When Your Brain Goes Shopping

by Martin Enserink on 4 January 2007, 12:00 AM | Permanent Link | 0 Comments

That new iPod looks terrific ... but $249 is a lot of money. To buy or not to buy? A new study sheds light on how your inner consumer makes such existential choices.

Observers of human behavior have long wondered what motivates people when they shop. Some theories say that shoppers weigh the anticipated pleasure of a purchase against the inevitable "pain" of parting with some of their money, while others have suggested that people weigh the benefits of a purchase against the benefit of buying something else. "It's sort of good-versus-bad, or good-versus-good," says Stanford neuroscientist Brian Knutson.

So Knutson, along with colleagues from the Massachusetts Institute of Technology in Cambridge and Carnegie Mellon University in Pittsburgh, Pennsylvania, had 26 volunteers make a series of rapid purchasing decisions with their heads inside an fMRI-scanner. On a screen, the subjects were shown a series of attractive products, such as an MP3-player, a *Sex and the City* DVD, a box of Godiva chocolates, or a Stanford T-shirt. To simulate a real store, the subjects first saw the item alone for a few seconds, then the price, after which they had to choose: Buy it or not? To get them into a buying mood, each was given store credit; and to make the stakes more real--without bankrupting the lab--participants actually got to keep a few of their purchases. After the scan, they were asked how much they liked each product, and what they'd be willing to spend on it.

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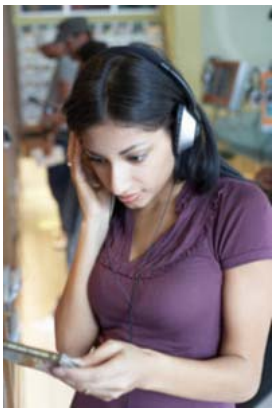

Tough choices?
The brain weighs the pleasure of a purchase against the pain of losing money, a study suggests.

Credit: Jack Hollingsworth / Photodisc Green

The researchers found that when subjects liked a product, the region in their brain called the nucleus accumbens--a part of the striatum, which had previously been associated with the anticipation of gains--was activated. On the other hand, when they judged the price of an article as too expensive, a region called the insula was activated while another called the mesial prefrontal cortex was deactivated--two phenomena previous studies have linked to the anticipation of loss and pain. Together, the findings provide evidence for the "good-versus-bad" theory, says Knutson.

Neuroscientist Alain Dagher agrees. "It's a very simple and very elegant study," says the Montreal Neurological Institute researcher, who wrote a commentary that appeared alongside the paper itself in today's issue of *Neuron*. Although pushing buttons in a lab isn't quite the same as visiting Macy's, he says, "they really tried to simulate the shopping experience while people were lying in the magnet." The nucleus accumbens has also been implicated in addictions, Dagher points out, so a logical next step would be to see if people with addictive shopping behavior have different activation patterns than do others.