

need to respect the “first-person” account of the research subject with the “third-person” account of the scientist, combining the experiential with the experimental.

They discover two coping methods among their subjects: Avoiders who feel a passive anxiety by trying to avoid problems, and Confronters, who respond with greater awareness and activity aimed at the stressor itself. All this comes merely from the innovation of “experiential neuroscience”—reporting the specific experiences of the research subject him/herself (“first-person” account) along with the technical findings.

Of great interest to me is the authors’ distinction between brain and mind—long a subject of controversy. We know what the brain is, of course—a three-pound mass of gelatinous matter in our skull. The mind, according to Price and Barrell, “may include the brain, the spinal cord, the autonomic nervous system, the rest of the body, and the world itself.” Those last two words really make the difference! Our consciousness is connected to the world. And there’s no way you can easily put that under a microscope.

This book is about a science of human experience, about human meaning and consciousness. For the first time, Price and Barrell offer a science of human meaning and experience, a science of con-

sciousness, and how to measure these with classical psychophysical methods, integrating qualitative aspects with quantitative methods.

Ever wonder about the relationship between money and happiness? No problem: $\text{Feelings} = \text{Money to the power of } 0.4$, according to a psychophysical study by the authors that was reported in the *Journal of Personality*.

Positive and negative emotional feelings (are there any others?) can be quantified using these new methods. Here’s the formula: $\text{Feelings} = -0.3 \text{ Desire} + 1.3 (\text{Desire} \times \text{Expectations to the power of } 0.5)$.

This book is not for everyone,

but is definitely for those who don’t mind taking a scientific look at human experience. It is groundbreaking in its focus on moment-to-moment, human, meaningful experience. A whole new science is uncovered here, one that has been emerging slowly and whose time has come it appears.

If you truly want to understand what’s happening in your own experience of meaning and how it relates to the real world, then this book is for you. Warning: Once you read it, you’ll never experience your feelings the same way again.

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POWER UP YOUR BRAIN: THE NEUROSCIENCE OF ENLIGHTENMENT

By DAVID PERLMUTTER AND ALBERTO VILLOLDO
Hay House, 2011, 264 pp., \$24.95, ISBN 9781401928179

Reviewed by Meg Blanchet

David Perlmutter, a prominent neurosurgeon and nutritionist, and Alberto Villoldo, a psychologist and medical anthropologist, have teamed up to write a book that articulates their perspectives on consciousness, the brain, and healing, and to offer an integrated approach to self-healing. Perlmutter overviews key aspects of brain anatomy, neuroplasticity, and biochemistry, and speaks of these in relation to stress, disease, and nutrition. Villoldo shares his understandings gleaned from 25 years of work with South American shaman and offers his perspective on the importance of psycho-emotional healing through fasting, and specific meditations and emotional processing. Villoldo’s holistic exercises coupled with Perlmutter’s nutritional recommendations are designed to allow optimal function of the prefrontal cortex, higher levels of overall wellness, and greater joy in one’s life. The book culminates with a clear and concrete prescription for an integrated approach to healing that is offered in a five-week format with suggestions for how to maintain this wellness approach in one’s life thereafter.

POINTS OF INTEREST

The Hippocampus, Cortisol, and Stress

Perlmutter talks about the different regions of the brain: the reptilian,



the mammalian/limbic system, and the neocortex. In his discussion about the limbic system, he talks about how the hippocampus acts as a way station that acquires information from the five senses and either sends it on to the amygdala (perceived threat) or to the cerebral cortex for other needs. He notes that the hippocampus is key to “episodic memory” and that when the hippocampus deteriorates (due to free radicals and chemical damage) this can be related to conditions such as Alzheimer’s. In his discussion of the HPA axis (hypothalamus, pituitary, and adrenals), that is, the system that governs fight or flight, he mentions that the hippocampus can be damaged by an overproduction of cortisol but that it is also the structure that regulates the cortisol production of the adrenals. He references a study done in 1962 by Levine in which guinea pigs that were fondled as pups had lower levels of cortisol not only as pups but throughout their lives, and what this implies about how nurturance at an early age predisposes one to be more resilient to stress. He does state that the hippocampus set point can not only be impacted during early life this way, but that positive life experiences can do this at any stage of life as well.

Mitochondria and the Divine Feminine

The mitochondria are not only the “powerhouses of the cell” but are key to the regulation of how every cell ages, divides, and dies. Derived solely from the DNA of the matrilineal line, the mitochondria are physical manifestation of the feminine life force to which the shaman have been referring, according to Villoldo.

There is a discussion of the importance of the health of the mitochondria in the body as it applies to free radicals and how they affect health and aging, to energy production, and to appropriate apoptosis or cell death.

The importance of mitochondria is underscored and is the target of Perlmutter’s methods of using hyperbaric oxygen to increase oxygenation and of administering intravenous glutathione because it protects the mitochondria and acts as a powerful antioxidant that counteracts free radical damage and regenerates Vitamins C and E in the brain.

It was also of particular interest to me that Perlmutter discussed a case in which he administered glutathione to a fibromyalgia patient and had their Parkinson’s dramatically improve; he understood this to be because fibromyalgia is due to a buildup of toxic byproducts because the mitochondria are not working up to speed and that Parkinson’s is “a mitochondrial disorder,” thus they both benefited from the treatment of their common source.

NEUROPLASTICITY: THE LINK BETWEEN CONTEMPORATIVE PRACTICES AND ENLIGHTENMENT

Neuroplasticity has to do with the brain’s ability to continue to make new connections and to regenerate throughout our lifetime. In order for the brain to create

new networks, it needs several ingredients: nutritional support (neurotrophic factor, i.e. BDNF), freedom from old habitual negative emotional material (i.e. re-

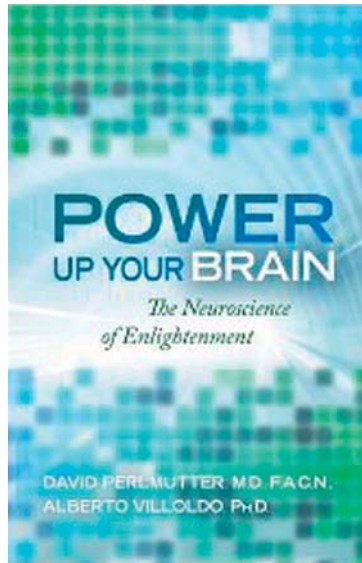
sponding from the neocortex vs. the automatical triggerings of the amygdala), and focused attention.

The gene that turns on the production of BDNF is stimulated by voluntary exercise, calorie reduction, curcumin, intellectual stimulation, and the omega 3, DHA. BDNF is important not

only because of its role in neuroplasticity and neurogenesis, but also because of how it helps to protect the brain from toxicity and trauma. (In the book the authors also talk about neurotoxins and the Nrf2 protein and the foods which help to support this protector of the brain.)

Meditation can be a key component of this process by increasing the blood flow to the anterior cingulate, a structure known to be related to empathy and social consciousness that is located at the anterior portion of the corpus callosum. The anterior cingulate acts as a calming influence and communication conduit to the amygdala.

Bridging our primitive emotional response area, the amygdala, with our highly evolved contemplative prefrontal cortex, allows the anterior cingulate to mediate how we perceive ourselves and our actions in relation to others and the rest of the world. Based on the fact that meditation enhances the functionality



REVIEWS

and capability of this circuitry, Dr. Newberg establishes a very important link between the physical brain and spirituality. (p. 81)

CONCLUSION

The premise of this book is that with nutritional support that supports the higher functioning of the brain, combined with activities that enhance brain function and overall health, and a consciousness that is focused on self-healing and personal growth, we each have the capacity to move to higher states of consciousness and functioning, and to attain the state of “enlightenment.”

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