The Craving Cycle

Addiction is normal; addiction should be overcome

A NEUROSCIENTIST AND THREE CONTEMPLATIVES ON THE CURIOUS CONTRADICTIONS OF HUMAN CRAVING
Topography: The Brain Scan

After you’ve become a human drum to let high frequency thrumming create magnetic pictures of your brain, you examine the evidence, cut by lateral cut, frame by polarized frame: full frontal nudity at its most arousing. Shot one: your skull is like Saturn its outer ring luminous, the next dark, oceanic, shifting: you can nearly hear finely ground shells and sand skuffing against your porcelain land. Another layer of snow-white light rings black bone, making an anatomical map of your headlands, your beaches, the most interior reaches of your secret home. Your brain is this island in a sea of bone. Slice by slice the territory is charted. Your fontanelle, the “soft spot,” the last baby bone to close, spills its secrets. You have held babies of your own, have seen this pulse and heard the little fountain gurgle its tenuous “I am,” its miraculous “I will.” This is your headwater: the source of your Nile. Shot six, clean as mitosis, shows the walnut shell split down its center, each side a winged maple seed that makes a child’s whistle. Then sudden, shocking, bright as night mushrooms, two bulbous moons rise: your eyes surrounded by rock and spongy as play-dough. In this sleight of mind one marvel follows another but when the great brain stem sprouts into view you know this is a godly thing like a single braid announcing a pharaoh’s child: this is the true royal coil. By shot twenty-two you can see every hole in your head. Your brain’s spread out like some gigantic Rorschach blot: Kali rises from flame, one powerful O’Keeffe flower stirs in your windless sky. At its bottom, the widening brain is a horseshoe crab scuttling over a silent boulder-strewn shore.

B.A. St. Andrews’s poems have appeared in some of the world’s premier journals and magazines, including The New Yorker, The Paris Review, and JAMA. Before she died from a brain tumor in 2003, she was the founding editor of The Healing Muse and the distinguished teaching professor of bioethics and humanities at SUNY Upstate Medical University. “Entering a medical university, I was transported to a world of open-heart surgeries, DNRs, neonatal ICUs, and MRIs,” she said. “I had found my strange way home to a place I’d never been before, leaving the illuminating questions of the liberal arts and entering the dubious certainties of medical science. Far from being separate, art and science, I discovered, are Siamese twins joined at the heart. They are two hands clapping.” St. Andrews authored two books of poetry: Stealing the Light and Learning from Renoir.
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### FROM THE PRESIDENT

Mind and Life’s Wendy Hasenkamp on President Obama’s BRAIN Initiative, and news on MLI’s global expansion. Plus, our new Spaces series.

### PERSPECTIVE

Does meditation make a more ethical soldier, or a more dangerous one? | By Tomas Rocha

### NETWORK NEWS

Dispatches from MLI’s circle of scientists, contemplatives, and more.

### UP CLOSE

We can simulate in computers what happens in the brain when an eye sees or an ear hears. But can we design a computer model for what happens in our minds when we meditate? Marieke van Vugt is going to try.

### WORKS IN PROGRESS

Paul Condon and his clever experiment in compassion.

### R&D

Mind and Life’s current class of Visiting Scholars.

### ANNUAL REPORT

A fiscal look at 2012.

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**The Craving Cycle**

Craving, desire, and addiction are three of the most human—and potentially most harmful—forces in our lives. We asked a former addict turned neuroscientist and three contemplative scholars about how these forces influence the human mind and whether the mind can, and should, overcome them.

*By Marc Lewis, Brooke Dodson-Lavelle, Sharon Salzberg, and Wendy Farley*

**Mapping the Mind**

A photographic exploration of the 2013 Summer Research Institute
From the President

The Bright Knight of the Soul
HOW A 13TH-CENTURY MYTH ILLUMINATES THE CONTEMPORARY MISSION OF MIND AND LIFE

As I reflect on the last 18 months and look forward to the next year and more, the medieval romance Parzival keeps reasserting itself. Its archetypal elements seem apt metaphors for the essential work of Mind and Life.

The story of Parzival opens with our hero as a young lad who has led a remarkably sheltered life in the woods of Soltane with a protective mother. He is the original innocent who knows neither his own name nor his lineage. One day, he sees in the forest what he believes must be a vision of angels—four dazzlingly armored and powerful men, traveling astride mighty horses. Upon seeing these knights, he quickly seeks his own way to King Arthur so that he too may become as those he saw.

Parzival’s journey of knighthood—too beautiful and too long to summarize here—leads him first to his mentor Gurnemanz, who teaches him courtesy and what is socially acceptable. His further adventures take Parzival to the Grail castle of Amfortas, the grievously wounded Grail King. It’s this part that I want to highlight.

Amfortas is the keeper of the miraculous chalice Jesus Christ used at the Last Supper, the same cup that caught his blood at the crucifixion. The Grail, of course, has since become an iconic Christian symbol for enlightenment, transformation, and transcendence.

Parzival’s hidden destiny is tied to that of the Grail and Amfortas, whose court is resplendent and unsettling to the newly courteous young man. Amfortas bears in anguish an unhealable wound, caused by a broken spear lodged permanently inside his body. The wound is gruesome, festering, and incapacitating, but it is never fatal; in the presence of the Grail, which nourishes all present, Amfortas is sustained until the new Grail King can be named. This is his curse.

As anyone would be, Parzival is aware of the wound—its grisliness can’t be overlooked—and yet, raised to be deferential and to not ask too many questions, Parzival “tactfully” avoids the subject. Instead, he experiences the wonders of the castle and the Grail, as well as his host, all the while ignoring the source and subject of Amfortas’s pain and suffering.

The Grail King, on the other hand, waits for the words that prophecy has foretold will release him from this lifelong curse. Words that, shockingly, no one who has encountered him has yet asked: “What ails thee?”

It is not giving away anything to say that on that night, Parzival is also too “polite” to ask and fails to supply the Grail King’s deliverance.

The next morning, the young knight awakens to a castle in ruins. There are no marvels to this place; it bears no resemblance to the sumptuous beauty of the night before. It has become what T.S. Eliot called a “wasteland.” Courtesy and good behavior are not enough.

Upon seeing the devastation, Parzival finds that he himself has begun to suffer. He is not wounded physically, but a spiritual longing consumes him. That longing leads him to undergo what modern parlance might term an existential crisis—one that commits him to a lifelong, knightly quest: to

“THERE IS NO NEED FOR TEMPLES, NO NEED FOR COMPLICATED PHILOSOPHIES. MY BRAIN AND MY HEART ARE MY TEMPLES; MY PHILOSOPHY IS KINDNESS.”

—The Dalai Lama, cofounder and honorary chairman of the Mind & Life Institute
rediscover the wounded King, the Grail, and in so doing relieve both their sufferings—the physical and spiritual—by finally speaking those three words.

I won’t spoil the ending here, but since becoming Mind and Life’s president nearly two years ago, there is a reason I have turned to this story again and again. The allegory of Parzival offers a powerful analogy to our mission.

At its foundation and in its highest incarnation, Mind and Life’s purpose is to ask this fundamental question: “What ails thee?”

Consider for a moment the profundity of that question and what its answers might illuminate: not just suffering, but its causes. Not just pain, but its balm. Not just problems, but their solutions.

The idea the Parzival legend provokes is moving, and it has never been more necessary than now. Enlightenment, transformation, transcendence—and their more earthbound qualities of love, kindness, and peace—arise from truly asking and therefore truly knowing what ails us and those around us.

In the issue you’re holding, we explore the ailing that surrounds addiction, a “curse” from which many hope to be released through compassionate action. We also take a retrospective look at this year’s Summer Research Institute, whose theme was “mapping the mind.” Through this initiative, the maps we hope to create are very much about locating the sources of human ailing. In so doing, and based on the answers that the combination of science and the wisdom traditions supply, we aim to offer relief from that suffering.

In our work to come on human ethics (more on that in our next issue), the Parzival myth is perhaps most pertinent.

There is a deep commitment at Mind and Life to understanding what an ethical life can and should mean outside of religion. Religion has traditionally been the home for the ethical and moral dimensions of our lives, but as our society becomes more secular, there is an urgent need for the ethical life to be reimagined and reasserted in order to adequately take on global problems, all of which are moral problems. Our educational system, the environment, our economies, even our internal lives…we believe the only way to embed ethics deeply enough so that it animates all human interaction is to develop that audacious human capacity of compassion. The instinct to ask, “What ails thee?”

Mind and Life is about this innate capability. It is about finding the Parzival within each of us. If we go deep into that tender, miraculous “castle” within our own skulls, we can cultivate our mind, changing it from a place that can hinder our resplendent humanity to one that calls it, and us, home.
“We now have a compelling body of scientific evidence showing contemplative science works. We have deep trust from those outside Mind and Life that, after 26 years of advocating for the field, we will ensure its integrity no matter where it takes us. And we have His Holiness who, everywhere he speaks, is pointing to Mind and Life and saying, help me reassert compassion and ethics in our time,” says Jacqui DeFelice, Mind and Life’s director of advancement and global development. “There has never been a riper time for the Institute to expand and become the global organization it really always has been.”

When talking about Mind and Life’s global plans, DeFelice points to the past as a way to understand the future.

Founded by the Dalai Lama; Adam Engle, an American entrepreneur; and Francisco Varela, a Chilean neuroscientist, Mind and Life has always been at its core international. Its original and most signature activity—the Mind and Life Dialogues with the Dalai Lama—mirrored that spirit: The first took place in Dharamsala, India in 1987. Additionally, its Summer Research Institutes, Visiting Scholars program, and research awards have provided a critical community to scientists, contemplatives, and others from around the world. And last year, because of growing interest and support in Europe, MLI opened Mind and Life Europe in Switzerland. The office is overseen by longtime Mind and Life staff member Diego Hangartner.

“Attempting to cultivate universal, human values means thinking globally and multiculturally,” says DeFelice. “It also means creating a coalition of institutional partners in other countries so that we learn from each just how expansive and inclusive those human values are. And how they can be fostered appropriately in, by, and for those cultures.”

As it turns out, institutional partners eager to join in Mind and Life’s mission have not been scarce.

In April of 2014, MLI will hold an event on
mapping the mind in collaboration with the Kokoro Research Center at Kyoto University in Japan. That event will be followed in 2015 by a pan-Asian symposium similar to that of Mind and Life’s International Symposium for Contemplative Studies. In between, Mind and Life is planning to foster an Asian presence by partnering with several institutions. In Thailand, MLI will hold an event on the future of education in collaboration with the Thanyapura Mind Centre in Phuket and Mahidol University in Bangkok. In Singapore, the Institute will join with the National University of Singapore, Yale University, and the Tibetan Buddhist Center on an event that explores the last 30 years of Buddhism and science. In Hong Kong,

“ATTEMPTING TO CULTIVATE UNIVERSAL, HUMAN VALUES MEANS THINKING GLOBALLY AND MULTICULTURALLY.”

Mind and Life will convene a conference on contemplative education. There will also be activities in Taiwan at the Dharma Drum Buddhist Center.

South America, the Middle East, and Africa are all goals for future MLI presences.

This global expansion will be paired with Mind and Life’s ongoing symposia, Summer Research Institutes, and events—both in Europe and in North America—related to the focuses on ethics and education; leadership; caring economics; mapping the mind; and craving, desire, and addiction.

“Mind and Life has always been a place where people come together,” says DeFelice. “This is not about multinationalism in the way one traditionally thinks about it—the security of resources or cheap manufacturing. It’s the opposite. It’s about supplying the most profound insights of the contemplative traditions—along with the science that affirms them—to as many as we can. It’s about creating an inexhaustible well of service.”

“I meditate at the base of a ladder in an orchard. At this place, I have a way to climb high into the trees, and into the light; to reach that divine energy that powers the earth. I imagine climbing towards the sun. As I do, I let go of everything and my mind is free. In this place, I connect to the ultimate energy—love—which empowers me to care for fruit trees that feed 100 or more people. I am fortunate to live on an organic farm where fresh, organic, and nourishing food is free for the taking. This is a cherished place to meditate, with many bees whirling around me.”

—Robert Lee Kilpatrick
Santa Cruz, California
“As humans, we can identify galaxies light years away, we can study particles smaller than an atom. But we still haven’t unlocked the mystery of the three pounds of matter that sits between our ears,” said President Obama during his announcement of a new endeavor—the BRAIN Initiative—that will allocate $100 million in funding for research into mapping that grey matter.

BRAIN, which stands for Brain Research Through Advancing Innovative Neurotechnologies, is part of The White House’s “Grand Challenges,” which have focused on such goals as making solar energy as cheap as coal (the SunShot program), finding ways for electronic vehicles to become as affordable and convenient as their gas-powered counterparts (EV Everywhere), and programs that ensure basic reading skills by the time students in low-income countries leave primary schools (All Children Reading).

“Ideas are what power our economy,” the president said. “Computer chips and GPS technology, the Internet—all these things grew out of government investments. The founders of Google got their early support from the National Science Foundation. The Apollo project that put a man on the moon also gave us eventually CAT scans. And every dollar we spent to map the human brain...”

Mind and Life’s resident neuroscientist on the BRAIN Initiative

THE MYSTERIES OF THE HUMAN BRAIN are hidden in an almost unfathomable array of synaptic connections, cellular activity, neurotransmitters, gene expression patterns, and electrical oscillations. Even deeper than these lay the questions of how such an extraordinarily complex electrochemical system connects to our moment-to-moment experience as human beings: our perceptions, our thoughts, our emotions—what cognitive scientists call our “subjective experience.” At Mind and Life, we recognize the critical importance of subjective experience; after all, it is the very lens through which we filter and interpret our lives. To overlook it is to overlook human nature itself.

When the Obama administration announced its BRAIN Initiative, I, like most neuroscientists I know, was very excited. Any investment in deciphering the mysteries of our minds is well worth the cost and promises great return. Admittedly, however, the more I read about the Initiative, the more I felt a familiar disappointment: Those making the case for the Initiative made it almost exclusively in medical terms. That is to say, one of its main selling points became how the project might unearth treatments or cures for diseases of the brain.

Having spent my early scientific career in the field of psychiatry, I couldn’t agree more with the call for new approaches to some of the most detrimental disorders affecting the mind-body continuum: schizophrenia, Alzheimer’s, Parkinson’s, major depression. These afflictions cause enormous suffering to individuals, families, and communities. They cost the U.S. billions in medical care, lost wages, and productivity. Without a doubt, advancing our knowledge in these areas is essential.

But, however detrimental, mental disease only affects a percentage of our population. And yet the absence of mental illness does not necessarily imply true mental health. Which is why society desperately needs more research on the neural underpinnings of well-being, health and happiness, and interpersonal connections. Questions around these elements are woven directly into the fabric of our daily lives—in families, at work, in relationships—and affect each and every one of us regardless of the presence or absence of mental disorders. Answers to such questions could prove to be as groundbreaking as any treatments or cures.

One of the reasons I came to Mind and Life is the important role the organization plays in discovering these kinds of answers. And it does so in a holistic way, through conferences, books, and interdisciplinary dialogue, as well as through the funding of rigorous research that explores the powerful connections between the mind and, well, life—our whole lives.
“WE HAVE A CHANCE TO IMPROVE THE LIVES OF NOT JUST MILLIONS, BUT BILLIONS OF PEOPLE ON THIS PLANET.”

This year, Mind and Life launched its own Mapping the Mind initiative, a long-term effort to gain a more complete picture of the human mind, and the ways that picture illuminates for us the hindrances to, and possibilities for, genuine happiness. We are achieving this by integrating the best insights from multiple perspectives: through modern science, yes, but also through the rigors of the humanities, philosophy, and the ancient wisdom of contemplative traditions. One without the other only offers incomplete answers. And incomplete answers are, by their very natures, misleading. When it comes to the human mind, we can’t afford to be misleading.

A central organizing principle for our Mapping the Mind project will be to get a clearer picture of the human emotional landscape. Emotions may, in fact, represent the major driving force of human behavior. Think about how much your feelings affect how you interact with others, how you set up your life in your own search for happiness. In order to realize human flourishing, we still need to understand the causes and neural representations of emotions, how they influence our actions, and how they can be regulated or changed. And if the goal of brain research in the 21st century is to understand our mental landscape, science will need to take seriously the first-person perspective and find ways of reliably incorporating it into traditional third-person experiments like those proposed under the president’s initiative.

Scientific understanding of the brain has burgeoned over the last several decades. One of the most exciting lessons in this area has come from modern neuroscience and relates to our immense capacity for what is called “neuroplasticity”—the ability to change our brains through experience. Indeed, our brains are constantly being shaped and remodeled based on our ongoing internal and external experience, whether we are conscious of it or not. This points to the importance of continually training our minds in healthy ways over our life spans. To reach our highest potential as humans, what kind of trainings do we need, at what ages, and how can we deliver them? This is precisely where the white coat and the philosopher’s stone come together. This is precisely where Mind and Life seeks to do—and does—so much good.

In the ongoing quest to understand the mind, the Obama administration’s BRAIN Initiative is, and will be, a critical stimulus. The research it supports will add significantly to our knowledge base and lead to scientific milestones. I am grateful for it. But we can do more. We should do more.

My hope is that one good investment will inspire another. When considering the brain, that means paying attention—whether through an MRI machine or spiritual insight—to our subjective experience of thought and emotion. That way we not only treat and prevent disease, but also find the pathways that lead to flourishing as individuals and communities.

Wendy Hasenkamp, PhD, is a neuroscientist and a contemplative practitioner. Her research examines the neural correlates of meditation using first-person information, with a focus on the shifts between mind wandering and attention. She has also contributed to neuroscience curriculum development, teaching, and textbook creation for the Emory-Tibet Science Initiative, which aims to integrate science into the Tibetan monastic education system in India.
Penny Pilgram George

A Q&A ON INTEGRATIVE MEDICINE, BUSINESS, AND MOVING THE CULTURE AWAY FROM DISTRUST

You’ve committed yourself to advancing integrative medicine at places like Abbott Northwestern Hospital, and you cofounded the Bravewell Collaborative to work on this issue nationally. What is misunderstood about integrative medicine?

Integrative medicine puts the person at the center of care, focuses on prevention and wellness as much as on curing illnesses “downstream,” and it empowers the individual to be the central agent in his or her own health. It also makes use of all appropriate healing modalities. Until the last few years people referred to this—especially the modalities—as “alternative medicine,” but in recognition that people were seeking not alternatives to Western medicine, but a full range of choices that included options that are part of Eastern medicine as well, the defining adjective of “integrative” has become the one used.

Two key elements are important to know: Integrative medicine sees people as connected in body, mind, and spirit, with immense self-healing capacities. The interventions that are taught in medical school tend to ignore this. Also, what we’re finding is that integrative medicine is not merely a way to address illness but that it shifts our mind-set to one where well-being is the goal. That is a game changer. Current research is beginning to gather the information to prove that an integrative approach to care leads to better outcomes, lower costs, and greater patient engagement—the so-called “triple aim” of healthcare reform.

Serious illness or disability is as much a spiritual crisis as a physical one. Healing is possible on a spiritual level even if it is not always possible on a physical level. Not to be able to talk about that dimension of our existence deprives us of connection and a feeling of safety. Because of its early 20th-century successes in vanquishing infectious disease and its belief in science, Western medicine tends to see death as the enemy and has tended to have more of a paternalistic approach to working with those who are sick. Financial incentives have also tended to keep medicine focused on disease and symptoms and interventions that are reimbursed, rather than addressing underlying causes and conditions.
of illness. And practitioners were selected for their intelligence and taught the science of medicine as defined by what could be measured and understood through a biomechanical lens. To address tough emotional issues requires a kind of human connection that has not traditionally been the purview of medicine, which is not to suggest that many health professionals have not brought their full humanity to their care of patients. Increasingly, medical training programs and those of allied professions are seeing the importance of this dimension in healing and their graduates are more open to the intimacy implicit in conversations about life and death, meaning and purpose, and other spiritual subjects.

What is it about having those conversations that works?

They lead to deeper connection, greater trust, more autonomy, and ultimately better medical choices. They do, however, require time. That the Affordable Care Act will cover the cost of end-of-life discussions will help make this more possible. And there are initiatives—such as one in Minnesota called Honoring Choices—that will help move the responsibility for end-of-life decision making beyond the medical institutions and into people’s homes and communities, engaging families in such important conversations. The Bravewell Collaborative has supported the Consortium of Academic Health Centers for Integrative Medicine (which is comprised of 55 of the leading medical training institutions in the country) to work on training health professionals to be more whole themselves and to see their patients as whole human beings. The more we open the aperture from medical treatment to include considerations of ultimate reality, the less frightening such discussions will be.

In addition to health care, the George Family Foundation focuses on leadership. What’s the connection?

In both cases, we are trying to bring individuals, teams, and organizations toward wholeness. We find that as we move closer to wholeness—no matter what the domain may be—we move further from “dis-ease” and fear and distrust, and closer to authenticity, empowerment, and compassion.

Your foundation recently provided support for Mind and Life’s forthcoming leadership institute, which will weave in lessons from science and the wisdom traditions with business. Is the “lab” or the “church” compatible with business?

I believe that business doesn’t exist in isolation or only to serve itself but must be a part of a larger whole. In recent decades, we have seen what can happen when business success becomes an end in itself, separated from the greater good. If we understand that organizations of all types—business, governments, nonprofits—are all led by human beings who are susceptible to human frailties, then we can see the importance of fostering wholeness. What we learn about wholeness from science and from wisdom traditions provides strength and grounding to individuals within organizations, allowing them to lead from wherever they are positioned. That wholeness will affect the organization and ultimately the larger society. We are excited about the role that the Mind and Life initiative will play in fostering the kind of learning environment that will cultivate this kind of wise leadership.

What are the spiritual lessons that you have taken into secular, or professional, settings?

If, as it’s said, life is what happens when you are planning something else, I would say the spiritual lesson that has had the most significant impact on my work is that suffering can be a profound teacher, that illness has transformative potential. In June of 1995, I had just completed my doctorate in counseling psychology after years of raising my family and working as a consulting psychologist. Eight months later, I was dealing with surgery, chemotherapy, and a possibly fatal illness. I had had no intention of changing careers, but my experience with healing from breast cancer was, for me, transformative. I saw that however well Western medicine treated the disease I had, it did not see me as a whole human being, and gradually I resolved to do something about that. Later, I decided that the entire healthcare system was on the wrong track and expanded my aspirations beyond medicine to helping improve the health status of the whole country, to do my small part in that larger generational shift toward wellness and well-being. While I would not wish cancer on anyone, I have found my way to a richer and more meaningful life than I could have possibly imagined.

A second lesson I learned, even earlier, is that one’s thoughts to a large degree create one’s reality. I grew up in a family that experienced a lot of anxiety, and in 1972 I began meditating, to learn to calm myself. That has had tremendous impact on my life and is one reason the work of Mind and Life was so appealing to me. The interior world becomes manifested in the external world, and I wanted to bring as much peace as possible to myself and into my relations with other people. Combining both of these lessons has led me to a place of acceptance of reality, including the reality of death and dying.

You have a nice quote by Winston Churchill on your website: “We make a living by what we earn, we make a life by what we give.”

That quote is a reminder that there are things that matter more than the material world and the inescapable reality for most people of having to make a living. It helps us remember that it’s the difference we make, the meaning and purpose we commit to beyond ourselves, that are the ultimate gauge of a good life.
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PhD, Buddhist monk at Shechen Monastery in Nepal

**TANIA SINGER**
PhD, director of the department for social neuroscience at the Max Planck Institute for Human Cognitive and Brain Sciences in Leipzig

**OTTO SCHARMER**
PhD, senior lecturer at the Massachusetts Institute of Technology (MIT) and founding chair of the Presencing Institute

This October, Mind and Life Europe presents its

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Arming Introspection

DOES MEDITATION MAKE A MORE ETHICAL SOLDIER, OR A MORE DANGEROUS ONE?

When Buddhist-based contemplative practices burgeoned in popularity in the United States and Europe during the 1950s and 60s, their central tenets were often disregarded in universities as New Age frivolity. Departments of religion and philosophy made some allowances for their study, but the same open-mindedness rarely occurred in “respectable” laboratories of psychology, cognitive science, or neuroscience.

Since then, a major shift has occurred, and the question is no longer about the scientific value of contemplative studies but instead on how they should be implemented. Should public schools be teaching meditation? Should prisons? Corporations? Why or why not? What are the major differences, if any, between learning how to meditate in a Zen center versus being taught mindfulness by a human resources manager? And what about the military?

In 2012, Mind and Life hosted a panel discussion at the International Symposium for Contemplative Studies titled “The Ethics of Teaching Contemplative Practices to the Armed Forces.” The panel discussed whether such practices could (or should) be introduced to individuals or institutions directly involved in violent activities. It’s a nuanced ethical quandary, which is often reduced to two perspectives: The first believes that everyone ultimately benefits from such practices, regardless of context, while the other maintains that the practices are tools prone to misuse outside of a nonviolent, prosocial framework.

In other words, if you believe that these practices grant everybody equanimity and insight into the nature of universal suffering, then you might support bringing contemplation to soldiers. If, on the other hand, you believe contemplative practices can enhance attention and emotional

TOMAS ROCHA is a research associate at Mind and Life. He completed his bachelor’s degree from Brown University and his master’s degree in philosophy from the University of Cambridge. He helped facilitate the Brown Contemplative Studies Initiative under Harold Roth, and worked as a research assistant for the Britton Lab under Willoughby Britton. A version of this essay appeared in The College Hill Independent.
With the support of Bhutan’s Royal Education Council, and in conjunction with her PhD research at the University of Oulu in Finland, PÄIVI AHONEN has interviewed education authorities, researchers, teachers, and headmasters at institutions now dealing with the basic principles of the country’s Gross National Happiness (GNH) program. Special attention in her analyses is being given to the ongoing teacher training of GNH by the Ministry of Education. Ahonen’s interviews will be analyzed in the context of the goals and principles set forth by the United Nation’s Decade of Education for Sustainable Development (2005–2014).

JOANNA ARCH recently published two papers in Behaviour Research and Therapy based on a 2007 Varela Award-funded project. The project featured an extensive randomized clinical trial that explored mindfulness-based stress reduction approaches versus group cognitive behavioral therapy for heterogeneous anxiety disorders.


MICHEL BITBOL is currently completing a book about consciousness, in which first-person experience is not a feature to be accounted for by neurobiology, but the primary voice in the debate with neuro-reductionism. In the spirit of Merleau-Ponty’s phenomenology, the reader is asked to become a protagonist, capable of self-realization at crucial steps of the argumentation. He has also recently published an e-book advocating a neo-pragmatist interpretation of quantum mechanics.

JUDSON BREWER recently ran a clinical trial that found that mindfulness training was twice as effective as the American Lung Association’s Freedom from Smoking program in helping individuals quit smoking. An analysis will be published in Drug and Alcohol Dependence that shows that mindfulness can literally decouple the relationship between craving and smoking. This is the first study to link mindfulness to the associative learning process of smoking. Brewer has also developed an iPhone app that will be tested in clinical trails soon. In collaboration with Cliff Sarcon and Evan Thompson, he has completed the first MRI neurophenomenology study that linked subjective experience of meditation to posterior cingulate cortex activity. This was published in NeuroImage. He also gave a TEDx talk highlighting this work.

LINDA CARLSON won the 2012 Arete Award for Research Excellence through the University of Calgary’s department of oncology, largely due to her work on mindfulness-based cancer recovery (MBCR). In keynote lectures at the International Congress of Behavioral Medicine in Budapest, the International Psycho-Oncology Society in Brisbane, and the Canadian Association of Psychosocial Oncology in Ottawa, she presented the results of a randomized controlled trial comparing MBCR to supportive-expressive therapy and a control condition for distressed breast cancer survivors. The primary results of this trial have been published in the Journal of Clinical Oncology.

JESSICA CREERY reports that in a project made possible by funding from a Varela Award, she is testing whether pro-social attitudes such as compassion can be strengthened through a method of targeted memory reactivation during sleep. To determine this, participants attend a compassion training session and, later, sounds associated with that session play during sleep. Differences in levels of compassion are measured using a modified Implicit Association Test, event-related potentials, and self-report on questionnaires. At present, she has tested two-thirds of her target participants with promising results.

ANDREW DREITZER, who is codirector of Claremont Lincoln University’s Center for Engaged Compassion, is launching a compassion-formation program called “The Way of Radical Compassion.” The pilot version involved more than 40 participants from the U.S., Canada, England, and Saudi Arabia. In addition, he is working on a book describing compassion-cultivation practices from the Christian contemplative traditions; teaching a foundational course in mindfulness for his university’s new master’s program in ethical leadership; contributing to Brown University’s Contemplative Development Program in ethical leadership; largely due to her work on mindfulness-based cancer recovery (MBCR). In keynote lectures at the International Congress of Behavioral Medicine in Budapest, the International Psycho-Oncology Society in Brisbane, and the Canadian Association of Psychosocial Oncology in Ottawa, she presented the results of a randomized controlled trial comparing MBCR to supportive-expressive therapy and a control condition for distressed breast cancer survivors. The primary results of this trial have been published in the Journal of Clinical Oncology.

In 1997, American author Brian Victoria made a major contribution to this debate with his book Zen at War. The book describes the “bastardization” of Zen philosophy during World War II, when the philosophy was used to revive in Japanese soldiers the “warrior culture established by the early shoguns.” Sawaki Kodo, a Japanese Soto Zen patriarch who had served on the Russian front, made it clear to military leaders that “if killing is done without thinking, in a state of no-mind or no-self, then the act is an expression of enlightenment.” After the book’s publication, Zen leaders and groups in Japan and the U.S. disseminated apologies to shocked practitioners and scholars who felt betrayed by this application of Zen beliefs. The self-denying egolessness prized by Zen and related schools refers back to the Buddhist concept of anatta, or no-self. Anatta is often understood as the idea that there is no enduring or fixed entity; that there is nothing permanent associated with the mind or body that exists during life or after death. Instead, we exist in a perpetual state of groundless “becoming.” Buddhist thinkers tend to question or outright reject the existence of a soul or independent “I,” and deny a permanent individual essence. Victoria’s book describes how Japanese military trainers developed the self-denying egolessness anatta describes—and that Zen prizes—into a form of “fascist mind-control.” Through it, they justified collective martyrdom, and by romanticizing the connection between Zen and the samurai’s warrior ethos, they validated the killing of enemies. The trainers also emphasized a link between Buddhist notions of compassion and the deliverance of a swift, merciful death. Coupled with practiced focus and attention training, this type of military training produced highly motivated, “in-the-zone” soldiers able to overcome fear and disregard the threat of imminent
death. According to Victoria, “in Zen, there was the promise that there was no difference between life and death, so you really haven’t lost anything.”

**Dr. Elizabeth Stanley** of Georgetown University is one researcher implementing meditation in the military. Her program—Mindfulness-Based Mind Fitness Training (MMFT)—is a multi-week mental health training tested in both military and civilian populations. For Stanley, war has become an important, appropriate research setting for mindfulness for two reasons.

The first stems from a concern over the mental health of soldiers.

There is a very real demand for, and a grossly lacking supply of, mental health care for veterans: 30–50 percent of returning National Guard reservists, soldiers, and Marines report some form of mental distress (the real percentage is no doubt higher due to mental health stigmas). Further, the Marine Corps suicide rate in January of 2009 was the highest ever recorded within that branch, and a 2009 *Joint Force Quarterly* article stated that “post-traumatic stress disorder (PTSD), substance abuse, divorce, domestic violence, and murder within the [armed] forces are on the rise.”

These ills travel abroad inside the bodies and minds of soldiers in combat and are transmitted back into the societies that deployed them, straining the bank accounts and empathic capacities of families, friends, and government institutions. In other words, they suffer, and so do we. The hope is that contemplative resiliency programs can help mitigate these effects, and empirical studies have consistently shown that they do.

But war as a research setting has another value to scientists like Stanley.

Dr. **Amishi Jha**, a University of Miami professor of psychology and Mind and Life Fellow who has studied the effects of Dr. Stanley’s MMFT program, said in a 2010 interview that “other than pregnant women or people who are about to enter chemotherapy, there are very few contexts [like military deployment] in which a known high-stress event [is guaranteed to happen] and its timeframe is known.” It is those two definitive variables that allow scientists to draw more conclusive data about the effectiveness of meditative practice for groups that undergo it and those groups who do not, lending the science true meaning and integrity.

**From the perspective** of a traumatized soldier or a policy maker worried about the long-term effectiveness of her country’s troops, programs like Stanley’s are obviously beneficial. But within contemplative communities that espouse certain ethical orientations, they remain problematic. While the language of today’s military contemplative programs are plainly different from those of early 20th century Japan, opponents of the military use of meditation claim that some contemplative practices can become the means to improve a soldier’s killing capabilities.

When asked whether she had encountered any ethical opposition to her research from contemplatives in the United States or abroad, Jha said that plenty of instructors and authors had voiced their disapproval but that, tongue in cheek, she didn’t “want to name names of our ‘enemies.’”

**NN Mapping Project; and fine-tuning courses in multireligious comparative contemplative practices.**

**DAVID FRESCO** recently co-authored a paper in *Clinical Psychology: Science and Practice* entitled, “What, Me Worry and Ruminative about DSM-V and RDoC?: Targeting Negative Self-Referential Processing in Treatment Refractory Patients.” He summarizes that “rumination, worry, and other forms of negative self-referential processing are familiar to everyone, as reflecting on the self is perhaps our most human characteristic. However, for a substantial subgroup of patients, negative self-referential processing (NSRP) arises in response to intense emotionality, worsening the clinical presentation, and diminishing the treatment response. The combination of emotionality and NSRP likely reflects the endophenotype of complicated and treatment refractory patients who fail to achieve a satisfactory treatment response in our trials and our clinics. An important next step is to personalize treatments by deliberately targeting NSRPs within established treatment protocols or in as yet novel treatments. Enriching treatments with mindfulness meditation is one possible avenue for personalized care of patients with this hypothesized endophenotype.”

**BRIAN M. GALLA** is a postdoctoral fellow in the department of psychology at the University of Pennsylvania. Galla studies how self-control—the ability to control attention and emotions, and to inhibit impulses—helps shape healthy development, from emotional well-being to academic achievement. Currently, he is studying the impact of self-control ability on college enrollment and persistence in a large sample of public high school students. Galla is also amid his Varela Award-winning project, a study that explores the immediate and long-term effects of teen meditation retreats.
In 2012, Jack received an award that was partly funded by her 2007 Varela Award. Jack's project investigated the efficacy of serum brain-derived neurotrophic factor (BDNF) as a biomarker of cognitive capacity, and its association with exercise modality (Tai Chi, aerobics, resistance). This was an expansion of her Varela project. Although the NRC project was approved at the national level, the recent funding crisis has caused that funding to be put on hold. However, Eveland's lab is still pursuing the project, and Hawkes is drafting a three-year project proposal. She is also revising one Varela manuscript for resubmission and one for first submission to peer-reviewed journals. She has started up a neuroscientific consultancy.

ELIZABETH HOGE recently reported a discovery that was partly funded by her 2007 Varela Award. The participants in the study were recruited mainly from the Insight Meditation Society in Barre, Massachusetts, and in addition to other meditation communities around the country. A paper on this was published in Brain, Behavior, and Immunity.

BRITTA HOLZEL published a paper in Science Direct that stemmed from her 2007 Varela grant on whether mindfulness training changes the processing of social threat.

DANA C. JACK was a Mind and Life Visiting Scholar this fall. During her time, she drew from Buddhist teachings and practice to articulate how a focus on a Western view of selfishness—which can lead women to silence the self and become depressed—may be transformed to foster flourishing and social-relational change. In 2012, Jack received the Ursula Gielen Book Award from the International Division of the American Psychological Association for Silencing the Self Across Cultures: Depression and Gender in the Social World (co-editor, Alisha Ali), “the most significant and fundamental contribution to psychology as a global discipline.”

CHRIS KAPLAN recently returned from the first Contemplative Development Mapping Project (CDMP) Public Symposium. The CDMP is an interdisciplinary “think tank” that he cofounded in 2011, which consists of a group of scholars, scientists, and practitioners who are personally and professionally committed to enriching our understanding of the varieties of contemplative practices and contemplative experiences. Held at the Barre Center for Buddhist Studies in Barre, Massachusetts, and in collaboration with project founder Willoughby Britton and project comanager Nathan Fisher, he presented on his Varela grant-funded “Varieties of Contemplative Experience” research study. In the fall of 2013, Kaplan will be at the Mind & Life Institute as a Visiting Scholar, where he will focus on two personal projects: a book manuscript expanding on his master’s thesis, which examines how global forms of spirituality and activism are redirecting globalization toward more democratic, humane, and sustainable ends; and a cross-traditional contemplative methodology and pedagogy based on overlapping understandings of contemplative development and subtle physiology.

JACK KORNFIELD’s latest book is Bringing Home the Dharma, which features simple meditation practices for awakening one’s “Buddha nature,” or wise and understanding heart, amid the ups and downs of our ordinary daily lives.

Some protesters may concede that “it’s okay to offer [contemplative training] post-deployment after damages occur,” but that ultimately more damage may be done if meditation is incorporated into pre-deployment training by “making [soldiers] concentrated robots.”

One of Jha’s counterarguments to this notion is that, because both the majority of soldiers currently deployed and those participating in the study are on their third or fourth deployments, “that line is instantly blurred, of what is pre- and what is post-.” She also claims that it is incorrect to assume that the contemplative training is “devoid of an ethical container,” though she did not elaborate on its nature.

In my interview with her, Jha recounted an anecdote that had been relayed to her by an Army commander. A convoy was leaving a town in Iraq. The last vehicle in the convoy was a tank with a gunner. As the convoy drove away, the gunner saw it come under fire. The rules of engagement state that when fired upon, a soldier determines the source of the attack and fires back. This gunner did not shoot.

The commander stopped the convoy farther down the road, marched up to the tank, and demanded to know why he had not returned fire. The gunner said, “Sir, the figure was too small.” He had made the call not to fire his gun at what turned out to be a child.

It is difficult for any of us to act against our behavioral conditioning. After millions of years of evolution, we have developed highly sophisticated mechanisms for self-defense. This becomes even more true for those who have gone through the type of rigorous military training that prepares the body to “fight” rather than “flight.” However, the gunner’s tale is a clear example of an individual having enough emotional self-regulation to be able to follow an ethical code of conduct in a high-stress situation.

Given that “soldiers who screened positive for mental health problems after returning home were up to three times more likely to report having engaged in unethical behavior while deployed,” it remains an open, and interesting, question as to whether soldiers would benefit from having more contemplative resources to make an already morally ambiguous situation a little less so.

What’s your perspective?
If you have something to say, send your ideas to communications@mindandlife.org. And don’t forget to visit the Mind and Life blog for more thought-provoking essays.
Ommm Ex Machina

**HOW DOES THE GAME CHANGE IF WE GET A COMPUTER TO MEDITATE? COGNITIVE SCIENTIST MARIEKE VAN VUGT WANTS TO FIND OUT.**

“**Friending**” Marieke van Vugt online or meeting her in person might obscure her profession. A long way from coming across as the logic-obsessed, lab-leashed scientist, van Vugt is warm, open, inviting. Her Facebook photographs depict her and her friends—an actual ballet troupe—stretching across colorful stages. But van Vugt is also a veteran of the contemplative science community. She’s attended nine out of 10 Mind and Life Summer Research Institutes (SRIs). She’s a professor of cognitive modeling in the department of artificial intelligence at the University of Groningen in the Netherlands. And she’s working on a computational model of meditation—more on that later.

Like many people, van Vugt learned of Mind and Life through Daniel Goleman’s 2003 best-seller, *Destructive Emotions*. It was after that experience that she attended her first SRI. “Those were pioneering events,” van Vugt says, noting how in the early 2000s, at the first SRIs, the field of meditation research was relatively unrefined. While enormous conceptual and methodological strides have been taken since, and researchers have...
GREGORY NORRIS has made substantial progress on his project, Handprinter, which seeks to empower students worldwide to address climate change and other environmental issues while at the same time graphically witnessing their ripple effects spread across the globe. The project also encourages students to engage their families in thinking more broadly and deeply about sustainable consumption. Watch a video on Handprinter by visiting: http://startsomethingthatmatters.maker.good.js/projects/handprinter/

$291,000 from the National Science Foundation to work on a project entitled “Genomics & Society—Exploring Ethics, Impacts, and Consequences of Technological Advances.”

In April, TUCKER PECK was awarded the University of Arizona psychology department’s service award. He was given the award largely due to his work founding the Arizona Meditation Research Interest Group, which now has more than 400 members. He also submitted the first draft of a manuscript for a chapter in an empirically-based self-help book; his portion of the chapter focuses on how meditation can be used to improve sleep.

CHAKRAVARTHI RAM-PRASAD was the principal investigator on a major research grant from the British Arts and Humanities Research Council that brought together Hindu and Buddhist views of self and non-self, including an edited volume, Hindu and Buddhist Views in Dialogue: Self and Non-Self (Ashgate, 2012). His book, Human Self, Divine Self: The Philosophy of Being in Two Gita Commentaries (Bloomburry, 2013) has been endorsed by Rowan Williams, former Archbishop of Canterbury, with whom he worked on a Hindu-Christian dialogue with religious leaders in India. He is currently writing a book on conceptions of the body in Indian thought, including the contemporary relevance of medical, contemplative, and cognitive theories in classical texts.

ZEV ROSEN is nearing completion of his PhD in neurobiology and behavior at Columbia University. His research over the past five years has focused on the question of how neuropeptidergic transmitters influence synaptic transmission in the hippocampus. Using optogenetics and electrophysiology, he has discovered a novel mechanism whereby dopamine neurons regulate synaptic transmission in accordance with the duration of the dopamine signal. In addition, he has been working on serotonin’s role in psychiatric illness, and has continued his work on global environmental change, planetary boundaries, and climate change. His projects have been supported by the National Science Foundation, the National Institutes of Health, and various foundations.

For van Vugt, it’s all about finding out—and then telling—a computer, very precisely, what it needs to do in order to simulate meditation, studying what kinds of cognitive operations are involved, and then interpreting the results that emerge.

But why would anybody be interested in developing a simulation of meditation instead of just doing the real thing? Isn’t that a bit like understanding running by watching someone jog rather than pounding the pavement oneself?

It turns out that some of the most tangible benefits
of models and simulations reside in their ability to predict the effects of different kinds of behaviors. For example, van Vugt has become interested in the “sense of spaciousness that’s deliberately cultivated through meditation.”

What she means is that everyday human cognition—or mental activity—operates like a “thought pump,” constantly churning out ideas, memories, emotions, and other aspects of consciousness. Meditation is one way to turn the dial down on that pump and increase the feeling of “spaciousness” that exists between thoughts. One theory is that people with depression and anxiety get stuck in runaway trains of thoughts and emotions, otherwise known as “rumination.” They have little control over their thought pumps and don’t get to experience the liberating feeling of spaciousness associated with contemplative practices. Therefore, if thought pumps, rumination, attention, working memory, and “spaciousness” can all be simulated computationally, scientists like van Vugt may be able to better understand what real-life measures can be taken to untangle our thoughts, to “return more to spaciousness,” and assume more control over our thought pumps.

By manipulating different variables, scientists can also use such cognitive models to predict which meditation practices would help certain types of people, or what guidance might be most beneficial for specific kinds of psychological troubles. In the same way a crash test dummy reveals the dynamics of accidents on a virtual body in order to improve car safety, computer models of our minds might reveal the dynamics of brain patterns that can improve real-life mental health.

Models may come in handy in other ways, as well: as visual aids for meditation teachers, something they can show to students to demonstrate activity in the mind and brain as it undergoes meditation. “I found that thinking about this model is helpful for me,” says van Vugt, “because it pushes me to analyze a little bit more what’s going on in my own practice.” For now, computational models remain pretty rudimentary, and there is no consensus on the best way to simulate cognition, in part because there isn’t even agreement on what models of the mind should look like.

One source of help, however, is input from contemplative scholars such as Andrew Olendzki and Maria Heim. Olendzki, a senior scholar at the Barre Center for Buddhist Studies, and Heim, an associate professor of religion at Amherst College, are the kinds of scholars unavailable to van Vugt at her university—and ones she has access to thanks to the Mind and Life Visiting Scholars program. Cognitive scientists like van Vugt usually build their models using standard behavioral measures such as “accuracy” and “response time,” but metrics are not as simple when it comes to modeling meditation. Cognitive models of meditation, according to van Vugt, “have to rely on introspective measures [rooted in] Buddhist psychology.” To that end, it’s fruitful for scientists like van Vugt to collaborate with scholars from wisdom traditions.

“I have had great conversations with Andrew about how I could structure the mind-moments that occur during meditation. We found that the affective components of experience [such as desire and aversion] are crucial in Buddhist psychology but largely absent in Western [cognitive models]. And Maria has enlightened me about the dynamic nature of mental factors, and how [certain] inputs can be experienced differently based on what feelings and volitions and other mental factors are present just at that moment. Buddhist psychology is just a whole lot more complicated than I had anticipated!”

Currently, van Vugt’s meditation-related work is uncommon in the field of cognitive science, and yet her goal is that its applications become widespread. “I hope that it will basically improve people’s lives, because that’s the bottom line,” she says, pausing for a moment to think. “A lot of people find it really inspiring when they learn about the scientific understandings of what’s going on in meditation. Me, too. I find I can better understand what I’m doing, why I’m doing certain things—or what I should be doing when I’m practicing—when I know a bit more about the science. I gave a talk a few months ago at my own meditation center, the meditation center where I sit, and people said that it inspired them to go back to the cushion and practice. That’s definitely a benefit.”

Van Vugt’s work is catching on beyond the meditation room. Even with her old colleagues. “I’m going to Philadelphia to give a talk at my PhD advisor’s lab,” she smiles. “He even seemed somewhat interested in my model of meditation, so we’ll see. Maybe things will change!”

TANIA SINGER reports several pieces of news from her lab, including one study which showed that, for the first time, short-term compassion training in “naïve meditators” led to plastic changes in the brain associated with networks involved in reward and affiliation. Along those same lines, she recently published a paper based on a study that contrasted learning effects after empathy versus those after compassion training in the very same subjects. The study showed...
A FORMER ADDICT TURNED NEOUROSCIENTIST, MARC LEWIS DESCRIBES WHAT HAPPENS IN THE BRAIN WHEN ADDICTION SETS IN, AND HOW BUDDHIST PSYCHOLOGY HELPS EXPLAIN IT. | BY MARC LEWIS

ABOUT 25 YEARS AFTER QUITTING DRUGS, I decided to write a book about the experience of addiction and the brain processes underlying it. Around my desk I stacked 20 volumes of personal notes from my mid- to late 20s. They told, in relentless detail, of my growing attachment to opiates, periods of depression that led to intense craving and compulsive thinking, and increasingly desperate schemes for acquiring drugs. They told of my crazy misadventures: stealing morphine from the labs I worked in, breaking into pharmacies...
at night, violating every moral standard I lived by. And they told of my eventual expulsion from grad school and a seemingly endless cycle of elation, loss, and self-hatred.

I finally did stop. I completed my PhD. I became a professor in developmental psychology and neuroscience. I had amassed thousands of articles on the emotional brain, self-regulation, and the neurobiology of addiction. I knew what addiction felt like, and what it looked like on a brain scan. The trick was to put these pieces together.

Over the same period of time, Mind and Life pioneered a new approach to the study of human capacities, based on the integration of subjective accounts with scientific experimentation. The idea was to examine human experience from the inside and the outside at the same time. That’s just what I wanted to do in my book. I also wanted to show how miserable we can make ourselves when we look for answers in all the wrong places. And how self-destructive habits develop, quite naturally, along the fault lines of our biology.

Whenever we pursue attractive goals, a neurochemical called dopamine is released. Dopamine is absorbed by brain structures responsible for narrowed attention, effortful action, and above all, desire—the visceral thrust that motivates goal seeking. When addiction sets in—whether to drugs, booze, cigarettes, sex, gambling, food, or something else—what starts out as an episode of pleasure (or relief) begins to control the dopamine pump. Soon, dopamine release is determined by the anticipation of getting more, and the overlapping neural networks of desire and intentional action are increasingly tuned to that singular goal. Those networks also become less and less sensitive to other goals. It feels tremendously exciting when you think you’re about to get whatever “it” is. But if you can’t find it, or it’s not enough, or you’ve just run out—or your partner threatens to leave you the next time you indulge—you suffer. The craving intensifies.

As this cycle repeats, areas of the cortex that represent what’s important and valuable become rewired. More and more synapses are devoted to “it”: thinking, reminiscing, planning, imagining—constructing intricate strategies for getting. At the same time, cortical regions responsible for cognitive control and self-monitoring become less effective—partly because they wear themselves out like a car revving its motor way too high for way too long—and partly because they lose their connection to the dopamine pump.

We asked people on social media what they feel are the addictions of our time. Their answers were interesting:

“Addiction to individuality as well as materialism.”

“Addiction takes us away from our own true nature.”
Out
Of a great need
We are all holding hands
And climbing.
Not loving is a letting go.
Listen,
The terrain around here
Is
Far too
Dangerous
For
That.

—Hafiz

FALLING IN LOVE CAN ENLIVEN US. Feeling seen and held can ground us; it can put us at ease. Love can also grant us a sense of safety and security. Falling out of love, on the other hand, can unravel us.

Losing love can trigger a cycle of craving and attachment that not only exacerbates our suffering but also can last a long time. As a feeling that once seemed like it would last forever starts to fade, we can become so addicted to the feeling of having been in love that we are willing to try anything to maintain that feeling—by “fixing” our former bond, changing ourselves, or persuading our partner to change. We might even be willing to endure difficult, or even unhealthy, situations in order make that love last. In the face of loss, our minds become fixated on finding something—anything—to fill that void left by love’s absence. Because loss on this level can make us feel we are not worthy of being loved at all, we also become guarded and therefore unwilling to be vulnerable once more. We can risk the hardening of our hearts.

When faced with such loss, great spiritual teachers often warn against this very thing: building fortresses to guard our hearts. These teachers ask us not to abandon love because it is a profound experience necessary for compassion. Rather, they encourage us to recognize more stable and fundamental sources of love within ourselves instead of some external source. Tsoknyi Rinpoche calls this “essence love.”

We can learn to experience essence love in part by surrendering our expectations of others and our resistance to, or fear of, change. And also by releasing the feeling that we are somehow intrinsically separate from others. In steering ourselves toward these two aims, we enlarge our capacity for compassion, which returns to us the profundity, and solace, of love in the aftermath of loss. This type of letting go, relaxing deeper into our innate capacity for love and connection, is one antidote to craving. Essence love helps us loosen the grips of habitual and cognitive frameworks that keep us attached to persons and conditions.

How do we achieve such a love after loss? To find that source—that feeling of being held from the depths of our being—we might recall moments in our lives when we shared a connection, however briefly, with another, even a stranger. This can be a moment in which we felt seen or accepted by that person, or a time in which we felt completely at ease. As we recall these moments, we might notice feelings of joy or happiness in our minds. We can deepen into and connect with essence love by fully occupying those remembered joys and kindnesses.

Indeed, memory is a powerful instrument here. Recalling moments of deep connection and profound comfort that we have experienced in the presence of another inspiring person, mentor, or spiritual teacher helps us tune into the profound well of love that is within and around each of us. Hafiz calls this “remembering God.” Such a practice can enable human nature to release cravings and fixations and relate to others in a more stable, compassionate, and open manner.

By remembering God or our spiritual teachers, we learn not only how to abide more deeply in love, but also how to offer it more freely and without conditions in and outside of loss.

Brooke Dodson-Lavelle is the senior program officer for Mind and Life’s new Ethics, Education, and Human Development Initiative. Prior to joining MLI, she taught compassion-based meditation programs to elementary school children and adolescents in Atlanta’s foster care system. She is currently completing her PhD in the graduate division of religion at Emory University. Her work focuses on the confluence of Buddhist contemplative theory and cognitive science, as well as the cultural contexts that shape the transmission, reception, and secularization of Buddhist contemplative practices in America.
The Anxiety of Happiness

BY SHARON SALZBERG

His life is a pursuit of a pursuit forever.
It is the future that creates his present.
All is an interminable chain of longing.

—Robert Frost

I’VE LONG THOUGHT that in this section of his poem, “Escapist–Never,” Robert Frost captures a lot of what contemplative traditions describe as craving, a source of great suffering. Craving is distinguished from motivating force, intentionality, and determination; in craving there is an element of fixation on what we don’t have, to the detriment of appreciating and being grateful for what we do have. There is an endlessness to that pursuit, a going on and on in thinking about the next potential source of joy while a sense of sufficiency or satisfaction right now eludes us.

Look at where we are looking for happiness: at what is not yet here.

In the poem, there are also hints at the ways in which we can mistake temporary pleasure for the deepest happiness available to us. There is an anxiety in happiness that is solely based on the experience of pleasure (as nice as it is) because along with that dependence comes a need for the pleasure not to change. We have likely experienced the weariness of going from object to object, from experience to experience, needing more and more intensity, not feeling we have enough stimulation right now to feel alive, and that we must find it...somewhere. This is the addictive spiral: not being mindful enough to connect strongly to what is happening now, and trying to avoid the dissatisfaction that is inevitably provoked by focusing on more craving.

So how do we break free of the habit of craving?

An example is given of a frog that is in a small pond and is told about the existence of the ocean. The frog does not believe what he is told because of being so long submerged in his small pond, so familiar and so lost to that circumscribed world. The frog cannot even imagine other possibilities. To explore the world beyond the fixation of craving, we need to enlarge our imaginations, our sense of aspiration, of what is possible for us, and explore our own minds.

We can establish a relationship with our own dissatisfaction, so that when it appears we can look at it in a healthier way, rather than trying to avoid it or cover it up. We can remember to appreciate what is here, what we have, and remind ourselves that everything inevitably changes. This is all within the purview of mindfulness meditation, which is the cultivation of a quality of awareness that changes our relationship to whatever our experience is right now. If we feel that experience to be pleasant, we learn to be with it more fully, with less distraction, and allow it to change. If we find our present moment’s experience to be painful, we learn to face it more honestly and with greater compassion, instead of trying anything to flee from it. If our present moment’s experience seems to us to be neutral, not pleasant or unpleasant, simply routine or ordinary, we can learn to break the cycle of endlessly seeking more intensity, and connect more fully to what is here.

This is how we come out of the hold of craving.

“Binging on whatever it is, food, caffeine, alcohol, as a means of comfort for times when we feel upset and/or stressed. It does not solve the issue but we become addicted to doing it nonetheless. There are various forms of meditation which would help calm the mind and heal the thing that is upsetting us or give us room to think about solutions to the situations that are giving us stress.”

with whatever one is trying to control. But here’s the kicker: Overvaluation of a single substance or activity never actually satisfies. At least not for long. After every cycle of wanting, getting, and loss, there is emptiness. Disappointment. A sense of betrayal. And that makes one all the more desperate for relief.

My saga stretched from being an addict to studying addiction as a scientist. I wrote my book; it did well. I started getting invited to talk about addiction to scientists, clinicians, and addicts themselves. I was interviewed on television and radio; I was featured in newspaper and magazine articles. It was a great ride. But then it took a turn I never would have expected.

One day last winter, I got an email inviting me to attend a five-day meeting with the Dalai Lama this fall, along with seven other academics, scientists, and contemplatives, at his residence in Dharamsala. The theme of the meeting was craving and addiction. Hey, I thought, that’s something I know about! Yet it seemed I was dreaming—this was too good to be true.

For the last few months, to prepare for this meeting, I’ve been trying to think like a Buddhist. And what strikes me most is that the Buddhist perspective on personal suffering—based as it is on desire and attachment—captures addiction surprisingly well. So well, in fact, that addiction comes off looking like a fundamental aspect of the human condition.

Buddhism sees personal pursuit and attachment as a cycle—a self-perpetuating cycle—in which many interacting elements contribute to ongoing suffering. What Buddhists describe as the lynchpin of human suffering, the thing that keeps us mired in our attachments, is exactly what keeps addicts addicted. The culprit is craving and its relentless link to grasping. We see something attractive outside ourselves—something that promises to fill the inner emptiness—and we crave it. Then we reach for it, grasp it, and despite the pleasure or relief we might achieve temporarily, it’s never enough. We crave more. That’s what keeps the wheel going round.

Whether the goal is success, material comfort, prestige (the more respectable human pursuits)—or whether it’s heroin, cocaine, booze, or porn—hardly seems to matter. Either way, we believe we’ve locked our sights on an antidote to uncertainty, a guarantee of completeness, when in fact we never become complete by chasing after what we don’t have. And, most incredibly, the pursuit itself becomes the condition for more suffering because we inevitably come up empty, disappointed, and betrayed by our own desires.

That sounds a lot like addiction to me. Yet the Buddhists talk about this as normal seeking and suffering. Isn’t addiction something abnormal? What about all those brain changes? To most scientists and practitioners (e.g. physicians, mental health experts, and addiction counselors), those brain changes suggest that addiction is a disease, an unnatural state. But a Buddhist perspective might cast it quite differently—as a particularly onerous outcome of a very normal process, a sadly normal process:

our continuing attempt to seek fulfillment outside ourselves.

But if such a process is normal, why would the brain change?

It turns out that the brain is designed to change. Every advance in child and adolescent development requires the brain to change. In fact, the condensation of value and meaning in adolescence corresponds with the loss of about 30 percent of the synapses in some regions of the cortex. Normal development, much like addiction, involves a lasting commitment to a small set of goals: I’m going to make money; I’m going to live in a secure neighborhood; I’m going to find a life partner. That commitment involves the formation and consolidation of some neural networks at the expense of others.

Indeed, every episode of learning, whether to play a violin, move in a wheelchair, or see with your fingers after going blind, requires the growth of new synaptic networks. These cortical changes ride on waves of dopamine, both in normal development and in addiction. Gouts of dopamine, with its potency to narrow attention and grow synapses, are highly familiar to lovers and learners alike. That palpable lurch for sex, admiration, or knowledge is always dopamine driven. In fact, the brains of starving animals are transformed by dopamine because, as with addiction, there is just one goal worth pursuing. Studies have shown that successful politicians achieve dopamine levels that would make an addict swoon. The brain has evolved to connect desire and acquisition, wanting and getting, and that connection...
depends on the tuning of synaptic networks to a narrow range of goals with the help of dopamine.

For both normal development and addiction, desire acts as a carving tool, collapsing neural flexibility in favor of fixed goals. That’s why our understanding of addiction may benefit more from a Buddhist-style perspective on normal development than the disease model favored by Western science and medicine.

The Buddhist perspective offers an advantage, too, when it comes to recovery: an emphasis on the value of mindfulness and self-control to free ourselves from unnecessary attachments.

Consider a provocative experiment recently published in *PLOS ONE*, a prominent science journal. While it’s well known that addiction causes thinning in certain regions of the cortex—believed to reflect a loss of synapses—this study found increasing synaptic thickness in cocaine addicts who had abstained for several months. In fact, the longer the period of abstention, the greater the growth. Contrary to expectations, the new growth wasn’t simply a reversal of what was lost, like a pruned bush growing back its leaves. Rather, synaptic growth was observed in new areas—areas underlying self-reflection, self-direction, and self-control. Most surprising, this growth surpassed levels reached by “normal” (never addicted) people after a period of roughly eight months, indicating the emergence of more advanced mental skills.

If these results are replicated, they’ll provide solid evidence that recovery, like addiction, is a developmental process, which may benefit from the advanced cognitive capacities facilitated by mindfulness training.

Based on studies such as these—and filling in the blanks with subjective accounts—addicts, scientists, and contemplatives have a lot to learn from each other. After all, addicts and Buddhists—all of us—make use of the same brain, with its vulnerabilities and strengths. It makes sense that the brain changes underlying suffering and healing have much in common, whatever their source.

“If I’ve given this a mere 10 minutes of reflection, and the most critical addiction I observe within my own nature is the self-cherishing attitude which tramples over the interests of others. It comes up so quickly; it is difficult to overcome. It is based in ‘ignorance’ of the real nature of existence. I imagine all other addictions such as my ‘love’ of chocolate and tea all emanate (arise from) from this basic self-cherishing nature.”

PH

“Ignorance, because we fail to recognize things as they truly are, and how they truly relate to us and everything else.”

PS

“Could it be that ‘tuning out’ is the addiction of our time—through media, substances, sex, sleep aids? People say they want to shut down; to turn the mind off. Turning the mind on appears to be terrifying. One of the issues in spreading the message of mindfulness as a method to reduce suffering is that in order to achieve that reduction, an individual must first go through an increase, because the act of tuning in causes much to come up. That’s a dialogue I want to begin: How do we get people to see the initial increase in uncomfortable emotions is a temporary movement toward mental freedom and stability?”

SF
The Pharmacy of Desire

BY WENDY FARLEY

An American success story: A college graduate gets a good job and marries. The couple drives a beautiful car, a consolation for their terrible commute. Work pays well but requires callous decisions. Expensive vacations and a lovely home recompense for the sacrifice not only of time, but also of ideals. Contentment, however, remains elusive; an underlying anger burns. The additional cocktail flames the anger into vindicating rage. Marriage lapses into emptiness; children become strangers; affairs end unpleasantly.

This is a pattern of addiction, but addiction to what? Each candidate seems as much a symptom as a cause: wealth, possessions, pleasure, rage, alcohol.

According to Augustine, “our hearts are restless until they rest in thee, O Lord.” In the Christian tradition, the soul is *eros*: a desire for luminous and uncreated Good. What marks this desire are interior peace (*apatheia*) and unconditional love (*agape*). The deeper into divine union one sinks, the more one is able to feel love, compassion, and joy.

But in the course of life, we can turn from this ultimate desire and ultimate Good and become entangled in their more evanescent versions that do not satisfy longing. It is this attempt to satisfy spiritual longing with material objects that opens us to the “fall” into egocentric existence.

Inside that castle, every satisfaction is fleeting, a merciless goad that struggles for pleasure and respite from anxiety. Desire is no different. It is like poison ivy. It itches terribly, but when you scratch it, a brief moment of relief is followed by increased discomfort. As discomfort intensifies, we are ever more desperate to relieve our pain, and so a cycle of anguish begins.

Addiction is a good example of this metaphor. In a state of severe disrepair, we may become literally addicted to drugs or alcohol, craving ersatz pleasures that dull our spirits and ruin our lives. Addiction to failed pleasures or toxic attachments suggests we are oriented toward the normal things in life as if they are capable of granting us perfect happiness. We become frustrated and angry when, inevitably, they do not.

Divine desire is the opposite of desire for things in the world—not because such desire has a different object but because it has a different structure. Spirit does not long for possession of good things but to be liberated from egocentric craving. The infinite good within us longs to be united with the infinite Good, and through this union, united in love with all creation. Our divine *eros* is like an arrow arcing away from our egocentric selves toward infinite love. When this spiritual longing is redirected toward finite goods, we try to fill the abyss of Good with a series of finite objects. It becomes like trying to drink the sea or own the stars.

Throughout human history, Christian contemplatives—Evagrius Ponticus, Teresa of Avila, John of the Cross, Julian of Norwich, and so many others—had a radical sense of divine love and mystery. They believed that contemplative practice reordered the mind so that it could tolerate the non-possessive abyss of divine love. From this repose in divinity, love and compassion naturally flowed. In our own time, techniques like centering prayer or compassion meditation, even without religious framing, awaken the heart for love. Paradoxically (from the ego’s point of view), contentment arises as one awakens to the beauty and suffering of the world. The human heart is not happy when it is bent in on itself, ceaselessly pursuing phantom pleasures.

Science is beginning to provide evidence of the benefits of “old” ideas like meditation and compassion. Christian contemplatives might nod contently, happy to know that another language is now available to lure us toward healthier emotional habits.

Wendy Farley teaches religion and ethics in the college and graduate school of Emory University, where she is also chair of theological studies. She is the author of several books in the area of philosophical and contemplative theology, with a particular interest in women contemplatives of the Middle Ages.
Every summer, Mind and Life brings together more than 150 scientists, contemplatives, scholars, and students for its Summer Research Institute (SRI). The gathering combines cutting-edge scientific research with the world’s oldest wisdom traditions in order to uncover groundbreaking insights into the human mind and human nature.

This year’s theme was on “mapping the mind.” In this photo essay, we’ve offered some of the thoughts that the six stimulating days at SRI provoked.

HAS OUR UNDERSTANDING of the brain changed over years of research? Many of us grew up hearing about the left versus the right sides of the brain, or that one area was for language and abstract thought, while another one controlled emotions such as anger or sadness. This kind of mapping is called “functional specialization,” and for decades it has been the prevalent view in neuroscience. That’s all being turned on its, well, head. Instead of mapping by discrete areas, Luis Pessoa and other SRI neuroscientists are beginning to look at the ways in which complex neural networks more accurately describe and predict the brain’s behavior. Instead of searching for brain areas, we should be looking at neural “hubs,” where networks that influence both cognitive and emotional processes interact.
MOST OF US GET DISTRACTED or daydream, so we know from experience that we’re not always good at paying attention. When we do pay attention, though, we usually understand it as a property controlled by the individual in a “top-down” manner. In other words, we assume that we direct the gaze, or spotlight, of our attention. But it’s also true that the nature of our attention changes depending on our feelings during any given moment. These “bottom-up” systems of attention are heavily influenced by our memories and emotions, and tune our orientation to the environment in interesting ways. Trauma, for example, can rewire bottom-up attentional systems and make it more likely that neutral stimuli will trigger a fear response. What is often called affective or motivational salience is just beginning to be investigated by SRI scientists such as Rebecca Todd.
WHY DO WE HAVE SUBJECTIVE EXPERIENCES IN THE FIRST PLACE? Why does it feel like something to be a person? Scientists call this the “explanatory gap” of consciousness: the challenge in explaining how material objects—the brain—give rise to immaterial experiences—the mind. Various theories have been put forward to close the explanatory gap, though none are accepted universally. Recent research into meditation, sleep, dreams, and near-death experiences might help us get a little closer to the truth. Evan Thompson raises these questions—and some possible ways of getting answers—in his latest book, *Waking, Dreaming, Being: New Light on the Self and Consciousness from Neuroscience, Meditation, and Philosophy*.

PSYCHOLOGIST AL KASZNIAK shared four ways that scientists today study consciousness. First, by looking at images of the brain during allegedly unconscious states such as comas and anesthesia. Second, by using objective research methods that try to minimize the unreliability of first-person accounts. Third, by studying the neural correlates of consciousness through brain imaging and other approaches (e.g. what areas of the brain light up when a person is feeling a specific emotion). And last, by using computers to create theoretical and computational models of consciousness. Mind and Life Visiting Scholar Marieke van Vugt, for example, is building a computational model to further understand and predict the effects of different kinds of mediation on brain and behavior (see page 15 for our story on her work).
ARE WE LIMITED BY OUR BIOLOGY, or can we transform ourselves to meet our highest potential? Richard Davidson thinks that we can change, and for the better. He shared numerous recent findings from his lab pointing to ways that meditation and other contemplative practices make us more resilient, happy, and compassionate. Part of this quest to improve ourselves will involve building maps of human development. But, he cautioned, mapping the mind is complicated and can’t be done from one perspective alone. We will need insights from both science and contemplative traditions if we have any hope of becoming a kinder, more caring species.

SCIENTISTS WHO STUDY meditation often interact and collaborate with Buddhists, but they don’t necessarily know the story of the Buddha. Most people working at the intersection of science and religion probably haven’t heard many of the rich narratives contained in the Buddhist canon. Sara McClintock’s presentation at SRI was a humorous and warm-hearted look at many of the most well-known Buddhist tales. It’s a point of interest how stories that have been passed down in wisdom traditions often point to the kinds of virtuous character traits that can, and are, studied by scientists and psychologists. Because these narratives share tales of radical transformations, they represent a powerful way of passing down ideas and insights to future generations.
John Dunne argued that the problems inherent in mind mapping are often the generalizations science and spirituality can make. He explained that the mind, too subject to cultural and historical influences, may be impossible to map for all humans in all societies across time. Most studies in psychology and neuroscience, for example, use subjects who come from countries that are “WEIRD”: Western, Educated, Industrialized, Rich, and Democratic. Most people do not live in WEIRD countries, however, so conclusions that arise from these data are limited to a specific time, place, and population.

“EVERY OBJECT well-contemplated opens a new organ in us,” said the German writer Johann Wolfgang von Goethe. Is this the essence of human development? Do we become what we pay attention to? The American philosopher John Dewey might have agreed. He said that, “the faculty of voluntarily bringing back a wandering attention, over and over again, is the very root of judgment, character, and will.” Mind and Life President Arthur Zajonc made the case that the goal of contemplation, and human development, is to narrow the distance between love and knowledge.
SCIENCE TELLS US that every human has the potential to change, but where do we turn for concrete instruction? One source is the collection of Tibetan practices called “meditations of innate compassion and wisdom.” John Makransky calls this “Innate Compassion Training,” and his presentation focused on pointing out the differences between compassion training and more cognitive-based meditation methods. Mind and Life intends to borrow from John Makransky and others as it begins to design a pedagogy and curriculum for compassion and ethical behavior that can be accepted by nonbelievers as well as people of faith—what the Dalai Lama calls “secular ethics.”
Model Behavior

A NEW STUDY ASKS: DOES MEDITATION MAKE US MORE COMPASSIONATE?

Most of us like to think that we’re compassionate people—that, given the opportunity, we’d recognize another’s pain and be moved to help. But in the midst of our daily lives, how compassionate are we, really? And is this something we can change about ourselves?

These questions were at the heart of a recent study funded by a Mind and Life Francisco J. Varela Research Award and led by Paul Condon, a graduate student studying social psychology with Dr. David DeSteno at Northeastern University.

The experiment offered participants eight weeks of meditation instruction. Meeting for two hours each week, half of the participants were taught techniques to foster mindfulness, and the other half were trained in compassion.

After eight weeks of instruction, participants took various cognitive tests, believing that the experiment was measuring the effect of meditation on things like attention and memory. However, the real goal was to understand changes in compassionate helping behavior. This is where the experiment got clever.

The setup went as follows: When a participant arrived for her cognitive testing at the end of the study, she entered a waiting room to find three chairs, two of which were occupied. Unbeknownst to the participant, the two other people in the waiting room were “confederates,” or colleagues who were part of the study but posing as bystanders. Naturally, the participant took the third seat and waited. After a minute, a third confederate, a woman, appeared around the corner with crutches and a walking boot. She winced in pain as she walked, stopped at the chairs and looked at her cell phone, then audibly sighed in discomfort and leaned back against a wall. The two other confederates continued to wait, seated. This scene was allowed to play out for two more minutes.

The real test was whether the participant would feel moved to respond compassionately and give up her chair to the woman on crutches. Condon and his colleagues found there was a clear difference in behavior: Those who had undergone meditation training (either in compassion or mindfulness) were five times more likely to give up their seat to the woman on crutches.
than those who had not practiced meditation. That’s a huge effect.

Is it a small gesture to give up one’s chair? Maybe so. But some argue that these kinds of behavioral measures might be more meaningful than those derived from an EEG or an MRI machine since they tap into how we respond to our fellow humans.

Condon reflects, “We knew that meditation improves a person’s own physical and psychological well-being, but now we have evidence that meditation actually increases compassionate behavior.”

Those who are familiar with meditation know that it’s sometimes easy to feel compassion when sitting peacefully (and alone) on a cushion, but it’s in our everyday lives and interactions with others where the rubber meets the road.

Condon’s study was published in the journal Psychological Science. Co-author Gaelle Desbordes of Massachusetts General Hospital and Boston University is also a past Varela Award recipient.

“Mind and Life has been a great resource for me,” said Condon. “The community provides me with a strong scientific foundation to study meditation, and an opportunity to interact with experts in neuroscience and contemplative scholarship. Funding from Mind and Life has allowed me to conduct interesting research on the social effects of meditation that I would not have been able to conduct otherwise. I probably would not have pursued meditation as a research topic without the support of the Mind and Life community and these awards.”

FROM PAGE 17

that the network involved after empathy training does not overlap with those networks exhibiting increased activation after compassion/loving kindness training. In addition to her research, Singer held a compassion workshop at the studio of the artist Olafur Eliasson in Berlin. This event has led to the creation of a more than 800-page e-book entitled Compassion: Bridging Practice and Science, which will be freely available to the public in English and German in the fall of 2013. Along with the e-book, a movie was shot by Eliasson and will be available soon. And, finally, Singer’s ReSource Project (www.resource-project.org) was launched. During this interdisciplinary longitudinal study, 200 participants will be led through cognitive and mental training program by 20 teachers for more than 11 months. The project consists of three consecutive, three-month modules: Presence, Perspective, and Affect. The Presence Module trains mindful attention for internal mental and physical processes. The Perspective module focuses on socio-cognitive abilities, such as insight into the nature of the mind and self, and also the ability to assume the perspective of others. The Affect module focuses on constructive ways of dealing with difficult emotions, and works to cultivate pro-social motivations and positive emotions such as compassion. The interdisciplinary research team will measure participants before, during, and after the training in areas such as subjective well-being, brain function, behavior, neuroendocrinological markers, and genetic aspects.

HILARY TINDLE’s book Up was released in May from Penguin. A cardiologist at the University of Pittsburgh, Tindle is an expert in the new science of outlook and a Varela Award winner. The New York Times said Up “offers precise technical definitions of optimism and pessimism, supplies a short validated questionnaire for readers to rate their own tendencies, and then provides seven steps of attitudinal change for those who come up short. These steps will probably be especially useful for individuals brimming over with a particularly bad quality known as ‘cynical hostility,’ which Tindle has found to be associated with a 16 percent elevation in mortality over eight years.”

In 2010, Dave Vago received a full-time, dual faculty appointment as an associate psychologist in the department of psychiatry at Brigham & Women’s Hospital and an instructor at Harvard Medical School. Since that appointment, he has obtained institutional and foundation research grants totaling more than $275,000 to fund several research initiatives, including a $100,000 grant from the 1440 Foundation for a cross-sectional, multisite, retrospective study investigating the potential long-term health effects of early exposure to mindfulness training. Other funds have supported neuroimaging and performance-based research initiatives into mapping the meditative mind using a model of noting and labeling techniques taught by Buddhist teacher Shinzen Young. Vago was also a contributing author on “How Does Mindfulness Work? Proposing Mechanisms of Action from a Conceptual and Neural Perspective,” which was published in Perspectives in Psychological Science and a first author on “Self-Awareness, Self-Regulation, and Self-Transcendence (S-ART): A Framework for Understanding the Neurobiological Mechanisms of Mindfulness,” published in Frontiers in Human Neuroscience. Vago was one of six scientists selected to present his research to the Dalai Lama for the Mind & Life Institute Dialogue, “Latest Findings in Contemplative Neuroscience.” He spoke with Shinzen Young on their collaborative research at the Buddhist Geeks conference in Boulder, Colorado in August, 2013.

MARIEKE VAN VUGT has recently developed a phone app that reminds people of meditation practices so they can integrate meditation into their daily life. She is currently testing the effect of the app on self-reports of well-being and stress. In a project with Heleen Slagter from the University of Amsterdam, she also examined the effect of meditative states on the attentional blink, finding that for practitioners with more than 2,600 hours of practice, the blink is reduced during “open monitoring” relative to “focused attention” meditation. She is in the process of developing a computational model of meditation, a project she is conducting as a Mind and Life Visiting Scholar. The computational model should serve as a basis for predicting transfer from meditation practice to cognitive tasks.

HELEN WENG recently published her paper, “Compassion Training Alters Altruism and Neural Responses to Suffering” in Psychological Science. The paper is based on a study in which Weng trained participants online in compassion meditation for 30 minutes per day for two weeks. The experiment showed that the participants behaved more altruistically toward strangers and also had changed brain responses to human suffering.

Helen Weng

Want to update us about your work, projects, awards, or other news? Write to us at communications@mindandlife.org. And don’t forget to subscribe to our eNews or follow us on social media for the latest.

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Helen Weng
This summer, Mind and Life welcomed seven Visiting Scholars to its recently opened house on the Amherst College campus. The Visiting Scholars program is meant to provide time and space for intensive individual and collaborative work that extends and broadens the intellectual fruits of MLI’s mission in three areas: ethics, education, and human development; mapping the mind; and craving, desire, and addiction. Visiting Scholars are generally in residence for periods ranging from a few weeks to an academic semester. We asked the seven to share their projects with us.

Rajesh Kasturirangan examined four factors of “eudaimonics,” or the study of human flourishing—the conceptual, which represents the philosophical element that dates back to Aristotle and Confucius; the contemplative, which also hearkens back to the same network of thinkers and practitioners; empirical research, which has grown with recent breakthroughs in the realms of psychology and neuroscience; and large-scale data gathering—all with the aim of exploring the relationship between cognition, embodiment, and well-being in education.

During her time as a Visiting Scholar, Jennifer K. Lynne worked on research for The Engaged Identity theory, examining the roles of listening, patience, and respect as three precepts or capacities that can be cultivated to develop greater understanding for conflict transformation and peace building. Lynne’s theory uses contemplative practices, science, and peace building to look at how, through these precepts, we can expand our worldviews.

John Whalen-Bridge explored the ways in which a set of writers from the United States turned to Buddhism for ethical stances and the contemplative aesthetics that connect personal refinement with more universal forms of human flourishing. Some of the writers studied included poets Allen Ginsberg and Gary Snyder, as well as fiction writers such as Maxine Hong Kingston. In delving into their work, Whalen-Bridge also examined the issues and obstacles related to human flourishing that these artists devoted themselves to: environmentalism, feelings of political disempowerment, sexism, and more.

Silke Rupprecht evaluated the impact of a mindfulness-based stress reduction (MBSR) intervention on the well-being and flourishing of teachers, who are more likely to experience stress-related symptoms and affective disorders than other professionals. Rupprecht also examined the ways MBSR can impact teaching quality, particularly as it relates to developing in educators the attitudes and skills needed to deal with emotionally charged situations in classrooms.

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▲ JUAN SANTOYO built on his ongoing work investigating how brain activity corresponds to the first-person experience of meditating during a real-time fMRI feedback scan. For this study, Santoyo helped investigate correlations between a self-reported online experience of meditating and the specific activation in a brain region thought to be important for awareness and self-reference (the posterior cingulate cortex). He plans to develop a publishable methodological review based on this experiment, examining it in relation to other case studies in neuropsych phenomenology and building on an approach through which “first-person” reports are considered in correlation with “third-person” data, such as those generated by neuroimaging techniques.

▲ SARA McCLINTOCK researched and wrote on the topic of the ethics of reading in a Buddhist context, specifically investigating the mechanisms by which reading Buddhist narratives may provoke particular kinds of ethical transformations. Her areas of particular interest in this project include how Buddhist narratives may give rise to certain experiences conducive to Buddhist practice, as well as the ways they may provoke a reexamination of a reader’s understanding of his or her relationship to self and others.

▲ GILDA HENRIQUEZ DARLAS researched the details of a moral psychology for the gradual cultivation of compassion by examining in detail and reinterpreting the guidance offered in a core Theravada text, Buddhaghosa’s Visudhimagga.

▲ ALL PHOTOS COURTESY OF THE VISITING SCHOLARS
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2012 Financial Position

Thanks to the commitment of all our supporters, Mind and Life continues to rest on sound financial footing. During calendar year 2012, we received, from all sources, including pledges and one-time contributions, $4.1 million to be used during 2012 as well as in future years. Total expenses paid in 2012 were $3.1 million, including costs associated with our Dharamsala conference in India.

For additional information or to request a copy of our audited financials, please visit our website or contact Lila Mereschuk, controller, at lila@mindandlife.org.
JOIN US FOR FOUR EXCITING DAYS as we gather the most innovative thought leaders—and present their ground-breaking research—in neuroscience, psychology, clinical science, the humanities, philosophy, and education. All with the goal of advancing our understanding of the mind, reducing human suffering, and enhancing our well-being. The Dalai Lama will join the event.