Brainwave Connections

Dedicated to communication and education in the emerging fields of neurofeedback, mental fitness, neuromeditation, and brain modification

Volume 2, Issue 2 Spring 2006

THE REALITIES OF HOME NEUROFEEDBACK

In this issue's Perspectives, Dr. Siegfried Othmer considers the future of neurofeedback, in a social perspective. These considerations are important, as we are looking to provide brain training and self-regulation to an increasingly large population.

When we look at the acceptance of other medical models, procedures, and practices into the home, we see a broad range of successes as well as failures.

To the benefit of many, we see things like the management of blood sugar levels and the administration of insulin successfully transitioned into the home, with adequate training and oversight. If we are able to move such practices into our private lives, why should we not be able to manage brainwave training, mental fitness, and similar activities.

Home biofeedback will require training, education, and trust between clinicians and home users. To achieve the necessary standards, we will need interpersonal communication and respect that will underlie successful home neurofeedback. Perhaps, as much as the feedback training itself, the discipline and understanding that make it possible will be ends in their own right, lending their own value to the overall effort.

ON VALUING JUDGEMENT

We recently saw a prominent manufacturer, in partnership with a leading researcher, unveil an innovative new product design that offered an entirely new way of approaching neurofeedback. This effort was the result of years of research and development, was a technical and conceptual challenge, and will likely take years for the field to fully explore and appreciate.

Within hours of the release, we saw a flurry of e-mails and list server postings that offered all sorts of evaluations, criticisms, predictions, and diatribes both for and against this new approach.

Some of these postings were spurious, misinformed, and downright slanderous ramblings that offered little more than confusion, distrust, and unnecessary concern. Others offered guarded opinions and predictions based upon limited information, and reflecting ulterior motives or vested interests. Later, we saw the inevitable stream of retractions, apologies, revisions, and explanations, some of which added yet more confusion, others that backpedaled to save face.

Generally, we think it may be a good thing to learn to withhold judgment and to refrain from opinions, in many aspects of life and work.

Buddhists teach us to exercise restraint and caution at times when we are prone to judge. For all of its value, judgment always tends to divide, separate, and close the book on things that may best be left for careful pondering.

The next time we are inclined to rush to some judgment or express our first opinion, we will consider taking that extra moment to appreciate the peace and wisdom that comes from silence, and the decision to not judge at all.

IN THIS ISSUE:

IN COMING ISSUES:

- *Book Reviews, Site Reviews, and personal commentaries*

Perspectives—Visualizing Success

Our complex human natures assure that as new turf opens up on which proprietorship can be asserted, there will inevitably be contentions…

Neurofeedback emerges out of an understanding of the brain that is going to become universal, much like the"chemical deficiency" model of mental illness is now…

Article by:

Siegfried Othmer, Ph.D., BCIAC

Dr. Othmer is Chief Scientist of the EEG Institute at the Brian Othmer Foundation

One senses that incrementally we are approaching the time of general acceptance of neurofeedback. It is something we've been looking forward to, but just as it is difficult to picture any kind of heaven where one might wish to spend eternity, we have difficulty picturing that blissful future. The goal has been an abstraction, and as we think about it, we realize that even the greatest success for the field that one might imagine may still not represent a state of bliss—except possibly in the hearts of those who helped to bring it about.

Our complex human natures assure that as new turf opens up on which proprietorship can be asserted, there will inevitably be contentions about the new real estate, the intellectual property, the scientific pecking order, and the codification of right belief about the new discipline. We have already seen this at every point in the development of the field, and this tendency may only get worse for a time as economic enticements increase. If we cast about for examples from the past that might help us here in the projection into the future, there are some breakthroughs that are epochal and singular, and there are other scientific breakthroughs that are also epochal, but they are more universal and diffuse. An example of the former is the Salk vaccine, where we can identify a moment in time when our society transitioned from polio being a scourge for which there was no remedy to one that could be readily prevented. The breakthrough will always be attached to the man that produced it. An example of the second is the recognition of the importance of personal hygiene and sanitation in public health. No single factor was as significant in the improved health prospects of our citizenship during the past century than the movement toward sanitation, clean water, proper sewage treatment, etc. There is no famous name like Salk attached to this far more significant, but mundane development. At this point, we can no longer assign paternity.

Neurofeedback emerges out of an understanding of the brain that is going to become universal, much like the "chemical deficiency" model of mental illness is now, and this understanding will underpin so many new developments that it will rival the revolution of public sanitation in terms of overall impact. And just like with the earlier example, the idea will become so universal that paternity will become obscure. Our grandchildren will be unable to imagine a time when these ideas were not understood.

Given the universality of the concepts that we are appealing to in neurofeedback, it seems like a huge waste of effort, and a hindrance to progress, to keep putting up "No trespassing" signs on aspects of this emerging reality. Jonas Salk even thought that way about his own breakthrough. He saw himself as the fortunate scientist who had come along at the right time to meet this opportunity. "To patent the vaccine would be like patenting sunshine," he said. Even I would disagree with him on that count when it comes to the Salk vaccine, but when it comes to neurofeedback, the sunshine analogy holds.

As a society, we would not dream of limiting sanitation only to those who can afford it. It is a public good, for the benefit of everyone alike. Similarly, education is a public good, and one's entitlement to it is not in question. Neurofeedback should be seen as a public good much like education. If there is a simple and accessible means by which people can make the central nervous systems more stable, functional, competent and serviceable, then this should not simply be dispensed to the elite on the basis of affordability. We have a situation in which the need for neurofeedback is not at all correlated with the capacity to afford it. In fact, an inverse relationship more nearly applies. That is where the society must step in to meet the need of the population at large.

There is still a role here for the private sector. The school system is a case in point. We still have private companies serving the needs of the schools---book publishers, etc. But our society guarantees free access to education, and it should at some point also assure access to neurofeedback.

Neurofeedback and Society

This obligation may actually be more manageable than it might seem when we reflect on neurofeedback training programs costing thousands of dollars per person. At nominally $2000 per person, the national neurofeedback budget would be $600B, which would exceed the current budget for the national defense. We could actually make the case for that, but it would be pointless. Even a $2000 expenditure pales beside the public cost of educating a child through twelve grades of schooling (about $100K). A cost-benefit analysis of the social costs of addiction, of academic failure, of the prison system, of persistent unemployment, of eldercare, and of family strife because of emotional trauma and other mental health issues would make a universal neurofeedback program a bargain. But the argument would remain pointless. Our society is not going there on the mere basis of a cost/benefit argument, even if it were to be convinced intellectually.

Universal access to neurofeedback will require an entirely different approach to the problem of service delivery than the current fee-for-service model. In thinking about this problem, my point of departure is the key word in biofeedback, which is "self-regulation." Success in neurofeedback means that the competence has been transferred to the trainee. This must be true at two levels. Firstly, the brain owns its own acquired competence. But secondly, through the neurofeedback process the person also gains an understanding of the enlarged scope of our personal autonomy that may be gained through self-regulation. The technique raises one's horizon on one's own potential. Barriers to personal engagement fall away because of an enlarged sense of empowerment. It's difficult to square this need to diffuse understanding broadly with the desire to compartment this kind of expertise within a professional cadre.

In order to reach its full promise, neurofeedback has to be framed not as a therapeutic intervention primarily but as a natural part of the educational process, in this case one targeting our own internal regulatory regime rather than our academic or intellectual potential. Our capacity to improve the self-regulation of our own biological functions must be part of the knowledge base of every child. With it will come an enhanced sense of responsibility for the self, something that has been undermined by our emphasis on genetic causation and utter dependency on medical interventions. The near-term benefit for our society and the world at large could well be comparable to the impact of the computer and Internet revolution. But the impact would be qualitatively different. We would be helping with the most intractable conditions that retard our societal progress, and we would be creating a more humane society.

About the Author

Since 1988, Siegfried Othmer has been engaged in research and the management of the clinical applications of EEG biofeedback as chief Scientist of the EEG Institute and the Brian Othmer Foundation. He provides training for professionals in EEG biofeedback, and presents research findings in professional forums. Since 1985, he has been involved in the development of computerized instrumentation to provide EEG biofeedback training.

He received his undergraduate education in physics from Virginia Polytechnic Institute with First Honors, and did work at Oak Ridge National Laboratory. He received his graduate education at Cornell University, Ithaca, New York; 1962-1970, where he received the Ph.D. in experimental physics, with minors in theoretical physics and mathematics; and also received a Danforth Fellowship and teaching assistantship.

In order to reach its full promise, neurofeedback has to be framed not as a therapeutic intervention primarily but as a natural part of the educational process…

Dr. Othmer has contributed many articles and talks to the professional literature, and has written chapters for books including "ADD—The 20 Hour Solution," (Steinberg and Othmer, ISBN –1-93741-37-9) and "Introduction to Quantitative EEG and Neurofeedback." (Evans and Arbanal)

Brainwave Connections

Published by: Stress Therapy Solutions Inc.
Publishing Editor: Terri Mrklas Collura
Subscription: $50/year; Provided without charge to all Active Affiliates of BrainMaster Technologies, Inc.
Website: www.stresstherapysolutions.com
Publication: minimum of 4 issues/year

Editorial Guidelines: Articles 250 to 2000 words, PC format ASCII (.txt) Rich Text (.rtf) or Microsoft Word[1] (.doc). Submit via email to stsinc@pantek.com or send disk or hardcopy to StressTherapy Solutions Inc., 3401 Enterprise Parkway, Suite 340, Beachwood OH 44122.

Phone: 216-766-5707 or 800-447-8052 FAX: 216-439-3015

[1] "Microsoft Word" is a trademark of Microsoft Corporation

Book Review

The Neurofeedback Book

by Michael Thompson and Lynda Thompson

2003

(Association for Applied Psychophysiology and Biofeedback)

This is an understandable explanation of the science behind biofeedback and neurofeedback. It is clear and easy-to-understand with specifically helpful illustrations. It provides in-depth information about procedures and cutting-edge methodologies, and insightful research and statistics to help you better evaluate results. It includes basic and detailed terminology germane to all EEG literature. Material is specifically written to prepare for certification, including the BCIA blueprint areas for EEG biofeedback.

Part One begins with questions. What is biofeedback? Why use an EEG? What kind of learning takes place? How is the EEG produced? What can be observed with the EEG? How does the EEG instrument detect and display this information? Neuroanatamy related to neurofeedback is covered. Part Two answers the question of how and why one does biofeedback (BFB) combined with neurofeedback (NFB). It includes how to do a NFB assessment, artifact the data, and carry out NFB training. It also includes a brief BFB stress assessment detailing what sensors are used, and how to carry out a combined NFB + BFB training session. Part Three contains information about research design and statistics, in a scientific and technical vein.

This is an excellent resource, and belongs in every collection.

The NeuroDevelopment Center

The NeuroDevelopment Center is a private multi-disciplinary center dedicated to providing traditional and innovative assessment and intervention options for individuals with neurologically based difficulties in their lives. We work with children and adults who have problems with attention, anxiety, mood, social relatedness, learning, and behavior. Our Center is friendly, fun, and professional

The last decade has seen an explosion in knowledge about brain function, due primarily to the use of new technologies that permit us to see the brain at work. At the NeuroDevelopment Center, we closely monitor new findings from neuroscience and carefully evaluate new clinical methods arising out of these findings. The last decade has seen an explosion in knowledge about brain function, due primarily to the use of new technologies that permit us to see the brain at work. At the NeuroDevelopment Center, we closely monitor new findings from neuroscience and carefully evaluate new clinical methods arising out of these findings

At the NeuroDevelopment Center, we are committed to carefully considering **all** of these factors in understanding the challenges and difficulties our clients face and in devising intervention plans to make for positive change.

For this reason, our approach to intervention is eclectic. We make use of strategies from cognitive behavioral psychology, psychodynamic psychology, attachment theory, systems or family therapy, and other developmental approaches. We also make use of various forms of biofeedback as an adjunct to psychotherapy, and as a primary form of intervention in some instances. At the NeuroDevelopment Center, we are committed to carefully considering **all** of these factors in devising intervention plans that make for positive change.

The NeuroDevelopment Center

260 West Exchange Street, Suite 302
Providence, RI 02903

Phone: 401-351-7779
Fax: 401-351-8188

www.neurodevelopmentcenter.com

Contact: Dr. Larry Hirschberg