

# MEDITATION AS MEDICINE

## A Critique

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**T**wenty-seven adults are arrayed at the front of a large, sloping lecture hall: some lying on their backs, some upright in free-standing chairs, some in the tiers of seats bolted to the floor. Most appear to range in age from mid-forties to mid-fifties. The lights are dim, most eyes are closed, and except for occasional fidgeting, everyone is silent and still. The instructor, a kindly psychiatrist who bears a striking resemblance to Santa Claus, has instructed everyone to focus attention on the ebb and flow of the breath, counting exhalations from one to eight, then returning to one. Each time the mind wanders off, the meditator should begin counting again at one: the point is not to get to eight, but to continually refocus attention on the breath.

Toward the end of the evening, participants gather on chairs in a circle, each speaking in turn about her or his experience. One woman says she hates meditating, because her mind wanders constantly, and her thoughts are full of “mean” commentary about herself. A Vietnam veteran remarks that for thirty years he feared that “if I allowed myself to have the memories they’d kill me, so I fought them off like I fought the war.” Meditation has helped him to see that his thoughts will not kill him, and that facing the painful memories relieves the depression and anxiety caused by his avoidance. Another woman’s voice breaks as she remarks that part of her resistance to meditation emerges from a belief that “I don’t deserve happiness.”

Scenes like this are being repeated in hundreds, perhaps thousands, of settings around the United States. They are part of a program called

Mindfulness-Based Stress Reduction (MBSR), which molecular biologist Jon Kabat-Zinn, Ph.D., developed at the University of Massachusetts Medical Center in 1971. During the eight-week MBSR program, participants attend a two-and-a-half hour class each week. They learn various forms of sitting and walking meditation, do visualizations to cultivate loving-kindness, and practice simple yoga postures. They also agree to complete daily homework assignments: to meditate and do yoga for forty-five minutes each day, and to keep a journal recording these practices and the practitioners' responses to stressful situations.

Other therapeutic protocols employing mindfulness practice have been developed specifically for dealing with psychological problems. Mindfulness-Based Cognitive Therapy (MBCT) has adapted the MBSR program for people suffering from depression.<sup>1</sup> Dialectical Behavioral Therapy (DBT) is a protocol for treating Borderline Personality Disorder developed by psychotherapist Marsha Linehan, Ph.D. It includes a form of mindfulness derived from Zen meditation and seems to be effective for addressing a disorder that is notoriously difficult to treat.<sup>2</sup> For simplicity's sake, this article will focus on MBSR, the largest of the programs.

### **Meditation as medicine: the scope**

The precise scope of MBSR is unknown, because the program is not centrally controlled. In 1996, fifteen years after MBSR was launched in Massachusetts, approximately 120 programs were operating in the U.S., and "a few" in other countries. A year later, the number had more than doubled.<sup>3</sup> As of April 2010, a database hosted by the Center for Mindfulness in Medicine, Healthcare, and Society, which Kabat-Zinn founded, listed 553 MBSR programs around the world. The Center estimates that "tens of thousands" of people worldwide have completed the program.<sup>4</sup> A slew of medical studies on MBSR have linked it to faster recovery from psoriasis outbreaks, improved cardiac health, fewer post-chemotherapy symptoms among cancer patients, greater immune responses to flu vaccine, and increased activity—possibly even neural growth—in areas of the brain associated with positive mood.<sup>5</sup>

I have no doubt that mindfulness can be very helpful to people in a variety of ways. I have practiced it myself for more than twenty-five years and have taught it to others, and I have both experienced and

observed its beneficial effects. Yet I have a number of concerns about the way mindfulness practice has become commodified in recent years. I find some of the recent clinical research on meditation very intriguing. Yet I have some questions about the research methods and about how to interpret the resulting data. I will explain those concerns below, but first I want to do two things: to show the dramatic increase in medical research on meditation over the past decade, and to consider some of the rhetorical strategies that underlie this increase. Then, I will offer five critiques of MBSR and the booming industry in meditation-as-medicine.

Over the past thirty years, literally thousands of books and articles describing psychological and physiological effects of meditation have been published.<sup>6</sup> Since 1972, the federal government has funded hundreds of research studies dealing with various forms of meditation. In fiscal years 2008 and 2009 alone, it spent nearly \$51 million on this research. Initially, scientists studied the effects of Transcendental Meditation, as taught by the Indian guru Maharishi Mahesh Yogi. Today, most studies employ some form of mindfulness meditation—most often MBSR, MBCT, or DBT. A handful of studies employ other forms of meditation, and some do not specify the type of meditation or mindfulness practice.<sup>7</sup> This is one of the problems with the research: “meditation” is not well defined.

In the chart at Figure 1, the solid line represents medical research on all types of meditation funded by the United States government since 1998. It funded seven studies that year, eighty-nine in 2008, and 122 in

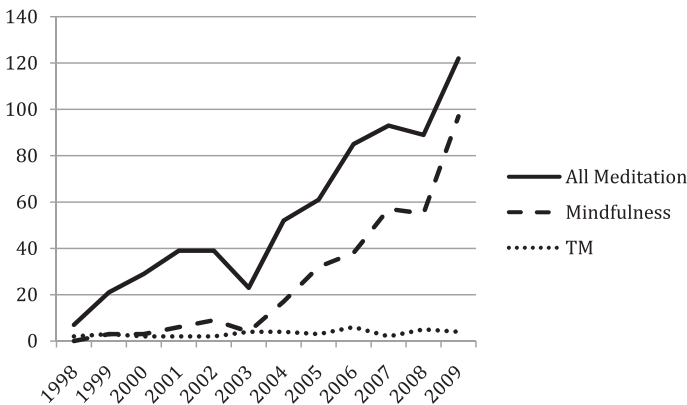


Figure 1. Federally funded research on meditation 1998–2009.

2009.<sup>8</sup> The dashed line represents research studies that specifically identify mindfulness, and the dotted line represents those that explicitly identify Transcendental Meditation. In 2009, the government funded four studies of TM and ninety-seven studies of mindfulness (all types).

These are just federally funded research studies. Next, let us look more broadly at clinical trials: funded publicly, or privately, or both. As of late January 2010, the National Institutes of Health was tracking 132 clinical trials dealing with meditation of all types, of which sixty-one were recruiting or preparing to recruit volunteers, thirty were actively underway, and forty were complete. (One had withdrawn.) Among those, 113 trials studied some form of mindfulness and fifty-seven dealt with MBSR. Thirty-two trials employed MBCT, and fifteen employed DBT.<sup>9</sup> Thus, 79 percent of studies dealing with meditation and 92 percent of those dealing with mindfulness used one of these three protocols.

#### **“Buddhist meditation (without the Buddhism)”**

Jon Kabat-Zinn has said explicitly that he wants to promote meditation in a way that does not scare people off by associating it with unfamiliar religious practices and Buddhist technical terminology. When he began to develop MBSR in 1971, he anticipated that doctors and scientists, as well as many patients, would resist a program explicitly grounded in a particular religious tradition, especially a foreign one. Indeed, over the past century or more, orthodox physicians have regularly denounced promoters of alternative medicine as quacks or charlatans. So it is understandable that Kabat-Zinn’s rhetoric has carefully distanced MBSR from Buddhist and Hindu teachings that regard meditation and yoga as religious disciplines. He calls the mindfulness practice taught in MBSR “Buddhist meditation (without the Buddhism).”<sup>10</sup>

Expressing another pragmatic concern, Kabat-Zinn has said: “[I]f you want to be able to integrate into medicine ... you’ve got to be able to charge the insurance companies for this.”<sup>11</sup> To reach his intended audiences effectively, “[T]he language that we use ... is how to take better care of yourself; how to live more skillfully and more fully; how to move toward greater levels of health and well-being.” He also stresses that MBSR is “a complement to medical treatment, not a substitute for it.”<sup>12</sup>

When asked at a conference on American Buddhism whether MBSR might be misappropriating Buddhist traditions, Kabat-Zinn said, “I really

don't care about Buddhism. It's an interesting religion but it's not what I most care about. What I value in Buddhism is that it brought me to the Dharma."<sup>13</sup> Although he has been involved in explicitly Buddhist meditation practices for several decades, he can make this rather striking remark because he has defined the key term, "Dharma," as trans-religious, trans-cultural, and trans-historic.

He says, "The word *Dharma*, to me, is pointing to something that really is universal.... The cultural and ideological overlays, and the historical elements of [Buddhism], beautiful and honorable and wonderful as they are, are not necessarily the heart of the Dharma, which transcends them."<sup>14</sup>

### **Two problematic assumptions**

Kabat-Zinn's remark is based on two assumptions that I want to challenge. The first is the assumption that the central practice of Buddhism is, and has always been, meditation. Although this is a common perception among Americans, any careful study of Buddhist history will reveal that meditation has almost always been a specialty of a small minority of monks and nuns.<sup>15</sup> Most Buddhist practices have centered on devotion and generating merit (or good karma) for oneself and one's ancestors. The focus on meditation, especially among laypeople, is at most a century and a half old, in a tradition that spans more than two and a half millennia. It has become widespread only in the past fifty years or so. The second faulty assumption is that Buddhist or Hindu religious ideas or practices are universal, transcending any particular cultural or historical context. Scholars of religion, including scholars of Buddhism, have pointed out that this perennialism itself is a product of modern, Euro-American colonialism.<sup>16</sup>

Kabat-Zinn's assumptions about meditation and the universality of Dharma place him squarely in a cultural, historical, and religious context that includes Swedenborgianism, Mesmerism, Transcendentalism, pragmatism, Theosophy, and New Thought. These Western metaphysical traditions interacted with modernist re-interpretations of Buddhism and Hinduism in Asia, which were produced in response to particular historical, political, religious, and economic conditions in Asia. As a result of these interactions, we tend nowadays to talk about how meditation and yoga can improve physical and mental health, rather about how they

can help us to deconstruct the “self,” realize Nirvana, and/or prevent negative future rebirths. But Kabat-Zinn, like other contemporary promoters of meditation-as-medicine, is silent about (or perhaps unaware of) this history.<sup>17</sup> Robert Sharf, a respected scholar of Buddhism, commented,

[I]t will take a long time—perhaps centuries—for the West to engage with the Buddhist tradition at a deeper level. Such an engagement will require that we see past the confines of our own historical and cultural situation and gain a greater appreciation of the depth and complexity of the Buddhist heritage. Certainly one impediment to that is the idea that the only thing that matters is meditation and that everything else is just excess baggage.<sup>18</sup>

So my first objection to Kabat-Zinn’s rhetoric is that it is, at best, myopic. At worst, it may be intellectually dishonest. I understand why he uses the rhetorical strategies he does, and I can see how they might seem necessary to accomplish the larger goal of making a helpful practice more accessible to people who might never try it otherwise—a goal that I applaud. But this rhetoric also erases two or three millennia of Hindu and Buddhist history—and the monks, nuns, monarchs, nobles, and ordinary laypeople who preserved and developed it. Kabat-Zinn himself learned mindfulness from Buddhist teachers, in Buddhist communities. I do not actually think there is anything inherently wrong with practicing meditation or yoga or lovingkindness for better wellbeing. It is recognized as a legitimate goal within these traditions, albeit a lesser one than enlightenment or union with Brahman. What I am critiquing here is a rhetorical erasure of the past, and the assumption that one’s own social, cultural, and historical perspective applies universally.

My second concern is that MBSR separates meditation and yoga not just from their doctrinal contexts, but from their moral frameworks. In both religious traditions, moral conduct is the foundation of meditation practice, because one cannot have peace of mind if one’s behavior is unethical. In Buddhism, lay practitioners are expected to observe five basic moral precepts: not killing, lying, stealing, engaging in sexual misconduct, or intoxicating oneself or others. Buddhist monks and nuns adopt additional precepts, numbering from ten to more than 300,

depending upon the tradition and, in some cases, the gender of the practitioner. (In some orders, nuns take more vows than monks.) Exemplary conduct is what makes monks and nuns worthy of the honorific title “Venerable,” and that is why it is considered meritorious for laypeople to make donations to the monastic Sangha. Doing so generates positive karma. The purpose of moral conduct is to overcome greed, hatred, and ignorance, and move along the Path toward enlightenment. Moral conduct (*yama* and *niyama*) is also the foundational practice of yoga, according to the Eight Limbs of Yoga developed by Patanjali. The ultimate purpose of yoga is to realize union with the Divine. In MBSR, participants in the day-long meditation retreats that are part of the training may be asked to observe the five Buddhist precepts for laypeople on that particular day. But moral conduct is not typically part of MBSR training; these stipulations are not universal; and they were not part of the courses I will discuss in the following paragraphs. Furthermore, although the Center for Mindfulness offers training and certification programs for MBSR teachers, and recommends both ongoing meditation practice and graduate-level education in a relevant discipline, it does not regulate teachers or require any certification to teach the program.<sup>19</sup>

Nor is community central to MBSR training, which is my third concern. The program, like the American Vipassana movement that underlies it, is highly individualistic. In Buddhist practice, as in many other religious disciplines, community is central. Even hermits depend upon a community for food. Community, or *sangha*, is one of the Three Treasures of Buddhism. MBSR, on the other hand, consists of classes, workshops, retreats, books, and audio materials that individuals buy. In class sessions, students spend very little time interacting with one another, so relationships have little opportunity to form. Students’ formal relationship with the teacher ends when the course ends. One consequence of this individualistic structure is that people may stop practicing once the course ends, which obviously limits its effectiveness.

In two MBSR classes that were part of a research study at Duke University, participants reported a significant drop in the amount of meditation they did after they completed the course. Many stopped meditating altogether without the support of weekly class meetings. Of the fifty-six people who originally enrolled in the study, only twenty-four completed the program and showed up for the follow-up assessment eight weeks

later. On average, they reported meditating about half as much as they had during the class. Meditation is very difficult to maintain on one's own, especially when difficult emotions or memories arise.

A fourth problem is that MBSR stresses individual practice as the key to wellbeing, so it tends to avoid any analysis of the systemic or institutional causes of suffering. These include racism, sexism, and poverty, all of which can affect access to medical care, at least in the United States. Kabat-Zinn is clearly aware of and concerned about these issues,<sup>20</sup> but the program itself is individualistic. This inattention to systemic suffering is a feature MBSR shares with metaphysical religions that promote positive thinking or the so-called "prosperity gospel." If you are suffering, it is your individual psychological problem.

One reason for this in MBSR may be the socio-economic status of people who take the courses. In most cases, the program is only fully accessible to people who can spare several hundred dollars and devote about eight hours a week to it for two months. In the Duke study just mentioned, MBSR classes were offered free of charge, in part to attract people who otherwise could not afford the normal fee of \$370 to \$395.<sup>21</sup> Nevertheless, 35 percent of the participants recruited reported annual incomes over \$65,000. Only 4 percent had incomes below \$20,000. And yet, according to the most recent available data from Durham County, approximately 22 percent of local adults had incomes below the federal poverty level of \$9,750. Among women, 32.5 percent of those without children and 38 percent of those with children had incomes below the poverty line.<sup>22</sup>

Of those who took a Duke MBSR course in the spring of 2007, 85 percent had college or graduate-level education. Twenty-three percent had college degrees; 11 percent reported some graduate-level education; and 51 percent had graduate degrees. And although the population of Durham County was 48 percent white and 38.5 percent black, 91 percent of the MBSR participants were white. While these results cannot be generalized to all participants of MBSR courses, they do suggest sharp disparities between the general population of Durham and the people taking MBSR courses there.<sup>23</sup>

If this demographic profile does hold true more generally, however, then perhaps one reason the program does not include systemic analyses of illness and other forms of suffering is that the people involved are



less afflicted by racism and poverty, which are systemic problems affecting health and access to medical care.<sup>24</sup>

My fifth and final critique has to do with methodological problems associated with medical research on meditation. Some of the studies are quite intriguing. Yet peer-reviewed journals have noted a variety of methodological concerns. These include inadequate controls, small sample sizes, demographic homogeneity among participants, and inattention to gender as a variable. In response to such critiques, researchers have attempted to improve their study designs. Some more recent review articles have reiterated the need for methodological rigor but are more positive about the results.<sup>25</sup> Although meditation may not be sufficient or appropriate for some people (e.g., those suffering from severe post-traumatic stress, major depression, or psychosis), mindfulness, *in conjunction with medication*, does seem to be helpful to those who have difficulty regulating their emotions.

Brain research on meditators is more problematic. Again, some findings are very intriguing. Certainly, the images produced by PET scans and functional MRIs of meditators appear to be very clear and compelling. Yet we must bear in mind that at every stage of production, these images are generated in a “black box” of assumptions, technical procedures, and human factors that we cannot see.<sup>26</sup> For example, extraordinary results depend upon comparison to a theoretical “normal” result, but “normal” is very difficult to define. In studies of brain activity using PET scans (positron-emission tomography, which creates three-dimensional images of the brain by tracing movements of radioactive isotopes), “normal” typically means a right-handed white male. This means that variations in race, gender, left-handedness (and possibly age) could produce different results. In addition, scans of research subjects’ brains are compared to a hypothetical “average” brain—a mathematical model that can vary from laboratory to laboratory. Brain activity also varies according to factors such as time of day, and whether the subject has recently ingested substances such as caffeine or nicotine. Because the imaging technology is expensive, sample sizes are typically small, which affects the degree to which particular results can be generalized.

Data from scans are translated into colored images, an interpretive process that is not necessarily consistent from study to study, and that inevitably highlights some differences and downplays others. A focus on

activity in a particular area of the brain also tends to obscure the ways that brain functions may be distributed across several areas simultaneously. The “resting” state between activities under study may be defined inconsistently from study to study as well, which affects how results are compared. (And, as has been noted, “meditation” is not defined consistently or well in clinical research.) The interpretation of images requires cooperation across multiple scientific disciplines, among researchers who have different types and degrees of expertise, and possibly competing agendas when it comes to issues like publication credit, research funding, and career advancement. Although the images may be very effective rhetorically, the more carefully one peers into the black box, the more problematic the images become. It is important to be honest about these limitations—even if it makes research funding a bit more difficult to obtain.

At the 2005 Mind and Life Institute conference on the clinical applications of meditation, the Dalai Lama was regaled with information about the latest clinical research on mindfulness. After the final presentation, he remarked: “For me, analytical meditation is more useful.” He explained, through his translator, that it is important to analyze the source of one’s pain. Often it is rooted in an effort to grasp at impermanence, or in self-centeredness, or in an unrealistic view of one’s situation. Each of these problems requires a different kind of approach, he said, without elaborating. His final remark produced peals of laughter but was also telling: “In order to use your intelligence more effectively, I prefer sound sleep better than meditation.”<sup>27</sup>

Advocates of mindfulness training argue that its transformative power lies in its ability to help people notice their subconscious internal narratives more clearly, and free themselves from destructive habits of mind. It helps them to be more fully present and more compassionate with themselves and with others, which promotes healing. I agree completely. Again, I practice mindfulness and I teach it to others—usually in a non-religious way, and always free of charge.<sup>28</sup> I also agree that it is appropriate to “meet people where they are” when offering a practice that can foster liberation from mental habits that create suffering. Buddhist tradition acknowledges that people have different motives for practice and are at different stages of development. I have no objection to meditation teachers doing outreach into new settings, and offering a

beneficial practice to people who might otherwise never set foot in a meditation hall. I think mindfulness can be helpful to people of any religion, and to those who are non-religious.

What I find objectionable is the tendency to turn this discipline into a *commodity* for sale. To do so risks fostering the very attitudes—greed and individualism—that both Buddhist and yogic traditions assert are inimical to liberation.

I also believe long-term formation in religious community can be very valuable, to the extent that it encourages us to grapple with problems we might otherwise avoid facing, such as our own self-centeredness or unwillingness to forgive, and the challenges of welcoming and working with people we might not like or understand. (Granted, not all religious communities do this.) Communities can also offer support and help us to find meaning during periods of difficulty—which, as some clinical research suggests, can be good for people’s overall health and happiness.

While I applaud the desire to foster healing that drives many promoters of meditation-as-medicine, I also have the concerns I have enumerated here: myopic rhetoric, the removal of meditation practice from its moral and communal frameworks, a tendency toward individualism and commodification, and questions about research methodologies. Above all, while a therapeutic approach to meditation is well suited to modern consumer capitalism, it does not necessarily contribute to addressing broader social problems that affect psychological and physical health, or access to medical care. For that we need to think systemically about the dynamics of race, gender, and class—and their effects in our political system, as recent debates over medical insurance reform amply demonstrate. We must grapple with those issues collectively, and work collectively for systemic change. In doing so, we need historical and cultural perspective. In short: we need people who are embedded in their communities and actively engaged in trying to make them healthier.

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## Notes

1. See <http://www.mbct.com>, accessed January 29, 2010.
2. Marsha Linehan, *Cognitive-Behavioral Treatment of Borderline Personality Disorder*, Diagnosis and Treatment of Mental Disorders (New York: Guilford Press, 1993). See also <http://behavioraltech.org>. Linehan is a student of Willigis Jäger, OSB, a Benedictine monk who

also received authorization as a Zen teacher in the Sanbō-Kyōdan school of Zen, a modern movement that has been active in Buddhist-Christian dialogue. Although marginal in Japan, Sanbō-Kyōdan has been extremely influential in American Zen. Jäger left Sanbō-Kyōdan in 2009 to found his own organization. [http://www.willigis-jaeger.de/en/?Zen:New\\_Line\\_of\\_Zen](http://www.willigis-jaeger.de/en/?Zen:New_Line_of_Zen) and <http://www.ciolek.com/WWWVLPages/ZenPages/HaradaYasutani.html>, both accessed January 29, 2010. See also Robert H. Sharf, "Sanbōkyōdan: Zen and the Way of the New Religions," *Japanese Journal of Religious Studies* 22, no. 3–4 (1995).

3. Jon Kabat-Zinn, "Indra's Net at Work: The Mainstreaming of Dharma Practice in Society," in *The Psychology of Awakening: Buddhism, Science, and Our Day to Day Lives*, ed. Gay Watson and Stephen Batchelor (York Beach, ME: S. Weiser, 2000), 239–40.

4. The directory of programs may be found at <http://www.umassmed.edu/cfm/mbsr/index.cfm>, accessed April 9, 2010.

5. Links to much of this research can be found at [http://psyphz.psych.wisc.edu/web/pubs/pubs\\_articles.html#2009](http://psyphz.psych.wisc.edu/web/pubs/pubs_articles.html#2009). Some representative examples include: S. R. Bishop, "What Do We Really Know About Mindfulness-Based Stress Reduction?" *Psychosomatic Medicine* 64(2002); R. J. Davidson and J. Kabat-Zinn et al., "Alterations in Brain and Immune Function Produced by Mindfulness Meditation," *Psychosomatic Medicine*, no. 65 (2003); A. F. Leuchter et al., "Changes in Brain Function of Depressed Subjects During Treatment with Placebo," *American Journal of Psychiatry* 160, no. 2 (2002); A. Lutz et al., "Long-Term Meditators Self-Induce High-Amplitude Gamma Synchrony During Mental Practice," *Proceedings of the National Academy of Sciences* 101 (2004); Michael Murphy and Steven Donovan, *The Physical and Psychological Effects of Meditation: A Review of Contemporary Research with a Comprehensive Bibliography 1931–1996*, ed. Eugene Taylor, 2nd ed. (Sausalito, CA: Institute of Noetic Sciences, 1999). See also Jon Kabat-Zinn, *Wherever You Go There You Are* (New York: Hyperion, 1994); Michael Murphy and Steven Donovan, "Toward the Mainstreaming of American Dharma Practice," in *Buddhism in America: The Official Record of the Landmark Conference on the Future of Buddhist Meditative Practices in the West, Boston, January 17–19, 1997*, ed. Al Rapaport and Brian D. Hotchkiss (Rutland, VT: Charles E. Tuttle, Co., 1998); Michael Murphy and Steven Donovan, *Coming to Our Senses: Healing Ourselves and the World through Mindfulness*, 1st ed. (New York: Hyperion, 2005); Jon Kabat-Zinn and University of Massachusetts Medical Center/Worcester Stress Reduction Clinic, *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness* (New York: Delta, 1991).

6. Murphy and Donovan, *The Physical and Psychological Effects of Meditation: A Review of Contemporary Research with a Comprehensive Bibliography 1931–1996*, 153–277. Most of the references are articles in peer-reviewed academic and scientific journals; a few are books oriented toward more general audiences. Of the studies published before 1970, most were authored in the 1960s by Indian researchers studying physiological effects of yoga and by Japanese researchers studying effects of Zen meditation. A bibliography published more than a decade earlier by the American Theological Library Association included more than 2,200 entries, including 937 articles in journals and magazines; more than 1,000 books in English, German, French, Spanish, and Portuguese; 200 dissertations and theses; 32 motion pictures; 93 sound recordings; and 32 societies and associations, Howard R. Jarrell, *International Meditation Bibliography 1950–1982*, vol. 12, ATLA Bibliography Series (Metuchen, NJ and London: The American Theological Library Association and The Scarecrow Press, Inc.,

1985). A 1989 bibliography on studies of yoga and meditation lists 1275 articles; 31 books, dissertations, and reports; and 292 conferences, symposia, and seminars. Robin Monro, A.K. Ghosh, and Daniel Kalish, *Yoga Research Bibliography: Scientific Studies on Yoga and Meditation* (Cambridge, UK: Yoga Biomedical Trust, 1989).

7. The National Institutes of Health maintains a database of federally funded research from 1985 to the present, called Research Portfolio Online Reporting Tool (RePORT). It is available at <http://projectreporter.nih.gov/reporter.cfm>. This database replaced the CRISP database (Computer Retrieval of Information on Scientific Projects) on September 1, 2009. CRISP was available at <http://crisp.cit.nih.gov/> until October 31, 2009, at which time it was discontinued. CRISP data went back to 1972. Both databases include(d) projects funded by multiple agencies. Searches of both RePORT and CRISP on October 18 and 23, 2009, for studies with the keywords “meditation” or “mindfulness,” revealed a total of 434 projects from 1972 to date, many of which were or are multi-year projects. The RePORT database is updated weekly, and now includes additional data. Searches on January 29, 2010, of the period from 1985 to date revealed 685 studies involving either meditation or mindfulness. The multi-year projects were each counted as individual projects for purposes of these tallies.

8. <http://projectreporter.nih.gov/reporter.cfm>. Accessed January 29, 2010.

9. <http://clinicaltrials.gov/ct2/search>, accessed January 29, 2010. Among the MBSR studies, 33 were recruiting, 16 were actively underway, and 13 were complete. Among the MBCT studies, 21 were recruiting, 7 were active, and 4 were complete. Among the DBT studies, 8 were recruiting, 4 were active, 2 were complete, and one had suspended operations.

10. Kabat-Zinn, “Toward the Mainstreaming of American Dharma Practice,” 481.

11. *Ibid.*, 505.

12. *Ibid.*, 487.

13. *Ibid.*, 515.

14. *Ibid.*, 495.

15. A number of respected scholars of Buddhism have pointed this out. One recent example is Donald S. Lopez Jr., *Buddhism & Science: A Guide for the Perplexed* (Chicago: University of Chicago Press, 2008), 207–10. See also the references in note 16, below.

16. Richard K. Payne, “Traditionalist Representations of Buddhism,” presented at American Academy of Religion Annual Meeting, Buddhism in the West Consultation (San Diego, CA 2007, forthcoming in *Pacific World*), 5–6. See also Robert H. Sharf, “Buddhist Modernism and the Rhetoric of Meditative Experience,” *Numen* 42 (1995). For an excellent, extended discussion of “Meditation and Modernity,” and of modern deployments of mindfulness meditation, see David L. McMahan, *The Making of Buddhist Modernism* (New York: Oxford University Press, 2008), 183–240.

17. Wakoh Shannon Hickey, “Mind Cure, Meditation, and Medicine: Hidden Histories of Mental Healing in the United States” (Ph.D. diss., Duke University, 2008).

18. Robert H. Sharf and Andrew Cooper, “Losing Our Religion,” *Tricycle: The Buddhist Review* 64, (Summer 2007).

19. <http://www.umassmed.edu/cfm/oasis/index.aspx>, accessed January 30, 2010.

20. Kabat-Zinn, *Coming to Our Senses: Healing Ourselves and the World through Mindfulness*.

21. In its regular, fee-based MBSR courses, the Duke Center for Integrative Medicine offers some scholarships, but does not accept medical insurance to cover course tuition.

22. The remaining 58 percent of MBSR participants fell within the broad range of incomes between \$20,000 and \$65,000. E-mail from Duke MBSR researcher Andrew Ekblad to Shannon Hickey March 3, 2008. Telephone conversation between Andrew Ekblad and Shannon Hickey March 5, 2008. These data were collected in late 2006 and early 2007, but not analyzed until 2008. Durham poverty figures from 2005 can be found at [http://www.durhamnc.gov/departments/eed/income\\_char.cfm](http://www.durhamnc.gov/departments/eed/income_char.cfm). Accessed October 25, 2009. Federal poverty guidelines for 2005 can be found at <http://aspe.hhs.gov/poverty/05poverty.shtml>. Accessed October 25, 2009. According to 2007 estimates by <http://www.city-data.com>, poverty rates in the City of Durham were 18.3 percent for all white residents, and 21.4 percent for all black residents. <http://www.city-data.com/city/Durham-North-Carolina.html>. Accessed October 25, 2009. For racial data, see [http://www.city-data.com/county/Durham\\_County-NC.html](http://www.city-data.com/county/Durham_County-NC.html). Accessed October 25, 2009. For 2000 census data on Durham, see <http://www.durhamnc.gov/departments/planning/pdf/demographics.pdf>. Accessed March 5, 2008.

23. 2007 MBSR Outcomes Study, Duke Center for Integrative Medicine, Principal Investigator Clive Robins, Ph.D. Results are as yet unpublished. These figures were provided in an electronic mail message from researcher Andrew Ekblad to Shannon Hickey, March 3, 2008; and in a telephone conversation between Ekblad and Hickey on March 5, 2008.

24. Another disparity within the world of meditation as meditation is the gender of its most visible spokespersons versus that of MBSR teachers and students. Most of the visible promoters in this field are white men with formal academic credentials, typically from elite institutions. This is not surprising, but it does obscure the role of women in spreading and popularizing the actual practice. At a 2005 conference on “The Science and Clinical Applications of Meditation,” sponsored by the Mind and Life Institute in Washington, D.C., all but one of the fourteen individual presenters was male. <http://www.investigatingthemind.org/speakers.html> Accessed October 28, 2009. At an October 2007 conference at Emory University, called “Mindfulness, Compassion, and the Treatment of Depression,” the featured speakers included eleven men and one woman. <http://www.mindandlife.org/mlxv.brochure.pdf> pp. 9–13. Accessed October 28, 2009. In April 2008, another conference on clinical applications of meditation was held at the Mayo Clinic in Rochester, Minnesota. Other than the Dalai Lama, his translator, and one other Buddhist monk who spoke at Emory, all of the panelists were white. <http://www.mindandlife.org/mayo08.brochure.pdf> pp. 9–11. Accessed October 28, 2009. But among MBSR teachers in the United States, women outnumber men by more than two to one. (Determined by reviewing the names of teachers listed in the database at <http://www.umassmed.edu/cfm/mbsr/>, identifying those whose names are typically feminine or masculine, and checking biographical data where available.) See Hickey, “Mind Cure, Meditation, and Medicine,” *ibid.*, 182. Although general demographic data about MBSR students is not available, in the Duke courses discussed in this essay, 84 percent of the participants were women. *ibid.*

25. Bishop, “What Do We Really Know About Mindfulness-Based Stress Reduction?” *ibid.* Allen, N. B.; R. Chambers; W. Knight, and Melbourne Academic Mindfulness Interest Group, “Mindfulness-Based Psychotherapies: A Review of Conceptual Foundations, Empirical Evidence and Practical Considerations.” *Australian & New Zealand Journal of Psychiatry* 40, no. 4 (2006); Ruth A. Baer, “Mindfulness Training as a Clinical Intervention: A Conceptual and



Empirical Review,” *Clinical Psychology: Science and Practice* 10, no. 2 (2003); Kirk Warren Brown and Richard M. Ryan, “The Benefits of Being Present: Mindfulness and Its Role in Psychological Well-Being,” *Journal of Personality & Social Psychology* 84, no. 4 (2003); Kimberly Hoppes, “The Application of Mindfulness-Based Cognitive Interventions in the Treatment of Co-Occurring Addictive and Mood Disorders,” *CNS Spectrums* 11, no. 11 (2006); Mary Jane Ott, Rebecca L. Norris, and Susan M. Bauer-Wu, “Mindfulness Meditation for Oncology Patients: A Discussion and Critical Review,” *Integrative Cancer Therapies* 5, no. 2 (2006); Stefan Schmidt, “Mindfulness and Healing Intention: Concepts, Practice, and Research Evaluation,” *Journal of Alternative & Complementary Medicine* 10 Suppl. 1(2004).

26. Joseph Dumit, “Producing Brain Images of Mind,” in *Picturing Personhood: Brain Scans and Biomedical Identity* (Princeton, NJ: Princeton University Press, 2004). My thanks to Barry Saunders, M.D., Ph.D., of the University of North Carolina-Chapel Hill School of Medicine, for bringing these issues to my attention. Mellon-Sawyer Seminar: Human Being, Human Diversity, and Human Welfare, A Cross-Disciplinary and Cross-Cultural Study in Culture, Science, and Medicine, at the Franklin Humanities Institute, Duke University, March 19, 2007. See also Andreas Roepstorff, “Mapping Brain Mappers, an Ethnographic Coda,” in *Human Brain Function*, ed. R. Frackowiak et al. (London: Elsevier, 2004). Thanks to Richard Jaffe, Ph.D., of Duke University, for bringing the latter to my attention.

27. *Highlights from the Science and Clinical Applications of Meditation Conference: An Overview of the Investigating the Mind 2005 Meeting with the Dalai Lama* (Washington, DC: Mind and Life Institute, Mind and Life XIII, 2007), CD-ROM. These remarks occur at the end of the concluding presentation by Ralph Snyderman, M.D., of Duke University Medical Center.

28. Although I am ordained as a Zen priest, full ordination and authorization as a Zen teacher occurs in multiple stages. I am not yet authorized as a Zen teacher. I am authorized as an academic teacher, and regard that as my vocation. In the academic courses I offer, I teach the larger doctrinal and moral frameworks of Buddhist and Hindu meditation in a critical, historical, and comparative manner. Outside of class, I offer meditation instruction in various religious and non-religious settings—without charge. As a priest, I am bound by a set of vows; my practice is supervised by a Zen teacher (Rev. Gengo Akiba, the Sōtō-shū bishop emeritus for North America); and I belong to a Zen community.

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