

## Zen-Brain Reflections

**By James H. Austin**  
**Published by the MIT Press**  
**Cambridge, MA, 2006**  
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Continuing from his first masterpiece, *Zen and the Brain* (see review by Thich An Hue published in the 2000 issue of this journal), James Austin leads readers of this book further into reflections of a reciprocal relationship between Zen practices and brain activities. Being a clinical neurologist and a long-term Zen Buddhist practitioner makes Austin capable of not only citing the most recent and relevant findings in neuroscience research, but also associating them to a spectrum of mental states induced by Zen practices or other conditions. Austin wishes that through this sequel readers will develop a better understanding of how Zen experiences may enrich the field of neuroscience and how neuroscientists may help determine the physiological basis for Zen practices.

The book opens with a description of the fundamental Zen practice – meditation – and its neurobiological correlates. Austin then goes on to illustrate the Path of Zen through progressively advanced meditative training, including such experiences as “quickening” (“brief surges in the brain’s activities,” p. 279), “absorptions” (“hyperattentive states [Samadhi] on the meditative path that change many sensory and affective impressions,” p. 315), “insightful awakenings” (states of “kensho-satori” or “peak experiences” with expressions of oneness and selflessness, p. 387), and “ongoing enlightenment” (a stage of “Ultimate Pure Being” experienced by rare sage, p. 393). The states of consciousness associated with each of these experiences and their corresponding brain structures and

biochemical and bioelectrical changes are also described in detail. By using an analytic and dialectic style, Austin guides readers to explore various regions in the brain, their unique and interdependent functions, and their relationships with the specific mental states under discussion.

Despite a wide range of research findings cited to account for a variety of mental events, there are still many areas that the existing literature in modern neuroscience has no answers for yet. For example, which part of the brain is responsible for the arising of a sense of self and other self-related functions? (p. 212); Does the so-called “witnessing sleep,” “an ongoing impression of awareness [experienced by transcendental meditators] while they are deeply asleep,” have a specific EEG correlate? (p. 185); How do different meditation styles, e.g., eyes-open vs. eyes-closed meditation, affect the way the pineal, the so-called “seat of the soul” by Rene Descartes, releases melatonin, “an important hormone that activates specific receptors both in brain and body”? (p. 142-143); and What is the relationship between nitric oxide and “alternate” states of consciousness? (p. 288). By pointing out these directions for future research, Austin hopes to inspire some neuroscientists to focus their investigation on the age-old meditative tradition.

Many other interesting causal connections between brain physiology and Zen practices have also been discussed in the book. Relaxing frontal lobes, for example, may lead to enlightenment, whereas inducing high-amplitude gamma activity through long-term advanced meditation could induce compassion. In addition, decreasing activation in the right amygdala, commonly experienced during deep meditation, is correlated with relief from fear and anxiety. In conclusion, Austin claims that Zen training can change the psychophysiology of the human brain, and Zen and neuroscience, though seemingly unrelated, are in fact the two

fields that bear a lot of implications toward mutual illumination.

– Ming Lee

### **Coming to Peace with Science: Bridging the Worlds Between Faith and Biology**

By Darrel R. Falk  
Published by Intervarsity Press  
Downer Groves, Illinois, 2004  
ISBN: 0-8308-2742-0

### **Finding Darwin's God: A Scientist's Search For Common Ground Between God and Evolution**

By Kenneth R. Miller  
Published by Harper Perennial  
New York, 2002  
ISBN: 0-06-093049-7

125 years after Charles Darwin's death, his ideas continue to generate debate and controversy. While the scientific evidence supporting his ideas on evolution is by now overwhelming, many still try to either discredit him or at least point out evidentiary gaps in his theories. The USA currently abounds with what one can only describe as vehement and polemical attacks on Darwin. Books are constantly published proclaiming the error of evolutionary theory, and Christian radio and television stations launch biblically based attacks on Darwin masquerading as scientific evidence. Those who support Darwin's teachings (which automatically includes most scientists, since they have studied the scientific evidence) feel themselves compelled to defend evolutionary theory whenever

possible. If the media is to be believed, a battle is being waged over Darwin and evolution, and it is being fought on radio, on television, in schools, and in our most august political establishments.

To further confuse matters, the debate over evolution is often billed as a battle between science and religion, with the former represented by atheistic scientists and the latter by Bible-thumping Christian fundamentalists. To embrace Darwin, it is argued, is to deny God, or vice versa. Matters are not helped by extremists on both sides, who use the debate to support their own ideological or quasi-religious agendas. The evolutionary biologist Richard Dawkins does not hesitate to use evolution to push forward his radically atheistic agenda that denies any purpose and meaning to human life. Christian fundamentalists, on the other hand, accuse Darwin's theory of being anti-God and thus causing a breakdown in social morals. The result is a fight which is both ludicrous in its appearance and tragic in its implications. Scientific findings are either ignored or distorted, schoolboards and school textbooks become ideological battlegrounds, and religious and scientific beliefs are tied into straitjackets that stifle human imagination and intellectual growth.

Faced by this frenzy of shouting voices and polemical chaos, it is a pleasant surprise to discover that there are still rational minds that refuse to accept the views of Richard Dawkins or radical Christian fundamentalists. In their well crafted books, Darrel R. Falk and Kenneth R. Miller demonstrate that belief in a Christian God and acceptance of Darwinian evolution are not automatically incompatible. Since both authors are professional biologists well recognized in their field, and religious believers who are deeply committed to their Christian faith, we would do well to listen to what they have to say.