

>> **NEUROECONOMICS**

Smokers' Choice

Certain people make decisions differently

Smokers tend to resist antismoking efforts that rely on "rational" approaches such as taxes, and researchers have pointed to confounding influences, including social factors and addiction. But differences in smokers' decision-making processes may also be at play.

A recent study from the Baylor College of Medicine found that smokers and nonsmokers react differently to news of how much they could have made in a stock-market game. The feedback was purely incidental: it offered no financial incentive to adjust one's investment strategy, yet nonsmokers were swayed by what might have been and changed their tactics. Smokers ignored the input, even though they processed the information in the same part of the brain as their nonsmoking peers did.

The study does not address whether smokers' behavior is a cause or an effect of their addictions but rather adds to a growing list of ways in which human beings sometimes ignore reason when it comes to decision making. In the book *Predictably Irrational* (HarperCollins, 2008), behavioral economist Dan Ariely of the Massachusetts Institute of Technology catalogues a bevy of errors, biases and otherwise illogical human behavior. Other behavioral economists are doing the same on the premise that these absurdities are understandable, and they are just beginning to team up with neuroscientists to try to tease out the roots of decision-making biases in the brain.

The hope is that this knowledge will one day inform policy. To combat smoking, for example, policymakers could "use evidence of what brain areas are active during the [decision-making] process to design other strategies" more nuanced than taxation, says behavioral economist Colin Camerer of the California Institute of Technology.

The field of neuroeconomics is in its infancy, however. Neuroscientists agree with behavioral economists that in the future it will be possible to use our irrationalities to our advantage, but as for whether their work could soon steer policy, "I think it's just too early" to make a decision, Ariely says.

—Lucas Laurson



■ The "runner's high" phenomenon may be widely known, but until now there was no evidence (other than athletes' anecdotes) that the effect actually exists. Neuroscientists at the University of Bonn in Germany finally confirmed with a new type of PET scan that strenuous exercise indeed releases a flood of endorphins in the brain, likely causing the widely reported euphoria that follows a hard workout.

■ **Anticipating** a good laugh whisks away stress, say scientists at Loma Linda University. The researchers told one group of men that they would be watching a funny video; a second group was offered some magazines. As suspected, the group that got the comedy had much lower levels of stress hormones such as cortisol than the magazine crowd did. Most surprising: the video viewers' stress levels dropped before the film had even begun.

■ The dreaded "sex talk" has long been an awkward tradition for moms and dads, but a growing body of research shows that many such conversations are better than one. The latest study, published in the March issue of *Pediatrics*, found that when parents repeatedly brought up sexual topics, their adolescent children reported feeling closer to them and more comfortable talking with them about personal issues. Previous studies have shown that kids who have closer relationships with their parents have sex later in life and are more likely to use contraception.



wasps supports and refines that theory: it seems that dominant individuals have larger brain regions responsible for higher-order cognitive processes.

Biologists at the University of Washington observed the behavior of paper wasps (*Mischocyttarus mastigophorus*) in the Costa Rican rain forest and then measured the size of their brains. The researchers found that the so-called mushroom bodies, the lobes that underlie learning and memory in insects, were larger in dominant wasps than in their subordinate peers.

Mushroom bodies are the insect equivalent of the human neocortex, the outer layer of our brain, which handles complex cognition. Scientists have already established that the neocortex and the mushroom bodies are larger in social species such as humans and wasps, as compared with solitary animals such as bears and lone spiders. The new study suggests that competition for rank may have been a key factor in the evolution of this intelligence.

—Peter Sergio

>> **EVOLUTION**

Big Brains Dominate

Waspish clues to human smarts

Experts have long suspected that complex social interaction drove the evolution of large brains in humans. Now a study in

GETTY IMAGES (top); MITSUHIKO IMAMORI/Minden Pictures (bottom)