FROM THE EDITOR

Special Issue: Challenges Affecting Successful Biofeedback Treatment

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The cover of this issue of *Biofeedback* shows a depiction of the mythical Sisyphus, condemned for all eternity to push an immense boulder up a hill, only to watch it roll back down the hill. The myth serves as a symbol for all of the medical and nonbiofeedback factors that can hinder biofeedback and neurofeedback treatment. It is our hope that this Special Issue may aid future practitioners to escape the fate of Sisyphus. (Thanks to Shutterstock for this photo).

**Introduction to the Special Section: Medical and other Non-Biofeedback Issues Affecting Successful Biofeedback Treatment Outcomes**

We have all had the experience that despite our best efforts, the patient still reports the presence of symptoms. Our immediate response varies: “What did I miss?” “The patient has to try harder,” “I think the patient is malingering,” “I think maybe the training or rewards need to be changed,” “Maybe another form of therapy would be better,” or “Are there medical issues interfering including medications?” Immediate examination of our records shows that we may have followed the standard treatment protocol to the letter and yet there is still a poor outcome. Technically what we did was correct, but the expected results did not occur.

When Donald Moss asked me to be a guest editor for Biofeedback, I was flattered and challenged. Looking at past issues of *Biofeedback*, each had a theme with publications from various authors basically discussing an issue, reviewing how they treated it, and reporting the outcome. If memory serves me correctly, no one published treatment failures, only successful outcomes. So I decided to look at factors that get in the way of successful biofeedback treatment. Thus the theme for this edition was born.

In preparation for this task, four issues emerged from my own training and background. First, in the present day research literature, most studies do not control for learning. Learning is the active ingredient in biofeedback. Whether we call it operant conditioning or self-regulation, learning is required to effect change. The early pioneers in surface electromyography (SEMG) recognized this. John Basmajian and De Luca (1985) and others developed what is known as the “picket fence criteria” in which subjects had to increase and decrease the activity of a single motor unit, while holding the adjacent single motor units quiet. This became the definitive criteria for demonstrating learning in their studies, which focused on SEMG biofeedback. Today articles report the subjects received xx number of sessions of biofeedback. We are left to assume learning has occurred, but did it? So one of the factors that interferes with successful biofeedback is the lack of control for learning.

The second issue that emerged was the lack of long-term follow-up studies in biofeedback. Most studies report short-term outcomes, but few include long term follow-up. (This is similar to the drug studies model.) In my doctoral studies my dissertation explored the effect of SEMG biofeedback training on chronic low back pain. Twelve of the 12 subjects reported no back pain immediately after six sessions of SEMG biofeedback in which learning (the picket fence criteria) was demonstrated (Donaldson, 1989). Five year follow-up showed that 11 of the 12 subjects remained symptom free. (We could not find the twelfth.) Learning had been demonstrated and follow-up study showed it to be permanent. This type of information is lacking in most reviews today, making the choice of protocols a calculated guess. As an aside, most therapists only know one or two treatment techniques leading to the adage: “It is tempting,
if the only tool you have is a hammer, to treat everything as if it were a nail” (Maslow, 1966, p. 15).

The third issue that emerged was an awareness that my knowledge of physiology was limited. Hormones, biochemicals, and metabolic processes were all terms that took on whole new meanings with implications for treatment. This in turn changed my working model. The biofeedback practiced in my office primarily affects the neurological systems. I speculated that repeated stimulation by the fight-or-flight response could/would alter the hormonal systems. For example, a highly anxious person could be suffering from adrenal fatigue. Treatment for anxiety using SEMG relaxation training, electroencephalogram (EEG) neurotherapy, and heart rate variability will all impact the targeted physiological systems, but can they overcome a distressed organ?

The fourth issue that emerged was my strong belief in the efficacy of biofeedback. The AABP routinely reviews and publishes efficacy reviews for biofeedback. (The third edition of Evidence-Based Treatment in Biofeedback and Neurofeedback is about to be released.) As part of my training for my dissertation I was required to read From the Ghost in the Box to Successful Biofeedback Training by Robert Shellenberger and Judith Green (1986). (This is a recommended reading for anyone practicing biofeedback). The authors’ concern was that the power of biofeedback (the box) would blind us to other factors (such as empathy) that are important in working with individuals—that is, that we would become mechanics.

With these thoughts and concerns in mind, I talked with a number of colleagues, asking for their thoughts and inviting them to submit articles. I must applaud the people who decided to submit, for it takes courage to stand up and write about issues that have affected their practices. All those invited are practitioners in private practice or hospital settings. It is on the front line where theories get tested and inspected and possibly rejected and our own shortcomings detected.

The contributors (listed in the order in which their articles appear) are:

Sarah Berrett. Sarah Berrett is a doctor of Naturopathic Medicine in private practice in Calgary, Alberta. Her knowledge of biochemical and hormonal systems in the human body is outstanding. Often when she combines this knowledge with SEMG or EEG biofeedback, the patient’s improvement is dramatic (especially with depression and anxiety).

Stuart Donaldson. Stuart Donaldson is a psychologist licensed to practice in Calgary, Alberta. He has written and published numerous articles on both surface electromyography and EEG neurotherapy. He has previously been a guest editor for the journal, Applied Psychophysiology and Biofeedback.

Gabriel E. Sella and Donald Moss. Gabe Sella is a physician practicing in West Virginia. He has published extensively in SEMG and other fields such as disability evaluations and forensics. Gabe’s passion is muscle physiology and making sure psychologists (namely me) know exactly the correct anatomy. Donald Moss has been the editor of the Biofeedback journal/magazine for 21 years. Presently he is directing the College of Integrative Medicine and Health Sciences at Saybrook University. His range of knowledge about biofeedback issues is outstanding and always current.

Jeffrey E. Bolek. Jeff Bolek is a psychologist practicing in private practice in Cleveland, Ohio. He recently retired from the Cleveland Clinics as a professor emeritus. Jeff uses surface electromyographic techniques, particularly some he has developed, to complete complex evaluations of muscle activity with disabled children.

Paul Swingle. Paul Swingle is a practicing psychologist in Vancouver, British Columbia, directing a private clinic there. The clinic primarily focuses on EEG neurotherapy, routinely seeing 300–400 patients a week. He has published extensively and recently developed the ClinicalQ program. He is a brilliant diagnostician and empathetic therapist who can laugh at his own mistakes.

Mari K. Swingle and Paul Swingle. Mari K. Swingle, who is Paul Swingle’s daughter, has recently exploded onto the biofeedback/EEG neurotherapy scene, having completed her PhD dissertation studying the effects of Internet addiction on the brain. Her knowledge of the issues related to childhood development and the brain and the Internet is outstanding, making her a leader in this field.

A sincere thanks must go out to each of these individuals for their contributions both intellectual and financial. Not only did they take time from their practices to share their thoughts, but not seeing patients means they lost revenue.

Finally a special thanks goes out to Donald Moss for helping me with all the editing and work that goes into publishing this document. I am sure Don has a few more gray hairs because of me. I believe that in the next year Don will be retiring as senior editor of Biofeedback to assume more duties at Saybrook University. This journal is what it is today, as he carried it on his back for 21 years. All of us have profited from his wisdom and caring. THANK YOU DON.

(Stuart Donaldson, PhD)

Feature Article

Erik Peper, Annette Booman, I-Mei Lin, Richard Harvey, and Jasmine Mitose provide a useful discussion of
diaphragmatic breathing and the use of abdominal muscle biofeedback as a tool to aid in breath training. Peper and his colleagues show that breathing is a whole-body process, and highlight the role of the musculature in both dysfunctional breathing and optimal breathing. They recommend a number of muscle exercises to mobilize the lower abdominal musculature, and show how muscle biofeedback can aid the process of breath training.

**Book Review**

In Autumn 2015, AAPB released the second edition of *The Neurofeedback Book*, by Michael Thompson and Lynda Thompson. In this issue, neurologist Robert P. Turner provides a review of this classic text in neurofeedback, which integrates all of the practice guidance of the Thompson’s first edition, with a greatly expanded discussion of the neuroanatomy and neurophysiology relevant for neurofeedback practice.

**References**


**Proposal and Abstracts**

The Summer 2016 issue will feature “Advances in Biofeedback Technology and Biofeedback Applications.” The Fall 2016 issue will feature “Further Advances in Mindfulness and Compassion-Based Approaches to Clinical Biofeedback,” with guest editor Inna Khazhan. The Winter issue will focus on “Clinical Practice in Neurofeedback: Advances and Applications.”

Contributions are invited to each of these special issues. General articles on topics in biofeedback, neurofeedback, and applied psychophysiology are welcome, as are proposals for an additional special issue. Feature articles should not exceed 2,500 words; department articles, 700 words; and letters to the editor, 250 words. Articles should be in American Psychological Association (6th Edition) format.