

Is Wisdom in the Brain?

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A review of *Zen and the Brain: Toward an Understanding of Meditation and Consciousness* by James H. Austin, Cambridge, MA: MIT Press, 1998, 841 pp. Cloth, \$40.00.

The least recognized time bomb of the 20th century may be contact between the Asian meditation traditions and Western culture. At their best, these traditions offer a portal into a radically new (lived) understanding of what it is to know, to be, to act, and to be an embodied self in time. Western approaches have so far tended only to nibble around the edges of these traditions. For example, meditation may be taken simply as a technology for therapy in which one's old notion of self can better get what it wants. Or Eastern forms may be viewed as spirituality in the transcendent sense in which hard questions of embodiment need not be confronted. *Zen and the Brain* brings up those hard questions.

A second modern trend, equally notable, is that of reductionism – in science, psychology, orthodox medicine, philosophy, even folk beliefs. In the cognitive sciences, this takes the form of the increasing faith that all of human functioning, including what was once the field of psychology, is fundamentally reducible to the brain: "Human values are inherently properties of brain activity, and we invite logical confusion by trying to treat them as if they had an independent existence..." Roger Sperry, cited by Austin, p. 589).

Zen and the Brain plants itself squarely in the middle of the very hard questions that arise at the interface of these two trends. What happens when neuroscience and the practice of Zen wisdom meet?

"Long ago, in a distant land, a man's brain abruptly changed" (p. 3). Thus does Austin, a neurologist, begin his story with a description of the Buddha's enlightenment, so stated as to be controversial to almost everyone. Austin's journey toward this position began in 1974, when he spent part of a sabbatical year in Japan at the Kyoto University School of Medicine. There he started meditation practice with a Rinzai Zen teacher, Kobori-roshi. From the beginning, there appears to have been a dual thrust to his efforts, meticulously trying to follow instructions and sit *zazen*, while at the same time keeping painstaking notes on his experiences, categorizing them in such a way that they could be explained by, or might contribute to, our knowledge about the brain. The book is built around an autobiographical core. Austin has organized his meditation experiences into roughly five stages and, to try to do neurophysiological justice to the phenomena encountered in each stage, has amassed an encyclopedic summary of the way in which present-day neuroscience views the structures and functions of the brain as it might be related to such experiences.

The first stage is one of simply settling down. Austin's experiences include those of posture, breathing, eye gaze, relaxation, positive affect, brief periods of fewer or no thoughts (which impress Austin greatly), and some loosening of his sense of himself. In the second stage, Austin reports a number of peculiar experiences, such as bright lights and blank vision, which, although understood by Zen to be irrelevant side effects, are as relevant as anything else for Austin's endeavor of understanding the brain. Stage 3 consists of one brief but intense absorption experience in which he loses the sense of a separate watcher and, after a moment of what he calls a vacuum plenum, gains clarity, a sense of 180 degree surrounding space, and a vivid visual image of a maple leaf. It is Stage 4 that forms of heart of the matter; Austin calls it a taste of *kensho*. One morning, some 8 years after he began his *zazen* practice, while he is standing in an unfamiliar London train station, the scene abruptly changes to one of viewerless immediacy possessing "three qualities: Absolute Reality, Intrinsic Rightness, Ultimate Perfection" (p.. 538). A few seconds later, he also realizes that this reality is timeless, "with nothing

more to do...and nothing whatsoever to fear" (p. 538). Within seconds, other certainties dawn on him, such as that this view cannot be conveyed conceptually and that he feels totally released mentally. The fifth stage consists of the rest of his life. Although *kensho* experiences were not repeated, he indicates an aftermath of greater acceptance and a more relaxed sense of the "I-Me-Mine self."

How, then, does he go about analyzing these experiences? From the first, he is explicit about his stance (and prejudices): "So far we have begun by presenting some orthodox Zennist views about where Zen thinks it is coming from. But suppose we now ask, where is Zen really coming from? Then we must...first, get into the brain and repair our own ignorance. Second, strip off the heavy baggage of centuries of mystical, philosophical, and doctrinal speculations" (p. 53). "The premise of the book is that it [any ultimate experience] must come from the brain"(p. 18).

And how is such an analysis put into action? The basic skeleton of Austin's approach appears to consist of the following steps:

1. Analyze the experience into parts or aspects that can be described in familiar conceptual terms (a dangerous move in Zen).
2. Find the nearest clinical pathologies or experimental studies that deal with conditions describable by those terms.
3. Indicate the brain structures, transmitters, and connecting pathways involved in the pathologies or experiments.
4. Acknowledge that the meditation phenomena in question is actually quite different from the conditions that were studied.
5. Assert that the meditation effects must have something to do with those same structures, transmitters, or pathways.
6. Call for more research.

Thus, for example, Austin likens initial stages of meditation to sensory deprivation, relates all changes in affect to the opioid systems, compares many experiences to the effects of psychoactive drugs like LSD, and investigates Zen action (rapid and without cogitation) by means of a disorder called apraxia in which the patient cannot perform intentional movements. The "flash of enlightenment," during which "many dysfunctional aspects of the self drop out" (see pp. 611, 657-658, 688, 692), is treated by means of a highly sophisticated review of the neurology of amnesias, ablations that cause body-in-space and memory deficits in monkeys, and the like, none of which are anything like the *kensho* experience, which Austin finally suggests calling a "transient global supermnesia" (p. 188). And so on.

What shall we make of all this? There are four basic kinds of questions we might ask. Is this a sensible way to look at the meditation traditions? Even if not, does it provide or point to useful ways of looking at the brain or mind? Either way, are there other methods for treating embodiment that may serve us in addition or instead? And finally, what can we learn from all this about doing science? None of these are simple matters.

First, consider meditation. All of the meditation traditions (Buddhism, Taoism, and Hinduism) agree that in our habitual state of mind, we are mistaken about everything important – about who and what we are, what is real, and how to act. The alternative? Tibetan Buddhism proclaims a primordial wisdom, a basic state of knowing that is "not fabricated by mind"; Zen speaks of original mind and "no mind"; and Taoism talks about the Tao or the "Source." All agree that this is our original, natural,

fundamental state, what we are right now, *not any particular or special experience*. When we realize this wisdom, the phenomenal world, including the sense of self and all other problems, is known as the timeless perfect radiance of that basic ground – with characteristics somewhat like Austin's description of *kensho* – from which actions of integrity and compassion flow in effortless nonaction. When we do not realize this wisdom, we run around like madmen and destroy ourselves and our world – as our species is now doing. We also make silly theories about things. Wisdom becomes downshifted into a set of false views: time; the separate self who perceives, knows, acts, and needs; and all the other distinctions on which our life and, yes, our sciences of psychology and neurology are based. But the final twist is that these are *embodied* false views. So our sciences could be quite relevant – if they are done right.

Does this book do it right? From the wisdom point of view, it is a sad but informative tale, for it demonstrates the mistakes that humans make every instant of their lives that keep them confused. For a specific illustration of this, let us look at Austin's treatment of time. In *kensho*, he apparently has a powerful glimpse of primordial timelessness. Afterward, he substitutes a concept in memory for that direct knowing, an idea that, in the downshifted conceptual mind, he calls "eternity." This concept then seems to him to be at the same logical level as, and contradictory to, other concepts such as the evidence of his senses, memory, and knowledge of history and geology. From this he concludes that the mystics who take timelessness seriously are wrong, that time does exist, and that the question we should ask is, "What happens, *inside kensho*, to create so different an impression?" (P. 565). *Kensho* thus becomes the peculiar experience, to be treated like a pathology. Austin then proceeds to a discussion of patients who develop defects in the time sense from lesions of the mediodorsal thalamus, fornix, cingulate gyrus, limbic systems, and prefrontal lobes – none of which deficits are like the *kensho* experience. He concludes that our normal time sense, not narrowly localizable, must be disconnected, jammed or bypassed during *kensho*. The meditator might equally ask what it is that is disconnected, jammed, or bypassed so that we normally do *not* experience the wisdom or primordial time.

The problem is even worse than this. Suppose that we did find a brain structure or chemical whose use gave people enlightenment-like experiences. Would that not be proof for the primacy of the brain? LSD research, treated at length in the book, is an interesting case in point. In some people, LSD does produce "unitive experiences" reminiscent of meditation reports. However, Buddhist teachers warn that LSD only uses the conceptual mind to mimic the wisdom that is not fabricated by mind (in Taoist terms, LSD is a false way, rather than the Tao's way, of being the Tao). Such experiences are said to be highly misleading, possibly preventing a person from ever being able to realize the real thing. So it is possible that all our neurologizing could only uncover the brain's incorrect way of imitating realization. We probably all agree that it would be interesting to study the brain of an enlightened person, but the logic of that might have to be the other way around. What the meditation traditions have to offer science is not just more data to plug into the old way of looking at brains, but a whole new way of looking.

Enough! Forget about wisdom. What does this work, as presented, tell us about the brain? After all, Austin has described a number of highly unusual experiences, as well as a transformative life, and with great intelligence and perseverance has explored the complexities of how all this could have arisen in the presently understood brain. The results are interestingly ambiguous.

Within the brain, Austin is not a reductionist. With care and integrity, he examines the vast complexity of functional systems, repeatedly putting down simplistic hypotheses such as that transcendence of the I is located in certain CA (cornu ammonis) cells of the hippocampus, or that meditation involves shifting processing to the right hemisphere. He does, however, offer many circumspect localization hypotheses. Here is an example that shows his level of specificity: The self and its maladaptions are located in a triangle consisting of the amygdala, hypothalamus, and central gray, and taming of the self is accomplished by means of cumulative lesions of the input and output cells to

this triangle. So one conclusion about this monumental endeavor might be that it has generated “a list of plausible sites” (p. 657) and thus validated that kind of approach to the brain.

However, exactly the opposite conclusion could also be reached. The book could be taken as a powerful argument against localization and our present way of doing neuroscience. Look at the kind of final description of important Zen processes that Austin feels compelled to give. *Kensho* is a “unique, selective, multilevel blend of functions” (p. 599). The meditative path involves “waves of reorganization within the networks of the brain” (p. 579). “It would be easier to untangle a large bundle of wet confetti than to tease out a single source for any of our more complex actions” (p. 671). Could Austin actually be covertly calling for a new and more wholistic way of envisioning brain functions? And at this level of description, is it not more a matter of religious-like faith (even zealotry) than of science that it is the brain that is the bottom line of embodiment?

In fact, from the meditation traditions come at least five challenges to the brain-centric view:

1. The body as interlocking functional system. We think of the brain, vital organs, chairs, and mountains as structures. The meditation traditions (along perhaps with modern physics, general systems theory, and process theology) see objects as interdependent happenings. When Chinese medicine talks about spleen, liver, fire, and so on, it is referring to functional whole-body interactive systems, not objects. We tend to think that Chinese medicine works because the Chinese accidentally discovered some of our medicine. Could we learn more by thinking the other way around?

2. The energy – chi, prana, lung – level of functioning. All of the meditation traditions teach the existence and importance of the yogic body, crudely (if misleadingly) describable as channels through which energy flows. This idea is less explicit in Zen because Zen relies primarily on *zazen* posture, rather than formal yogic exercises, to guide the energy. The energy level rules the structural. Acupuncture in Chinese medicine is based on a similar system of channels. These channels do not correspond to what we know of the nervous system and brain. Research on Chinese medicine is presently confined to proving that it works, usually by requiring it to cure conditions that Western medicine cannot! Irrespective of medicine, it is demonstrable to anyone that manipulating the so-called channels and energy produces effects. What does the existence of this system imply for our understanding of neurology and brain?

3. The chakras. These are major energy centers in the body. Their number, exact locations, and descriptions vary in the different traditions. (Because they are not things, it makes sense that they would be influenced by the practices done to discover and work with them.) Work with the chakras can be quite potent. They also do not necessarily fit with current neurological knowledge.

4. Mind transmission. If the phenomenal world is one interdependent whole, the body enclosed by its skin is not an isolated unit either physically or mentally. Mind transmission of wisdom from teacher to student is centrally important in many meditation traditions. It does not depend on sensory cues. Some students even become skilled in identifying the nuances of what they have received. The reason that our ESP experiments show either no or minimal effects is that they are directed at things that probably do not transmit across space. A major reconceptualization of brains and sensory systems would be needed to incorporate such phenomena.

5. Death *samadhi*. When Tibetan lamas die, they typically do not do so all at once. The breath stops; the brain stops, and if the lama is in a modern hospital, the body will be pronounced clinically dead. However, the heart center remains warm, and the body does not behave like an ordinary corpse. Physically, the lama will remain in meditation posture for hours, days, or weeks, the body decaying some around the outside. The important thing is that during that time, the lama continues to teach – and very powerfully. It is as though removal of all the body’s living functions, including the brain, has removed a

veil or blockage between the teacher and his students, and now his wisdom mind can reach them much better. One of the most remarkable experiences of my life was seeing a teacher in such a state. Note that the lama is still embodied. But it is a different meaning of body than anything we presently imagine.

What does all this have to tell us about the way we do science? Canonical science takes itself as objective. It is easy to point out that this is not so, that "in the last analysis, we are part of nature, and therefore part of the mystery that we are trying to solve" (Max Planck, cited by Austin, p. 578). But the meditative-wisdom traditions force us to actually take this idea seriously. If we base research on constricted, indirect, naive, false views, that is the portrait of ourselves that we will get out of it, and we will remain like patients with simultagnosia, a condition Austin describes in which the sufferer cannot grasp whole pictures. Yes, research on the meditation traditions can provide data to crunch with the old mind set. But they have much more to offer, a new way of looking.

This can be a useful book. If neuroscientists are to get beyond their present feverish mapping of locations in the brain, on the one hand, and groundless intellectual speculations about consciousness, on the other, they must surely take account of neuroscience's limits. And meditators might well be challenged to really think about their embodiment.

Of course, some people are both neuroscientist and meditator. Austin tells us about his first koan, "When all things return to the one, *where* is the one returned to?" later shortened to "Where is 'one'?" He says that he eventually gave up working on it. Not so. *Zen and the Brain* is his koan and the koan of all of us in this reductionist age. Every time we answer that "where?" with "in the brain," the brain, as both researcher and researched, like any good teacher, replies, "Further; deeper; keep going!" May we all continue to pursue this question.