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To Your Health

On the road to happiness, a pleasant surprise beats a sure thing



By Meeri Kim August 8

Pharrell Williams accepts the award for video of the year for “Happy” during the 2014 BET Awards in Los Angeles June 29. REUTERS/Mario Anzuoni

Do you remember the last time you were dreading something, only to have it turn out to be a pleasant surprise? Maybe it was a bad summer blockbuster you were forced to watch, or a blind date set up by your parents.

You turn up, grumbling and prepared to hate every second of it. But then a funny thing happens: You crack a smile—laugh out loud, even—and before you know it, you’re having a grand old time.

It turns out that the element of surprise has a big impact on how we feel from moment to moment and that we’re

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happier when satisfied unexpectedly instead of certain of a positive outcome in advance, according to a new mathematical model of happiness. A [study of this was published online Monday](#) in the Proceedings of the National Academy of Sciences.

“Happiness is not about how well you’re doing in general, but rather if you’re doing better than expected,” said study author and neuroscientist [Robb Rutledge](#) of the Max Planck UCL Centre for Computational Psychiatry and Ageing.

For instance, say you go to a restaurant where the food was the best you’ve ever had. According to the happiness equation, you would actually be happier at the end of the meal if you had expected it to be just average, as opposed to assuming it would be as delicious as it was.

“Most of our senses are much more tuned to changes in things than to levels, and the same is true for happiness,” said [economist George Loewenstein](#) at Carnegie Mellon University, who was not involved in the study. “This ensures that however successful we are, we are always going to be driving for more.”

But this doesn’t mean that having low expectations is the path to happiness, because the model also shows that such pessimism leads to discontentment while you wait for an outcome. So if you make plans with a flaky friend and assume he’ll cancel, you’ll take a hit on your happiness in the meantime, even if you experience a boost when he shows up on time.

On the other hand, imagine bubbling with anticipation about finally securing concert tickets to go see your

about finally securing concert tickets to go see your favorite musician.

“The whole day, you might be a little bit happier as a result,” Rutledge said, even if the performance eventually disappoints and causes unhappiness later on. “Before you find out the outcome, you’ll be happier if your expectation is higher.”

These two factors — degree of surprise and overall expectation — play a dual role in determining our momentary well-being, although Rutledge found that surprise matters more. His team is currently testing people with depression to investigate how their emotions deviate from the model, with the hope that such knowledge can somehow lead to better treatment options.

Using an MRI scanner, Rutledge and his colleagues first measured the brain activity of 26 subjects who played a gambling game. Even though the players on average earned a net profit, their self-reported happiness did not increase between the beginning and end of the experiment. In fact, there wasn’t any significant relationship between monetary earnings and happiness. What did contribute to happiness was having a good chance of earning money or getting an unexpected reward.

“We’re happy when we have a rosy view of the future, but we’re also happy that the present exceeds what our expectations were,” Loewenstein said.

Also, quite unsurprisingly, the model found that past rewards had less of an impact on contentment as time passed.

Using the MRI data, the researchers determined that signals from a region of the brain called the striatum could be used to predict how happy people would be at any given time during the experiment. They then created [a smartphone app](#) to test their model on a much wider audience – a total of 18,420 online participants.

The app featured the same decision-making game as the MRI experiment. Although the subjects were remote and anonymous, the results were still consistent with the model.

“All models are simplifications of reality,” said Loewenstein. “But their central insight that happiness depends on how reality pans out relative to expectation is a correct one, in my view.”

He noted that, while the idea behind the happiness equation isn’t new, the study is a “strong and interesting” piece of supportive evidence. But can we use this knowledge to boost our own well-being? Lowering expectations as a tactic has already been ruled out, but the study does hint at why you might not feel as elated after reaching an expected goal as you might think.

“People are always pursuing goals, and when they reach the goal, they don’t end up being as satisfied as they perceive they’d be—as if happiness is held out in front of us, and we never quite achieve it,” Loewenstein said.

On the other hand, he suggests that there might be some consolation in realizing that we are all hard-wired this way

in order
to keep us moving forward.

Kim is a freelance science journalist based in Philadelphia.