

ing contracts over into the next quarter to boost results then? "What happens if it's the final Thursday in a quarter, and you have already hit your quarterly target, and your fax machine comes through with a couple more contracts that were just signed? Do you need to process those now or should you just go out, have some drinks with friends, and celebrate, and wait to process those on Monday to start the next quarter out strong? In the real world," reports Soltes, "most people wait until Monday."

"You don't blow past your targets," he continues, conveying student reactions, "that just raises expectations and creates more work. Most people want to take it easy. That is manipulation in the same way, but now instead of overstating earnings, which everyone recognizes as wrong, you are understating performance." There are legal ways to manage earnings—accelerate a release, postpone a writedown, reevaluate a pension assumption—and there are others deemed illegal by courts, such as backdating a sale from a Monday to the previous Friday, which landed eight people in jail at Computer Associates. Soltes says he tells these stories to teach his students humility. Many of the people he writes about went to the Business School, the Law School, or the College. They are more like than unlike the students he sees every day.

But Soltes does identify patterns of misconduct that could help his students avoid similar mistakes. In many of these crimes, the perpetrators don't perceive the harm. Operating on intuition, often under pressure to make quick decisions, with no apparent victim in view, they miss the significance of signing a document or approving a strategy that on reflection might seem questionable.

He also advocates strategies for avoiding such mistakes. His favorite example involves venture capitalist Ben Horowitz, who routinely consulted an outside legal adviser whom he trusted—a practice that saved him from jail. For a software company he'd founded, Horowitz hired a talented CFO who suggested that, to be more competitive, the firm ought to backdate options as part of executive compensation, a practice that had become common among technology companies in the 1990s. Her previous employer's legal counsel and their auditors had designed the process and said it was acceptable, whereas Horowitz's adviser from outside Silicon Valley told him, "I've gone over the law six times and there's no way that this practice is strictly within the bounds of the law." (A few years

later, the CFO briefly went to prison for her involvement in backdating options at the previous company, Soltes reports.) Horowitz believes he avoided prison only because he had good counsel, good luck, and "a good compliance system," says Soltes. That story "has resonated with me more than any other," he continues, "because it shows that staying on track is not always about one's moral compass or having 'good values.' Instead, avoiding consequential mistakes is sometimes simply knowing where we might unexpectedly go astray, and putting in a place a system—like review by an outsider—to prevent missteps."

Uber offers another kind of example that reflects how technology sometimes outruns regulatory frameworks. The company, which Soltes calls "a remarkable firm that upended

the transportation market," and "one of the most valuable" of the twenty-first century, "clearly skirted laws and regulation in the United States and abroad," he points out: "two of their executives in France" have been convicted of violating transport and privacy laws and fined. "Sometimes being innovative and skirting the law will make you an Uber," he says, "and sometimes being too aggressive will lead to the same end as Enron and Jeff Skilling [M.B.A. '79], who has been sitting in prison for nearly a decade. Figuring out which side of that line you're on, students learn, is sometimes hard." ~JONATHAN SHAW

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#### BENEFITS OF BLISS

## Can Happiness Make You Healthier?

**I**N THE QUEST to study human happiness, including its causes and effects, even agreeing on a definition is a formidable undertaking. Joy, euphoria, contentment, satisfaction—each of these, at times, has been used as a proxy or emphasized in research studies.

Studies that probe the link between happiness and health outcomes are still relatively rare in scientific work, but the new Lee

Kum Sheung Center for Health and Happiness at the Harvard T.H. Chan School of Public Health aims to change that as it pursues a new approach to health maintenance: focusing on specific factors that promote the attainment and maintenance of high levels of well-being. In this, the center represents a sharp departure from traditional medicine that focuses on risk factors and



treatments for disease. Among the center's first goals: to catalog and standardize the measures used to describe and evaluate happiness and related factors. "There are more than 100 different measures already in use for the various forms of well-being," says Laura Kubzansky, the Lee Kum Kee professor of social and behavioral health. "And it may be that the instrument we need for our research does not yet exist." Happiness, after all, is a term that encompasses physical, emotional, and social factors. Although the different facets of well-being frequently occur together, measuring one does not always shed light on whether the others are present; thus, different measures may be needed to capture these distinctive facets.

The researchers also hope to solidify evidence that emotional health influences physical health, and not just the other way

## "Happiness" encompasses physical, emotional, and social factors.

around. This notion was challenged last year, when *The Lancet* published a study finding no connection. But critics (including Kubzansky, who coauthored a letter of response in the same journal) took issue with the study's methodology, noting that in adjusting for self-rated health (which is partly defined by emotional well-being), the study's authors essentially adjusted for the very factor they were trying to investigate as a predictor.

The debate exemplifies the tension underlying research in this area: the public seems to find the subject enormously compelling, but some segments of the scientific community remain skeptical. Kubzansky and her colleagues aim to amass enough evidence of biological connections between emotional

and physical health that eventually the link will be taken for granted, much as exercise is generally regarded as beneficial.

Yet even if that link is established, how can it be applied? If some people are innately happier than others, are the latter doomed to ill health? To answer such questions, the researchers seek to identify social policies that may be relevant as well as to test interventions with the potential to increase happiness: exercise, mindfulness, and cultivation of a positive mindset, for example. Other studies will aim to establish best practices for corporate wellness programs by testing their efficacy.

Another prong of research will be led by Kasisomayajula "Vish" Viswanath, Lee Kum Kee professor of health communication, who studies the impact of movies, television, advertising, and social media

on health and happiness. For example, watching or reading news with a focus on negative events such as war, terrorism, and crime may influence people's sense of well-being: "If you feel that the entire world is coming apart, that affects your emotions," says Viswanath. Researchers will also investigate how media can be used to positively influence happiness and health.

Research about happiness gets headlines more readily than grant funding. Kubzansky notes that to date, her projects—including studies of veterans that link post-traumatic stress disorder with poor heart health and a positive outlook with improved heart health, and studies of older men that link hostility with diminished lung function—have capitalized on existing data. That allowed her to conduct work on this topic without the level of grant support that an original study design and data collection would require. That

is why the \$21 million underwriting the new center—a gift of the Lee Kum Kee family, whose Hong Kong-based companies make products such as sauces, condiments, and herbal supplements—is critical to investigating the relationship between happiness and health. Such research represents a paradigm shift, Viswanath explains, and that has been one reason for funding challenges. Until very recently, he says, "We have always treated health as the absence of disease"—and the existing funding framework for both government investment and private philanthropy focuses principally on understanding and preventing specific diseases.

The new center will focus instead on factors that can lead to positive outcomes. "Unhealthy lipid profiles, high blood pressure: these are biological processes that have been shown to lead to poor health," says Kubzansky. "The question is, are there biological processes that we have not yet identified, or that we don't characterize well, that lead to better health?" She and Viswanath envision the center as a place that brings together researchers from Harvard and beyond, complete with funds for pilot-testing ideas that may generate the initial data necessary to obtain support for full-scale studies.

"People focus on problems because that's what catches our attention, and people want to solve them," says Kubzansky. But she is optimistic that the culture will begin to shift, thanks to the new center: "My hope is that with a convening platform to pull people together, we'll be able to change how people think about health," and how to maintain it throughout their lives. —ELIZABETH GUDRAIS

LEE KUM SHEUNG CENTER FOR HEALTH AND HAPPINESS WEBSITE:

[www.hspf.harvard.edu/health-happiness](http://www.hspf.harvard.edu/health-happiness)

### MODULAR ANTIBIOTIC ASSEMBLY

## Super Drugs for Super Bugs

LAST SPRING brought alarming reports of the first known case of a germ resistant to colistin, considered an antibiotic of last resort. The bug, a strain of *E. coli*, was found in a culture taken from a Pennsylvania woman with a urinary tract infection. Thomas Frieden, director of the Cen-

ters for Disease Control and Prevention, responded by warning that "the medicine cabinet is empty for some patients," with few new antibiotics in development to fight drug-resistant super bugs. As of 2013, only four international pharmaceutical companies were still attempting to produce new

options; in May, *The Economist* noted that, given the expense of drug development, companies prefer to focus on medicines for chronic diseases such as high blood pressure, which patients take indefinitely.

The Pennsylvania woman's infection happened to respond to other existing antibiot-