

FROM THE EDITORS

Special Issue: Sports, the Arts, and Beyond

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The cover of this Spring 2012 issue of *Biofeedback* shows a cellist doing an Open Focus™ exercise, while being monitored with electroencephalography (EEG). My thanks to William (the cellist), Rae Tattenbaum (William's optimal performance coach who conducted the EEG monitoring), and Douglas I. Fishman (the photographer).

This is the third in a series of special issues on the use of biofeedback, neurofeedback, and related interventions in optimal performance (spring 2011, fall 2011, and spring 2012). (AAPB members will find the previous issues available online through the AAPB Web site.) Earlier issues focused to a great extent on sports, including Olympic winners, and artists, with a few extensions to everyday life. In this issue, the emphasis is that optimal performance is a paradigm and an approach applicable in almost any setting. Biofeedback is an effective tool to help humans discover unrealized potential. Every time an individual discovers that he or she can raise hand temperature or alter brain electrical rhythms, a broadening of personal agency and self-efficacy occurs. This is powerful in moving individuals toward higher achievement, in sports, music, academics, business, and even professional work.

Biofeedback can be used to shift the focus away from pathology and deficit and toward potential and capacities. This was the core of Abraham Maslow's (1968) humanistic psychology. He called for a science that would spend less time studying broken human beings and psychological deficits and more time examining how highly actualized human beings function. The carrier of this banner today is positive psychology, which takes an empirical approach to the study of positive functioning, higher-level wellness, and "the good life" in human beings (Seligman & Csikszentmihalyi, 2000). Mihaly Csikszentmihalyi created a number of innovative ways to research human beings in the midst of life, sampling their experiences. He highlighted the flow experience, in which the human being becomes completely immersed and at one with the current activity, such that everything else in life falls away (Csikszentmihalyi, 1990). Biofeedback has been used by many to support similar states. Les

Fehmi's Open Focus™ model comes to mind, as the Open Focus state, often facilitated by neurofeedback (Fehmi & Robbins, 2007), is essentially the same as the flow state.

Professional Issues

The issue begins with an article by Moss, Shaffer, and Crawford on the current internationalization of biofeedback certification. In March 2010, BCIA, originally the Biofeedback Certification Institute of America, renamed itself as the Biofeedback Certification International Alliance. This name change reflected substantial expansion of BCIA certification globally. In 2011, 34% of all new certificants lived and practiced outside the United States. Furthermore, in 2011, BCIA signed a new agreement with BCIA-Australia to become BCIA's first international affiliate. BCIA-Australia will begin immediately to conduct its own certification process, initially in neurofeedback. BCIA-A will require each new certificant to show mastery of skills and knowledge in the BCIA "Blueprint of Knowledge" and will use the written BCIA exam to ensure a consistent global standard of practice.

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The first issue in the special issue on peak performance comes from Estate Sokhadze, who highlights the role of neurofeedback in creating mental peak performance states. Sokhadze introduces a protocol emphasizing specific training models for focus, alertness, and what he calls "Neureka"—a correlate with 40 Hz or Gamma range cortical activity—associated with positive emotional experiences, mindfulness, and improved memory. Sokhadze reports on the applications of this protocol with attention-deficit hyperactivity disorder subjects and normal controls. He advocates for the relevance of this neurofeedback approach with any population working under pressure, where a peak performance state is essential. Target groups include sports, the performing arts, military personnel, and others. Elsewhere, Hammond (2000) has summarized research and clinical findings on the significance of 40 Hz in neurofeedback training.

Wesley Sime, a pioneer in peak performance biofeedback applications, provides an article on expanding peak performance work “from sports to business and medicine.” He introduces his approach, as developed in work with pro golfers, major league baseball players, and college athletes. Then he points to peak performance elements in other professions, such as medicine. A case narrative illustrates the use of an optimal performance first with a physician’s family member and then with the same physician’s practice group. Sime encourages biofeedback practitioners generally to use optimal performance protocols with a variety of business and professional populations in any environment.

Rae Tattenbaum, guest editor in this series of special issues, provides a dual case study. Her article provides the narrative of her personal and professional path toward neurofeedback and biofeedback work with performing artists, including her use of the *NeuroOptimal*TM neurofeedback system in her own rehabilitation from illness. Next, she narrates the case of William, a gifted cellist, plagued by migraines. She focused with William on finding his path as a musician, rather than on a targeted treatment of headache. William responded to the *NeuroOptimal*TM approach as well, along with other self-regulation strategies. As his musical gifts unfolded, his physical health improved.

Richard Matte and Mia van Otterdijk report on an initiative of their consulting firm, to develop a “Mind Room,” modeled on the biofeedback program used by several sports franchises, including the Milan World Cup soccer club (Wilson, Peper, & Moss, 2006). Matte and Otterdijk used the Mind Room as their paradigm to integrate biofeedback and coaching to enhance executive performance. They describe typical personality profiles of executive clients and identify some of the challenges in coaching executives. Three case studies show the integration of several biofeedback modalities, including neurofeedback, heart rate variability (HRV), surface electromyography, and skin conductance, with an executive coaching intervention. The reader may also wish to consult Cochrane (2011), in the fall 2011 issue of *Biofeedback*, who described an optimal performance neurofeedback intervention with 16 partners in a financial services firm.

Nidamangala Srinivasa Srinivasan provides a novel perspective, integrating a traditional Indian Vedantic approach with neurofeedback, in an approach combining the quest for excellence, a pursuit of quiescence, and an openness to higher values. Srinivasan emphasizes emotional quiescence, executive quiescence, and sensory quiescence and proposes neural correlates of the quiescence. He introduces a case study of a high-achieving 36-year-old

CEO, who was caught in the tsunami that hit India in December 2004. He developed bilateral Stevens-Johnson syndrome (loss of tear gland activity) and progressively suffered greater and greater depression. The protocol integrated HRV biofeedback, neurofeedback (sensory motor rhythm training), and use of the low-energy neurofeedback system. Improvements were seen in business performance, tear gland activity, and emotional state. The recovery from catastrophic events is always critical for a human being, and in his case, both his business and family suffered until the biofeedback interventions facilitated recovery.

Lindsay Shaw, Vietta Wilson, and Stephanie Nihon bring us back to the domain of sports, with their study on “Getting off the Bench.” They report on a study to provide both HRV and EEG biofeedback training to 11 university-level gymnasts and identify differences between those athletes who have made it into competitive play and those who had remained on the bench. All research participants were in the balance beam event, six in the competitive line up and five not selected for competition. Results were mixed, but one EEG marker consistently separated the competitive athletes from the benched athletes. Their ratios of intensity (or high Beta) to high Alpha were lower than the benched athletes, showing less absorption in anxious or effortful thinking. The authors discuss the need for more research on elite athletes, to identify variables distinguishing them from their less successful peers.

Brief Reports

Royce Malphrus reports on an intervention with an NFL quarterback who developed significant anxiety preseason. Malphrus introduced positive self-talk, breath training, and HRV biofeedback to reduce physiological and emotional overactivation. After eight sessions, some by telephone, the quarterback began to discover the fun in his game again. Among the supportive interventions, Malphrus provided him with educational CDs for calming and control, and the quarterback responded most positively to the CD on Zen. High-profile clients may present at any time in biofeedback practice, and standard self-regulation interventions, such as those used by Malphrus, often effectively reawaken their potential.

Nubli Wahab and Suriya Kumar Sinandurai describe the use of biofeedback in Malaysia. They describe the pressure to achieve improved personal performance, occupational effectiveness, and economic progress in the Malaysian culture at this time. At the University Malaysia Pahang, biofeedback is applied to enhance academic performance and occupational/professional training, as well as in

remedial and rehabilitation settings. They report that research is increasing, as is use, with integration of biofeedback in several primary school settings.

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Donald Moss



Rae Tattenbaum

Proposal and Abstracts

Authors are invited to submit manuscripts on any topic in applied psychophysiology and biofeedback. Articles are welcome presently for a dual special issue on Surface Electromyography and Rehabilitation, and Surface Electromyography and Pelvic Floor Training for Summer 2012, a special issue on Advances in Neurofeedback and Quantitative EEG for Fall 2012, and a special issue on Advances in the Science and Practice of HRV Biofeedback for Spring 2013. Proposals and Abstracts are also invited for additional topics for future special issues of Biofeedback.