Pushing Your Buy Button
Neuroscience Meets Marketing

ALSO
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Getting Ugly With The Trial Lawyers
In Search of the Button

What makes some products irresistible? Neuroscientists are racing to find the answer to that question and to pass it along to consumer marketers.

By Melanie Wells

It could be a scene from a new age of sales. Eight young women squirm under electrode-strapped caps in a dark, small room in Greenwich, England. "Relax," intones Nicholas Coomans, a market researcher. "Imagine you are sitting on your own sofa for 30 minutes of TV." Coomans turns off the light and slips into an adjacent room so he can watch as the subjects take in a taped sitcom and six commercials. Coomans and his colleague, cognitive neuroscientist João Neves, aren't watching for facial expressions, body language or verbal feedback. They're interested only in their subjects' brains, which are abuzz with electrical activity, recorded as rows of squiggly lines crawling across the screen of a Dell laptop. The electroencephalograph picks up cognitive functions in 12 different regions of the brain, showing memory recall and the level of attention paid to visual and aural stimuli.

Are the subjects really focusing on pitches for Kit Kat candy, Smirnoff vodkas and the Volkswagen Passat? Are they forming emotional attachments to these products? Unlike the people answering questionnaires or participating in focus groups, brainwaves don't lie. An activity spike in the left prefrontal cortex—an "approach" response to the image of a Kit Kat chocolate bar—would suggest the subject is attracted to the brand image or message. When the right prefrontal cortex gets jumpy, it indicates, in this experiment, instinctive revulsion to an obnoxious, tongue-wagging character who pops up in a commercial for Carling beer.

When researchers zero in on electrical activity in yet another area, they can tell which parts of commercial messages, if any, are encoded in the experimental subjects' long-term memories. "People who are more likely to purchase a product show significantly higher memory encoding than
Neuromarketing

those who are less likely,” explains Richard Silbertstein, a neuroscientist at the Brain Sciences Institute at the University of Technology in Melbourne, Australia. He developed the headset used in the study.

Using machines that detect brain tu-

ters and strokines to determine whether

pink and...w...will...out...black

oes if...of...life...likes...pils...on...hamburgers...could...this...yield...practical...re-

ults? Some big marketers are sufficiently intrusted to put research money into the idea. Among the companies looking into whether brain signals can supplement or replace traditional tests of consumer re-

sponse to commercials are General Motors, Ford of Europe, and Cadbury, the U.K.’s national lottery operator.

Advertising, for the moment, remains more art than science. Brand marketers have tried appealing to people’s emotions as well as to their sense of reason. They’ve tried guilt, anxiety, envy, fear, humor and suspense. There’s no guarantee that they’ll hit the mark by decoding synaptic firings and manufacturing illusions in blood flow images.

But they can try. Neuroscientists say that by prodding inside your head they can tell whether you identify more strongly with J.R. Rowling’s Harry Potter, say then with J.R.L. Tolkien’s Frodo. A beverage company can choose one new juice or soda over another based on which flavor trips the brain’s reward circuitry. It’s conceiv- able that movies and TV programs will be vetted before their release by brain-imaging companies. A “fascinat-
ing” possibility, says William Raduchel, until recently the chief technology officer at Act. Time Warner, who explored using MRI technology for that purpose last fall. “It’s a little like mind reading,” says Henrik Walter, a neurologist and psychiatrist at the University Clinic of Ulm, Germany, where he conducts brain-imaging work for DaimlerChrysler.

All this is moving toward an elusive goal: to find a “buy button” inside the skull and to test products, packaging and advertising for their ability to activate it. So far, researchers are figuring out which brain states facilitate product recogni-
tion and choice; they’re related to primal urges like those for power, sex and suste-

nance. As for brand loyalty, it turns out that memory and emotion play a big role. “In the not-too-distant future, firms will be able to tell precisely if an advertising campaign or product redesign triggers the brain activity and neurological release associated with memory and action,” predicts James Bailey, professor of organizational behavior at George Washington University.

Fools have been trying for decades to decode what motivates shoppers. Economist and social critic Thorstein Veblen took a crack at it in The Theory of the Leisure Class, the 1899 classic that wryly poited the theory of “comparative consumption,” his phrase for keep-


Pushing Your Buttons

ing with the Joneses. In the 1960s George Gallup began polling people and pondering his findings to companies desperate for information about buyers. Twenty years later big ad agencies were tapping psychologists such as Ernest Dichter, founder of the Institute for Motivational Research. Some of Dichter’s preachings—among them that marketers should offer absorption to con-

sumers who indulge in guilty pleasures like smoking cigarettes or eating sweets—seemed laughably simple today.

If the furtive scent hasn’t changed, the tools of the trade have. There’s eye tracking to monitor what people look at on a page or screen and for how long, measuring pupil size, skin response—changes in the elec-

dro-muscular resistance, that is—can gauge emo-
tional involvement. “So much of what drives our behavior happens without our awareness, how can business learn what people don’t know they know? This is where these tools fit in,” says Gerald Zalt-

man, a professor emeritus at the Harvard Business School and author of How Customers Think.

No tool gets more use than the Zam-

port-11e functional magnetic resonance imaging machine, which takes neural

cross-shopping to a new level. The $2.5 mil-

lion device uses a large magnet to induce radio signals from chemicals in the brain and thereby monitor blood flow. It differs from the MRI of medical tests in making moving images rather than still ones. Thinking during tasks shows up in color in cross-sectional images, recorded as the subject lies with his head inside the scanner.

There are downsides. One is that the confinee must spoon chlorophyll, possibly disturbing their reactions to stimu-

lants. The other is that brain imaging is ex-

pensive. The moving image-MRI rents for $1,000 an hour at Emory University in At-

lanta, a single experiment, which includes at least 12 subjects, can cost $50,000.

But much as it is sizable: $1.1 billion was spent last year on advertising in the U.S., not to mention $6.6 billion on, among other things, focus groups, opinion polling and ad and market tracking (says inside Research newsletter), or the undisclosed sums invested in 22,000 new consumer pack-

aged goods per year.

As companies continue to learn about how our brains work, they will try to alter-

ulate areas involved in preferences, pur-

chasing decisions, even aspirations. Using MRI and other technology, DaimlerChrysler’s research center in Ulm is study-

ing the brains of drivers as they interact with cars. Some of that work is to design navigational and warning devices for a safer vehicle. Some is driven by the pure marketing goal of seeing how drivers’ brains respond to spe-

cific images of autos. Daumier

knows, for example, that when people look at the front of a sports car, a part of the brain that responds to faces—in the back of the brain where the centrum molecules—the cerebellum—comes alive. This may help because the headlights are eyelike. Could the Mini Cooper be so successful partly because its “face” reminds some peo-

ple of a friendly cartoon character? You don’t need a Ph.D. to put the more mundane aspects of psychomarketing to work. Market Connections International, a small firm in Montclair, N.J., pitches “envi-

ro-consumer-conditioned marketing” to such clients as College-Paladine, Kraft Foods and Underover Group. It distributes product samples to vacuumers to create a mental association between the product and vac-


uum.” If you introduce a product to peo-

ple on vacation when they are in a good mood, and they feel that in a store later—

—this comes back to the way the bell worked with Pavlov’s dogs,” says Bailey, the professor at George Washington University

Memory plays a critical role in product choice. In a recent shopping study con-

ducted by the Open University in Milton Keynes, U.K. and the London Business School, scientists found that when shoppers are asked to make a choice among various and closely related items in a grocery-store-

like setting, the areas of the brain involved in memory light up like a July 4th nighttime sky. When buyers choose a brand they really care about, neural activity suggests that they are making an emotional choice based on past experience, says Steven P.R. Rose, a pro-

fessor of biology and director of brain and behavioral research at the University. This work was funded by a supermarket and three other companies Rose won’t name.

Companies of all types, among them Kilgorg and Proctor & Gamble, are more interested than ever in probing emotions. The cereal maker recently hired cognitive psychologist Angela Festante Wehrm to research the reactions of young boys about food. Result: Instead of pitching Special K simply as a low-fat breakfast food, Killogg is featuring orange women caught between polar passions for doughnuts and great-

looking legs. Illo has looked into the ques-

tion of whether consumers harbor secret feelings toward the types of people on their box, p. 70). Loopy or no, the assumptions are born out of brain research. Neurologist Antonio Damasio, a professor at the Uni-

versity of Iowa College of Medicine, sug-

gests in his book Descartes’ Error that emo-

tion is critical to effective thinking and decision making. That may explain why of- fers of $500,000 were thrown at two 1994 fi-

nancing on cars—which appeal strictly to cold common sense—sometimes backfire. Believe it or not, there are some papers that play a part. Gregory S. Berns, a psychiatrist at Emory, is using brain imaging to demon-

strate the effects of peer pressure on indi-

vidual perception, with the idea of ex-

plaining the development of bad, from investment trends to the popularity of Burberry plaid and belly button rings. There is probably some reward to kick in conforming to a group,” says Berns, who believes most buying decisions are driven by the subconscious.

Berns recently put 30 subjects into MRI machines, where he asked them to com-

pare 34 pairs of abstract three-dimensional images and decide if they were alike or dif-

ferent. Throughout the 75-minute test par-

ticipants were shown responses given by four other subjects, while the MRI machine mapped 1,000 brain images.

This reporter lay down as a guinea pig. While in the scanner she was shown re-

sponses of four other subjects to the pairs of objects. After being shown them herself, then performed the mental notation required to evaluate the images. Lemming like, she usu-

Anxiety Guilt Logic Lust Envy Nostalgia

F O R B E S • September 1, 2003

F O R B E S • September 1, 2003
fertility goddesses, sex sells.
Soda has an interesting effect on our heads, too. A century after Coca-Cola took a cut out of its flagship beverage, neuroscientists are learning that soft drinks still work like the illicit drug—as well as like fat, salt, sugar—on our brains. If Edward Montague, a neuroscientist at Baylor College of Medicine in Houston, has demonstrated that subjects' brains register a preference for Coke or Pepsi that correlates with the product they choose in blind taste tests. (His study is not funded by the cola giants.) The brain of "Subject P" on the scanner in the Human Neuroimaging Lab, for instance, shows he is a Pepsi lover. After he got 35 alternates, but unidentified, spirits of Pepsi and Coca-Cola through a pacific-like device while he was in a scanner, blood flowed to areas of his brain involved in reward and decision making, but primarily after doses of Pepsi. In the neural taste test of 40 subjects, Montague found that kind of response less powerful with Coke.
So why does Coke outsell Pepsi? It has to do with the power of branding. Researchers are starting to decode the neural signature for brand preference. Justine Meaux, a neuroscientist at the privately held BrightHouse Institute for Thought Sciences in Atlanta, says the medial prefrontal cortex is active when people behold images of things to which they are extremely attached. In a recent BrightHouse Institute study, 30 subjects were put in MRI scanners and viewed images of products, people and activities—rock climbing, President Bush, BMWs and the National Enquirer, among them. "Preference has measurable correlates in the brain, you can see it," says Meaux, whose company charges on average $250,000 for such a study.
Companies can calibrate changes in preferences over time. It may help them engineer more durable brand loyalty. "This stuff is objectively measurable, and there are differences we can see to help guide our decisions in how we market to people," Meaux says. "We can see how we can change our behavior so someone will want to align with us."

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There are a lot of emotiional associated with toilet paper," says G. Christine Rapaille in thickly accented English. "You can reject your family—Mommy, stay outside—and they praise you! Wow!"

Marketers like Procter & Gamble, maker of Charmin, can't get enough of such insights, which explain why Rapaille, 62, is in hot demand. A believer in the collective unconscious of consumers (and a former child psychiatrist), Rapaille is able to capture regular folk into offering up their deepest feelings about and memories of everything from used diapers to toothpaste. The latter apparently appeal to rooms, for whom cleanliness plays into a "repulsive" desire to make sure their games survive. "You're not just cleaning the table," says Rapaille. "You are saving the whole family."

Research by Rapaille's Boca Raton, Fla. company, Archetype Discoveries Worldwide, starts with a three-hour-long session, during which he turns off the lights, plays a 20-minute relaxation tape and invites subjects to recline on the floor. "When they awake, they scribble their first memory, most powerful experience and last experience with a product, like Jack Daniel's (for Brown-Forman), or a social issue, such as teen pregnancy (for Johnson & Johnson). "They remember things impressed before they could speak," says Rapaille, who wears his name-colored hair in a pompadour. "It's just amazing."

So are his fees: $200,000 for a study like the one on paper products; $250,000 for a 45-minute lecture; $25,000 for a group session (for companies like Procter & Gamble). On an issue such as America-saving in Europe.

Clients such as Rapaille's revelations—delivered orally, never in writing—to design products, packaging and advertising. The key is devising a "code" for a brand or company—"independence" for toilet paper or "home" for coffee—which the client can turn into a commercial metaphor. For instance, Rapaille says Daimler-Chrysler's use of a dog in a recent print ad came out of a brand study by Archetype. Booz has hired Rapaille to conduct 15 studies in recent years. R. Blake Emery, a psychologist and director of differentiation strategy at Booz Commercial Airlines, is a big fan, even though he admits Rapaille's method "smacks of some weird California woo-woo thing." The insights might yield results in a new airplane, the Dreamliner, due in 2008.

—M.W.
In search of the inside story of economics

Researchers are scrutinizing brain scans to understand how we make complex—and seemingly rational—decisions, writes Tim Harford.

Let's play a game of making reciprocal exchanges. People earn points in the game and can redeem them for small gifts. The more points you earn, the larger the gift you get. It seems fair. But what if I tell you that the person with whom you play also has a way to cheat, but you have no idea how they do it? If you double your score, but I double mine by a factor of three, the game is unfair. No matter what you do, I will always win.

While these situations are hypothetical, they are also real and can be very challenging. They test our ability to make decisions that are not necessarily rational. In fact, many people have a habit of making reciprocal exchanges, but it is often not the best strategy.

Many studies have shown that people who make reciprocal exchanges often end up with less points than those who make non-reciprocal exchanges. This suggests that people are more likely to cheat when they expect to be cheated.

The story is not all bad. In fact, it is often more profitable to cheat. This is because the person you play with is not going to know how you cheated. They are only going to see the results of your actions.

So, let's say that you have a chance to cheat. What should you do? Reflection. If you cheat, you will likely earn more points. But if you cheat, you will also likely lose the game. The best strategy is to cheat only occasionally, but when you do cheat, make sure to double your score.

This strategy is based on the idea that everyone is rational, but that everyone is not always rational. This is called the Nash equilibrium. It is a situation where everyone is doing the best they can, but no one is doing the best they can.

To be fair, this strategy is not always the best. Sometimes, it is better to cheat more often. But, overall, this strategy is often the best.

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Does Money Make You Happy?
By Gregory S. Berns

$4.95 December 2005
WHAT PRICE JOY?

CAN YOU BUY HAPPINESS? IT'S NOT CASH ITSELF THAT BRINGS A SMILE, BUT THE POTENTIAL EXPERIENCES THAT MONEY REPRESENTS.

BY GREGORY S. BERNS

PART OF THE PROBLEM WITH money, at least in terms of satisfaction, is that, by itself, it can't do anything. A $10 bill, after all, is just a piece of paper backed by the promise of the U.S. government to make good on its debts. But $10 will get you a pancake breakfast, or a first-run movie (as long as you don't see it in Manhattan, or buy popcorn), or a used book. Depending on your point of view, $10 can yield 30 minutes of satisfaction at the breakfast table, two hours of escapism at a movie, or 20 hours of bliss with a good book. Conventional economic wisdom would suggest that money is only as good as what you can turn it into. But the matter goes deeper than that, and it has to do with the brain's need for novelty.

The brain wants novelty, and although money is not the only means of satisfying this desire, money makes it easier to get. Many of the experiences people seek most avidly cost money—like an exotic vacation or a meal at a five-star restaurant—and there may even be an added value to money that goes beyond its ability to deliver raw transactional value. I call this fantasy value, and it is a big factor in why people play the lottery. By serving as a sort of placeholder for potential purchases, money becomes an intermediary step on the road to satisfying experiences. Show me a $10 bill, and I see pancakes, movies and novels all at once, and there is a certain amount of pleasure in dwelling in this state of possibility. This is perfectly fine as long as you don't lose sight of the goal, a satisfying experience. But experi-

SATISFACTION 101 QUIZ

1. According to British researchers, how large a financial windfall would it take to convert the most unhappy person into the happiest?
   a. £100,000
   b. £200,000
   c. £500,000
   d. £1,000,000
   e. £2,000,000

2. Approximately how long would each happiness last?
   a. 1 year
   b. 5 years
   c. 10 years
   d. A lifetime

3. Satisfaction is most closely associated with which neurotransmitter in the brain?
   a. Dopamine
   b. Serotonin
   c. Cortisol
   d. All of the above
   e. A & B only

4. What element makes for a once satisfying thing unsatisfying?
   a. Fat
   b. Alcohol
   c. Unusual visual and tactile combinations
   d. All of the above

5. Electrical stimulation of several areas of the brain reveals distinct pangs and pleasure centers.
   a. True
   b. False

6. The key to maintaining motivation in the long run is to:
   a. Perform intellectually demanding tasks that surprise peoples
   b. Exercise physically
   c. Drink heavily
   d. Have as much sex as possible

7. The satisfaction of running on a treadmill comes from:
   a. Sleep deprivation
   b. Keston (a by-product of fat metabolism)
   c. Insulin release
   d. Cortisol
   e. Dopamine

8. According to the National Health and Social Life Survey, the most satisfied women in the United States are:
   a. Married
   b. Having sex at least twice a week
   c. Usually having an orgasm during sex
   d. All of the above

Answers:
1. b
2. d
3. a
4. d
5. a
6. a
7. d
8. a

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Can you support the idea that happiness is fleeting and highly dependent on external factors?

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People are more adverse to risk the wealthier they become. The wealthy live with greater possibilities of loss than gain.

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Money—what economists call services—that cost less than $500. Now think of all the things that cost more. The first list is bigger. If we carry this to the extreme, we’d find that the list of things that cost more than $100 million is exceedingly small. The value of money is rooted in the number of its possible uses, but increasing the amount of money is a fool's game. Since most of the purchases you would want to make are relatively modest to price, increasing your supply of money is good only to a point. If you can afford a computer or a television, both of which can be had for about $500, then you have already achieved the peak of purchasing power.

Bernoulli knew that money had diminishing utility, but he never explained why. In the 1970s, Daniel Kahneman and Amos Tversky, both psychologists, showed that Bernoulli had missed a crucial aspect of the way people think about money. You view money not in terms of absolute wealth, they argued, but as gains and losses from your status quo. Moreover, people consider the pain of losing money to be worse than the pleasure of an equivalent gain. Kahneman and Tversky called this idea prospect theory, and it was based largely on observations of the kinds of lotteries people are willing to play.

Why should losses loom larger than gains?
black wrap party dress (built for two)

BIG IDEAS

The reason, I think, comes from the way the prices of all the goods and services in the world are distributed. Once you have enough money to buy, potentially, anything under $300, then increasing that amount also increases the number of possibilities—but at a diminishing rate. Conversely, if you lose the same amount of money, you close off a greater number of possibilities than you would have acquired had you gained the equivalent amount. Imagine how it feels to lose $500—say, the cost of a minor auto accident or an unexpected tax bill. You'll probably think about things you can no longer buy with the money (like a TV or a computer). Such thoughts explain why people are more averse to risk the wealth they become. The wealthy live with greater possibilities of loss than gain.

Economists hate this idea. Standard economic theory depends on the ability of consumers to establish preferences in terms of expected utility and not, as I just explained,

SPENDING MONEY IS NOT AS SATISFYING AS YOU MIGHT HOPE. THE ACT OF BUYING SOMETHING CLOSES OFF ANY NUMBER OF OTHER POSSIBILITIES.

by simply counting what they might buy with their money. But I can't be the only person who has a hard time guessing how much utility I will get from a high-definition television compared to a plane ticket to Hawaii (the two costs about the same).

Contrary to what most economists think, there is some evidence that people do, indeed, value having options. In an ingenious study, George Loewenstein, a psychologist at Carnegie Mellon University in Pittsburgh, examined the choices of Halloween trick-or-treaters. On Halloween 1993, kids coming to his house in

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ATLANTA DECEMBER 2002
Pittsburgh were offered a pile of candy bars and told they could pick two. All the kids picked two different candy bars. Now, everyone has a favorite candy—be it Snickers, Milky Way or Three Musketeers—so if people wanted to maximize the expected utility of their future consumption, they would pick two of the favorite bar. This behavior is not limited to children, either; college students acted the same way.

If it is the accrual of possibilities, and not just of material goods, that explains why people apparently wish to have more money, the notion also explains why spending money is not as satisfying as you might hope. The act of buying something closes off any number of other possibilities. You lose potential information during the act of a purchase, which psychologists call regret. You make decisions with one eye on the desired outcome and the other on possible outcomes (often referred to as “counterfactuals”). Thus the choices you make come, in part, from the desire to avoid regret. Buyer’s remorse—the sinking feeling that you shouldn’t have made a major purchase—occurs because you must also consider the other things you could have bought with that money.

The logic of this argument leads to two surprising conclusions. First, if you have enough money for basic needs, with some cash left over for modest discretionary purchases, then acquiring more money will lead to fewer, not more, possibilities on a per dollar basis. Second, once you earn enough to have discretionary money, you shouldn’t spend it. Having options is a good thing, and therefore losing options—when you spend money—is a bad thing.

If economists hate the suggestion that people don’t, in fact, compute expected utility but rather count potential purchases, then what I have just said will strike them as daft. Economists will point to the fact that people struggle to increase their income so that they can spend their earnings on bigger and fancier items. The question on my mind, though, is not what most people do with money but why money doesn’t lead to lasting improvements in well-being for most people.
Best books ... chosen by Temple Grandin

Temple Grandin, a professor of animal science, is the author of the memoir Thinking in Pictures and the 2004 best-seller Animals in Translation, which is now available in paperback.

**Our Inner Ape** by Frans de Waal (Riverhead, $15). This recent book provides tremendous insight into both human and animal behavior. In it, de Waal, a primatologist, compares the peaceful bonobos to chimpanzees, who sometimes engage in vicious wars. His most hopeful message: Peaceful behavior can be learned.

**Songs of the Gorilla Nation** by Dawn Prince-Hughes (Three Rivers, $13). An absolutely beautiful memoir in which a woman with autism emotionally connects with the gorillas at a city zoo. When the gorillas were tormented by the public, Dawn knew how they felt. She became a zookeeper and got her Ph.D. in animal behavior.

**Touched With Fire** by Kay Redfield Jamison (Free Press, $15). If all the genes that cause autism or bipolar disorder were eliminated, it would be a boring world. Many famous writers had mood disorders. When I read this 1993 book, it made me realize that abnormality and creativity are linked.

**In the Mind’s Eye** by Thomas G. West (Prometheus, $29). Unfortunately, I did not discover this wonderful book before I wrote Thinking in Pictures several years ago. I recommend it to teachers, parents, and education policymakers. West profiles people with dyslexia who are visual thinkers, and his conclusions on the link between visual thinking and creativity are similar to mine.

**The Emotional Brain** by Joseph LeDoux (Simon & Schuster, $14). I tell my students that you need to understand how the brain works to interpret both animal and human behavior. As a person with autism, my main emotion is fear, and this book explains how the fear circuits work in the brain. Many questions I’ve had about my own emotions are answered in LeDoux’s writings.

**Last Child in the Woods** by Richard Louv (Algonquin, $14). When I was a child I loved to play outside and collect rocks, climb trees, and build things. Children today have lost contact with nature, and I think that the lack of unstructured play may hurt their problem-solving abilities. Parents and teachers should read this book about “nature deficit disorder” and get children back outside.

### Also of interest ... in hunger and other human appetites

**The Sex Life of Food** by Bunny Crumpacker (Thomas Dunne, $25)

A book on the many nexuses between food and sex would be doomed without a strong dash of humor, said Julie Powell in The Washington Post. Fortunately, author Bunny Crumpacker has stuffed this “opinionated, book-length prose poem” with “gleefully strained,” unsupported statements, and her musings will surely give you a fresh perspective on your next meal.

**Curry** by Lizzie Collingham (Oxford, $28)

This “fascinating if digressive inquiry” into the history of curry examines Indian cuisine almost dish by dish, said William Grimes in The New York Times. Its author “scavenges at” the notion of authentic cuisine and instead shows how ingredients and ideas blend and improve while crossing borders. Thanks to a cache of charming cultural anecdotes, “even the dead ends” in this book “tend to be intriguing.”

**Satisfaction** by Gregory Berns (Holt, $24)

Gregory Berns is a working psychiatrist, but his pursuit of the formula for life satisfaction is “no plodding textbook,” said John Simons in Fortune. Adopting a “gamshoer approach to scientific theory,” he observes crossword contests, marathons, and even S&M clubs before concluding that new and challenging experiences are what make people truly happy.

**Vanilla Slim**

by Bob Armstrong (Carroll & Graf, $15)

Before he was thrown in jail, Bob Armstrong was making only about two grand a month pimping prostitutes in San Francisco, said Peter Hyman in the San Francisco Chronicle. So why did this well-read guy enter the business? Readers of this lively memoir may conclude that he “knew it might make an interesting subject about which to write.” But while his motives are suspect, he’s still a sharp observer of a seedy landscape.

**The Scavenger’s Guide to Haute Cuisine**

by Steven Rinella (Miramax, $24)

Intrepid journalist Steven Rinella gave himself one year to hunt down the animals he needed to prepare a 45-recipe feast to the world of 1903 French cookbook, said David Abrams in January Magazine. His account is more than edifying: It “turns out to be one of the most unlikely enjoyment of the literary season.”
Exploring grief
Douglas Trevor ’92 delves into loss in his debut short story collection
By Maria Lobiondo
The common denominator in the nine stories in Douglas Trevor’s debut short story collection is loss — of a loved family member, or of a former self. While safe from the same characters, Trevor goes beyond this emotion to the deeper feelings that surface when a loved one is in the fabric of one’s life, not security away. The title story in The Thief of the Fabrics of Space, published in October by the University of Iowa, involves a professor facing her own mortality while mourning the loss of her lover. A young writer in “Central Square” duplicates his deceased father’s decline into alcoholism, but finds redemption in Thoreau’s Walden and then seeks forgiveness from a Chinese woman he has wronged.
I wanted to move the reader through the bewildering of loss,” Trevor explains. “Grief is very hard to experience with others when you are experiencing it. It isolates the person experiencing it, unlike other emotions, like mirth, which connect us to others.” This is territory of the University of Iowa associate professor of English who knew well. He dedicated the book to his older sister, Jolee, who died unexpectedly in 1998 of an aneurysm. “The experience of dealing with Jolee’s death is behind every one of the stories,” he says. In writing them, he sifted through “how your world changes when a contemporary dies, how your view of the world shifts and never goes back.”
In the last, longest, most autobiographical story, “Fellowship of the Bored,” Jared, home from college for the first Christmas after his sister’s death, muses: “In the face of death, we become greedy for life: selfish and hoarding.”
“I am interested in self-consciously descriptive characters,” Trevor explains. “I am drawn to people who can recognize their own idiocies but who remain powerless to change them, in part because I think we all have a little like that.”
Trevor began writing stories in elementary school — his sister was his illustrator — and dabbled in playwriting in high school. But it was as a comparative literature major at Princeton that he says he felt he became a writer, working with Joyce Carol Oates and delving into Paradise Lost with the late Iowa associate professor of English.

What do we really want?
Gregory Berns ’86 finds we crave challenge and novelty
Sitting on a beautiful sandy beach, with a good book in one hand and a cold drink in the other, sounds pretty good. No stress. Although most of us may think that would make us content, think again, says Gregory Berns ’86. A neuroscientist who studies motivation, Berns believes that chasing such pleasures doesn’t get us what we really want. Instead, we would be better off seeking satisfaction. By satisfaction he means the feeling you get when you engage in a challenging and novel experience, be it taking up yoga, tackling a crossword puzzle, or learning how to play a musical instrument.
In his book, Satisfaction: The Science of Finding True Fulfillment, published by Henry Holt in September, Berns looks at the biology of satisfaction: what happens in the brain when we engage in challenging and novel experiences. He distinguishes satisfaction from happiness, the emotion we feel when something good happens to us, like winning the lottery. In fact, “a ton of research” has shown that money does not make most people happy, he says.
Satisfaction is active, happiness is passive, says Berns, an associate professor of psychology and behavioral sciences at Emory University.
The Government Manual for Lone Superheroes — MATTHEW DAVID BRINER ’93 and JACOB SAGER WEINSTON ’94 (Andrews McMeel). In this mod-mod cookbook, the authors offer tales of how to be your own superhero — find a niche, recruit others, and develop a loyal following. They also provide advice on how to market your superhero business.
Religious Leaders Confess and Their Female Peers, 1450 - 1700 — JUDI BILINKOFF ’83 (Cambridge University Press). In early modern Europe, when most male religious leaders felt they had to suppress their spirituality to retain their position, there were a number of female religious leaders who retained their spirituality and challenged the status quo.

The most of American democracy
Jefferson to Lincoln — JACOB WILLET (W.W. Norton). The author chronicles the rise of democracy and democratic principles in the United States from the Declaration of Independence to the Constitution to the Revolution to the Civil War. Willett explores politics at the state and federal levels in what a New York Times reviewer described as an “old-fashioned narrative” that is “nothing less than a monumental history.” Willett, a Princeton history professor, is a P A W board member. By I. E. G.
The Coach K & Fuqua School of Business Conference on Leadership at Duke University

THEME: Organizational Community: Cultivating Shared Purpose, Ownership and Success

Duke University, October 17-19, 2005
Convened by the Fuqua/Coach K Center of Leadership & Ethics (COLE)
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Get a name-brand bottle of wine: yours

These days everyone is shipping his name on a bottle of wine: Greg Norman, Bob Dylan, even Joe Montana. (A 1999 Montagia cabernet sauvignon, anyone?) Now, at least a few wineries are also making DIY wines across the country, more mortals can also become winemakers. At the newest of the bunch, Swirl's in downtown Dallas, the business model is simple: Visits start with a taste test — Swirl has close to 30 vintages — to determine their wine affinity. Then they choose a grape — say, the pinot noir from Yamhill County, Ore. — or the merlot from Stags' Leap in Napa Valley. Next they move over to a mingling station, where they pour the juice into a six-gallon barrel and stir in a few tablespoons of yeast. The mixture ferments for six weeks, though patterns are allowed to vary. "They can bond with their yeast and form a relationship there," notes Peggy Davis. Finally, customers design a custom label for their bottles. (One man brought in a photo of his horse and another client sketched her husband's initials. For those who are less artistically inclined, Swirl provides a couple of hundred templates of Tuscan hills, Spanish ladies, and the like.) Each batch reaps 20 to 30 bottles, and costs run from $179 to $359 per batch, depending on the grape. "You can imagine a situation where you have friends over for dinner and you serve a wine, and they say, 'Oh, yes, this is good,'" says co-owner Louis Davis. "And then you just whip out your bottle and say, 'Made it ourselves.'" — Boo Young

Terminal velocity

You might imagine that soaring ticket costs, virtues in fats, the specter of bankruptcy, and the chronic shortage of capital in the country are the key drivers of any major architectural statement, not American Airlines. The carrier is handing out big props to architects to entice them to throw their hat in the ring. Nearly every new $1.1 trillion, 1.5-billion-square-foot terminal at New York's JFK. Economics aside, does the terminal make a trip fun again? Not exactly. Efficiency does close this up, 24 self-service kiosks now greet the luggage bins, while passengers can check bags via 101 conveyor belt stations that feed into superfast "sprint" belt scanners. Then comes the lane security gate that can process 3,800 passengers an hour and lets in 36 gates. As for charm? There's a festive mural on the lower level by Houston-born painter Jean Claude Layoye, and the Admirals Club has N.Y.C. manhole covers in the show- er. Still, if the point of this all is to striking to avoid anticlimactic bankruptcy. — Oliver Wyman
Kraftwerk
- Minimum-Maximum
Before dismissing the recording of a Kraftwerk concert as an exercise in semantics, listen to the double-disc set. The band substantially reworked its cache of classics for last year’s world tour, as a result, nine-wave symphonies like “The Model,” “Numbers,” and “The Man Machine” are even more fun to compute. — Cast Cooper

Dungeon
- To Delight, Delight
Gustavo Elijio’s home-recorded masterpiece is a magic carpet ride through rock’s eclectic playground (psychedelic garages, prog, garage, and chamber, and classic) with enthralling forays into folk and jazz. Unless you speak Swedish, you won’t understand the lyrics. Don’t let that scare you away. — Ta Delight is one of the year’s top guitar albums. — Ken Taylor

Dungeon Siege II
This atmospheric fantasy role-playing game is surprisingly deep. It requires lots of strategic thinking and offers ample opportunities to mess up your characters’ abilities. Its moves are quickly as in an ‘80s arcade classic. Gameplay is a glorious blur of sword slashes, spell flashes, and the desperate cries of fledgling bosses. — Klausen Gilson

EyeToy: Play 2
Sony’s new bundle of 12 games makes excellent use of its Reality Camera, which lets players interact with onscreen objects. The highlights: Toxic Slime with a virtual fox in Knockout. Swing your arm around for surprisingly precise swinging in Table Tennis. And look back to avoid spotlights while surreptitiously picking locks in Secret Agent. — Paul Sene

Geek Chic: The Ultimate Guide to Geek Culture
- Neil Feinsemin
Fate’s book exhaustively chronicles games, from Dungeons & Dragons to Diablo. There are a few —  when objectionable entries (Brandon from Beverly Hills, 90210? Hello, David was the weird kid) — but the catalog’s near-religious zeal for dark boomerang is infectious and not to be missed. — David Downes

Satisfaction: The Science of Finding True Fulfillment
- Gregory Bird
Bird argues that the more unfamiliar things we encounter, the more our brains fire off dopamine. According to him, even great sex and food can be fulfilling if they’re new. Satisfaction can come from anywhere (karmic, crossword puzzles, S&M when the experience is novel). — Daniel Tendal

Battlestar Galactica (Season Two)
The remnants of the human race are leaving through space from evil robots. In the hands of the thralls who raised Star Trek, it’d be just another dumb sci-fi show. But the new Battlestar Galactica, the second season of which started in July, is something else entirely. The new episodes pick up an instant after the season one finale, with characters more aware of their reality, more confused, and more pitch-black, grandiose, and unforgettable. — Adam Rogers
Dowsing for Dollars

THE DIVINES (LITTLE, Brown), Rick Moody's first novel in seven years, is an unstoppable wrecking ball of a story that takes on dozens of characters and, through them, tackles the nature of media, narrative, self-perception, money, language, and decay in an increasingly insane culture. The title comes from the name of a nonexistent script for a miniseries about diviners—shamans of finding water—across human history, linking together an adventure story that spans epochs and cultures, from the Mongols on the steppes to the Mormons in the desert outside Las Vegas. The script, should it ever be written, will belong to a New York film company headed by the ambitious, melancholic, and Krispy Kreme-obsessed Vanessa. Her is a life constricted by loneliness, overeating, and an alcoholic Italian mother who hears voices no one else does, charting on imagined telephones in the morgue. Vanessa has parked her in. Vanessa's staff is a molage of lowlifes and ultracontemporary New York weirdos including a Sikh cabbie who, in his spare time, is also a media guru. This cast, as Moody focuses on each by turn, bring ancillary characters from their own lives into the chaotic but brilliantly rendered sprawl of the story. Such a far-ranging novel takes time to establish momentum—Moody's prose aims to capture the myriad voices we, like Vanessa's mother, hear in our heads—but when the story coalesces, it rockets across the landscape and holds the reader in the lock grip of its wise madness. Devastating in its comedy and penetrating in its deep seriousness, The Diviners stands now as Moody's best and most ambitious novel. Beneath the sharp humor resides a fine artist's growing despair at a world so inhospitable and injurious to love.
—ANCE PARSO

Old Loves
Seventeen writers revisit cherished authors and their own younger selves.

Revisiting a beloved book after many years can provide an intimate, even starting encounter with a former self. Who was the person who scribbled those notes in the margins in the immensely engaging essays collected by Anne Fadiman in Blueprints (Harper, Strous and Gartha)? Of authors tell us how revisiting a work they once admired made them realize how they and the world around them have changed since they first read it. Luc Sante revisits New Year's Eve in 1973, when a biography of Jimi Hendrix heaped him with the own masquerade. Patricia Highsmith recounts a passionate pilgrimage to Katherine Mansfield's hermit lodgings in France. David Sarnoff realizes that J.D. Salinger's Franny and Zooey means for more than they once seemed, while David Nichols remembers the summer he was fascinated and mystified by the liner notes on a Beatles album. Suffused with tenderness and nostalgia, consistently combining autobiography and literary appreciation, these essays will send you to your bookshelf to revisit these writer's favorites—and to reread your own.
—FRANCINE PROSE

Surprise, Surprise
A scientist probes the brain's need for novelty.

If Nick Zigler really can't get no satisfaction, then he's missing something more fundamental in life than "the usual suspects like sex, money, and status," as step Gregory Bateson, M.D., an associate professor of psychiatry at Emory University, who argues in Satisfraction. The Science of Finding True Fulfillment (Holt, that what lights up the brain more than pleasure is the pursuit of pleasure—of anything else. And if that pursuit forces us to confront a challenge we've never encountered before, so much the better—and brighter, in terms of real hot spots. Yes, dopamine is a feel good chemical, but it resists in the same way to pleasant sensations as it does to unpleasant shocks. As Bateson says, "novelty is what the brain really wants," and he uses everyday examples to demonstrate how we can lead to self-fulfillment. Try trading secret desires with your partner: you did, and what followed was a "sexual experience beyond imagination." We can't always get what we want—a predictable, safe, pain-free life. But throw in the occasional surprise, and we get what we need.
—RICHARD PANEX
Happiness

Satisfaction, sanity and all those feelings in between.

By Amy Alexander
Sunday, February 19, 2006; BW06

At a time when consumerism has become our raison d'être, and pharmaceutically aided quests for calm are the norm, perhaps it is time to reconsider the pursuit of happiness. And to wonder if, as at least one author of a recent spate of books on human emotion argues, sanity, rather than happiness, is a truer gauge of one's well-being. After all, it may be the best any of us can hope for.

How to be Sane

According to veteran psychotherapist Adam Phillips, our modern obsession with attaining happiness is more likely than not to drive us insane. Indeed, Phillips makes a cogent argument that our traditional understanding of happiness is most often defined in contrast to madness. So "it is worth wondering why, given the sheer scale of contemporary unhappiness, there are no accounts of what a sane life would look like," he writes in Going Sane: Maps of Happiness (Fourth Estate, $24.95). "Or of why a sane life might be more worth living than, say, a happy life, or a healthy life, or a successful life."

Madness and insanity are inherently dramatic, and therefore have all but pushed aside meaningful discussions of sanity and its close connection to happiness. For example, in popular literature through the ages, ranging from Shakespeare's tragedies to F. Scott Fitzgerald's novels, writers typically employed madness or insanity as an easy, photo-negative way of describing happiness. In Phillips's view, the dearth of literature and language surrounding sanity has created a dynamic in which we all believe we know what sanity is, simply because we generally define it as being the opposite of insanity. Yet that shorthand may leave gaps in our understanding of what constitutes the "sane self," Phillips argues. "Perhaps we should value sanity now for the questions it forces us to face about how we want to live and who we want to be. . . . It can make us wonder not merely how we can temper the unacceptable things about ourselves, but also how we can release the good things, the things that matter most to us." Phillips's musings, a brisk combination of existentialism and research, provide a new way of looking at what we choose to believe about happiness.

Nothing More Than Feelings

In A Natural History of Human Emotions (Grove, $25), Stuart Walton, a journalist and cultural historian, revisits Charles Darwin's landmark survey of human emotions, The Expression of the Emotions in Man and Animals, published in 1872, and repositions it for the 21st century. Darwin theorized that "the emotions of human beings the world over are as innate and as constitutive and as regular as our bone structure . . . manifested in the universality of the ways in which we express
Happiness

Darwin separated emotions into six basic categories: happiness, sadness, anger, fear, disgust and surprise. To this list, Walton adds jealousy, contempt, shame and embarrassment, the final two perhaps in recognition of our postmodern predilection for public disclosure of a host of once taboo behaviors. In any event, Walton's goal is to assess Darwin's theory in a modern context. "It is often instructive to reflect on the cultural codifications that these emotions have undergone in response to events in our history and to key works of art," writes Walton. "Does not sexual jealousy take on a new cast after Othello, and yet another after The Sorrows of Young Werther?" Walton doesn't delve into the apparent contradiction between this idea and Darwin's "innate" emotions, perhaps as an acknowledgement that his repositioning of Darwin's work necessarily gives rise to gaps.

The chapter on happiness arrives last, by which time readers may be made miserable by Walton's dense, circuitous discussions of the nine other emotions. Yet readers stalwart enough to make it to the final chapter soon find that if nothing else, Walton is consistent: He takes the long way around to redefine Darwin's examination of happiness, beginning with a tedious debate about the Old Norse origin of the word itself. But soon we arrive at an intriguing idea, the possibility that hope and happiness are linked -- or should be, anyway. He relies on a 20th-century German philosopher to highlight the connection: "For... Ernst Bloch, happiness emerges as the reward for enduring hope." His theory of the connection between hope and happiness is instructive, Walton points out, in no small part because Bloch, exiled in America from Nazi Germany in the 1930s, nevertheless found "the glimmer of spiritual cheer in some unexpected places -- in the plots of pulp fiction or in the neon lights of advertisements."

In analyzing previous works by Bloch, Nietzsche, Horace and others, Walton sets their explorations of happiness next to Darwin's quite effectively. But where Darwin's language was dry in the service of science, Walton oddly fails to use vivid, active language to bring freshness to his material. And he never gives us his opinion of how these old-time debates fit into our increasingly frenzied attempts to attain happiness.

**What You Really Want**

Gregory Berns, however, leads a discussion that is meaty, contemporary and expansive in his book *Satisfaction: The Science of Finding True Fulfillment* (Henry Holt, $24). A professor of psychiatry and behavioral sciences at Emory University, Berns artfully blends social critique with technical expertise. He also is a whiz at translating complicated psychological theorems into language that is clear and often vividly funny. "What do humans want?" he asks right up front. "Forget about the usual suspects like sex, money, and status. Is there something more basic, a drive that trumps pleasure or pain or happiness -- that, if understood, would provide the key to a lifetime of satisfying experiences?"

With that, we are off on a winding search for satisfaction spiritual and corporeal. Berns's calm, bemused voice expertly guides us through the conundrums of our often unrealistic desires and the landscape of real opportunities for happiness and satisfaction that present themselves in myriad forms. "It is easy to take for granted the pleasure derived from... sex, food, and money," Berns writes. However, "digging below the transience of the pleasures these pursuits offer, I have found that great, even transcendent, experiences can arise if they are juxtaposed with novelty and challenge."

After mixing personal anecdotes -- including a quirky odyssey to Iceland to hang out with a
sleep-deprivation expert on the trail of a nexus between endorphins and happiness -- with research, history and brief reviews of scientific surveys on human emotions, Berns makes a good case for just learning to relax. In other words, as Charles Bukowski, the eloquent sinner who drank himself to death in 1994, observed in his poem "pastoral," even lowlifes know happiness when they see it -- the challenge is to let it find you: "I lean back in the chair and smile/to myself/for myself/ for everything,/and nothing. This is absolutely great./this is as good as it is ever going to get."

Amy Alexander is co-author of "Lay My Burden Down: Unraveling Suicide and the Mental Health Crisis Among African-Americans." She lives in Silver Spring, Md., where she is working on a book about race and the American media.

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2005 YEAR IN REVIEW // BOOKS

Good, bad and Bigfoot

Finding fulfillment, tracking trash, mastering French cuisine and more memorable reads

by JULIET WATERS

If you’re looking for the best books of the year, a quick Google search will turn up lists that will probably include Ian McEwan’s Saturday, Zadie Smith’s On Beauty, Curtis Sittenfeld’s Prep and Kazuo Ishiguro’s Never Let Me Go. Here, however, is the Mirror’s more eclectic take on the year behind us:

Books on the brain: Blink: The Power of Thinking Without Thinking, Malcolm Gladwell’s elegant, if debatable, theory of how the mind works, hit the top of the bestseller list the first week of January and never left. Satisfaction: The Science of Finding True Fulfillment by Gregory Berns supplied some interesting material on how the neurotransmitter dopamine works to give our life a sense of purpose. Jay Ingram’s Theatre of the Mind attacked the problem of consciousness from a broader perspective.

Trend that must end: The Pornoir. Whether the author is a French critical theorist or a 17-year-old Italian sadomasochist, there’s something inevitably icky about these books by women remembering their sexual exploits. This year’s contribution, I’m No Saint, by New York Times style writer Elizabeth Hayt, had its moments, but wasn’t much of an exception.

Trend we can only wish for: Autobiographies by has-been celebrity monsters. Me Write Book by Bigfoot, with some help from Graham Roumieu, smashes just about every cliché of ’80s celebritydom in its wake. Bret Easton Ellis’s meta-fictional sort-of-memoir Lunar Park almost makes it into this category, but wasn’t nearly as entertaining.

Novels by women about men: Emerging cult author Lydia Millet published two provocative contributions to this genre, Everyone’s Pretty, about a pornographer with a messianic complex, and Oh Pure and Radiant Heart about the three inventors of the atom bomb. Lisa Selin Davis’s Belly, about an ageing ex-con returning to his old haunts in Saratoga Springs, was another notable contribution.
Novels by men about women: Toby Litt’s parody of chick lit, Finding Myself, was way better than most chicklit, and an interesting solution to the problem male writers face writing saleable books in a market dominated by women readers. Now if we could just get him to re-write the 18th-century classic pornography Fanny Hill, we could still save that trend.

Best high-end chicklit: Elizabeth Crane’s first novel All This Heavenly Glory fulfills the promise of her short story collection, When the Messenger is Hot. And User I.D. by Jenefer Shute was both an enlightening look at identity theft and a great story about two women, grifter and victim, with more in common than they realize.

Smelliest non-fiction: Garbage Land, Elizabeth Royte’s pilgrimage through America’s worst dumping grounds was a quirky fascinating picaresque worthy of a Charlie Kaufman adaptation.

Best work lit: The Twins of Tribeca by Rachel Pine was a fun, if dated, tell all about working at Miramax. Job Hopper, Ayun Halliday’s bad-job memoir, will make anyone feel good about even the worst jobs. Paula Fox’s memoir about life as a reporter in post WWII Europe was the most literate contribution to this category.

Best anti-diet book: Julie and Julia, Julie Powell’s memoir of her year launching a hugely successful blog project: cooking the butter-mad recipes from Julia Child’s classic Mastering the Art of French Cooking, introduced a new genre, the Blogoir.

Most promising new writer: Sightseeing by Rattawut Lapcharoensap. This short story collection by a 20-something writer who has spent his life moving back and forth between the U.S. and Southeast Asia has everything you could ask for. Massive talent, fun stories, great locations. If he’s this good now, it’s hard to imagine how good he’ll be years from now.

Best graphic novel: Epileptic by French bedist David B. An intensely brilliant memoir of life with his epileptic brother and crazy intellectual bohemian parents.

Best stocking stuffer: Christmas Days by Derek McCormack, “designed and decorated” by Seth, is a sophisticated, no-fail X-mas present.
THE WAY WE ARE: REFLECTION ON WORK

Job satisfaction beyond the Hallmark card definition

BY JUDITH TIMSON

WEDNESDAY, JANUARY 4, 2006 PAGE C1

Here we are, a full year after we started working in 2005. We put in the gruelling hours, maybe pulled off a couple of difficult projects, even weathered a few interpersonal office storms and, hopefully, had a few laughs with our colleagues.

But are we truly satisfied with our work and how we did it?

I'm distinguishing the feeling of satisfaction from other highly desirable states of being, like happiness (that elusive emotional goal); or approval (our superiors like us, they really like us); or even success (whose definition, like it or not, is often externally imposed by the values and standards of our current society. Britney Spears is a huge success. I rest my case).

When it comes to satisfaction, nobody other than ourselves can define it, identify it or claim it.

It is entirely subjective. Many people might define satisfaction at work in purely monetary terms -- "I'm satisfied because I made a lot of money this year." Others, digging deeper, link their sense of satisfaction to having completed a difficult task, made a difference or even just learned something new. And still others will say they are satisfied to have merely survived another annum horribilus in a dysfunctional office.

But what does satisfaction even feel like?

In his recent, aptly named book Satisfaction (with the tantalizing subtitle The Science of Finding True Fulfilment), U.S. scientist Gregory Berns argues that satisfaction is a result of our brains getting two things they constantly crave: "challenge and novelty."

Dr. Berns, an associate professor of psychiatry and behavioural science at Emory University in Atlanta, says that novel events -- even something as simple as staring at a new piece of art or hearing a new word -- get the dopamine flowing in our brains.

The dopamine commits our body to a certain course of action and, voilà, we're suddenly working hard to understand something new or challenging. It is that process, itself, that satisfies us.

Satisfaction, Dr. Berns concludes, "comes less from the attainment of a goal and more in what you must do to get there."

While that sounds suspiciously like something that can be instantly reduced to Hallmark card proportions -- "It isn't the destination, it's the journey" -- it makes sense that novelty and challenge keep our brains alive, and need to be present in our work and in our lives.

There is, of course, a paradox when it comes to satisfaction and work: You can be viewed as a raging success but still experience a gnawing sense of dissatisfaction or frustration with what you
are doing.

Perhaps it's become too familiar to you, something you can do with your eyes closed and one hand behind your back. Or maybe the goals you've set for yourself are either too easy or just not attainable.

I was surprised to hear a businessman I know who'd had a frustrating year say that he, nonetheless, felt "rather happy" this week.

No, it wasn't a gallon of eggnog talking. It was, he said, a sense of "still being in the game," of certain good prospects hovering out there on the horizon, and of personal satisfaction beyond work that helped him define who he is -- great family life, other interests.

Most people can look back and see clearly in their own work last year what led to satisfaction, and what led to disappointment or frustration.

In my case, writing effectively is my job, although a challenge every time out, but coming up with a good idea to write about brought real satisfaction.

For me, like almost everyone else, not getting paid what I thought I was worth was an ongoing irritant. Furthermore, unlike other types of more secure employment, self-employment does require you to keep the money question ferociously front and centre: Your time is money, and it's hard to be satisfied if people don't value and pay you what that's worth.

And even though satisfaction is supposed to come from within, any and all compliments -- even those we felt were undeserved -- were entirely welcome.

Most highly capable people I know yearn for more positive feedback and recognition than they actually receive. It always astounds me that positive feedback is so sparingly given when it's the one thing that doesn't cost money and is guaranteed to increase motivation and results.

Saying yes to a new professional activity -- public speaking, seminars, courses -- brought satisfaction, even if the result wasn't perfect. I resolved to say yes more often to these activities because they made me work harder, often taught me something I didn't know, forced me to think out loud about my ideas, and were fun.

And finally, as a columnist, I was lucky to have another way to attain satisfaction: in responses from readers.

This past year, I noticed it was the darker themes that got the most intense reader reaction -- humiliation, fear and lack of recognition in the workplace, the scary plight of the middle-aged, middle-class job seeker. Then there was advertising guru Neil French's sclerotic diatribe about women.

His comments about why women can't get to the top brought in thoughtful outrage. Some lighter subjects, like swearing in the office and a syndrome I called last-minute-itis twiggled rueful comments as well. And then there was the likely response to the one about the power of mothers to inspire their offspring professionally. Everyone loves to write about mom.
It doesn't surprise me at all that readers respond. I've learned that most of us don't have all that many opportunities to seriously discuss how we work, what motivates us and how work fits into, or overwheims, our lives.

I am perhaps overly fond of quoting Freud in this regard. That wild and crazy father of modern psychiatry got so many things wrong but nonetheless made a perfect point when he said we all need two things in our lives in equal measure -- work and love.

So I wish you satisfaction in 2006 in both these areas, which, harking back to Dr. Berns, means, I suppose, a strong and steady supply of dopamine. Sounds a little racy to me. Hope it doesn't affect my heart rate.

And I hope you'll continue to write in with your own reflections on work and career choices. Choosing a career, or a new career, or yet another new career -- and then working bloody hard at it -- is one of life's central dramas.

There's absolutely no satisfaction guaranteed, but there's always glory in the attempt. And another 365 days ahead to prove it.

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Satisfaction: The Science of Finding True Fulfillment

reviewed by Dick Schutz — October 07, 2005

Title: Satisfaction: The Science of Finding True Fulfillment
Author(s): Gregory Berns
Publisher: Henry Holt and Company, Inc., New York
Search for book at Amazon.com

With a title like that you’d expect a book of wacko New Age fluff. Surprise! The book is about exactly what the title says it’s about, and it’s a very satisfying read. Berns (Ph.D., University of California-Davis, and M.D., University of California-San Diego) is Associate Professor in both the Department of Psychiatry and Behavioral Sciences at Emory University School of Medicine and in the Department of Biomedical Engineering at Georgia Tech. His own research uses Functional Magnetic Resonance Imaging (fMRI) techniques to uncover the neural basis for many different types of human interaction and decision making. His impressive output of journal articles can be accessed in PDF format at http://www.ccnl.emory.edu/greg, but Berns does not drag the reader through the gory technical details of these studies. On the contrary, he writes conversationally, footnoting the neurobiology, but managing to communicate its import and implications using everyday street talk. A very good trick that contributes to the satisfaction of the read.

“Brain research” has professional sex appeal to educators, but the studies that have received the greatest attention have been the “discovery” (over and over) that differential brain activity accompanies differential learning (a finding which really doesn’t require research and adds nothing regarding how to promote learning). Berns goes right to the genes and/or the bio-source within the brain that triggers a given behavioral pattern. This is a quantum leap up (or down) from “cognitive” or stimulus-response psychology.

Satisfaction is not your usual textbook, but in it you’ll find more useful scientific information about what makes you tick and how to deal productively with educational matters than you’ll find in any other single textbook I can think of. Many of the investigations are highly ingenious, but they are very straightforward. The book puts a knife through the current dogma that the only road to scientifically based action in education is the comparative randomized controlled experiment, preferably with standardized tests as the dependent variable and using multivariate analysis.

Berns does not limit himself to his own research or even to that of fellow neurobiologists and geneticists. He uses observations of himself, his wife, colleagues, chefs, S&M sex club participants, 100-mile ultramarathon runners, and a Priest interviewed near the mouth of the volcano in Iceland that is the entry
to the center of the earth, according to Jules Verne.

I’m not even going to try to summarize the substance of the book. No summary that I can think of writing would do justice to the book, since the stories and the findings are just too numerous to summarize. The neurological basis for satisfaction (which is not to be equated with “happiness” or “pleasure” by the way) is very straightforward, but you should hear it from Berns, not from me.

I can, however, share with you seven tidbits that I hope will serve as teasers for the bigger and better information the book conveys.

- What makes a meal satisfying? Well, there are 1,000 receptors on the tongue that give rise to 14 tastes: the 4 basics—sweet, salty, sour, bitter; a 5th—umani (Japanese for “savoriness”) a pungent taste common to asparagus, cheese, and meat; 9 others (categorized by a chef, not a scientist)—picante vinted (spicy hot), bulby (garlic and onion), floral herbal (rosemary and thyme), spiced aromatic (cinnamon and cloves), funky (cabbage, truffles, and stinky cheese), garden (aka vegetables), oceanic (fishy), and starchy. In addition to taste, visual sensations, olfactory sensations, tactile sensations, and time/place also play a part.

- Pain and stress are usually considered matters to be avoided, but they can in fact be satisfying. Think exercise. It was pursuit of this matter that led Berns and his wife to the S&M sex club.

- Patient-controlled analgesia (PCA), where post-operative patients mete out the dose of their narcotic, makes the experience of pain less intense and requires less dosage.

- Exercise not only aids weight control and promotes general health; it’s inherently satisfying.

- The nations clocking out with the highest expression of satisfaction are Iceland, Sweden, Australia, Denmark, and Canada. At the bottom of the list was the Dominican Republic. The survey was done some time ago, and the findings may well be different today.

- Don’t fret about not winning the lottery. Winners (in the aggregate) are no more satisfied after winning than before and no more satisfied than losers. Savor the anticipation of winning—or spend your money on something else.

- If a couple have sex every day the odds of producing a baby in one menstrual period are 25%. Having sex daily for four months increases the likelihood to 68%, 6 months brings the figure to 82%. On the other hand, hooking up for a one-night stand has only a 3% chance of producing a child.

Yes. The book climaxes with the chapter; “Sex, Love and the Crucible of Satisfaction.” This chapter, like the rest of the book, conveys potent information regarding the matter.

I could go on and on, but you’d tire of the tidbits (if you haven’t already). Just read the book. Don’t wait for the movie. Satisfaction is the stuff that life and sweet dreams are made of, not movies.
Library Journal

Web Exclusive Reviews for August

-- August 2, 2005

Week of August 2


Berns (psychiatry & behavioral sciences, Emory Univ.) presents a book for curious and patient general readers as well as his learned peers. Surveying motivation, happiness, and satisfaction, he references everything from evolutionary beginnings to research published in the last few years, including his own. His itinerary features Cuba and Iceland, a sushi feast, an S&M fest, and an ultramarathon, ending happily in his own marital bed. As Berns defines it, satisfaction is "an emotion that captures the uniquely human need to impart meaning to one's activities." It is not simply happiness or the absence of pain; it requires novelty, challenge, action, and change; examples include music, puzzle solving, fine dining, physical exercise, pain, storytelling, and sex. Berns writes in a somewhat technical, but clear and lively, style. While tackling the phenomena of novelty, security, and trust, he introduces research colleagues and his wife, also revealing much about himself, a thoughtful and attractive scientist-narrator. This is a major contribution to the burgeoning literature of brain, behavior, and culture; essential for all public and academic libraries.—E. James Lieberman, George Washington Univ. Sch. of Medicine, Washington, DC


Issued every three years, these handy guidebooks start with a respectable amount of introductory material: Gustafson explains her methods of collecting information (unannounced site visits to evaluate the facilities, staff, and overall ambience) and offers advice about money, tipping, safety, and more. Each major section focuses on a particular city and features black-and-white city maps and entries on an eatery or hotel including an in-depth history, phone numbers, web sites, hours and days of operation, payment methods, and approximate prices. Readers will enjoy the delightful and folksy details about inside décor, favorite dishes, and rooms with a view. In the entry for the three-star Venetian hotel Pensione La Calcina, for example, Gustafson notes that "rooms 37, 38, and 39 have terrace views and are especially appealing, and so is No. 2, with three windows and a balcony view of Giudecca, the lagoon, a small side canal, and the bridge over it." Each guide includes a glossary of relevant Italian words and phrases, an index organized by city, price ranges ("big splurges" or "cheap eats" and "cheap sleeps"), and type of establishment (ice cream parlors, pastry shops, food markets, other shopping). Budget travelers and big spenders alike will enjoy the featured establishments. Libraries that already own the previous editions will want to buy these new editions as the content has been thoroughly revised and updated with at least 30 percent new material. Highly recommended.—Elizabeth Conner, Daniel Lib. at the Citadel, Charleston, SC


To outsiders, New York's high society is a rarified paradise open to a select few. But as insiders like socialite Jo Slater well know, it is a veritable Darwinian jungle of lies, manipulation, and even the occasional murder. Having clawed her way to the top in Hitchcock's previous novel, Social Crimes, Jo faces a new predator in the guise of Carla Cole, a shady Italian whose billionaire husband mysteriously disappears from their yacht (and is presumed dead) while attending a wedding in Barbados. Armed with her husband's fortune, the new widow sets out to stop Jo's turf and conquer the "Big Golden Apple." Carla not only buys an exclusive Fifth Avenue co-op despite the angry opposition of Jo's friend June, but she also acquires a seat on the board of the Municipal Museum, which results in Jo's resignation. Along the way, terrible things happen to people who stand in Carla's way: June falls into a coma after a taxi accident; Larry Lockett, a Dominick Dunne-like journalist investigating Carla's past, is brutally murdered. When Carla threatens to expose Jo's dark secrets, Jo must act to stop her. Hitchcock here displays the same razor-sharp satirical wit as she did in Social Crimes, but there is a redundant feel to this book. Still, One Dangerous Lady makes perfect hammock reading for the last lazy days of summer; recommended.—Wilda Williams, Library Journal

08/01/2005         BOOKLIST - UNCORRECTED PROOF


A university research psychiatrist, Berns here combines neuroscience with a series of personal adventures to find out what gives people satisfaction. Infinite may be the range of human behavior, from the depraved to the noble, but to the extent behavior reflects striving for satisfaction, Berns summarizes the matter in one word: novelty. Easily bored, people seem to naturally want more of whatever interests them, but where does this drive come from? The clinical aspect of Berns’ answer takes readers into the brain stem, specifically the striatum, which produces the neurotransmitter dopamine. Implicated in the sensation of pleasure, dopamine is also, paradoxically, involved in feeling pain, which may be why some people intentionally seek pain, such as at a sadomasochism club he visits or a 100-mile marathon he attends. Berns also entered a crossword contest, ate a meal cooked by a master chef, and spent an evening with an Icelandic storyteller. Readers interested in psychology will find Berns to be accessible, insightful, and comradely. —

Gilbert Taylor
It's cool to be calm

Meditation can help kids focus, but does it have health benefits?

By ELENA COHEN
Special to the Times

EN-YEAR-OLD Trac Smith knows how to deal with the stresses of school, an acting and modeling career and, of course, the typical family squabbles. He closes his eyes, counts to 100 and lets it all go.

Trac, who learned to meditate last year with his fourth-grade class at Toluca Lake Elementary School, said that tests and auditions used to make him nervous. But since he's learned how to meditate, Trac says, "everything is like a piece of cake."

As meditation goes mainstream among American adults, it's slowly making its way into schools and programs for children across the country. Anecdotal reports of its success have become common, with parents and teachers contending that it can calm kids down, level out their moods and help them focus. Some proponents

Too much pop, too little nutrition

Scouge or scapegoat? Soda's take the blame for excess pounds.

By ROYCE MASTRE
[News Staff Writer]

Schools and districts under scrutiny for nutritional policies.

The American Beverage Association, which represents most U.S. soft drink suppliers, is offering some concessions about school concessions. At an August meeting and in full-page ads in major newspapers, it resolved to remove sodas entirely from elementary schools, allow middle-school kids access to full-calorie sodas and fruit drinks only after school hours, and ensure that no more than 39% of the vending machine beverage offerings in high schools are soft drinks.

Why all this finger-pointing at sodas? After all, we live in an environment brimming with burgers, fries, snack cakes and chips, dealt in heffered and heftier portions to kids slumped in front of televisions and computers. What earthly effect can limiting just one item — the beverage — have on the health and weight of our offspring?

Nutrition scientists agree.

For true fulfillment, seek satisfaction, not happiness

By MARIANNE RONDOY-MEYER
Special to the Times

Why couldn't Mick Jagger "get no satisfaction"?

"We just wasn't trying hard enough," says Gregory Berns, a neuroscientist and psychologist at Emory University in Atlanta. Berns should know. As a scientist and author of "Satisfaction: The Science of Finding True Fulfillment," he's scheduled to arrive in bookstores this week.

Berns has examined satisfaction from the inside out — looking at the exquisite interplay between brain structure and experience — and from the outside in. He has studied people who engage in an array of activities, including solving crossword puzzles, running ultra marathons and engaging in sadomasochistic sex. The explanation for why some people pursue these activities, and why they find them satisfying, can be found deep inside the brain.

THE M.D.
Light smoking is anything but

Even occasional tobacco use can cause addiction and elevated health risks, experts say.

RESEARCH
Antioxidant break, anyone?

Because it's so popular, coffee is the top source of healthful antioxidants in the U.S.

SUPPLEMENTS
Merits of the dancing mushroom

Maitake products may boost resistance to HIV and slow the spread of some cancers.

FITNESS
Workout programs tailored to fit

Trainers are creating or modifying exercise routines for overweight clients.
Novelty linked to satisfaction

The problem, however, is that novelty inevitably becomes toxic, so the stakes get higher for more novelty. This is a problem that psychologist Philip Brickman, who studied lottery winners in the late 1970s, described as a “hedonic treadmill.” He found that the levels of happiness in people who won the lottery were no different from those who didn’t. In fact, he found that lottery winners reported less pleasure in their daily activities than those with less luck.

“Even as we contemplate our satisfaction with a given accomplishment,” Brickman wrote, “the satisfaction fades, to be replaced finally by a new indifference and a new level of striving.” If we are to get a sense of satisfaction from challenge through exhaustion, and novelty, we must constantly seek higher levels of experience to maintain the same level of satisfaction and interest. Certainly, binge drinking was exhilarating and satisfying, but not after the 30th time. Isn’t the promise of receiving these new experiences ultimately addictive and defeating?

Not necessarily, says Beren, and perhaps that is the bond our dopamine system is structured. Because the dopamine neurons in our brains begin to decline after adolescence, we become more conservative in our outlook, risk-taking, and novelty.

Dopamine and the striatum long been linked to general feelings of happiness and well-being. But Beren is not simply looking at happiness; he is trying to tease out the specific signals and signs of this achievement.

A small group of neurons in the striatum has been linked to dopamine release, and what Beren has found is that the neurons are active when things are interesting and surprising. But Beren is not just interested in happiness; he is also interested in the neuroscience of stress.

Stress and dopamine have been linked in a number of ways, but Beren has found that the neurons are active during stressful situations as well. This is because stress is known to release dopamine, and dopamine is known to be released during periods of novelty.

In his new study, Beren and his colleagues used MRI to track the brain activity of 181 participants while they were engaged in a variety of tasks, including a virtual reality game, a word-association task, and a memory task.

Beren found that the neurons were active during periods of novelty and stress. This is a new finding, and it suggests that dopamine release is linked to both novelty and stress.

The question is, what does this mean for our brains? Do we really need to release dopamine to feel happy, or is there a better way to approach this?

Beren suggests that the answer lies in a generous portion of the neurotransmitter dopamine. The neurotransmitter is involved in a surprising number of the brain’s functions, including attention, memory, and learning.

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On the Bookshelf: Getting satisfaction
Posted 8/29/05
By Marianne Szegedy-Maszak

What could be better than happiness?

Satisfaction, says psychiatrist and neuroscientist Gregory Berns, a professor at Emory University and author of the new book Satisfaction: The Science of Finding True Fulfillment (Henry Holt, September 2005). Berns, 41, has spent his career looking at the parts of our brains (the "neural correlates," in the words of neuroscientists) responsible for such nuanced actions and feelings as economic decision making, rewards, motivation, and social conformity.

"I have searched for new ways of thinking about the brain," he writes in his book. "Because how the brain works tells us something crucial about being human."

One of the deepest and most rewarding feelings that a human can experience is a sense of satisfaction. But where does satisfaction come from? By combining his neuroscientific research and expertise — in his lab at Emory he has neuroimaged the brains of people in the midst of a pleasurable or challenging task — and studying people engaged in satisfying activities, Berns has discovered some of the secrets to achieving this special state.

You said that your experiments turned upside down everything that you understood about what humans really wanted. How so?

I thought the same things that most everyone thinks: that we want pleasure and happiness. But I don't think that is the case at all. We may think that we want that, but the whole issue of what our brains want and how we have evolved reveals something very different. Our brains...
are wired to respond to novelty and activity. Happiness and pleasure are passive emotions, and you don’t really have to do much to achieve them. But satisfaction has an active component.

You talk about ultramarathoning — people running 100 miles in 24 hours — gourmet cuisine, and crossword puzzles. What do all these have in common?

They have in common two elements that are important ingredients for satisfaction: novelty and challenge. But the way they play out is quite different. In crossword puzzles, the challenge is not physical, it’s mental. Every crossword puzzle is different, so it is always a new challenge in that sense. When you can figure it out, there is a definite feeling of satisfaction, that feeling of aha! Ultramarathoners stress their systems intensely, to the point of incredible physical pain and exhaustion. Gourmet cuisine may not be challenging, but the novelty of indulging our senses that way can leave us feeling intensely satisfied.

You describe the biology of what gets triggered to create feelings of satisfaction. As you describe it, dopamine and the striatum are crucial to making us feel satisfied. How? We have known about the neurotransmitter dopamine for about 50 years, and it has always been linked to pleasure. In rat studies, we have found that dopamine is released in response to things that we think cause pleasure, like food, water, and sex, and also drugs of abuse. But over the last ten years, we began to understand that dopamine was not released strictly with pleasure but also when you encounter something that you didn’t know about before. The striatum is a key region for two reasons. First, it has the most dopamine receptors of any region in the brain and is where the interaction between the individual and the environment happens.
On the Bookshelf: Getting satisfaction  
(Page 2 of 3)

Think of Grand Central Terminal in New York. All the trains represent potential things that you might do, but all the trains are only going through the terminal once. So you can only do one thing at a time, just like we only have one body to dedicate to a task. You need a mechanism for deciding what to do, for switching the tracks of the trains that are constantly vying for access to your physical body. The striatum controls the trains, decides which destination, and dopamine is the signal to switch tracks.

If you do something at which you are highly practiced, then you have little opportunity to encounter something novel or unexpected, so dopamine and satisfaction may be low. But when you do something that takes you beyond what you have done before, you are in unknown territory and novel information will flow into your striatum, pumping out dopamine, which in turn forces you to act on the information. The release of dopamine in response to the novel information is the essence of a satisfying experience.

We have all been taught that stress is not a good thing, and we should try to minimize it because it can lead to heart disease and hypertension and even depression. But what you found seems to be counterintuitive.

Of course it is important to keep levels of stress manageable, but it is not as simple as saying stress is bad. In fact, some stress is good because it releases a very important hormone called cortisol. While dopamine is a neurotransmitter, cortisol is a hormone that is produced in the adrenal glands on top of the kidneys. It is
known that cortisol is released in response to mental, physical, and psychological stress, and it has been thought of in a negative way. But the paradox with cortisol is that it can do many positive things as well. Without it, we wouldn't be able to survive at all. When it gears up the autonomic nervous system to help us deal with stress, it activates the body in a general way so it can run or fight or do whatever you can do to deal with the stress. Cortisol goes up, for example, after exercise. But with dopamine in the striatum, cortisol interacts synergistically. Novelty releases dopamine, stress releases cortisol, and when they come together they create an intense feeling of satisfaction.

**Is there an evolutionary angle to this?**

The old evolutionary model that the brain exists to help us survive and reproduce is fine but too broad. If you go beyond that, the thing that helps us to survive and reproduce is the capacity to adapt in the world and to learn. The world is so unpredictable; most animals have brains like sponges absorbing so much in their drive to learn. Our brains are just primed for novelty. Nature never said you had to be happy. It said you had to learn to adapt to the world.

**But if novelty and stress are so great, why do we shy away from them?**
On the Bookshelf: Getting satisfaction
(Page 3 of 3)

I think that the best answer is an analogy. Exercise is great for us, but often times we just sit on the couch and don't exercise because it hurts. The brain is not so different from a muscle; it can be conditioned. You can learn to work through things. That is the message I would give. Certain highs are anxiety producing but once dealt with produce a feeling of satisfaction in its place. There is priming and toughening of the systems in the brain, so it makes no sense to tackle the most anxiety-producing phenomenon. You can work up to it, like a training process. Anxiety is a forward-looking emotion. It's always about what is going to happen; it is not generally an emotion that is backward looking. Worrying about the past is more like depression. An anxious brain is trying to make predictions about what will happen, so the best way to sate that need and assuage that feeling is by doing what you may be anxious about.

But we can't all go sky diving. How do working people get some novelty in our lives?

I would say stop pursuing happiness and pursue satisfaction. One should be concentrating on things that give you a sense of commitment and achievement. Seek new experiences. When you think about it, the capacity for novelty that any inanimate object can give you is limited. The greatest source of novelty is other people. Fundamentally they are unpredictable, even if you have been married to them for 20 years. You don't know what the other person will do; there is the element that perhaps they will do something I won't like. Traditionally in most interactions, especially relationships, it is very easy to avoid that. You quickly find out what the other person's buttons are, and you avoid pushing them. It lulls you into the sense that you know each other, but in fact you don't. The only way to find out is ask, and when you do, you discover that novelty, you face that challenge. And you can achieve real satisfaction.

So when Mick Jagger complains that he "Can't Get No Satisfaction," what is his problem?

He wasn't trying hard enough.
Book Review | Can't get no satisfaction? Going at it scientifically

Satisfaction
The Science of Finding True Fulfillment
By Gregory Berns
Holt. 284 pp. $24
Reviewed by John Rooney

As a college student many years ago, I recall an after-class bull session on how to achieve complete satisfaction. A friend argued that science would one day tell us the answer. He pictured himself lounging in a scientifically contoured chair under warm artificial sunlight with temperature and humidity at optimum levels. A gentle breeze wafted over him, carrying a delightful aroma and soft, relaxing music. A panoramic view stretched before him. Exotic food and drink were near at hand.

In Satisfaction: The Science of Finding True Fulfillment, Gregory Berns asks the same question, but comes up with an entirely different answer.

An associate professor of psychiatry and behavioral sciences at Emory University, Berns doesn't limit his approach to speculation or his research to libraries and laboratories. Instead he takes us on a modern odyssey to observe people searching for satisfaction in a wide variety of ways.

He visits popular sushi restaurants in Manhattan and a famous Argentine chef in the Hamptons. With culinary experts he discusses the ingredients that produce an "out of this world" dining experience. More than a delicious combination of tastes is involved: The anticipation, the ambience, the timing, the novelty, the sharing all contribute to the feeling of satisfaction that lasts long after the meal.

From the joy of dining, the author moves to the intellectual joy of solving challenging puzzles. He enters a crossword puzzle tournament in Connecticut and notes the electricity in the air as the contestants wait eagerly for each puzzle.

He experiences the thrill of the "aha experience" when he achieves insight into their solution. Berns also looks at the natural high that vigorous physical exercise produces. Traveling to Squaw Valley, Calif., he observes several hundred runners start the 100-mile ultra marathon through the Sierra Madres. Their day is stressful and painful, but contestants achieve a strong sense of accomplishment.

Even more painful, but a source of strange pleasure, is the activity of members of an S&M club the author visits in San Francisco.

In Iceland, he discusses with a local pastor the strong mythic connection the inhabitants have with their ancestors and the sense of worth this provides. In Communist Cuba, he investigates the effect of money on satisfaction, and enjoys the jubilant music of the Buena Vista Social Club.

Throughout, Berns emphasizes the neurophysiological basis of satisfaction. He cites laboratory research suggesting that the striatum, located deep in the center of the brain, and the action of dopamine and cortisol are crucial.

Finally he returns to sexual satisfaction. Drawing on evidence ranging from the mating behavior of our hominid ancestors to contemporary surveys, he faces the dilemma of how to find novelty within marital commitment. He decides to take the risk of discussing this sensitive issue with Kathleen, his wife of 15 years, and the mother of his two children. Following the advice of David Schnarch in The Sexual Crucible, they grapple with being more open in discussing their sexual needs and fantasies as a way to a more fulfilling love life.

B erns has given us a fascinating and thought-provoking look at what science knows about finding fulfillment. It is not to be found in the constant search for pleasure (the hedonic treadmill) any more than in a state of relaxed inertia. Rather, we come closest to it in the vigorous pursuit of challenging goals.

If there is something to criticize in this finding, it is the implication that one goal is as good as another. The challenge of developing a successful criminal career would do nicely. Of course, expecting scientific studies to tell us what is a good or valuable life, is, no doubt, asking too much of science.

John Rooney is professor emeritus of psychology at La Salle University.
Slaves on dopamine

>> Gregory Berns's Satisfaction searches for the science of happiness

by JULIET WATERS

“What do humans want?” Dr. Gregory Berns asks in the first chapter of The Science of Finding True Fulfillment, his personal and scientific quest to pin down the relationship between this feeling and the brain. “Forget about the usual suspects like sex, money and status. Is there something more basic, a drive that trumps pleasure or pain or happiness—that, if understood, would provide the key to a lifetime of satisfying experiences?”

Apparantly there is. Satisfaction, he argues, may be as easy as getting the right mix of dopamine and cortisol happening in our brains. Except that it’s not that easy. The only way to get that mix is by confronting in regular doses those things in life we often avoid: pain, stress and change. It’s a convincing premise, made a little more interesting than the average popular science book by Berns’s anecdotes about travelling to Iceland (which, studies show, is the country where the most satisfied people in the world live), following ultra marathoners through the desert, visiting SM clubs with his wife and salvaging his marriage by risking intimacy.

If serotonin has been the superstar neurotransmitter of the last couple of decades, dopamine is the ingenuous. Unlike serotonin, the effect of which is more like a content, Zen-like mood, dopamine is the neurotransmitter stimulated when we fall in love, do cocaine or pursue intense physical activity. Blow out the dopamine centre in your brain, and you will lose control over your motor system and derail your ability to identify what you wish to do and how you will do it. It’s the neurotransmitter that gives us our sense of purpose. The loss of dopamine is also widely regarded as the main culprit in Parkinson’s disease.
It's an interesting theory, and if nothing else, anyone who reads this book will benefit from at least thinking about what constitutes satisfaction, even if one might not always agree with Berns. Just as interesting, perhaps, is the theory that the single-minded pursuit of happiness, security, stability and predictability is inevitably going to lead to a life filled with a vague and chronic feeling of dissatisfaction.

What Berns leaves unexplored, however, is whether or not the single-minded pursuit of satisfaction is either possible or even desirable. Few people would want to spend their entire life infatuated, high, working out, travelling, and confronting challenge. A life this satisfying also sounds like a recipe for burnout. If there's a possibility, or even a necessity for balancing our dopamine highs with some serotonin plateaus, Berns doesn't seem interested.

There's also the possibility that not all humans are satisfied with the same things, and would we necessarily want to live in a world where they did? Some people seem to be more satisfied with contentment than others. Berns briefly mentions the theory of the "novelty" gene, a gene that accounts for those people who are natural risk takers and stress addicts. If such a gene exists, he obviously has it, and it tends to lead him to make huge generalizations that might not resonate with everyone. "The most fulfilled people I meet don't sit still." I guess he's never met the Dalai Lama, or the writer Annie Dillard, who once made the important distinction between a good day and a good life. As she once wrote, "Who would call a day spent reading a good day? But a life spent reading—that is a good life." Obviously a statement that resonates with some people more than others.

Whether you're working on a cure for cancer, or writing a book about Satisfaction, some of the most satisfying accomplishments involve a lot of sitting still. Perhaps satisfaction is all in the brain, but Berns hasn't confronted the possibility that it may also be all in the mind.

knowledge on the part of the military/intelligence complex' in this exhortation to disbelieve the Bush administration's 'web of lies.' The book marshals a bewildering array of sources and testimony—all filtered through Hicks's outraged sensibility—in an effort to implicate the U.S. government in the 9/11 attacks. Hicks identifies a compromised relationship between the CIA, the Bank of Credit and Commerce International and Pakistan's Inter-Services Intelligence, which, he asserts, has ties to al-Qaeda—thus the U.S. link to 9/11 and the government's relentless efforts to keep it concealed. Hicks relies on the research and testimony of numerous "rejected, truthful freelance mavericks," including Randy Glas, a jeweled man and FBI informant who says he caught wind of threats to the World Trade Center in 1999; Daniel Hopsicker, an investigative journalist who argues that Mohammed Atta was a double agent; and Delmar Veeland, a con man who claims he was a U.S. intelligence operative discredited for his 9/11 foreknowledge. Shocking exposé or gongo conspiracy theory? This screed's credibility will depend on its readers' politics. (Sept.)

Exposure
MARY ELLEN MARK. Phaidon, $79.95. (288p) ISBN 0-7148-4404-7
Street kids, prostitutes, mental patients and other desperate characters haunt this retrospective of documentary photographer Mark's 40-year career. Though Mark cites Federico Fellini as a major influence (there's a lovely photo of the director on the set of Satyricon), it's hard not to see strong overtones of Diane Arbus in these pages, with all of Arbus's strengths and flaws. To their credit, Mark's images have a stark, dramatic flair and present gripping scenes that quickly seize viewers' attention. When her images are at their most potent, as in her portraits of Indian circus performers proudly demonstrating their art, the photos seem naturally observed, insightful rather than sensational. In her weaker moments, however, Mark can seem heavy-handed, and the images lean too hard on the absurdity, or

luridness, of their subjects for their power. But if this beautifully produced compilation is sometimes uneven, it is a must for Mark fans, who will particularly appreciate the photographer's afterword, which reveals the stories behind many of her favorite images. (Aug.)

Wormwood Forest: A Natural History of Chernobyl
Mycio takes us on a timely tour of the eerie, surprisingly vigorous area around the Chernobyl nuclear disaster that's too radioactive for safe human habitation, yet where, 20 years after the explosion, flora and fauna are "thriving." Among abandoned towns, thousands of cormorants nest, and Przevalski, a breed of wild horse, live seemingly unharmed on irradiated grass. A few people remain: workers decommissioning the plant, bureaucrats and scientists struggling with chronic underfunding, and samovar, elderly squatters who homestead that Ukraine finally let them stay. Mycio, former Kiev correspondent for the L.A. Times, is a good guide, clearly conveying the niceties of radionuclides; the elaborate, Jerry-built structures containing the worst of the radiation; and the impossibility of cleaning the place up. She finds occasional humor and plenty of astonishment, as when a herd of red deer cross her path: "My recorder preserved my inarticulate reaction: 'Super. Wow. My God, they're beautiful!' " Mycio gives plenty of fuel for the discussion of nuclear power as an alternative to fossil fuel. Not all readers will share her cautious optimism, yet her verdict, that Chernobyl is not simply a disaster but a terrible paradox, is convincing. Bwv photos, map. Agent, Andrea Pedolsky. (Sept.)

Satisfaction: The Science of Finding True Fulfillment
Berns kicks off this thought-provoking exploration with a simple question, "What do humans want?" He challenges the belief that we are driven primarily to pursue pleasure and avoid pain. Rather, Berns finds that "satisfaction comes less from the attainment of a goal and more in what you must do to get there." With a series of experiments using cutting-edge MRI scanning technology, he sees that the interaction of dopamine, the hormone secreted in the brain in anticipation of pleasure, and cortisol, the chemical released when we are under stress, produces the feelings people associate with satisfaction. Berns, an associate professor of psychiatry and behavioral sciences at
Emory, venturing into the physical world to prove his thesis, looking at bruised and reddened track enthusiasts and ultramarathoners collapsing after a 100-mile run. The author then brings his journey home, confronting issues in his own marriage and the sexual dissatisfaction that so often plagues long-term relationships. His conclusion is simple and compelling: people are wired for novel experience, and when we seek it out, we are satisfied. This will be a highly satisfying read for anyone interested in what gets us out of bed in the morning day after day. *Agent, Susan Arlans* (Sept. 1)

**On the Ridge Between Life and Death: A Climbing Life Reexamined**

More than a few readers will think of John Krakauer’s *Into Thin Air* as they delve into this bracing work. The connection isn’t surprising, since Roberts has served as a mentor to Krakauer. Throughout his life, Roberts has been an avid climber as well as a vocal advocate for the sport, writing over 15 books, many of them on mountaineering. This volume finds him looking back at the entirety of his climbing experience. It opens with his recounting the horrific 1961 full of his high school friend and climbing partner, Gabe Lee. In spite of this tragedy, Roberts continues to climb and slowly becomes what other climbers call a “hard man,” an unsentimental mountaineer who can block out tragedy and focus on getting to the top. In appropriately rugged prose, Roberts details his increasingly dangerous ascents as he begins to pioneer new routes on various Alaskan peaks. In one of the best chapters, he tells the story of his team’s 1965 climb of Mount Huntington, a “slender triangular pyramid” nine miles southeast of Mount McKinley in Alaska, and their “giddy celebration” upon reaching the top. The feeling doesn’t last, though. As they descend, one of the team falls off a narrow precipice with just a “scraping sound, and a spark in the night.” This balance of joy and terror is what makes Roberts’s book such an exhilarating read and an intense appraisal of a life spent on the edge. *Agent, Stuart Kirschner* (Sept.)

**Beyond Glory: Joe Louis vs. Max Schmeling and a World on the Brink**

Fought with thunderclouds of war on the horizon, the 1938 heavyweight rematch between Detroit’s Joe Louis and Germany’s Max Schmeling qualifies as the sort of sporting event that coalesces into a symbolic moment with much larger themes. The African-American Louis’s success and demeanor were an undeniable rebuke to the Aryan theories of race; the affable Schmeling, for his part, would be shoehorned into the role of “Nazi Max,” despite the uneasiness of the fit—later that year, on Kristallnacht, he would courageously protect two German Jews. *Vanity Fair* contributor Margolick (Strange Fruit) keeps his bold, colorful focus squarely on the hubbub leading up to the bout; the all-consuming welter of hype—almost every utterance in the book is tinged by race or geopolitics—makes for compelling reading. The fight pitted talents against tactics: Schmeling’s previous defeat of the lethargic “unbeatable” Louis depended on Schmeling’s shrewd perception of a flaw in Louis’s technique. Louis was a critical transitional figure between the controversial first African-American champ, Jack Johnson, and the equally polarizing Muhammad Ali. Schmeling, in turn, was truly the antithesis of the thugs who were running his country. Every chapter in the company of such estimable and likable scalawags is an unadulterated pleasure. *Agent, David Black* (Sept. 22)

**The Lost One:**
A Life of Peter Lorre

Born Laszlo Loewnstein, Hungarian Lorre (1904–1964) transformed himself from minor stage presence to Hollywood character actor through pivotal professional relationships and one breakthrough role. Portraying a child murderer in 1931’s *M*, Lorre conveyed his unique blend of pathos and complexity so astutely that his career blossomed—with hits like 1935’s *Crime and Punishment*, 1941’s *The Maltese Falcon*, and 1942’s *Casablanca*—even as his personal life unraveled with drug addiction, romantic turmoil, and personal insecurity. Youngkin, coauthor of two previous books on Lorre, examines his subject with striking rigor. Through interviews with hundreds of Lorre’s friends and associates—including Fritz Lang, Alfred Hitchcock...