

Michael Landgraf's

Vol. 6, #1
Fall '07

AVS Journal

AUDITORY / VISUAL STIMULATION

AVS: A Personal View by Julian Isaacs, Ph.D.

"Tell me and I forget. Teach me and I remember.
Involve me and I learn." by Laura Riggs, MSW, ASW

Zoe Seven and Mind Exploration

The Need for Vitamin D. by Dave Siever, CEO of MindAlive, Inc.

& More!

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AVS Journal* *Vol. 6, No. 1* *Fall '07

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“I want to express *special thanks* to Jeff Labno for his ongoing support of the AVS Journal, and especially for his unique ability to keep me motivated and excited about delivering a dynamic and quality Journal to you, the readership.” - Michael Landgraf

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Cover design created entirely by Christopher Oliver. Mr. Oliver is known in the AVS community for his talent in designing avs sessions, musical compositions and the "AV3X: Digital Meditation" DVD. You can contact Christopher at: www.Mindmachines.com.

A Special Update about Michael Hutchison:

Michael Hutchison is writing a new book and although he remains paralyzed in his hands does use voice-activated software. The rough draft is just completed and Michael intends to polish it up quickly. However, because of his long years being bedridden due to his paralysis, he has developed a severe shortage of growth hormone.

Growth hormone production in the body not just diminishes with age, but for anyone disabled to the point where mobility is problematic, growth hormone levels decrease dramatically, and this becomes a serious problem.

Growth hormone is strings of 151 different amino acid molecules, and catalyzes every function in the body, including regeneration of muscle and tissue.

If you want to see how important growth hormone is just look it up on Internet under "growth hormone Rudman" (Rudman is the man who wrote the original earthshaking article in the New England Journal of Medicine). Look particularly for his article on the effects of growth hormone on men in their 60s. As Michael has been living in poverty many of his friends have gotten together to form a Trust to buy the growth hormone he needs, which is quite costly (thousands of dollars a month). If you would like to help, please send your contribution to:

The Michael Hutchison Irrevocable Special Needs Trust
510 McCubbing Drive
Lexington, KY 40503

Acquiring growth hormone is really essential as his neurosurgeon believes it is necessary to build Michael's body back up from its current extremely weak 105 pounds to get strong enough to undergo an essential back operation.

All of us involved in this industry owe Michael Hutchison a debt of gratitude for the tremendous work he has done to publicly promote the benefits and cost-effectiveness of the technology we manufacture, distribute and/or personally use. Your donation, however small or large, will be going directly to help the man who has done so much for us!

For anyone new to the field, you can read a detailed interview with Michael Hutchison in the AVS Journal. It is a free download at http://www.mindmachines.com/RelaxationSuperstore/Light-Sound-Mind-Catalog/page_1_FREEDOWNLOADS.html. Click the AVS Journal Fall '01 issue.

AVS: A Personal View

By Julian Isaacs, Ph.D.

In 1984 I relocated from the UK to California to join the faculty of the Consciousness Studies Dept of John F Kennedy University in Orinda in the Bay Area. I was researching and teaching in the parapsychology area at that time and had always been interested in states of consciousness, parapsychology and spirituality. Later, in the conservative atmosphere of the Regan-Bush years, funding for parapsychology largely collapsed. However I was lucky enough to have a “dream job” for three years which acquainted me with AVS firsthand. I was to locate and investigate powerful but hitherto little known or utilized transformative techniques on behalf of “The Other 90 Percent” organization headed by Ron Gordon, who wanted to open a nationwide chain of “mind-spas”.

This was shortly after the 1986 publication of Michael Hutchison’s ground breaking “Megabrain” book which brought the field of psychotechnology to public awareness. Living quite close to Michael I was introduced by him to AVS technology (known as “light & sound” devices at that time). It was rapidly apparent to me that AVS could induce altered states, including both states of stimulation and relaxation. My own EEG monitoring of AVS effects at that time showed that, at least at and above the alpha range, the EEG spectrum shows amplitude enhancement at the flicker rate, and at the second and third harmonics. At slower rates, harmonics of the driving frequency were present, but enhancement of the fundamental driving frequency was usually missing in the EEG. During this period I was also privileged to present Michael’s Megabrain workshop on his behalf and to witness the positive reactions of many workshop participants to AVS.

In surveying the field of transformative techniques, I was impressed by Tom Budzinski’s “Twilight Training” technology, which induced alpha-theta hypnogogic states of consciousness and then played suggestion tapes while the subject was in the theta dominant state. Accordingly, we researched the induction of alpha-theta states using a huge variety of techniques and technologies. This was three years before Penniston’s first (1989) paper on alpha-theta training. We were hoping to find a “magic bullet recipe”. But very many relaxation technologies, including binaural beats and AVS, were equally effective. The magic recipe was actually very simple. The subject has to be extremely comfortable, in a reclining relaxed position and the stimulus field has to be immersive (to screen out competing environmentally produced stimuli), very pleasant, and very monotonous.

Our researches also showed that the claims for the “frequency following” effect from AVS were not literally true where alpha-theta was concerned, because any frequency of flicker was compatible with induction of theta states, including “beta” frequency stimulation, as long as the brightness was not too high. The brain does not literally “follow” these frequencies to theta.

Rather, immersive stimuli trigger the biologically inbuilt deactivation response into occurring, given long enough exposure to a pleasant and monotonous stimulus.

After this project ended, I then joined “Tools for Exploration” as a consultant for professional customers and witnessed the growth of use of AVS among therapists, hypnotherapists, biofeedback practitioners etc. It was clear that AVS has useful roles in the treatment and management of many disorders, including anxiety, insomnia, ADD and depression and can enhance creativity and performance.

My partner of that time suffered from SAD (“winter blues”) during the rainy season in California. AVS was remarkable in freeing her from SAD symptoms for 2 to 3 days after a brief 20 minute session – much more efficient than conventional light treatment. For this particular application I favored a 20 minute program that produced a sequence of 5 second segments which randomly jump frequencies between segments. The effects are definitely “brain brightening”.

Having become a neurofeedback practitioner in 1994 I now use EEG driven AVS systems, as well as conventional neurofeedback approaches. I have also adopted the “video-DVD-neurofeedback” technique for some clients and protocols. This technique involves modulating the size of the film image by the client’s brainwave profile (e.g. beta/theta ratio). Progress of the film is even paused if the child’s brainwave profile exceeds certain limits. This has dramatically reduced compliance problems amongst my child clients. Children who would space out or bitch and moan during sessions now troop happily into neurofeedback sessions where they get to see re-runs of their favorite movies – and maintain states of rapt attention for prolonged periods. I do have some reservations about the film content because it seems contradictory to show a kid a highly exciting and stimulating movie if one is trying to induce a parasympathetically dominant state – for example to induce sensory motor rhythm production. Sometimes I feel as if I have traded-in doing neurofeedback for running a cinema for kids!

There are two main types of EEG driven AVS systems - Chuck Davis’s ROSHI system and Len Och’s Flexys and LENS systems. The Flexys system measures the moment-to-moment “dominant frequency” of the EEG. The dominant frequency is defined as being the frequency of the highest peak in the EEG spectrum (the spectrum usually being confined by filtering to between about 3 Hz and 20 Hz). The dominant usually jumps around, since when alpha is present, the dominant will usually be in the alpha range, since under eyes closed conditions alpha is normally the “biggest” brainwave, certainly in the middle and back parts of the brain. When alpha switches off for a period, the dominant then usually shifts into theta or delta.

The Flexys software adds a user-selected “offset” frequency to the dominant, anywhere from 2 to 30 Hz, and flickers the AVS goggles at the summed frequency. If someone’s dominant is 10 Hz alpha and the offset is selected to be 5 Hz, the flicker frequency will be $10\text{ Hz} + 5\text{ Hz} = 15\text{ Hz}$. So an alpha EEG input creates a beta flicker feedback signal. The process of sampling the dominant frequency and outputting the feedback frequency is continuous. So as the brain’s EEG jumps about in response to the flicker, the flicker jumps about in response to the EEG. This creates a powerful “workout” for the brain.

These systems evade the besetting problem of conventional neurofeedback systems which require the client to consciously and deliberately learn how to control their brain. Instead, feedback is delivered directly to neural networks in their own language of “on-off” signals, instead of via the symbolic images of biofeedback bars and active icons which demand much more perceptual and cognitive processing to decode.

The ROSHI EEG-AVS programs are different and the original ROSHI 1 had four main types of protocol. The ROSHI 2 and 2+ only have the proprietary “complex interactive” algorithm which is secret, but which may provide the “flavored randomness” of flicker which seems so effective in working out the brain. Using the complex adaptive protocol, brainwave amplitudes can be inhibited or enhanced according to the protocol chosen.

EEG driven AVS systems, are, in my opinion, enormously powerful in changing brain function. They are particularly powerful in suppressing excessive frontal alpha, which tends to be present in both depressive and ADD populations. Excessive frontal alpha is the bane of the neurofeedback therapist’s life because it is very difficult to inhibit using conventional neurofeedback training approaches. Looking at the response of clients’ EEGs to neurofeedback driven AVS I can’t help having the subjective impression that, as claimed by Ochs, neurofeedback driven AVS does indeed “perturb” people’s EEGs out of their stereotypical grooves. This improves functional plasticity and suppresses large amplitude EEG excursions. I have not tried to measure this to prove it, but study of these systems would, I’m sure, repay the effort.

At present, the subsequent neural reorganization after brain “perturbation” by these systems is left to nature. Len Ochs thinks nature is smarter than we are, and he may be right. However, for very sensitive clients, LENS treatments can easily be too much “strong medicine” at once, and headaches, negative mood changes, and in extreme cases, suicidal ideation can result. And of course, the training of practitioners of LENS therapy strongly emphasizes safety and erring on the side of caution, so these effects are extremely rare in practice.

These kinds of extreme reactions are less likely with pure AVS, although all AVS devices carry warnings that they can induce seizures in photosensitive epileptics. It may also be significant that feedback from the LENS system is in the form of a very low intensity radio frequency electromagnetic “burst”, so LENS could be construed as producing a direct electronic intervention into brain function, which is why it may be so very powerful. Speaking for myself, I have never suffered any negative effects of LENS treatments on myself. Its track record of effectiveness for my depressed clients, who can be difficult to treat with conventional neurofeedback, is startlingly good – most notice an immediate mood lift after a single session! And as mentioned above, a colleague of mine and I are planning to investigate the effects of “laying on of hands” type “brain healing” by healers, administered immediately after LENS treatments to see if the integration of LENS effects is smoother and better with this post “perturbation” energetic treatment.

One other very important difference between non-interactive and neurofeedback driven AVS

systems which the AVS world seems not yet to have examined is that the brain very rapidly adapts to stimuli having static properties. Thus the brain tends to “tune out” constant flicker frequency stimulation, and may even tune out slow changes in flicker frequency. As such it is an axiom of both the ROSHI and Flexys systems that as a result of their internal logic they provide rapidly changing flicker frequencies that approximate randomness. Indeed, it is suspected by some that the pROSHI, which is a non-interactive AVS system created to mimic the original interactive ROSHI system, probably produces some kind of biased or “flavored” randomness in its flicker output. This kind of input seems to “work out” the brain much more powerfully than more stable flicker inputs, so that short (a few minutes or less) exposures work much better than long ones. With classical non-interactive AVS, seemingly, longer sessions tend to have more effect.

Since I have access to EEG driven AVS systems I do not now tend to use regular AVS systems on myself, although I am aware that AVS has come a long way since its inception. AVS systems are much smaller, less expensive and less fussy to use than EEG driven AVS systems, which are dependent on computers. I know that neurofeedback practitioner friends of mine have rented or loaned AVS systems to their neurofeedback clients for their use at home between neurofeedback sessions, with reportedly good results in the domains of ADD, anxiety and depression.

I am familiar with AVS systems from several manufacturers. David Siever of Mind Alive has probably sponsored and/or conducted more research into the applications of AVS than any other manufacturer, and for this he is to be thanked. He has conducted ground breaking research into the use of AVS for chronic pain and premenstrual syndrome and various other complaints. His latest products embody pacing for HRV (Heart Rate Variability) training.

Michael Landgraf asked me to comment on criteria a beginner might use for selecting a first AVS system. This is a difficult question because of the range of applications and the differences between potential users. Probably two factors are most important. One is to be clear about what you intend to use your AVS system to achieve, whether relaxation, deep states or stimulation etc. The second is that only by actually trying out systems from different manufacturers can you hope to optimize your “fit” with an AVS system. In this way the Megabrain workshops were wonderful in allowing participants free rein to try lots of different AVS systems to find a good fit.

Michael also asked me what I am up to now, and what I think are the most important issues facing the AVS and neurofeedback industries. As outlined above, I am still very much in private practice as a neurofeedback and QEEG practitioner, and am also teaching both neurofeedback and QEEG brainmapping to local small groups. I am excited about the increase in effectiveness of neurofeedback which has occurred as the field has developed. I am involved in two research areas currently, one, as mentioned above, being to document the possible effects of energetic neurological “hands on healing” techniques via QEEG and other means, and to compare and contrast these effects with those of neurofeedback.

The other is that I am a member of a local Marin County research group created by two long term Buddhist Vipassana meditators, one a neurologist, the other a psychologist. We are attempting to harness recent neurological and psychological research to the improvement of the efficiency of meditative training and to provide usable techniques and resources to the lay public. We are currently conducting a search of the EEG/meditation literature and have already found studies which point towards the use of specific neurofeedback training protocols to accelerate the learning of meditation associated skills, including attention.

Of course the use of neurofeedback to improve attention in ADD & ADHD populations has long been a central topic of the neurofeedback field, but the question remains whether these approaches are relevant to so-called “normal” populations. I am planning to record QEEGs on both “elite” long term meditators who can enter the profound “jhana” states and well as meditation students who are in phases of accelerated development. The leaders of this team have created an interesting monthly lecture series on various meditation related topics and MP3 recordings of these lectures and much other interesting and useful material can be downloaded at no charge from their website, “wisebrain.org”.

I feel that the AVS field could benefit from much more research being done on its benefits, bringing the field more public attention. But ironically, this might also incur risk, because if medical claims are established for AVS it might cease to be freely available without all the negative aspects of FDA approval – so much for the craziness of the current US medical situation! In the field of neurofeedback I feel that “we ain’t seen nothin’ yet”. I expect new findings and new techniques to extend the applications of neurofeedback to new domains (like remediation of visual problems) and to increase its potency still further and increase its ease of use. One concern is whether big pharma will see neurofeedback as a competitor and attempt to coerce the FDA into controlling it more tightly. Meanwhile the field seems to be developing rapidly.

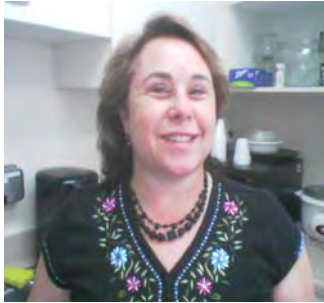
Julian Isaacs, September 2007

“Tell me and I forget. Teach me and I remember. Involve me and I learn.”

By Laura Riggs, MSW, ASW

It is my pleasure to bring to you the words of one of our nations greatest leaders, Benjamin Franklin who said; “Tell me and I forget. Teach me and I remember. Involve me and I learn.” Today I am going to involve you in a personal success story. A young woman who struggled throughout her academic career, overcoming learning disabilities, dealing with reduced visual acuity, and multiple life traumas to attained success and personal growth with the assistance of light and sound technology.

Let me start by saying I am humbled and grateful to Michael Landgraf for introducing the technology of light and sound to me over 15-years ago. He has touched so many lives with his work and mine is just one of his many success stories. I will continue to spread the knowledge in his honor.



My name is Laura L. Riggs and I have overcome many personal challenges both emotional and physical throughout my life, but not as challenging as sustaining a back injury and undergoing multiple surgery. I turned to light and sound technology to assist me in coping and dealing with the pain. I have relied on my machine for relief from my symptoms from Chronic Fatigue, chronic back and neck pain, as well as a lifetime of persistent migraine headaches.

I currently work in a Hemo Dialysis clinic as a Nephrology (renal) Social Worker in the Ventura County area. I graduated from San Jose State School of Social Work in 2000 with an MSW degree specializing in aging and a certification in Gerontology.

Throughout my relative short career as a social worker I have utilized the light and sound machine for myself as well as my patients. I first began using the machine by integrating it as I studied and listened to my textbooks on tape. It increased my ability to learn by increasing my retention of the subject matter and stimulating my ability to recall what I had read. I used my light and sound machine continually throughout my academic career including graduate school.

Following graduate school I worked in an Adult Day Health Care (ADHC) setting dealing with individuals who suffer from dementia, mental illness and a variety of multiple medical conditions. This population can become very anxious and have difficulty coping with life's stressors at on a daily.

One crazy and hectic summer afternoon following lunch I had my sound machine on in my office while I worked at my desk. A very agitated and confused Alzheimer's client was escorted into my office. I had not had time to turn the machine off so it remained on as I conducted my session. Now this is an individual with who I had had multiple encounters. This time I noticed that as we spoke they became more relaxed and less agitated almost immediately. Noticing the change I began leaving my sound machine on during my sessions with clients. It was having a dramatic effect on not only my dementia patients, but on those suffering from chronic pain and anxiety disorders. With permission and signed consents I introduced the light and sound on an individual basis to clients at the center.

My use of the light and sound technology has been constant. It has been my companion as I moved from my work in ADHC, to Adult Protective Services, Long-Term Care Ombudsman, In Home Support Social Worker, Multi-Purpose Senior Service's case manager, and director of a six-bed recovery facility, to now working in multiple hemo dialysis units throughout Ventura County. I have not left my light and sound machine behind.

For those not familiar with Hemo Dialysis, it is a procedure done outside of the body by a machine that acts as an artificial kidney. The machine filters the blood and removes the waste that builds up in your blood, cleaning it and returning it to the body. This process is done sitting in a chair, in one position for over three hours, three to four times per week for the rest of the patient's life. When your kidneys fail you must have dialysis for the rest of your life or receive a kidney transplant.

Light and sound technology seemed a natural fit in the hemo dialysis setting. I have utilized the machine for over 3 years and the patients love the concept. It is relaxing, anxiety reducing, and decreases the amount of pain they experience during their treatments. I use the technology of my mind machine as I counsel and assess the needs of my patients on a daily basis. I use my knowledge, experience and achievements to improve the quality of the lives I touch.

So may I conclude by once more quoting my dear friend Mr. Benjamin Franklin, with words to live by; "Without continual growth and progress, such words as improvement, achievement, and success have no meaning." Go forth and do good things and enjoy the benefits that light and sound have to offer.

Laura L. Riggs, MSW, ASW
Social Work is not a profession; it's a passion.

Zoe Seven and Mind Exploration

"Zoe Seven" is the result of my ongoing investigations into the human psyche and the nature of reality. He is the main character of The Void Trilogy -- Into The Void, Back From The Void, and the forthcoming Beyond The Void. The books represent the next step in consciousness exploration and follow the mind and experiments of an amateur researcher investigating altered states of consciousness induced by the combination of psychoactive compounds (aka entheogens) and mind modifying devices. This research reveals that the ingestion of entheogens during specific mind machine induced brain states – theta, REM (rapid eye movement sleep) and delta – produce drastically different experiences than when psychoactive compounds and mind machines are used independently of each other.

Experiments with this novel combination lead to a series of uncanny occurrences including out of body experiences, encounters with hyper dimensional beings in waking reality, and "full dimensional shifts" into alternate realities. Zoe Seven's books are written in such a way that to those lacking similar psycho-spiritual experiences, they will read like science fiction.

Why refer to Zoe Seven in the third person? Oftentimes I think of Zoe Seven as an extension of myself, like an alter ego. You see, when I go back and read about what I've done – the experi-

ments and their resulting experiences – it seems to me as though someone else was actually doing them; like it all happened in a dream somehow. It's almost like a part of me is the 'daring psychonaut' who is willing to take his brain and mind to its very limits... While another facet of me plays the role of the 'observer,' who avidly takes notes, which end up becoming Zoe Seven's books.

The first installment of the trilogy, *Into The Void*, was the culmination of nearly five years of consciousness research. During this time, I took it upon myself to boldly go where I had never gone before: straight into the deepest aspects of myself, of my psyche, to try and understand how reality – the fabric of existence and everything that exists within it – was created and is maintained. I was curious about the origins of time, space, and consciousness, even God. As I like to say, "If God exists, I want to know what makes that sucker tick."

Early on I concluded that the best tool to investigate and study these existential concepts including the nature of consciousness was consciousness itself. With this in mind, I began to expand my mind not by using any technology or chemicals, but rather by in taking knowledge and information: hundreds of books, lectures on audiotape, magazine articles, papers and abstracts, live workshops - everything that I could get my hands on about subjects like quantum physics, biology, chemistry, psychology, philosophy and shamanism. After a few years of doing this, and only then, did I commence to experiment with AVS technology and entheogens as well as with their combination. As explained in Zoe Seven's books, I don't use entheogens out of addiction or anything of the like. They are used only as tools for serious experimentation and mind research.

Back in 1996, while reading various books on the subject of consciousness exploration in preparation for my own research, I came across a book called, *Megabrain: New Tools and Techniques for Brain Growth & Mind Expansion* by Michael Hutchison. This book greatly influenced the direction of my investigations at the time, as it deals with AVS technology. And given my exposure to books on shamanism right around that same time period, it seemed to me as though both fields of my research would complement each other. It is important to note that my books, especially *Into The Void*, are not meant to be 'how to manuals' on the use and combination of psychoactives and mind machines. Rather, Zoe Seven's books chronicle the experimental findings of someone who has merged these two fields out of a sense of curiosity.

The first audio-visual device I used was the DAVID Paradise. I also purchased the OASIS neuroelectrical stimulator together with it. The resulting experiences of both devices were so exciting to me that they quickly got me interested in experimenting with other similar mind machines, Bob Beck's BT-6, the Audio Strobe system and a couple of lucid dreaming induction devices called the Dream Light and the Nova Dreamer. I also bought the Mind Mirror III EEG, an electroencephalograph especially designed to measure altered states of consciousness.

One of the many things I learned from this specialized research of mine is that neuroelectrical stimulation would greatly help in recalling details of entheogen induced explorations. A neuroelectrical stimulator is a device that is attached to the temples or earlobes to stimulate the

brain to release a number of neurochemicals, including dopamine, acetylcholine and beta-endorphin. As explained in *Into The Void*, one of the books I was reading during this initial phase of my research discussed the work of a neuroscientist by the name of Allan Hobson, who theorizes that when the brain enters REM sleep, it stops manufacturing the neurotransmitter chemicals responsible for memory. And this is interesting. Although humans have typically about five dream periods each night, we have very poor memory of them, if at all. Hobson's theory made sense to me therefore. And it would prove useful in my own research when psychoactives were introduced. Because you see, the one universally reported side-effect of neuroelectrical stimulation therapy is vivid dreaming. The result of this being the increased short term memory, thanks to the release of neurotransmitters such as acetylcholine, which is the neurotransmitter responsible for the storage, processing and retrieval of stored memories.

Most people that have taken psychedelics will tell you that after an experience, it is difficult at best to remember details about what took place while under the influence. But by undergoing neuroelectrical stimulation therapy for about 3 weeks before ingesting entheogens and then engaging a chemical or plant induced modified state of awareness, it is a whole different story. Details of the experiences are very clear and most of the information received during the experience is recalled.

After a few years of experimenting with neuroelectrical devices and AVS technology, both separately and later in combo, I decided to see what would happen if psychoactive compounds were added to the mix... The result: *Into The Void* – and *Zoe Seven*.

Over the years of using AVS technology, I can attest to their efficiency in bringing about reliable meditative and other similar states. Similarly, I cannot say enough about the results of combining lucid dreaming induction devices like the Nova Dreamer together with an entheogen like sublingual *Salvia divinorum* or ayahuasca. As one is able to go into a lucid dreaming (or REM sleep) episode under the influence of said entheogen, resulting in an entirely new type of experience. This type of experimentation might just be the next step in entheogen/consciousness exploration. As here we are talking about full “dimensional shifts” to alternate realities and dimensions, i.e., you actually going “there,” to a different system of reality. As opposed to say, seeing blobs of light or geometrical visual patterns.

As far as what long-term benefits can be ascribed to the use of AVS technology and/or entheogens, I am of the belief that both are tools. It is the user really that determines the type of results. In other words, you get out of them what is inside you. Nothing more. With entheogens for instance, which oftentimes act as psychological amplifiers, if the user happens to be a little creative, he or she can become more creative. Similarly, if they are a little intelligent, this intelligence can increase. But if someone is say dumb, or into deluding him or herself, entheogens will not make the user “smart,” but dumber or even more deluded! So you see, entheogens can be double-edged swords.

Somewhat similar is AVS technology, as these devices facilitate particular experiences but do not force them. The experiences are very individualistic depending on the psychological, emotional, spiritual and perhaps even intelligence of the user.

I would discourage someone new to AVS and/or entheogens from attempting to experiment with these combinations. Unless you happen to be a seasoned explorer like Zoe Seven. As explained earlier, the modified states resulting from this type of combination are drastically different than with either entheogens or AVS technology separately. Speaking from my own personal experiences, once one begins to work with a psychoactive shamanic plant, for instance, a particular “psychic state” begins to develop in the individual over time. Similarly, by using some of the AVS technology available, over time, new neurological pathways that interconnect both brain hemispheres are created. These two results can act synergistically, taking the individual’s consciousness to higher level of consciousness and being. I have noted that my somewhat limited psychic functioning and creativity have increased as result of my experiments. And a “sophisticated depth and level of thought,” for lack of a better description, has seemingly manifested as well.

My first book was centered mainly around experiments with psychoactive chemicals and mind machines. While the second one deals with many psychoactive plants and AVS technology. For the final installment of the trilogy, Zoe Seven will be engaging in a totally new set of experiments. They will be based on Dr. Michael Persigner’s work -- induction of altered states of consciousness via rotating magnetic fields.

There are several experimental devices I will be using, similar to the ones Dr. Persigner used in his own experiments. I will combine these with a few psychoactive plants, including San Pedro, datura, ayahuasca and Salvia divinorum. The experiments will attempt to bridge realities: this one, with what is sometimes referred to as the astral plane in the metaphysical literature. As discussed in *Back From The Void*, while in a small town in Brazil -- Abadiania -- Zoe Seven discovered a portal which discarnate entities that incorporate into a Brazilian medium/ psychic healer use to enter into this reality. These entities are invisible (and non-physical). Zoe Seven interacted with them while in an entheogen induced trance state. But for these new experiments, Zoe Seven will not be in a trance state but fully conscious, with eyes open and in a lit room. The magnetic fields will act as the “tuning frequencies” while the entheogens will amplify the “signal” from the next plane of existence. In other words, I will attempt to see into this other reality not in an out of the body state but rather while still “in the body.”

Sometimes I’m asked whether Zoe Seven is really “real” or a fictitious character. I reply that he is the personification and result of the many altered states of consciousness this writer has experimented with. It is also true that Zoe Seven is a character in a trilogy in progress I’m currently writing. As explained in book 1 of the trilogy, Zoe Seven contacted me from a future probable timeline and explained he’d been manipulating certain events and experiments so that he could come into existence in our 3D reality. Then, at the end of *Into The Void*, he crosses over from said framework of potential reality to find himself ‘here,’ in me as Zoe Seven. Which sometimes makes me wonder whether I created Zoe Seven or, if Zoe Seven actually created the writer of his trilogy.

Whether Zoe Seven is real or not - let’s just say that Zoe Seven wasn’t “real” until he met one particular writer...

The Need for Vitamin D.

by Dave Siever, CEO of MindAlive, Inc.

Introduction

The winter of 2005-2006 was a real challenge for me. For no apparent reason, I had developed full-blown restlessness and insomnia by December, and come January, I began feeling mildly depressed, had severe bouts of fuzzy-headedness and lethargy. I was waking up at 2, 3 and 4AM, and because of that, I would sleep in until 9:30 to 10 AM, as I tried to make up for the lack of it. I was craving chocolate like mad – and simple carbs (candy, cake, etc.) as well - but mostly chocolate. By February, I was feeling like a tired old man. I had no physical energy and felt very weak. I quit working out on the weights because it took just too much effort. By April, my lower right molar and gums began getting quite painful when I ate, making it difficult to chew. Later in April my upper left molar also began aching as well. Also, my elbows, knees and ankles began to ache. I was really feeling old, if not ancient. This was of great concern for me, as I normally feel physically strong.

In early April, just before attending the AAPB conference, I went for an 8-minute tan and noticed that later on in the day, I felt relatively very good, but by the next day I was back in the slumps. A few days later, I went back and tanned to the point of getting mildly pink. The next day there was no change but the following three days I felt very good, and in particular I had an excellent head-space, even though my joints and mouth continued to hurt.

Suspecting a connection, I took time off from work every day at noon for the first two weeks in May, stripped down to my shorts and took in at least 30 minutes of tanning in the warm May sun. Never have I got so much sun so early in the year and fortunately, our Spring was the warmest and sunniest ever, with leaves sprouting and flowers blooming a full three weeks ahead of schedule.

By May 15, my mind was as sharp as a well-honed knife and all of my body pain vanished. I was suddenly bursting with energy and strength and biked 25 miles on Mothers' Day! Best of all, my wit and humor returned and I enjoyed being the life of the party again. On the May 20, Canada long weekend, I went to Jasper National Park and participated in the annual SCUBA diving competition – feeling GREAT!

Winter 2006

This winter was an unusual one. We normally have a good foot of snow by Christmas, but with global warming looming, the past 10-years have seen three winter droughts. This year, we didn't get snow until March 15! What this has meant to me and some of my clients whom I have since spoken to since, was that this was a particularly severe year for certain people suffering in symptoms of a kind-of seasonal affective disorder (SAD),

A possible reason for this is due to a lack of reflection off of the snow. Edmonton is situated about 300 miles north of the USA/Canada border at 53 north latitude. Edmonton is a fairly sunny place and in Edmonton the sun shines at roughly a 20-degree angle in around the winter solstice. This means that plenty of sunlight bounces off of the snow and given that most clothes pass 10-20% of the sunlight that strikes them, everyone would get some sunlight exposure. This year, without the snow, I missed my weekend cross-country skiing and the concurrent nourishment from the sun.

The Vitamin D Story

Vitamin D is a potent steroid, much like testosterone. It is essential for the metabolizing of calcium (which is also essential for generating the voltage potentials in neurons). This explains the emotional collapse and the subsequent depression, anxiety, restlessness, insomnia and so on in those who are deficient. Vitamin D also plays a key role in muscle strength and the integrity of connective tissue and the maintenance of bones as well as playing a part in controlling swelling and in tissue repair. Vitamin D supplementation has been shown to reduce the risk of breast, colon, pancreatic and prostate cancer. Current research indicates vitamin D deficiency is a causal factor in 17 varieties of cancer, heart disease, stroke, hypertension, autoimmune diseases, diabetes, depression, chronic pain, osteoarthritis, osteoporosis, muscle weakness, muscle wasting, birth defects, periodontal disease, rickets, and the common flu.

Vitamin D is involved in brain function. Nuclear receptors for vitamin D are localized in neurons and glial cells. Genes encoding the enzymes involved in the metabolism of vitamin D are also expressed in brain cells. Vitamin D is important in neurotransmitter synthesis. Vitamin D has been shown to have neuroprotective and immunomodulatory effects and may help us resist bacterial and viral infections. A study of arterial and venous blood samples from 101 healthy Australian men over a one-year period found strong correlations between ambient sunlight and production of serotonin in the brain. In fact, depression and schizophrenia are highly correlated with vitamin D deficiency. Autism is also effected by seasonality, which may be related to vitamin D deficiency during pregnancy.

It has been thought that the average human utilizes roughly 1500-2000 IU of vitamin D per day. However, recent research suggests that healthy men require upwards from 3000-5000 IU per day. Those who live above or below 30 degrees latitude are likely to become vitamin-D deficient throughout the winter. Over one billion people worldwide have become deficient in vitamin D including many Americans who work daylong in office buildings. Estimates in the USA suggest that somewhere from 21 – 58% of adults and adolescents are vitamin D deficient (and this is using the old low-level standard).

Vitamin D has been shown to significantly enhance the genetic expression of antimicrobial peptides in macrophages, thus improving up-front ability to attack and destroy a broad spectrum of invasive microbes, spanning both viruses and bacteria. This may be why there is a seasonal effect with flu. Flu season occurs in the winter of both the northern and southern hemispheres, and it is not attributed to more people staying indoors as previously thought.

The best kind of vitamin D, vitamin D3, or cholecalciferol (its chemical name), comes from the sun. Most vitamin supplements also contain vitamin D3. Calcidiol (25-hydroxy vitamin D) is a prehormone in your blood that is directly made from cholecalciferol. When being tested for vitamin D deficiency, calcidiol is the only blood test that should be drawn. When doctors refer to vitamin D blood levels, they are referring to calcidiol levels, but the lab will know calcidiol as 25-hydroxy vitamin D. The only natural sources of vitamin D are sunshine and fatty fish such as salmon and mackerel. Milk is fortified with vitamin D, but at very low levels - enough to prevent Rickets.

About SAD

Each year, 6% of northern populations are affected with Seasonal Affective Disorder (SAD) and another 14% have a milder form of SAD, called the winter blues. Surprisingly, SAD may occur at any time of year and even in equatorial regions although the ratio of northerners with SAD as compared to those living in the tropics is about 10-1. People in the southern USA experience SAD in the summer from staying indoors where air conditioning allows them to escape the unbearable summer heat. People have also experienced SAD moving into a basement suite or an office on the north side of a building or after painting the interior of their home a darker shade of color. People have experienced SAD following the development of cataracts or after wearing sunglasses for an extended period of time and during overcast, rainy periods (Rosenthal, 1993).

The common symptoms are depression, anxiety, extreme fatigue, hypersomnia, carbohydrate cravings, and weight gain. Women between the ages of 20 to 40, (their sexually reproductive years), are most susceptible (Rosenthal, 1993). The first controlled study using light therapy to treat SAD was published in 1984. SAD was officially accepted as a clinical malady in 1987 by the American Psychiatric Association and described in its then current diagnostic manual, the DSM-III-R. Since that time, a great number of studies on the topic have been completed.

The “Captain and Pineal”

All species studied to date have been observed to have a biological clock. This clock is essential for survival, regulating various types and levels of arousal to provide cues for alertness, eating, sleep and the release of hormones. Light waves striking the retina activate electrical output that is sent down the optic nerve to the brain for visual processing. A secondary, smaller nerve tract from the retina, originating from specialized cells that utilize a light detecting pigment called melanopsin, also carries signals to the suprachiasmatic nucleus (SCN) of the hypothalamus. The SCN, in turn, sends nervous outputs to various parts of the brain including the pineal gland. Four genes that govern circadian cycles in flies, mice and humans have been discovered that not only reside within the SCN, but in all cells of the body. When cultured in a petri dish under constant lighting, these cells continue with gene activity, hormone secretion and energy production in a 24-hour cycle that varies less than 1% (Wright, 2002).

In the mid 70s, Dr. Alfred Lewy of the National Institute of Mental Health (NIMH) discovered

the neurotransmitter melatonin. The wake/sleep cycle in animals and humans is controlled by melatonin, which is produced by the pineal gland, a structure the size of a pea and located in the mid-brain. Every night, the pineal gland excretes melatonin into the bloodstream and continues to do so until dawn. However, under normal exposure to sunlight, secretions of melatonin follow the earth's light/dark time frame and therefore more melatonin is typically released during the long dark hours of the winter months. Henceforth, the pineal gland is in charge or “captains” our wake/sleep arousal states.

A Comparison Between SAD and Vitamin D Deficiency

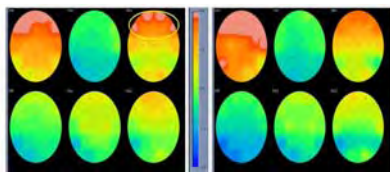
Although most anxiety and depression inventories could be used to detect SAD, one popular SAD test is the Seasonal Pattern Assessment Questionnaire or SPAQ, developed by Rosenthal and his colleagues at the NIMH. The SPAQ is a self-assessment questionnaire that evaluates one's level of SAD. However, one big problem with the SAD test is that there is much overlap between the symptoms of SAD and Vitamin D deficiency, and more than just the basic SAD type questions must be asked.

Symptoms of SAD Symptoms of Vitamin-D Deficiency

1) anxiety	anxiety & restlessness
2) depression	depression
3) fatigue	fatigue
4) carbohydrate cravings	carbohydrate cravings
5) hypersomnia	insomnia
6)	physical weakness
7)	connective tissue swelling

The literature on the brain wave effects of SAD is inconsistent, ranging from increased broad alpha/theta to increased left frontal alpha activity as is known in depression. In Figure 1 below are eyes-closed brain maps from the Skil database at a scale of ± 2.6 SD before and following 2-weeks of sun tanning. Notice the exceptionally high alpha (encircled in yellow) while deficient in vitamin D. The high delta is primarily artifact. If this was a case of true SAD, it would have resolved itself by the time the “sunlight” QEEG was taken on May 15, as eye/pineal exposure is significant by May.

Figure 1. Vitamin D Deficiency Vs Sunlight Exposure Treatment of SAD



A number of coping techniques are used to reduce the symptoms of SAD. These include long walks outside, aerobic exercise, a diet rich in complex carbohydrates and protein, relocating to sunnier locations, winter vacations to tropical areas, and frequenting sun-tanning centres. Light-based clinical interventions include light box therapy and audio-visual entrainment.

“Light box” therapy has been used to reduce the symptoms of SAD in 60% to 80% of SAD patients. White light therapy, using intensities of 2,500 lux, requires exposure times from 2 to 6 hours, a considerable behavioral investment for the user. Light exposures in the intensity of 10,000 lux for 30-minute exposures has been found to be more effective than 2,500 lux intensity with exposure times of several hours. Some people have reported that over-use of light therapy can leave them feeling “wired” and restless.

Audio-Visual Entrainment (AVE) using flashing lights and pulsing tones has been shown to enhance EEG activity at the stimulation frequency. However, a lesser-known attribute of AVE lies in its inhibition effect at roughly the half-frequency of stimulation. In QEEGs (brain maps) collected at our office of those with SAD, we have observed long spindles of 10 Hz alpha brain wave activity, globally, with particularly increased activity in the left frontal regions. In light of these findings we ran a study of 74 people struggling with SAD. AVE at 20 Hz produced profound reductions in anxiety, depression, carbohydrate cravings and body weight. Energy and quality of life increased.

Treatment of Vitamin D Deficiency

The only treatment for vitamin D deficiency is vitamin D3, whether it be from food sources or via the sun. Many supplements are available. Studies have shown that it is difficult to become toxic on vitamin D, and a wide variance of a suggested toxic limit exists in the literature. An adult may have to consume 4000-8000 IU for more than four months in order to become toxic.

Resources

For more information on Vitamin D:

www.vitamindcouncil.com

Dale Kiefer. Why is Flu Risk So Much Higher in the Winter? Life Extension, February, 2007, 23-28.

For more information on SAD and its treatment with AVE:

www.mindalive.com/1_0/articles%204.pdf

About the Author: Dave graduated in 1978 as an engineering technologist. He later worked in the Faculty of Dentistry at the University of Alberta designing TMJ Dysfunction related diagnostic equipment and research facilities where he organized research projects, taught basic physiology and the advanced TMJ diagnostics course. Dave had noted anxiety issues in many

patients suffering with TMJ dysfunction, prompting him to study biofeedback, which he applied to their patients and later design biofeedback devices.

In 1984, Dave designed his first audio-visual entrainment (AVE) device – the “Digital Audio-visual Integration Device,” or DAVID1. Since this time, through his company, Mind Alive Inc., Dave has been researching and refining AVE technology since, specifically for use in relaxation, and treating anxiety, depression, PMS, ADD, FMS, SAD, pain, cognitive decline and insomnia, which he presents at conferences and for special interest groups. Dave also designs Cranio-Electro Stimulation (CES) and biofeedback devices and continues to conduct research and design new products relating to personal growth and development.

A Case For Computerized Brainwave Entrainment Technology and Tips On How To Use It

By Adam Hewett, Director of Development for the Transparent Corporation

Introduction

At first glance, the personal computer seems the ideal platform for audio/visual brainwave entrainment technology. Even the earliest computers had beeps and blinking lights. Today the very definition of a computer is inseparable from a monitor and, in most cases, a sound card as well. You can use your computer for email, VOIP phone calls, video conferencing and a million other activities – why not Audio/Visual Stimulation (AVS)?

In this article I’m going to explore some of the advantages to using the computer as a brain stimulation device. I will also provide tips on how to get the most out of your computer-based AVS experience and map out some of the common pitfalls.

Advantages of the AVS computer

Like the brain, computers are incredibly versatile instruments, able to take input from many different sources and adapt to virtually any situation. Your computer-based AVS experience can be a highly personalized one, integrating your own needs, preferences and goals into the process. If you are so inclined, it can also broaden your experience into many other areas such as hypnosis and biofeedback.

Customizability – One of the first things you’ll notice about using AVS software is the limitless number of options you have at your disposal, far beyond adjusting volume or brightness. At the click of a button, you can change the carrier of a binaural beat or the color of the screen. You can scale a session to the exact length of time you have available. You can completely change how the session sounds: Don’t like tones? Pick your own background sound to mask the tones, or import music you find relaxing.

Sound Files and Net Radio – Software allows you to easily integrate music, nature sounds or any other audio into your AVS experience. You can play CDs, use all of those MP3 files you downloaded, or use meditation-focused Net Radio stations and Podcasts to meditate simultaneously with thousands of other mind explorers across the world.

Hypnosis and Affirmations – Well designed software allows for the playing of many sounds at once, giving you the opportunity to add powerful hypnosis and affirmations to your AVS sessions. Some software will allow you to record your voice with the use of a microphone hooked up to the computer. The AVS session and affirmations can even be linked – for example, you can have the affirmations play at a specific point in the session after you have had time to relax and enter a truly receptive state of mind.

3D Capabilities – Most computers these days are capable of some fantastic visual rendering. If you think the light shows you get with LED's are fun, try combining flashes with computer generated visualizations. Many of these visualizations are very hypnotic (even without the flashing) and most of them will base their visual patterns on the relaxing music you have chosen.

Easy Session Creation - Session creation is a daunting task for many people, but in many ways it is essential for an optimal brainwave entrainment experience. There is no one-size-fits-all solution in any therapy (even outside of the AVS field). Studies have shown that people can respond very differently to the exact same stimulation – depending on current brainwave activity, alpha levels, mental state, personal preferences and other factors. What one person responds well to may have no effect on you. Yet, Jeff Labno reported in the Spring '01 issue of the AVS Journal that less than 5% of brainwave entrainment users create their own sessions. Luckily, that percentage increases dramatically with software, where the button for creating sessions is right next to the button for playing them. Additionally, since there is no need to upload your creations to an external device, you can preview and experience your creation instantly – allowing you to determine very quickly what kind of session is going to work best for you.

Frequency precision and smooth transitions – One of the earliest intended uses of computers was as a platform for complex scientific calculations. Because of this, using a computer you are able to specify frequencies with a virtually unlimited number of decimal points. Specify 7.83 if you like, or 8.415 or 12.853409 and so on. This kind of precision is also crucial for smooth transitions, such as fading in and out. If you want to dim the brightness, or move slowly from one frequency to the next, computerized AVS will give you a relaxing, seamless transition every time.

Data or Biofeedback-Driven AVS – One of the most exciting areas of this field is in biofeedback-driven stimulation. Inevitably, researchers are turning to computers to make this happen. Computers can bridge the data from electroencephalography (EEG), Galvanic Skin Response (GSR), Heart Rate Variability (HRV) or any biofeedback modality, and transform it into a signal that helps drive and optimize the brainwave stimulation you receive. Input could even be taken from a database, from the internet, or from a live therapist who is analyzing your responses and adjusting as you go along.

Control external Mind Machines – No, you don’t have to give up your beloved Mind Machine to utilize the advantages of computer-based AVS. Chances are it can be used in tandem with your computer. There is a common protocol that most AVS devices use called AudioStrobe. AudioStrobe uses inaudible signals to embed frequency data into sound, allowing AVS devices and their LED Glasses to be driven using any sound device such as an MP3 player or stereo. Every computer with sound has a standard sound port. Wherever your speakers are currently plugged in to, you will be able to plug headphones or an AudioStrobe-compatible Mind Machine as well. If you are using AVS software that has AudioStrobe capabilities, it will be able to communicate with your Mind Machine through your sound port. You will also be able export CDs or MP3 files to do the same. The ins and outs of AudioStrobe are explored in the “Tips” section.

Disadvantages of the AVS computer

Computers are not optimal for visual stimulation - A computer is often performing many tasks at once, so it may not be able to focus on providing you with precise flicker stimulation. Screen flashing may work fine for a few seconds, but if the computer starts to check mail or scan for viruses, the screen can “choke”, skip a few flickers, and there goes your effective entrainment. Despite this, 10 hz and below generally works very well with most computers. For faster rates, it helps to close other programs you have running and to reduce the resolution of your screen (some AVS software can do this for you).

Screens are not close to your eyes – In most cases it is recommended that you close your eyes throughout an AVS session. In order for screen flashing to shine through your eyelids and provide effective flicker stimulation, you may need to increase your monitor’s brightness and be in a dimly lit room. If that is not possible, I have found it very enjoyable to watch the screen for 2 to 6 minutes until my eyelids become heavy enough to close on their own. This is particularly effective when using flickers with 3D visualizations. The visualizations are entertaining and hypnotic by themselves - add a flicker to that, and I’m easily entranced within a few minutes, at which point I just close my eyes and let the audio take over.

Ergonomics and location – The main problem people have using computers for AVS is this: most computer chairs are not the type you can recline in and most computers are not located in private, serene environments. Heavily trafficked areas such as your living room are no place to experience mental bliss. Luckily, computers are more than capable of providing options for portability. This is discussed at length in the “Tips” section.

Too many options can be a bad thing – A screen full of options can be overwhelming and intimidating at first. This field can be complex and good software will give you all the features you need to make the best of it. This can require some fiddling and experimentation to determine the best settings for you.

Computer knowledge required - Probably the most common reservation people have about using AVS software is their belief that they are not “computer savvy” enough to run such a program. Oddly enough, after I begin talking to them it quickly becomes apparent that they have underestimated their own computer skill level. If you can burn a CD and browse the internet,

you can use brainwave entrainment software. If you have any knowledge of brainwaves or have used AVS devices in the past you should feel right at home. Even so, basic computer knowledge is required and learning any software program is going to be significantly more involved than loading a CD or popping batteries into an AVS device.

Tips

Portability

Everybody wants to take the benefits of AVS with them. Whether you are traveling to Europe or to your bedroom, portability is an important consideration. Luckily, there are a range of options you have at your disposal to make your computer-based AVS experience portable.

Laptop – The most obvious answer is a laptop. However, this has problems of its own. Many laptops don't have the highest quality sound output, emitting a static that can interfere with LED glasses driven by AudioStrobe. Still, laptops are rapidly improving and a great number of people have chosen this route. It lets you take all the flexibility of computer-based AVS with you anywhere you go. If you do choose this option, be sure to turn off screen flashing if others are around, particularly children.

Burn Audio CDs – Most AVS software allows you to export a file that can be burned to CD. From there, you can play it using any regular CD player. AVS software can also export sessions embedded with AudioStrobe, so if you have a Mind Machine the CD you burn can be used to drive the LED glasses.

MP3 Players (iPod, etc) – Today there are a number of very portable and inexpensive devices that can easily be used to take an AVS session with you. The *iPod* is one, the *Zen* by Creative Labs is another. There are many less expensive options as well, some smaller than a keychain.

Sound Files

There are a variety of digital sound file formats that can be used to transfer your AVS session to an audio player or CD. Here are the most common formats and their relation to AVS:

WAV Files – WAV files are usually what is exported from AVS software. This format is as high quality as it gets, and is standard enough that it will be compatible with every media player or CD burning software on the market. Unfortunately, WAV files also take up a lot of space: an hour long AVS session in WAV form can easily fill up your audio player. With audio CDs, however, this isn't an issue, since it is the *length* of the song, not the format of the sound file that consumes space on an audio CD.

MP3 Files – Despite what you may have heard, MP3's can in fact be used for brainwave entrainment. In most cases, even the default settings of your MP3 encoding software will work fine. For best results, set the mode to Stereo and the bitrate to at least 128 kbps. If you are using AudioStrobe, disable low-pass filtering (if that is an option), and set the bitrate to 320 kbps, or

the highest quality possible. If your AVS software does not support MP3 exporting directly, you can find free MP3 encoders all over the internet. I recommend RazorLame.

WMA and OGG Files – WMA and OGG files are basically the same as MP3s with one exception: they tend to work better with AudioStrobe. If you are in the market for a portable audio player like an iPod, choose one that supports WMA or OGG files if you can. I recommend the Zen player series from Creative Labs.

Computer Hardware Specs

Sound Card – Most personal computers come with a sound card, with the exception of some computers used in offices. Any sound card will work for AVS, though some do require some additional configuration (see the *Computer Configuration* section). If you want to use your Mind Machine with a computer, be aware that some sound cards emit a static that can interfere with AudioStrobe. You will quickly find out if your sound card does this after plugging your Mind Machine into the computer. If the LED glasses light up immediately, even without an AVS session running, you have a problem. The only AudioStrobe Decoder I have used that is able to filter this static out is the Light/Sound Synergizer from MindExplorer. If you experience this with your Mind Machine you may want to consider investing in a USB Sound Card. They are very small and inexpensive (I have seen some under \$10!), and I have not used one that emitted static. (Note that the sound card will not affect how sessions burnt to a CD or transferred to an MP3 player will function. All Mind Machines work well with CDs and MP3 players.)

Microphone – You will need a digital microphone if you want to record your own affirmations or hypnosis scripts. For most purposes I would recommend a USB microphone instead of one that plugs into your sound card. USB microphones tend to be more reliable and less can go wrong since they do not need to pass through a sound card. To get higher-quality recordings, make sure you are in a quiet environment (turn off fans or air conditioners) and be sure to use recording software that incorporates noise reduction filters. Doing this will give you clear, crisp, near-studio quality recordings at a fraction of the cost.

Computer Configuration

Sound Card Configuration – High end sound cards come with lots of wonderful options such as 3D effects and reverberation. If you were playing regular old music this would add a sense of realism to your listening experience – as if you were in a concert hall. Unfortunately, these same settings can decrease the effectiveness of your AVS session. 3D effects, for example, will cause the right and left stereo channels to blend, eliminating the binaural beat effect. Reverberation and echo will decrease the precision of sound pulses and in severe cases may cause frequency doubling. You should be able to turn these effects off by adjusting the settings of your sound card. Consult your sound card's manual or website for more information.

System Volume Control – The brightness of AudioStrobe is controlled by the volume of the sound. The most common problem people have using AudioStrobe from a computer is that their system volume needs to be turned up. Low volume can cause the lights to be too dim, and in some cases can keep one or both sides of the LED glasses from lighting up at all.

Disable screensaver and energy saver options – If you are using screen flashing or 3D Visualization effects for your computer-based AVS experience, be sure to disable your screensaver and your computer's power-off options. While you “zone out” in your session your computer thinks you have walked away, so it starts the countdown to screensaver or power-down mode. There is nothing worse than an abrupt end to a wonderful AVS session because of this often-overlooked configuration issue.

Other Tips

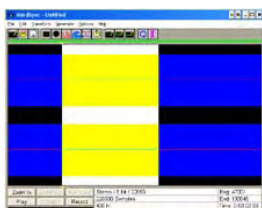
Session end options – If you are using AVS to help you sleep, some AVS software can be set to shut down your computer or put it in standby mode after the session ends.

Sound Tests – Some software comes with headphone and AudioStrobe configuration tools. Be sure to use these tools before proceeding with your first session.

Using Music – If you are considering adding music to your sessions, there are a number of options. One method is to “rip” the music from the CD to the computer using Windows Media Player. However, be sure to disable copy protection before the ripping process begins, otherwise most AVS software will not be able to use it. If you are downloading music from the internet, I recommend using Napster or MusicMatch instead of iTunes. Apple does not allow other software to play music downloaded from their service. If you already use iTunes, you may have to burn the music to a CD and then rip it back to your computer in order to use it for this purpose. I have heard that Apple is considering eliminating such protections from their service, so this may not be an issue in the future.

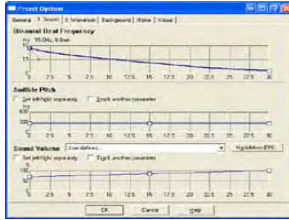
History

Here is a brief history of the most well-known AVS programs for the computer. To keep it short, I'm only including the programs that allow session creation and are specifically designed for computer use (as opposed to those designed only to upload sessions to Mind Machines). I am also excluding software that can be used for entrainment, but isn't designed for it.

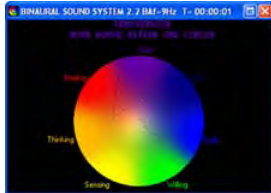


Mind Sync (1991-1993) Before CoolEdit was released commercially in 1995, and became the most popular sound editing software for Windows, its creator David Johnston was making brain stimulation software. MindSync was designed to create binaural beats. A unique feature of this program was the “Brainwave Synchronizer”, which could spatially position any sound in a way that created binaural beats without relying on pitch difference between 2 tones. The brainwave synchronizer feature persisted throughout all of the versions of CoolEdit and still exists today as the “Binaural Autopan-ner” filter in Adobe's Audition software (renamed, after acquisition by Adobe). You can find this spatial positioning feature in other programs as well, such as in Mind Stereo.

Computer Narcotics (1994) An innovative DOS program centered around recreating the effects of drugs using audio-based entrainment. Unfortunately, I can no longer get this program to work on any modern machines.

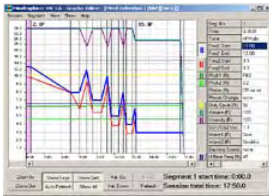


Brainwave Generator (1998 – 2004) An AVS application specializing in the creation of binaural beats with screen flashing and AudioStrobe capabilities. Though no longer in development, BWGen is very well known and can still run on many of the machines I've tested.



Binaural Sound System (1999-2000) A very unique and interesting application that was originally developed to investigate frequency and harmonic relationships, but was later made into a brain stimulation program. Seven frequencies are plotted on a circle and the frequency output is determined by a “path” that travels inside this circle. You can control the path by moving your mouse.

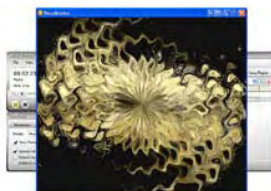
SBaGen (1999 – Present) The creation of open source programmer Jim Peters, SBaGen is a flexible and well known DOS-based binaural beat application. It is robust, cross-platform and completely free.



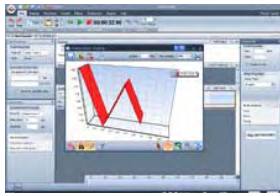
Mind Explorer (2000 – Present) A complex but flexible AVS software package allowing for binaural beats, pulsed tones, AudioStrobe and more. This program was created by the manufacturer of the Light/Sound Synergizer mentioned earlier, but was originally designed as a stand-alone solution for the computer.



Neuro-Programmer (2004 – Present) Specializes in combining AVS with hypnosis, affirmations and Neuro-Linguistic Programming (NLP). Includes a hypnosis script editor and microphone recording options, along with comprehensive AVS editing and AudioStrobe support.



Mind Stereo (2006 – Present) Brain stimulation program in the form of a media player. Unique features include Net Radio and Podcast support, as well as the flicker-enhanced 3D visualizations mentioned earlier.



Mind WorkStation (expected release: 2007) Focuses on programmability and the use of input from biofeedback devices, real-time interaction and other data sources to optimize brain stimulation. It will also support screen flickers, enhanced visualizations, AudioStrobe and the uploading of sessions to multiple AVS devices.

Conclusion

The personal computer can be transformed into an empowering, individualized AVS device, allowing users to not only improve themselves in the sense of traditional AVS, but also to innovate and experiment with their own mind. Perhaps the greatest testaments to this are the huge online communities that have built up around these programs, some with vast libraries of user-created sessions, user commentary and home-grown protocols. A meditator will upload a session that has enlightened him, a father will upload a session that worked wonders for his son, or people will share experiences they've had using established sessions, devices and CDs. Some fantastic insights have come as a result of grass roots community effort, as well as some of the most effective AVS sessions available anywhere.

Download a free trial of an AVS software package. You'll enjoy the results.

Using Light and Sound in a Float Tank

By Jeff Labno

While operating Altered States MindGym, the two most popular services were flotation tanks, and light and sound. These two services got the most rave reviews, plus had the most bookings of a myriad of services.

People began to ask, what would it be like to have a light and sound session while in a sensory deprivation tank? While the light and sound experience offered a quasi psychedelic hallucinations, doing it in the float tank without any external distractions from the outside world seemed to be a promising dynamic duo. This could be quite a trip.

So, the question came up; why offer sensory stimulation in an environment designed for sensory deprivation? Isn't that contrary to the purpose of float tanks? The answer was; why not? If some of the public wanted to do this float/light/sound combo, why not give them the opportunity.

This experience could be the new all healthy drug free trip of the century. After all, the inventor of the flotation tank, Dr. John C. Lilly, chronicled his drug induced hallucinogenic experiences inside the float tank in his book called *The Center of the Cyclone*. This inspired the movie *Altered States* which premiered in 1980 depicting psychedelic episodes inside the float tank. I couldn't resist the challenge to find out exactly how to offer light and sound while floating. The question that remained was, how do you protect electronic equipment from being submerged in a solution of Epsom salts and water?

I began hobnobbing with friends and customers who were engineers to tackle this problem. We had to figure out just how to connect earphones and light glasses so they worked under water, such that the salt solution did not corrode the components, and there was no electrical danger to the customer.

The solution did not take long to figure out. We already had underwater ear buds that we used for binaural beat frequencies while floating. We purchased them cheap at Radio Shack (\$1 to \$6 each). These were standard ear buds for Walkmans. It turns out they work perfectly fine being submerged in salt water for a month or longer. After that, they corrode, you throw them away, and buy new ones.

There is no electrical danger as long as you use low Voltage light and sound system such as a battery powered unit, say with up to 4 AA batteries. You don't want to use any unit that plugs into the wall.

The light glasses were a different story. They used circuit board technology with LEDs (light emitting diodes) to pulse the light. To protect the circuitry from exposure to water, we used a silicon calk, and put it all over the circuitry in the light glasses, while allowing the top part of the LEDs to illuminate, free from being coated.

The set up was simple. Plug the ear buds, and the light glasses into a plastic battery operated portable light and sound controller, put the controller into a protective zip lock bag, rest it on a rattan stand just outside the tank door, allow the customer time to enter the tank and insert the ear buds and put on the light glasses; then someone on the outside just presses play and LET THE SESSION BEGIN.

For two months we offered free session to any AquaNaut brave enough to explore this new techno combo. The experiment functioned perfect, without flaw. After two months of gathering subjective data, a conclusion was summarized.

Almost nobody liked the combo. The common complaint was that the two different technologies carried you in different directions, and interfered with each other. The tank was conducive for letting go and being without sensorial input. The light and sound experience was conducive for maintaining your mental focus on the stimulation of pulsed light and sound. The two just did not seem to mix.

The conclusion was; WE DID IT! The results were; no one liked it. What we learned was; time to move on to the next noble experiment.

Important to keep in mind is that light and sound technology was not as evolved when we did this experiment, as it is today. The main difference is newer machines use ultra bright LEDs, not dim lights.

Dim LEDs produce a flickering effect with eyes closed, whereas ultra bright LEDs produce gorgeous visuals.

Jeff Labno can be reached at <http://www.labnoconsulting.com>

Anthropology of Light and Sound: Stone Age Tribes in the Americas The Yanomömö of Brazil: The Fierce People

By Jeff Labno

As part of receiving my Bachelor of Arts Degree in Anthropology at U.C.L.A., I learned about the Yanomömö indigens of the Brazilian rain forest. My teacher was Professor Newman, who spent 8 months living with the Yanomömö.

The prime directive of Anthropological observers is to live with a secluded tribal people uninfluenced by modernism, to not introduce modern ways, to not interfere with their thinking, learn their language, and observe them as if studying a microbe under a microscope.

Then you write and teach about their ways to preserve their legacy and traditions within the written record so people living in the modern world can learn about civilizations existing in natural environments from a non-judgemental point of view.

Yanomömö means, the Fierce People. They pride themselves on using green skin make-up made with plants which they put on their face as not to stand out in the forest. Doing this, their goal is to become invisible in the forest, so that they could hunt and gather food more successfully.

Professor Newman showed us a film of the Yanomömö, called Magical Death. This film depicted how the Yanomömö collected the bark from a tree, and pulverized it into a powder called Yopo.

The tribal shamans would snort this powder through a long tube with the help of someone blowing hard at the other end. The result of snorting Yopo was to induce a hallucinagenic trance state.

At the day's end, when all chores were completed, after eating dinner and taking care of children's needs, a campfire was lighted in the middle of their circular village made of covering of tree barks, to ward off the monsoonal-type rains of the rain forest, and to keep out wild animals.

Drums and other instruments were brought out and played.

The flickering light of the camp fire, and the drone of the pounding drums set the stage for a ceremony in which shamans only were allowed to participate. Shamans dedicate their lives to the betterment of their people, as they are gifted in ways that allow them to be sensitive to the environment around them. The shamans would ingest the powder of the Mokohiro bark; then the Magical Dance would begin.

Within 40 minutes, the power of ingesting powdered Yopo took hold, and the entire tribe observed the event, much like when one goes to a theater.

The stage was set. The villagers were comfortable in their hammocks with their children, eagerly watching. The fire was lit. The musicians began to play. The sick waited for magical cures. Others waited to hear messages from their ancestors.

The shamans, did a Magical Dance that brought forth the spirits of the deceased. They were able to communicate with these spirits, and pass along messages to their loved ones, acting like a telephone, communicating back and forth with messages between the living and the dead.

Within the magic of these events, the shamans would heal the sick, and cure distresses of the suffering. They did this within this Magical Dance style play that not only entertained the tribe, but had curative, spiritual, and calming results on its members.

An important part of the use of pulverized Yopo was doing it at a time when the chores of the day were done, and amidst a backdrop visual and aural display of pulsed light and pulsed sound, provided by the campfire and drums.

The Yanomömö have been doing this for over 8,000 years. They are considered to be the largest living tribe of stone age people in the world, living out of bounds of the modern world.

Light and sound has played a huge ceremonial part in native tribes all over the world. Churches world wide also use light and sound, which plays a major role in setting the stage for spiritual experiences.

Jeff Labno can be reached at <http://www.labnoconsulting.com>

Mind Machines: Basic Toilet Training

By Jeff Labno

The deepest and most satisfying light and sound sessions occur when doing them when you are already relaxed. Isn't the same true about living life? You enjoy life much more when you relaxed?

If one of the prime benefits derived from doing light and sound is basic relaxation; then does this mean one should always do two sessions in a row, one to relax you first, and do yet another session based on your goal? Wouldn't that then double the time commitment required?

Actually, there is a better way.

Do short sessions while sitting on the toilet, and on a regular basis.

First of all, most of us sit on the toilet several times each day, before work, during the day, after work, and during the night. This elevates the toilet to be the ideal shrine for doing regular and ongoing short and sweet sessions.

Just place your machine on top of your toilet for quick access – what could get easier than that?

Now pick any program, press play, and you are off. When you flush, your session is over. Keep in mind that by definition of circumstance, these programs will be short, not long enough for anything to be accomplished other than basic relaxation.

Now for the BIG payoff!

Just from doing short sessions on a regular basis, most people report some very interesting personal benefits. They find their short-term memory improving, ability to stay aware on what's going on around them is better, overall mood improvements, and they have more energy throughout the day. These improvements were reported by a wide range of people.

When it comes time to doing longer and more serious sessions like creative visualization, meditation, memory recall, super focus, mind clearing, etc.; you will access these states faster and deeper.

Jeff Labno can be reached at <http://www.labnoconsulting.com>

Never Heard Creation Explained This Way Before! (Courtesy of anonymous email)

In the beginning, God created the Heavens and the Earth and populated the Earth with broccoli, cauliflower and spinach, green and yellow and red vegetables of all kinds, so Man and Woman would live long and healthy lives.

Then using God's great gifts, Satan created Ben and Jerry's Ice Cream and Krispy Creme Donuts. And Satan said, "You want chocolate with that?" And Man said, "Yes!" and Woman said, "and as long as you're at it, add some sprinkles." And they gained 10 pounds. And Satan smiled. And God created the healthful yogurt that Woman might keep the figure that Man found so fair. And Satan brought forth white flour from the wheat, and sugar from the cane and combined them. And Woman went from size 6 to size 14. So God said, "Try my fresh green salad." And Satan presented Thousand-Island Dressing, buttery croutons and garlic toast on the side. And Man and Woman unfastened their belts following the repast.

God then said, "I have sent you heart healthy vegetables and olive oil in which to cook them." And Satan brought forth deep fried fish and chicken-fried steak so big it needed its own platter. And Man gained more weight and his cholesterol went through the roof. God then created a light, fluffy white cake, named it "Angel Food Cake," and said, "It is good." Satan then created chocolate cake and named it "Devil's Food."

God then brought forth running shoes so that His children might lose those extra pounds. And Satan gave cable TV with a remote control so Man would not have to toil changing the channels. And Man and Woman laughed and cried before the flickering blue light and gained pounds. Then God brought forth the potato, naturally low in fat and brimming with nutrition. And Satan peeled off the healthful skin and sliced the starchy center into chips and deep-fried them. And Man gained pounds.

God then gave lean beef so that Man might consume fewer calories and still satisfy his appetite. And Satan created McDonald's and its 99-cent double cheeseburger. Then said, "You want fries with that?" And Man replied, "Yes! And super size them!" And Satan said, "It is good." And Man went into cardiac arrest. God sighed and created quadruple bypass surgery.

Then Satan created HMOs.

Visual Pathways And The Tru-Vu Eyeset

by Dave Siever

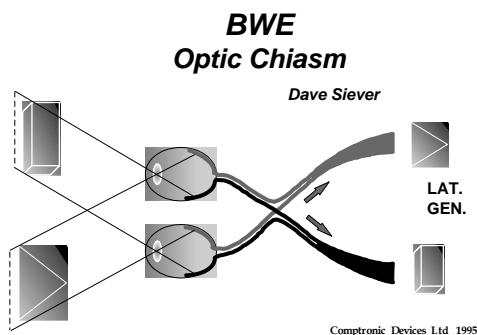


Our ancestors easily and unconsciously altered their brainwaves by staring into a flickering fire or light. As they focused on the light, both eyes were visually stimulated at the same time. This often produced an enjoyable state of reverie. This kind of visual stimulation was clinically replicated in the first commercial brainwave entrainment (BWE) device, the Brain Wave Synchronizer, developed in 1958 by Sidney Schneider. Using a xenon flash tube (similar to the flash-bulb in a modern camera), the Brain Wave Synchronizer would be placed two to four feet in front of the subject with its light flashing at a set frequency. The whole front of the subject was enveloped in the flashing white light.

With the further development and commercialization of BWE devices, eyesets were used for photic stimulation. These eyesets housed small light bulbs which flashed the light directly in front of each eye. This allowed for two distinct stimulation methods: both eyes stimulated in a synchronized fashion (together) or alternate (left/right) stimulation of the eyes. The subjective experiences and preferences between the two types of stimulation are varied.

Many report that the synchronized approach is generally seen as a “blanketing” of colors in the visual field, while the alternate stimulation produces a myriad of vertical and horizontal lines flooded with small “pockets of colors”. The synchronized method generates a large evoked response within the visual cortex. Harmonics often appear as well. The alternate method produces a very different BWE response in the visual cortex because of the way in which the nerve network connecting the eyes to the brain function. This nerve network is called the optic chiasm. Instead of connecting the left eye to the right brain and vice-versa (as the rest of the body is wired), the optic chiasm connects the left visual fields from both eyes to the right brain and vice-versa. Figure 1 shows this nerve arrangement on its way to the first processing centre (lateral geniculate) before the visual impulses travel toward the visual cortex located at the back of the brain.

Figure 1



Because the optic chiasm is wired this way, the alternate method rarely produces a visual evoked frequency at the same frequency as the stimulus. If it does, the BWE frequency will most likely be a sub-harmonic. While the alternate method stimulates each eye at different times, both visual fields and both visual cortexes are also stimulated with each flash of light. An eight Hz alternating stimulus will flash on the left eye eight times and flash on the right eye eight times in one second, generating a visual evoked response of 16 Hz. In other words, the visual evoked response or BWE response is double that of the stimulus frequency when using the alternate method of stimulation.

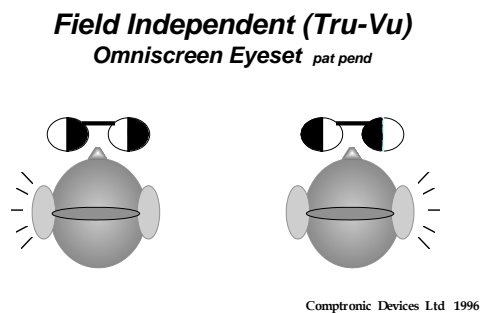
A third (and new) method of generating BWE by visual stimulation is to stimulate each of the visual fields separately rather than the entire visual field of each eye. The eyeset flashes into the left visual fields of both eyes, then alternately flash into the right visual fields of both eyes. This approach allows the ability to stimulate either visual cortex with a frequency different from the other visual cortex. For example, a person who functions strongly from the left brain could have eight Hz stimulated into the right visual field (and therefore the left brain) to slow down left brain function and have 18 Hz stimulated into the left visual field to increase right brain function. Using spectral analysis EEG, we have seen evidence of this effect.

Another area where we find this new approach to visual stimulation beneficial is in the treat

ment of Attention Deficit Disorder (ADD). When treating children with ADD, we found it necessary to generate a wide variety of stimulus (partly to overcome blocking effect and as a way to override the child's mental chatter). In the past, we would switch from synchronized stimulation to alternate stimulation every minute using the same frequency for both the left and right side. In some cases, the children experienced vertigo or found this uncomfortable. This made the BWE experience undesirable and often sessions would discontinue.

We are confident that this new "Field Independent" approach will replace the standard eyeset in all applications using alternate stimulation and when dual frequency stimulation is desired. Because of the unique sensorial experiences associated with the standard eyeset while in alternate mode, there may be some applications where this approach will be preferred. Figure 2 shows how the new Tru-Vu Field-Independent Omniscreen™ eyesets operate.

Figure 2



Helping Hands UK Org and The David PAL Sound and Light Machine



We came across the David PAL from Mindalive by accident but, what a godsend this device

has proved to be.

Helping Hands UK Organization is a UK-based non-profit making organization that reviews, then hopefully recommends mainstream software that we believe will help physically and visually challenged PC users in their day to day computing activities (please see <http://www.helpinghandsuk.org>)

Around two years ago we were encouraged to trial the PRX2 from Mind Gear, a sound and light machine. This was to help many of our members who suffered from ADD (Attention Deficit Disorder). We had moderate results with this device. Around a year ago we were invited to a seminar in Birmingham, UK and on display was a David PAL sound and light machine. We were asked again if we wanted to trial this device which, we accepted.

The David PAL proved to be a brilliant solution to help combat ADD. We have also used the device continuously to relieve stress and bring a calming mood to the staff at Helping Hands UK Org.

We have found that sessions lasting between 20 and 40 minutes seem most beneficial for most users. Obviously, at this point in time, we can only conduct one session per user per day. Hopefully, in the future we will be in a position to offer more sessions for more users.

Quite a few of our members have asked about adopting sessions for visualization to achieve better results in job interviews, breaking bad habits etc. This is definitely an area we wish to investigate.

With the introduction of the latest David PAL which utilizes CES (Cranio Electro Stimulation) we are very excited. We believe this technology will help in the alleviation of depression and anxiety often related to challenged people. The people at Mindalive have also added 18 extra sessions to the David PAL extending this to 36 sessions.

We fully recommend and applaud the David PAL sound and light machine and would encourage any organizations such as ours to utilize such a device. Obviously, any person dealing with mentally challenged persons or anyone suffering from epilepsy would have to take sound advice before use but, with our use with physically challenged people, we cannot recommend this device enough.

Graham J Hadlington
Helping Hands UK Org

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The Electric Lodestone: Electric Aspirin*

(***Disclaimer:** any reference to aspirin is poetic in nature. The Electric Lodestone is not medicine and not regulated by the FDA)

I recently was diagnosed with a sinus infection. At first, I felt I had a simple ear infection, something like Swimmers Ear. I self treated it with Q-tips to get the ear wax out and an OTC Swimmers Ear treatment. Within days, a mild discomfort turned into my ear throbbing, non-stop headaches on my left side, upper and lower jaw pain, and pain in my throat.

I was shocked when my doctor told me it was a sinus infection and all I needed to do was to inhale an OTC medication called Nasaret. Within days, most of the pain subsided; but then, my left ear started to drain constantly producing a clear yet sticky liquid. My doctor told me that I probably had punctured my eardrum somehow, perhaps sneezing from the sinus blockage. In the meantime awaiting my next doc appointment, pain in my ear continued, with mild discomforting headaches as well.

Then one afternoon I ran across my Electric Lodestone which I had stored away in a box. I pulled it out, plugged it in and started using it immediately. For those who don't know, the Electric Lodestone is a pulsed magnetic device producing pulses of magnetic flux <200 gauss. Pulsed magnetic therapy is gaining greater popularity among healthcare professionals; just look it up on the worldwide web.

After just a few minutes, 90% of my ear pain and headache pain went away. I now use the Electric Lodestone several times a day when the pain reoccurs, to wipe it out. I now have a new attitude...I can focus on work and getting things done instead of dwelling on my pain.

I've been reviewing products in the mind tech field since 1978, including light and sound. My main message is, use the right tool for the right job all while not ignoring or abetting the help we get from standard medical procedures.

Jeff Labno



The Electric Lodestone / Call 818-831-7931 for details



Chris Williams

Chris Williams passed away July 1st, 2007 in Apple Valley, California.

Born April 4th, 1973, Chris was widely regarded for his innovations to the field of consciousness technology.

Chris was a good friend to many of us, and was well respected for his creativity by developing several new products, greatly accelerating the evolution of light and sound instrumentation.

Some of his inventions included: Lightframe Polarity Adapters, which enabled common power polarity lightframes to be used with common ground polarity instruments and vice versa; the ALLcolor Visual System, which was the *first* lightframe capable of producing every true, blend or shade of color imaginable, negating the need for consumers to purchase a separate lightframe when wanting to experience a specific color; and the Electric Lodestone, which generates pulsed magnetic stimulation to the body for the alleviation of pain and stiffness.

We will miss you Chris. Thank you for your great work and contributions to the light and sound industry. You will be fondly remembered by all those who met you and personally knew you.

Michael Landgraf - Christopher Oliver - Jeff Labno

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