

What I mean by mindfulness "hype" is when existing data is non critically "sold" -such as the author mentioning that increased cortical thickness study after an 8 week program, is far removed from "proof" of cause and good effect. What is more important is that if people feel better and suffer less when they do these practices themselves then that is the kind of evidence that really matters. The rest is interesting and "needs further study". As she says below "You can't imagine you are healing. If you are healing, you are healing!"

Best,
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Don't Believe the Hype

Neuroscientist Catherine Kerr is concerned about how mindfulness meditation research is being portrayed in the media.

Last May, an article about mindfulness on a popular mainstream news website finally spurred neuroscientist and meditation researcher Catherine Kerr to act. The article cited 20 benefits of meditation, from "reducing loneliness" to "increasing grey matter" to "helping sleep," and painted a picture of meditation as a kind of golden elixir for modern life. Kerr posted the article on her Facebook page. "It is not like any of this is grossly inaccurate," she wrote in her post. "It is just that the studies are too cherry-picked and too positive."



Assistant Professor of Medicine and Family Medicine at Brown University, Kerr directs translational neuroscience for Brown's Contemplative Studies Initiative and leads a mindfulness research program at Providence's Miriam Hospital. She takes no issue with the value of mindfulness practice; Kerr has personally reaped enormous benefit from Mindfulness-based Stress Reduction (MBSR) in a two-decade-long battle with cancer, and as a researcher she has studied the beneficial effects MBSR has had on others. But as a scientist committed to facts, she was worried. "I think we are all going to need to take responsibility and do something so that the coverage looks slightly more balanced," she wrote to her Facebook friends who are scientists, clinicians, philosophers, and contemplatives in the

meditation research community. “Otherwise, when the inevitable negative studies come, this whole wave will come crashing down on us.”

Within three days, Kerr’s Facebook thread grew to over 100 comments. Kerr founded a Facebook group and moved the discussion there. Today, “Mindfulness and Skillful Action: A Research Discussion Group” is an important rallying point for over 400 prominent academic, scientific, and clinical meditation researchers as well as leaders from the Buddhist community. (The group is now closed to new members.) This Facebook community has been tracking two rapidly diverging discourses: the evolving scientific, scholarly, and clinical consensus and the popular press coverage about that consensus. As the gap between the two widens to what Kerr fears will soon reach a “crisis point,” group members are asking themselves and each other what ethical obligations they have to intervene in the popular discourse around meditation. Together they are strategizing about how to tone down the hype to accord with the facts while not, as Kerr commented in one post, throwing the baby out with the bathwater.

Tricycle spoke with Kerr in Providence, Rhode Island to understand the significance of this emerging meta-discourse—the conversation about the conversation about meditation.

—Linda Heuman, Contributing Editor

In a recent article in *U.S. News*, you were quoted as saying: “Mindfulness is a science that is just beginning. And there’s a lot of media hype around that.” What kind of hype? The *Huffington Post* is the worst offender. The message they deliver becomes a ubiquitous, circulating meme that people put up on their Facebook pages and that becomes “true” through repetition alone. The *Huffington Post* features mindfulness a lot and tends to represent only the positive findings (and in the most positive light imaginable) rather than offering a balanced reading of the science. They use that approach to justify the idea that every person who has any mental abilities should be doing mindfulness meditation. I don’t think the science supports that. The *Huffington Post* has really done mindfulness a disservice by framing it in that way.

How does hyping mindfulness do it a disservice? One of the negative consequences if this wave of hype continues could be that the backlash will be too strong. People will lose faith and revert to the other side: mindfulness has *no* value.

What are some of the popular myths or narratives about mindfulness that scientists would like to correct? Scientists are, for the most part, circumspect about making claims for cures attributed to mindfulness. The science doesn’t support that. Scientists know from looking at meditation trials that not every person benefits from mindfulness therapies, but this is something non-scientists seem to have difficulty with. Individuals should not make clinically based decisions based only on neuroscientific studies because the sample sizes are too small; if you are making an evidence-based decision, it should be from a full picture of the evidence that includes clinical trial data. The clinical trial data on mindfulness for depression, for example, is not a slam-dunk. The results are really not better than those for antidepressants. In general, mindfulness is not orders of magnitude stronger than other things that people are doing right now to help manage stress and mood disorders. So you have to look at mindfulness in the context of a range of options. Unlike other therapies, mindfulness can be self-led at a certain point—it becomes a practice rather than a

therapeutic modality in the same way that exercise is a training or practice. But mindfulness doesn't work for everything and is not suitable for everyone.

Another popular narrative about MBSR is that it's derived from a two-and-a-half-millennia-old practice. It is very hard to evaluate or falsify that statement or even to figure out what it means. I think it gets assigned way too much weight.

Could you give an example of a scientific result that was oversold by the media? I was the second author in Sara Lazar's 2005 paper "Meditation experience is associated with increased cortical thickness." It is a lovely paper, but its findings were preliminary.

Was this the study that had everyone saying that meditation changes your brain? Yes. It is cited over 800 times in scientific literature. Sara is still interviewed *constantly* about this study. And scientists know that it's a nonrandomized cross-sectional study, which means that the measures are only taken at one time point. So if there is a difference in brain thickness, we don't know if the cause is practice or lifestyle, or if people with thicker brains are simply attracted to mindfulness. To see that something is causing something else, we need to see change over time that's *controlled*. And we don't see that in the paper. But the typical headline in the popular press was "Mindfulness Makes Your Brain Grow."

We also didn't claim that there was a directly measured behavioral benefit in having a thicker brain. (There are actually some conditions where it's not good to have a thicker brain!) We were really clear about the significance of our findings in our paper, but because the brain is such a fetish and because the idea of growing your brain was so attractive, many media portrayals missed the subtlety entirely. Sara Lazar's finding has since been replicated. I wasn't totally sure about the results until they were replicated.

So even though the measures were only taken at one point, because it has been replicated the results are still significant? Yes, it has been replicated many times in different ways. It's very exciting for a scientist to have your findings replicated. There's a really significant replication crisis right now in psychological science—especially in social psychology. Many findings that were thought to be canonical—which were in the psychology textbooks and which everyone just thought were true—are not replicable. We can't generate those effects. It's not necessarily the case that the first study was bad, but the gold standard of science is replication.

There's a broader replication crisis in medicine. There is a very famous article about this by John P. A. Ioannidis called "Why Most Published Research Studies Findings are False." In the same vein, a report published in *Nature* reviewed preclinical cancer studies and found that over 80 percent of the findings reported in top journals were nonreplicable. That means we can't trust them. They're likely not true!

Both scientists and scientific laypeople have a lot of trouble with these reports.

Why do you think that is so? We want certainty; we do not like the indeterminacy of not really understanding what is going on. Yet somebody who has a clear scientific understanding knows that the evidence base is always mixed—it is not a 100-percent, only-positive thing. Mixed into the weave of the science are negative findings and poorly designed studies. The problem is not isolated to mindfulness.

So how should scientific laypeople interpret the research on meditation? It's fair to say

that there are some clues from brain science that meditation might help enhance brain function. That is an evidence-based statement. The mistake is investing 100-percent certainty in a result and not holding a probabilistic view of scientific truth or risk and benefit. When people are making decisions for their own well-being, they need to be able to hold that uncertainty in mind. And they need to understand that the scientific context in which they are making their decisions could be different five years from now. Personally, I don't really make decisions about what to practice based on these small-sample-size studies reported in the media. Many mindfulness scientists are very puzzled by people making decisions based on these small neuroscientific studies.

What kind of evidence *would* it be appropriate to consider in evaluating mindfulness as a therapeutic remedy? Consideration of the concrete experience of doing these practices should be much more central in the discussion. "This is what it feels like to follow your breath for twenty minutes. How do you like it? What did it make you feel like later in the day?" Those seem like the *real* questions, not "What would happen if I threw you in a scanner?"

There are many claimants for attention and funding from the National Institutes of Health (NIH) and insurance companies. I think it's fair to ask for some objective evidence before you decide to reimburse on something, to have preliminary scientific data before the NIH bestows a million-dollar grant. That type of demand has its place. The problem is when the volume is turned up too high, when there is an overestimation of what the evidence might really mean. This problem of overestimation is ubiquitous. It is true in statin literature; it true in hormone replacement therapy literature. We thought there were really strong benefits, and they turned out to not be there—sometimes these therapies were even harmful.

Do you think that the researchers themselves are in part responsible for the media hype? The approach in mindfulness science is pretty much aligned with how scientists generally communicate, where, especially in early-stage work, one of your responsibilities is to generate enthusiasm. To get things going, get collaborators, and garner NIH interest, you need to be a little entrepreneurial. There is a real art to expressing something as a theory you want to test and getting people excited about it while making sure that they understand this theory hasn't been proven yet. Researchers have to strike a tricky balance between expressing genuine enthusiasm and cautioning about limitations.

But a lot of times I will clearly say, "I am stating a very exciting hypothesis." When I lay out how the hypothesis might work, listeners grab onto that hypothesis story as though it is true—even though I've said, "It hasn't been proven yet." People don't really know how to hear a story that a scientist is telling as a hypothesis. They don't know how to gauge that. The hypothesis somehow registers as "already proven."

Do researchers benefit from the hype? Do they leverage it—intentionally or unintentionally? You can read media coverage of scientists' encounters at public forums and probably find examples where they are making a story a little stronger than the evidence suggests. Mindfulness didn't invent the problem. It is a big problem in science communication across the board. That is how things work in these TED-style forum talks—it is not about skepticism or careful thinking; it is about who can tell the most dramatic story.

It is very hard for the public to remember a complex story. Part of our job as communicators is to strip the story down. The tricky thing is to determine when we cross a line to become manipulative and not true to the underlying science.

The NIH takes an interest in therapies that are popular and available, so publicity can translate into more NIH funding. Other scientists start to get interested, and that recruits more scientists into the field. It makes our studies seem more interesting and significant because they relate to a phenomenon that people are interested in. So we do benefit. But I don't think that is the main thing that has been driving the hype.

You have called on scholars of contemplative studies to take the lead in starting a critical dialogue about mindfulness. What would that look like? Some important questions to ask are why people want to believe that mindfulness is good in every circumstance, that there are no negative side effects, and that it's derived in a pure way from a 2500-year-old practice. Why do contemplative practices, especially Asian contemplative practices, seem to elicit this type of positive response? Those are the really interesting cultural questions about the present moment.

What would be your contribution be? I'm very interested in patient narratives—clinical narratives. When I read critiques of mindfulness closely, I see they often don't address the experiences of people who do the practice. Left out of consideration in current critiques of mindfulness is people's sincere desire to be happy and to suffer less.

In my brain science course, I bring in examples of what a scientific abstract says and also a news article that reports on it. They are very disconnected from one another. People want ways to reduce suffering and stress and they have grabbed onto mindfulness like a life jacket. I find that very moving, and I want to take it seriously.

There is a flavor of desperation around some of this hope. I'm sensitized to this from over ten years of research I did on the placebo effect at Harvard Medical School with Ted Kaptchuk, a leader in the field. When people seek help in a medical-therapeutic context, they are often quite desperate for relief.

What is the placebo effect, and does it relate to the healing power of mindfulness? The placebo effect is usually defined, somewhat tortuously, as the sum of the nonspecific effects that are not hypothesized to be the direct mechanism of treatment. For example, having a face-to-face conversation is not hypothesized as what makes psychotherapy work—you could have a face-to-face conversation with anybody. But for some reason, if you go every week to therapy, you are going to get better. But you could talk about the weather! When we perform these rituals with a desire to get better, we often do. We now know that a lot of the positive therapeutic benefit from psychotherapy and from various pain drugs may come from that initial context; it often has nothing to do with the specific treatment that is being offered. It is really just about the person approaching a situation with a sense of hope and being met by something that seems to hold out that hope.

MBSR has tapped into that in a really deep way. What happens to an individual in the course of the eight-week MBSR course is based on this initial motivation to get better. Much of the benefit he or she receives from MBSR likely comes from that. Participants have complex relationships around their hopes of getting better. There is something very profound about that—something very human. My sense of this isn't only grounded in my knowledge of mindfulness science and my earlier work on the science of the placebo; I live this. I have had an underlying cancer for 18 years. Qigong and mindfulness have been very helpful to me in managing the side effects of my illness and psychological fluctuations. They may have even helped me manage my immune system. But what is in the foreground for me is that every morning I get up and have a sincere desire to be better.

If someone is aware that the placebo effect may be an important part of why a particular treatment works, will the treatment still work for that person? As someone who is an expert on the placebo effect, can it still affect you? Why wouldn't it? You can't imagine you are healing. If you are healing, you are healing!

Ted Kaptchuk did a great study on "placebos without deception." He recruited people with irritable bowel syndrome and told them: "We have a treatment here that we've already studied. It appears to really help people. It is called 'the placebo.' So I'm going to hand you some pills that have no physiological benefit. But based on our data, we think this will help you." And there was a pretty robust response.

Even though people knew it was a placebo? So you don't need to be under the illusion that you are taking an actual drug? You need something that you are actively doing for yourself. You need to take a pill; you need to get touched—something needs to happen. There needs to be a ritual where there is a transaction of some sort.

The placebo effect is a kind of category mistake. It is what gets left over when you throw out the effects of the specific treatment. But the minute that you make the placebo a veritable mechanism, it stops being "the placebo effect." It is paradoxical in that way. It has been studied, and it is tractable. It seems like the dynamics of ritual are very important.

Are you saying that if there are two people who are both ill and really want to get better, the one who takes any kind of action has a better chance of recovery? Yes. What is interesting about mindfulness is the way it works with that desire and the simple fact of taking action by doing your homework every day. It enrolls you in a process of which you are very self-aware.

Do you think there is a risk that mindfulness hype preys on that hope people have by giving them a false promise of cure? I've heard reports of people who have abandoned chemotherapy to do mindfulness. I don't know if that has really happened. Certainly there are people who go off their antidepressants or lithium and think that mindfulness is going to manage their serious depression or bipolar disorder. That's a concern we have with the current hype around mindfulness. People might see it as being more active than it really is. It doesn't resolve those situations.

If mindfulness doesn't actually resolve conditions like depression, how does it help? I did a qualitative study of participants in an MBSR course and I found that they appear follow a trajectory. People show up and they really want relief. They have a lot of different conditions. They are seeking help. They think that maybe this course is going to take away their problems. And the teacher on the first day says that's not what this class is about. This class is about learning how to be present to your own inner life, including distress and suffering that you may have been avoiding. By weeks four and five, people really get it. They've been sitting and their suffering has not gone away, and there's this profound experience people have in which they realize that maybe just wiping away the suffering is not what this is about. Then people have a lot of generalized distress, and they go through it and end up on the other side. They realize, "I can face that!"

When promoters of mindfulness only focus on its effects on brain mechanisms—and I say this as a brain scientist—they are missing a big part of the story. Similarly, when Buddhist critics of mindfulness attack secularized mindfulness because they are worried it is corrupting the dharma, they too are missing something important. Both are blind to this experiential dimension of what it is like

for people in pain to take an MBSR course: you have this very complex process of wanting relief, discovering that this isn't going to take your problems away, and then facing into your problems in a new way. That process is about learning how to tolerate the uncertainty that is our existential problem. We're not sure if we are right; we don't know how things are going to turn out. Living with that uncertainty is really deep! And MBSR and its variants help people with that. I worry that our tendency to parse the world into competing abstractions—scientific reductionism on the one hand or dharma purism on the other—may cause us to miss this hard-to-see qualitative shift that may be the true source of the power of mindfulness.

Do you consider yourself part of the “mindfulness backlash?” I am a cautious member of the backlash, but I am also aware that the backlash can crystalize into ideological rhetoric. People who think of mindfulness as “training their brains” are taking refuge in an idea that has not been proven; they are either unaware of or unable to process the problem of scientific uncertainty. Similarly, people who are concerned that “McMindfulness” could be watering down the dharma could also be viewed as ideological and intolerant of the uncertainty that comes with something new. Insistence on surefire answers, whether in science or about a received notion of the dharma, can be an avoidance of the existential problem of uncertainty.

Do you think that there is no place for critics who are saying we should exercise caution about whether we consider this a new form of Buddhism? These are important questions for dharma teachers, but I'm not sure of their social significance beyond committed dharma teachers and students. Viewed in terms of the amount of suffering that is being met by MBSR, the question of whether or not MBSR is Buddhism doesn't really matter.

There are, however, significant questions about how the increasing popularity of secular meditation programs might affect Western Buddhism. How would you recommend Buddhists meaningfully discuss these issues? It is important for mindfulness critics to be curious about the experiences of people who take these secular mindfulness programs. The questions people need to be asking are not these abstract ones: “Is it scientific?” “Is it true dharma?” The question to ask is: “What does it feel like?” If you go straight to brain circuits or straight to ideology, you are missing that fundamental question—and that curiosity.

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With support from the John Templeton Foundation, Tricycle's Buddhism and Modernity project is initiating a conversation between Buddhists and leading thinkers across the humanities and social sciences. Tricycle is exploring how perspectives drawn from research on the nature of religion, culture, science, and secularism can shed light on unexamined assumptions shaping the transmission of Buddhism to modernity. This project offers Western Buddhists new ways of thinking about their spiritual experiences by demonstrating how reason can be used as a tool to open up—rather than shut down—access to traditional faith.

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