesize anandamide and the presence of specific receptors for it, suggest the presence of anandamide-containing neurons. Anandamide is an eicosanoid, that is it belongs to a group of substances that are derived from arachidonic acid, including leukotrienes, prostaglandins, and thromboxanes. Anandamide is basically a compound that reduces activity, such as reducing the formation of many stimulatory neurotransmitters. The human brain muscarinic acetylcholine receptor (mAChR), which is involved in memory function is inhibited by arachidonic acid

and is also inhibited by anandamides.

Anandamide's long hydrocarbon tail makes it fat-soluble and allows it to easily slip across the hydrocarbon-rich blood-brain barrier. Its shape strongly resembles that of THC (tetrahydrocannabinol, the active ingredient in marijuana), but unlike THC, anandamide is fragile. It breaks down very quickly in the body, which is why anandamide doesn't produce a perpetual natural 'high'. Scientists reasoned that since THC is not naturally present in the body, there must be a natural key molecule with a very similar shape that activates this receptor. The key was isolated by Israeli scientist Raphael Mechoulam in 1992 as being arachidonyl ethanolamide, later called 'anandamide':

Learning and memory is established by connections between nerve cells by either making new connections or breaking old ones. Repeated use of a connection makes it grow stronger while lack of use can cause the connection to be lost. Some biochemical evidence suggests that anandamide plays a role in the making and breaking of shortterm neural connections. Anandamide might be one of the bliss making chemicals that helps to produce a self-forgetfulness by which we can separate more fully from our past. Animal studies suggest that anandamide induces forgetfulness and calm. Animals treated with anandamide walk less and lay down more; they have reduced body temperature and slower respiration.

Three anandamide-like compounds were found in dark chocolate by Daniele Piomelli and co-workers at the Neurosciences Institute in San Diego [Piomelli, 1996].

www.nsi.edu Eating chocolate is not advisable due to the negative effects of sugar on protein structures, the feeding of candida, and fermenting GI Tract contents. However raw cacao beans might be just the thing for overcoming down-cycle blues. They can be purchased at www.rawfood.com as Cacao Nibs (peeled raw/organic cacao beans). Apparently raw cacao beans provide MAO inhibitors which increases the serotonin and other neurotransmitters circulating in the brain. Cacao beans are said to help reduce appetite, however we all know that marijuana increases appetite, so I don't know the role these endogenous cannabinoids have on appetite.

Anandamide is not the only THC-like molecule used for signalling in the brain. Piomelli's group has found a new molecular key that closely resembles anandamide [Piomelli, 1997]. Naturally produced sn-2 arachidonylglycerol (2-AG) can also lock into the bliss receptor. 2-AG is present at 170 times the concentration of anandamide in some regions of the brain. Piomelli thinks that 2-AG and anandamide perform complementary functions.

The endogenous cannabinoids anandamide and 2-arachidonylglycerol may be produced under distinct physiological conditions or in distinct brain regions. Anandamide activity was found to be highest in the **hippocampus**, followed by the thalamus, cortex, and striatum, and lowest in the cerebellum, pons, and medulla.

Outside the brain, anandamide acts as a chemical messenger between the embryo and uterus during implantation of the embryo in the uterine wall. Thus it's one of the first

communications that occurs between mother and child. In animal studies the highest concentrations of anandamide were found not in the brain, but in the uterus just before embryo implantation. Anandamides play a survival role for young mammals in their instinctive suckling behavior and lack of anandamide levels can cause spontaneous abortions in mammals.

There are important functional relationships between endogenous cannabinoid and opioid systems. Levels of the endogenous opiate anandamide in the hypothalamus regulate compulsivity and appetite initiation. Research found endocannabinoids are involved in **retrograde synaptic inhibition** in the hippocampus, in long-term potentiation and memory, in the development of opiate dependence, and in the control of appetite and food intake. They also suggested the existence of as yet unidentified cannabinoid receptors in the cardiovascular and central nervous systems and in macrophage-mediated helper T cell activation.

A decrease in GABA inhibition both facilitates the induction of long-term potentiation (**LTP**), and promotes the hyperexcitability of epileptic seizure. Scientists investigated how the nervous system maintains its discriminating control on GABA's inhibitory effect, in order to promote memory by LTP and prevent seizure. They found that pyramidal cells, the ones towards which inhibition is directed, may regulate their own state of inhibition by sending a signal backwards across the synaptic junctions (retrograde synaptic inhibition) and thereby causing the inhibitory interneurons to stop releasing GABA temporarily. This signal from the pyramidal cell to the

interneuron is the endocannabinoid molecule anandamide.

The cerebellum is a brain structure vital to many functions including learning and memory. These functions are controlled by ion channels in the Purkinje cells of the cerebellar cortex. This is a specific type of nerve cell with more branches than any other kind of nerve cell, which carries information output by the cerebellum and possess a great deal of control over the refinement of motor activities. It was found that Purkinje cells release endogenous cannabinoids in response to elevated calcium, thereby inhibiting presynaptic calcium entry and suppressing transmitter release.

These endogenous cannabinoids mediate retrograde signals from postsynaptic neurons to presynaptic terminals in the CNS. Endocannabinoids can be released from postsynaptic neurons following depolarization-induced elevation of intracellular Ca^{2+} concentration. The released endocannabinoids act retrogradely onto presynaptic cannabinoid CB1 receptors and suppress inhibitory or excitatory neurotransmitter release. This type of modulation has been termed depolarization-induced suppression of inhibition (DSI) or depolarization-induced suppression of excitation (DSE).

The endocannabinoid-mediated retrograde modulation is an important and widespread mechanism for the regulation of synaptic transmission in the CNS. Endocannabinoid release and resultant retrograde suppression of transmitter release are also triggered by activation of certain glutamate receptors (mGluRs) or acetylcholine receptors (mAChRs) in the postsynaptic neurons. This pathway can work independently or cooperatively

of the depolarization-induced mechanism. It is shown that DSI is enhanced significantly when these glutamate and acetylcholine receptors are activated simultaneously, and that this enhancement is much greater than expected and cannot be attributed to mere increases in Ca^{2+} .

MORPHINE

Nerve cells communicate by releasing special 'key' molecules that are intercepted by other nerve cells downstream. When the key molecule at right locks into the receptor on the surface of a nerve cell, it opens a door in the membrane that allows chloride ions to flood into the cell. This equalizes charges inside and outside the cell and prevents the cell from firing. The keys must be removed again from the lock somehow, or the nerve cell will be permanently prevented from firing. Certain enzymes are produced that remove (by degrading and destroying) the keys after a certain amount of time, so that the nerve cell can go back to work.

Drugs that have a powerful effect on the central nervous system often mimic natural molecular keys. For example, morphine is a potent pain killer that was found to lock into an 'opiate receptor' present on nerve cells and blocks enkephalins out. The body's key removing enzymes can't pry it from the receptors. The endogenous equivalent to morphine are **enkephalins**. Although morphine is just a forgery of enkephalins, it's much more powerful (and more addictive) than the enkephalins because the key-removing enzymes can't pry it from the receptors.

Christina Grof had an experience of morphine stopping

kundalini during childbirth.

"During the birth of my first child, for which I had prepared with the Lamaze method of breathing (very much like yogic pranayama), this enormous spiritual force was released in me. Of course, I didn't understand it and was given morphine to stop it as soon as the baby was born.... Then the same thing happened when my second child was born. This all led to more and more experiences. I threw myself into yoga, although still not acknowledging it as a spiritual tool. My meeting with Swami Muktananda really blew the lid off everything. He served as a catalyst to awaken what I had been resisting, which was kundalini (the universal life force). I felt something snap inside me. A powerful force was unleashed in my body, and I began to shake uncontrollably. Electrical tremors ran from my toes and legs through my spine to the top of my head, where brilliant mosaics of white light exploded. A new, involuntary breathing rhythm overrode my practiced Lamaze pattern. I was excited and terrified. As soon as my son Nathaniel was born, I was given two shots of morphine, which returned me to normal. I felt fearful, and very embarrassed that I had lost control of myself. A more powerful version of the same thing happened two years later, when I delivered my daughter Sarah." ~

[Christina Grof](#)

PHENYLETHYLAMINE

Increase in vasopressin during the heart expansions and inner-conjunctions might be one of the factors involved in cortical shutdown during extreme kundalini events. Vasopressin (VP) is a peptide neurotransmitter in the limbic system synthesized in

the medial amygdaloid nucleus in the presence of sex steroids, transported to other limbic structures such as the hippocampus and septum and secreted there by a calcium-dependent process. Its excitatory action on the inhibitory interneurons produces near-total shutdown of electrical activity of the efferent fibers of pyramidal cells, the projection neurons of the hippocampus.

During the Inner-Conjunction/silver cord when massive orgasmic energy streams through the body (what I call the peak of the influx stage), the dominant hormone might be the amphetamine-like love chemical **Phenylethylamine (PEA)**. This neurotransmitter occurs during the infatuation state of romantic love to promote elevated mood, promotes alertness, confidence, openness to risk, essentially leading to a state of excitement. The levels of this stimulant also spike at orgasm and ovulation.

The drug **Ecstasy (MDMA)** is a phenylethylamine, and there are similarities in the symptoms of kundalini and use of Ecstasy: expanded heart, feeling of love, oneness with others, amplified senses and increased energy. Phenylethylamine along with dopamine no doubt propel us into the "super-sensorial realm" associated with the peak of awakening. When all senses are greatly heightened, one has transcendental vision, celestial music plays in one's head and the muse is practically sitting on one's shoulder. The incredible love and heart expansions that occur during the influx and transmutation are similar to the heart opening that happens on Ecstasy. Nitric oxide, oxytocin and vasopressin are probably key in the dilation of the vascular system that occurs during heart expansions.

Levels of PEA are increased by monoamine oxidase inhibitors. Moderate exercise raises PEA levels for most people. Interestingly PEA might be the agent of bliss associated with Eureka experiences, profound insight, thrill seeking and risk. As such geniuses and daredevils no doubt produce more than the average person.

Our bodies can convert the amino acid phenylalanine to tyrosine and PEA. Tyrosine is a precursor to norepinephrine and dopamine. D-phenylalanine, which does not normally occur in the body or in food, is metabolized to PEA. Although L-phenylalanine can be converted to PEA it is preferentially converted to L-tyrosine. Since D-phenylalanine is not widely available the mixture DL-phenylalanine is most often used as an anti-depressant. Because other amino acids compete with phenylalanine for entry into the brain it needs to be taken on an empty stomach. This shortens the time it takes for the brain to convert it to norepinephrine. (See Neurotransmitter Food Formula.)

Kindling Effect

Some of the conditions for the initiation of kundalini appear to be:

Hyperactivation of the thyroid and parathyroids.

Hyperactivation of estrogen and testosterone (plus metabolites of T. eg: Estradiol).

Hyperactivation of the sympathetic nervous system (adrenaline, norepinephrine).

Hyperactivation of the stress hormones (corticosteroids eg: cortisol, DHEA) Hyperactivation of opiate systems (endorphins, enkephalins, anandamide, phenylethylamine).

Repetitive or overwhelming circumstances and conditions create cumulative resonance that increases in magnitude until the entire organism is in sympathetic resonance. The barriers to unity are penetrated so to speak. The increased charge and particular frequency of neural firing opens up unique neural thresholds in crucial parts of the brain. As the contagion of kundalini builds it pulls all bodymind systems into its service.

Kundalini awakenings are likely if hyper-arousal of the nervous system is kept going for several years and conditions of perpetual irritation to the brain neurons occurs. The particular blend of hormones and neurotransmitters reduces the threshold by which kundalini passes through the body. Like a river of fire, kundalini forges its own effluent cascade through the nerve tributaries and sustains itself through the changes it induces. In recent years there has been some attempt to correlate the phenomena of kindling with kundalini.

Kindling in epilepsy was first discovered accidentally by researcher Graham Goddard in 1967, while he was studying learning in rats. He found that a sustained, periodic, low-intensity stimulation of the limbic region of mammalian brains eventually sets up a cumulative resonance which increases in

magnitude until the entire organism is in sympathetic resonance. Eventually these bursts of electrical activity induce similar patterns in nearby brain regions, and the seizure threshold progressively lowered. While normally the electrical stimulation he used was too low to cause any type of convulsing, he discovered that repeated exposure of brain areas to small electric shocks seem to make subsequent episodes of spontaneous seizure-like electrical events more likely to occur. After repeated stimulation at the same intensity, their brains had become sensitized to electricity, and even months later the rat would convulse when stimulated.

The name *kindling* was chosen because the process was likened to a log fire. While the log itself is very hard to set afire in the first place, when surrounded by smaller, pieces of wood, kindling, soon the log itself will catch fire. There is evidence that the more mood episodes a person has, the harder it is to treat each subsequent episode..." thus taking the kindling analogy one step further: that a fire which has spread is harder to put out.

The kindling sensitization hypothesis suggests that initial seizure episodes make it more likely that future seizure and depressive episodes will occur. Spontaneous kindling is more likely if there has been early damage to the brain through chemical exposure, childhood sexual or emotional abuse, or if one has inherited a sensitive nervous system. If reared in an abnormal, deprived, stressful and socially isolated environment, the limbic system neurons will atrophy and the septal nuclei, amygdala and hippocampus may develop seizure-like activity, referred to as kindling. Trauma affects our

capacity for cortical control over the limbic system to regulate bodily homeostasis. This includes unusual patterns of cortisol, norepinephrine, and dopamine metabolite excretion; the role of serotonergic and opioid systems (arousal and numbing); receptor modification by processes such as kindling; and involvement of central pathways involved in the integration of perception, memory and arousal.

Kindling can start only in the limbic brain where it progresses from the amygdala, then to the amygdala on the other side of the brain, to the hippocampus, to the occipital cortex, and finally to the frontal cortex. In fetal brain development the limbic or emotional brain predates the development of the cortex or "seat of intelligence". The brain's limbic system modulates emotions and memory organization systems, balance, gastrointestinal motility, the autonomic nervous system, and the auditory and visual integration of stimuli.

While kindling was originally thought to be a model of epilepsy, John Gaito of York University has reported that a different mechanism is apparently involved since the amino acid, *taurine*, which suppresses epileptic seizures in laboratory animals, does not prevent phenomena caused by kindling. Also, kindling apparently causes **permanent changes** in the neural circuitry.

Kundalini has elements similar to the kindling phenomena, and yet runs through a very complicated sequence of "events." The article: "*Kindling, once epilepsy model, may relate to kundalini*," Brain/ Mind Bulletin, Vol. 2, No.7, February 21, 1977; pp. 1-2.) reports on the convulsion-like phenomenon

called kundalini. At the Max Planck Institute in Germany, subjects reported "electrical sensations, tingling, inner lights, even convulsions usually followed over a period of time by a moderation of 'symptoms' and apparent alterations in the central nervous system." This article says that the kundalini phenomena typically occurs after a period of meditation in a setting that is non-threatening. This report suggests that while meditating, the individual tries to arrest all thought or cortical activity, thus allowing the evolutionary more primitive areas of the brain to assert itself. The Kindling Model is one of the current interpretations of PTSD. The scientists concluded that those who experienced the kundalini phenomenon were actually reexperiencing **primal pain** laid down before the brain has completely developed (See Toxic Mind Theory).

Periods of cycling may begin with an **environmental stressor**, but if the cycles continue or occur unchecked, the brain becomes kindled or sensitized. With repetitive use pathways inside the central nervous system are reinforced so to speak-- and future more frequent episodes of depression, hypomania, or mania will occur by themselves independent of an outside stimulus. Thus, to put it simply, brain cells that have once been involved in an seizure episode are more likely to do so again, and more cells will become sensitized over time. Goddard demonstrated that it was possible to induce kindling chemically as well through repeated small exposures to inhaled toxins; or single overwhelming exposures of chemical, visual, auditory, electrical stimulation. It has been shown that substances such as cocaine and alcohol have their own kindling effects which can contribute to bipolar kindling.

As a result of many studies involving the kindling model, many researchers now believe that kindling contributes to both rapid mood cycling and treatment-resistant bipolar disorder. This kindling model also is consistent with cases where cycling began with definite mood triggers, stressful or exciting events, and later became spontaneous. Researchers concluded that there was a need for early and aggressive treatment of bipolar disorder, to prevent the brain from becoming more and more sensitized and going into rapid cycling or manic depression.

A **seizure** is a sudden involuntary alteration in perception or behavior caused by an abnormal synchronized discharge of cortical neurons in the central nervous system. **Epilepsy**, on the other hand, refers to chronic recurrent seizures from a primary underlying brain abnormality. Seizures can be attributed to a number of causes including metabolic abnormalities, infections, nutritional deficiencies, or trauma. Emotional stress and sleep deprivation also increase the frequency of seizures, but most seizures occur due to unknown reasons. Seizures can be broadly classified into two major categories: partial, involving onset from a discrete area of the brain that may or may not secondarily generalize to the rest of the brain, and primary generalized, involving simultaneous onset from both hemispheres.

What is really interesting is that pulsed repetitions of telepathic senders have also been shown to increase the reception of telepathic messages. Thus the kindling effect apparently applies to the paranormal channel as well as to more orthodox transmission channels.

DISINHIBITION OF INHIBITION

The two primary regions of the brain that are involved in epilepsy are the cerebral neocortex and the hippocampus. In the neocortex, excitatory synapses are made primarily on the dendritic spines and shaft. The release of neurotransmitters at these sites gives rise to excitatory postsynaptic potentials. The inhibitory synapses are more prominent on the soma or proximal dendrites, and give rise to inhibitory postsynaptic potentials. Abnormal neuronal excitation is thought to occur as a result of disruption of the depolarization and repolarization mechanisms of the cell. Aberrant neuronal networks develop abnormal synchronization resulting in the propagation of an epileptic seizure.

The primary excitatory neurotransmitters in the central nervous system are the amino acids glutamate and aspartate. The primary inhibitory neurotransmitters in the central nervous system are gamma-aminobutyric acid (GABA) and glycine. Excitatory neurotransmitters usually act by opening Na^+ or Ca^{2+} channels, whereas inhibitory neurotransmitters usually open K^+ or Cl^- channels. Glial are mainly responsible for K^+ reuptake.

It seems that one of the mechanisms of kundalini may be the overstimulation of the neuro-inhibitory glycine and GABA receptors in the spine and brainstem, during the hyper-activation of the sympathetic nervous system. This disinhibition means the hyper-charge is allowed to continue like wild-fire because the "off switch" has essentially been rendered ineffective. Simply upping one's glycine intake doesn't return

neuron inhibition back to normal. Kundalini abates when the glycine receptors themselves become operational again, once the hyper-charge of kundalini up the spine reduces, perhaps when the fire runs out of fuel. Thus kundalini awakening ends when the "charge" reduces and the "glycine receptors" are once more fully receptive and able to do their neuro-inhibiting job.

Compounding this, it might be that when the free radical load goes up with the onset of kundalini, glycine is pulled from all readily available sources in order to make the antioxidant **Glutathione** (ie: glycine + glutamic acid + cysteine). The cerebrospinal fluid (CSF) would be one of those sources since it contains 100mg of glycine for 100ml of fluid. This reduction in CSF-glycine would further reduce the inhibition of nerve firing up the spine. The wild fire would thus burn until it burns itself out.

Glycine is an inhibitory neurotransmitter in the central nervous system especially in the spinal cord. The cerebrospinal fluid contains 100 mg of glycine per 100 ml. When glycine receptors are activated, chloride ions enter the neuron and the cell membrane undergoes hyperpolarization, which inhibits the neuron. In seizures the brain naturally accumulates more glycine at the seizure site in order to protect itself by inhibiting neuron firing.

It may be that during the inner-conjunction the kundalini ignition up the spine is so intense that the inhibitory neurotransmitter glycine may have failed to stop the cascade of electro-chemical reactions that constitutes the awakening. The force of the kundalini cascade may overwhelm the normal

nerve inhibition of glycine by rendering the glycine receptors useless or "disinhibited." The poison strychnine causes convulsions for this reason. B-alanine and taurine also activate glycine receptors but with lower inhibitory capacity.

In the brain, glutamine is precursor to glutamate is a "on-switch" neurotransmitter, it is also the precursor to GABA which is an "off-switch" neurotransmitter. Lower GABA correspond to increased seizures and epilepsy. Anti-seizure medications work by increasing levels of the inhibitory neurotransmitter GABA in the temporal lobes, calming neuronal activity and inhibit nerve cells from overfiring or firing erratically. Glutamic acid decarboxylase (GAD) is the rate limiting enzyme responsible for conversion of glutamate to gamma-aminobutyric acid (GABA) regulating levels of glutamate and GABA in the mammalian brain. GABA can be taken as a supplement (L-Glutamine), produces a calming effect on people who struggle with temporal lobe symptoms like temper, irritability, and anxiety.

Many people with temporal lobe problems also suffer from memory problems, which can be helped with Phosphatidyl Serine (PS), Ginkgo Biloba and Vitamin E. Brain GABA levels depend on both zinc and vitamin B6. Consequently, zinc deficiency may increase the risk of seizures by reducing brain GABA.

Glutamate concentrations in the brain are higher in some seizure patients, and these concentrations can increase to potentially neurotoxic concentrations during seizures causing cell death. One study showed that with a higher dose of B6 (10

mg/kg), the CSF glutamic acid was normalized. It was concluded that the optimal dose of B6 for epileptics should be the dose that normalizes CSF glutamate levels, not just the control of seizures.

Glutamate is the principal excitatory neurotransmitter in the brain thus it inevitably plays a role in the initiation and spread of seizure activity. The process of "kindling" limbic seizures in rodents by repeated electrical stimulation is dependent on activation of N-methyl-D- aspartate (NMDA) receptors. The function of these receptors is enhanced in the hippocampus of kindled rats and in the cerebral cortex of patients with focal epilepsy.

It is probable that the **adrenocorticotrophin** releasing hormone system in the central nervous system is mainly distributed in the limbic system, and glutamate might be one of the trigger factors to induce excessive stress response in the hypothalamus-pituitary-adrenal axis. Acute mania is accompanied by elevated glutamate/glutamine levels within the left dorsolateral prefrontal cortex. Glutamate and aspartate NMDA receptor antagonists are one potential mechanism for anticonvulsants.

Psychosis could result from AMPA receptor activation caused by overactivity of the glutamatergic system, due to reduced GABAergic inhibitory control. Expression of messenger RNA for the GABA synthesizing enzyme in the prefrontal cortex and the number of GABAergic neurons in the hippocampus are reduced in schizophrenia and bipolar disorder. GABA_A receptor drugs, which activate Cl⁻, appear more effective as

anticonvulsants than GABA_B receptor agents, which activate K⁺. Apparent the GABA_A receptor is involved in epilepsy due to its role in the synchronization or desynchronization of thalamus-cortical pathways. The oscillatory and burst-firing of these circuits is attributed to neurons in the thalamus and leads to synchronization and desynchronization of the EEG.

Dr. Stephen Lasley found that brains of rats that are genetically prone to seizures also have reduced levels of **taurine** as well as increased levels of **aspartate**. Therefore, I believe that avoidance of aspartame should be a key element in an anti-seizure diet. Also, taurine, in doses of 1-3 grams per day may be helpful.

ENERGY GENERATION

If kundalini starts and you really don't want it then cut all carbs from your diet for 2 weeks, and this should suspend the cascade of change. If stopping the consumption of carbohydrates stops or lessens the progression of kundalini metabolism, this then points to the mechanism of kundalini itself. It is therefore apparent that kundalini is fueled it seems by the burning of glucose "**glycolysis**" and less so or not at all by ketosis or the burning of fat. Glucose is taken up by glial cells and metabolized by glycolysis to lactate and pyruvate, which are then released as substrates for **oxidative phosphorylation** in the neurons. Within the brain, glycogen is primarily stored in glial cells, Glycogen stores in the brain are low compared to liver and muscle however the glycogen turnover is very rapid.

Glycolysis is the conversion of glucose to pyruvate and lactate resulting in the net production of only 2 mol of ATP. Pyruvate can enter the Krebs cycle and produce 30 mol of ATP via the mitochondrial **oxidative phosphorylation** cascade. Hence the energetic value of oxidative phosphorylation over glycolysis is obvious. In the early stages of activation the increased energy demand is met by glycolysis rather than oxidative phosphorylation. It was found with PET scans that glucose utilization in activated cortical areas was not matched by an equivalent increase in oxygen consumption, because Glycolysis does not require oxygen to function.

Glucose is the energy fuel for the brain and is almost entirely oxidized to CO₂ and H₂O. A quarter of the total body's glucose is utilized by the brain although the brain only represents 2% of the body weight. Glucose can be incorporated into lipids, proteins and glycogen, and it is also the precursor to certain neurotransmitters such as GABA, glutamate and acetylcholine. GABA and glutamate serve to regulate the excitability of virtually all neurons in the brain. GABA and glycine are the most important inhibitory neurotransmitters in the brainstem and spinal cord. The neurotransmitter glutamate is derived from glucose, and I think that glutamate is probably the primary neurotransmitter involved in the changes in the conveyance of energy through the nerves.

I propose that Nitric Oxide is produced in excess during certain hyper-kundalini events causing a hypersensitivity to glutamate NMDA receptors and this produces the most radical peak experiences and pivotal height of the awakening cycle itself. Energy metabolism may be controlled by specific

neurotransmitters such as norepinephrine (NE). Cell bodies of NE-containing neurons are localized in the brainstem from which axons project to various regions of the brain including the cerebral cortex. Hence the noradrenergic system could regulate energy homeostasis globally in the brain.

Polarity is vitally important for living cells, hence they continually work to generate and maintain regions of differing electrical properties against continual leakage of charge. In fact, the ceaseless work involved in achieving and maintaining these electrical needs consumes some 50–60% of the metabolic activity of the cell.

*"When our cells are functioning normally, a proton (H^+ , a hydrogen atom with its positive charge) gradient exists across the oxygen-using parts of our cells, which keep out calcium and sodium ions. But when these oxygen-using parts, the mitochondria, are unable to make ATP, they cannot keep up the gradient. Sodium and calcium ions rush into the cell in a fatal process of cell damage called necrosis. (269) If damage caused by these [oxidative] reactants is not reversed to normal, there will be decreases in the capacity to generate ATP, lower global biochemical activity, and reduced use of free energy. The oxidative poisoning can lead to cell damage or trigger the mechanism of cell self-destruction call apoptosis. (271) Levels of the intracellular antioxidant glutathione fall when ATP is not around. Lowered ATP thus reduces the cell's ability to make more of the ATP it needs more than ever." 270, Eric Schneider & Dorion Sagan, *Into the Cool: Energy Flow, Thermodynamics and Life*. University of Chicago, 2005*

THE COMBUSTION OF FAT

Ketogenesis is the process by which ketone bodies are produced as a result of fatty acid breakdown. Ketogenesis may or may not occur, dependent on how many carbohydrates are available. Ketone body formation occurs as an alternative energy source during times of prolonged stress e.g. starvation. The initiating event is a change in the ratio of glucagon:insulin in the blood. Insulin deficiency triggers the lipolytic process in adipose tissue with the result that free fatty acids pass into the plasma for uptake by liver and other tissues. Glucagon appears to be the primary hormone involved in the induction of fatty acid oxidation and ketogenesis in the liver. It insures that long-chain fatty acids can be transported through the inner mitochondrial membrane to the enzymes of fatty acid oxidation and ketogenesis.

Ketone bodies are produced mainly in the mitochondria of liver cells when carbohydrates are so scarce that energy must be obtained from breaking down fatty acids. Fatty acids are long chains of carbons with an acid group on one end. The body gets energy from fatty acids by breaking the carbon chain down into pieces that contain only two carbon atoms. These pieces are in the form of acetyl-CoA. When the body has *no carbohydrates* available, fat instead must be broken down into acetyl-CoA in order to get energy. CoA is not being recycled through the citric acid cycle: it is being attached to more and more acetyl groups. You need more CoA to keep breaking down fats, and the only place to get it is from all those acetyl-CoA molecules, by attaching them to each other to get the CoA to fall off. A large amount of energy is released during this

process, which can be used for muscle contraction and all of the other activities in the cell.

L-carnitine acts to increase energy by carrying fat across the cell membrane and into the mitochondria. Energy is then stored as ATP. It reduces the metabolites of fats (ketones) in the blood from incomplete fat metabolism and reduces hyperammonemia.

GLYCOSIS AND KETOGENESIS AND SEIZURES

The Ketogenic or high-fat diet was found to reduce epileptic seizures by a 50 to 70%. Dr. John M. Freeman, in *The Epilepsy Diet Treatment* recommends a stringent diet consisting of high fat, low protein, low carbohydrate foods. Generally the ketogenic diet consists of 4 parts fat to 1 part protein/carbohydrate. Notice that protein also is low, the theory being that the body can turn protein into sugars also. This extreme measure might be necessary for epileptics to reduce seizure, but it is simply no way to be generally healthy. Complications can include nutrient deficiency, kidney stones, abnormal liver function, high cholesterol, weight gain, dehydration and bone thinning. Not to mention all the extra free radicals generated from such a high fat diet.

Such extreme measures are perhaps not necessary for a kundalini awakening, however there is much to learn from the ketogenic diet about how we might modify our diet to best serve our awakening. Of paramount importance however is to prevent the spiking of blood sugar to conserve the integrity of protein structures and prevent glycation, so you can convey a deeper more focused consciousness. This is achieved by ensuring that our carbohydrate quotient consists

of low glycemic, non-starchy, high fiber to prevent blood sugar spiking. I also find that raw carbohydrates are much easier on the body and on de-fogging and lucidity than all forms of cooked carbohydrate. Reduce the blood sugar and kundalini doesn't spark up to an all-consuming flame.

During a kundalini awakening the body is in a mode of hyper-energy generation. The cells are producing more energy (via hyperactivated mitochondria)...what energy is not converted to ATP is given off as heat. This extra cellular energy in the nerves causes certain glutamate receptors (NMDA) to be hyperactive increasing the action potential and release of neurotransmitters in the synapses. Thus the sympathetic nervous system is in hyperdrive, and the off switch receptors (parasympathetic, glycine, GABA) are over stimulated hence cannot perform their normal inhibitory functions.

The heat of kundalini itself further exacerbates the excitation of the nerves by facilitating ion movement and increasing neurotransmitter release. Researchers from St Louis School of Medicine have discovered that 'cooling' the neurons responsible for focal epileptic seizures can stop the seizure from ever happening without doing any harm to the brain cells. Cold seemed to prevent the nerve cells firing probably through interfering with the movement of ions in the cells and preventing the release of neurotransmitters.

As the kundi-fired body is in a HPA axis activated state, the liver generates and releases more glycogen to fuel this fire. Cell apoptosis (cell death) occurs through excess free radicals and high glutamate

and Ca^{2+} levels and body tissues are catabolically dismantled and turned into glycogen. The hyperactivity of the limbic brain turns on the pleasure centers generating copious endogenous opiates and cannabinoids...and these increase compulsivity so that the individual is attracted to eating carbohydrates (sugar) to fuel the increased energy demand. The body is asking for more energy, and this can be achieved by drinking water (ie: hydroelectric energy). Giving in to sugar cravings while in kundalini will cause blood sugar spiking that can severely damage tissues and turn the body toward insulin resistance and down-regulate other receptors as well.

Besides the reduction of excess glutamate and Ca^{2+} release, perhaps another reason why the ketogenic diet works could be the actual physical blocking of insulin receptors with cholesterol due to the high fat content of the diet. This blocking would reduce sugar/glucose uptake by the cells and prevent the energy surge that initiates kindling of seizures. Since the ketogenic diet is so low on carbohydrates the usual blood sugar spiking that initiates excessive levels of insulin and leptin and associated down-regulation of receptors is avoided.

By eliminating the majority of cooked/high-glycemic/starchy carbohydrates from one's diet the fog of bliss can be lifted. Avoid sugars, honey, artificial sweeteners, grains, fruit and anything starchy or sweet except perhaps sativa. Green vegetables, tomatoes and avocados can be eaten but avoid "starchy" plants like rice, potatoes, corn, and "sweet" ones like carrots and beets. You will find that after less than three days of eliminating sweet and starchy foods the bliss-fog significantly clears. I experienced less magnetic activity around my

head, probably due to reduced “kindling” or firing of the nerves in the brain. Body pain did not increase, although there was a little tiredness from the rapid cutoff of carbohydrates.

By reducing carbohydrates in our diet kundalini still remains but greatly subdued. Even during peak estrogen day of the month, if not given its glycogen fuel kundalini did not rise significantly. That is, even if all the other triggers are available (thyroxin, sex hormones, DHEA, adrenaline etc...) if there is not a surplus of glucose available in the blood, then kundalini does not increase its fire. Knowing this is a radical boon for people going through kundalini awakenings, and for seizure, epilepsy, psychosis and probably bipolar depression etc.. You might find that during and after a kundalini awakening you may want or need to adopt a low carb diet indefinitely.

One of the contributing factors to my spontaneous kundalini awakening of 1989 was that I had eaten 3 pieces of very rich Xmas cake packed with coconut sugar and dried fruit. After eating this I could feel the blood course through my veins like speed. This combined with being in a car, playing bongo drums and singing, a biblical New Zealand Christmas evening under the stars, catalyzed my first 10,000 org spontaneous rush up the spine...after which I felt like Jesus Christ.

One possibility why the ketogenic diet controls epilepsy is that the diet alters brain handling of glutamate, the major excitatory neurotransmitter and a probable factor in evoking and perpetuating a convulsion. Researchers found that brain metabolism of ketone bodies can furnish as much as 30% of glutamate and glutamine

carbon. Ketone body metabolism also provides acetyl-CoA to the citrate synthetase reaction, in the process consuming oxaloacetate and thereby diminishing the transamination of glutamate to aspartate. Relatively more glutamate then is available to the glutamate decarboxylase reaction, which increases brain GABA. Ketosis also increases brain GABA by increasing brain metabolism of acetate, which glia convert to glutamine. GABA-ergic neurons readily take up the acetate and use it as a precursor to GABA.

Ketosis also may be associated with altered amino acid transport at the blood-brain barrier. Specifically, ketosis may favor the release of glutamine from the brain, through transporters at the blood-brain barrier exchanging it for blood leucine. Since brain glutamine is formed in astrocytes (glial) from glutamate, the overall effect will be to favor the release of glutamate from the nervous system.

Astrocytes are glial cells which make up 80% of the mass of the brain and communicate with neurons via changes in Ca^{2+} . Intracellular Ca^{2+} mediates changes in membrane proteins to initiate transmitter release and ion channel opening; it also activates enzymes to allow neurons to cover or uncover receptor sites that alter neuronal sensitivity. Several studies indicate that following the rise of calcium, astrocytes release the amino acid glutamate, which helps them talk to the neurons. The communication flows both ways, with neurons also being able to talk to the astrocytes through their own glutamate release. Signaling molecules, such as ATP and prostaglandins, also appear to promote the cell-to-cell communication.

Communication between astrocytes and neurons may aid memory. Adding glutamate to cell samples of astrocytes prompts them to produce special molecules that nourish neurons, known as neurotrophins, that are key to memory function. In one recent study, injections of trophic factors into the brains of rats boosted the biological mechanisms known to relate to memory and improved the rats' performance in a memory task. This all may mean that glutamate release from neurons triggers astrocytes to produce neurotrophic factors, which then help neurons process information for memory.

High blood sugar (hyperglycemia) is implicated in increasing the likelihood of seizure. Ordinarily, insulin prods the liver to decrease its production of glucose. It also helps the body's fat and muscle tissues use glucose in the blood for energy. Insulin has many roles including stimulating and balancing immune function, stimulating revascularization, stimulating neuron and oligodendrocyte growth, reducing cell death, stimulating myelination and re-myelination of neurons, stimulating differentiation and proliferation of neural stem cells, increasing permeability and transport of nutrients and wastes across cell membranes and the blood-brain barrier.

(Oligodendrocytes are the structures responsible for myelination. The presence of NMDA receptors in oligodendrocyte processes presents a mechanism by which demyelination might occur under excessive glutamate/Ca²⁺ conditions.)

LACK OF GLUTAMATE CLEARING

Patients suffering from temporal lobe epilepsy (TLE), experienced increased extracellular glutamate levels in the

hippocampus both during and after clinical seizures. These increased glutamate levels could be the result of malfunctioning and/or downregulation of glutamate transporters, indicating impaired clearance of glutamate released by neurons. Glutamate is predominantly cleared by glial cells through the excitatory amino acid transporter 2 (EAAT2) and its subsequent conversion to glutamine by the glial enzyme glutamine synthetase.

Cerebrospinal Fluid, limbic, temporal and striatum glutamine concentrations are implicated in schizophrenia, bipolar disorder and major depression. The answer, it appears, is by cleaning up their synapses. For **LTP** to occur, a presynaptic neuron must release the glutamate in a continuous manner. Normally, glutamate is removed from the synaptic cleft by housekeeping proteins, known as glutamate transporters, in the postsynaptic neuron. Suspecting that this glutamate-removal system might play a role in maintaining input specificity,

An increase in the extracellular concentration of glutamate and aspartate before or during seizure onset, suggesting that either enhanced amino acid release or impaired uptake contributes to seizure initiation. Glutamate antagonists are potent anticonvulsants and provide significant protection against brain damage following stroke or traumatic injury, but can have cognitive side effects. Anticonvulsant compounds which act on sodium channels and reduce ischemia-induced glutamate release, are cerebroprotective but are free from the cognitive side effects of NMDA-receptor antagonists.

In developing a supplemental protocol for kundalini we would

do well to consider Ward Deans article *Seizures: A Nutritional Approach* at www.vrp.com/

For seizure Ward Dean M.D. suggests:

Magnesium: 500-1,000 mg/day, Selenium: 100-200 mcg/day, Taurine: 1-3 gm/day, L-carnitine: 1-3 gm/day, GABA 500-1,000 mg/day, Vitamin E: 400-800 IU/day, DMG (dimethylglycine): 50-200 mg/day, Pregnenolone: 100-500 mg/day, Kava Kava: 200-800 mg/day; Vitamin B complex, w/special emphasis on: Vitamin B1: 50-100 mg/day, Vitamin B6: 200-500 mg/day, Folic Acid: 400-1,000 mcg/day

Shock of Awakening

Spiritual awakening is damned inconvenient at the best of times.

The awakening of kundalini appears to be a major autonomic shock to the whole organism. The shock, panic, anxiety and depression can occur regardless of the conditions in one's life or the personal contents of one's mind, and despite whatever story or explanation we give ourselves as to what is happening to us. This is probably due to the penetration of the veil of conditioning, and also the hyper-activation of the adrenal glands, with massive changes in the nervous system.

"The sudden forced arousal to activity of this hitherto inactive center creates a condition analogous to that created by a serious accident."

P.21 [Living With Kundalini](#), Gopi Krishna

The autonomic shock could also be an expression of the unconsciousness and organic blockages that are becoming apparent with the amplification of energy and consciousness. That is the ego becomes aware that it was only masquerading and was "not our Self" by the Self's sudden appearance and the collapse of our known worldview. This "disillusionment" can create an intractable ineffable shock and depression in the beginning stages of the awakening. The ego-mind can't really make sense of this shock for it happens well below conscious awareness and is unrelated to the daily world, but is simply a phase of the physiology of the metamorphic process.

Philip St. Romain relates his ideas on the changes in the autonomic nervous system:

- *The sympathetic nerves constrict blood vessels in the skin and most visera. This leads to an increase in heart rate and faster breathing, both of which are observed during meditation. It may also explain the heat experienced on the skin--particularly the shoulders. One is reminded here of yogis drying cold, wet sheets with their shoulders.*
- *The sympathetic nerves dilate blood vessels in the skeletal muscles. This allows more blood to be taken to the sketetal muscles. Presumably, this once served as an adaptive role in running from danger. During kundalini, it serves to carry more nutrients to muscle tissues being healed from emotional pain.*

- *Sympathetic nerves stimulate glycogenolysis, which increases blood sugar. This serves to keep the body energized in the state of heightened nervous activity. The Hindu's concern for proper diet may also be related to this effect.*
- *Sympathetic nerves stimulate adrenalin secretion, which elevates heart rate and brings the body into a higher state of preparedness. This is also an undeniable effect of meditation, which, paradoxically, results in an eventual lowering the threshold of excitability. Consequently, meditators do not become stressed easily." P.87*

After the first major opening of the influx (Sex with Eros) I experienced a corresponding major contraction. I call this particular contraction the **White Death** because blood leaves the skin surface and the skin turns white; one doesn't have much motor control and feels dispossessed during this event. That is one goes into shock. During the "White Death" shock and the ongoing general meta-activation of the sympathetic nervous, the adrenals are highly active and blood is removed away from the body surface and sent to the skeletal muscles. Perhaps this is tied into the changes in the production of immune cells in the **bone marrow** during metamorphosis.

At this time the nervous system would be flooding the body with a certain mix of neuropeptides that would signal the cells to change from their normal function into the transmutation mode. The fact that neuropeptides are the molecules of

emotion, and that this alchemy occurs of its own accord and there is nothing much we can do about it, helps explain why the early stages of a sudden awakening can be so emotionally overwhelming.

During the initial stages of the awakening there is a radical activation of the adrenals and sympathetic nervous system, which essentially is the fight-flight response. So great is this sympathetic activation during the influx stage that the digestive system purges. Digestion is activated by parasympathic or the rest-relaxation side of the nervous system and with the crisis instigated by the radical sympathetic activation the parasympathetic is equally activating leading to the body rapidly purging the intestinal tract so that more energy can be available for strategic thinking for fight-flight. The purging is essential first, so that when the shock phase hits the digestive system is relatively empty, for the intestines and the visceral organs go into an intense contraction. Perhaps this contraction is necessary in order to reset the function of the organs into the transmutation mode. Note that while the body is purging it is best to avoid eating food. Instead a little fruit or fresh squeezed vegetable juice should be fine, but only if the desire for it is there.

The first awakening appears to be more of a "shock" to the system than subsequent awakenings, even if subsequent awakenings are more "intense." In my first awakening when I was 28 years I lost 30 lbs in nervous energy and my period ceased for 6 months.

During the White Death of the 2000 awakening the autonomic

shock my body went into of its own accord was perhaps equivalent to seeing a nuclear blast occur out of the blue. Many people would assume in experiencing this kind of autonomic shock that they are going through a "Dark Night of the Soul" experience. For me the white death shock proper occurred after the initial peak opening of the influx of spirit, the shock being in direct proportion to the extent of the opening.

The White Death is associated with the ignition phase while the die-offs happen after a certain time interval of transmutation has occurred. The die-offs are quite different in sensation and physiology to the White Death experience. The White Death is a state of **septic shock** created by the NO, free radicals other metabolites produced during the hyperactivation of the Influx. While the die-off is an elaborate catabolic process choreographed by hormones etc...and involving the immune cells cannibalizing body cells that cannot withstand the high oxidation conditions. This later process is known in the traditions as The Death and Resurrection.

To deal with the septic shock do gentle stretching and pushing exercises and plenty of breathing. Get some form of bodywork or the comfort of another human body to hug. Eat green vegetables and green drinks and avoid heavy foods for a body in shock is not prepared for digestion. Supplement at least with B Vitamins and antioxidants and drink plenty of water. Take baths in Epsom salts in order to provide the magnesium that will help turn on the relaxing parasympathetic nervous system and loosen the contraction of the intestines allowing proper peristalsis.

(For more on this subject see *Septic Shock of the White Death* in the Nitric Oxide section.)

It is absolutely amazing that the most primitive functions in the body turn themselves into the service of the highest biological faculty of transmutation.



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