

Review Article

Pineal Gland, DMT & Altered State of Consciousness

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ABSTRACT

Endogenous and synthetic DMT and their relation to pineal function have been the subject matter of numerous popular and scientific articles, crossing many disciplines. Correlations for visionary and psi-conducive states have been widely suggested. Numerous spiritual technologies have been retrieved from traditional cultures and new technologies based in frequencies and resonance have been concocted and sold to the public. Yet, in 2010, even the leading researcher Rick Strassman says that “we don't know if DMT does appear in the pineal...[or, if] endogenous DMT activity increases during particular non-drug altered states, such as dreams and near-death experiences.” If it were, it would help explain the psychedelic characteristics of those altered states.”

This strongly suggests that new assays for low levels of endogenous DMT, 5-MeO-DMT, bufotenine, and metabolites in different tissues would be very useful. Such experiments were conducted in 2012 with positive results. Nevertheless, a review of the history and speculation on the psychoactive compounds remains of great interest to both researchers and the general public. What do these things mean? The jury remains out, and we are wise to remember that theories remain just that. Baselines need to be established for normal waking consciousness, and comparisons made for a variety of states of consciousness. But perhaps the greatest result of such research is new understanding of what it means to be fully human.

Key Words: pineal gland, DMT, dimethyltryptamine, N,N,-dimethyltryptamine, 5-methoxytryptamine, altered state of consciousness, 5-MeO DMT, “telepathine”, Pinoline, 6-methoxytetrahydro-beta carboline, 6-MeO-THBC, hallucination, darkroom retreats, soma pinoline, shamanic journeys.

I am created by Divine Light. I am sustained by Divine Light. I am protected by Divine Light. I am surrounded by Divine Light. I am ever growing into Divine Light. Swami S. Radha in *Realities of the Dreaming Mind* (1990).

Introduction

What do imaginative children, passionate lovers, dreamers, psychonauts, telepaths, bliss-bunnies, UFO abductees, shamans and neo-shamans, birthing mothers and babies, near-death experiencers, and schizophrenics have in common? The same thing Tibetan, Taoist and Kabbalistic masters, meditators, mystics and religious prophets share.

Popular theories contend that their brains may be flooded with natural psychedelic pineal

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secretions that tenaciously cling to their synaptic junctions, electrifying their whole being with multisensory virtual stimuli, experiential beliefs and delusions about the nature of reality.

Can the resonant buzzing of our own bioelectronic Third Eyes awaken latent metaprogram circuits, leaving us virtually blinded by compelling mind-altering hallucinations? In extraordinary circumstances, chemical brainstorms of scintillating multidimensional visionary Light are generated in our own craniums producing demons, divinities, aliens, oceanic ecstasies, death/rebirth, and time distortion. According to some, this hyperdelic retinal circus is your brain on the natural high, DMT.

Whether or not DMT can be proven as the source, there is a long history of unusual phenomenology contained in the world's great literature and in traditional lore. This spiritual supercharge, revealed in all wisdom writings, has been sought by cultures from Egypt and Asia to the Americas, from Druids to Tibetan lamas, and now in modern science.

Psychedelic alchemist, Sasha Shulgin claims, "DMT is everywhere," in nature. Seekers have ceremonially emptied or exhausted their mindbodies, using plant or animal products, spiritual technologies, sensory deprivation, social isolation, fasting and ordeals, rhythmic chanting, drumming, electronic resonance, even sex, to hasten and drive the neurological illumination. (Miller, 2006)

DMT was 'discovered' by Richard Manske (by synthesis) in a lab in 1936, and later found in South American shamanic plants in the mid-1940's. But, its psychoactive properties were not recognized until 1956 by the Hungarian chemist and psychiatrist Stephen Szára. With his colleagues, he characterized the biochemistry of the first three psychedelic cogeners of tryptamine: dimethyl-, diethyl-, and dipropyl-tryptamine (DMT, DET, and DPT), describing their pharmacological dynamics and effects.

Mathematician Ralph Abraham (2006) reports scientific inspiration from synthetic DMT:

"At one time, around 1969, we used large doses of DMT, and this period was crucially important to the whole evolution of my mathematical understanding of consciousness, based on geometry, topology, nonlinear dynamics and the theory of vibrating waves. For in these experiments, although lasting only a few minutes, the reciprocal processes of vibrations producing forms and forms producing vibrations were clearly perceived in abstract visual fields."

Professor Steven Barker has taken DMT research into the philosophical level, as well, considering questions of spirituality and the nature of belief in God. He focuses not only on the pharmacology and hallucinations, but reports of spiritual effects and religious experience. Such preparations give the impression of "being in touch with the universe". Drugs such as ayahuasca have inspired a robust tourist trade and an explosion of shamanic experts of varying credibility.

Barker reports, "[These compounds] cause euphoria, tunnels of light, they see fantastic beings — deities, relatives — you can't explain it. Those phenomena ... we know these compounds can do those things." He admits such experiences can be kindled without ingesting drugs. He calls such spontaneous phenomena the biological and molecular basis for religious faith. This is how "God"

emerges from our bodies. Speculations have given way to the emerging science of transcendental experiences -- neurotheology, the anatomy of spiritual life.

This Is Your Brain on Youth

We are hardwired to seek pleasure, to seek ecstasy. As children we expressed our authentic, core selves – that which can neither be taught nor learned. But the whole “self-help” and “new age” movements are based on trying to get back that golden state of innocence, childlike wonder and awe with spiritual connection.

When religion suggests we “become as little children” again, who could imagine this implies a shamanic return to the womb and the natural psychedelic state of an uncalcified pineal gland? In early childhood, we are perpetually immersed in cascades of trance-inducing theta rhythms of the brain, with the feel-good chemical brew it creates for metaprogramming.

Until roughly age 8, we can't really distinguish between fantasy and reality, due to our own natural hallucinogen, DMT, (dimethyltryptamine). DMT molecules are similar to serotonin and target the same receptors. Meditation has been suggested as a means of preserving youthful appearance and mental flexibility. Dr. Rick Strassman and others claim this spiritual technology encourages production and release of natural DMT (Soma Pinoline) in the mindbody throughout the lifespan.

DMT is implicated in the wild imaginings of our nightly dreams, near-death phenomena (NDEs), alien abduction experiences, and dream yoga. It is also a plausible source of visionary phenomena in therapy, such as unusual psychophysical states attained in waking dreams, shamanic or psychotherapeutic journeys. Synthetic and botanical DMT crosses the blood-brain barrier and bonds to the same synaptic sites as serotonin.

“Each night in dreams we experience an essentially psychedelic state. The principal difference between dreams and hallucinations is the way the stages of wakefulness are organized, with the suppression of REM sleep and the intrusion of PGO waves in the arousal (waking) stage and in NREM (or slow) sleep.

“The stages include: waking (arousal) stage, stage of PGO waves, hallucination stage, sleep stage and hallucinatory manifestations. The waking dream eliminates “residues” stirred up by the PGO wave pattern in the absence of REM sleep. These visions resemble those at the approach of death, or what are called near death experiences (NDEs). In another context, they are perceived as visions. They include the characteristics of two phases of NDEs (Sabom, 1982):

Autoscopic phase includes: 1) subjective feeling of being dead; 2) peace and well-being; 3) disembodiment; 4) visions of material objects and events.

The Transcendental phase includes 5) tunnel or dark zone; 6) evaluation of one's past life; 7) light; 8) access to a transcendental world, entering in light; 9) encounter with other beings; 10) return to life.

The Path of Light: Primordial In-Sight

The pineal sits, well protected in the deep recesses of the brain, bathed in cerebrospinal fluid by the ventricles, the fluid-filled cavities of the brain that feed it and remove waste. The ventricles also function as resonant capacitors, sensitive to certain frequencies. There are many scientific examples of psychedelic body fluids and metabolites (Collected Abstracts).

The pineal gland emits its secretions to the strategically surrounding emotional, visual and auditory brain centers. It helps regulate body temperature and skin coloration. It secretes the sleep hormone melatonin, which is also implicated in DNA repair (Santoro) and epigenetic regulation (Korkmaz). Epigenetic, inherited genetic modifications are known to be involved in disease.

Generally, after the more imaginative period of childhood, the pineal calcifies and diminishes at the onset of puberty's sex hormones, around age 12. The pineal is the only unpaired gland in the brain. Curiously, this solitary gland is light sensitive and actually has a lens, cornea, and retina. Is there a retinal circus of biophotons deep in the brain, which only the Third Eye sees or even creates: the Light of Wisdom?

This "Third Eye," in the center of the brain, is implicated in the production of endogenous or natural DMT, dubbed the Spirit Molecule in popular literature. The pineal synthesizes natural hallucinogens in response to certain psychophysical states, and raises serotonin levels in the brain. There is a functional decline in the gland with advancing age.

This master gland is responsible for the internal perception of Light, the raising of Kundalini the serpent power, and for awakening inner sight or in-sight. The key to a successful meditation is the withdrawal of the sensory currents to the eye focus or the third eye. Once there, the gaze focuses on the middle of whatever appears without any distractions or intrusive thoughts, ideally immersed in the unconditioned field.

The groundbreaking work of Dr. Rick Strassman (2001) focuses on the role natural body chemistry plays in creating spiritual life. He calls DMT the Spirit Molecule; an endogenous hallucinogen, which he boldly asserts, is an active agent in a variety of altered states including mystical experience. To explore his theory, Strassman conducted extensive testing, injecting volunteers with the powerful psychedelic, synthetic DMT (N,N-dimethyltryptamine; N,N-DMT).

DMT is so powerful it is physically immobilizing, and produces a flood of unexpected and overwhelming visual and emotional imagery. Taking it is like an instantaneous LSD peak. DMT crosses the usually impenetrable blood-brain-barrier, suggesting its fundamental role in consciousness. But, concluding his 5-year studies early, Strassman admitted despite their growth potential, there were no viable therapeutic or neurological applications. He does *NOT* recommend recreational use.

DMT production is stimulated, in the extraordinary conditions of birth, sexual ecstasy, childbirth, extreme physical stress, near-death, and death, as well as meditation. Pineal DMT also plays a

significant role in dream consciousness. This chemical messenger links body and spirit. Pineal activation awakens normally latent neural pathways.

"All spiritual disciplines describe quite psychedelic accounts of the transformative experiences, whose attainment motivate their practice. Blinding white light, encounters with demonic and angelic entities, ecstatic emotions, timelessness, heavenly sounds, feelings of having died and being reborn, contacting a powerful and loving presence underlying all of reality--these experiences cut across all denominations. They also are characteristic of a fully psychedelic DMT experience. How might meditation evoke the pineal DMT experience?"

"Meditative techniques using sound, sight, or the mind may generate particular wave patterns whose fields induce resonance in the brain. Millennia of human trial and error have determined that certain "sacred" words, visual images, and mental exercises exert uniquely desired effects. Such effects may occur because of the specific fields they generate within the brain. These fields cause multiple systems to vibrate and pulse at certain frequencies. We can feel our minds and bodies resonate with these spiritual exercises. Of course, the pineal gland also is buzzing at these same frequencies. . .The pineal begins to "vibrate" at frequencies that weaken its multiple barriers to DMT formation: the pineal cellular shield, enzyme levels, and quantities of anti-DMT. The end result is a psychedelic surge of the pineal spirit molecule, resulting in the subjective states of mystical consciousness." (Strassman, 2001).

Natural hallucinogens may belong to the tryptamine or beta-carboline family of compounds. One compound (6-methoxy-1,2,3,4-tetra-hydro-beta-carboline) has been implicated in rapid eye movement sleep (REM). It is concentrated in the retinae of mammals, which may be related to its visual effects. There are several ways in which either psychoactive tryptamines and/or beta-carbolines may be produced within the central nervous system and pineal from precursors and enzymes that are known to exist in human beings. In addition, nerve fibers leave the pineal and make synaptic connections with other brain sites through traditional nerve-to-nerve connections, not just through endocrine secretions.

Third Eye Blind

Serotonin or tryptamine levels are higher in the pineal than any other organ in the brain. 5-methoxy-tryptamine is a precursor with hallucinogenic properties, which has a high affinity for the serotonin type-3 receptor. Gucchait (1976) has demonstrated that the human pineal contains an enzyme capable of synthesizing both DMT and bufotenine-like chemistry. These compounds are prime candidates for endogenous "schizotoxins," and their production may be related to stress and/or trauma, that correlate with schizophrenia.

Strassman notes that both the embryological rudiments of the pineal gland and the differentiated gonads of both male and female appear at 49 days. Melatonin is a timekeeper for gonadal maturation, so the pineal is implicated again. He suggests this rein-effect may be the root of the tension between sexual and spiritual energies, yang and yin. The pineal gland is a source of both psychedelic compounds and the regulates the gonads, sources of spiritual and generative immortality.

Stress-related hormones cue the pineal activation to activate normally latent synthetic pathways, creating tryptamine and/or beta-carboline hallucinogens. When we face stress or potential death, or in meditative reveries, we “tune back” into the most well developed motif of such experiences--the birth experience. Perinatal themes and memories re-emerge (Grof).

Those with Cesarean deliveries report greater difficulty in attaining transcendent states of breakthrough and release during drug-induced states. Maybe less fetal (or maternal) hallucinogens were released at the time of birth. They may not, according to Strassman, have a strong enough “*template of experience*” to fall back on, to let go without fear of total annihilation, because lesser amounts of pineal hallucinogens were produced during their births.

Through meditation, the pineal may be modulated to elicit a finely tuned standing wave through resonance effects. It creates the induction of a dynamic, yet unmoving, quality of experience. Such harmonization resynchronizes both hemispheres of the brain. It recalibrates the whole organism.

Dysynchrony is associated with a variety of disorders. Such a standing wave in consciousness can induce resonance in the pineal using electric, magnetic or sound energy, and may result in a chain of synergetic activity resulting in the production and release of hallucinogenic compounds. Thus, the pineal can be likened to an attractor, or “lightning rod” of consciousness. It generates an illuminative laser beam that pervades the energy body.

A Walk on the Wild Side

McGillion (2002) reports that ancient cosmobiologists noticed effects of the planets were mediated by the pineal gland. Physician-astrologers in Greece and Europe assumed a correlation between events in the heavens and those on earth that was relevant to both health and disease.

The sun, moon, and planets studied by the early health practitioners can, and do, affect us. A simple example is being born in the day or night can make us a “morning person” or “night owl,” by setting the circadian body-clock of pineal sensitivity and melatonin production.

Humans are among the organisms in which light sets off chain reactions of enzymatic events in the pineal gland that regulate circadian rhythms. It modulates photoreceptive circadian oscillators, sets the pacemaker, and governs longer cycles. Seasonality and geomagnetism at birth can affect long term development. In this way, it influences our relationship with people, animals and the earth. It keeps us in synch with life.

Physicist Cliff Pickover argues that, “DMT in the pineal glands of Biblical prophets gave God to humanity and let ordinary humans perceive parallel universes.” “Our brain is a filter, and the use of DMT is like slipping on infrared goggles, allowing us to perceive a valid reality that is inches away and all around us.”

He suggests, perhaps our ancestors produced more DMT, leading to extraordinary spiritual visions. "Maybe this is why the ancients seemed so in touch with God and with miracles and visions. Maybe Moses, Mohammad, and Jesus had a greater rate of pineal DMT production than most." Pickover blames artificial light for a reduction in our DMT production rate. Or perhaps more likely, as most ancient cultures, they simply supercharged themselves with shamanic herbs.

Some claim the "burning bush" was *Cannabis sativa*, Assyrian Rue (*Pegunam harmala*; Zoroaster's Hoama, Asena) or the North African Acacia tree, and that Moses either smoked the leaves or got high downwind in the DMT-containing smoke. Graves, (1948, 264) claimed the Acacia *Sant*, a host tree of the mistletoe-like *loranthus*, was the 'burning bush' and source of manna.

If this oracular tree of Canaan contained tryptamines, as many species do, Moses could have had access to DMT illumination. It is still a practice to burn botanicals inside a tent to imbibe their smoke. Assyrian rue was the most sacred plant of Mohammad, who took the *Esphand* (Arabic/Persian name for the plant) before receiving the Koran from God. This holy *Esphand* was associated with the appearance of angels and casts out evil spirits, and was used to cure fever and malaria and provides the rich red dye of Persian carpets.

Rue was central to the Petra mystery rites and schools of alchemy. Their sacrament was a beverage of illumination and restoration, mixed with gold and other alchemical products. It was passed down from Zoroaster, who was also known as Chem the original Alchemist and CHEMist. Chem is an ancient name for Egypt. The grandson of Zoroaster, Nimrod or King En.Meru.dug, founded the Egyptian 2nd Dynasty. This plant of life became central in the Mysteries and healing schools of ancient Egypt, where Moses could easily have learned its powers. (Bosman)

The original Essenes, named after the plant, were headquartered in Heliopolis. *Asena*, the botanical Bush of Life, is an acronym, ASNA, of Aset (Isis) Sutekh (Set) Nebtet (Nephtys) and Auser (Osiris). It embodied the female form of the One God ATON, who correlates with the Greek goddess of wisdom, Athena.

Shamanic Bedouins still make the Egyptian eucharistic Bread of Light using the Asena/Hoama bush, the North African Acacia tree, and ground meteorite. They still shape it the form of the Eye of Ra, a circle with a central hole. The tradition was passed down to Christian Gnostics in Abydos, Egypt where the bush eventually was used symbolically to sprinkle holy water. Leonardo da Vinci and Michaelangelo reportedly used it for visionary inspiration.

In modern times, Pickover has suggested spontaneous DMT experiences as a possible source of Whitley Streiber's *Communion* aliens: "...we know that DMT can often produce visions of cartoon-like aliens." Others (Meyer, 1993) report those using DMT often claim communication with stick-like, insect-like or elf-like beings and discarnate entities. Psychonaut, Terence McKenna used synthetic DMT (N,Ndimethyltryptamine) to intentionally contact "machine elves" and explore parallel worlds: "What is driving religious feeling today is a wish for contact with this other universe."

Arguing for their radical “otherness,” McKenna emphasized that the hyperspace aliens seen while using DMT present themselves "with information that is not drawn from the personal history of the individual." But smoking this synthetic DMT for 'hyperspace experience' rarely yields Clear Light experiences.

The Harma alkaloid "Harmine" is also known as Telepathine and Banisterine. It is a naturally occurring beta-carboline that is structurally related to harmaline. They stimulate the CNS by inhibiting the metabolism of serotonin and other monoamines. Telepathine, is an MAO inhibitor, which parallels the function of Pinoline (a natural MAO Inhibitor) naturally produced by the Pineal Gland. The combination of the Pineal secreted DMT (Dimethyltryptamine) and the MAO Inhibitor, Pinoline (Methoxytetrahydrobetacarboline, MeOTHBC) may be responsible for naturally occurring psychic experiences.

Harmine and harmaline are found in Syrian Rue (3-7% harma alkaloid), and ayahuasca brews made with DMT sources, bark and leaves of “*Psychotriavidis*” or *Banisteriopsis caapi* vine. Ayahuasca is the South American sacrament of the Church of Santo Daime and Uniao de Vegetal (UDV). In this setting, the churches condition the “spiritual” expectations, experiences, ethics and type of information “received” in the altered state. The visionary state is considered to be the essence of the shamanic complex.

Shamanic vision differs from hallucination in volition, form and content of thoughts, clarity of heightened awareness, perception and contextualization. Practitioners have claimed it is for “analysis”. There is no primary delusional experience. The distinction between self and non-self is blurred; the notion of causality is affected. Its chemistry probably works as follows:

The primary function of harmala alkaloids in ayahuasca is to allow for the oral activity of DMT by inhibition of MAO-A, and further permits accumulation of 5-HT and other neurotransmitters. On their own harmala alkaloids have only weak psychoactive effects (Callaway, 1994) but Kim et al (1997) found that the harmala alkaloids, which occur in ayahuasca, were the most effective inhibitors of purified MAO-A. (Callaway, 1994)

The psychedelic effects of ayahuasca probably manifest primarily through the serotonergic effects of DMT on the CNS and through increased levels of unmetabolised biogenic amines. Pinoline potentiates the activity of methylated tryptamines and this is the probable mechanism behind ayahuasca (Callaway, 1994) Investigation of long-term users of ayahuasca showed a statistically significant difference between control group and users with a higher binding density in blood platelets of 5-HT uptake sites in the ayahuasca drinkers. This indicates a modulatory role for pinoline (the endogenous equivalent of ayahuasca) in the CNS. An upregulation of the serotonergic system is exactly what current antidepressant medications attempt to do, i.e. increasing synaptic 5-HT by preventing its reuptake. (Callaway, 1994)

Phalaris grass expert, “Johnny Appleseed” brings the finesse of a professional Transpersonal Psychologist to his experiential shamanic teaching. Phalaris arundinacea and Phalaris aquatica, as well as Phalaris brachystachys, contain the psychoactive alkaloids N,N-DMT, 5-MeO-DMT, and 5-OH-DMT. He contends 5-MeO DMT awakens psychic centers by amplifying our telepathic ability to affect or be receptive to others’ brainwaves through modulating chemistry,

electromagnetic entrainment and standing feedback loops. Plants are mixed in brews with MAO Inhibitor containing plants (Banasteriopsis Caapi, Syrian Rue etc.), to produce entheogenic brews that mimic the DMT-Pinoline combination naturally produced by the pineal gland in the brain.

“For the last ten years I have been doing healing and exploratory sessions with individuals and small groups. We have occasionally experienced the phenomena of telepathy, ESP, and interactions on an energetic level that produce healing in a number of modalities. I work only with a strain of Phalaris grass, an entheogen specifically bred to contain 5-MeO DMT. I use this in an oral preparation potentiated by MAOI from Syrian Rue. This is not a common mix, as most people smoke it for a blast, which is not conducive to this work. I feel all of the other materials mentioned, LSD, mushrooms, and DMT-based brews distort consciousness to some degree. Oral-based 5-MeO DMT from plant sources is something completely different, however. Traces of other alkaloids from the plant source produce a more enhanced experience than the pure chemical. A clear yet enhanced state is accessible easily and reliably with no delusional ideation, or visual distortions.

It is simply like being fully awake. This is probably because we were born with, and until puberty had, a pineal gland that made 5-MeO DMT in quite substantial amounts, unlike the reports of only very trace amounts of endogenous DMT. Thus, we have the receptors and metabolic pathways to deal with this material in a non-distorting way.” (Appleseed, private correspondence, 2001).

The pineal gland makes a neurohormone called melatonin, which is one of the key regulators of the circadian and seasonal biological rhythms. It also makes a mono-amine oxidase (MAO) inhibitor called pinoline (Methoxytetrahydrobetacarboline (MeOTHBC)) which acts on the GABA receptors and whose chemical structure is virtually identical with the harmala alkaloids. Serotonin (5 Hydroxytryptamine (5HT)) has frequently been implicated in certain aspects of psychoses.

Pinoline is a neuromodulator, which prevents, amongst other effects, the breakdown of serotonin. This results in an accumulation of physiologically active amines including dimethyltryptamine (DMT) within the neuronal synapses, which may lead to hallucinations, depression or mania depending on the amines being affected (Strassman, 1990).

Ananda M. Bosman emphasizes the crucial role of endogenous DMT and sacramental DMT from Syrian Rue and other potentiating botanicals. The ancients called it *Hoama* in Persian (*Avesta Veda*), *Soma* in Sanskrit (*Rg Veda*), the Egyptian *Essene*, the Sumerian Tree of Life, Mohammed's *Esphand*, the burning bush *Asena* of Moses, the Gnostic *Besa*, the Etruscan *Phallaris arundanacia*, and the *Rue* of alchemy.

Syrian Rue was revered because Melatonin's active metabolite Pinoline is oneirogenic and antidepressant, increasing Serotonin turnover. Lack of Pinoline disturbs our circadian rhythms and creates depression. Pinoline has been conclusively demonstrated to have no function in schizophrenia, since test subjects healthy and otherwise, had the same levels of Pinoline. (Bosman)

The pineal is a superconducting resonator. Ananda claims it potentiates DNA as a multidimensional transducer of holographic projection, through hadron toroids, and is implicated in staying youthful. 5meoDMT and DMT act on the T-RNA messengers, which carry out the protein synthesis for the DNA, or the rebuilding of our body image and organs.

Melatonin is exclusively made in the pineal gland, comprised of the same Tryptophane base materials as Pinoline. Melatonin induces mitosis. It does this, by sending a small electrical signal up the double helix of the DNA, which instigates an 8 Hz proton signal that enables the hydrogen bonds to the stair steps, to zip open, and the DNA can replicate. The human Pineal gland not only produces the neuro-hormone melatonin, one of the body's most potent antioxidants, but the revolutionary Pinoline, 6-methoxy-tetra-hydro-beta carboline, or 6-MeO-THBC.

Pinoline is superior to Melatonin in aiding DNA replication. Pinoline can make superconductive elements within the body. It encourages cell division by resonating with the very pulse of life - 8 cycles per second - the pulse DNA uses to replicate and the primary Schumann Resonance. Andrea Puharich measured this 8 Hz resonance in healers in the late 1970s.

Ananda implicates DMT in the hyperdimensional geometry or architecture operating in DNA through hadronic mechanics, a model of the 8 Hz, or universal phase-conjugational force, that is also the most coherent Nuclear Magnetic Resonance and the DNA replication frequency. He relates this to the sacred geometry of the Merkabah, Flower of Life, Sri Yantra, Diamond Body, and Vector Equilibrium Matrix.

The living DNA in our bodies operates in the hyperdimensions of wave-genetics. The entire body holographic message is present in the single DNA molecule, in order to be capable of reproducing the entire whole. The local 8 Hz field component is a standard tetrahedron interlocked with a second tetrahedron representing the counter-rotary field that it is phase-conjugating with, which together comprise a “stellated cube.”

Ananda has also investigated Dark Room techniques for stimulating the pineal with chi master, Mantak Chia. Ananda developed, researched, and has taught the Dark Room technology for endogenous Pineal Soma and DMT production (Endohuasca), since 1992, upgrading his technique with Master Chia in 2000. Isolated from external light, the third eye (pineal gland) overflows with certain neurotransmitters that awaken the higher brain, the ability to imprint the brain, reprogramming itself for an “instant experience of Being.”

The retreat claims to reopen the source code of embryogenesis. 5-MEO-DMT activates the whole spine, the whole tree of life (Djedi, the staff of Hermes, the Caduceus of the spine) becomes active to be reprogrammed. This is the accessing and awakening of the tree of life, the kundalini, which is a readout of the DNA. DNA itself is a minute tree of life.[See “Pitch Black”, below]

In *The Unity Keys of Emmanuel and Somajetics*, Ananda says, “[By the DMT translation of the Sound of Silence of the Word into the Soul Computer Virtual Reality Interface, the parallel quantum bodies are thus accessed by the NMDA inhibition, which is electrical anesthesia,

engaged by the heart ecstasis of 8 hz, to the 1000 hz petaled lotus. [This] is the learned means of NMDA inhibition, engaged through the cave and dark room retreats of inner re-engagement. Thus the chemical soul's crystal laser transducers and interdimensional door keys, are in Soma Harmaline-Pinoline-Harmine, DMT and 5-MeO-DMT, and by the NMDA inhibitors through ecstasis."

"A high spin state within the DNA water molecule harnessed by Pinoline/Soma intercalating with the DNA (a molecule that has a stable 8hz NMR proton-proton spin-spin coupling [thus hadron pi-meson interplay), together with N-Methyl-D-Aspartate-Inhibitors enables the electron states to move into a nulling, and electron freeze within an entire cell, enabling only 8 hz fields to pass through, changing the charge of the cell, so that the superconductivity harnessed by the pinoline DNA intercalation (with sonic interaction of the vocalized DNA electron spin resonance tones) — enables the hadronic force to be able to operate within the macro region of an entire cell (and intercellularly, by extension)."

Furthermore, noradrenaline plays a significant role in the Pineal gland, when there is sufficient Pinoline saturation in the brain. It releases a serotonin site, enabling another serotonin site on the pineal gland to produce the potent visionary Dimethyltryptamine (DMT), neurotransmitter.

Dr. James Callaway detected this molecule in the spinal serum of people who were dying, or were having an "Out of body experience (OOBE)", or who were lucid dreaming. It is Pinoline that enables the threshold levels of DMT to become active in the brain, but it requires an adrenaline burst. DMT with Pinoline increases brain activation, and with its cousin the 5-Methoxy-DMT, has been shown to activate the brain by as much as 40%, compared to our 10% maximum potential at present. This is a frightening prospect for the uninitiated, due to the absolutely overwhelming nature of DMT.

Youthenize Yourself

Hollywood trainer to the stars, Barry Hostetler, P.I. advocates "Youthenizing", claiming his 35 years of bodybuilding and meditating allows him to "kick out the DMT." We can control our psychobiology by controlling our mental state and vice versa, especially the reactive "dragon brain" or "reptilian brain". Paramahansa Yogananda taught, "If you are in a dark room, don't beat at the darkness with a stick, but rather try to turn on the light!"

Under stress we release toxic catabolites into our system, which undermine the immune system and age us faster. Without exercise (aerobic, core, strength) poisons accumulate, making the body toxic and mind frustrated and agitated. When we are calm and balanced, body chemistry is nontoxic and immune function improves.

Meditation is an alpha brain wave entrainment technique, which synchronizes the two brain hemispheres into 8 Hz. Closing the eyes, stops Melatonin flow leakage to the body, and makes it saturate the neocortex, increasing concentrations of Melatonin and Pinoline in both brain and body. Meditation, several times a day, is an essential health exercise, an energizer, and tool for mental integration of daily activities.

Pinoline and related beta carbolines are not only produced in the brain, but in the adrenal glands themselves, where these hormones undergo their transformation to the hormones of life. HeartMath Institute demonstrated that minutes of compassion in the cardio-rhythm, which induces 8 Hz in the brain, brought DHEA up to youthful levels.

Twenty minutes of compassionate love, through meditative breathing, and whole body 8 Hz entrainment is the ultimate hormone precursor anti-aging pill. Not only does the pineal gland produce more Melatonin and Pinoline, which instigate 8 Hz ELF waves throughout the body, but these neurohormones signal the pituitary to release the life hormone Somatropin, which signals the adrenal glands to instigate cholesterol to convert to Pregnenolone then DHEA.

The extra Pinoline and other beta carboline levels that result, aid the body cells to replicate, and neutralize microorganisms, parasites, fungoids, and bacterias, and related harmful invaders. Melatonin and Pinoline are also antioxidants. Meditation is a rest break, an exercise session, an integration session, an energizer, and a body tuner, promoting antioxidant and antidepressant production. This makes meditation valuable for stress-management and simple self-care.

We can return intentionally to more youthful states by doing emotional exercises and visualizations, which stimulate the body chemistry of our glory days. The body remembers and mimics those chemical states, producing youthful hormones and more flexible mental and physical states, improving overall balance and disposition. When “Youthenizing” yourself, it is helpful to use a photo from under age 7, a time you felt at your peak, or your happiest, or other 'good chemistry' times.

Kinesiology demonstrates that the mind "thinks" with the body itself. Mindbody is the subtle mechanism behind the disease process. The chemistry you generate with moods and states in your body is crucial to your health and well being. First toxic states of mind affect the energy body, then the physical body. Subjective and objective experience are hidden determinates of behavior. Embodied as corporeal memory, the body *is* your memory and subconscious. Self-regulation can modulate this process.

The body is an island of energy/matter and emotions with waves of feelings crashing onto its shores. Body-consciousness can either hide or reveal spirit, depending on how we direct our attention toward our ego, stress (including spiritual distress) and relief. The body and mind can be reunited in a congruent, healthy lifestyle by acting on what you know.

Pitch Black

Absolute darkness has an initiatory quality – the metaphor of moving from the darkness of ignorance into the illuminative Light. But it is more than a metaphor. All wisdom traditions have used sensory deprivation and darkness, (such as caves, tunnels, catacombs or special chambers), as a shamanic mind-altering force. Disorientation outside facilitates internal focus and connection. Dark Room (DR) technology is for core reprogramming, restimulating the hardened pineal which begins calcifying around age 12. Sound becomes light. Chanting and drumming

amplify the effects, which culminate in a rebirth of the spirit when one enters the point of Light or primordial Luminosity.

Author, Robert Newman, (*Calm Healing*, 2006) advocates Medicine Light for a variety of conditions. He cites Tibetan Buddhist, Trungpa Rinpoche about a highly advanced, dangerous form of meditation practiced in utter darkness, known as a Bardo Retreat. They last up to seven weeks in a specially prepared Darkness Chamber, during which the whole *Tibetan Book of the Dead* is experienced and visions arise innately from the brain. The beneficent and wrathful “eyes of Buddha” become visually and interactively alive as the Bardo of Luminosity flashes on and off; visions are self-arising; and transcend ordinary perception. The 49-day cycle recapitulates embryogenesis up to the point when pineal and gender differentiation occurs. The Taoists, Egyptians, Druids and others had similar practices of external light isolation.

Taoist master, Mantak Chia of Thailand recommends sound and light isolation in a process he calls Darkroom Enlightenment. He sequesters participants in the dark for over a week to shock the pineal into critical arousal to stimulate production of natural DMT and break down the barriers to transcendence. The neurotransmitter 5-MeO-DMT is normally only active when we are in the womb and in the first months of our lives. It is reactivated in the darkroom.

Stages include the ‘Melatonin state (Day 1-3; ego death), Pinoline State (Day 3-5; energy body and astral projection; lucid dreaming), 5-MeO-DMT (Day 6-8; telepathy, White Light), culminating in illuminative DMT (Day 9-12; Clear Light; Immortal Body). Participants leave through a tunnel, presumably a symbolic rebirth.

“There is now enough 'Mono Amine Oxidase Inhibition' triggered by the pinoline, to allow the pineal gland's 'serotonin to melatonin cycle' to be intercepted by adrenaline and ephedrine activity and converted into a 'serotonin - DMT pathway'. When DMT levels reach more than 25mg, one's experience can become very visual. DMT is the visual third eye neurotransmitter. It enables the energy body and spirit to journey into hyperspace, beyond third dimensional realms of time and space.” (Chia, 2006)

Reentry implies rebirth -- the self-organizing emergence of the new self. The seed of initiation is realized as the mature fruit of experience, which feeds and sustains us. The experience continues to be useful in our lives. Each healing journey is the death of something within us, which has kept us stuck or stultified. Healing facilitates our continuing evolution. The new self continues to emerge and the consequences of the journey become embodied in this new form for months and even years after the journey. New behaviors, feelings, attitudes, ideas, and wisdom follow. Thus, the circle of life continues unbroken.

Entheogen expert, K. Trout (2001, correspondence) is skeptical: “I'll ignore the shakiness of their biochemical presentation but to arrive at DMT from melatonin or a betacarboline starting point would be interesting if not fanciful under physiological conditions. It is much more likely that formation of endogenous DMT would be instead of melatonin rather than from it or into it (and the two paths mutually preclusive similar to what we see in plants as concerns DMT and 5-MeO-DMT synthesis even when the two co-occur). Now to go from melatonin to a 6-

methoxylated-betacarboline with psychoactivity on the other hand is not at all far fetched if an appropriate enzyme exists and was present”.

The Biology of the Inner Light

Melatonin and pinoline, made by the pineal gland are regulated by the seasonal changes in light and darkness, linked to the sleep/wake cycle. Pinoline is made in the pineal from 5HT and hypothesized as the neurochemical trigger for dreaming. Lack of sleep for several nights is often linked to the onset of acute psychotic breakdown in which the person starts hallucinating or “dreaming while awake.” This state of consciousness is common to the dream state, the psychedelic state, and the shamanic initiation experience. (Roney-Dougal)

Illumination has been described as being blinded by the manifestation of God’s presence. This brightness has no relation to any visible light. Visionary experience, which has symbolic or religious content, may give way to this dazzling light, which is reported in eastern and western religions. It can confer a palpable glow to the person that is perceptible after the return to ordinary awareness.

Meditation modulates pineal activity, to create a standing wave through resonance effects that affects other brain centers with both chemical and electromagnetic coordination. Resonance can be induced in the pineal using electric, magnetic, or sound energy. Such harmonization resynchronizes both hemispheres of the brain. This results in a chain of synergetic activity resulting in the production and release of hallucinogenic compounds.

Sacred images are generated by the lower temporal area which also responds to ritual imagery, facilitated by prayer and meditation. Religious emotions originate from the middle temporal lobe and are linked to emotional aspects of religious experience, such as joy and awe. Yet neural correlates don't mean that these experiences exist "only" in the brain or are merely illusory; they are associated with distinct neural activity. There is no way to distinguish if the brain *causes* these experiences, or actually perceives spiritual reality. Visions of bright lights, portals, and spiritual icons correlate with DMT.

"Could it be that human beings have actually evolved specialized neural circuitry for the sole purpose of mediating religious experience?" Neurologist Ramachandran says so. "There may be certain neural pathways—neural structures in the temporal lobe and the limbic system—whose activity makes you more *prone* to religious belief.”

If this is true, it is easy to see how much this mind-altering chemical could amplify all of the tendencies toward mystical apprehension originating in other parts of the brain.

The pineal contains high levels of the enzymes and building blocks for making DMT, and it may be secreted when inhibitory processes cease blocking its production. It may even produce other chemicals, such as beta-carbolines that magnify and prolong its effects.

Clear Light

Illumination has been described as being blinded by the manifestation of God's presence, which has no relation to visible light. Visionary experience, which has symbolic or religious content, gives way to this dazzling light, which is reported in eastern and western religions. Sacred Light is generated internally by DMT within the ventricles. Tendencies toward mystical apprehension originating in other parts of the brain are amplified. This universal Clear Light appears in all cultures with different names.

The mindbody is electronic, but it is rooted in the luminosity of its invisible ground. Living systems are very sensitive to tiny energy fields and resonance phenomena, both locally and at a distance. They allow the cells of the body to work together instantaneously and symphonically. All biological processes are a function of electromagnetic field interactions. EM fields are the connecting link between the world of form and resonant patterns. EM fields embody or store gestalts, patterns of information. Biochemical action and bioelectronic action meet at the quantum-junction.

We can return to Nature and our nature, collectively preparing a paradigm shift for a new shared reality and trajectory of physical, emotional, cognitive and spiritual coherence. The silent frictionless flow of living intelligence is beyond words and conceptual constructs. We are a process of recursive self-generation. This continuum, which is our groundstate or creative Source, is directly discoverable in the immediacy of the emergent embodied moment, in the living Light that generates our Being.

Blinded by the Light

Kabbalists speak of this mystic Light during ecstatic entry into Pardes, the "orchard" of the Garden of Pomegranates, the self-luminous spheres of the Tree of Life. This metaphysical experience of the "Light of the Shekinah," the feminine aspect of the Divine, is associated with qabalistic ascent up the Middle Pillar. In this state the soul remains covered or adorned, and one cleaves to the Light, gazing at the awesome radiance of God (*Tzvi ha Shekinah*) in rapt mystic Union.

According to Kabbalist Idel, the grace of "sweet radiance" has erotic overtones. It also implies mystical death, separated from all concerns with the mundane world. The Divine Light attracts the light of the soul, "which is weak in relation to the Divine Light." The metaphor is one of magnetic attraction. The Kabbalists tried to reach the pre-fall state of the Primordial Man, to reenter the radiance of the Shekinah, a mystically erotic relationship with the Divine Presence which creates a reflective "glow."

Entrance of the philosopher or mystic into the Pardes affects only the human soul. But in the Theosophical paradigm it does have effects on the non-human realms, the system of divine powers, influencing the relationships between them. In the Theurgic paradigm there is also an influence on, or struggle with, the demonic realm, which seeks to hold the soul back from union.

In both cases, Pardes represents a danger zone, leading potentially to insanity or death, being overwhelming for most mortals. Premature entry to this realm has been likened to tearing a silk scarf from a rosebush, rather than gently removing it slowly (with regular meditation). It sounds like the wrathful visions of Buddhism and the intensely raw effects of unmediated DMT.

Yogatronics

Want to take an active role in your own spiritual life, a safe and easy mind trip? Would you like to glimpse some of the experiences outlined here? Or even just get the mental health benefits of deep relaxation and increased inner focus? Intimidated by the prospect of spending 15 to 20 years learning to meditate to attain life-enhancing benefits?

Haven't had a near-death experience and don't want one? Too busy to devote your life to alchemy, or spend endless years in transpersonal therapies, or too afraid to allow a "mad scientist" to zap your brain with EM frequencies, hook your brain up to a high-tech scanning machine, or inject you with psychedelic substances?

Modern technology offers an easy Do It Yourself, "passive" alternative. Anyone can employ a safe and easy technique that automatically puts you in the "zone." A form of "yogatronics" is available using a simple CD and headphones with input from subsonic frequencies. This audio technology creates a harmonization of the left and right hemispheres of the brain, and automatically drives the brain harmlessly into the Alpha or Theta brainwave range.

This resonance phenomenon, entrainment, is called the frequency-following response, or binaural beat technology. Entrainment is the process of synchronization, where vibrations of one object will cause another to oscillate at the same rate. It works by embedding two different tones in a stereo background. Continuous tones of subtly different frequencies (such as 100 and 108 cycles per second) are delivered to each ear independently via stereo headphones. The tones combine in a pulsing "wah wah" tone.

External rhythms can have a direct effect on the psychology and physiology of the listener. The brain effortlessly begins resonating at the same rate as the difference between the two tones, ideally in the 4-13 Hz. (Theta and Alpha) range for meditation. All you have to do is sit quietly and put on the headphones. The brain automatically responds to certain frequencies, behaving like a resonator.

You may not become immediately enlightened, but hemispheric synchronization helps with a whole host of problems stemming from abnormal hemispheric asymmetries. Problems, often resulting from stress or abuse in early life, include REM sleep problems, narcissism, addictive and self-defeating behaviors. Communication between hemispheres correlates with flashes of insight, wisdom and creativity.

Brain Synchrony

Our brain's two hemispheres are meant to work in concert with one another. Interactive hemispheric feedback is used to treat disorders such as post-traumatic stress disorder (PTSD), depression, ADD, addiction, obsessive-compulsive disorder, anxiety, and numerous other dysfunctions. Disorders of under-arousal include depression, attention-deficit disorder (ADD), chronic pain and insomnia. Overarousal includes anxiety disorders, problems getting to sleep, nightmares, ADHD, hypervigilance, impulsive behavior, anger/aggression, agitated depression, chronic nerve pain, and spasticity.

Because the brain is functionally “plastic” in nature, creating and exercising new neural pathways can retrain neural circuitry. In meditation, the halves of the brain become synchronized and exhibit nearly identical patterns of large, slow brainwaves. Rhythmic pulses can modulate collective neuronal synchrony. Then, both lobes automatically play in concert.

Rhythm regulates the entire spectrum of activation and arousal by kindling, or pulling more and more parts of the brain into the process. Disorders related to under- and over- arousal, including attentional and emotional problems, can be stabilized by self-organizing restructuring. Depressions, anxiety, worry, fear, and panic can be moderated. Stimulating neglected neural circuitry creates new pathways, improving equilibrium and long-term change, essentially “tuning” the nervous system.

There are many companies branding this self-regulation technology, both in “active” clinical neurofeedback programs, and as “passive” home programs. Among the oldest is the Monroe Institute <monroeinstitute.org>, which calls its trademarked method Hemi-Synch. Another program offered by Centerpointe Research Institute <centerpointe.com> is called Holosynch. BioPulse is another. Another variation uses light pulses from goggles to drive the process, and is marketed as Alpha-Stim.

Discussion

As of 2012, Barker and his colleagues at Cottonwood Research Foundation, Inc. upgraded their trials and protocols to determine the role of endogenous hallucinogens. They improved their measurement and low-level identification methodology a thousand-fold over previous attempts, using state-of-the-art liquid chromatography-mass spectrometry (LC/MS) equipment and claimed to meet their research goals.

They measured the three known endogenous hallucinogens and their major N-oxide metabolites in blood, urine, cerebrospinal fluid, ocular fluid and/or other tissues to fully assess the status of an endogenous hallucinogen pathway. They confirmed the structural identity of a major metabolite (the N-oxide) that has never before been monitored in any endogenous hallucinogen study in humans.

Their ayahuasca studies showed "a major metabolite of DMT, DMT-N-oxide (which retains the identifying structure of the parent substance), being excreted in the urine at levels 10-20 times greater than DMT itself after ayahuasca administration. Similarly, N-oxide levels in blood were four times greater than DMT. They note, "This is the first time this metabolite has been reported in humans following DMT administration by any route."

They are confident continuing studies will determine the normal role and function of these compounds in non-drug induced altered states, including dreams, psychosis, meditation, religious experience, childbirth, and near-death states. They cite Cozzi et al., stating that "the enzyme responsible for synthesis of the endogenous hallucinogens is present in pineal gland, brain, spinal cord and retinal tissues of primates and appears to be an inducible enzyme, an enzyme that responds to specific signals. Therefore, clearly establishing the role of endogenous tryptamine hallucinogens in various states of consciousness will provide tremendous insight into their origin, and may lead to more reliable means of working with and studying their utility".

Conclusions

Are there things we should not know? We are innately geared to crave ecstasy, "escape reality," and seek extraordinary or novel experiences on our way to wisdom. The history of mankind recounts the stages of that journey. Religions, mystery schools, and mysticism arose from accounts of spontaneous spiritual experiences. In shamanism, our ancestors sought them in an instinctual or animalistic way. In art, myth and ritual we sought them in a human, if narcissistic and self-expressive reactionary way.

Curiously, DMT is ubiquitous in the biosphere, found everywhere from a variety of botanicals to mammals: It has been documented in rat brains at birth. Not only is it found in seaweed, flowers, vines, acacia tree (*Sant*), toadskins, *Desmanthus illinoensis* and *Mimosa hostilis*, *A. columbrina*, lawn grass, etc., but also in our brains and spinal columns.

"It is only in Western society that the potential shaman, with all of their psychic gifts, is ignored and treated as sick. All other human societies have honored their prophets, psychics, seers and shamans. We need to learn to recognize the potential shaman in our midst and re-learn what is required to ground them, teach them and train them so that their creative and psychic abilities can be a gift, not a curse, and can be used for their and our benefit." (Roney-Dougal)

In creativity and meditation we seek in a fully conscious way, willfully cooperating and facilitating the process not only of connecting with the divine, but experiencing ourselves in the process of "becoming" divine or being sacred. The ego no longer perceives itself as a separate expression of consciousness, but reconnects in a stabilized, not sporadic way. Our metaprogram is the same essence as All, infused with Light.

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