Altered States of Consciousness, Healing, Shamanism, and Biofeedback: The Interface

Lewis Mehl-Madrona

What are the commonalities between practitioners of biofeedback and neurofeedback and the world’s traditional cultural healers? Where is the interface? What are all trying to accomplish? What is the world view guiding each, and how does that contribute to effectiveness?

For traditional healers, all healing is fundamentally spiritual, though trivial or ordinary problems are often solved by what appear to outsiders as herbs or other external means. For insiders in these cultures, however, an herb is never “just an herb.” Giving an herb means giving the spirit of that plant as much, or more so than the plant itself. Within that world view, spirits are the force behind the motion of physical matter. For example, the Lakota word for “God” is Dakuskans-kan, which means, “that which moves everything that moves.” For traditional healers, the spiritual realm contains the source of healing. Entering into a state of consciousness most compatible with healing is a goal; perhaps the most famous (to academics) example being Balinese trance dancers. Traditional healers recognize that an altered state of consciousness facilitates healing. Within that state of consciousness (trance, ecstasy, etc.), spirit connection is more likely and more profound, and radical reorganization (healing) can occur. Cultures vary in how the produce these states of consciousness and what they call them.

Spirituality typically involves feelings of love and bliss related to the transcendental (greater than human experience) realm. It involves peak experiences that expand our sense of connectedness to larger than human realms. Transcendence is the experience of perceiving oneself as an integral part of the universe as a whole. Neurofeedback often aims to generate similar feelings of connectedness, expansion, and peak experiences, with the idea that these states promote health and healing. Traditional healers rely upon spirits through ceremony to produce healing once these states of awareness are achieved.

My mother’s people are Cherokee. Pre-contact, everyone was expected to have capabilities for sustained, conscious awareness that go far beyond what we expect for average people in North America today. Survival depends upon heightened awareness. Successful hunting requires a meditative ability (mindfulness, in some modern terminologies) and a cultivated ability to be simultaneously aware of many happenings around the hunter. The positive psychology movement has called this “being in the flow.” Whatever we call it, we know when we are there, we are focused, “one with our environment,” and definitely not using our “list making brain.” I think of the list making brain, the dorsolateral prefrontal cortex, as the executive planner and an important player. However, to hunt well and survive, we must turn off that circuitry and “just be” one with the forest or the prairie. Every member of the society was expected to have those abilities. Nevertheless, some individuals cultivated these abilities to a more developed level and were recognized as being more sophisticated in their abilities to communicate with spirits. Perhaps, more importantly, the spirits...
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FROM THE President

I recently attended our “parent” society’s meeting (AAPB at Daytona Beach). I had a chance to see the current societal offerings, including seeing some of the other state societies and their ability to provide meaningful content to their membership. I must say that I was “thrown” by this perceptual exercise into a real cognitive tail-spin… rather unexpectedly.

First off, our “parent” organization is actually younger than the BSC … which must have made for a difficult labor and delivery! Secondly, there are lots of states… but fewer societies. The state societies I saw were almost without exception mere fading shadows compared with their past glory. They are spending down their cash reserves serving a dwindling membership with fading services. In addition, they have been unable to provide state meetings or a societal newsletter that has substantial content.

You can see why I was in such a tail-spin… my expectations have been set by the BSC. We have three newsletter publication printings each year with a solid newsletter editorial team of Christina Malewicz and Janette Sperber and our new managing editor, Hilary Perez. We also hold regional meetings, in addition to our conference each year. Let me toot your horn: We have a great society here in California. I don’t write this to disparage any of the societies mentioned, but rather to draw a sharp contrast for our members of what is “out there” versus what we have here at home!

You might notice that we have a new Executive Director, Hilary Perez, who will introduce herself in this issue, as well as a wonderful hard working Board and Committee structure, and even the volunteer editors of this very newsletter. Thanks to our past ED, Cindy Kerson, for her years of dedication to building and maintaining our society; we wish her well in her new position with ISNR! I’m happy to say the transition was a smooth one.

FROM THE Editor

In this issue Jay Gunkelman contrasts the BSC to other state societies in his letter from the president and concludes that we remain a vital organization. I couldn’t agree more. I am always impressed with the passion with which members of the BSC support each other and this newsletter. I’d like to welcome and thank Hilary Perez, who replaced Cindy Kerson as the Executive Director and managing editor of the newsletter—she’s off to a great start!

Our lead article comes from Lewis Mehl-Madrona regarding the interface of altered states of consciousness, healing, shamanism and biofeedback. Dr. Mehl-Madrona compares the similarities and effectiveness of each form of healing and contrasts the world views they operate from.

Janette Sperber writes a comprehensive review of Nancy Hopp’s CD: “Relaxation/Affirmation Techniques”. One thing I appreciate about Janette’s review is that it also contains practical and clinically relevant information. Also in this issue, Janette interviews Servaas Mes who discusses his personal and professional experience with somatics and biofeedback. He talks about key concepts in somatics and suggests ways to integrate somatics into a biofeedback practice. Servaas will be presenting at our upcoming conference in Asilomar for those who would like to learn more about his work.

Meg MacDonald writes an editorial piece entitled “Change is Hard.” She uses a situation in her life to reinforce the importance of moving away from habit to conscious choice. For folks who missed our Northern California Regional Meeting held on May 10th at San Francisco State University, Richard Harvey summarizes the presentations in his column “Learning Somatics from the Experts.”
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CEs for APA, CNA, BBS. Stens Corp is approved by the APA to offer CE for psychologists and maintains responsibility for the program.
From the President
Continued from page 3

I have one more hot tip: you can get the full experience of how great this society is by attending our annual meeting. This fall we have the annual scientific meeting at our classic venue, Asilomar. The meeting promises to be another coastal success drawing wonderful keynote and invited speakers and featuring some of our own members’ wonderful work, in addition to access to the beautiful beaches and sunsets of Asilomar.

Look to our newsletter to keep you in the loop, but set aside the dates now so you don’t miss out on the best the west has to offer, the Asilomar 2008 BSC annual meeting at the beach!

See you all there!  
Jay  
qeegjay@sbcglobal.com

From the Executive Director

THANK YOU! That is the first thing I would like to say to all of the BSC Members.

My transition into the Executive Director position has been an exciting and stimulating journey. I have had a warm reception from the Board and Cindy Kerson has been a solid, inspirational mentor that has given her time and energy abundantly to me and the society.

A little bit about me. I am a California native, born in Sacramento but raised all over the west coast. I graduated from Arizona State University with a Bachelor of Arts degree in Interpersonal Communication. I have lived in Mission Viejo, CA for 15 years and love the geographic variety, weather and laid back lifestyle that characterizes us southlanders. My other important job is CEO of my family; two teenage boys and a great husband.

My career background is rooted in administration and management. My ideal work environment is healthcare. I truly believe in helping others to achieve optimum health; mentally, physically and spiritually, even if it is from working behind the scenes keeping things organized. Working with the Biofeedback Society will fulfill my professional passion.

My goal for the society as the new Executive Director, is to provide a reliable, consistent administration that promotes the profession; problem solves and initiates growth without compromising the long achieved quality of the society’s newsletter, CEU’s and overall member support. I hope to meet every one of you and get to know more about you as a person and as a professional in this important field.

If I can be of assistance to you, please reach out for me. I appreciate the opportunity to represent and work with the Biofeedback Society of California.

Peace & Gratitude—Hilary Perez

Functional Neurology: Improving the Frequencies of Life

Donald J. Baune, D.C., D.A.C.N.B.  
Diplomat of the American Chiropractic Neurology Board

Brain waves measure the symphony of neuronal firing created by trillions of nerve cells, with each individual neuron contributing its unique frequency. Neuronal regulation requires healthy individual nerves and support cells and relies on optimizing, or at least improving, all aspects of each cell’s requirements.

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The BSC 34th Annual Conference

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Lewis Mehl-Madrona, MD, Ph.D.  “Native American inspired Approaches to healing”
Jay Gunkelman, QEEGD.  “Phenotype predicts stimulant efficacy in ADHD”
Hank Weeks, Ph.D.  “How Ethical are you?”

Conference registration materials and information will be available in our Fall Newsletter. Check your email and the Web site for updates.

These meetings will be under review by Amedco for CMEs (annual conference only) for MDs and CEUs for BBS, BRN, APA and BCIA.

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Interview with Servaas Mes

Janette Sperber

Janette Sperber: It looks like you will be presenting at our conference in Monterey in November. Since most of our membership is not familiar with you, why don’t you start out by telling us about your background and how you got into this work.

Servaas Mes: I grew up in the Netherlands and was trained there as a physical therapist. In 1989 I immigrated and moved to British Columbia, Canada, and started my own private practice. In 1991, I got injured while playing a soccer game. Basically my whole right leg forgot how to work. I went through the whole medical system—doctors, therapists, x-rays, MRIs, bone scans, nerve conduction studies... 30 different practitioners looked at my leg, and nobody could figure out what was going on. In 1996, I met somebody who did somatic work, which intrigued me. So I went in for a session, where it became obvious that I literally had forgotten how I could control my own muscles. And not just my leg, it became apparent that it was my whole body that had forgotten how to move properly. So from there on, I was really intrigued with somatics.

I went to Eleanor Criswell’s institute in Novato for Somatics training and became a Somatic Practitioner, while integrating the latest from the world of rehabilitation. In 1999, I spent a year at the Spine and Joint Center in Rotterdam, the Netherlands, where I had a chance to introduce somatics. I went back to Canada and met my lovely wife Beverly; we were married by none other than Eleanor Criswell. I joined Beverly at her office in St. Helena in the beautiful Napa Valley, where we have our office, called “The Somatic Health Center.” We are very involved in expanding the frontiers of rehabilitation, health, fitness and overall human potential. Recently we were both published in a new book called “Peak Vitality,” where there are 57 leading experts in their fields talking about health and vitality, for example Dr. Oz, Deepak Chopra, Donna Eden, Candace Pert, John Bradshaw, Andrew Weil, Prince Charles, Alice Walker & Pema Chodron et al. My chapter is called “Self Hidden in Present Time”; Beverly’s is called “Body Earth Energies.” [Servaas kindly gave me a copy of this book and it does indeed look like a truly valuable resource for ourselves and our clients—ed.]. I am also working on my own book about Somatics and hoping to find a publisher who can move the Somatic work further forward.

JS: Could you define the term “somatics”?

SM: Somatics literally means the body experience from within, according to the late Thomas Hanna. It’s the integration of body and mind, left and right, function and structure, the integration of past, present and future.

JS: What is the nature of your professional practice?

SM: We see people one on one, with issues of rehabilitation, health education, fitness... whatever work people need to get their body back in present time. The first goal in rehabilitating people is to get them living consciously in present time. The main idea behind what we do is to make people independent of practitioners. So somatics and energy medicine work is bodywork as well as education, it’s not that if you’re the client that you are passively sitting on a chair or lying on a table. No, you are actively involved and you are literally upgrading your own neurophysiology so that you walk out differently than when you walked in.

JS: How do somatics and biofeedback relate to each other?

SM: The origin of somatics is more or less based on the work of Moshe Feldenkrais. He did a lot of movement—beautiful work—but didn’t explain too much to the client; so Hanna
Servaas Mes
Continued from page 7

was the first one to actually explain this model. Hanna also introduced the concepts of sensorimotor amnesia, as well as the concept that injuries, stress, surgery, etc., cause disturbances in the body in characteristic patterns of tightness, leading to faulty movement patterns and leading to health issues or complaints. In somatics, our clients learn about themselves. It’s like you are starting a dialog with yourself and for many people that is incredibly fascinating. Biofeedback is the same, it also starts the dialog with yourself. When I look into my crystal ball I can see the future as a blending of biofeedback and somatics, where somatic practitioners blend in more biofeedback and biofeedback practitioners blend in more somatics.

JS: How many times will you typically see a client?
SM: If someone has a traditional injury without structural pathology behind it, it would be between one and three or four sessions. That is how powerful this is. And a session is between an hour to an hour and a half.

JS: If you used biofeedback, what would you do with it?
SM: Biofeedback is one of the few modalities that can validate the immediate changes that somatics brings into someone’s body. And to make somatics more mainstream, we need research, which means we need data. The subjective is not good enough to convince the insurance companies that this method is applicable to the majority of the population. That’s where for instance the objective component of biofeedback can really support the subjective component of somatics.

JS: Could you give an example of your methods, the way you work with people?
SM: A part of the somatic process is called pandiculation, which is a conscious muscle contraction followed by a conscious eccentric release. I use my hands to assist the client to see where the movement starts and where the movement will end. Beyond Hanna’s pandiculation, I also introduce the emotional component of the movement, the energetic component of the movement, as well as the physical component. We get much faster results this way, as far as tapping into that muscle amnesia and immediately changing it into muscle awareness.

JS: How do you introduce the emotional component?
SM: The emotional connection is basically the holding pattern that is based on the injury of the past. It’s almost like a muscle memory where the muscles don’t want to contract and they don’t want to release. It’s like: “I’m holding, I’m guarding, I am not going to let go… I might not have let go for 20 years!” So during pandiculation, the brain gets the muscle in present time—or does the muscle get the brain in present time? That is always the question. However, the profoundness is that in present time, that holding pattern isn’t there! So suddenly people can contract and release their muscles in ways that their muscles haven’t moved in a long...
time. Then I teach them how they can do it by themselves without my guidance. They learn to recognize when tension habits creep back in and correct it as well. Independently!

JS: What do you find to be the most satisfying part of your professional work?

SM: When I witness my clients literally returning into their bodies, coming back into present time. And the side-effect is that “miraculously” their aches and pains are often gone!

JS: What do you find to be the hardest part of your work?

SM: The hardest part is also the most exciting: the pioneering part. There really aren’t many people doing somatics, so everywhere you go, it’s still new and you have to break through barriers and explain what you’re doing. Sometimes I wish we would be 20 years from now and there would be a lot more infrastructure in somatics: literature, DVDs, research studies, etc. Naturally, I’d like to see as well that somatics will be integrated by insurance companies—of course, with the help of the field of biofeedback!

JS: What changes would you like to see in the way our health care system currently operates?

SM: I would like to see more integration between all the different specialties in practitioners. Personally I am very interested in the question why a treatment modality does NOT work for part of the population, why not? Why didn’t it work? I think there is a lot to be learned from that. With the knowledge that we have currently, I firmly believe that it IS possible to develop programs that work for all!

JS: And finally, how did you end up connecting with Dr. Erik Peper?

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SM: Well, that is a funny story.
JS: I expect nothing less! [laughs]

SM: My wife and I went to see “The Universe Within,” an exhibition of plastinated human cadavers. I was standing in front of one of those cadavers and I was making some comments about the lumbar discs and sciatic nerve, when suddenly there was a voice behind me, also making a comment about that same sciatic nerve. And five minutes later I was standing in front of another cadaver, making a comment, and it’s the same person making another comment! And then I actually recognized him from an article he had written for Somatics magazine, and I said to him, “You must be Erik Peper,” and that’s how we met. So it was quite a coincidence really. Then one thing led to another, and now I am teaching a course at San Francisco State University on Somatics in the Holistic Health Department [where Dr. Peper teaches biofeedback classes—ed.]. Both Erik and I teach postgraduate programs for Physical Therapists in The Netherlands and I am very excited that in the spring of 2009, Erik will be complementing and validating the Somatics work with biofeedback in my workshop for the Dutch Physical Therapists. Erik is great and always super helpful!

JS: Anything else you’d like to say?

SM: I invite you to come up to the beautiful wine country and drop in to experience a Somatic Conditioning class that I teach here twice a week. You will learn to move organically, child like, like getting up from the floor and back down, and literally strengthen the neurophysiology in your own body.

JS: One last thing, can you tell us your plans for your presentations at our upcoming conference at Asilomar?

SM: Well, one thing you can be sure of: it will be fun and very practical and experiential. Please make sure you wear comfortable clothing, like you’re going to a yoga class. Be open minded!

JS: So you can guarantee us that your workshop will not be producing those glassy-eyed stares…

SM: That would be correct. I would like to reverse that, even better, so that at the end of the workshop your whole body will be freer and looser than it’s been in a long time! Isn’t that what it’s all about?

JS: Thanks, Servaas, for your time and we’ll see you in November.
Opinion of Dr. Meg MacDonald

You CAN Change Your Mind!

Meg MacDonald, M.D., Neurobehavioral Rehabilitation

My boyfriend is a smart guy. He’s a psychotherapist. He deals in the workings of the human mind all day long. He’s also a jogger, a member of the Sierra Club, a Democrat, and he cares about the environment. He hasn’t used plastic containers or plastic wrap in the microwave for years. He’s had fluorescent light bulbs in most fixtures in his house since the time when they cost a lot more to buy than regular bulbs. He’s generally a guy who is willing to put his actions and even his money where his beliefs are. So, why then would the following situation arise?

We have a small kettle, which he uses every morning to boil water for his decaf coffee (I use the automatic drip coffee maker for my “real” coffee). I calmly switched the kettle to the back burner, which is smaller, and showed him how the flames on the large burner, which is the largest burner, are positioned nicely around the bottom of the kettle. The flames are posi-tioning around the sides of the kettle, thus wasting a lot of energy and not boiling the water as quickly. With a smaller burner, the flames are positioned nicely around the bottom of the kettle. Simple logic, right? Fits right in with his apparent desires to be a good environmental citizen, right? A “no-brainer,” as they say.

Well, two years later he is still putting the kettle on the large burner and turning it up too high and I am coming along behind him and turning the gas down or switching the kettle to the back burner. This morning, I recognized what was really going on. I wasn’t taking it personally that he just didn’t want to do it “my way.” I also wasn’t just chalking it up to “he’s a guy” either. When I mentioned my idea to him, he readily agreed that the only reason he is still doing it that way is that he’s been doing it that way for years. It’s a habit, simply that, nothing else. And habits can be difficult to change.

But why?

He’s readily adopted new habits about light bulbs, food containers and many other things. He says it’s mainly because he’s still half asleep when he comes down to put on the kettle, so he’s really just not thinking about it. Bingo! It’s not about motivation or ego at all. I mean, he also tends to over-water (in my opinion) the lawn. We live in a desert climate, but he just really WANTS to have a nice green healthy lawn like the neighbors. Well, I can justify that. Sometimes you just have to have what you really want. But where’s the desire in wasting some natural gas? There isn’t any. But there also doesn’t seem to be a desire to change how he boiled the kettle. Maybe subconsciously he saw it as me telling him what to do and didn’t want to respond to that. Maybe there’s some other motivation. And maybe there isn’t any motivation—it’s

We forget that we as individuals, and we alone, are the ones who have both the power and the responsibility to create our lives and our experiences.

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"Relaxation / Affirmation Techniques" by Nancy Hopps

Review of Audio Relaxation CD

Janette Sperber

Normally I make my own home practice recordings for my clients, by using a handheld microphone plugged into a tape recorder. I guide the client through the process, whether it is guided imagery, progressive relaxation, breathing or whatever, and tape my voice as I go along. At times, when necessary, I put the tape on "pause" when my words do not need to be recorded (or if one of us is going to sneeze!). This allows me to customize each guided practice tape for the specific needs of the client. Other benefits include first, a reinforcement for the client in hearing her/his practitioner's voice, and second, since the client has already experienced a transformative process from my voice leading the journey, s/he is likely to have a better response when practicing at home alone.

Lately, I’ve started running into a technical problem now that MP3s are taking over, which is that fewer people (especially those under 40) even have tape players anymore. My solution to this has been to find a Walkman type cassette player and loan it out to the client. This strategy has worked well up until a couple of months ago.

I had a chronic pain client who desperately needed home practice in progressive relaxation. After receiving the recording I made for him, he returned the next week saying that the background noise on the tape was too distracting for him, and he requested a better quality recording. Thus began my journey of what seemed like endless hours of research into commercially available progressive relaxation audio products.

One difficulty was that most relaxation audio products did not have audio samples available, without which I would not consider risking a purchase. Another difficulty was that even recordings labeled as "progressive relaxation" sometimes consisted of simply passively relaxing one area of the body after another! Other recordings had only a few minutes of progressive relaxation followed by 15–30 minutes of music, nature sounds, etc. Other times, when I did manage to locate an audio sample of a likely candidate, the person's voice was not suitable. I greatly respect and personally benefit from the work of Belleruth Naparstek, but she unfortunately has not made a recording of a progressive relaxation. In general, I would say her products are always a safe bet, assuming you can find what you are looking for amongst her titles.

My final choice was a CD by Nancy Hopps, who offers a wide variety of audio products of interest to our professional communities. Her CD entitled Relaxation / Affirmation Techniques seemed to fit the bill, as she had a designated progressive relaxation track combined with color imagery for a total track length of 24 minutes. The contents of the CD are: Progressive Relaxation (9 mins, 30 secs) which is combined with color imagery (14 mins, 30 secs), a Color Relaxation (15 mins, 40 secs), and finally Affirmations (12 mins). Each of these 3 tracks is preceded by a brief introductory / preparatory track of 1–2 mins.

Before examining her content in more detail, I will say that I really liked the way she separated the introduction part of each main track onto a separate track so that one does not have to wade through it each time in order to listen to the main track. All of her intros were great: succinct and helpful to the novice.

About the progressive relaxation, one thing I liked was her suggestion to either greatly tighten an area and release it slowly or to tighten it minimally and release it all at once. She goes through the body in fairly traditional way (for a 9 min experience), for example, separating the left vs. right arms and legs.

There were a few things lacking from my perspective: first, while she gives instructions such as "tighten the muscles in your left upper arm," she never provides any guidance as to how to accomplish any specific contraction. Second, there were no reminders to continue to breathe and to let the rest of the body remain relaxed. Finally, there were no instructions to isolate the contracted muscle or to the effect of "study the contrast between your left arm tensed vs. your right arm relaxed." In my opinion, the total effect of the script is more of a relaxation than a muscle learning exercise. I should also note that her voice was not the soothing and hypnotic type; she adopts a very matter of fact, almost crisp enunciation which is not personally my favorite but it seemed to work for me anyway. It might even be preferred by your clients who are leery of "too much woo-woo."

I enjoyed the color imagery that
followed: floating down a rainbow of colors starting with the color red. She states that red is the color of physical energy and can help us release tension. She then goes through the entire body again, passively relaxing each body part, with “soothing warmth” of red (this may not be suitable for patients with inflammatory pain). Then much more briefly, she goes through orange for emotional relaxation, suggesting we ask ourselves “what am I feeling right now?” and breathing out any unsettling emotions. She then goes through yellow for mental relaxation, suggesting we ask ourselves “What are my thoughts?” and releasing any distracting thoughts. I really liked the distinction made between physical, emotional and mental relaxation.

We then see ourselves surrounded by the peacefulness of green in nature, imagining ourselves in a beautiful meadow with an animal friend for comfort. Engaging all of our senses, we then are encouraged to let go of any limiting beliefs as the sky turns to violet as a symbol of our higher self. Each of these is accompanied by a suggestion that we will be able to invoke this peaceful state in the future by simply imagining the color again.

The middle track on the CD consists of a “Color Relaxation” that uses a 12 to 1 countdown induction, leading to one’s special inner place of peace. The final track consists of spoken affirmations with a background of ocean or moving water sounds. The affirmations seemed generally good; some examples follow.

- I realize how important it is to balance work and play.
- I deserve to relax and play and I make that time for myself on a regular basis.
- I appreciate myself and the special things I have to offer.
- I believe in myself, thus I find that other people do too.
- I feel tremendous love flowing through me.
- I feel a new sense of clarity and peace.
- I am letting go of any negative programming easily and effortlessly.
- To change any condition or circumstance in my life, I know I must first change my innermost beliefs.
- I am grateful for the abundance in my life.

Bottom line, I think the progressive relaxation/color imagery works okay as a relaxation exercise, for the purpose of enhancing parasympathetic activity and decreasing sympathetic activation. The lack of hypnotic tone and pacing may be a problem for people who are used to that and expecting that. However, the affirmations would be great for playing at times such as driving to work. For a client who needs to zero in on gaining control of muscle activity, I could only recommend Nancy Hopps’ CD until the point (when and if) I find something which better addresses those needs.

Nancy Hopps’ website is www.RelaxIntoHealing.com, and she can be reached by phone at: 541 683-9088.

Opinion

Continued from page 11

just a habit—it doesn’t get thought about, it just gets done.

I think this is the point. I am a physician, a liberal thinker, and I have always thrived on personal growth and change. I must have a pretty flexible brain. But not everyone does. In my experiences working for social change, third world development, and in health care, the simplest things can be the most difficult. We all know that clean water and hand washing are good for basic hygiene—but getting poor people to do it when they are not accustomed to it (as my niece is discovering in rural Ghana) is just not easy. We all know that if everyone ate their fruits and vegetables and stayed away from fast food, cigarettes, etc., and exercised every day, we wouldn’t have most of the chronic disease problems we have in our country. But it’s these simple things that fall down to each person to do on a daily basis—habits that must be changed or established—that are the most difficult to influence. And I think that the main reason for this is that most people really don’t live a very sentient existence. They just don’t spend time thinking about what they are doing, they just do it.

This is the crux of personal and social change. The ability to make conscious a decision about self-determination, in every way, about every nuance, and every action we take, including how we are going to think and feel, is the great existential quest. And let’s face it, most of us never get anywhere close. We are creatures of habit. In so many ways, conscious choice really doesn’t enter into it. Everything about how we interact with the world becomes habit after we’ve lived long enough. How we take care of ourselves, how we set up our routines (or lack thereof), what we eat, how we relate to people, how we react to someone cutting us off on the freeway—most of it isn’t conscious choice at all, it’s just habit, knee-jerk action or reaction.

So what could our lives be like if we were somehow able to insert our conscious choice into more of what we do every day? Most of us really aren’t choosing to be unfit and overweight and stressed out—we just haven’t recognized that we even have a choice at all when it comes to these things. We feel like the external circumstances of our world drive us, rather than the other way around. We are always waiting for some magical opening of time and opportunity to allow us to finally get around to making some of those changes we’ve thought about. We forget that we as individuals, and we alone, are the ones who have both the power and the responsibility to create our lives and our experiences.

Living by choice, following your desires, the purpose-driven life, mindfulness, all of these clichés derive from a real truth. We spend so much time reacting to the world around us that we forget that we can stop and choose our response more carefully, more purposefully, in a way that allows us to get the desired result, rather than the default response. And, in taking this power-to-choose into every moment of our existence, we can begin to live a fully evolving life that is not based solely on habits. What a relief! What freedom! It gives a whole new meaning to the phrase “sentient being.”
Learning Somatics from the Experts

On Saturday, May 10th, 2008, 16 people learned about “Somatics” from published experts in the field. The workshop was the primary focus of the Biofeedback Society of California (BSC) Northern California Regional Meeting, held during the spring of each year. This year, the BSC’s annual statewide meeting will take place on the Monterey Peninsula at the Asilomar conference center. If you missed the Northern California Regional Meeting, there will be an opportunity to learn about somatics from the experts again at Asilomar, November 7-9, 2008.

The somatics workshop had three scheduled expert presenters: Erik Peper, Servaas Mes and Eleanor Criswell. Peper is President of the Biofeedback Foundation of Europe (2005), a life-time member of the BSC and past President of the Association for Applied Psychophysiology and Biofeedback. He holds Senior Fellow certification from the Biofeedback Certification Institute of America. Peper specializes in somatic awareness while using the computer and has published Healthy Computing with Muscle Biofeedback. Mes is a noted author and part-time faculty at San Francisco State University. He is a Somatic Practitioner and director of The Somatic Health Center in St. Helena, California, as well as a Registered Physical Therapist, a Hanna Somatic Educator, a Pranassage Practitioner and a Pilates Mat Instructor. He is the founder of Mobilizing Awareness Somatic Movement Programs as well as Somatic Conditioning fitness programs. Eleanor Criswell, who taught with Thomas Hanna (and was married to Hanna), was scheduled to present, however a family illness kept her from the meeting. Criswell currently carries the Hanna legacy of somatics by editing the journal Somatics.

The day began with Erik Peper describing the evolution of the field of somatics. Peper led the group in two brief experiential exercises for increasing internal awareness of our somatosensory system, drawing on the Moshe Feldenkrais method of somatic education. Servaas Mes added to the history of somatics, talking about the scholarly work of Thomas Hanna, considered a founding father in the field of somatics. Whereas it is possible to read in books and journals about the principle concepts of somatics, the art of learning somatics is in the practice. And practice we did.

Mes led the group through a series of floor movement practices to illustrate the difference between body awareness and somatic awareness. He had us lying on our backs on the floor, while guiding us for about 20 minutes into gradually feeling the relationship between the floor and the muscles, bones, tendons, ligaments and joints of the legs. Ever so gently, we were instructed how to bend our right leg and lift our right heel off the floor, followed by pointing our right knee towards our right toe, while noticing how our right hip raised automatically. Although the gradual movements seemed very subtle, the group had an “a-ha” moment when Mes asked us to feel our legs, then look and compare what we saw with our eyes to our internal awareness of our legs. Uniformly, everyone reported experiencing an internal sensation of the right leg being inches longer than the left, even though they appeared the same length.

After lunch, Mes continued exploring practical movement exercises that could be used for enhancing somatic awareness. Mes also presented a model for differentiating the first, second and third person perspectives of somatic awareness. For example, by moving from a cognition of “they” can do that somatic practice to “I” can do this somatic practice, a person shifts from a third to first person experience in which s/he can take responsibility and ownership.

Throughout the workshop, Mes reminded us about how the field of somatics can complement the field of biofeedback and vice versa. For example, he described ways of using somatics knowledge for enhancing biofeedback sessions by incorporating somatosensory feedback into a protocol, gradually increasing the time for building “felt” or “embodied” experiences into a biofeedback session. Although somatic feedback does require time, it does not require equipment, and can therefore be practiced easily. Following questions and answers at the end of the day, people lingered for a while, an indication that there was a desire for more learning. Please read more about Servaas Mes’s work in this newsletter, and sign up for a somatics workshop during the fall meeting, at Asilomar, November 7-9, 2008.
The 141-page spiral-bound booklet presents Sue’s latest approach in a straightforward and easy-to-use guide. This 2008 update of last year’s Protocol Guide reflects significant changes in integrating inter-hemispheric with left- and right-side training. We are certain this will be a valuable tool for developing protocols that will help you to improve your clinical results.

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who talked back to them were recognized as being powerful and able to make change happen on the physical world. These “healers” and cultures developed ways to deepen “trance” or “sustained, focused awareness without thought,” especially including the use of ceremony and ritual (drumming, chanting, dancing). They also used other tools, including what translates as “putting them to sleep so that they can dream like they’re asleep but they’re really awake,” which I interpret as what psychology now calls guided imagery, visualization, or hypnosis (And it strikes me from watching people work and then listening to what they say they do, that the words we use are completely arbitrary and must be grounded into a person’s actual observed practice to make any sense at all). Thus, I am suggesting that traditional healers were the world’s first neurofeedback practitioners in that they knew how to produce profound states of alpha and/or theta rhythm without technical awareness of these rhythms at all. (Stories exist, however, to demonstrate knowledge that the brain radiates energy, similar to what we now call bio-electricity).

Biofeedback practitioners are more varied in beliefs about the spiritual realm, especially in whether or not they address this realm with their clients. Nevertheless, most believe that states of mind exist that facilitate wellness. The difference clearly is the use of machines to cultivate changes in awareness.

When I asked the traditional elders who advise me what they thought about neurofeedback, several shrugged their shoulders and looked puzzled. One said, “It’s how white people do everything. They make an expensive machine and take weeks to do what we can do in hours with a drum and our voice.” Another said, “Since they only believe in what machines tell them, I guess they need machines to tell them how they are.” A third said, “It sure is a fancy way to talk to the spirits.” A fourth said, “The joke is on them. The spirits go into those machines and move them. They’re talking to ghosts in a box.” A fifth one said, “I feel sorry for those white people. It’s a lonely world when all you believe is machines.”

Of course, neurofeedback involves more than white people, but my elders tend toward a binary “us versus whites” orientation; they use race where I would compare “pre-modern” to “modern,” but the point of their attitude is clear. They accept what people do to find altered states of consciousness, but find it puzzling.

In my own life, I have done neurofeedback and I have gone to ceremony and ritual. For me (and for many others whom I know), ceremony wins hands down. Nevertheless, many of the people I see can’t or won’t go to ceremony. My “Christian Indians” fear it as devil worship, though I suspect many find profound trance when they sing their hymns. My alcoholic and addicted clients often believe in very little, though going to ceremony can be the first step in their recovery. And many modern people in urban areas have absolutely no connection with a world of ceremony and ritual. As the elders said, they believe in machines. So let’s let the machines help them. Beyond that, there may be specific benefits that focally targeted neurofeedback can offer for conditions such as inattentiveness (which I read as excess attentiveness to the peripheral environment competing with focal attentiveness to a task which requires ignoring the periphery, in appreciation of Thom Hartmann’s notion that what we now call ADHD was crucial for survival in hunter/gatherer times. Thom calls it the “Edison Gene”), for controlling mania, or for other states of brain which can be modified with feedback. In short, I translate the elders’ comments about neurofeedback as saying, “there are many ways to skin a cat in a post-modern world; whatever works for you is good; use it.”

Now let’s look at what we know about the neurobiology. During religious recitation, self-identified religious subjects activate a frontal-parietal circuit, composed of the dorsolateral prefrontal, dorsomedial frontal, and medial parietal cortex. Carmelite nuns recalling experiences of intense connection and communion with God experienced intense bursts of alpha waves with intense activity in the left occipital region. Michael Persinger at Laurentian University in Sudbury, Ontario uses a “helmet” to stimulate the right side of the brain, including the parietal lobe, with low-level electromagnetic radiation. Eighty percent of his subjects feel a presence in the room. Many weep and say they feel God nearby. Recall of the experience of possession-trance-dance by a Salpuri dancer increased alpha activity along with markedly increasing frontal midline theta activity. Compared to a resting state, the electrical activity showed an increase in the global field power integral and a decrease in generalized frequency and spatial complexity. PET scan data show increased blood flow in the supplementary motor cortex (SMA) during intense religious experiences with increased blood flow in the dorsolateral prefrontal cortex, increased blood flow in the right pre-cuneus. Does this provide a neurobiological explanation for how effective dance is in inducing trance? Oohashi, et al. (2002) used portable EEG equipment to study Balinese subjects engaged in a trance possession ceremony in the field. The subject who became “possessed” showed significant increases in frontal theta rhythm cordance and in alpha

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rhythm cordance (cordance is a calculated measure combining relative and absolute power that is well correlated with blood flow in the region). Two subjects who did not become possessed had no significant change in brain energy patterns.

The SMA is involved in the planning of motor activity, particularly the anticipation of movement. I interpreted the neurobiology to my elders who said (I paraphrase them) that it is obvious that when spirit is instantiated into matter (the body) it moves the body through the brain and of course we would see their tracks and activity when we record the activity of the brain. My interpretation is that circuits exist in the brain to support intense spiritual and meditative activity, and that these states have been crucial to survival for millennia. These states involve the areas described above.

Furthermore, the data on the “prayer circuits” teach us that the prayerful attitude supports a reflexive mode of experience (awareness of awareness) and that prayer or meditation is not just a pre-conceptual, immediate affective experience, but also an attributional cognitive phenomenon. To further support these concepts, 11C-raclopride PET studies on yoga nidra meditators showed increased endogenous dopamine release in the ventral striatum during meditation, associated with decreased blood flow in prefrontal, cerebellar and subcortical regions—structures thought to be organized in open loops serving executive control.

In the striatum, dopamine modulates excitatory glutamatergic synapses of the projections from the frontal cortex to striatal neurons. In turn, they project back to the frontal cortex via the pallidum and ventral thalamus. Increased endogenous dopamine correlates with an increase in EEG theta activity, a characteristic feature of meditation. All participants reported heightened sensory imagery during meditation. PET scanning with 15-O, H2O among yoga nidra meditators showed differential activity is in 1) the dorso-lateral and orbital frontal cortex, 2) the anterior cingulate gyri, 3) the left temporal gyri, 4) the left inferior parietal lobule, 5) the striatal and thalamic regions, and 6) the pons and cerebellar vermis and hemispheres. Again, these are the structures thought to support executive attention. Meditation and prayer decreases the complexity of brain activity by many different measures of complexity. During meditation, approximate entropy decreases. All of these processes can be enhanced with neurofeedback.

However, here is another kind of neurofeedback device, the sweat lodge.

The changes described in the neurobiological studies are also most likely produced inside this structure where participants sit in complete darkness, singing, drumming, and rattling, while hot stones radiate energy to purify them and heal them.

I suspect that states of brain are somewhat unique to individuals and that the research on states of brain during hypnosis are as applicable to the studies of meditation and prayer, since we use these terms so arbitrarily and without adequate pre-specification of what we mean operationally. In waking and hypnosis, highly susceptible subjects generate greater mean theta
power than low hypnotizable subjects with large differences in frontal electrodes. Occipital theta (just where the Carmelite nuns showed increase) was the best predictor of hypnotic susceptibility, and significant correlations have been found between hypnotizability and right occipital theta. Increments in theta activity also occur in a variety of problem-solving, perceptual processing and cognitive tasks. Meditation changes EEG, with greater increases of theta activity among experienced meditators than naive meditators. This increase is more often frontal than occipital or parietotemporal. Even the attitudes and states of mind associated with cooperative social behavior activate brain areas associated with reward processing and increase theta activity.

In summary, we have much to learn about the way the brain works and how we can use feedback devices to change brain function. We are making progress. Nevertheless, pre-modern techniques for inducing changes in brain functioning may still be the most effective of all that we can do. Modern technology may never trump shamans in this area.

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porating oxygen-enriched air into a clinical practice before, during or after a neurofeedback session can significantly improve patient’s results and often be the ‘missing link’ in successful treatment programs. Providing oxygen-enriched air to patients is similar to opening an oxygen bar inside your clinic. Oxygen concentrators utilized in oxygen bars are safe and do not require medical referral or supervision.

Food provides the raw materials that the brain needs in order to function and repair itself. The brain needs healthy nutrition (omega oils, glucose, minerals, protein, etc.) just like a car needs various fluids (motor oil, radiator fluid, transmission fluid, brake fluid, etc.). When a car has everything it needs, it works better. When the brain gets all the healthy nutrients it needs, it works better too. Functional assessment tools are available through nutrition companies such as Metagenics and Biotics to help you determine a patient’s needs.

Activation is the newest buzz word in neurology. Activation drives neuronal firing and plasticity. It also influences the dynamic and constantly changing Resting Membrane Potential, which is the resting state of any individual neuron. The RMP of a neuron is often referred to as its ‘Central Integrative State’, or CIS. The CIS is very important because a neuron that is hyperpolarized (far away from excitation threshold) (Fig. 1) will take more stimulation in order to fire, slowing down its firing rate. Conversely, a neuron that is hypopolarized (closer to excitation threshold) (Fig. 2) will be easier to fire and potentially fire at an increased rate. Through temporal and spatial summative windows, the central integrative state of various neurons (Thalamic Oscillatory Neurons, Sensory Neurons, Motor Neurons, Autonomic Neurons, Internuncial Neurons, etc.) can be modulated and improved, thereby improving the functional state of the central nervous system and facilitating results with any neurofeedback device.

In a Biofeedback or Neurofeedback setting, there are functional neurological tests that can be easily performed to allow a practitioner to formulate a program of neurological exercises and activities to help the patient optimize brain function. These tests can also serve as assessment tools to evaluate patient’s progress and need for care. Neurological tests may include simple cerebellar balance and performance tests, comparative muscle weaknesses and dyspraxias, cortical blind spot mapping, Optokinetic tape testing and more. Therapeutic exercises and activities may include specific eye exercises, caloric stimulation, ipsilateral motor and metoric activities for proper unilateral brain stimulation and more.

Brainwave training technology offers a means for affecting the frequencies of cortical tissue and optimizing neurological function. A deeper understanding of all the key elements that contribute to neuronal firing, based on recent findings and insights, will facilitate a broader clinical application and allow for enhanced patient response. Spatially summative afferent input to the brain is a new paradigm of brain function and offers us clinical tools to enhance the neurofeedback experience and improve brain function. The practitioner who masters and utilizes these insights into their clinical practice should find improved patient outcomes and satisfaction.