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BIOFEEDBACK

Volume 32, Number 1

Spring, 2004

AHA!



FROM THE EDITOR

From the Editor:

Donald Moss, PhD

The cover of this Spring 2004 issue of *Biofeedback Magazine* portrays the use of biofeedback as a tool to facilitate moments of personal discovery, called "Aha" experiences. An article in this issue by Vieta Wilson, Erik Peper, and Katherine Gibney discusses the incidence of such "Aha" moments in self-regulation oriented biofeedback therapy. Their article reminds us that biofeedback is rarely a mechanical training process; rather there is an element of mind-body self-discovery in each course of biofeedback treatment.

This Spring issue includes a special article on morality in clinical practice, in which Seb Striefel challenges each of us to consider what kind of professional, and what kind of person we wish to become. We also include case studies by two respected senior clinicians, Randy Neblett and Cory Hammond. The *Biofeedback* magazine welcomes case studies, which serve many purposes. They illustrate the practical detail of treatment, thereby allowing us to learn from skilled clinicians. Case studies also often forge the way into new applications, which have not yet been established by larger scale research studies. Finally, well-controlled single case studies allow us to reach some preliminary conclusions on the efficacy of therapies for a specific disorder.



Donald Moss, PhD

This issue also includes a handout developed by Ronald Rosenthal on the use of biofeedback for stroke and traumatic brain injury. This handout can be clipped and copied for use with referral sources, insurance companies, and patients.

AAPB News and Events Section. AAPB President Lynda Kirk, President-Elect Steve Baskin, and Executive Director Francine Butler offer their current perspectives on events shaping professional research and practice today. In addition, we include a commemoration of one of AAPB's beloved and esteemed members, Betty Horwitz, who died in Autumn 2003.

Proposals and Abstracts are now invited for three special issues of the *Biofeedback Magazine*: *Case Studies in Clinical Psychophysiology*, Summer 2004, *Meditation, Changes in Consciousness, and Health* for Fall 2004, and *Integrating Life Style Change into Applied Psychophysiological Therapies* for Spring 2005. The editor also welcomes proposals for future special issues of the *Biofeedback Magazine*.

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- November 1 for Spring issue, published March 31.
- April 1 for Summer issue, published June 30.
- May 15 for Fall issue, published September 30.
- September 1 for Winter issue, published December 31.

Articles should be of general interest to the AAPB membership, informative and, where possible, factually based. The editor reserves the right to accept or reject any material and to make editorial and copy changes as deemed necessary.

Feature articles should not exceed 2,500 words; department articles, 700 words; and letters to the editor, 250 words. Manuscripts should be submitted on disk, preferably Microsoft Word or WordPerfect, for Macintosh or Windows, together with hard copy of the manuscript indicating any special text formatting. Also submit a biosketch (30 words) and photo of the author. All artwork accompanying manuscripts must be camera-ready. Graphics and photos may be embedded in Word files to indicate position only. Please include the original, high-resolution graphic files with your submission – at least 266dpi at final print size. TIFF or EPS preferred.

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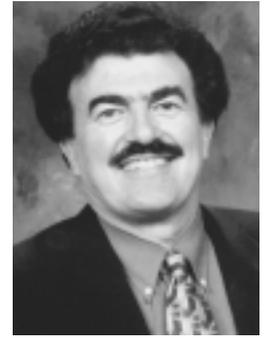
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Morality: What Kind of Professional Do I Want to Be, and How Do I Get There?

Sebastian “Seb” Striefel, PhD



Abstract: Developing a sound moral character requires an ongoing commitment to acquiring the moral knowledge and skills needed to know and do what is right morally and ethically. Several models or theories on moral development exist, each with its advantages and disadvantages. They may be helpful to practitioners in understanding and enhancing their skills in moral reasoning. The focus of much of this article is on answering the question, “What kind of professional do I want to be?” and on the types of activities than one might engage in to improve his or her level of moral functioning.

Introduction

In a recent chapter in Moss, McGrady, Davies, and Wickramasekera (2003), I stressed the importance of practitioners striving to develop a sound moral character because resolving some, if not all ethical dilemmas, takes more than familiarity with ethical principles (Striefel, 2003a). It takes a practitioner with the moral knowledge and commitment needed to do the right thing, i.e., a person with a sound moral character. So what does it take for a practitioner to develop a sound moral character? The simple answer is that practitioners must make a life-long commitment to behave ethically (APA, 2002; Striefel, 2003a) and part of that process involves answering the question, *What kind of professional do I want to be?* So what does that pursuit of moral character entail? To answer this question we must back up a bit and start with some basics.

Definitions, Environments, and Models

Morals can be defined as being what people think is right or wrong about conduct or character (Kitchener, 2000; Striefel, 2003a). *Morality* is thus concerned with right and wrong conduct and often involves an evaluation of conduct on the basis of some cultural context or religious standard (Corey, Corey, & Callanan, 2000). *Ethics* can be defined as moral principles adopted and codified by a group (or for that matter, by an individual) to provide rules of right conduct (Corey et al., 2000). Moral principles are believed to be universal, unalterable, and not dependent on social or authoritative agreement (Hennig & Walker, 2003). The moral principles of autonomy, justice, beneficence, and non-maleficence are generally universally accepted by professional health care providers and take precedence over ethics codes (Lavin, 2003). They form the basis for ethics codes and do not change over time but their interpretation as codified in ethics codes differs across groups, cultures, and time. (See Striefel, 2003a, 2003b, for a detailed discussion of foundational ethical principles with which practitioners should be familiar.)

Most individuals are aware, at least to some degree, of how their physical environment shapes and impacts their lives (Lloyd & Hansen, 2003). Yet many individuals and practitioners seem unaware that they also live in an ethical environment (good or bad) that shapes their lives by supporting certain behaviors and making others taboo (Lloyd & Hansen, 2003). The ethical environment is often difficult to discern, and

yet, it often selects and reinforces what should or ought to be done or not done out of all the possibilities available in the natural environment (Lloyd & Hansen, 2003). Some individuals are fortunate to work and/or live in an environment where there are good models of moral and ethical conduct to learn from, often without being aware that they are doing so. Others are not so fortunate. They live in an environment where the models do not always engage in moral or ethical behavior or even where the behavior modeled is often immoral or unethical (prostitution, pregnant women using illegal drugs, lying, stealing, abusing children, etc.). Young children learn by imitating those around them and so do professional practitioners. False beliefs, over-generalizations, prejudices, and exaggerations can lead to irrational beliefs and values and inappropriate emotions (Lavin, 2003). Young children often do not engage in reflective thinking about what they are learning and experiencing. As they mature, many children, and hopefully many professional practitioners, learn to engage in reflective thinking. Are you aware of your irrational beliefs, values and emotions and how they might impact your daily professional activities, e.g., resolving ethical dilemmas? Rational cognitive psychotherapy is an effective method for helping clients and practitioners alike become aware of and change irrational beliefs, values, and emotions (Lavin, 2003).

One way, if not the best way to foster the development of a sound moral character, is via the professional relationships one has and especially the experience gained by consulting with more experienced ethical practitioners about ethical issues (Hennig &

Walker, 2003). Of course one must also reflect on the experiences that one is having. What is the ethical environment like in which you work and live? How can you improve it?

The public believes, and rightly so, that practitioners should do what is right and in their best interests as patients (Striefel, 2003a). So it follows that practitioners “should strive to develop a sound moral character and an excellent sense of what is right, and they should adhere to the highest standards of conduct” (Striefel, 2003a, p. 95). Adhering to the highest standards of conduct means going beyond just doing one’s duty by adhering to the ethical principles of one’s profession (mandatory ethics). It means aspiring to go beyond the minimum by doing all that one can do to know and engage in the highest level of ethical functioning. This means developing a sound moral character through a lifelong continuing education effort and an ongoing effort to deliberately consider and resolve each successive ethical situation that arises..

Moral Reasoning and Development

Practitioners must learn not only the ethical principles and practice guidelines and standards, but also how to engage in moral reasoning, without letting their emotions interfere with doing what they know is right. *Moral reasoning* is the process of deciding between competing moral claims (Hennig & Walker, 2003). Another way to say this is to define moral reasoning as the process for resolving ethical dilemmas by deciding which of the ethical choices available is correct and why it is correct. One needs to have a moral or ethical rationale for doing what one does when faced with an ethical dilemma. The focus of moral reasoning is on doing what is right (Hennig & Walker, 2003). This includes consideration of what is in the best interests of the client. Moral education attempts to instill moral principles and virtues, both of which should help a practitioner develop moral values. Virtuous principles like courage, prudence, conscientiousness, integrity, respectfulness, compassion and caring, and trustworthiness can all be helpful in making ethical decisions and in developing a sound moral character (Striefel, 2003a). Striefel (1997,

1998) discussed the relationship between duties and professional values. Readers are referred to those articles for more information on these topics.

Kohlberg, Levine, and Hower (1983), Hoffman (1991) and others have proposed theories about moral development. Each has some advantages and disadvantages and clearly more research in the area of moral development is needed. Each theory attempts to provide a way to understand how we as individuals go about understanding moral issues and how we learn to engage in moral reasoning. These theories will not be discussed in detail here. Rather, some information will be reviewed in simplified form to make specific points. The interested reader is encouraged to go and read the original sources for more information.

Kohlberg’s Stages

Kohlberg et al. (1983) proposed six levels or stages of moral development. In each stage the individual’s development moves more and more from a focus on the self to a focus on the interdependence with others in society and toward a perspective that considers what is just for all. In essence, as one moves from one stage to the next, one engages in higher levels of moral functioning because moral reasoning usually becomes more mature as individuals grow older and gain more varied experiences with moral issues and principles (Hennig & Walker, 2003). Not all individuals learn the lessons of each stage of moral development, i.e., some individual’s moral development seems to get stuck at one of the early stages. Few individuals seem to make it past stage four and almost no one seems to make it to stage six.

In Stage 1 the lesson to be learned is *do as you are told or suffer the consequences*. Most children quickly learn that failing to comply with adult directives (good or bad) results in punishment. Avoidance behavior may at times be a very useful survival skill but certainly is not just. Persons who bully or abuse others may well be stuck in Stage 1 of moral development. Professionals should not be making ethical decisions purely because they wish to avoid punishment. In reality, they should have a moral reason for doing what they do to resolve an ethical dilemma. In addition, doing what you

know is right can often have severe consequences. Think about what can happen to referrals or friendships when you are faced with having to report the unethical behavior of a friend or referral source.

In Stage 2 the lesson to be learned is *what’s in it for me?* Children quickly learn that the adults around them often demand behavior that makes their life as an adult easier or comfortable, but such behaviors may ignore what is in the best interests of the child. Some children learn grandma’s rule, *if you will do x, I will do y*, in other words they learn to try to negotiate to get their needs met. Some adults refuse to negotiate. The informed consent process stresses the importance of client involvement in all stages of the assessment and treatment process. In a sense it is a form of negotiating to reach common agreements. One usually retains the knowledge and skill gained in one stage when one masters the knowledge and skill of the next stage. In a sense it gives an individual more options and incorporates the best of what was learned before one moves to a higher moral level of functioning.

In Stage 3 the lesson to be learned is *be nice and good and people will like you..* Children often learn that if they are nice and good others will provide them with affection and approval. Reciprocity seems to be the key here for assuring mutual affection and support. Of course different physical and social environments (home, school, church) have different demands that must be mastered. Many of us have seen children that are “hell on wheels” at home yet their teachers report that the child is an angel in school, and vice versa. When clients come to a practitioner for biofeedback services, they are also seeking approval and support. Sometimes this means that clients do not initially share all pertinent information with the practitioner. After trust develops, clients are much more willing to share information that makes them feel guilty or ashamed, e.g., that they have a drinking problem, or that the father is abusive with his wife or the children.

In Stage 4 the lesson to be learned is *we are all interdependent and thus should be protected by laws and social rules and others should also abide by these laws and rules*. Social harmony depends on balancing the

rights of the individual with those of a society. Clients expect practitioners to abide by social norms and often depend on the practitioner to educate them about the acceptable norms of receiving services, although more and more clients are using the internet to access information about their client rights and about the ethical and legal rules that should govern the behavior of service providers. How do you as an individual practitioner balance the rights of the client, the third-party payer, the referral source, and other stakeholders, including yourself?

In Stage 5 the lesson to be learned is *everyone is entitled to due process so we must safeguard individual rights..* This stage focuses on consensus in the application of various moral principles often found in professional codes of ethics, e.g., respect for individual rights, the right to autonomy, and the need to consider the costs and benefits of one's actions on others. Here individuals look at rights from the perspective that there may well be alternative ways of behaving based on the interpretation and modification of regulations. Alternative codes of ethics become possible when one reaches this stage of moral development. Various professional associations have differing codes of ethics. What do you do in your daily practice activities to protect the due process rights of those you serve?

In Stage 6 the lesson to be learned is *that there are universal, abstract ethical principles that should be applied impartially..* How can one apply moral principles impartially when that would require that no personal identity features (e.g., age, gender, race, religion, etc.) be allowed to influence the process for deciding ethical or moral issues? In Stage 6 Kohlberg stresses the importance of justice, respect for the dignity of all, and the equality of human rights. This stage of development has not yet been supported by research findings (Hennig & Walker, 2003). The major lesson to be learned through all the stages of moral development is that one cannot resolve moral problems ethically if one only considers one's own point of view.

Hoffman

The biggest criticism of Kohlberg's approach is that it seems to stress that the motive for professional behavior is solely

one of doing one's duty (Hennig & Walker, 2003, Hoffman, 1991). Engaging in behavior based on duty alone is not enough because it focuses only on reasons and principles (cognitive activity) and ignores the motivation provided by emotions (Hennig & Walker, 2003; Hoffman, 1991; Striefel, 2003a). Practitioners often know what they should do in specific ethical situations (duty), but fail to do it (emotional conflicts). For example, most professionals know that they should report or confront a colleague who is engaging in serious unethical behavior, yet surveys repeatedly show that they fail to do so. With the right level of moral development of a sound moral character and the commitment to doing what is right, individuals are more likely to be emotionally motivated to do what they know is right. Human emotions can also mislead a practitioner in making moral and ethical decisions (Lavin, 2003). Throughout development, individuals acquire a value system that helps shape their personality and their moral character. Much of that value system is acquired from the models (other people) around them, by their own experiences, and by reflective thinking. It is not surprising that emotions (feeling) accompany these learning experiences. As Lavin (2003) pointed out, not all pro and con feelings are equal. Since feelings are based on beliefs (values are one form of belief) it makes sense that if one's beliefs change (e.g., via education, discussion, experience) the associated feelings will also change. If one is exposed to unethical practitioner models, one may develop inappropriate emotions and beliefs concerning what is appropriate ethical behavior, especially if the model has a high status in the field.

Hoffman (1991) proposed a sequence of levels that individuals go through in developing empathy and he argues quite convincingly that it is empathy that often motivates individuals to behave in morally acceptable ways. It seems that practitioners need to focus both on duty (cognitive activities) and emotions (e.g., empathy) in developing a sound moral character and in resolving ethical dilemmas. Part of the education and experience that practitioners obtain during training, combined with the

consultation and supervision that they receive, should help them identify the feeling (emotions), beliefs, and values that are considered acceptable to others in their chosen discipline when resolving ethical dilemmas. Learning to modify and balance one's feelings, beliefs, and values can result in the identification of new ways of moral reasoning that lead to the resolution of ethical dilemmas.

One can see the importance of emotions when one looks at examples like the issue of abortion where individuals who believe in the sanctity of the life of the unborn fetus kill doctors who conduct abortions. What happened to the belief in the sanctity of life when killing another? How can one take a life if it is a purely cognitive decision? The emotional component seems to override the cognitive component in such situations. How do you keep from letting your emotions cloud your judgment when faced with an ethical dilemma? How do you decide who to see first when you have a waiting list? Do you decide on the basis of first come first served or do you decide based on the severity of client need? What moral principles justify your decision?

Moral Functioning

According to Hennig and Walker (2003), moral functioning seems to involve four components.

1) Moral sensitivity involves recognizing that a moral issue exists and that one's actions (including taking no action at all) have ramifications for the welfare and best interests of others. When a moral norm or principle is in danger of being violated, the individual (or practitioner) must consider the possible alternative courses of action and the potential risks and benefits of each on all stakeholders. Both cognitive and emotional factors need to be considered. How can you improve your skills for becoming aware that a moral or ethical dilemma exists?

2) Moral judgment includes both moral reasoning and principled reasoning. Some individuals do not have adequate competence in forming moral perspectives to make sound moral judgments. Such individuals may attempt to simplistically justify their actions, e.g., *"it is ok to have sex with*

this client because she or he initialed the encounter.” Rationalization alone is not a defense for engaging in unethical behavior. How can you improve your competence in both moral reasoning and principled reasoning?

3) Moral motivation involves more than moral reasoning. It also requires the ability to motivate oneself to do what is right by being able to empathize with the other person’s plight and being motivated to do what is right just because it is the right thing to do, not just because it is one’s duty. For example, doing what one knows is right even when it has a personal cost to the doer (loss of friendship, referrals, etc.), and even when no one else would ever have known if one had done the wrong thing. A person with a sound moral character does what is right even when no one else is watching.

4) Moral character involves the application of components 1 through 3 until and because they are a habitual part of one’s moral character. One must have the strength to follow through on doing one’s best in moral reasoning and decision making and in the application of those decisions. In the professional world, moral character is fostered by consulting with and watching how more experienced practitioners who are ethically competent go about resolving ethical dilemmas.

Sound Moral Character

In summary, one must decide *what kind of practitioner (and person) he or she wants to be* and then make a lifelong commitment and effort to develop a sound moral character and to act ethically in all situations. Developing a sound moral character means: a) continuing education for understanding moral and ethical principles, values and virtues, and beliefs and their application; b) setting goals for improving one’s ability to resolve moral and ethical dilemmas (e.g., “I will take one ethics workshop this year and read one ethics book and reflect on the content of both”); c) being sensitive to the occurrence of moral and ethical dilemmas; d) accepting responsibility for one’s own actions; e) being reflective about what one is doing and why; f) improving one’s competence in moral and principled reasoning; g) consulting with more experienced practitioners about ethical situations and engaging in case discussions and reflective thinking about those cases; h) becoming or being aware of both the duty (cognitive) and emotional components of every ethical situation; i) maintaining control of one’s own emotions; j) improving one’s ability to be compassionate and empathic toward others; and k) doing what is right in spite of potential negative consequences.

Continued on page 12



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Treatment of the Obsessional Subtype of Obsessive Compulsive Disorder with Neurofeedback

D. Corydon Hammond, PhD, ABEN, Salt Lake City, Utah

Abstract: Obsessive-compulsive disorder (OCD) is a treatment challenge and the obsessional subtype has the worst treatment outcome rates. This paper reports the first successful treatment of this subtype with neurofeedback, with improvements maintained on 8 month follow-up.

Introduction

The lifetime incidence of obsessive compulsive disorder (OCD) is about 1%-3% and it is widely regarded as having a strong biological basis. There are several different electrophysiological patterns associated with OCD. In a qEEG study, Kuskowski, Malone, Kim, Dysken, Okaya, and Christensen (1993) discovered lower absolute power in delta, beta 1, and beta 2 bandwidths frontally and in the right hemisphere in OCD patients. They further discovered increased alpha relative power across temporo-parietal, central, and occipital regions, along with decreased relative power in beta bands in the left frontal region. Their research additionally revealed severe right hemisphere hypoactivity, particularly in beta relative power.

There are some evoked potential studies of OCD. Error-related negativity (ERN) is an event related potential that is associated with making mistakes or errors. Gehring, Himle, and Nisenson (2000) found that the error-related negativity (which has been localized as being generated from a single source in the medial frontal cortex) was increased in OCD patients compared with matched controls, and the magnitude of the ERN was related with symptom severity. In an fMRI study, Ursu, van Veen, Siegle, MacDonald, Stenger, and Carter (2001) found increased error-related activity in the anterior cingulate cortex in OCD patients,

and this degree of activity was correlated with severity of symptoms. Such findings correlate with a subtype of OCD that Robert Gurnee and I have found clinically, with QEEG abnormalities in this area (Fz-Cz).

Other QEEG research has identified two subtypes of OCD patients (Mas, Prichep, John, & Levine, 1993; Perros, Young, Ritson, Price, & Mann, 1992; Prichep, Mas, & John, 1989; Prichep, et al., 1993; Silverman & Loychik, 1990), one associated with alpha excess (particularly around T5, P3, O1). Another subgroup has a theta excess, most extreme throughout frontal areas and at posterior temporal electrodes.

Treatments for OCD

Cognitive behavioral treatment commonly uses exposure and response prevention techniques to treat OCD (Foa & Franklin, 2001), with claims that 76% to 86% of patients *who complete treatment* make improvements, although an earlier review by Foa, Steketee, and Ozarow (1985) reported that 51% of patients reduced their symptoms at least 70%. However, Greist's (1990) review notes that the greatest problem with behavior therapy is that many patients dislike this treatment and fully one-quarter decline treatment or sabotage it with overt or covert avoidance, and he estimated that the percent improvement in symptoms was 50%. Greist (1990) also noted that behavior therapy has proven less successful with pure obsessional disorder (without rituals). His review estimated the degree of symptomatic improvement with the most widely used treatment, serotonin drugs, is only 30%. This is compatible with Goodman, McDougle, and Price (1992) who found that symptom amelioration in

OCD treatment with selective serotonin reuptake inhibitors (SSRIs) is about 35% on average, and that only 50% of patients experience this partial symptomatic improvement. There is, however, evidence that QEEG has the potential to assist in predicting medication response in treating OCD (Prichep et al., 1993). Suffin and Emory (1995) at UCLA now have a QEEG database available specifically for making medication predictions. Neurosurgical treatment of OCD has also produced only very modest improvements, with high costs and risks (Rauch, 2000)

Neurofeedback Treatment of OCD

Last year I published (Hammond, 2003) the first objective findings with lengthy follow-ups on the treatment of OCD with neurofeedback. Quantitative EEGs were gathered on two consecutive OCD patients and this guided protocol selection for neurofeedback training. Scores on the Yale-Brown Obsessive-Compulsive Scale (YBOCS) and the Padua Inventory normalized following treatment. The patients showed 3.7 and 3.0 standard deviation improvements on the YBOCS. This was particularly impressive because a meta-analysis of 25 drug studies (Ackerman & Greenland, 2002) found that the most effective pharmacologic treatment for OCD (Clomipramine—Anafranil™) only produced an average drug treatment effect on the Y-BOCS of a 1.33 standard deviation improvement (uncorrected for placebo effects), and that across studies Prozac™ only produced about one-half that much improvement. Improvements were also documented with an MMPI, and there were follow-ups of the two cases at 15 and 13

months respectively post-treatment documenting maintenance. This maintenance was also externally validated through contacts with family members.

Case Report on Treatment of Obsessional OCD

The next consecutive case of OCD that presented at my office (following the two cases cited above) was one that primarily consisted of obsessions, which as noted earlier, is the type of OCD with the worst outcomes with cognitive behavioral treatment. This patient was a 23 year-old university student, diagnosed with OCD 4 years prior. He scored 16 on the YBOCS, which is the cut-off score one must usually have to be included in OCD medication trials. The mean for OCD patients on the YBOCS is 21.9 (SD=8). However, on the obsessions subscale, he scored 10, and the mean for OCD patients is 10.7. He was a very religious young man and his main obsessions concerned worthiness and whether he might be a homosexual. There was absolutely no evidence of homosexual fantasies with or without masturbation. The patient had exclusively heterosexual attractions and he was engaged to be married. Nonetheless, even though he intellectually realized the irrationality of the latter obsession, a frequent rumination was whether, after marriage, he might find that he was really homosexual. Other obsessions had to do with right and wrong, morality, and honesty. There were a few checking compulsions and compulsions to confess possible wrongs he felt he may have committed, but the OCD primarily consisted of obsessions. His previous treatment had consisted of pharmacotherapy and eight different medications had been tried, including Zoloft,TM Celexa,TM Luvox,TM Paxil,TM Prozac,TM Xanax,TM Risperdal,TM and Seroquil.TM

On his pre-treatment Minnesota Multiphasic Personality Inventory (see Figure 1) he scored 115 T-scores on the Pt scale and 101 T-scores on the Sc scale. Ego-strength was low, he ruminated almost constantly, was anxious, very perfectionistic, self-critical, somewhat introverted, and very withdrawn from people. He showed mild

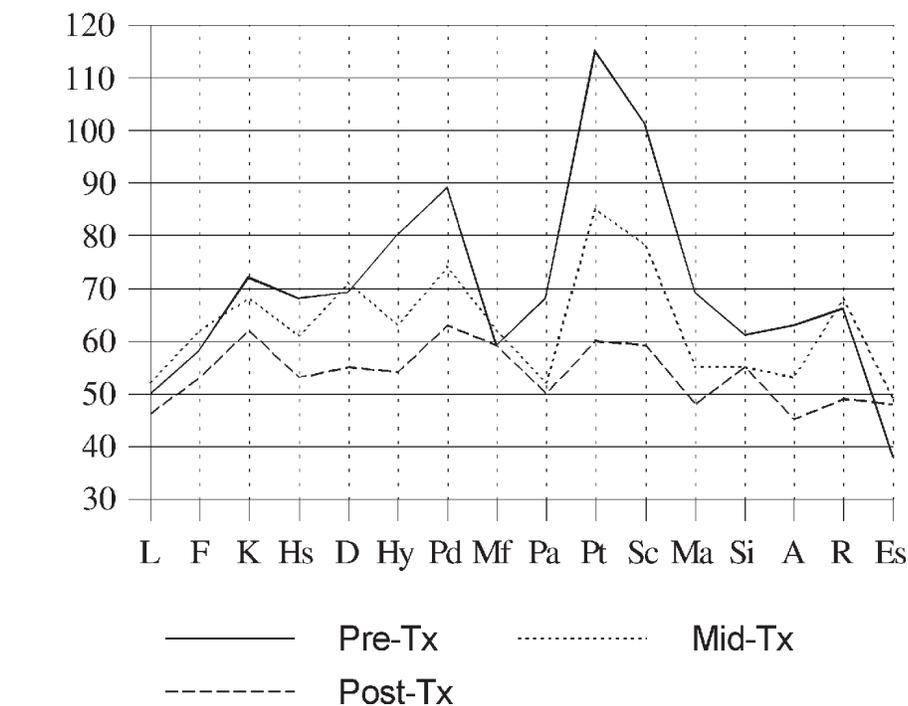


Figure 1. Pre-Post Treatment MMPI T-Score Changes

depression on the MMPI, and rated his depression a 3-4 (on a 0-10 scale), but in the month previous he felt that his depression level was 8-9. On his QEEG, using the Nx Link database we found a relative power beta excess along the midline from Cz-Fz and extending into Fp2 in the right frontal area (ranging from .73 to .81 Z scores in excess). There was also a more significant excess of relative power alpha (ranging from 1-1.4 Z-scores) in central, frontal and left temporo-frontal areas (C4, Cz, C3, T4, Fz, F3, F7), with a milder alpha excess in other areas. In the Nx Link database, and on one Hertz maps with the Lifespan database, we found that in 10-11 Hz alpha he had an asymmetry with more power in the left posterior area (O2, T5, P3). This resembled one of the previous cases that I reported, as well as the alpha subtype of OCD seen in Prichep et al. (1993). A weighted average map displayed alpha activity as being most prominent from Cz-Pz and into the left posterior area.

We began treatment using the Neuropathways EEG system, inhibiting 19-25 Hz at Cz-Pz with a bipolar montage. After 5 sessions, he reported no noticeable improvements. Therefore, we shifted the protocol to inhibiting alpha at Cz-Pz using

the Roshi neurofeedback system. After two sessions he indicated that he felt some improvement and believed that he was worrying less. We continued with this protocol for another two sessions, after which he indicated that he believed he felt worse for two days after a sessions, but that he then felt more control over his thoughts. However, he still felt he was obsessing a great deal about "senseless things." We then shifted to again inhibiting 19-25 Hz but at electrode sites Fz-Pz, using a bipolar montage on Neuropathways equipment. At this point he continued to feel that there had been only minimal changes and I was naturally becoming concerned with the lack of progress. I innovated at this point and implemented a more broad band inhibit of 3-12 Hz (mildly reinforcing 12-14 Hz) at Cz-Pz, with bipolar training. After three sessions he reported feeling "really good," indicating that he was not as bothered by the obsessional thoughts and that he felt that the thoughts were more "distant." Feeling relieved that at last we were hearing encouraging progress, we continued with this protocol for another dozen sessions. He continued to report that he was obsessing less and was better able to disengage from the obsessions. For three sessions we

expanded the inhibit band from 3-25 Hz and he continued to report improvement, saying, "I've felt great lately." We kept our training along the midline at Cz-Pz and shifted to inhibiting 19-25 Hz for half a dozen sessions.

At this point he indicated that he was feeling like he had improved enough to begin considering terminating treatment. I recommended that he do another MMPI to provide us with an objective measure of progress. His mid-treatment improvements may be seen in Figure 1. His Pt scale, which is attuned to many of the obsessional processes, had improved from 115 to 85 T-scores, and his Sc and Pd scales had also improved. Despite his feeling much improved, it was apparent that further progress was needed. Subsequently we did further training at Fz-Pz. The patient still displayed mild-moderate depression on the MMPI. On the Rosenfeld protocol at the time of the QEEG, he also displayed a clear

frontal alpha asymmetry by scoring 32.2% (58% or less is considered to represent a biological predisposition) (Baehr, Rosenfeld, & Baehr, 1997). Therefore, we utilized the Hammond depression protocol (Hammond, 2001) with the Roshi at electrode sites Fp1 and F3. In each session, we inhibited alpha for an average of 10 minutes, followed by 10 minutes of a program that inhibits both alpha and theta while reinforcing 15-18 Hz beta, then finishing the session with 10 minutes on a program that again inhibits both alpha and theta, while reinforcing 12-15 Hz. This continued for 10 sessions.

After three sessions with this depression protocol, the patient indicated that he was no longer feeling depressed. He stated that without feeling depressed, there did not seem to be anything to obsess about. After 8 sessions with this placement he said, "I've never felt this good," and reported his best semester of college studies. We re-adminis-

tered the MMPI and all scales were now within normal limits. Impressively, his Pt scale had decreased from 115 T-score to 60 T-score.. An 8 month follow-up was conducted. At that time I obtained external validation from his mother that he was still doing beautifully. I also interviewed the patient and re-administered the Y-BOCS. He had improved from his original score of 16 to a score of 3, representing a 2.2 standard deviation improvement. He originally scored 6 on the compulsions subscale, and now scored zero, and his score improved from 10 to 3 on the obsessions subscale. The patient is now married and has his first child. He is going to school full time and working part time. Although he indicated that he has never felt more stress in his life due to these commitments, he also indicated that he has never been happier in his life.

Discussion

This was a challenging case where the QEEG was useful in guiding treatment, but

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where an openness to clinical innovation and “tweaking” protocols was also necessary. However, the results on this case combined with the previous two consecutive cases (Hammond, 2003) provide considerable encouragement that OCD may be effectively treated with neurofeedback. Controlled research clearly seems called for at this time.

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continued from page 7

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Revised Ethical Guidelines for AAPB

The Ethical Guidelines for AAPB were revised and approved by the AAPB Board on March 27, 2003. Members may request a copy from AAPB or download a copy from the AAPB web site – www.AAPB.org

Biofeedback Therapy Within an Interdisciplinary Chronic Pain Management Program

Randy Neblett, MA, LPC

Abstract: The goal of this article is to describe, and to demonstrate with a case example, how biofeedback is being used in a large interdisciplinary chronic pain management facility. These biofeedback services have been designed to compliment the goals of the facility and to maximize the benefits of psychophysiological interventions within the limitations of a relatively short, intensive, rehabilitation program. These biofeedback services are a product of the setting in which they are offered and might look very different in another setting, such as private practice.

The Setting

PRIDE (Productive Rehabilitation Institute of Dallas for Ergonomics) is a tertiary-level, chronic pain management facility in Dallas, Texas. The clientele are almost exclusively injured workers who have been unsuccessful with previous treatments and have become significantly disabled. Most of the patients have been unable to work or function normally with daily activities for at least 6 months and up to several years. The general goals of the program are: to increase each patient's physical conditioning, flexibility, and ability to function; to address psychosocial obstacles that might interfere with increased functioning; to provide extensive biopsychosocial education; and to facilitate a return to productive employment and normal daily activity.

The main phase of the program is 15 days of physically and educationally intensive treatment. This is preceded by 10 to 15 less intensive pre-program visits. All program patients receive 5 to 10 "biofeedback classes" (psychophysiological oriented classes) and 5 to 8 individual biofeedback sessions. The classes take place in the pre-

program phase, and the majority of individual biofeedback sessions take place in the intensive phase.

Biofeedback Goals

There are 3 primary biofeedback treatment goals.

First, it is essential to provide education and rationale for mind/body interventions before most patients will "buy into" the treatment, follow-through with homework, and utilize the skills on a daily basis. This education is provided primarily in the class. Topics include: defining stress; the relationship between stress, tension, and pain; how the mind and the body are connected; how thoughts and emotions can result in physical symptoms; concepts of fight/flight response; and how biofeedback and relaxation training can help one become more aware of, and to have more control over, stress, tension, and pain.

Second is training in specific relaxation techniques. A guided relaxation induction is performed daily in the class, and periodically, as needed, in individual biofeedback sessions. Each patient is provided with 2 relaxation tapes, a tape player, and batteries. Patients are exposed to a variety of relaxation strategies (including breathing focus, body scanning, mental imagery, open focus, and self-coaching with autogenic-type phrases), so that they can choose the specific techniques that work best for them. Patients are encouraged to practice with their tapes daily until they can perform the techniques independently. The relaxation techniques are promoted as tools for reducing stress, controlling pain, and increasing sleep success. Almost all patients who report consistent practice with their relaxation

techniques report success with relaxation and pain control.

Third, in order to maximize success with relaxation and biofeedback training, patients must learn ways to generalize their self-regulation skills outside of treatment. Emphasis is placed on the use of slow, diaphragmatic breathing, along with "scanning" and releasing tension, periodically throughout the day. This goal also involves identifying specific muscle bracing and postural habits with surface EMG (SEMG), teaching patients increased awareness and control over these habits, and encouraging patients to monitor and correct these habits independently as part of their normal daily routine.

Biofeedback Session Protocol

Some traditional biofeedback protocols involve gradual shaping of a desired response toward a goal with minimal therapist instruction (Tan, Sherman, & Shanti, 2003). Because of time limitations in our program, individual biofeedback training tends to be very directive (probably similar to a golf lesson). When a training goal is identified, patients are actively shown how to reach the goal with verbal and tactile cuing, visual demonstration, and visual (and sometimes auditory) feedback. Patients are encouraged to develop both a somatosensory recognition of goal success and a specific behavioral strategy for achieving the goal. A heavy emphasis is placed on independent practice of skills outside of treatment sessions (Neblett, 2002a, 2002b).

A typical biofeedback session is structured in the following way:



1. Discuss follow-through and success with homework.
2. Briefly review previous sessions and decide on a training focus for the current session.
3. Hook up appropriate placements and get a baseline measure. (If the baseline looks good, then review what it showed, hook up another placement, and get a different baseline.)
4. Establish a specific training goal.
5. Show the patient how to reach the goal.
6. Reduce feedback as the patient becomes proficient at reaching the goal.
7. Assign homework to practice the newly learned skills.

Case Example

Beth was a 35-year old female who was working as a recovery analyst for an insurance company at the time of her injury. She was injured in 2002, about 14 months prior to beginning treatment, when pulling out a 300-pound file drawer that had not been locked in properly. The drawer came out and fell on top of her. Beth reported a history of work injuries, including a neck injury in 1991, resulting in a 2-level fusion; shoulder and back strain in 1993; and torn left and right rotator cuffs in 1999, resulted in surgeries to both shoulders. Her medical diagnosis at the time of her PRIDE treatment included chronic right lumbar radiculopathy, chronic old postoperative right cervical radicular syndrome; chronic old postoperative right shoulder impingement, chronic right hip dysfunction, chronic right elbow dysfunction, right wrist dysfunction, deconditioning syndrome, and chronic pain syndrome. She presented with Major Depressive Disorder with anxious features, agitation, sleep disturbance, and family stressors, and she demonstrated some medication dependence on Lortab. At the time of her first doctor's visit she reported a 10 out of 10 pain level.

Beth participated in 5 classes and 6 individual biofeedback sessions. Biofeedback therapy was begun several weeks into her rehab program. By this time, Beth had tapered off of her Lortab, and had begun taking Paxil. Beth reported some improvement in her pain level and sleep success, which she attributed to her stretching exercises and to her Paxil. She had begun her "biofeedback classes," and had received her first relaxation tape a few days before her initial individual biofeedback session. Though she reported pain in a number of body parts, her right shoulder and neck were her primary complaint. A synopsis of each session is provided below (see Cram, Kasman, & Holtz, 1998 for the specific SEMG placements that are presented).

Session #1

Placements (reclining)	Two 5-Minute Baselines	Best with Training
Wrist-to-wrist SEMG μ v	18.0 to 15.0	2.0
Ankle-to-ankle SEMG μ v	6.5 to 5.0	3.5
Left hand temperature °F	93.7 to 95.0	N/A
Respiration	6 BPM, thoracic, forced	6 BPM, abdominal, smoother

Self-report: She had begun using her relaxation tape with moderate relaxation success, though she reported some difficulty getting comfortable and staying focused.

Session Notes: During this baseline, she tried to perform the breathing technique that had been described in her classes. Her pace was good, but her breathing style was primarily thoracic and overly effortful. She was surprised at her muscle tension levels at the baseline and thought that she was more relaxed than she was. During training, she had a tendency to be impatient and to force relaxation. It required moderate to maximal cuing to achieve SEMG relaxation. She made some improvement in allowing her breathing to flow more abdominally and effortlessly with visual and verbal cues.

Session #2

Placements (reclining)	5-Minute Baseline	Best with Training	Average During Induction
Wrist-to-wrist SEMG μ v	33.0 to 23.0	2.0	<3.0
Ankle-to-ankle SEMG μ v	23.0.0 to 15.0	3.5	<3.0
Left hand temperature °F	93.0 to 94.8	N/A	> 94
Respiration	6-8 BPM, thoracic, strained	6-8 BPM, abdominal, smoother, less strained	6-8 BPM, abdominal, smooth, less strained

Self-report: She reported daily use of relaxation tape, generally good success with relaxation, and inconsistent success with decreased pain.

Session Notes: The physical therapist requested biofeedback intervention today to address a pain "flare-up" in her neck and shoulder. She was initially very tense. She seemed fearful and pain focused. She was trying to use her breathing and relaxation skills during the baseline, but she appeared to be forcing and struggling. Education about the "pain>>>fear>>>tension cycle" was provided. She was successful in reducing muscle tension, smoothing her breathing pattern, and reducing her fearful "struggling" approach to pain, with visual feedback and verbal cuing. An autogenic-type relaxation induction was performed. She maintained good relaxation during the exercise. She reported good success with focusing away from pain during the induction, and a reduced pain level at the end of the session.

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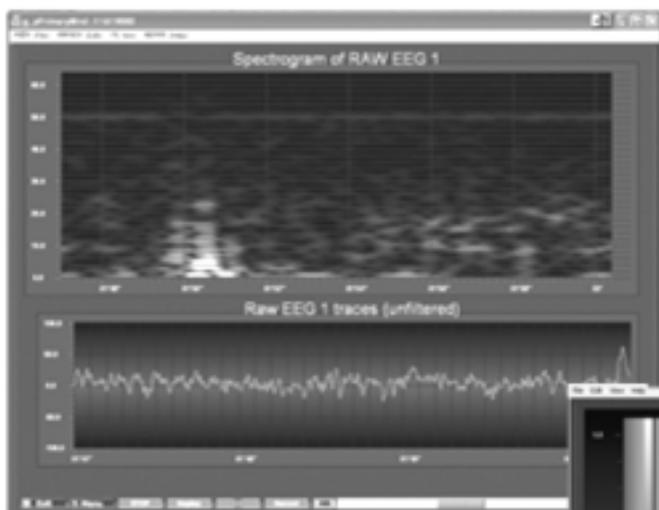
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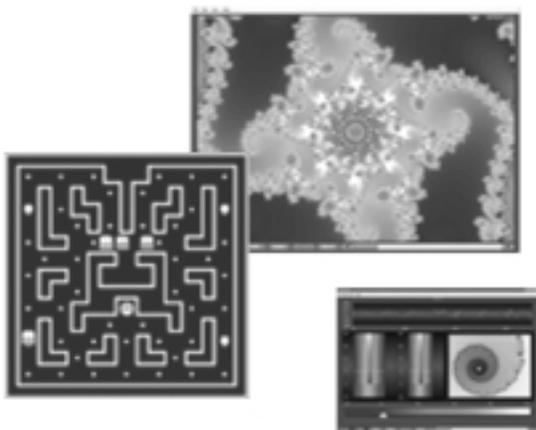
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Biofeedback Therapy Within an Interdisciplinary Chronic Pain Management Program

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Session #3

1st SEMG Placements	20-Second Baselines			After Training:		
	sitting	standing	recovery	sitting	standing	recovery
Left Cervical to Upper Trapezius μv	2.7	3.9	5.0	1.5	3.0	3.0
Right Cervical to Upper Trapezius μv	3.3	4.5	9.0	1.8	3.0	3.6

2nd SEMG Placements	20-second Baselines		After training	
	sitting	neck flexion	sitting	neck flexion
Left Cervical to Mid Trapezius μv	8.0 to 6.0	5.0	2.5	3.5
Right Cervical to Mid Trapezius μv	8.8 to 6.0	5.5	2.5	3.5

Self-report: She reported daily practice with her relaxation tapes, good success with relaxation, good success with focusing away from pain, and success with decreased pain most of the time.

Session notes: She continued to report pain and stiffness in her neck and right shoulder. Recovery problems were noted in her right neck and shoulder following a contraction (with 1st EMG placements). We worked on contract/recovery trials with visual feedback, verbal cues, and an emphasis on somatosensory awareness of muscle activity. She demonstrated increased awareness of muscle bracing vs. relaxation and good progress with recovery following contractions. Specific strategies such as “head floating” and “shoulders dropping heavy” seemed to help her relaxation success.

Postural imbalance was noted while sitting in a chair, including head forward and rounded shoulders. With verbal cuing and visual feedback (with 2nd SEMG placements), she was able to correct her posture and reduce excessive muscle bracing in her neck and upper back.

Her physical therapist had previously requested that biofeedback be utilized to help her increase inhibited neck movement (Neblett, Mayer, & Gatchel, 2003; Neblett, Gatchel, & Mayer 2003). We worked on relaxation while stretching her neck into forward flexion (with 2nd SEMG placements). She demonstrated improved relaxation and improved range-of-motion during neck flexion with breathing cues and auditory feedback.

She was encouraged to monitor posture and muscle bracing, and to practice relaxed neck stretches, at every opportunity during the day.

Session #4

Placements (reclining)	5-Minute Baseline	Practice
Wrist-to-wrist SEMG μv	<3.0	<3.0
Ankle-to-ankle SEMG μv	<3.0	<3.0
Respiration	5-6 BPM, abdominal, smooth	6-8 BPM, abdominal, smooth

Self-report: She reported daily practice with relaxation tape, good success with subjective relaxation, good success with decreased pain, and improved success with sleep at night. She reported frequent focus on scanning and self-regulating muscle tension in her neck and shoulders and good follow-through with relaxed stretches. She verbalized, “When my body is more tense, my pain is more irritating. When I’m relaxed, I don’t notice it as much.”

Session notes: She demonstrated good carry-over with general relaxation training from previous sessions. She spent some time practicing breathing maintenance with mental focus on a meditative phrase. We discussed her progress to this point.

Session #5

1st SEMG Placements	20-Second Baselines			After training		
	sitting	standing	recovery	sitting	standing	recovery
Left Cervical to Upper Trapezius μv	1.5	2.8	2.8	N/A	N/A	N/A
Right Cervical to Upper Trapezius μv	1.9	3.0	3.0	N/A	N/A	N/A

2nd SEMG Placements	20-second Baselines		After training	
	sitting	neck flexion	sitting	neck flexion
Left Cervical to Mid Trapezius μv	4.0 to 3.0	2.0	1.5	N/A
Right Cervical to Mid Trapezius μv	4.0 to 3.0	2.1	1.5	N/A

Self-report: She reported daily relaxation practice, both with the relaxation tapes and independently, without the tapes. She reported frequent focus on scanning and self-regulating muscle tension in her neck and shoulders and good follow-through with relaxed stretches. She reported consistent success with relaxation, pain control, and sleep at night. She verbalized “I feel so much better since you taught me how to relax my neck. It doesn’t get as stiff and painful now.”

Session notes: Good carry-over with neck and shoulder relaxation. She needed some additional practice to establish consistency with postural balance. Developing and using a specific postural strategy, rather than just relying on somatosensory cues, helped to improve her consistency. I had her verbalize her postural strategy several times as she practiced.

Session #6

SEMG Placement (walking)	30-Second Baseline	Best with Training
Left to right upper trapezius μv	9.0	<5.0

Self-report: Continued success in all areas. Also, feeling stronger and more confident in general.

Session Notes: I placed a portable SEMG unit on her shoulders, and let her walk around the facility with auditory feedback in order to facilitate generalization of muscular relaxation skills. Her walking SEMG levels were only moderately elevated compared with many other patients with similar symptoms who often show SEMG levels above 20.0 mv. We worked on relaxed and balanced posture during standing and walking, and did some contract/recovery practice.

Conclusion

It can be challenging to provide effective biofeedback and psychophysiological interventions within the time restrictions of a brief, intensive, rehabilitation program. To optimize success, one must "sell" mind-body and self-regulation concepts, in order to encourage independent practice with techniques. Individual biofeedback therapy sessions must be efficient and goal directed in order to maximize treatment time. Treatment must be individualized to meet the specific needs of each patient. One must prioritize the treatment focus, and recognize that there isn't time to "fix" every-

thing. Support from other treatment team members in re-enforcing self-regulation principles is extremely helpful.

Beth was an especially gifted patient. It generally takes more treatment time for the average patient to develop and carry-over the skills that she learned. She made strong gains in all areas of her treatment program. I attribute her success to her determination and her willingness to follow-through independently with homework. At the completion of her treatment program, she reported confidence in her ability to return to employment and get on with her life. She reported a decreased pain level and only minimal functional limitations due to pain.

In her words, "I'm tired of sitting around. This is my body, and I'm going to take control of it."

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Using the ‘Aha’ Experience with Biofeedback: Enhancing Body-Mind Integration

**Vietta E. Wilson, Toronto, Ontario,
Erik Peper, PhD, San Francisco, California, and
Katherine Gibney, San Francisco, California**

Abstract: The ‘Aha’ experience refers to moments of personal insight and discovery that occur both in therapy and in everyday life. This article reviews the psychological literature on the ‘aha’ moment, explores those ‘aha’ experiences that occur spontaneously in biofeedback treatment, and highlights psychophysiological conditions conducive to their occurrence. The authors introduce an approach using biofeedback to facilitate the occurrence of ‘aha’ insights.

Introduction

“I couldn’t wait to tell you! While we have been working with biofeedback and breathing for my Repetitive Strain Injury (RSI), I never told you that I had hypertension and I’ve been on medication since my mid-20’s. My last check-up with my family doctor showed that my blood pressure is much lower. Now I realize that my blood pressure problem was related to my breathing—and I probably wouldn’t have gotten RSI if I’d done biofeedback years ago, when my doctor recommended it. Wow!”

— 40 year old court reporter

Most clinicians have observed a client experiencing an ‘insight,’ ‘illumination,’ or sudden understanding of knowledge or information. This experience is known as the ‘aha’ effect. For over a century the sudden insight or ‘aha’ has been studied with varying hypotheses, research and theories about its effects. More recent experiments attempted to determine underlying psychophysiological processes that lead to the ‘aha.’ What seems simple—“Aha! Now I understand”—is actually a complex process.

What is the ‘Aha’ Experience?

Some individuals believe that the ‘aha’ experience is something that just comes, without effort or intent, as if a gift of the gods suddenly drops on one and the problem is solved or a new understanding is reached. Researchers have proposed that the ‘aha’ is a part of the creative or problem-solving process and that the ‘aha’ effect has a process of its own. The ‘aha’ experience was the third stage proposed by Wallas (1926) in his work on creative thoughts or problem solving: 1) preparation where information is gathered and conscious work occurs; 2) time for consciously working on the problem; 3) illumination or insight or ‘aha’ where the person sees or knows how to solve a problem; and 4) verification where a solution is worked out or checked for accuracy. Since that time several main theories have been proposed to explain how problem solving or creativity occurs and the role of insight in that process. For a comprehensive review and critique of the theories on the ‘aha,’ a recent chapter by Davidson (2003) is recommended.

Davidson (2003) summarizes the theories of ‘Gestalt,’ ‘nothing-special’ and ‘puzzle problem’ approaches as treating insight as a solitary, cognitive event. Contrarily, the ‘great mind’ and ‘systems approach’ theories of insight propose that all significant insights, while cognitive events, are also embedded within a social context. In general, all approaches support the concept that



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prior to having an ‘aha’ experience the person has either incomplete information, or failure to appropriately apply the information, or an impasse on being able to use the information. When these problems are resolved, the ‘aha’ or insight is believed to occur.

Beyond experiential reports, research supports that there is a ‘moment of aha.’ Based upon a relationship between what one looks at and what the person is thinking about, Knoblich, Ohlsson and Raney (2001) used eye movement measurements to enhance the study of problem solving and ‘aha’ experiences. They described solving problems as being more related to inappropriate or misleading information, rather than incomplete information. Jones (2003) also used eye movement measurements to show that there generally is an impasse in understanding or solving problems before insight occurs. It is possible that when a person relaxes self-imposed constraints and then breaks the problem into smaller units (decomposes the ‘chunked’ information), he becomes ‘insightful.’ The following example demonstrates how a client who believed that she

was just getting old and arthritic was able to decompose her beliefs and experience an 'aha':

Wendy, a 40-year old office worker, came in for biofeedback training for repetitive strain injury (RSI) with upper extremity pain. When she demonstrated her mousing technique, she was quite surprised when asked if she had left hip pain, which she confirmed. She was asked if she believed that she was getting old and arthritic—again, affirmative to both. Once more she demonstrated reaching for the mouse with her right hand and was asked to observe the tension in her left hip. She realized that she was using it to anchor her reach. She was not feeling pain as a result of getting old, rather as a result of repetitive and sustained poor use of her body. She now looks at how she performs her various functional tasks with an eye toward observing how she uses her body.

The deleterious effects of aging are often the result of learned disuse and dysponesis (chronic inappropriate use) without regeneration. We forget that how we use our bodies shapes and develops the physiological/psychological structure, and that this structure constrains our functions.

In the on-going debate on whether general creativity ability correlates to the ability to generate 'aha' moments, Conti, Coon and Amabile (1996) assert that **there may be a personality predisposition to creativity, but that training, experience and task motivation can enhance creativity.** Jausovec (1997) monitored eight sites of electroencephalographic (EEG) measurement of alpha (7.5-13Hz) activity during problem solving, and reported that ill-defined problems demanded more mental activity (less alpha) during the preparation phase but less mental activity during the solution phase. He suggests that individuals were more relaxed during the solutions for problems that required more creativity. This would suggest that perhaps the timing of delivery of information to clients may influence if and when the 'aha' effect will occur.

Why the 'Aha' Experience is Valuable

Important learning can occur during 'aha' moments that may not be possible through other learning techniques. Insights or 'aha'

experiences seem particularly suited for the integration of information from different domains. Additionally, when a person learns through insight or 'aha' the information is better remembered (Auble, Franks, & Soraci, 1979).

Our clinical experience confirms this research. Often, a client may have difficulty learning a concept—he or she may even have reached a plateau in learning. If the client experiences an 'aha,' significant progress can be made toward achieving training goals. The 'aha' often leads to a paradigm shift and positive feelings: The client begins to have a 'can do' attitude that replaces the belief that he/she is ill or injured and unable to perform fully. This shift can lead to conscious control, not only in the areas of training, but may be generalized throughout life. In short, it is our experience that the 'aha' can change clients' belief systems: It leads them to awareness and control, which can affect confidence and competence.

"I took the idea that I could reset my breathing patterns to heart. I immediately noticed that I was breathing poorly in a variety of situations, not just at work. I started trying out the breathing techniques my therapist taught me everywhere: while driving, on walks, when talking, before going to sleep. One day during this period of hyper-awareness I was playing tennis and noticed I actually held my breath while serving the ball. Although I had developed a powerful serve in the few years I've been playing tennis, it had never been very consistent. That day, incorporating many of the tips I'd learned from my biofeedback therapist, I figured out a simple breathing pattern to use when serving, which dramatically improved the placement, power and overall success rate of my serves. I can consistently apply this technique now to hitting the ball during rallies as well. With improved breathing, I am able to see the ball much more clearly and have far greater control and speed with less effort."

—Dawn Van Hee

(Van Hee & Peper, in press)

Biofeedback as a Tool to Facilitate the 'Aha'

We propose that biofeedback displays are a natural way to help individuals become aware of their internal processes and to understand that the mind and body affect each other—a moment of 'aha.' Clients see

a connection between thoughts and actions and begin to understand that discomfort may be connected to patterns of movement and/or beliefs. Real-time feedback can be the bait that leads clients down a path of discovery and awareness, such as with the initial awe of observing unnecessary tension when mousing, especially when the same clients had believed that they were relaxed. When the clients develop the ability to relax at will while still continuing to work and maintain performance levels, their confidence is reinforced and they often continue exploring other mind/body options.

Following are some examples in which the clinician's perceptive use of biofeedback helps create an 'aha' experience that results in an attitudinal change and increased motivation to implement appropriate interventions.

Group 'Aha': Changing Work-Style and Reframing the Etiology of Illness

In our work on discomfort at the computer, we frequently monitor a volunteer participant in front of large group. The audience can see the physiological signals as the person rests with hands on lap, typing at the keyboard and resting again. To their complete surprise the audience observes that the volunteer's respiration rate usually increases by 30% or more, that the anterior deltoid and upper trapezius muscles stay activated during the typing tasks, and there are no momentary gaps/micro-breaks (momentary relaxation of the muscle to rest condition) as shown in Figure 1.

At the same time the person typing is oblivious of any of these physiological changes—this is simply standard operating procedure when typing. When the data are shown to the volunteer, both the volunteer and the audience are now persuaded that they are usually unaware that when they work at the keyboard:

1. Their shoulder muscles tighten.
2. Their breathing rate quickens.
3. There are no regeneration breaks during data entry.

While the audience watches, the volunteer is then taught quick muscle releases and proper breathing. When the typing

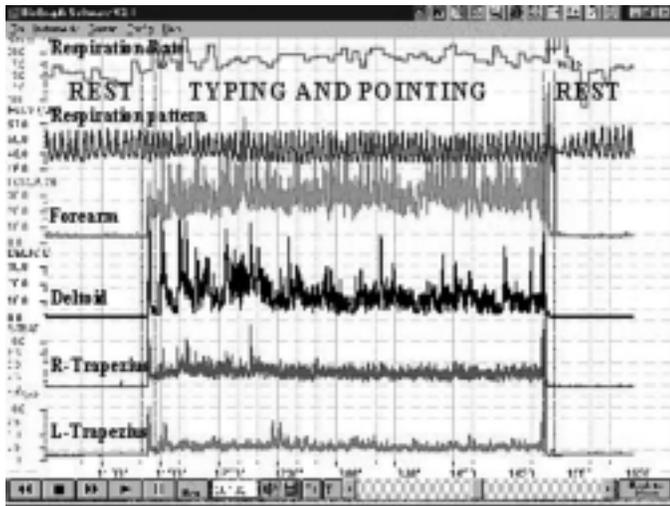


Figure 1. Representative physiological recording typing and pointing movements. Note that the respiration rate increases and there are no micro-breaks (momentary low SEMG values) during the typing and pointing (from Peper et al, 2003).

demonstration is repeated the volunteer's success is obvious to all; and the audience usually provides social reinforcement through comments the person's ability to make quick changes. This demonstration totally changes the common perception that the only factor responsible for RSI is the ergonomic condition of the chair, keyboard, mouse or monitor. The audience often begins to shift their own individual beliefs through the group 'aha' experience.

Group 'Aha': Mind-Body Connection

Skin conductance response (electrodermal activity or EDA) is often used to demonstrate the mind-body connection: Any arousal will increase conductance. When this is demonstrated to subjects, they are often totally surprised by their own responses. The favorite games we use to demonstrate this experience are again done in groups.

After the EDA sensor is attached to the volunteer, we explore the volunteer's response to common stressors, such as a loud noise. Often after a 1-2 second delay, the conductance significantly increases. Yet, to demonstrate that this reaction also includes expectancy, thoughts and emotions, we then ask some one in the audience to come up and give the subject a kiss. In almost all cases, there is a dramatic increase in skin conductance response to the request — without any actual kiss taking place. Similarly, one can ask for permission to place one's hand on the person's knee. After the EDA signal has habituated just ask if the person minds if you can touch him/her higher. Again a large response occurs.¹ This is a powerful 'aha' demonstration of how our body reacts to thoughts, anticipated actions and intentions.

Clinically, EDA facilitates an 'aha' experience in which the client understands that he can integrate and thereby, change his cognitive style to facilitate health and change behavioral patterns. The following three case examples illustrate this 'aha.'

1. Case Example: Fibromyalgia

A 50-year old woman with a 10-year history of Fibromyalgia

experienced extreme fatigue, cognitive problems, joint and muscle pain, and trouble sleeping. The symptoms initially started after her son was involved in drugs and had dropped out of high school. For a number of months prior to attending biofeedback she had been taking morphine for the pain and had also developed panic attacks. The original family problems had been successfully resolved a few years prior and she had a supportive partner.

Training began with teaching her relaxation skills and slower diaphragmatic breathing, which she practiced at home. However, it was only after monitoring her EDA that the 'aha' experience occurred. Whenever she opened her eyes, her skin conductance increased significantly and took a long time to return to baseline. Even though she seemed totally relaxed and nothing appeared to change when she opened her eyes, her EDA consistently jumped the moment she opened her eyes. The therapist said to her, "When you opened your eyes, you literally jumped out of your skin." Tears came to her eyes, as she finally felt that she understood what was happening—she was very reactive and sensitive to others emotions. The moment she opened her eyes she became hyper-vigilant—although she appeared totally relaxed.

This hyper-vigilance, triggering the autonomic reactivity, would also activate the trigger points and maintain the fibromyalgia. Once this concept was understood, she proceeded with further training, which consisted of inhibiting this arousal response. She practiced opening her eyes softly versus vigilantly (see Figure 2).

She practiced this skill at home by alternating eyes closed, eyes open softly, eyes closed, and eyes open. In this process she learned to sense her vigilance, feel the body response, and to learn to inhibit the response. A major focus was learning to open the eyes softly and to react to every vigilant response with an effortless exhalation, imagining she was blowing her breath down and through her legs while letting her eyes open softly. She began to listen to herself, trust herself and realize that she could also trust her sons and husband. She then applied these concepts to her Thanksgiving family

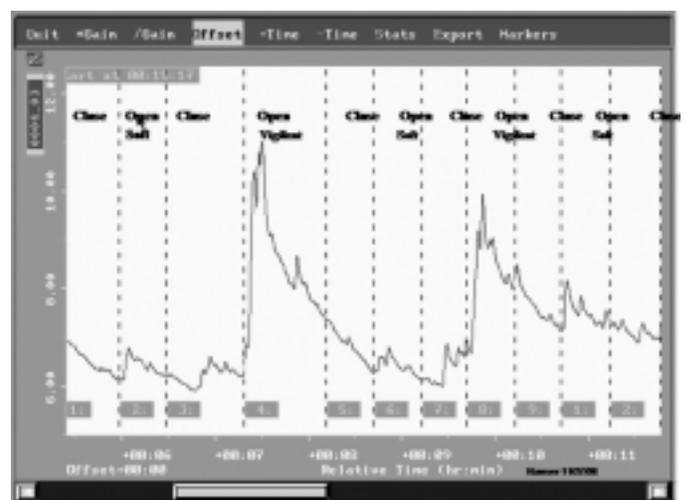


Figure 2. Subject opens her eyes trustingly (soft) or vigilantly (hard). Note the high electrodermal response when the subject opens her eyes with vigilance (hard) as compared to opening the eyes softly.

gathering, which she generally loathed because she would be exhausted, anxious and in pain. She took responsibility to get everything ready for a party, and then practiced letting go and trusting that her grown sons and husband could fend for themselves (e.g., if they were thirsty they could ask or go to the refrigerator themselves). For the first time in ten years, she experienced no pain and was not exhausted after the party. Her health has continued to improve.

Her successful training was facilitated by her confidence in a therapist who helped her gain the insight ('aha') and provided a trusting and encouraging environment in which to address her fear response.

2. Case Example: Road Rage

A client in his mid-thirties with road rage was referred by his supervisor. His job consisted of responding to equipment failures at different locations throughout Northern California. He had to drive to a facility and quickly fix the problem before being dispatched to another site, which could be up to 200 miles away. He spent approximately 80% of his work time in the car and was feeling increasingly frustrated with traffic congestion.

His supervisor was concerned that he was angry while driving and his family observed that he was frequently irritated. After the therapist took an initial history and recorded a baseline session, the training focused upon his relaxing while driving and changing driving habits—not tailgating—and asking himself if driving more quickly was worth “dying over.”

Although he did some of the homework he appeared unmotivated—as if he was simply present, knowing that he had to do the biofeedback. His involvement changed dramatically after we guided him through imagery, which involved visualizing driving with rage, and then relaxing (see Figure 3).

When the data was shown back to him, the therapist pointed out that the client's average heart rate during imagined road rage was 80 beats per minute (bpm) and that during the relaxation and

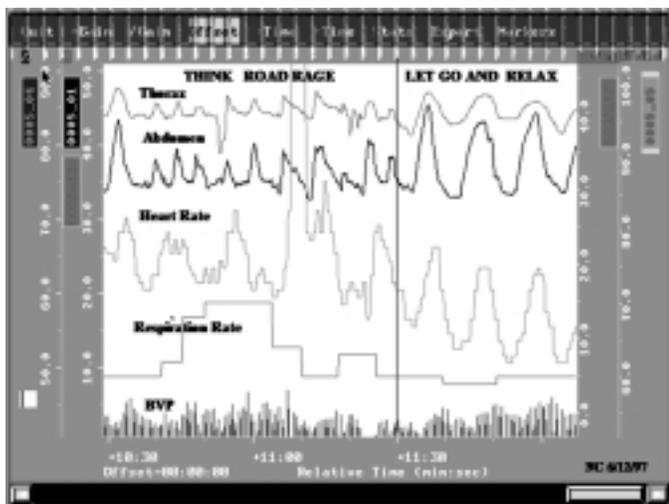


Figure 3. Breathing pattern and heart rate recording during imagined road rage and relaxation. Observe that during relaxation the average heart rate decreased by 16%.

recovery period it slowed to 69 bpm. Hearing this, he noticeably paled as the therapist explained that this meant that his heart had to do 16% extra work during road rage (11 bpm more than during the relaxation). The client then shared that his father had died many years ago from a heart attack—he did not want this to happen to him and leave his wife and children behind.

With this ‘aha’ experience, his motivation changed significantly. He practiced the skills and began using the time while driving to listen to more classical music. He also began to listen to Spanish language audiotapes in preparation for a family vacation in Latin America. He now actively reframed being ‘stuck in traffic’ as an opportunity to learn more and almost looked forward to traffic jams. At a three month follow-up he had continued to drive without road rage and his wife reported that he was much less reactive and a more peaceful and mellow husband and father.

3. Case Example: Ghost in the System for the Therapist

A 20-year old professional male athlete showed repeated and consistent high frequency Beta (22-32Hz) in EEG assessment and training while training for attentional enhancement. The dominant high beta waves were explained as sometimes indicating anxiety or rumination from past experiences. He denied unusual anxiety or serious problems from his past life or sport history. I called the wave a possible ‘ghost in the system.’

Many weeks later, he shared an experience that involved ‘fear and freezing’ in a family related incident when he was quite young in which he thought he or another member of his family might be killed due to his ‘failure to perform.’ His ‘aha’ moment came when he connected this past event with his recent professional performance when he had a ‘fear of failure’ and he responded like a ‘deer in the headlights.’ He is now cognizant of when this feeling begins to appear and why (fear). While the fear of failure is not extinguished, the events in which he experiences fear are less frequent. He practices self-regulation control mechanisms, which allow him to continue to perform at a high level. As he gained this insight, his high Beta EEG generally disappeared from his EEG recordings.

Factors Important for Facilitating ‘Aha’ Experiences

Biofeedback as a psychophysiological mirror is very often a covert procedure to induce an ‘aha’ experience. This experience can be facilitated when the therapist and client are open to deconstructing and reconstructing beliefs, providing a positive mood in which learning (not receiving therapy) is the goal, eliminating any sense of competition, and encouraging interactive communication. Following are suggestions for enhancing the ‘aha’ with these four elements:

1. Deconstruct/Reconstruct

Ask the person to write in detail the components of the problem that is to be resolved. When the client presents you with the information, put it in a hierarchical outline or summary on one page. This presents an overview of the entire problem, puts it into a framework defining the different aspects of the problem, and facilitates problem solving. Not only does a one-page deconstruction

into elements provide a 'gist' of the problem, it also highlights which area is most important. For example, when an executive looks at a one-page psychophysiological profile and sees that he is at high risk for heart disorders, he tends to shift his focus from one argument with a colleague to an attitude of 'how do I prevent a heart attack and resolve this problem?' After the deconstruction, the phase of relaxation or 'letting go' develops within the biofeedback session.

2. Eliminate Competition

Lessen the desire of the person to 'compete' with the biofeedback machine since competition interferes with solutions and 'aha' insights (Shalley & Oldham, 1997). Emphasize within the session changes in motivation and use summary data to show progress. Reframe competition as exploration. Similarly, many clients are willing to do homework if it is explained as a week long experiment instead of as something one has to do forever.

3. Positive Mood State

A positive mood state without judgment enhances the possibility for an 'aha' experience. Interpret the biofeedback data in a positive framework. Emphasize the possibilities and develop the areas of competence.

4. Interactive Communication

We encourage the use of interactive communication as well as 'therapeutic pauses' delivered in a welcoming environment to enhance 'aha' (Wrobbel, 2003). The therapist can say 'Yes' in an encouraging tone, when the client's hand temperature goes up or EDA activity goes down, and then invite the client's perspective as to why or how these changes were achieved. Such interactions not only facilitate an awareness and recognition of mind/body interactions but also honors the client's interpretation of the events.

Summary

Biofeedback is a powerful tool to demonstrate the 'aha' experience of body-mind unity. The use of visual/auditory biofeedback shows that changes have occurred in a person's mind/body of which the person was often unaware. Once awareness has been achieved, the feedback can be used to demonstrate that transformation and mastery are possible (e.g., respiratory sinus arrhythmia may increase as breathing slows; focusing on certain topics induces a skin conductance response; or a certain behavior increases muscle tension or heart rate). We believe that biofeedback data, if used properly, can create insight or 'aha' moments for the client—a powerful transformational process. In a technologically dominated society, biofeedback can often be used to demonstrate and facilitate changing beliefs as well as motivating the client to do the home practices. And a sympathetic and supportive therapist, who understands the value of the 'aha' experience, can lead a client on a road to discovery that may continue to unfold well after the client completes biofeedback training.

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Notes

¹We thank Richard Harvey for creating this useful demonstration.

New Web Based Publication: *Mind-Body-Heart-Spirit-Transformation Report*

Biofeedback, Neurofeedback and related Mind-Body topics don't get much in depth attention from the media. I've created a project which aims to correct that situation.

If you go to the number one site to search for news articles – Google-News—and do a search for biofeedback, you might find 20-30 articles with the word biofeedback, but most of them are articles that only include biofeedback in a list of services or classes offered, or options for how to treat problems—but not real articles on biofeedback. I just did a search and of 59 “hits”, google-news shows 27 unique pages. Of the unique pages, there is literally only one article specifically on biofeedback, plus the press release AAPB created. The other 25 “hits” are really articles that just list biofeedback.

If you do a search on NEUROfeedback, you only find three “hits” in total. One is the article found in the BIOfeedback search, one is the AAPB press release, and another is a one paragraph announcement about a new brain training center opening in Anchorage Alaska.

The point is, there is very little current coverage of biofeedback in the news.

I have started the *Mind-Body-Heart-Spirit-Transformation Report* as a web based publication that will cover biofeedback and the topics the title implies, plus health and learning.

Since it is a spin-off of my *OpEdNews.com* news and opinion website (98,000 visitors in January, and growing) *Mind-Body-Heart-Spirit-Transformation Report* benefits from the fact that OpEdNews.com is one of just 4500 legitimate news organizations that are spidered by Google news. Generally, any article we publish is picked up by Google-news. By working with members of AAPB, SNR and other practitioners and researchers who contribute either original or reprint articles, we can dramatically expand the number of real, in-depth articles that other media, researchers, patients and health care providers find when they do google news searches.

While people can search Google's general search interface and find 410,000 biofeedback “hits” 39,600 neurofeedback “hits” and 7960 neurotherapy “hits” these are often commercial or specific to a person's practice. On the other hand, people expect substantive, up-to-date articles from Google News.

This project has the potential to dramatically increase both the exposure of the field and the depth and quality of the articles picked up by Google-news. That should be good for everyone.

I hope to get reprints of articles that have appeared in *Biofeedback Newsmagazine*, plus original contributions from members of AAPB. These will be published with links to AAPB, to the author's websites, with email links and with plenty of keywords to be sure to catch the google spiders.

I encourage submissions from Biofeedback practitioners and researchers and the cooperation of AAPB and SNR in providing files that are usable.

Articles should be sent to rob@futurehealth.com.

Cordially,

Rob Kall
Editor, *Mind-Body-Heart-Spirit-Transformation Report*



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Biofeedback For Stroke and Traumatic Brain Injuries

Ronald L. Rosenthal, PhD
Miami, Florida



Ronald L. Rosenthal, PhD

Abstract: Biofeedback is an under-utilized modality in the rehabilitation of patients with motor problems secondary to stroke and head injury. One obstacle to the use of biofeedback for these patients is a lack of awareness of the potential benefits of biofeedback training by both patients and therapists. This article provides a brief description of biofeedback as it is used for motor re-training, and can be used to educate patients, health care professionals and third party payors.

Strokes and traumatic brain injuries can disrupt the functioning of central sensorimotor control systems, leading to a variety of motor problems including plegia, spasticity, tremors and ataxia. In some instances, the deficits may be relatively mild and transient and motor control can improve through a combination of rehabilitation and spontaneous recovery. However, in many cases the deficits are long standing and can impose severe limitations on functional activities. Traditional methods in physical and occupational therapy often emphasize adaptive methods (wheelchairs, braces, etc.) and it is often difficult to improve motor control for the stroke or **traumatic brain injury** (TBI) patient.

As the patient recovers, the brain will attempt to improve motor control based upon functional outcomes—more success-

ful efforts will be strengthened while less successful efforts will be less likely to recur. However, many times there will be a fair amount of variability in motor patterns that will fail to have an impact on the functional outcome of an intentional movement. Biofeedback training techniques can make this variability readily apparent and help an individual learn to control muscles more effectively.

Biofeedback training for stroke or TBI patients typically involves the use of a multi-channel computerized system with four or more channels of **surface electromyographic (SEMG) sensors, to record muscle activity**. In the most basic application, training can be done to increase the activity of hypoactive, plegic muscles. The advantage of SEMG biofeedback training is that very small changes in activity can be readily displayed, even when the level of muscular activity is low and cannot be felt readily. Research has demonstrated the efficacy of training for increased activity of the anterior tibialis muscle to improve ankle control of stroke patients.

Motor control problems for this population often involve impaired coordination of groups of muscles. More primitive patterns of movements, called synergies, may appear when higher level inhibitory activity is

reduced. These flexor and extensor synergies are frequently seen in stroke patients and are also present in many cases of TBI. Movement is stereotyped and inflexible, reflecting an undifferentiated control of the multiple muscles. Multi-channel biofeedback training is ideally suited to this problem. Auditory signals can be programmed to occur only when the overall pattern of activity improves. **By this means** improvements **can be achieved** in coordinated activity that **are** difficult to attain with traditional modalities.

Biofeedback researchers and clinicians are constantly striving to develop new techniques and approaches. There are many clinical reports that EEG biofeedback, also called neurofeedback, may be effective with TBI and stroke patients. Neurofeedback's efficacy in the treatment of seizure disorders is well-documented and it is also widely used to treat attention deficit disorders. Biofeedback can also be combined with constraint-induced movement therapy. This is an approach developed by Dr. Edward Taub at the University of Alabama and involves the repetitive and forced use of the impaired limb after immobilizing the good limb.



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A Brief Review of *Pain: Assessment and Intervention from a Psychophysiological Perspective* by Richard Sherman, PhD

Reviewed by Randy Neblett, MA, LPC



After 30 years of research and clinical work in psychophysiological interventions for pain disorders, Richard Sherman has compiled his knowledge into a new book. I was able to obtain an advanced copy and would like to share my impressions.

Dr. Sherman begins his book with an overview of mechanisms of pain involving the central and peripheral nervous systems, the endocrine system, genetic influences, and cognitive and emotional factors that can influence pain perception. He does a wonderful job of condensing such a large topic into just a few chapters. Both classic and new cutting-edge research are presented, which demonstrates our current knowledge of pain disorders, the error in many traditional assumptions, and the number of unanswered questions about pain.

Much of the book deals with psychophysiological assessment and intervention for specific pain disorders, including (but not limited to) headache, back pain, orofacial pain, phantom limb pain, pelvic floor pain, Raynauds phenomenon, and complex regional pain disorders (e.g. reflex sympathetic dystrophy). Dr. Sherman emphasizes only those pain disorders and treatments for which effectiveness has been demonstrated through controlled studies, replication, and the test of time. He admits that his book is somewhat limited in this way, because there are relatively few good studies in the field of applied psychophysiology and the treatment of pain.

Though biofeedback interventions are the primary focus, the use of other cognitive/behavioral techniques for pain

intervention, such as cognitive restructuring, imagery, meditation, and breathing techniques are also presented. All commonly used biofeedback modalities are discussed, but special emphasis is placed on the use of surface EMG and peripheral skin temperature. Dr. Sherman provides specific step-by-step assessment and treatment protocols for each pain disorder, including patient handouts and other forms that the reader is welcome to copy and use. Research evidence is cited to support the efficacy of each intervention. He provides a nice review of the proper use of biofeedback equipment and each specific modality, to help assure that practitioners are able to get

accurate and reliable measurements. Additional chapters cover traditional medical approaches and other alternative approaches to pain treatment.

The strength of this book is its readability. Dr. Sherman has managed to present complex information about our current knowledge of pain disorders into a condensed, straightforward, and easy-to-understand format. He then provides practical assessment and treatment strategies, which are supported by clinical research. This book is an important contribution to the area of applied psychophysiology and pain. Any practitioner who decides to enter this field of treatment should read it.

We Encourage Submissions

Send chapter meeting announcements, section and division meeting reports, and any non-commercial information regarding meetings, presentations or publications which may be of interest to AAPB members. Articles should generally not exceed 750 words. Remember to send information on dated events well in advance.

Send Word (.doc) or text files by e-mail to the News and Events Editor: Ted LaVaque, PhD, tlavaque@gbonline.com.

ABOUT THE AUTHORS

Katherine Gibney is a biofeedback therapist and Clinic Manager at NovaCare Rehabilitation in Oakland, California. She collaborates with Erik Peper in student research and Risk Management Prevention Programs at San Francisco State University. She is co-author of two books, *Healthy Computing with Muscle Biofeedback* and *Make Health Happen: Training Yourself to Create Wellness*, of numerous articles and research papers, and co-producer of *Healthy Computing Email Tips*. She is co-director of Work Solutions, USA, which provides work-site prevention and employee training utilizing biofeedback.

D. Corydon Hammond, PhD, is Past President of the International Society for Neuronal Regulation and of the American Society of Clinical Hypnosis. He is Board Certified in EEG and QEEG from the American Board of Electroencephalography and Neurophysiology, and a Diplomate of the Quantitative Electroencephalography Certification Board. He is a full Professor of Physical Medicine & Rehabilitation at the University of Utah School of Medicine in Salt Lake City, Utah. He has been doing neurofeedback since 1992 and is the author of more than 100 professional publications.

Randy Neblett, MA, LPC, is a Licensed Professional Counselor with a master's degree in psychology from Southern Methodist University. He has provided counseling and biofeedback services in the Dallas area for 13 years, specializing in physical rehabilitation. Though his experience has included spinal cord, head injury, stroke, and chronic pulmonary rehabilitation, his primary interest is in chronic pain. He currently manages the biofeedback and

psychophysiological services at PRIDE (Productive Rehabilitation Institute of Dallas for Ergonomics), an interdisciplinary chronic pain management program for disabled workers, and holds an adjunct faculty position at the University of Texas Southwestern Medical School.

Erik Peper, PhD, is Professor and Director of the Institute for Holistic Healing Studies at San Francisco State University. He is President of the Biofeedback Foundation of Europe and past President of the Biofeedback Society of America, now AAPB. His most recent books are *Healthy Computing with Muscle Biofeedback* and *Make Health Happen: Training Yourself to Create Wellness*. He is co-producer of *Healthy Computing Email Tips*. His research interests focus on psychophysiology of healing, healthy computing, respiratory psychophysiology and voluntary self-regulation. Correspondence can be directed to ihhs@sfsu.edu

Ronald Rosenthal, PhD, is a psychologist and biofeedback provider in Miami, FL. He received his PhD in experimental psychology from New York University and worked for five years with Neal Miller. After completing a retraining program in clinical psychology, he opened a practice specializing in the rehabilitation of motor dysfunction in 1992. Ron has been active in the Biofeedback Society of Florida and in AAPB; he is currently serving as the co-chair of the insurance committee.

Sebastian "Seb" Striefel, PhD, became a Professor Emeritus in the Department of Psychology at Utah State University in September 2000. For twenty six years he

taught graduate level courses in ethics and professional conduct, clinical applications of biofeedback, clinical applications of relaxation training and behavior therapy. He was also the Director of the Division of Services at the Center for Persons with Disabilities at Utah State University. In that role he managed a variety of programs, including an outpatient clinic, a biofeedback lab and an early intervention program. He is a past president of the Association of Applied Psychophysiology and Biofeedback (AAPB), past president of the Neurofeedback Division of AAPB, current vice-president of and past secretary/treasurer of the International Section of AAPB, and regularly writes an ongoing ethics column and conducts workshops on ethics, standards, and professional conduct.

Vietta E. Wilson, PhD, is a professor at York University, Toronto, where she teaches sport psychology, counseling and biofeedback assisted self regulation courses at the graduate and undergraduate level. Dr. Wilson has 25 years of education and experience in Canada and the United States in sport education, medicine and psychology. She has worked with Olympic performers from archery to yachting. She has also worked in the medical field in a clinic for individuals with cerebral palsy, in the Atkinson Counseling Center and is currently at the private, ADD Clinic for attention deficit disorders and performance enhancement. She is the president of a stress management company. Her past research was topographical EEG brain mapping of imagery and she recently completed a study on the effects of posture on mood states.

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Editor: Frank Andrasik

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Dr. Steve H. Senart - Cranial Chiropractic Specialist

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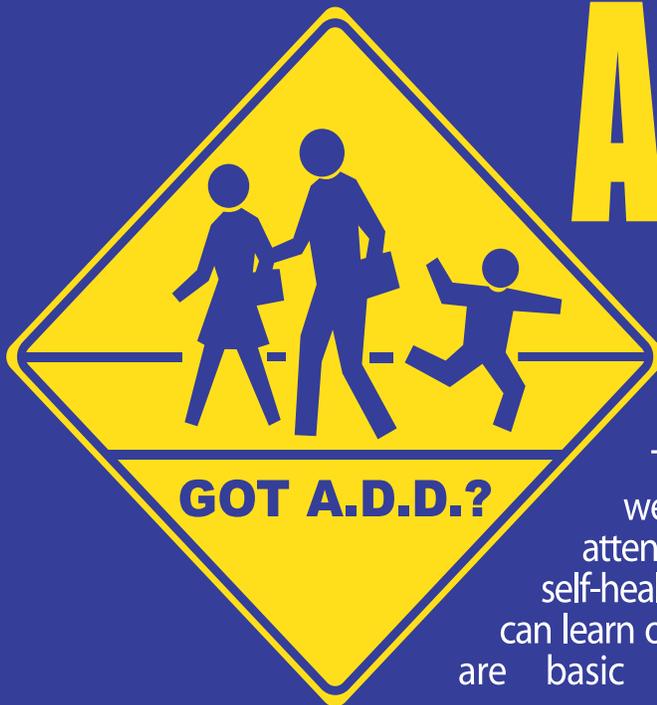
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FROM THE PRESIDENT

What's In a Name? (Or...Who Are We, Anyway?)

Lynda Kirk, MA, LPC, BCIA-C, QEEG-D



In my last “official” message in this venue for addressing you as your AAPB president, I want to share my thoughts about our future both as a field and as an organization. I also want to offer you my heartfelt appreciation for the opportunity to serve both the field I love and you - my colleagues and friends - for whom I have immense respect and affection.

In the film *Field of Dreams*, the character played by Kevin Costner is unexpectedly jarred from whatever he is doing by a voice repeatedly uttering, “Build it and he [they] will come!” Though the orator is invisible, the character played by Costner takes the message both figuratively and literally. At first, he is confused about the validity of the voice. Yet at the same time he cannot ignore it and is compelled to act on its message. As the film progresses, he realizes that in order to achieve his “dream” he is going to have to go on faith and believe in its reality and *act* before his dream actually appears as “fact”.

You and I often hear the phrase “you have to see it to believe it,” but many of us, including our colleagues involved in energy medicine research (are you listening, Elmer?) would say that you have to believe it before you will ever see it. To put it even more bluntly, I believe that you and I will

never see it unless you and I *do* believe it and act on it *before* it appears.

So I pose both a question and a challenge for all of us: What are we going to do with our vision and our dreams about the future of our field? What actions are we going to take? With biofeedback, we have possibly the most powerful tools of transformation of mind-body-spirit available to humankind. We have “evidence-based” data that show that with biofeedback we can now self-regulate our physiology, our emotions, our cognition, our intellect, and our consciousness in ways that were not previously possible. It is incumbent upon us – clinicians and researchers alike in the field of biofeedback and applied psychophysiology – to get the word out.

This year, as in years past, one of the recurring themes in our AAPB board discussions has been our identity as an organization. We have examined ways to reach out to more groups and individuals. We have partnered with international, national, regional, and state societies to network and deliver more workshops and continuing education opportunities. We are continually exploring ways to increase our effectiveness and our “reach,” including creating partnership opportunities with groups such as the National Fibromyalgia Association and oth-

ers. We are publishing more books about biofeedback, neurofeedback, standards and principles, and efficacy. We are continuing to brainstorm new ways to improve our organization and spread the word about biofeedback.

One of the most important aspects of an organization’s identity and vision is reflected in its name. For several years, we have increasingly received feedback that our association’s name is confusing. It has been proposed that one of the most visible ways that we can broaden our reach is to have a name that would be attractive to more professionals who would, within our organization, become familiar with biofeedback and applied psychophysiology. If we were to make our name be more effective and inclusive, we might consider the reasoning behind the recent merger of two of our sections, the *Primary Care Section* and the *Pediatric Section*, to become the *Mind-Body Medicine Section*. There are some compelling reasons bolstered by sound logic regarding why we might want to consider “reframing” what we call ourselves:

The name *Association for Applied Psychophysiology and Biofeedback* is confus-

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FROM THE EXECUTIVE DIRECTOR'S DESK



To Renew... or Not to Play at All

Francine Butler, PhD

Like many of you, I belong to a number of organizations and the dues renewals arrive on my desk in December and January. Also like many of you, before I automatically renew each membership, I go through an exercise to review the value of the organization to me.

What constitutes value and how do you assess benefit? For me, there are two aspects-, one being what I get from the organization and the other- what I give back.

What is membership anyway? The opportunity to belong to a group that shares common interests is accompanied by the offering of educational programs and relevant publications. Those are the concrete benefits. Others are not so specifically defined. It's not the journal or the magazine so much as it is the information I gleaned and applied to my work setting which made my life simpler and improved procedures I use all the time.

The meetings provide great value, not just for the content, but for

the networking, the conversations, the meeting of new friends who share inspiration- and the stimulation of new and creative ideas.

We seem to live in a culture where unquestioned loyalty has diminished and "what have you done for me lately" has replaced it. Admittedly, at dues time, that thought has entered my mind as well.

That's when the second aspect of membership evaluation begins. What have I given back? Was I just a passive member on paper or did I really participate? Did I volunteer, serve on a committee, run for office, present a program at the meeting, write an article or simply offer up some good ideas?? All these doors are open to members. Actually my philosophy is not to join an organization unless I believe I can benefit both "by getting and by giving".

I hope you have assessed your membership in AAPB in the same way- we strive to keep AAPB of value to you -and look forward to your "give back" as well.

In Memorium, Betty Horwitz, EdD, CCC-SPL, BCIA-C

Our Biofeedback family has lost a dear friend, Betty Horowitz. Betty found AAPB a number of years ago while trying to broaden the work done in the area of speech and anxiety. She had the vision to be able to cross boundaries and the courage to be a neophyte in an area not a part of her training, even though she was an accomplished scientist, clinician and writer in her own discipline. She came to AAPB meetings, visited many of us, and tried to winnow the essence of our knowledge for use in her own work. With the publication of *Communication Apprehension* (2002, Singular Press), she brilliantly drew together her work and what she had learned from her AAPB colleagues into a readable and useful volume.

But as is often the case, those of us who knew Betty got back much more than we gave. She was one of those people of great dignity and warmth, humility and confidence, strength and softness. She moved through the world with ease and grace and touched those lucky enough to get to know her. At the Jacksonville meeting, while riding the riverboat down the St Johns River, she shared some of her optimism about her fight with cancer, but also her quiet strength in facing what turned out to be her final obstacle. At the time I had the feeling that she knew her time was limited and she used the time to focus on other shared matters. I had the impulse to tell her what a special person that I thought she was, but I said only the usual things. The family of AAPB will miss her, and I will especially miss her.

Betty Horwitz served as adjunct professor at New York University, where she received an award for teaching excellence. She was a licensed speech pathologist in private practice in New York City. She graduated from the University of Michigan, Kean University, and Columbia University. She completed postdoctoral training in child and adolescent psychotherapy, psychophysiology, and biofeedback. She integrated insights from the fields of human development, speech and language pathology and psychophysiology, to deepen the current understanding of oral communication.

Richard Gevirtz, Ph.D

From the President-Elect: Optimal Dysfunction

Steve Baskin, PhD



Where I live and practice in Connecticut, many parents and students seem to be looking for an edge. One of my sons is in seventh grade and he informed me recently that every kid in his math class “except me and Dan” (Dan’s father is an MIT grad), have a tutor. It seems that his algebra teacher is “pedagogically challenged” and the parents are afraid that their kids will fall behind. Some kids have tutors in every subject as well as a creative writing mentor. Most high school students have SAT tutors; some have college selection specialists, application completion sages and essay writing mavens. For a hefty fee, they will present your child to the college of her choice as a unique candidate fighting for truth and justice on the path to self-actualization. They will even arrange “volunteer experiences” certain to wow the college of your choice.

My 13 year old recently celebrated his bar-mitzvah. As part of the service he was required to relate his Torah portion to the modern world. The portion was a wonderful story about the death of Abraham’s wife, Sarah, and Abraham’s emotional need for his son Isaac to marry a woman, who could “comfort his heart.” In preparation for his speech, he browsed the internet to examine different analyses of the biblical passage. He found full length, ready for presentation, bar-mitzvah speeches, with fill in the blanks for parents and grandparents names. He was amused. I was mortified. Would anybody really plagiarize his bar-mitzvah speech? He got a big laugh at the service, recounting this experience.

Both of my sons have played “travel” sports and now my older son is playing high school interscholastic sports. I have observed a transformation over the last few

years, kids “specializing” in one sport at younger ages. One twelve year old boy didn’t play his last year of little league baseball on the team that I managed because “my father wants me to concentrate on basketball.” Private coaches abound, teaching everything from pitching mechanics to lacrosse stick-handling.

Recently, we have observed how elite athletes have gotten an edge using designer steroids, herbal and pharmaceutical stimulants, many taking handfuls of vitamins, minerals, herbs, “supplements” daily trying to replicate the effects of banned substances or taking undetected not yet banned compounds similar in chemical composition to the drugs on the illicit list. I guess this type of cheating is almost understandable at this top level of sport since the margin for success and riches is narrow. These athletes want a payoff for their years of training and sacrifice and unfortunately peak performance can be chemically enhanced. However, I have recently seen in my practice a few high school athletes interested in maximizing their performance. They had read that relaxation training, imagery, and biofeedback could be useful along with their physical training and nutritional support. This sounds like a reasonable plan for optimal functioning. However, one of the kids was taking “Andro,” a legal steroid precursor (remember Mark McGwire), and another the herb Ma Huang that is in effect, Ephedra, a stimulant implicated in a few recent sports deaths and soon to be off the market. One athlete told me that some kids buy pharmaceutical stimulants from their ADD friends, at the gym or off the internet to enhance workouts and competitions. The boy taking “Andro” had recently been suspended for fighting. I’m not sure why this

athletic cheating bothered me so much. In part, it was the naiveté of the kids. “This stuff is available, some of it is legal, we don’t get drug tested and we’ll perform better.” Part of it was my naïveté, viewing youth sports as somewhat pure filled with determination and character. Maybe it was the bastardization of optimal functioning.

I guess my message is that in many communities, peak performance reigns supreme, from academics to athletics to getting into college. Sometimes it takes on an ugly face in order to get the edge. The hordes of academic advisors are at worst obnoxious, elitist and expensive, at best a bit comical and helpful for some kids. The sports stuff really bothers me. Ask about performance-enhancing substances with any high school athletes that you see. Be aware of the different supplements and substances. Almost anything can be procured on the internet. My gut feeling is that this is more prevalent than we think. This peak performance at any cost philosophy can distort normally positive applications in sports psychophysiology. We may have to be a little more vigilant in how some of our biofeedback protocols are being utilized in the “elite” athletic world that appears to be starting in middle school.

What's In a Name? (Or...Who Are We, Anyway?)

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ing and poorly understood by both the public and by professionals who might otherwise be attracted to and encouraged to join our organization. An alternative name such as *International Mind-Body Medicine Association* would be a more recognizable 'reframe' of 'applied psychophysiology.' Mind-body Medicine as a title is widely used today and has potent name recognition. It strikes a clear chord with both public and professional audiences. (The theme of our 2004 35th Annual Meeting is 'Launching New Mind-Body Paradigms').

I have written previously in this column about how much "tee up time" I must spend with the Primary Care Physician residents who have rotations through my clinic to learn about biofeedback. After spending a day in my clinic, one of the most common statements I hear is: "This is the epitome of Mind-Body Medicine *plus it's experiential and quantifiable!*"

The National Institute of Health (NIH)'s National Center for Complementary and Alternative Medicine (NCCAM) and the Office of Behavioral and Social Sciences Research (OBSSR) have both identified Mind-Body Medicine as a discipline under their mandate for research funding. NCCAM actually classifies biofeedback as a mind-body therapy. This is a valuable opportunity for our organization to actively participate in shaping this historic health care revolution, rather than just passively letting it shape us. Through our organization our collective voices can serve to encourage and maintain critically important federal funding for research in this area and to advocate for equitable insurance reimbursement for mind-body medicine treatments. With a 'name reframe' we would more likely be immediately understood and recognized as both the voice and the home for mind-body medicine, which would give us an advantage in promoting our agendas and securing needed funding for research in mind-body medicine (translation: biofeedback and self-regulation). Our organization will be going to Washington, D.C. this summer to advocate for biofeedback and applied psychophysiology.

Finally, by focusing on Mind-Body Medicine as a major theme within our organization, we can as an organization influence other health care practitioners and professional groups to recognize the critical role of measuring, monitoring and transforming psychophysiological (mind-body) parameters for greater health, healing, personal growth, and optimal performance. We can provide educational programs about applications of biofeedback-based strategies not only within the healthcare domains of medicine, nursing, dentistry, chiropractic, psychology, social work, counseling, physical therapy, occupational therapy, and affiliated healthcare professions but also to other groups that identify themselves with "mind-body paradigms" such as meditation, yoga, Qi-Gong, energy therapies, and more. Anything that can benefit from optimal performance training and self-regulation is fair game. This includes education, sports and athletics, business, performing and fine arts, optimal performance and *life*. The sky's the limit. The more inclusive and holistic an organization we are, the more we can reach out to serve and support holistic approaches in all of these areas.

This brings us back to my original question and challenge: What are we going to choose to believe in? What are we going to build? Our transformational tools of biofeedback have the potential to shift old paradigms of healthcare and healing and performance in all its applications. But we will not reach the necessary 'Tipping Point' unless we expand our area of influence and launch new paradigms of mind-body self-regulation.

"Build it and they will come." We have the tools of transformation before us. What we must build, my friends and colleagues, is increased awareness within the professional and lay public about biofeedback and mind-body self-regulation. We **MUST** get the word out and make biofeedback more widely accessible to a public that is hungry for self-regulation. What we have to lose by inaction on our part is the opportunity to make a real impact on unnecessary human pain and suffering. What we have to gain by building increased awareness of our powerful tools of mind-body transformation is quantum leaps in health, creativity and human potential. The time is now. It's up to us.

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