

November 9, 2007

SCIENCE
JOURNAL

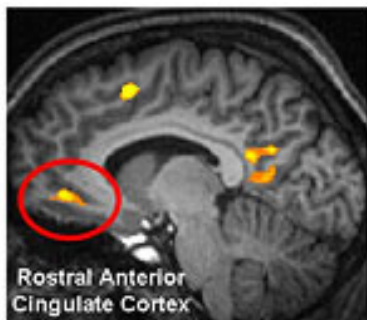
By ROBERT LEE HOTZ



Except in One Career, Our Brains Seem Built for Optimism

November 9, 2007

Calling someone an optimist these days may be the polite way to say he's a sap. Optimism often occupies a second-class compartment in the train of human values, and is derided as a naive, soft-soap disposition that distorts the realities of life.



New York University


An NYU brain imaging study showed greater activity in brain's rostral anterior cingulate cortex (top) and amygdala (bottom) when subjects imagined positive future events.

Yet, in the palette of human temperament, a rose-colored view of the future is the dominant hue, regardless of culture or nationality. Psychologists puzzle over this basic bias for the bright side. This sense of hope boosts consumer confidence, creates market bubbles and spurs irrational exuberance. "We don't know whether optimistic people are dumber or better than pessimistic people," said Martin Seligman at the University of Pennsylvania, who helped pioneer the study of positive psychology.

Two research teams exploring the anatomy of expectations offer a new perspective on the power of a positive outlook. For the first time, scientists at New York University have mapped the upbeat brain -- finding in a cluster of neurons the size of a martini olive the seed of a sunny outlook on life. At its core, the brain is built for optimism, their work suggests.

Far from deforming our view of the future, this penchant for life's silver lining shapes our decisions about family, health, work and finances in surprisingly prudent ways, concluded economists at Duke University in a new study published in the *Journal of Financial Economics*. "Economists have focused on optimism as a miscalibration, as a distorted view of the future," said Duke finance scholar David T. Robinson. "A little bit of

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optimism is associated with a lot of positive economic choices."

To detect its influence, the Duke researchers analyzed the U.S. Federal Reserve Board's Survey of Consumer Finances, a national balance sheet of what Americans own -- from houses and cars to stocks and bonds -- how much we borrow and how we bank. Normally, the triennial survey is used to frame discussions of tax policy, consumer debt and pension reform. The researchers used its data on personal predictions of life expectancy to sort the nation's optimists from its pessimists.

LOOKING ON THE BRIGHT SIDE



Recommended Reading:

At the [NYU laboratory of psychologist Elizabeth Phelps](#),¹ neuroscientists investigate how emotion, learning and memory shape our decisions.

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Duke University economists Manju Puri and David T. Robinson analyzed [how optimism affects our economic choices](#)² in The Journal of Financial Economics.

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Writing in The American Psychologist, University of Pennsylvania psychologist Martin Seligman and his colleagues assessed [the development of the new field of positive psychology](#).³

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In "[Stumbling on Happiness](#),"⁴ Harvard University psychologist Daniel Gilbert surveys recent findings from psychology, cognitive neuroscience, philosophy and behavioral economics to explore the limits of the human imagination and its ability to preview or predict our future happiness.

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The broader mystery of how anger, fear, love and joy underpin our intelligence is the subject of "[The Emotional Brain](#)"⁵ by NYU neuroscientist Joseph LeDoux.

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JOIN THE DISCUSSION



⁶ Do you think optimism and pessimism are partly shaped by outside experiences? Or can it be entirely dictated by biology? [Share your opinion in a forum](#).⁷

forum.⁷

Optimists, the Duke finance scholars discovered, worked longer hours every week, expected to retire later in life, were less likely to smoke and, when they divorced, were more likely to remarry. They also saved more, had more of their wealth in liquid assets, invested more in individual stocks and paid credit-card bills more promptly.

Yet those who saw the future too brightly -- people who in the survey overestimated their own likely lifespan by 20 years or more -- behaved in just the opposite way, the researchers discovered.

Rather than save, they squandered. They postponed bill-paying. Instead of taking the long view, they barely looked past tomorrow. Statistically, they were more likely to be day traders. "Optimism is a little like red wine," said Duke finance professor and study co-author Manju Puri. "In moderation, it is good for you; but no one would suggest you drink two bottles a day."

Mapping brain behavior with an fMRI medical imaging scanner, NYU neuroscientists Talia Sharot and Elizabeth Phelps identified the neural networks underlying this optimistic outlook. Their work, published in Nature, was presented earlier this week at the annual meeting of the Society for Neuroscience in San Diego.

By studying neural activity in 15 healthy U.S.

volunteers, they learned that our brains imagine positive future events about our own well-being more intensely and vividly than negative possibilities.

These rosy thoughts triggered one key brain region most strongly. Called the rostral anterior cingulate cortex, this neural nub is active whenever we think of hopes and aspirations. "This region of the cortex may actually be taking information and transforming it in a way that creates this optimism bias," Dr. Phelps said.

The influence of optimism on human behavior is so pervasive that it must have survival value, researchers speculate, and may give us the ability to act in the face of uncertain odds.

Medical evidence is suggestive. Optimistic people at risk for skin cancer are more likely to use sunscreen. Optimistic coronary artery bypass patients are more likely than pessimists to be taking vitamins, eating low-fat foods and joining a cardiac-rehab program five years after surgery -- and living longer, studies show.

"If even half the time our actions work out well, our life is going to turn out for the better," Dr. Phelps said. "If you are pessimistic, you are unlikely to even try."

Indeed, the researchers suspect that the breakdown of this brain network may contribute to clinical depression. All in all, Dr. Seligman said, optimists tend to do better in life than their talents alone might suggest.

Except lawyers.

Surveying law students at the University of Virginia, he found that pessimists got better grades, were more likely to make law review and, upon graduation, received better job offers. There was no scientific reason. "In law," he said, "pessimism is considered prudence."

• Email me at sciencejournal@wsj.com⁸. For a discussion on this column, go to the [Science Journal forum](#)⁹.

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