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Science and Religion, Dalai Lama Style

The Dalai Lama at MIT

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The topic of science and religion is presently of great public interest whether it be the evolution debates, research on the efficacy of prayer, or psychological explanations of religion. What is usually meant by religion in such discourse is a theology that posits human-like supernatural beings who intervene at will in the natural world. But what of the nontheistic Eastern religions that stress discovery of the nature of reality by naturalistic means such as meditation? It is against such a background that Tendzin Gyatso, the fourteenth Dalai of Tibet, has been attempting to foster interaction between Western scientists and Buddhism, largely in the form of a series of conferences which are then published as books.

The Dalai Lama at MIT consists of talks and discussion from the eleventh such conference entitled "Investigating the mind: Exchanges between Buddhism and the biobehavioral sciences on how the mind works." Previous conferences were small, by invitation only, generally held at the Dalai Lama's seat in Dharamsala, India, and generally structured into a series of tutorial talks by each scientist on his field followed by rather diffuse discussion. The MIT meeting was large, open to the public, and structured in a manner potentially conducive to a working exchange between Buddhist and scientist. The theme of the meeting was the relationship between the "first person" knowledge obtainable through meditation (historically called "introspection") and the "third person" knowledge of the scientific community. Three specific topic areas were the focus of discussion: attention, mental imagery, and emotion. For each topic, one scientist and one Western Buddhist with a scientific background presented a paper. The Dalai Lama was hospitably present throughout, saying little but perhaps contributing significantly to the atmosphere, since the most remarkable thing about the conference and book is the ambience of good will, receptivity, and downright friendliness among the participants. Nevertheless, despite their evident enthusiasm for this cooperative enterprise, the content of the exchanges might, on reflection, give serious pause to both Buddhist and scientist.

Attention

Many aspects of attention are studied in cognitive science; the aspect discussed in Jonathan Cohen's lead paper is the relation between cognitive control and attention. The issue is understood thus: "Control operates by representing the goal of a behavior: what we are trying to accomplish. It then oversees the process of performing the particular task to achieve the goal by selecting appropriate stimuli and the actions that correspond to those stimuli." (p. 29). The image is that of an abiding, somewhat homunculus-like, goal directed self (or, at least, executive function) whose continuously shifting attention monitors and focuses in on aspects of the environment relative to those goals. In contrast, Alan Wallace presents a Buddhist claim that such attention is actually impaired because it is *not* in control; it cannot concentrate and requires extensive training in meditation techniques that will enable it to stay put on a single object. The suggested relevance to science of such training is that a) it makes the mind a stable (rather than wobbly) base upon which to mount one's awareness, the mind thus becoming a laser-like instrument of observation, and b) it produces experts in sustained attention (elsewhere referred to as "the Olympic athletes of meditation") for cognitive scientists to study.

Here are some problems with this formulation that might arise from the Buddhist side. The purpose of Buddhist training is not to produce experts in attention but to engender wisdom

insight into the nature of experience. The reason people lack such insight, it is said, is that they live in fantasy worlds where a supposed but illusory self strives for goals, i.e. obtaining what it wants, avoiding or destroying what it doesn't want, and ignoring its true nature and condition. Note that this is the very portrait of attention in Cohen's description of control of attention -- and actually in Wallace's also. Buddhist meditations are designed to reorient the mind to a different mode of functioning altogether by various means, all of which are difficult precisely to the extent that people keep trying to artificially control their minds and attention in the form of a motivated self external to experience who has the goal of becoming an expert meditator (Zen calls this "putting a head on top of one's head"). Finding the mind that is naturally with experience and in which insight can occur involves relaxing attention as much as it does not wandering until eventually the meditator must let go completely (of his attention, as well as his goals and his supposed self). For most people this involves more than just meditation: for example, teachings, teachers, a fellowship of practitioners, transmissions from teachers, and so on. Meditative concentration on a single object (technically, in Buddhist terms, producing a mind stream in which the same object manifests moment after moment) is considered to be a preliminary practice that does not of itself lead to wisdom. In short, there is something interesting and important for attention research about Buddhist meditation, the reorganization of the mind so that attention is part of a different system altogether from that pictured in attention and control theory, but this will remain off the radar for the scientists as long as they are presented only with a view which focuses on "experts" who can perform feats of concentration within the scientists' old paradigm of attention.

Turning now to the scientists' side: isn't it enough to work with the readily understandable concept of expertise and some experienced concentrators who can be tested in the laboratory? The fact is that the study of trained experts is not the way science progresses. It was already shown in the 1960s that attention could change in long-term Zen meditators and Hindu yogis, and in 1970 Swami Rama, a Hindu yogi, was extensively studied at the Menninger Foundation where he demonstrated a variety of extreme abilities, including the voluntary death-like state of physiological arrest called *yoga nidra* (Anand, Chhina & Singh, 1961, Kasamatsu & Hirai, 1969, Boyd, 1995). But other than the "Wow, look what these people can do" factor, these investigations have had little effect. For that matter, it is not through the study of actual Olympic athletes that advances in the biological sciences have occurred. The reality is that basic science is much more theory (and custom) constrained and driven than our rhetoric of empirical observation would admit. So the scientists might need to pay attention to the meaning, not just the surface, of Buddhist practices if there is to be a significant interaction between Buddhism and science.

Mental Imagery

Similar issues arise with respect to mental imagery. Representing the scientists, Stephen Kosslyn, Daniel Reisberg, and Marlene Behrmann presented a thoughtful paper identifying three kinds of relationship between imagery and introspection: there are aspects of imagery where introspections agree with experimental findings, aspects where the introspections disagree and are thus considered erroneous, and aspects about which introspections haven't a clue, namely cutting edge questions about the brain mechanisms that produce mental images. From the Buddhist side, Matthieu Ricard spoke about visualization in Tibetan Buddhist practices,

emphasizing the development of visualization skills that allow maintenance of elaborate and detailed mental images over long periods of time; this aspect of visualization elicited much interest from the scientists. He also explained that visualizations in Tibetan Buddhism were performed so that the meditators could take on the various aspects of wisdom or compassion represented by the forms that were visualized; however, this latter challenging aspect was not headlined and was not picked up or discussed by the scientists.

The purpose of visualization in Tibetan Buddhism is not to produce attentional prodigies; I've even heard lamas respond to student complaints about their difficulties with visualization by relating classic tales of meditators who got so focused on the visualization itself that they were reborn as demons with the imagery of the visualization coming out of every pore -- not a recommended outcome. Again it seems to be an issue of the seduction of peripheral aspects over meaning. From the scientists' point of view, the hope seemed to be that these skilled visualizers would be able to point to the brain mechanisms underlying mental imagery, access to which is not available to the introspections of ordinary people. But visualization is not designed to do this, and researchers might be surprised by the non-brain-centric, energy based, yogic physiology that is understood to underlie the imagery. As with attention, the scientist (and meditator) has the choice of marginal issues that require little understanding beyond present paradigms or of venturing to explore matters that might require (and consequently yield) transformations in the sciences – and perhaps in the mind of the scientist as well.

Emotions

This may be the trickiest of the topics. There is already a good deal of popular press and public interest in the increasingly researched clinical benefits of various Eastern practices, among them Buddhist derived mindfulness training (Brown, Ryan, & Creswell, in press). Perhaps the most dramatic results in regard to emotion is the oft cited research by Richard Davidson which he summarized at the conference. Through a lifetime of careful experimentation, Davidson has shown the association of a certain kind of positive affect with increased activation of areas of the left prefrontal cortex, a region of the brain that was hyper activated, beyond anything he had seen before, in a small sample of Tibetan Buddhist monks. To be sure, there is more to emotional processing by the brain than the prefrontal cortex, but of particular relevance to the Dalai Lama's central concern of fostering compassion throughout the world, Davidson also found that thoughts of compassion triggered this area of positive emotion in the monks (one in particular) but not in American student research subjects.

In previous conferences, the Dalai Lama's approach to emotions has been to emphasize that afflictive, destructive emotions such as hatred, anger, and greed can (and should) be eliminated by various Buddhist practices which counteract them through engendering positive emotions such as kindness, generosity, and compassion. At the MIT conference, Buddhist scholar Georges Dreyfus presented the Yogacara Abhidharma of Asanga and Vasubhandu as though it were a Buddhist ethics whose main point was to teach the replacing of such afflictive negative states of mind by positive ones in order to achieve a good life in the Greek sense of *eudaemonia.* Alas for Dreyfus' basically careful presentation, these texts are anything but Greek in orientation. Abhidharma texts, as Dreyfus himself initially points out, are primarily lists of mental factors with which to analyze sentient experience without having to postulate a unified

self. Positive, negative, and neutral refers to karmic not affective qualities, and the goal is not to produce a happy ordinary life based on good karma, but to get beyond karma altogether to the vast mind (or beyond mind) of wisdom and compassion from which the practitioner can act (beyond ethical generalizations and rules) on the basis of what is truly needed in each unique situation.

Of course, this is still about a good life, so the question arises as to what the Buddhists hope to learn from science in this respect; after all, interactions at the conference were supposed to be mutual. An interesting exchange between MIT Cognitive Science professor Nancy Kanwisher and Buddhist monk Ajahn Amaro pinpoints this issue:

> Kanwisher: ...you don't need our pretty brain pictures to decide what kind of life you want to live.
> Amaro: What I get out of it is a healthier world and the delight of humanity being in a better state than it was before.
> Kanwisher: How does neuroscience, specifically, contribute to that?
> Amaro: Because people believe in the great god of data.
> Kanwisher: So it is a public relations tool? (pp. 63-64)

There may be nothing wrong with good publicity for good research, but Buddhists might want to be careful about truth in advertising. Offering up expert feel-gooders as the fruition of meditation is even more questionable than showcasing "Olympic" concentrators. Buddhism does not offer ego a rose garden. Dharma centers are full of people who seek outside psychotherapy or leave because the practices are not giving them what they want or expect. An even greater danger than disappointment is that if Buddhism keeps presenting itself to Westerners as therapy or as a Sunday school battle of good versus bad mental states, that is what it will degenerate into here. We already have lots of therapies and lots of Sunday schools. Buddhism can offer what is genuinely outside the box; it just has to trust Westerners and scientists enough to do it, and Westerners and scientists have to be willing to stretch their minds enough to receive.

The Summing Up

In the final analysis, the conference appeared to be more than the sum of its parts. The atmosphere of good will, inclusiveness, and the possibility of including the whole person in science seemed to get through on some level to participants and to form the basis of the celebratory speeches closing the conference. It is ironic that in the effort to present only what is obviously scientific within our present paradigms, that atmosphere, which may have been the most notable contribution of the Dalai Lama and his attendant Tibetan monks to the conference (and imagine transmitting that kind of mind state to meetings of the United Nations), was never presented or even acknowledged as a topic of discussion. As a result of the way the Buddhism-science dialog has been slanted, Buddhism is becoming firmly categorized with reductionist materialist views of the mind in the public awareness and popular press (see, for example, the January 29, 2007 issue of *Time* magazine). Buddhism has something more profound to offer science than that. To be sure, science, like all endeavors, must proceed by small practical steps, but that doesn't mean the steps cannot and should not be guided by vast vision. Or in the epigram of Antoine de Saint-Exupery: "If you want to build a ship, don't drum up the men to

gather wood, divide the work and give orders. Instead, teach them to yearn for the vast and endless sea."

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