

The Top 10 Insights from the "Science of a Meaningful Life" in 2013 by Greater Good

The past few years have been marked by two major trends in the science of a meaningful life.

One is that researchers continued to add sophistication and depth to our understanding of positive feelings and behaviors. Happiness is good for you, but not all the time; empathy ties us together, and can overwhelm you; humans are born with an innate sense of fairness and morality, that changes in response to context. This has been especially true of the study of mindfulness and attention, which is producing more and more potentially life-changing discoveries.

The other factor involves intellectual diversity. The turn from the study of human dysfunction to human strengths and virtues may have started in psychology, with the positive psychology movement, but that perspective spread to adjacent disciplines like neuroscience and criminology, and from there to fields like sociology, economics, and medicine. Across all these fields, we're seeing more and more support for the idea that empathy, compassion, and happiness are more than you-have-it-or-not capacities, but skills that can be cultivated by individuals and by groups of people through deliberate decisions.

In 2013, the UC Berkeley Greater Good Science Center is now part of a mature, multidisciplinary movement. Here are 10 scientific insights published in peer-reviewed journals from the past year that we anticipate will be cited in scientific studies, help shift public debate, and change individual behavior in the year to come.

A meaningful life is different—and healthier—than a happy one.

The research we cover here at the Greater Good Science Center is often referred to as "the science of happiness," yet our tagline is "The Science of a Meaningful Life." Meaning, happiness—is there a difference?

New research suggests that there is. When a study in the *Journal of Positive Psychology* tried to disentangle the concepts of "meaning" and "happiness" by surveying roughly 400 Americans, it found considerable overlap between the two—but also some key distinctions.

Based on those surveys, for instance, feeling good and having one's needs met seem integral to happiness but unrelated to meaning. Happy people seem to dwell in the present moment, not the past or future, whereas meaning seems to involve linking past, present, and future. People derive meaningfulness (but not necessarily happiness) from

helping others—being a “giver”—whereas people derive happiness (but not necessarily meaningfulness) from being a “taker.” And while social connections are important to meaning and happiness, the type of connection matters: Spending time with friends is important to happiness but not meaning, whereas the opposite is true for spending time with loved ones.

And other research published in the Proceedings of the National Academy of Sciences suggests that these differences might have important implications for our health. When Barbara Fredrickson and Steve Cole compared the immune cells of people who reported being “happy” with those of people who reported “a sense of direction and meaning,” the people leading meaningful lives seemed to have stronger immune systems.

The emotional benefits of altruism might be a human universal.

One of the most significant findings to have emerged from the sciences of happiness and altruism has been this: Altruism boosts happiness. Spending on others makes us happier than spending on ourselves—at least among the relatively affluent North Americans who have participated in this research.

But a paper published in the Journal of Personality and Social Psychology suggested that this finding holds up around the world, even in countries where sharing with others might threaten someone’s own subsistence.

In one study, the researchers examined data of more than 200,000 people from 136 countries; they determined that donating to charity in the past month boosts happiness “in most individual countries and all major regions of the world,” cutting across cultures and levels of economic well-being. It was even true regardless of whether someone said they’d had trouble securing food for their family in the past year.

When the researchers zeroed in on three countries with vastly different levels of wealth—Canada, Uganda, and India—they found that people reported greater happiness recalling a time when they’d spent money on others than when they’d spent on themselves. And in a study comparing Canada and South Africa, people reported feeling happier after donating to charity than after buying themselves a treat, even though they would never meet the beneficiary of their largess. This suggests to the researchers that their happiness didn’t result from feeling like they were strengthening social connections or improving their reputation but from a deeply ingrained human instinct.

In fact, they argue, the nearly universal emotional benefits of altruism suggest it is a product of evolution, perpetuating behavior that “may have carried short-term costs but long-term benefits for survival over human evolutionary history.”

Mindfulness meditation makes people more altruistic—even when confronted with barriers to compassionate action.

In March, the GGSC hosted a conference called “Practicing Mindfulness & Compassion,” where speakers made the case that the practice of mindfulness—the moment-by-moment awareness of our thoughts, feelings, and surrounding—doesn’t just

improve our individual health but also makes us more compassionate toward others. Coincidentally, just weeks after the conference, two new studies bolstered this claim.

The first study, published in *Psychological Science*, found that people who took an eight-week mindfulness meditation course were significantly more likely than a control group to give up their waiting-room seat for a person on crutches. This was true despite the fact that other people in the waiting room (who were secretly working with the researchers) didn't acknowledge the person in need or make any gesture to give up their own seats; prior research suggests that this kind of inaction strongly deters bystanders from helping out, but that wasn't the case when the bystanders had received training in mindfulness.

A few weeks later, another study published in *Psychological Science* echoed that finding. In this second study, which was unrelated to the first, people who had practiced a mindfulness-based "compassion meditation" for a total of just seven hours over two weeks were significantly more likely than people who hadn't received the training to give money to a stranger in need. What's more, after completing their training, the meditation group showed noticeable changes in brain activity, including in networks linked to understanding the suffering of others.

"Our findings," write the authors of the second study, "support the possibility that compassion and altruism can be viewed as trainable skills rather than as stable traits."

Meditation changes gene expression.

Are genes destiny? They certainly influence our behavior and health outcomes—for example, one study published in 2013 found that genes make some people more inclined to focus on the negative. But more and more research is revealing how it's a two-way street: Our choices can also influence how our genes behave.

In 2013, a collaborative project between researchers in Spain and France and at the University of Wisconsin found that when experienced meditators meditate, they quiet down the genes that express bodily inflammation in response to stress.

How did they figure this out? Before and after two different retreat days, the researchers drew blood samples from 19 long-term meditators (averaging more than 6000 lifetime hours) and 21 inexperienced people. During the retreat, the meditators meditated and discussed the benefits and advantages of meditation; the non-meditators read, played games, and walked around.

After this experience, the meditators' inflammation genes—measured by blood concentrations of enzymes that catalyze or are a byproduct of gene expression—were less active. Blood samples from the people in the leisure-day condition did not show these changes.

Why does this matter? The researchers also looked at their study participants' ability to recover from a stressful event. Long-term meditators' ability to turn down inflammatory genes, it turns out, predicted how quickly stress hormones in their saliva diminished after a stressful experience—a sign of healthy coping and resilience that can potentially lead to a longer life.

This is good news to people who come from a family of stress cases who are stress-prone themselves: There are steps you can take to mitigate the impact of stressful events. Hard as it may be to find time or get excited about meditating, mounting evidence suggests that it can offer more concrete advantages to a healthy life than the leisurely activities we more readily seek.

Mindfulness training improves teachers' performance in the classroom.

For educators grappling with students' behavioral problems and other sources of stress, new research suggested an effective response: mindfulness.

Although mindfulness-based programs are not uncommon in schools these days, they've mainly been deployed to enhance students' social, emotional, and cognitive skills; only a handful of programs and studies have examined the benefits of mindfulness for teachers, and in those cases, the research has focused largely on the general benefits for teachers' mental health.

But in 2013, researchers at the University of Wisconsin's Center for Investigating Healthy Minds broke new ground when they studied the impact of an eight-week mindfulness course developed specifically for teachers, looking not only at its effects on the teachers' emotional well-being and levels of stress but also on their performance in the classroom.

They found that teachers randomly assigned to take the course felt less anxious, depressed, and burned out afterward, and felt more compassionate toward themselves. What's more, according to experts who watched the teachers in action, these teachers ran more productive classrooms after completing the course and improved at managing their students' behavior as well. The results, published in *Mind, Brain, and Education*, show that stress and burnout levels actually increased among teachers who didn't take the course.

The researchers speculate that mindfulness may carry these benefits for teachers because it helps them cope with classroom stress and stay focused on their work. "Mindfulness-based practices offer promise as a tool for enhancing teaching quality," write the researchers, "which may, in turn, promote positive student outcomes and school success."

There's nothing simple about happiness.

Who doesn't want to be happy? Happy is always good, right?

Sure. Just don't be too happy, OK? Because June Gruber and her colleagues analyzed health data and found that it's much better to be a little bit happy over a long period of time than to experience wild spikes in happiness. Another study, published in the journal *Emotion*, showed how seeking happiness at the right time may be more important than seeking happiness all the time. Instead, allowing yourself to feel emotions appropriate to a situation—whether or not they are pleasant in the moment—is

a key to long-lasting happiness.

In a study published earlier in the year in the journal *Psychological Science*, Sonja Lyubomirsky and Kristin Layous found that not all research-approved happiness practices work for everyone all the time. “Let’s say you publish a study that shows being grateful makes you happy—which it does,” Lyubomirsky recently told us. “But, actually, it’s much harder than that. It’s actually very hard to be grateful, and to be grateful on a regular basis, and at the right time, and for the right things.” She continued:

So, for example, some people have a lot of social support, some people have little social support, some people are extroverted, some people are introverted—you have to take into account the happiness seeker before you give them advice about what should make them happy. And then there are factors relevant to the activity that you do. How is it that you’re trying to become happier? How is it that you’re trying to stave off adaptation? Are you trying to appreciate more? Are you trying to do more acts of kindness? Are you trying to savor the moment? The kind of person you are, the different kinds of activities, and how often you do them, and where you do them—these are all going to matter.

The bottom line might be that if happiness were really that simple, we’d all be happy all the time. But we’re not, and that appears to be because there is no rigid formula for happiness. It’s a state that comes and goes in response to how we’re changing and how our world is changing.

Gratitude can save your life.

Or at least help lessen suicidal thoughts, says a study published in the *Journal of Research in Personality*.

Across a four-week period, 209 college students answered questions to measure depression, suicidal thoughts, grit, gratitude, and meaning in life. The idea was to see if the positive traits—grit and gratitude—mitigated the negative ones. Since depression is a large contributing factor to suicide, they controlled for that variable throughout the study.

Grit, said the authors, is “characterized by the long-term interests and passions, and willingness to persevere through obstacles and setbacks to make progress toward goals aligned or separate from these passionate pursuits.” It stands to reason that someone with lots of grit wouldn’t waste much time on suicidal thoughts.

But what about gratitude? That entails noticing the benefits and gifts received from others, and it gives an individual a sense of belonging. That should make life living—and, indeed, the researchers found that gratitude and grit worked synergistically together to make life more meaningful and to reduce suicidal thoughts, independent of depression symptoms.

As the authors note, their study has huge clinical implications: If therapists can specifically foster gratitude in suicidal people, they should be able to increase their sense that life is worth living. This new finding adds to a pile of new research on the benefits of gratitude. Saying “thanks” can make you happier, sustain your marriage through tough times, reduce envy, and even improve physical health.

Employees are motivated by giving as well as getting.

Over the past two decades, work satisfaction has declined, while time spent at work has significantly increased. Not a good combination!

Would paying people more money help? Some studies have shown that rewarding employees for their hard work and late nights at the office with a bonus will make things a little better and quiet dissatisfaction. But in September, through the collaborative research of Lalin Anik, Lara B. Aknin, Michael I. Norton, Elizabeth W. Dunn, and Jordi Quoidbach, we learned that employee bonuses might have the most positive effects when they're spent on others. The researchers suggested an alternative bonus offer that has the potential to provide some of the same benefits as team-based compensation—increased social support, cohesion, and performance—while carrying fewer drawbacks.

Their first experiment focused on broad, self-reported measures of the impact of prosocial bonuses on an employee's job satisfaction. They were either given a bonus to spend on charity or were not given a bonus at all. Those who gave to charities reported increased happiness and job satisfaction. The second experiment was conducted in two parts—both focused on “sports team orientation” by looking at the difference between donating to a charity or a fellow employee—and attempted to see if these improved actual performance. In the first part of the experiment, these participants were given \$20 and told to spend it on a teammate or on themselves over the course of the week. In the second part of this experiment, they were instructed to spend \$22 on themselves or on a specified teammate over the course of the week. Both of these experiments found more positive effects for givers than those who spent the \$22 on themselves.

This collaborative research indicates that prosocial bonuses can benefit both individuals and teams, on both psychological and “bottom line” indicators, in both the short and long-term. So when you receive your bonus this year, you might want to think twice before buying those pair of shoes you've been dying for, instead consider spending it on someone else—because, according to this research, you'll probably be much happier and more satisfied with your job.

Subtle contextual factors influence our sense of right and wrong.

An out-of-control train will kill five people. You can switch the train onto another track and save them—but doing so will kill one person. What should you do?

A series of experiments published in the journal *Psychological Science* suggests that on one day you'll divert the train and save those five lives—but on another you might not. It all depends on how the dilemma is framed and how we've been thinking about ourselves.

Through the train dilemma and other experiments, the study revealed two factors that can influence our moral decisions. The first involves how morality has been defined for you, in this case around consequences or rules. For example, when researchers asked participants to think in terms of consequences, some readily diverted the train, thus saving four lives. On the other hand, those who prompted to think in terms of rules (e.g., “thou shalt not kill”) let the five die. But that factor was influenced by another that

depends on memory and whether your past ethical or unethical behavior is on your mind—a memory of a good deed might make you more likely to cheat, for example, if urged to think of consequences. It's the complex interaction between those two factors that shapes your decision.

That wasn't the only study published during the past year that revealed how susceptible we are to context. One study found that people are more moral in the morning than in the afternoon. Another study, cleverly titled "Hunger Games," found that when people are hungry, they express more support for charitable giving. Yet another experiment discovered that thinking about money makes you more inclined to cheat at a game—but thinking about time keeps you honest.

The bottom line is that our sense of right and wrong is heavily influenced by seemingly trivial variables in memory, in our bodies, and in changes within our environment. This doesn't necessarily lead us to pessimistic conclusions about humanity—in fact, knowing how our minds work might help us to make better moral decisions.

Anyone can cultivate empathic skills—even psychopaths.

In daily life, calling someone a "psychopath" or a "sociopath" is a way of saying that the person is beyond redemption. Are they?

When neuroscientist James Fallon accidentally discovered that his brain resembled that of a psychopath—showing less activity in areas of the frontal lobe linked to empathy—he was confused. After all, Fallon was a happily married man, with a career and good relationships with colleagues. How could he be beyond redemption?

Additional genetic tests revealed "high-risk alleles for aggression, violence and low empathy." What was going on? Fallon decided he was a "pro-social psychopath," someone whose genetic and neurological inheritance makes it hard for him to feel empathy, but who was gifted with a good upbringing and environment—good enough to overcome latent psychopathic tendencies.

This self-description found support in a study published this year by Swiss and German researchers, which showed education levels and "social desirability" seemed to improve empathy in diagnosed psychopaths. Another new study found that empathy deficits don't necessarily lead to aggression.

It seems that psychopaths can be taught to feel empathy and compassion, though they have a disability that makes developing those skills difficult. When a team of researchers looked at the brain activity of psychopathic criminals in the Netherlands, for example, they discovered the predictable empathic deficits. But they also found that it made a difference in their brains to simply ask the criminals to empathize with others—hinting that empathy may be repressed rather than missing entirely in people classified as psychopaths. For some, at least, it may help a great deal to lift that repression.

Psychopathy remains an intractable mental illness and social problem—this year's studies of treatment did not reveal a magic bullet that would turn psychopaths into angels. But we can take heart in the fact that if they can develop empathic skills, anyone can.