

Journal of Neurotherapy: Investigations in Neuromodulation, Neurofeedback and Applied Neuroscience

Editorial

Randall Lyle Senior Editor PhD Published online: 25 Nov 2010.

To cite this article: Randall Lyle Senior Editor PhD (2010) Editorial, Journal of Neurotherapy: Investigations in Neuromodulation, Neurofeedback and Applied Neuroscience, 14:4, 259-260, DOI: <u>10.1080/10874208.2010.523328</u>

To link to this article: <u>http://dx.doi.org/10.1080/10874208.2010.523328</u>

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EDITORIAL

This issue of the Journal of Neurotherapy: Investigations in Neuromodulation, Neurofeedback and Applied Neuroscience marks several milestones in its ongoing development as the premier journal in the field of neurofeedback. This issue contains the abstracts and proceedings from the ISNR Annual Conference. The reader who takes the time to review them will see that the field is full of high-quality researchers, theoreticians, scholars, and students. Each is contributing to the body of knowledge that is Neurotherapy in important and compelling ways.

The journal is also publishing the original manuscript, which has not been published in a public forum to date, of Dr. M. Barry Sterman's early research in neuromodulation and reestablishing it in the context of modern discoveries. We believe that it is important for the field to keep the past in mind even as it reaches for its future. Many who have come to the field more recently may not have an awareness of some of the early work that made the field possible.

We are also very pleased to introduce a scholarly dialogue between different groups of researchers surrounding the topic of efficacy in the treatment of ADHD. Lofthouse, Arnold, and Hurt have written a thorough and well-reasoned response to Sherlin, Arns, Lubar, and Sokhadze's (2010) "A Position Paper on Neurofeedback for the Treatment of ADHD." Sherlin et al. have written a response to their concerns, and we look forward to this and other important dialogues continuing as we seek to establish the efficacy and legitimacy of neurofeedback in the treatment of other conditions.

We are also publishing Larson, Ryan, and Baerentzen's qualitative research article exploring the perceptions and roles of the

therapist in the application of neurofeedback. We believe that this is the first qualitative research published in the journal.

It is the simultaneous publication of the ADHD dialogue with its emphasis on precisely what constitutes adequate "evidence" for effectiveness and the first qualitative research article that set me to thinking about the nature of scientific inquiry and alternative paradigms. The dialogue between Lofthouse et al. and Sherlin et al. takes place within a positivist paradigm. This is the traditional paradigm of the so-called hard sciences. It believes that there is a reality that is "out there." That reality is controlled by immutable physical laws. It is imperative that the researcher be a neutral and objective observer of the subject of interest and that the research be value free. Therefore the methodologies used must proceed following the beliefs and restraints of traditional "scientific methods."

The acceptance of this paradigm is implicit in the original position article and in the Lofthouse et al. response and again in the response of Sherlin et al. to Lofthouse et al. Nowhere is the belief in the taken-forgranted truths of this particular "scientific paradigm" expressed or questioned. This is not unusual. Indeed the neuroscience that we all use to direct our training and methods of treatment tell us that the brain prefers categorization and sameness as it permits the conservation of energy that might be needed for protection and self-preservation. The methods of research and the results of the research and the conclusions drawn all apply, but only within the particular paradigm being used.

It is important to remember that this is not the only paradigm. Larson et al.'s article reminds us that there are other ways to carve

up reality. The constructivist paradigm championed by such researchers as Guba and Lincoln (1985) and Denzin and Lincoln (2005) provides an alternative paradigm of inquiry that is not driven by the belief in a reality that is "out there." Rather this paradigm accepts as a given that reality is constructed in and through the process of observation, participation, and conversation. There is no absolute reality that can be separated from our human action on and through it. As a neurologist acquaintance recently quoted Anais Nin, "We do not see the world as it is, we see it as we are"; from the point of view of naturalistic inquiry we cannot not involve ourselves in the subject of our inquiry. The very questions we seek to answer are conditioned by who we are, where we came from, our biological and genetic inheritance, and so on. The types of evidence required and the level of certainty desired for conclusion is different for the two paradigms.

I am not arguing against the traditional positivist empiricism. It is important and is a central paradigm in the kinds of research we need to complete to place neurofeedback squarely in the world of effective, beneficial, economical, and safe treatment for a variety of disorders. I am, however, arguing for the inclusion of the naturalistic, qualitative paradigm as well. It is this openly subjective, personally involved, humanistic type of research that will keep the field stretching its limits and openly exploring realities that are perhaps as yet unimagined. Both paradigms have been important and crucial in our development.

I encourage you to join in this dialogue along with the "effectiveness" dialogue that we have begun in this issue. I look forward to hearing from you.

> Randall Lyle, PhD Senior Editor

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