buy·OLOGY

TRUTH *and*

LIES *about*

why we BUY

MARTIN LINDSTROM

DOUBLEDAY

new york london toronto

sydney auckland

Let's face it, we're all consumers. Whether we're buying a cell phone, a Swiss antiwrinkle cream, or a Coca-Cola, shopping is a huge part of our everyday lives. Which is why, each and every day, all of us are bombarded with dozens, if not hundreds, of messages from marketers and advertisers. TV commercials. Highway billboards. Internet banner ads. Strip mall storefronts. Brands and information about brands are coming at us constantly, in full speed and from all directions. With all the endless advertising we're exposed to every day, how can we be expected to remember any of it? What determines which information makes it into our consciousness, and what ends up in our brains' industrial dump of instantly forgettable Huggies ads and other equally unmemorable encounters of the consumer kind?

Here, I can't help but be reminded of one of my numerous hotel visits. When I walk into a hotel room in a strange city, I immediately toss my room key or card somewhere, and a millisecond later I've forgotten where I put it. The data just van-

ishes from my brain's hard drive. Why? Because, whether I'm aware of it or not, my brain is simultaneously processing all other kinds of information—what city and time zone I'm in, how long until my next appointment, when I last ate something—and with the limited capacity of our short-term memories, the location of my room key just doesn't make the cut.

Point is, our brains are constantly busy collecting and filtering information. Some bits of information will make it into long-term storage—in other words, memory—but most will become extraneous clutter, dispensed into oblivion. The process is unconscious and instantaneous, but it is going on every second of every minute of every day.

The question is one I've been asked over and over again: Why did I bother to write a book about neuromarketing? After all, I run several businesses, I constantly fly all over the globe advising top executives—heck, I'm home only sixty days out of the year. So why did I take time out of my already time-starved schedule to launch the most extensive study of its kind ever conducted? Because, in my work advising companies on how to build better and lasting brands, I'd discovered that most brands out there today are the product equivalent of room keys. I realized that, to clumsily paraphrase my countryman Hamlet, something was rotten in the state of advertising. Too many products were tripping up, floundering, or barely even making it out of the starting gate. Traditional research methods weren't working. As a branding advisor, this nagged at me to the point of obsession. I wanted to find out why consumers were drawn to a particular brand of clothing, a certain make of car, or a particular type of shaving cream, shampoo, or chocolate bar. The answer lay, I realized, somewhere in the brain. And I believed that if I could

uncover it, it would not only help sculpt the future of advertising, it would also revolutionize the way all of us think and behave as consumers.

Yet here's the irony: as consumers, we can't ask ourselves these questions, because most of the time, we don't know the answers. If you asked me whether I placed my room key on the bed, the sideboard, in the bathroom, or underneath the TV remote control, consciously, at least, I wouldn't have the foggiest idea. Same goes for why I bought that iPod Nano, a Casio watch, a Starbucks Chai Latte, or a pair of Diesel jeans. No idea. I just did.

But if marketers could uncover what is going on in our brains that makes us choose one brand over another—what information passes through our brain's filter and what information doesn't—well that would be key to truly building brands of the future. Which is why I embarked on what would turn out to be a three-year-long, multimillion-dollar journey into the worlds of consumers, brands, and science.

As you'll read, I soon came to see that neuromarketing, an intriguing marriage of marketing and science, was the window into the human mind that we've long been waiting for, that neuromarketing is the key to unlocking what I call our Buyology—the subconscious thoughts, feelings, and desires that drive the purchasing decisions we make each and every day of our lives.

I'll admit, the notion of a science that can peer into the human mind gives a lot of people the willies. When most of us hear "brain scan," our imaginations slither into paranoia. It feels like the ultimate intrusion, a giant and sinister Peeping Tom, a pair of X-ray glasses peering into our innermost thoughts and feelings.

An organization known as Commercial Alert, which has petitioned Congress to put an end to neuromarketing, claims that brain-scanning exists to "subjugate the mind and use it for commercial gain." What happens, the organization asked once in a letter to Emory University president James Wagner (Emory's neuroscience wing has been termed "the epicenter of the neuromarketing world"), if a neuroscientist who's an expert in addiction uses his knowledge to "induce product cravings through the use of product-related schemes"? Could it even, the organization asks in a petition sent to the U.S. Senate, be used as political propaganda "potentially leading to new totalitarian regimes, civil strife, wars, genocide and countless deaths"?[1]

While I have enormous respect for Commercial Alert and its opinions, I strongly believe they are unjustified. Of course, as with any newborn technology, neuromarketing brings with it the potential for abuse, and with this comes an ethical responsibility. I take this responsibility extremely seriously, because at the end of the day, I'm a consumer, too, and the last thing I'd want to do is help companies manipulate us or control our minds.

But I don't believe neuromarketing is the insidious instrument of corrupt governments or crooked advertisers. I believe it is simply a tool, like a hammer. Yes—in the wrong hands a hammer can be used to bludgeon someone over the head, but that is not its purpose, and it doesn't mean that hammers should be banned, or seized, or embargoed. The same is true for neuromarketing. It is simply an instrument used to help us decode what we as consumers are already thinking about when we're confronted with a product or a brand—and sometimes even to help us uncover the underhanded methods

marketers use to seduce and betray us without our even knowing it. It isn't my intention to help companies use brain-scanning to control consumers' minds, or to turn us into robots. Sometime, in the faraway distant future, there may be people who use this tool in the wrong way. But my hope is the huge majority will wield this same instrument for good: to better understand ourselves—our wants, our drives, and our motivations—and use that knowledge for benevolent, and practical, purposes. (And if you ask me, they'd be fools not to.)

My belief? That by better understanding our own seemingly irrational behavior—whether it's why we buy a designer shirt or how we assess a job candidate—we actually gain *more* control, not less. Because the more we know about why we fall prey to the tricks and tactics of advertisers, the better we can defend ourselves against them. And the more companies know about our subconscious needs and desires, the more useful, meaningful products they will bring to the market. After all, don't marketers want to provide products that we fall in love with? Stuff that engages us emotionally, and that enhances our lives? Seen in this light, brain-scanning, used ethically, will end up benefiting us all. Imagine more products that earn more money and satisfy consumers at the same time. That's a nice combo.

Until today, the only way companies have been able to understand what consumers want has been by observing or asking them directly. Not anymore. Imagine neuromarketing as one of the three overlapping circles of a Venn diagram. Invented in 1881, the Venn diagram was the creation of one John Venn, an English logician and philosopher from a no-nonsense Evangelical family. Typically used in a branch of mathematics known as set theory, the Venn diagram shows all

the possible relationships among various different sets of abstract objects. In other words, if one of the circles represented, say, men, while the other represented dark hair, and the third, mustaches, the overlapping region in the center would represent dark-haired men with mustaches.

But if you think of two circles in a Venn diagram as representing the two branches of traditional marketing research—quantitative and qualitative—it's time to make room for the new kid on the block: neuromarketing. And in that overlapping region of these three circles lies the future of marketing: the key to truly and completely understanding the thoughts, feelings, motivations, needs, and desires of consumers, of all of us.

Of course, neuromarketing isn't the answer to everything. As a young science, it's limited by our still-incomplete understanding of the human brain. But the good news is that understanding of how our unconscious minds drive our behavior is increasing; today, some of the top researchers around the globe are making major inroads into this fascinating science. At the end of the day, I see this book—based on the largest neuromarketing study of its kind—as my own contribution to this growing body of knowledge. (Some of my findings may be questioned, and I welcome what I believe will result in an important dialogue). Though nothing in science can ever be considered the final word, I believe *Buyology* is the beginning of a radical and intriguing exploration of why we buy. A contribution that, if I've achieved my goal, overturns many of the myths, assumptions, and beliefs that all of us have long held about what piques our interest in a product and what drives us away. So I hope you enjoy it, learn from it, and come away from it with a better understanding of our Buyology—the multitude of subconscious forces that motivate us to buy.

1

A RUSH OF BLOOD TO THE HEAD

The Largest Neuromarketing Study Ever Conducted

NOT SURPRISINGLY, THE smokers were on edge, fidgety, not sure what to expect.

Barely noticing the rain and overcast skies, they clumped together outside the medical building in London, England, that houses the Centre for NeuroImaging Sciences. Some were self-described social smokers—a cigarette in the morning, a second snuck in during lunch hour, maybe half-a-dozen more if they went out carousing with their friends at night. Others confessed to being longtime two-pack-a-day addicts. All of them pledged their allegiance to a single brand, whether it was Marlboros or Camels. Under the rules of the study, they knew they wouldn't be allowed to smoke for the next four hours, so they were busy stockpiling as much tar and nicotine inside their systems as they could. In between drags, they swapped lighters, matches, smoke rings, apprehensions: *Will this hurt? George Orwell would love this. Do you think the machine will be able to read my mind?*

Inside the building, the setting was, as befits a medical lab-

oratory, antiseptic, no-nonsense, and soothingly soulless—all cool white corridors and flannel gray doors. As the study got under way I took a perch behind a wide glass window inside a cockpit-like control booth among a cluster of desks, digital equipment, three enormous computers, and a bunch of white-smocked researchers. I was looking over a room dominated by an fMRI (functional Magnetic Resonance Imaging) scanner, an enormous, $4 million machine that looks like a giant sculpted doughnut, albeit one with a very long, very hard tongue. As the most advanced brain-scanning technique available today, fMRI measures the magnetic properties of hemoglobin, the components in red blood cells that carry oxygen around the body. In other words, fMRI measures the amount of oxygenated blood throughout the brain and can pinpoint an area as small as one millimeter (that's 0.03937 of an inch). You see, when a brain is operating on a specific task, it demands more fuel—mainly oxygen and glucose. So the harder a region of the brain is working, the greater its fuel consumption, and the greater the flow of oxygenated blood will be to that site. So during fMRI, when a portion of the brain is in use, that region will light up like a red-hot flare. By tracking this activation, neuroscientists can determine what specific areas in the brain are working at any given time.

Neuroscientists traditionally use this 32-ton, SUV-sized instrument to diagnose tumors, strokes, joint injuries, and other medical conditions that frustrate the abilities of X-rays and CT scans. Neuropsychiatrists have found fMRI useful in shedding light on certain hard-to-treat psychiatric conditions, including psychosis, sociopathy, and bipolar illness. But those smokers puffing and chatting and pacing in the waiting room weren't ill or in any kind of distress. Along with a similar sample of smokers in the United States, they were carefully chosen participants in a groundbreaking neuromarketing study who were helping me get to the bottom—or the brain—of a mystery that had been confounding health professionals, cigarette companies, and smokers and nonsmokers alike for decades.

For a long time, I'd noticed how the prominently placed health warnings on cigarette boxes seemed to have bizarrely little, if any, effect on smokers. *Smoking causes fatal lung cancer. Smoking causes emphysema. Smoking while pregnant causes birth defects.* Fairly straightforward stuff. Hard to argue with. And those are just the soft-pedaled American warnings. European cigarette makers place their warnings in coal-black, Magic Marker–thick frames, making them even harder to miss. In Portugal, dwarfing the dromedary on Camel packs, are words even a kid could understand: *Fumar Mata.* Smoking kills. But nothing comes even close to the cigarette warnings from Canada, Thailand, Australia, Brazil—and soon the U.K. They're gorily, forensically true-to-life, showing full-color images of lung tumors, gangrenous feet and toes, and the open sores and disintegrating teeth that accompany mouth and throat cancers.

You'd think these graphic images would stop most smokers in their tracks. So why, in 2006, despite worldwide tobacco advertising bans, outspoken and frequent health warnings from the medical community, and massive government investment in antismoking campaigns, did global consumers continue to smoke a whopping 5,763 billion cigarettes, a figure which doesn't include duty-free cigarettes, or the huge international black market trade? (I was once in an Australian convenience store where I overheard the clerk asking a smoker, "Do you want the pack with the picture of the lungs,

the heart, or the feet?" How often did this happen, I asked the clerk? Fifty percent of the time that customers asked for cigarettes, he told me.) Despite what is now known about smoking, it's estimated that about one-third of adult males across the globe continue to light up. Approximately 15 billion cigarettes are sold every day—that's 10 million cigarettes sold a minute. In China, where untold millions of smokers believe that cigarettes can cure Parkinson's disease, relieve symptoms of schizophrenia, boost the efficacy of brain cells, and improve their performance at work, over 300 million people,[1] including 60 percent of all male doctors, smoke. With annual sales of 1.8 trillion cigarettes, the Chinese monopoly is responsible for roughly one-third of all cigarettes being smoked on earth today[2]—a large percentage of the 1.4 billion people using tobacco, which, according to World Bank projections, is expected to increase to roughly 1.6 billion by 2025 (though China consumes more cigarettes than the United States, Russia, Japan, and Indonesia combined).

In the Western world, nicotine addiction still ranks as an enormous concern. Smoking is the biggest killer in Spain today, with fifty thousand smoking-related deaths annually. In the U.K., roughly one-third of all adults under the age of sixty-five light up, while approximately 42 percent of people under sixty-five are exposed to tobacco smoke at home.[3] Twelve times more British people have died from smoking than died in World War II. According to the American Lung Association, smoking-related diseases affect roughly 438,000 American lives a year, "including those affected indirectly, such as babies born prematurely due to prenatal maternal smoking and victims of 'secondhand' exposure to tobacco's carcinogens." The health-care costs in the United States

alone? Over $167 billion a year.[4] And yet cigarette companies keep coming up with innovative ways to kill us. For example, Philip Morris's latest weapon against workplace smoking bans is Marlboro Intense, a smaller, high-tar cigarette—seven puffs worth—that can be consumed in stolen moments in between meetings, phone calls, and PowerPoint presentations.[5]

It makes no sense. Are smokers selectively blind to warning labels? Do they think, to a man or a woman, *Yes, but I'm the exception here*? Are they showing the world some giant act of bravado? Do they secretly believe they are immortal? Or do they know the health dangers and just not care?

That's what I was hoping to use fMRI technology to find out. The thirty-two smokers in today's study? They were among the 2,081 volunteers from America, England, Germany, Japan, and the Republic of China that I'd enlisted for the largest, most revolutionary neuromarketing experiment in history.

It was twenty-five times larger than any neuromarketing study ever before attempted. Using the most cutting-edge scientific tools available, it revealed the hidden truths behind how branding and marketing messages work on the human brain, how our truest selves react to stimuli at a level far deeper than conscious thought, and how our unconscious minds control our behavior (usually the opposite of how we *think* we behave). In other words, I'd set off on a quest to investigate some of the biggest puzzles and issues facing consumers, businesses, advertisers, and governments today.

For example, does product placement really work? (The answer, I found out, is a qualified no.) How powerful are brand logos? (Fragrance and sound are more potent than any logo alone.) Does subliminal advertising still take place? (Yes,

and it probably influenced what you picked up at the convenience store the other day.) Is our buying behavior affected by the world's major religions? (You bet, and increasingly so.) What effect do disclaimers and health warnings have on us? (Read on.) Does sex in advertising work (not really) and how could it possibly get more explicit than it is now? (You just watch.)

Beginning in 2004, from start to finish, our study took up nearly three years of my life, cost approximately $7 million (provided by eight multinational companies), comprised multiple experiments, and involved thousands of subjects from across the globe, as well as two hundred researchers, ten professors and doctors, and an ethics committee. And it employed two of the most sophisticated brain-scanning instruments in the world: the fMRI and an advanced version of the electroencephalograph known as the SST, short for steady-state typography, which tracks rapid brain waves in real time. The research team was overseen by Dr. Gemma Calvert, who holds the Chair in Applied Neuroimaging at the University of Warwick, England, and is the founder of Neurosense in Oxford, and Professor Richard Silberstein, the CEO of NeuroInsight in Australia. And the results? Well, all I'll say for now is that they'll transform the way you think about how and why you buy.

MARLENE, ONE OF the smokers in the study, took her place lying flat on her back inside the fMRI. The machine made a little ticking sound as the platform rose and locked into place. Marlene looked a little hesitant—who wouldn't?—but managed a gung-ho smile as a technician placed the protective head coil over most of her face in preparation for the first brain scan of the day.

From Marlene's pretesting questionnaire and interview, I knew she was a recently divorced mother of two from Middlesex, and that she'd started smoking at boarding school fifteen years earlier. She thought of herself less as a nicotine addict than a "party smoker," that is, she smoked just a couple of "small" cigarettes during the day, as well as eight to ten more at night.

"Are you affected by the warnings on cigarette packs?" the questionnaire had asked.

"Yes," Marlene had written, twirling her pen around in her fingers as though she was about to ignite the thing.

"Are you smoking less as a consequence of these?"

Another yes. More pen-spinning. I've never been a smoker, but I felt for her.

Her interview answers were clear enough, but now it was time to interview her brain. For those who've never had an MRI, it's not what I'd call the most relaxing or enjoyable experience in the world. The machine is clankingly noisy, lying perfectly still is tedious, and if you're at all prone to panic or claustrophobia, it can feel as if you're being buried alive in a phone booth. Once inside, it's best you remain in a state of yogic calm. Breathe. In, out, in again. You're free to blink and swallow, but you better ignore that itch on your left calf if it kills you. A tic, a jiggle, a fidget, a grimace, body twitching—the slightest movement at all and the results can be compromised. Wedding bands, bracelets, necklaces, nose rings, or tongue studs have to be taken off beforehand, as well. Thanks to the machine's rapacious magnet, any scrap of metal would

rip off so fast you wouldn't know what just belted you in the eye.

Marlene was in the scanner for a little over an hour. A small reflective apparatus resembling a car's rearview mirror projected a series of cigarette warning labels from various angles, one after another, on a nearby screen. Asked to rate her desire to smoke during this slideshow, Marlene signaled her responses by pressing down on what's known as a button box—a small black console resembling a hand-sized accordion—as each image flashed by.

We continued to perform brain scans on new subjects over the next month and a half.

Five weeks later, the team leader, Dr. Calvert, presented me with the results. I was, to put it mildly, startled. Even Dr. Calvert was taken aback by the findings: warning labels on the sides, fronts, and backs of cigarette packs had no effect on suppressing the smokers' cravings at all. Zero. In other words, all those gruesome photographs, government regulations, billions of dollars some 123 countries had invested in nonsmoking campaigns, all amounted, at the end of a day, to, well, a big waste of money.

"Are you *sure*?" I kept saying.

"Pretty damn certain," she replied, adding that the statistical validity was as solid as could be.

But this wasn't half as amazing as what Dr. Calvert discovered once she analyzed the results further. Cigarette warnings—whether they informed smokers they were at risk of contracting emphysema, heart disease, or a host of other chronic conditions—had in fact *stimulated* an area of the smokers' brains called the nucleus accumbens, otherwise known as "the craving spot." This region is a chain-link of

specialized neurons that lights up when the body desires something—whether it's alcohol, drugs, tobacco, sex, or gambling. When stimulated, the nucleus accumbens requires higher and higher doses to get its fix.

In short, the fMRI results showed that cigarette warning labels not only failed to deter smoking, but by activating the nucleus accumbens, it appeared they actually *encouraged* smokers to light up. We couldn't help but conclude that those same cigarette warning labels intended to curb smoking, reduce cancer, and save lives had instead become a killer marketing tool for the tobacco industry.

Most of the smokers checked off yes when they were asked if warning labels worked—maybe because they thought it was the right answer, or what the researchers wanted to hear, or maybe because they felt guilty about what they knew smoking was doing to their health. But as Dr. Calvert concluded later, it wasn't that our volunteers felt ashamed about what smoking was doing to their bodies; they felt guilty that the labels stimulated their brains' craving areas. It was just that their conscious minds couldn't tell the difference. Marlene hadn't been lying when she filled out her questionnaire. But her brain—the ultimate no-bullshit zone—had adamantly contradicted her. Just as our brains do to each one of us every single day.

The results of the additional brain scan studies I carried out were just as provocative, fascinating, and controversial as the cigarette research project. One by one, they brought me closer to a goal I'd set out to accomplish: to overturn some of the most long-held assumptions, myths, and beliefs about what kinds of advertising, branding, and packaging actually work to arouse our interest and encourage us to buy. If I could

help uncover the subconscious forces that stimulate our interest and ultimately cause us to open our wallets, the brain-scan study would be the most important three years of my life.

BY WAY OF profession, I'm a global branding expert. That is, it's been a lifelong mission (and passion) to figure out how consumers think, why they buy or don't buy the products they do—and what marketers and advertisers can do to pump new life into products that are sick, stuck, stumbling, or just lousy to begin with.

If you look around, chances are pretty good you'll find my branding fingerprints are all over your house or apartment, from those products under the kitchen sink, to the chocolate you stash in your desk drawer, to the phone beside your bed, to the shaving cream in your bathroom, to the car sitting in the driveway. Maybe I helped brand your TV's remote control. The coffee you gulped down this morning. The bacon cheeseburger and French fries you ordered in last week. Your computer software. Your espresso machine. Your toothpaste. Your dandruff shampoo. Your lip balm. Your underwear. Over the years I've been doing this work, I've helped brand antiperspirant, feminine hygiene products, iPod speakers, beer, motorcycles, perfume, Saudi Arabian eggs—the list goes on and on. As a branding expert and brand futurist (meaning that the sum of my globe-hopping experience gives me a helicopter view of probable future consumer and advertising trends), businesses consider my colleagues and me something of a brand ambulance service, a crisis-intervention management team.

Let's say that your line of pricey bottled water from the

Silica-Filled-Crystal-Clear-Mountain-Streams-and-Artesian-Wells-of-Wherever is tanking. The company wants consumers to believe it's bottled by elves standing ankle-deep in fjords rather than inside a sprawling plant off the New Jersey Turnpike, but regardless, its market shares are tumbling, and no one in the company knows what to do. I'll begin digging. What's the secret of their product? What makes it stand out? Are there any stories or rituals or mysteries consumers associate with it? If not, can we root around and find some? Can the product somehow break through the two-dimensional barrier of advertising by appealing to senses the company hasn't yet thought of? Smell, touch, sound? A gasp the cap makes when you unscrew it? A flirty pink straw? Is the advertising campaign edgy and funny and risk-taking, or is it as boring and forgettable as every other company's?

Because I travel so much, I'm able to see how brands perform all over the world. I'm on an airplane about three hundred days out of the year, giving presentations, analyses, and speeches. If it's Tuesday, I could be in Mumbai. The next day São Paolo. Or Dublin, Tokyo, Edinburgh, San Francisco, Athens, Lima, Sri Lanka, or Shanghai. But my hectic travel schedule is an advantage I can bring to a team that's usually too busy to go outside their own building for lunch, much less visit a store in Rio de Janeiro or Amsterdam or Buenos Aires to observe their product in action.

I've been told more times than I can count that my appearance is as nonconventional as what I do for a living. At thirty-eight, I stand about five feet eight inches, and am blessed, or cursed, with an extremely young, boyish-looking face. The excuse I've come up with over the years is that I grew up in Denmark, where it was so cold all the time the

weather froze my looks in place. My features, my raked-back blond hair, and my habit of wearing all black give a lot of people the impression that I'm some kind of quirky child evangelist, or maybe some precocious, slightly wired high-school student who got lost on the way to the science lab and ended up in a corporate boardroom by mistake. I've gotten used to this over the years. I suppose you could say that it's evolved into my brand.

So how did I find myself staring through a window into an antiseptic medical lab in a rain-soaked English university as one volunteer after another submitted to an fMRI brain scan?

By 2003, it had become pretty clear to me that traditional research methods, like market research and focus groups, were no longer up to the task of finding out what consumers *really* think. And that's because our irrational minds, flooded with cultural biases rooted in our tradition, upbringing, and a whole lot of other subconscious factors, assert a powerful but hidden influence over the choices we make. Like Marlene and all those other smokers who said that cigarette warnings discouraged them from smoking, we may *think* we know why we do the things we do—but a much closer look into the brain tells us otherwise.

Think about it. As human beings, we enjoy thinking of ourselves as a rational species. We feed and clothe ourselves. We go to work. We remember to turn down the thermostat at night. We download music. We go to the gym. We handle crises—missed deadlines, a child falling off a bike, a friend getting sick, a parent dying, etc.—in a grown-up, evenhanded way. At the least, that's our goal. If a partner or colleague accuses us of acting irrationally, we get a little offended. They might as well have just accused us of temporary insanity.

But like it or not, all of us consistently engage in behavior for which we have no logical or clear-cut explanation. This is truer than ever before in our stressed-out, technologically overwired world, where news of terrorist threats, political saber-rattling, fires, earthquakes, floods, violence, and assorted other disasters pelts us from the moment we turn on the morning news to the time we go to bed. The more stress we're under, the more frightened and insecure and uncertain we feel—and the more irrationally we tend to behave.

For example, consider how much superstition governs our lives. We knock on wood for luck. (I've been in boardrooms where, if there's no wood around, executives will glance around helplessly for a substitute. Does a briefcase count? A pencil? What about the floor?) We won't walk under ladders. We cross our fingers for luck. We'd prefer not to fly on Friday the thirteenth, or drive down the street where we spotted that black cat in the bushes last week. If we break a mirror, we think, *That's it, seven years of bad luck.* Of course, if you ask us, most of us will say no, don't be ridiculous, I give absolutely no credence to any of those inane superstitions. Yet most of us continue to act on them, every day of our lives.

Under stress (or even when life is going along pretty well), people tend to say one thing while their behavior suggests something entirely different. Needless to say, this spells disaster for the field of market research, which relies on consumers being accurate and honest. But 85 percent of the time our brains are on autopilot. It's not that we mean to lie—it's just that our unconscious minds are a lot better at interpreting our behavior (including why we buy) than our conscious minds are.

The concept of brand-building has been around for close

to a century. But advertisers still don't know much more than department store pioneer John Wanamaker did a century ago when he famously declared, "Half my advertising budget is wasted. Trouble is, I don't know which half." Companies often don't know what to do to engage us authentically—as opposed to simply attracting our attention. I'm not saying companies aren't smart, because they are. Some, like the tobacco companies, are *scarily* smart. But most still can't answer a basic question: What drives us, as consumers, to make the choices we do? What causes us to choose one brand or product over another? What are shoppers really thinking? And since no one can come up with a decent answer to these questions, companies plow ahead using the same strategies and techniques as they always have. Marketers, for example, are still doing the same old stuff: quantitative research, which involves surveying lots and lots of volunteers about an idea, a concept, a product, or even a kind of packaging—followed by qualitative research, which turns a more intense spotlight on smaller focus groups handpicked from the same population. In 2005, corporations spent more than $7.3 billion on market research in the United States alone. In 2007, that figure rose to $12 billion. And that doesn't even include the additional expenses involved in marketing an actual product—the packaging and displays, TV commercials, online banner ads, celebrity endorsements, and billboards—which carry a $117 billion annual price tag in America alone.

But if those strategies still work, then why do eight out of ten new product launches fail within the first three months? (In Japan, product launches fail a miserable 9.7 times out of every ten.) What we know now, and what you'll read about in the pages that follow, is that what people say on surveys and

in focus groups does *not* reliably affect how they behave—far from it. Let's take an example. Today's modern mother is more and more fearful about "germs," "safety," and "health." No woman in her right mind wants to accidentally ingest *E. coli,* or pick up strep throat, nor does she want little Ethan or Sophie to get infected either. So a company's research department develops a small vial of something antibacterial—we'll call it "Pure-Al"—that women can tuck in their pockets, and whip out to slather on their hands after a day spent in a suffocating office, a friend's filthy apartment or an overcrowded subway car.

But can Pure-Al really inhibit our fears about "germs" and "safety"? How can its marketers know what these terms mean to most of us? Sure, there's a basic human desire to feel safe and secure, as well as a natural aversion to germ-ridden banisters, bacteria-laden jungle gyms, and dusty offices. But as our smokers' questionnaires showed, we don't always express or act on these feelings consciously; there's an entire peninsula of thought and feeling that remains out of reach. The same goes for every single other emotion we experience, whether it's love, empathy, jealousy, anger, revulsion, and so on.

Tiny, barely perceptible factors can slant focus group responses. Maybe one woman felt that as a mother of four kids and three dogs and seventeen geckos, she *should* care more about germs, but didn't want to admit to the other women in the room that her house was already messy beyond the pale. Or maybe the head of the research team reminded another woman of an ex-boyfriend who left her for her best friend and this (okay, just maybe) tainted her impression of the product.

Maybe they just all hated his nose.

Point is, try putting *these* micro-emotions into words or writing them down in a roomful of strangers. It can't be done. That's why the true reactions and emotions we as consumers experience are more likely to be found in the brain, in the nanosecond lapse before thinking is translated into words. So, if marketers want the naked truth—the truth, unplugged and uncensored, about what causes us to buy—they have to interview our brains.

All of this is why, in 2003, I became convinced that something was fundamentally wrong with the ways companies reached out to customers, to us. Quite simply, companies didn't seem to understand consumers. Companies couldn't find and develop brands that matched our needs. Nor were they sure how to communicate in a way so that their products gripped our minds and hearts. Whether they were marketing cosmetics, pharmaceuticals, fast-food, cars, or pickles, no advertisers dared to stand out, or to try out anything remotely new or revolutionary. In terms of understanding the mind of the average consumer they were like Christopher Columbus in 1492, gripping a torn, hand-drawn map as the wind picked up and his boat lurched and listed toward what might or might not be flat land.

By uncovering the brain's deepest secrets, I wasn't interested in helping companies manipulate consumers—far from it. I buy a lot of stuff, too, after all, and at the end of the day, I'm as susceptible to products and brands as anyone. I also want to sleep well at night, knowing I've done the right thing (over the years I've turned down projects that, in my opinion, crossed that line). By attempting to shine a spotlight on the buying behavior of over two thousand study subjects, I felt I could help uncover our minds' truest motivations—and just maybe push human brain science forward at the same time.

It was time to throw everything up in the air, see where it landed, then start all over again. Which is where our brain-scanning study came in.

FOR ME, IT all began with a *Forbes* magazine cover story, "In Search of the Buy Button," which I picked up during a typical daylong airplane flight. The article chronicled the goings-on in a small lab in Greenwich, England, where a market researcher had joined forces with a cognitive neuroscientist to peer inside the brains of eight young women as they watched a TV show interspersed with half-a-dozen or so commercials for products ranging from Kit Kat chocolates, to Smirnoff vodka, to Volkswagen's Passat.

Using a technique known as SST, which measures electrical activity inside the brain (and resembles, I later found out, a floppy black Roaring Twenties–era bathing cap), the scientist and researcher had focused on a sequence of wiry lines crawling across a computer, like two garter snakes engaged in a mating dance. Only these weren't snakes, but brain waves, which SST was measuring millisecond-by-millisecond, in real time, as the volunteers viewed the commercials. An abrupt spike in one woman's left prefrontal cortex might indicate to researchers that she found Kit Kats appealing or appetizing. A sharp drop later on, and the neurologist might infer the last thing in the world she wanted was a Smirnoff-on-the-rocks.[6]

Brain waves as calibrated by SST are straight shooters.

They don't waver, hold back, equivocate, cave in to peer pressure, conceal their vanity, or say what they think the person across the table wants to hear. No: like fMRI, SST was the final word on the human mind. You couldn't get any more cutting-edge than this. In other words, neuroimaging could uncover truths that a half-century of market research, focus groups, and opinion polling couldn't come close to accomplishing.

I was so excited by what I was reading I nearly rang the call button just so I could tell the steward.

As I mentioned earlier, eight out of every ten products launched in the United States are destined to fail. In 2005, more than 156,000 new products debuted in stores globally, the equivalent of one new product release every three minutes.[7] Globally, according to the IXP Marketing Group, roughly 21,000 new brands are introduced worldwide per year, yet history tells us that all but a few of them have vanished from the shelf a year later.[8] In consumer products alone, 52 percent of all new brands, and 75 percent of individual products, fail.[9] Pretty terrible numbers. Neuroimaging, I realized, could zero in on those with the highest chance of succeeding by pinpointing consumers' reward centers and revealing which marketing or advertising efforts were most stimulating, appealing, or memorable, and which ones were dull, off-putting, anxiety-provoking, or worst of all, forgettable.

Market research wasn't going away, but it was about to take a seat at the neuroscience table and in the process, take on a brainy new look.

* * *

IN 1975, WATERGATE was still scandalizing America. Margaret Thatcher was elected the leader of the conservative party in Great Britain. Color TV debuted in Australia. Bruce Springsteen came out with *Born to Run.* And executives at the Pepsi-Cola Company decided to roll out a heavily publicized experiment known as the Pepsi Challenge. It was very simple. Hundreds of Pepsi reps set up tables in malls and supermarkets all over the world, handing out two unmarked cups to every man, woman, and child who'd stopped to see what all the commotion was about. One cup contained Pepsi, the other Coke. The subjects were asked which one they preferred. If the results worked out as they hoped, Pepsi might finally make a dent in Coke's longtime domination of the estimated $68 billion U.S. soft drink industry.

When the company's marketing department finally toted up the results, Pepsi executives were pleased, if slightly perplexed. More than half of the volunteers claimed to prefer the taste of Pepsi over Coke. Hallelujah, right? So by all accounts, Pepsi should be trouncing Coke all across the world. But it wasn't. It made no sense.

In his 2005 best-seller, *Blink,* Malcolm Gladwell offers a partial interpretation. The Pepsi Challenge was a "Sip Test," or what's known in the soda industry as a "Central Location Test," or CLT. He cites a former Pepsi new-product development executive, Carol Dollard, who explains the difference between taking a sip of a soft drink out of a cup and downing the entire can. In a sip test, people tend to like the sweeter product—in this case Pepsi—but when they drink an entire can of the stuff, there always lurks the possibility of blood sugar–overkill. That, according to Gladwell, is why Pepsi prevailed in the taste test, but Coke continued to lead the market.[10]

But in 2003, Dr. Read Montague, the director of the Human Neuroimaging Lab at Baylor College of Medicine in Houston, decided to probe the test results more deeply. Twenty-eight years after the original Pepsi Challenge, he revised the study, this time using fMRI to measure the brains of his sixty-seven study subjects. First, he asked the volunteers whether they preferred Coke, Pepsi, or had no preference whatsoever. The results matched the findings of the original experiment almost exactly; more than half of the test subjects reported a marked preference for Pepsi. Their brains did, too. While taking a sip of Pepsi, this entirely new set of volunteers registered a flurry of activity in the ventral putamen, a region of the brain that's stimulated when we find tastes appealing.

Interesting, but not all that dramatic—until a fascinating finding showed up in the second stage of the experiment.

This time around, Dr. Montague decided to let the test subjects know whether they were sampling Pepsi or Coke *before* they tasted it. The result: 75 percent of the respondents claimed to prefer Coke. What's more, Montague also observed a change in the location of their brain activity. In addition to the ventral putamen, blood flows were now registering in the medial prefrontal cortex, a portion of the brain responsible, among other duties, for higher thinking and discernment. All this indicated to Dr. Montague that two areas in the brain were engaged in a mute tug-of-war between rational and emotional thinking. And during that mini-second of grappling and indecision, the emotions rose up like mutinous soldiers to override respondents' rational preference for Pepsi. And that's the moment Coke won.[11]

All the positive associations the subjects had with Coca-Cola—its history, logo, color, design, and fragrance; their own

childhood memories of Coke, Coke's TV and print ads over the years, the sheer, inarguable, inexorable, ineluctable, emotional *Coke*-ness of the brand—beat back their rational, natural preference for the taste of Pepsi. Why? Because emotions are the way in which our brains encode things of value, and a brand that engages us emotionally—think Apple, Harley-Davidson, and L'Oréal, just for starters—will win every single time.

That Dr. Montague's study had proven a conclusive scientific link between branding and the brain took the scientific community by surprise . . . and you can bet advertisers began paying attention, too. A newborn but intriguing window into our thought patterns and decision-making processes was a few sips closer to becoming reality.

A similar, but no less powerful neuromarketing experiment soon followed on the heels of the Coke–Pepsi study. Far north from Texas, four Princeton University psychologists were busy conducting another experiment, this one aimed at scanning subjects' brains as they were presented with a choice: short-term immediate gratification versus delayed rewards.

The psychologists asked a group of random students to choose between a pair of Amazon.com gift vouchers. If they picked the first, a $15 gift voucher, they would get it at once. If they were willing to wait two weeks for the $20 gift certificate, well, obviously they'd be getting more bang for their buck. The brain scans revealed that both gift options triggered activity in the lateral prefrontal cortex, the area of the brain that generates emotion. But the possibility of getting that $15 gift certificate *now!* caused an unusual flurry of stimulation in the limbic areas of most students' brains—a whole grouping of brain structures that's primarily responsible for our emo-

tional life, as well as for the formation of memory. The more the students were emotionally excited about something, the psychologists found, the greater the chances of their opting for the immediate, if less immediately gratifying, alternative. Of course, their rational minds knew the $20 was logically a better deal, but—guess what—their emotions won out.[12]

Economists, too, want to understand the underlying decisions involved in what makes us behave as we do. Economic theory may be fairly sophisticated, but it's come up against blocks similar to the ones advertising is confronting. "Finance and economic research has hit the wall," explains Andrew Lo, who runs AlphaSimplex Group, a Cambridge, Massachusetts, hedge fund firm. "We need to get inside the brain to understand why people make decisions."[13]

That's because, just like market research, economic modeling is based on the premise that people behave in a predictably rational way. But again, what's beginning to show up in the fledgling world of brain scanning is the enormous influences our emotions have on every decision we make. Thus the interest in neuro-economics, the study of the way the brain makes financial decisions. Thanks to fMRI, it is giving unprecedented insight into how emotions—such as generosity, greed, fear, and well-being—impact economic decision-making.

As George Loewenstein, a behavioral economist from Carnegie Mellon University, confirmed: "Most of the brain is dominated by automatic processes, rather than deliberate thinking. A lot of what happens in the brain is emotional, not cognitive."[14]

* * *

IT COMES AS no surprise that once neuroimaging had snagged the attention of the advertising world, it would find its way into other disciplines, too. In fact, politics, law enforcement, economics, and even Hollywood were already in on the action.

Politicians' interest in the fMRI—well, you could almost see it coming. Committees spend up to a billion dollars handcrafting an electable presidential candidate—and elections are increasingly won and lost by the tiniest fraction of a percentage point. Imagine having at your disposal a tool that could possibly pinpoint what goes on in the brains of registered voters. If you were involved in a campaign, you'd want to use it, right? Or so Tom Freedman, a strategist and senior advisor to the Clinton administration, must have thought when he founded a company known as FKF Applied Research. FKF is devoted to studying decision-making processes, and how the brain responds to leadership qualities. In 2003, his company used fMRI scanning to analyze public responses to campaign commercials during the run-up to the Bush-Kerry presidential campaign.

Freedman's test subjects looked at a selection of commercials for incumbent president George W. Bush and Massachusetts senator John Kerry; photographs of each candidate; images of the September 11 World Trade Center terrorist attacks; and former president Lyndon Johnson's infamous 1964 "Daisy" ad in which a young girl is seen frolicking with a daisy as a nuclear explosion detonates.

The results? Not surprisingly, the September 11 attack imagery and the "Daisy" ad triggered a noticeable, across-the-board increase in activity in voters' amygdalas, a small brain region named after the Greek word for "almond," which governs, among other things, fear, anxiety, and dread. Yet

Freedman found that Republicans and Democrats reacted differently to ads replaying the September 11 attacks; the amygdalas of Democrats lit up far more noticeably than the amygdalas of Republicans. Marco Iacobini, the lead researcher and an associate professor at the Neuropsychiatric Institute, interpreted this odd discrepancy to Democrats' fear that 9/11 was a nerve-wracking touch-point that could lead to George W. Bush's reelection in 2004. Tom Freedman threw in the theory that in general, Democrats are a lot more unsettled by the idea of military force, which they associated with 9/11, than are most Republicans.

But what was most interesting to Freedman was that his study also showed that scanning voters' amygdalas could be beneficial in designing campaign ads, as playing on voters' fear has been shown time and time again to be key in securing a politician's win. After all, Johnson's "Daisy" ad had helped to ensure his victory in 1964 by playing to the fear of nuclear war. And, as it turned out, history would repeat itself forty years later when the Republicans clinched victory in the 2004 election by sledgehammering the fear of terrorism into voters' heads. Despite widespread cries that political advertising emphasize "optimism," "hope," "building up, not tearing down," and so on, fear works. It's what our brains remember.

Although using brain-scanning technology to sway political decisions is in its infancy, I predict that the 2008 American presidential showdown will be the last-ever election to be governed by traditional surveys, and that by 2012, neuroscience will begin to dominate *all* election predictions. "These new tools could help us someday be less reliant on clichés and unproven adages. They'll help put a bit more science in political science," Tom Freedman commented.[15]

Hollywood, too, is fascinated by neuroscience. A Stanford University experimental neurobiologist, Steve Quartz, has studied subjects' brains to see how they respond to trailers of movies that are weeks, if not months, away from general release. Are they memorable, catchy, provocative? Will they hook our attention? By exploring precisely what appeals to the brain's reward center, studios can create the most provocative trailers, or even sculpt the end of the movie to reflect what appeals to us, the viewing public.[16] So if you think films are formulaic now, fasten your seatbelts for *Rocky 52*.

As for law enforcement? One California entrepreneur has come up with a neuroimaging spin on the widely used polygraph, or lie-detector, test with a product called the No Lie MRI. Its assumption, as any capable dissembler can tell you, is that it takes effort to lie. In other words, saying, "No, I didn't cheat on you, darling," or "I *swear* I used my blinker!" requires a stimulation of cognition—and thus a rush of oxygenated blood to the brain. Even the U.S. Pentagon has increased their research into an MRI-based lie detection program, partially funded by the Defense Advanced Research Projects Agency, which comes up with ingenious new tools and techniques for military use.[17]

But back to marketing. As we've seen, this fledgling science had already made some inroads. In 2002, for example, Daimler-Chrysler's research center in the German town of Ulm used fMRIs to study the brains of consumers while showing them images of a series of automobiles, including Mini Coopers and Ferraris. And what they found was that as the subjects gazed at a slide of a Mini Cooper, a discrete region in the back area of the brain that responds to faces came alive. The fMRI had just pinpointed the essence of the Mini

Cooper's appeal. Above and beyond the car's "wide bulldog stance," "ultra-rigid body," "1.6L 16-valve alloy engine," and "6 airbags with side protection" (goodies lauded on the car's Web site),[18] the Mini Cooper registered in subjects' brains as an adorable face. It was a gleaming little person, Bambi on four wheels, or Pikachu with an exhaust pipe. You just wanted to pinch its little fat metallic cheeks, then drive it away.

There's no doubt that babies' faces have a strong effect on our brains. In a University of Oxford study involving an imaging technique known as magnetoencephalography, neuroscientist Morten L. Kringelbach asked 12 adults to carry out a computer task while the faces of infants and adults (similar in expression) flashed onto a nearby screen. According to *Scientific American,* "While the volunteers ultimately processed the faces using the brain regions that normally handle such a task, all the participants showed an early, distinct response to the infant faces alone." More specifically, "Within one-seventh of a second, a spike in activity occurred in the medial orbitofrontal cortex, an area above the eye sockets linked to the detection of rewarding stimuli." In other words, according to Kringelbach, the volunteers' brains seemed to identify infants' faces as somehow special.[19]

More intriguing revelations followed. Daimler-Chrysler researchers then displayed images of sixty-six different cars to a dozen men, again scanning their brains using the fMRI. This time, the sports cars stimulated the region of the brain associated with "reward and reinforcement" according to Henrik Walter, a psychiatrist and neuroscientist involved in the study. And what is often the most rewarding thing for guys? Sex. It seemed, just as male peacocks attract female mates with the iridescence of their back feathers, the males in this study subconsciously sought to attract the opposite sex with the low-rising, engine-revving, chrome pizzazz of the sports car. Walter even took it one step further, explaining that just as female birds reject male birds with scrawny plumages—the peacock-equivalent of a comb-over—in favor of the most preening, showstopping birds because the length and sheen of a male peacock's plumage correlate directly to the bird's vigor, virility, and social status, so do women prefer men with a showy, slinky sports car: "If you are strong and successful as an animal, you can afford to invest energy in such a pointless thing," Walter points out.

In essence, neuroscience revealed what I'd always believed: that brands are much more than just recognizable products wrapped in eye-catching designs. Yet at the time, all previous neuroimaging tests had focused on a particular product. The brain scan study I decided to undertake would be the first attempt to examine not just a specific brand—whether a Heineken, a Honda Civic, a Gillette razor, or a Q-tip—but to explore what the concept "brand" really means to our brains. If I could sneak a peek inside consumers' heads to find out why some products worked, while others fell flat on their faces, I knew my study could not only transform the way companies designed, marketed, and advertised their products—but also help each one of us understand what is *really* going on inside our brains when we make decisions about what we buy.

So what the heck was I supposed to do next?

The obvious next stage was to find the best scientists—and the most sophisticated instruments around—to help me carry out this experiment. Ultimately, I decided to combine two methods, SST, the advanced version of the electroencephalograph; and fMRI. I chose these for a number of reasons. Nei-

ther instrument is invasive. Neither involves radiation. And both are able to measure the level of emotional attraction (or revulsion) we as consumers experience more precisely than any other tool available.

FMRI, as I mentioned earlier, is able to pinpoint an area as small as one millimeter in the brain. In essence, it takes a miniature home movie of the brain every few seconds—and in as little as ten minutes can amass a spectacular amount of information. Meanwhile, the less expensive SST brings with it the advantage of being able to measure reactions instantaneously (while fMRI has a few seconds delay). This made SST ideal for registering brain activity while people are watching TV commercials and programs, or any other kind of visual stimuli happening in real time. Better yet, it's portable and travel ready—a kind of movable laboratory (which, believe me, came in handy when we secured special, unprecedented permission from the Chinese government to scan the brains of Chinese consumers).

Ultimately, we based our research on 102 fMRI scans and 1,979 SST studies. Why not half-and-half? A typical fMRI brain scan, which involves design, analysis, conducting the experiment, and interpreting the results, can be expensive. SST studies are far less costly. Even so, our fMRI studies were almost twice as extensive as any conducted to date.

Until we began our research, no one had ever mixed and matched fMRI and SST on behalf of a broad-scale neuromarketing study. If you think of the brain as a house, any and all previous experiments were based on looking through a single window, but our wide-ranging study promised to cast its gaze through as many windows, cracks, floorboards, attic windows, and mouse holes as we could find.

But this study wasn't going to come cheap, and I knew that without corporate backing, it was dead in the water. But when I get an idea in my head that keeps me up at night, I'm persistent. Politely pushy, you might call it. Those twenty-seven messages on your answering machine? They're all from me (sorry). Nevertheless, in spite of all my efforts, business after business turned me down. The people I approached were either intrigued-but-unconvinced, or intrigued-but-spooked. And of course, with a brain-scanning experiment this ambitious, backers weren't without their ethical concerns. "Orwellian"—that's the most frequently heard reaction when people hear the word *neuromarketing.* A recent *New York Times Magazine* cover story touching on the law and brain imaging noted a widespread fear among scholars that brain scanning is a "kind of super mind-reading device" that threatens the privacy and "mental freedom" of citizens.[20]

But to be honest, I didn't share these ethical concerns. As I said in the introduction, neuromarketing isn't about implanting ideas in people's brains, or forcing them to buy what they don't want to buy; it's about uncovering what's already inside our heads—our Buyology. Our willing volunteers were genuinely excited to take part in the birth of a new science. There were no complaints. No adverse reactions, no side effects, no health risks. Everyone knew what they were doing, and they were fully briefed before they signed on. And in the end, a hospital ethics committee oversaw every detail and aspect of our study, ensuring that nothing could go forward until we'd cleared it with them first.

Finally, one company said they were willing to give neuromarketing a shot. Followed by another company. Then another. A few months later, I'd secured all the resources I

needed from eight multinational corporations. Finally, I put in some money of my own.

Now, I was faced with the largest operational and logistical headache I've ever come up against: finding a huge number of volunteers—2,081 at final count—from a handful of countries around the world. Why? First, I didn't want anyone claiming that the sample population I came up with was in any way too narrow or limited. Plus, our research had to be global, because the work I do is global, and because in today's world, companies and brands are global as well.

So I settled on a final five countries: America, because it's home to Madison Avenue and Hollywood; Germany, because it's the most advanced country in the world as far as neuromarketing is concerned; England, because it's where Dr. Calvert's company is based; Japan, because there's no rougher, tougher place in the world to launch a new product; and China, because it's by far the world's largest emerging market.

Cut to a few months later, when I found myself in a Los Angeles studio, surrounded by hundreds of volunteers, attired in SST caps, electrodes, wires, and goggles, all glued to a TV screen watching Simon Cowell, Paula Abdul, and Randy Jackson perched in their red chairs like a high-school disciplinary committee. Simon idly sipped a Coke as across the stage, a guy with sideburns and a Hawaiian shirt warbled an off-key rendition of the Monkees' "Daydream Believer."

By exploring viewers' responses to one of the most popular TV shows in America, our first experiment would answer the first question I was posing—does product placement really work, or was it, despite what advertisers and consumers alike have long believed, a colossal waste of money?

2

THIS MUST BE THE PLACE

Product Placement, American Idol, *and Ford's Multimillion-Dollar Mistake*

REMEMBER THAT COMmercial you saw on *American Idol* two nights ago? The one where the tractor salesman was scarfing down those fish sticks, and that kind-of-funny cell phone ad with those two quacking ducks . . .

Yeah, me neither. As a matter of fact, I don't even remember what I had for dinner two nights ago. Steak? Lasagna? Fettucine Alfredo? A Caesar salad? Maybe I forgot to eat. The point is, I can't recall—just as I have no recollection of the third man who landed on the moon, or the fourth person who summited Mt. Everest.

By the time we reach the age of sixty-six, most of us will have seen approximately two million television commercials. Time-wise, that's the equivalent of watching eight hours of ads seven days a week for six years straight. In 1965 a typical consumer had a 34 percent recall of those ads. In 1990, that figure had fallen to 8 percent. A 2007 ACNielsen phone survey of one thousand consumers found that the average per-

4

I CAN'T SEE CLEARLY NOW

Subliminal Messaging, Alive and Well

IT WAS THE SUMMER OF 1957. Dwight D. Eisenhower had begun his second term in office, Elvis had made his last appearance on the *Ed Sullivan Show,* Jack Kerouac's *On the Road* debuted in bookstores, and over a six-week period, 45,699 moviegoers crowded inside the movie theater in Fort Lee, New Jersey, to watch William Holden as an ex-jock-turned-drifter fall for Kim Novak, a Kansas girl who's already spoken for, in the cinematic version of William Inge's play *Picnic.*

But unbeknownst to audiences, this version of *Picnic* had an apparently sinister twist. It turns out that a market researcher by the name of James Vicary had placed a mechanical slide projector in the screening room, and had projected the words "Drink Coca-Cola" and "Eat Popcorn" for a duration of 1/3000 of a second onscreen every five seconds during every showing of the movie.

Vicary, who is famous to this day for coining the term *subliminal advertising,* claimed that during his experiment, the Fort

Lee theater saw an 18.1 percent increase in Coca-Cola sales and a whopping 57.8 percent surge in popcorn purchases, all thanks to the suggestive powers of his hidden messages.

The experiment touched a nerve in an American public already jumpy from cold war paranoia and inflamed by the publication of Vance Packard's book *The Hidden Persuaders,* which exposed the psychologically manipulative methods marketers were bringing to advertising. Consumers were convinced that the government could use the same kinds of under-the-radar techniques to peddle propaganda, that the Communists could use them to recruit supporters, or that cults could use them to brainwash members. As a result, American television networks and the National Association of Broadcasters banned subliminal ads in June of 1958.

In 1962, Dr. Henry Link, the president of the Psychological Corporation, challenged Vicary to repeat his Coke-and-popcorn test. Yet this time the experiment yielded no jump whatsoever in either Coke or popcorn sales. In an interview with *Advertising Age,* Vicary came out and somewhat puzzlingly admitted that his experiment was a gimmick—he'd made the whole thing up. The mechanical slide projector, the surge in popcorn and Coca-Cola sales—none of it was true. Despite Vicary's confession, the damage was done, and a belief in the power of subliminal messaging had been firmly planted in the American public's mind.

Shortly thereafter, the American Psychological Association pronounced subliminal advertising "confused, ambiguous and not as effective as traditional advertising," and the issue—and the ban—appeared to be laid to rest.[1] Predictably, consumer paranoia about the topic drifted away, just as it would time and again over the next half-century as consumers and advocacy

groups occasionally petitioned for stricter laws, only to have governmental agencies fail to pass any outright federal legislation.

But then, some fifteen years after Vicary's faux-experiment, Dr. Wilson B. Key published his book *Subliminal Seduction* with a cover photograph picturing a cocktail with a lemon wedge in it, accompanied by the irresistible teaser, *Are you being sexually aroused by this picture?* Soon, a new wave of paranoia burbled through the country. This time around, the FCC announced in January 1974 that subliminal techniques in advertising, whether they worked or not, were "contrary to the public interest," and therefore, any station using them was in danger of losing its broadcast license.[2]

Still, today, there are no explicit bans against subliminal advertising in the United States or the United Kingdom, though the Federal Trade Commission has taken the official position that a subliminal ad "that causes consumers to unconsciously select certain goods or services, or to alter their normal behavior, might constitute a deceptive or unfair practice."[3] The emphasis here is on *might*—to this day, no official regulations or guidelines as to what constitutes subliminal advertising exist.

Generally speaking, subliminal messages are defined as visual, auditory, or any other sensory messages that register just below our level of conscious perception and can be detected only by the subconscious mind. But despite the hype and worry that have surrounded subliminal advertising over the past half century, the topic tends to be treated with good-natured eye-rolling. *Who do they think they're fooling?* is how most of us react whenever a story about subliminal advertising shows up on the news, whether it's a report of a McDonald's

logo flashing for 1/30 of a second during the Food Channel's *Iron Chef America* program (a spokesperson for the Food Channel claimed it was a technical error), or an unfounded rumor that a cloud of dust in Disney's *The Lion King* spells out "s-e-x."

Still, accusations of subliminal messages do crop up from time to time, especially in the movies. In 1973, during a showing of *The Exorcist,* one petrified moviegoer fainted and broke his jaw on the seat in front of him. He sued Warner Brothers, and the filmmakers, claiming that the subliminal images of a demon's face flashed throughout the movie had caused him to pass out.[4] And in 1999, some viewers accused the makers of the film *Fight Club* of subliminal manipulation, claiming they had planted pornographic images of Brad Pitt in the movie in a deliberate attempt, according to one Web site, to enhance the film's "anti-work message and revolutionary tone."

Accusations of subliminal manipulation have been leveled at musicians from Led Zeppelin (play "Stairway to Heaven" backward and you'll supposedly hear "Oh, here's to my sweet Satan") to Queen ("Another One Bites the Dust" played backward allegedly yields "It's fun to smoke marijuana").

And in 1990, the parents of two eighteen-year-old boys from Nevada who had attempted suicide took the British heavy-metal band Judas Priest to court, charging that the band had inserted subliminal messages—including "Let's be dead" and "Do it"—inside its song lyrics. Though both boys were high school dropouts from severely troubled families, one of the boys who survived the joint suicide attempt was later quoted in a letter as saying, "I believe that alcohol and heavy-metal music such as Judas Priest led us to be mesmerized."[5] The suit was later dismissed.

Much of the time, when subliminal messages show up in

our culture, they're selling sex. Take the 1995 Yellow Pages advertisement for an English flooring company called D.J. Flooring, whose motto is "Laid by the Best." When held upright, this ad features an image of a woman holding a champagne glass, but tip it over, and what you see is an image of a woman masturbating. In a montage of print ads someone showed me once, I saw an ad for an exercise machine that showed a bare-chested young man with rippling abs on which were imprinted—or was I, and everybody else, imagining it?—the silhouette of an erect penis. A second ad, for a ketchup company, featured a hot dog and, poised over it, a dollop of ketchup coming out of a bottle that resembled a human tongue. And a recent example shows a woman with her manicured fingers resting on a computer mouse that rather uncannily suggests a clitoris.

In 1990, Pepsi was asked to withdraw one of its specially designed "Cool Can" designs from the market when a consumer complained that when the six-packs were stacked a certain way on a shelf, they produced a pattern spelling out s-e-x. A Pepsi advertising manager denied any ulterior motive, saying only, "The cans were designed to be cool and fun and different; something to get the customer's attention," while a Pepsi spokesman insisted that the message was an "odd coincidence."[6] Sure was.

But not all subliminal messaging is as subtle. Today, some stores play tapes of jazz or Latino music (available through more than one Web site) that conceal recorded messages—imperceptible to our conscious minds—designed to prod shoppers into spending more or to discourage shoplifting. Among the messages: "Don't worry about the money," and "Imagine owning it," and "Don't take it, you'll get caught."

According to one vendor, in stores that broadcast these tapes overall sales are up 15 percent, while store thefts have fallen by 58 percent.

And if, as I've long believed, subliminal advertising can be understood as subconscious messages conveyed by advertisers in an attempt to attract us to a product, then it is even more prevalent than anyone has ever realized. After all, in today's overstimulated world, countless things slip beneath our conscious radar every day. Consider the Gershwin standard that plays in the clothing store while we're shopping for a swanky new summer suit—sure, we can hear it, but we're too distracted to consciously register the fact that it's playing. Or what about the small print on a snazzy product package—it's right in front of our eyes, but we're too overstimulated by all the bright colors, fancy typography, and witty copy to actually read it. Or what about the aromas that are pumped into casinos, airplane cabins, hotel rooms, and just-off-the-assembly-line cars? (I hate to tell you this, but the seductively leathery smell of a new car comes out of an aerosol can.) Aren't these essentially subliminal messages? Couldn't it even be argued that with so many TV commercials, magazine ads, and Internet pop-ups constantly demanding our attention, these messages too have become subliminal, in the sense that we *almost* register them, but not really?

Then there are those advertisers who openly use subliminal advertising. In 2006, KFC ran an ad for its Buffalo Snacker chicken sandwich that, if the viewer replayed it in slow motion, revealed a code that consumers could enter on the KFC Web site to receive a coupon for a free Snacker. Though ostensibly aimed at countering a rise in ad-skipping technologies such as TiVo by giving viewers an incentive to actually watch

the commercial, KFC was nevertheless using hidden messages (if the commercial was played at normal speed, the codes weren't consciously perceptible) to promote their product.[7] Other advertisers have found a way to make split-second impressions work, but don't call them "subliminal" anymore. By the 1990s, they'd taken on a new name: "primes" or "visual drumbeats." In 2006, Clear Channel Communications introduced "blinks," radio ads that last about two seconds, on their commercial radio network. For a blink advertising *The Simpsons,* for example, listeners hear Homer yelling "Woo-Hoo!" against the show's theme music before an announcer breaks in: "Tonight on Fox."

And if political candidates have become brands (which I believe), then subliminal advertising, or priming, is even alive and well in political messaging. One recent example is a 2000 ad produced by the Republican National Committee in which George W. Bush criticizes Al Gore's prescription drug plan for senior citizens. Its tagline: "The Gore prescription plan: Bureaucrats decide." Then, toward the end of the ad, the word *rats* flashes in oversized letters for a split second while an offscreen voice reiterates the phrase, "Bureaucrats decide." The Bush campaign claimed that the ad's producer must have accidentally "botched the hyphenation of 'Bureaucrats,' placing 'Bureauc' and 'rats' in different frames."[8] George W. Bush dismissed the controversy as "weird and bizarre," but after claiming it was "purely accidental," its creator, Alex Castellanos, later confessed that the word *rats* was a visual "drumbeat designed to make you look at the word 'bureaucrats.' "[9]

Then, in 2006, there was the Harold Ford incident. Ford, a light-skinned black man, was running a close senate race in Tennessee against white Republican Bob Corker. In what

could only be interpreted as an explicit—if subliminal—attack on Ford's race, Corker and the Republican National Committee produced an ad in which every time the narrator talked about Ford, African tom-tom drums beat, just barely audibly, in the background. The kicker lay in the final words: "Harold Ford: He's Just Not Right." One could infer that what the Republican National Committee actually meant was "he's just not white."

Clearly, subliminal advertising pervades many aspects of our culture and assaults us each and every day. But does it actually exert any influence on our behavior, or does it, like most product placements, get essentially ignored by our brains? That's what the next part of my study would find out.

IN 1999, HARVARD University researchers tested the power of subliminal suggestions on forty-seven people from sixty to eighty-five years old. The researchers flashed a series of words on a screen for a few thousandths of a second while the subjects played a computer game that they were told measured the relationship between their physical and mental skills. One group of seniors was exposed to positive words, including *wise, astute,* and *accomplished.* The other group was given words like *senile, dependent,* and *diseased.* The purpose of this experiment was to see whether exposing elderly people to subliminal messages that suggested stereotypes about aging could affect their behavior, specifically, how well they walked.

The Harvard team then measured the subjects' walking speed and so-called "swing time" (the time they spent with one foot off the ground), and found that, according to the

lead researcher, Harvard professor of medicine Jeffrey Hausdorff, "The gait of those exposed to positive words improved by almost 10 percent." In other words, it seemed that the positive stereotypes had had a positive psychological effect on the subjects, which in turn improved their physical performance. There seemed to be positive evidence that the subliminal suggestions could affect people's behavior.

Subliminal messaging has even been shown to influence how much we are willing to pay for a product. Recently, two researchers demonstrated that brief exposure to images of smiling or frowning faces for sixteen milliseconds—not long enough for volunteers to consciously register the image or identify the emotion—affected the amount of money test subjects were willing to pay for a beverage. When subjects saw flashes of smiling faces, they poured significantly more drink from a pitcher—and were willing to pay twice as much for it—than when they viewed the angry faces. The researchers termed this effect "unconscious emotion," meaning that a minute emotional change had taken place without the subjects being aware of either the stimulus that caused it or any shift in their emotional states. In other words, smiling faces can subconsciously get us to buy more stuff, suggesting that store managers who instruct their employees to smile are on the right track.[10]

Or consider this: the origin of a product may even subconsciously influence how likely we are to buy it. Recently, I was called to Germany to help a struggling perfume brand regain its footing in the market. When I glanced at the bottle to see where the fragrance was manufactured, I noted that instead of the typical glamorous cities (New York, London, Paris) most perfume-makers print on their canisters, the company had listed decidedly less glamorous ones. Now, Düsseldorf and Oberkochen may be fantastic places to live, but most consumers don't associate them with sophistication, sensuality, or any other swanky qualities we look for in a fragrance. Among other things, I convinced the company to replace those cities with ones we all dream about taking long, bewitching vacations in (we weren't lying; the company *did* have offices in Paris, London, New York, and Rome)—and sales shot up almost instantly.

But the power of subliminal advertising has little to do with the product itself. Instead, it lies in our own brains. In 2005, a University of Pennsylvania postdoctoral student by the name of Sean Polyn used fMRI to study the ways in which the brain hunts down specific memories. Volunteers were shown approximately ninety images in three separate categories: famous faces (Halle Berry, Jack Nicholson), well-known places (e.g., the Taj Mahal), and common everyday objects (such as nail clippers). As the subjects' brains registered the assortment of images, Polyn asked them to place the image in question in a distinguishing mental context. For example, did they love or loathe Jack Nicholson? Would they ever be remotely interested in paying a visit to the Taj Mahal?

A short time later, Polyn asked the volunteers to recall the images. As the subjects' brains scrambled to retrieve them, they exhibited the precise same pattern of brain activity that was present when their brains had first formed the impression. In fact, Polyn and his team found evidence that the subjects were able to recall what category—celebrities, famous places, everyday items—the image was in before they could

even recall the name of the image, suggesting that the human brain is capable of recalling images before those images register in our consciousness.

But even if the brain can summon information that lies beneath our level of consciousness, does that mean that this information necessarily informs our behavior? That's what the next brain scan experiment would help us find out. Our subjects were, once again, twenty smokers from the United Kingdom. But this time around, we were looking at more than warning labels. This cigarette-related investigation posed questions about subliminal messaging I'd always wanted to get to the bottom of: Are smokers affected by imagery that lies beneath their level of consciousness? Can cigarette cravings be triggered by images tied to a brand of cigarette but not explicitly linked to smoking—say, the sight of a Marlboro-red Ferrari or a camel riding off into a mountainous sunset? Do smokers even need to read the words *Marlboro* or *Camel* for their brains' craving spots to compel them to tear open a cigarette pack? Is subliminal advertising, those secretly embedded messages designed to appeal to our dreams, fears, wants, and desires, at all effective in stimulating our interest in a product or compelling us to buy?

BUT BEFORE WE get to our fMRI test and its startling results, let's do a little mind experiment of our own. Imagine that you've just walked into a chic urban bar where the clientele is young, good-looking, and hip, where the drinks have exotic names like the Flirtini, and the food is gorgeously minimalist and costs an arm and a leg. As you enter, you

briefly take note of the stylish upholstery in a familiar shade of red covering the chairs and couches, but your friend is waving to you from across the room, loud music is playing, and as you try to navigate through the crowds, your eyes firmly fixated on the delicious-looking cocktail beckoning you from the bar, those conscious impressions of your surroundings are soon forgotten.

Strangely enough, you suddenly feel the urge to smoke a Marlboro, although you're not sure why.

Coincidence? Hardly. Thanks to worldwide bans on tobacco advertising on television, in magazines, and just about everywhere else, cigarette companies including Philip Morris, which manufactures Marlboro, and the R.J. Reynolds Tobacco Company, which owns Camel, funnel a huge percentage of their marketing budget into this kind of subliminal brand exposure. Philip Morris, for example, offers bar owners financial incentives to fill their venues with color schemes, specially designed furniture, ashtrays, suggestive tiles designed in captivating shapes similar to parts of the Marlboro logo, and other subtle symbols that, when combined, convey the very essence of Marlboro—without even the mention of the brand name or the sight of an actual logo. These "installations," or "Marlboro Motels" as they're known in the business, usually consist of lounge areas filled with comfy Marlboro red sofas positioned in front of TV screens spooling scenes of the Wild West—with its rugged cowboys, galloping horses, wide open spaces, and red sunsets all designed to evoke the essence of the iconic "Marlboro Man."

To ensure the greatest possible exposure for its product, Marlboro also markets rugged, collectible outdoor cowboy clothing, including gloves, watches, caps, scarves, boots, vests,

jackets, and jeans all designed to evoke associations with the brand. The Dunhill store in London sells leather goods, timepieces, menswear, accessories, and even a fragrance meant to underscore the luxurious image of the brand. In Malaysia, Benson & Hedges has even sponsored brand-themed coffee shops selling products emblazoned with the cigarette's gold logo. As the manager of one of these Kuala Lumpur cafés put it: "The idea is to be smoker-friendly. Smokers associate coffee with cigarettes. They are both drugs of a type."[11]

Donna Sturgess, the global head of innovation for the consumer business of GlaxoSmithKline, sums up this phenomenon neatly: "It's an unfortunate irony that as a result of government bans, tobacco companies have fast-forwarded into the future—and moved into alternative media, methods and mediums as a way to drive their business. In effect, cigarette companies have been forced to develop a whole new set of skills."

Skills that include worldwide sports sponsorship—namely NASCAR and Formula One. NASCAR (the National Association for Stock Car Auto Racing) oversees approximately 1,500 races annually at over 100 tracks in America, Canada, and Mexico, and televises its races in over 150 countries. In the United States, it's the second-most popular professional sport in terms of TV ratings, ranking behind only the National Football League, and its approximately 75 million fans purchase over $3 billion in annual licensed product sales. According to the NASCAR Web site, NASCAR's fans "are considered the most brand-loyal in all of sports and as a result, Fortune 500 companies sponsor NASCAR more than any other governing body."[12]

Formula One has its roots and popularity throughout Europe, which remains its leading market, and hosts a series of highly publicized Grands Prix—a sport whose far-reaching popularity makes it another obvious sponsorship bonanza.

Why? Think about it: if your ads have been knocked off TV and banned by governments around the world, what better way to convey that feeling of risk, cool, youth, dynamism, raciness, and living on the edge (as opposed to, say, being tethered to a respirator) than to sponsor a car race? What about sponsoring the Ferrari team during its Formula One races? Paint a car Marlboro-red. Dress the driver and the crew in bright red jumpsuits. Then sit back in your box seat and exhale.

How effective are these underground tactics? It was time to put subliminal tobacco advertising to the test, using two iconic and enormously popular brands: Marlboro and Camel.

SEVERAL MONTHS BEFORE conducting the study I described in Chapter 1 about the efficacy—or, as it turned out, the lack thereof—of health warnings on cigarette packs, we'd shown our American volunteers one of the most repulsive (and to my mind, effective) antismoking TV ads I'd ever seen. A group of people are sitting around chatting and smoking. They're having a jolly good time, except for one problem: instead of smoke, thick, greenish-yellow globules of fat are pouring out of the tips of their cigarettes, congealing, coalescing, and splattering onto their ashtrays. The more the smokers talk and gesture, the more those caterpillar-sized wads of fat end up on the table, the floor, their shirtsleeves, all over the place. The point being, of course, that smoking

spreads these same globules of fat throughout your bloodstream, clogging up your arteries and wreaking havoc with your health.

But just as with the cigarette warning labels, viewing this ad had caused our respondents' craving spots to come alive. They weren't put off by the gruesome images of artery-clogging fat; they barely even noticed them. Instead, their brains' mirror neurons latched on to the convivial atmosphere they were observing—and their "craving spots" were activated. Another powerful antismoking message had been taken down, just like that.

In other words, overt, direct, visually explicit antismoking messages did more to encourage smoking than any deliberate campaign Marlboro or Camel could have come up with. But now it was time to put *subliminal* tobacco ads to the test.

A good-looking cowboy with a rugged landscape stretched out behind him. Two men loping along on horseback. A hillside in the American West. A jeep, speeding down a curving mountain road. A lipstick-colored sunset. A parched desert. Bright red Ferraris. Racing paraphernalia from both Formula 1 and NASCAR, including red cars and mechanics wearing signature red jumpsuits. These were among the images we showed our volunteers.

The images had two things in common. First, they were all associated with cigarette commercials from back in the era when governments permitted cigarette advertising (and don't forget that regardless of whether our smokers could actually remember these images from growing up, they're still ubiquitous online, in stores and cafés, and through viral marketing). Second, not a single cigarette, logo, or brand name was anywhere in sight.

Over a two-month period, our smokers filed in and out of Dr. Calvert's laboratory. What parts of their brains would light up as they watched these logo-free images?

All of our subjects were asked to refrain from smoking for two hours preceding the test, to ensure that their nicotine levels would be equal at the start of the experiment. First, both groups were shown subliminal images that had no overt connection to cigarette brands—the aforementioned western-style scenery, including iconic cowboys, beautiful sunsets, and arid deserts. Next, to establish a comparison, they were shown explicit cigarette advertising images like the Marlboro Man and Joe Camel on his motorbike, as well as Marlboro and Camel logos. Dr. Calvert and I wanted to find out if the subliminal images would generate cravings similar to the ones generated by the logos and the clearly marked Marlboro and Camel packs.

To no one's surprise, the fMRI scans revealed a pronounced response in the volunteers' nucleus accumbens—the area we now know to be involved with reward, craving, and addiction—when they viewed the actual cigarette packs. But what was more interesting was that when the smokers were exposed to the nonexplicit images—the red Ferrari, the cowboys on horseback, the camel in a desert—over a period of less than five seconds, there was an almost immediate activity in the craving regions of their brains as well, in the exact same regions that responded to the explicit images of the packs and logos. In fact, the only consistent difference was that the subliminal images prompted more activity in the volunteers' primary visual cortex—as might be expected given the more complex visual task of processing those images.

More fascinating still, when Dr. Calvert compared the

brains' responses to the two different types of images, she found even *more* activity in the reward and craving centers when subjects viewed the subliminal images than when they viewed the overt images. In other words, the logo-free images *associated* with cigarettes, like the Ferrari and the sunset, triggered *more* cravings among smokers than the logos or the images of the cigarette packs themselves—a result that was consistent for both Camel and Marlboro smokers.

We also discovered a direct emotional relationship between the qualities the subjects associated with Formula 1 and NASCAR—masculinity, sex, power, speed, innovation, coolness—and the cigarette brands that sponsored them. In other words, when consumers were exposed to those red Ferraris and racer jumpsuits, they subconsciously linked those associations to the brand. In short, everything Formula 1 and NASCAR represent was subliminally transformed, in only seconds, into representing the *brand.*

In answer to the question, does subliminal advertising work, one would have to say yes—chillingly well. But why?

One reason is that since the subliminal images didn't show any visible logos, the smokers weren't consciously aware that they were viewing an advertising message, and as a result they let their guard down. Pretend that it's thirty years ago (back when cigarette ads were legal), and you're a smoker. You see an ad in a magazine or on a billboard. You know the ad is for cigarettes because the Camel logo is prominently positioned in the bottom corner. Immediately you raise your guard. You know that smoking is bad for your health, not to mention expensive, and that you'll be giving it up any day now. So you consciously construct a wall between yourself and the message, protecting yourself from its seductive powers. But once the logo vanishes, your brain is no longer on high alert, and it responds subconsciously—and enthusiastically—to the message before you.

Another explanation lies in the carefully manufactured associations that the tobacco industry has established over the past few decades. In 1997, in preparation for the ban on tobacco advertising that was about to come into place in the United Kingdom, Silk Cut, a popular British tobacco brand, began to position its logo against a background of purple silk in every ad that it ran. It didn't take long for consumers to associate this plain swath of purple silk with the Silk Cut logo, and eventually with the brand itself. So when the advertising ban came into effect, and the logo was no longer permitted on ads or billboards, the company simply created highway billboards that didn't say a word about Silk Cut or cigarettes but merely showcased logo-free swaths of purple silk. And guess what? Shortly after, a research study revealed that an astonishing 98 percent of consumers identified those billboards as having something to do with Silk Cut, although most were unable to say exactly why.

In other words, the tobacco companies' efforts to link "innocent images"—whether of the American West, purple silk, or sports cars—with smoking in our subconscious minds have paid off big time. They have succeeded in bypassing governments' regulations by creating stimuli powerful enough to replace traditional advertising. And in fact, they've even managed to enlist the help of governments all over the world; by banning tobacco advertising, governments are unwittingly *helping* to promote the deadly behavior they seek to eliminate.

For me, these results were a revelation. I speak at an enormous number of conferences every year, all around the globe. At each and every one, I'm exposed to literally hundreds of logos displayed on the walls, on brochures, on bags, on pens, and that's just for starters. For companies, the logo is regarded as king, the be-all and end-all of advertising. But as our study had just shown with what my research team assured me was 99 percent scientific certainty, the logo was, if not dead, then certainly on life support; that the thing we thought was most powerful in advertising was in fact the *least* so. Because, as our study had proved, far more potent than any cigarette logo were images associated with smoking, whether it was a red sports car or an aura of romantic solitude against a backdrop of the American Rockies.

So what are the *least* powerful ads in prompting you to smoke? Tobacco ads *without* warning disclaimers. Followed by ads *with* warning disclaimers—which make the ads all that more enticing—then merchandising (ashtrays, hats, you-name-it). More powerful still was the subliminal imagery, particularly the Formula 1/NASCAR race association. It's a little scary to find out that what we thought had the least to do with smoking is actually the most effective in making us want to smoke, and that the logo—what advertisers and companies have long endowed with almost mythic powers—in fact works the least well.

Can you imagine a world without logos? No headlines. No taglines. Can you imagine wordless ads that you could look at and know immediately what brand they were selling? Many companies, like Abercrombie & Fitch and Ralph Lauren, and as we've just seen, Philip Morris, have already begun to use logo-free advertising, and to great effect, too. In the future,

many brands will follow suit. So remember, subliminal messages are out there. Don't let yourself—and your wallet—fall prey to them.

WHEN YOU GET dressed in the morning, do you always put your left shoe on first? When you go to the mall, do you always park in the same section of the parking lot, even though there are closer spots elsewhere? Do you have a lucky pen you always take to important meetings at work? Do you fearfully refuse to open an umbrella indoors? If so, you're not alone. In the next chapter, we're going to take a look at the extent to which rituals and superstitions govern our "rational" lives—and how most of the time, we don't even notice it.

7

WHY DID I CHOOSE YOU?

The Power of Somatic Markers

PLAY ALONG WITH ME for a moment as we head to the supermarket. Shouldn't take long; there are only a couple of items on our list.

Let's make our way to the peanut butter section first. There's Skippy, Peter Pan, Jif. The generic supermarket offering, plus a few virtuous organic brands—salt-free, no sugar added, the sort where the oil rises to the top.

Most consumers think about their choice for all of two seconds. In this case, let's say you grab the Jif, and we're on to our next stop.

Was your decision rational? It may have seemed that way to you as you made your choice, but it wasn't, not by a long shot. If your decision-making process was conscious—and articulated—my guess is it might have gone something like this: *I associate Skippy with childhood . . . it's been around forever, so I feel it's trustworthy . . . but isn't it laden with sugar and other preservatives I shouldn't be eating? . . . Same goes for Peter Pan, plus the name is so childish. And I'm not buying that generic brand. It costs 30 cents less,*

which makes me suspicious. In my experience, you get what you pay for . . . The organic stuff? Tasteless, the few times I had it . . . always needs salt, too . . . Plus, didn't I read somewhere that "organic" doesn't necessarily mean anything, plus it's almost double the price . . . Jif . . . what's that old advertising slogan of theirs: "Choosy Mothers Choose Jif" . . . Well, I am a fairly discriminating person . . .

These are the subconscious conversations that go on in our heads every time we choose one product over another. Except they are rarely if ever uttered aloud. Instead, we rely on almost instant shortcuts that our brains have created to help us make buying decisions.

Our next stop is bottled water. There are dozens of glistening bottles, both glass and plastic, and in all shapes and sizes, too. Again, let's imagine the rational conversation that might take place inside your head as you decide which one to buy: *Dasani . . . no, that's the one Coke makes . . . Someone told me it was nothing more than tap water with a phony name . . . I don't want my bottled water to be "commercial," it should be special, chic . . . wait, what's this one? Iskilde. By far the most beautiful bottle on the shelf. From Denmark . . . No idea what Iskilde means, but isn't Denmark a land of snow and streams and healthy people on ski slopes? Even the lettering on the bottle is clear-blue, like Scandinavian eyes . . . The bottle is so clean and simple and icy-looking—like the water from a Danish mountain stream . . . Iskilde: it's almost like a Danish guy saying "It's Cold." It's expensive, too, which probably means it's special . . .*

And so Iskilde goes into your cart. You've never tasted the stuff, but your gut tells you you've made the right decision. If I asked you to describe how you came to your decision, you'd probably shrug and reply "Instinct," or "No reason," or "I just did." But the real rationale behind your choices was in fact built on a lifetime of associations—some positive, others neg-

ative—that you weren't consciously aware of. Because when we make decisions about what to buy, our brain summons and scans incredible amounts of memories, facts, and emotions and squeezes them into a rapid response—a shortcut of sorts that allows you to travel from A to Z in a couple of seconds, and that dictates what you just put inside your shopping cart. A recent study conducted by German brand and retail experts, Gruppe Nymphenberg, found that over 50 percent of all purchasing decisions by shoppers are made spontaneously—and therefore unconsciously—at the point of sale.

These brain shortcuts have another name: a somatic marker.

THE GREEK PHILOSOPHER Socrates once told his student Theaetetus to imagine the mind as a block of wax "on which we stamp what we perceive or conceive." Whatever is impressed upon the wax, Socrates said, we remember and know, provided the image remains in the wax, but "whatever is obliterated or cannot be impressed, we forget and do not know."[1] A metaphor so suggestive and widespread that we still say that an experience "made an impression."

Imagine for a moment that you're a six-year-old kid. You're just home from school and you're hungry, so you wander into the kitchen to see what that nice smell is that's coming from the stove. Opening the oven door, you spy a navy-blue Le Creuset pot. You begin to pull out the pot when you recoil backward, your fingertips stinging. You're in tears; your parents come running; and assuming your fingertips weren't too

badly burned, a half hour later you're back playing with your trains, dinosaurs, or sharks.

The tenderness of your fingertips will vanish in a few days, but your mind isn't quite so lenient. It won't forgive what happened; certainly it won't ever forget it. Subconsciously, the neurons in your brain have just assembled an equation of sorts, one linking together the concepts of "oven" and "hot" and "fingertips" and "grill" and "excruciating pain." In sum, this chain-link of concepts and body parts and sensations creates what scientist Antonio Damasio calls a somatic marker—a kind of bookmark, or shortcut, in our brains. Sown by past experiences of reward and punishment, these markers serve to connect an experience or emotion with a specific, required reaction. By instantaneously helping us narrow down the possibilities available in a situation, they shepherd us toward a decision that we know will yield the best, least painful outcome. Long after we've passed our sixth year, we "know" whether or not it's right to kiss a hostess we barely know good-bye after a cocktail party, whether it's safe to dive into a lake, how we should approach that German shepherd, or that if we reach into an oven without a mitt on, our fingers will get burned. If someone asks us how or why we know that, most of us shrug—what a funny question—and chalk up our response to "instinct."

These same cognitive shortcuts are what underlie most of our buying decisions. Remember: it took you less than ten seconds to choose the Jif and the Iskilde, based on a completely unconscious series of flags in your brain that led you straight to an emotional reaction. All of a sudden, you "just knew" which brand you wanted, but were completely unaware of the

factors—the shape of the product's container, childhood memories, its price, and a lot of other considerations—that led to your decision.

But somatic markers aren't simply a collection of reflexes from childhood or adolescence. Every day, we manufacture new ones, adding them to the bulging collection already in place. And the bigger our brain's collection of somatic markers, whether for shampoos, face creams, chewing gums, breath mints, potato chips, vodka bottles, shaving creams, deodorants, vitamins, shirts, pants, dresses, TVs, or video cameras, the more buying decisions we're able to make. In fact, without somatic markers we wouldn't be able to make any decisions at all—much less parallel park a car, ride a bike, flag a taxi, decide how much money to take out of the ATM machine, plug a lamp into an electrical socket without getting electrocuted, or take a burning casserole dish out of the oven.

For example, why do many consumers choose to buy an Audi over other cars with equally attractive designs, comparable safety ratings, and similar prices? It might very well have something to do with the company's slogan, *Vorsprung durch Technik*. Now, I strongly doubt many people outside of Germany or Switzerland know what this means (roughly, it translates to "progress and/or head start through technology"; U2 fans, of which I'm one, will note that Bono murmurs the phrase at the beginning of the song "Zooropa"). But that's not the point. Most people *will* guess correctly that the phrase is German. Our brains link together "automobile" with "Germany" with everything we've picked up over our lifetimes about top-of-the-line Teutonic car manufacturing. High standards. Precision. Consistency. Rigor. Efficiency. Trustworthiness. The result: we walk out of the showroom holding the keys to a new Audi. Why? We are rarely conscious of it, but the fact is that in a world teeming with cars that are for the most part indistinguishable, a somatic marker that connects Germany with technological excellence comes alive in our brain and ushers us toward a brand preference.

Or let's imagine that you're shopping for a digital camera. Even with the vast array of features—optical zoom, tony image processors, face detection gizmos, red-eye correctors—most of them look exactly the same. So why do you find yourself gravitating toward the ones that come from Japan? Once, back before Japan became a global leader in manufacturing technology, the words "Made in Japan" turned you off. You associated it with cheap kids' toys, gadgets that fell apart after fifteen minutes, and crummy, mass-marketed merchandise put together by people working in substandard conditions. But now anything Japanese seems to you a marvel of cutting-edge sophistication. Again, based purely on a series of unconscious markers, your mind has linked together Japan with technological excellence and you leave the store with a new Japanese camera under your arm.

This is all very well and good, but by now you might be wondering, how do these markers form? And do companies and advertisers work to deliberately create these in our brains? You bet. Take TV commercials. If you've ever shopped for tires, you know that they all look the same—Dunlop, Bridgestone, Goodyear—nothing but a mind-numbing ocean of black rubber. Yet you automatically make your way, say, to the store's Michelin section. You know you're making the right choice but you can't really articulate why. In truth, your brand preference has very little to do with the tires themselves, but instead with the somatic markers the brand has carefully cre-

ated. Remember the cute baby Michelin once used in their advertising? Or what about the Michelin man, whose plump, round appearance suggests the protective padding of a well-made tire? And then there are the Michelin Guides, those slender, authoritative, high-end travel and food guides (which the company invented so that consumers would drive around in pursuit of the best restaurants—and thus purchase more tires). Point is, all these seemingly unrelated bookmarks deliberately forge certain associations—safety for your child passengers; sturdy, reliable durability; and a high-quality, top-of-the-line, European experience. And it's these powerful associations that come together to shepherd you toward a choice that feels rational, but that isn't at all.

Professor Robert Heath, a British consultant who among other things has written extensively about somatic markers, has examined the success of a brand of British toilet paper known as Andrex that outsells its nearest rival, Kleenex, in the United Kingdom by an almost two-to-one margin. Both companies spend the same amount of money on TV ads, both are of equally high quality, and both cost approximately the same. Heath's explanation for Andrex's success? A small Labrador puppy. But what, pray tell, does a little dog have to do with an eight-pack of toilet paper?

For years, Andrex has used its puppy mascot to advertise how "soft, strong, and very long" its toilet paper is. In a series of commercials, the puppy is seen skidding down a snowy hill on a sheet of toilet paper; in another, a woman holds the puppy while behind them a long lacy banner of Andrex toilet paper billows and flutters behind a speeding car. At first, the connection between puppies and toilet paper seems obscure, kind of random. But as Heath writes, "Puppies are linked with growing young families; puppies are even linked to toilet training. The connections between any of these concepts and the puppy associations can be created and reinforced every time the ads are seen." Heath adds, "When faced with the need to buy toilet paper, the average consumer will not stop and try to recall the ads to mind. However, when they tap into their intuitive feelings about the two brands, the likelihood is that they will come up with a far richer set of conceptual links for Andrex than for Kleenex . . . All they might do is 'feel' that Andrex is somehow indefinably 'better' than Kleenex."[2]

For advertisers, it's easy and inexpensive to create a somatic marker in consumers' brains. Let's take an example from real life. How do you know to look both ways when you cross the street? Chances are you once had a close call that came as a shock—and that shock has stuck with you ever since. Since somatic markers are typically associations between two incompatible elements—in this case, an uneventful morning and a sudden screech of brakes—they are far more memorable, and lasting, than other associations we form throughout our lives. Which is why, in attempting to hook our attention, advertisers aim to create surprising, even shocking associations between two wildly disparate things.

Take a guy by the name of Tom Dickson. Tom Dickson resembles any midwestern, middle-aged suburban dad. But this suburban dad has a rather out-of-the-ordinary job. He sells blenders. But that's not what's most bizarre about him. To advertise the blenders, he has created a series of short videos, available on the Blendtec Blender Web site (which have migrated virally over to YouTube), which open with the question "Will it blend?"—a concept likely borrowed from Dan Ayk-

royd's famous *Saturday Night Live* skit, in which he used a blender to pulverize a sea bass. As viewers look on saucer-eyed, Tom Dickson proceeds to grind, chop, mash, mince, puree, and annihilate a series of objects inside his kitchen blender. Bic lighters. A tiki torch. A length of garden hose. Three hockey pucks. Even an Apple iPhone. Every week, Tom Dickson makes it his mission to pulverize something new and seemingly unpulverizable.

Watching an iPhone whirl and clack until it's been reduced to a smoking mass of black particles is, to say the least, unforgettable. It creates a somatic marker so dramatic in our brains that the next time we're whipping up a strawberry smoothie, we can't help but think: wouldn't the Blendtec Blender do a better job? Our brains associate the brand of blender with the memorable image of an iPhone being ground into a steaming pile of dust, and without even consciously realizing it, we've picked up the Blendtec box.[3]

Sony created an ingenious somatic marker in the weeks before the release of *Spiderman 3,* using men's rooms in selected theaters. A guy would stroll in and see a conventional line of urinals and stalls. Nothing out of the ordinary. That is, until he would happen to gaze upward and see a single stand-alone plastic urinal seven feet above his head. Next to it: the words *Spiderman 3 . . . Coming Soon.* Pretty memorable, huh?

And remember the Energizer Bunny? "Nothing outlasts the Energizer. He keeps going and going and going . . ." A stuffed pink creature banging down on a drum, marching across dinner tables, knocking over bottles of wine. Impossibly irritating. Also impossibly hard not to associate with long-lasting power when you're browsing the battery section.

Fifteen years ago, when I was living in Copenhagen and working for an advertising agency, Luciano Pavarotti paid his first visit to Denmark. It was a huge deal, and the Danes were beside themselves. Everything was in place to celebrate his arrival—gala dinners, special broadcasts, interviews, and open-air broadcasts. But at the very last minute, the tenor canceled his performance, having come down with a sore throat. I don't think I've ever witnessed a nationwide disappointment like that. I was worried the entire country would have to go on Prozac.

But it gave my advertising team and me an idea. In less than a few hours, we managed to convince a sore-throat lozenge manufacturer named GaJol to buy space in newspapers and magazines with a new tagline: *If only Pavarotti had known about GaJol.* It turned a nationwide disaster into a coup for the company. Even fifteen years later, many Danes associate GaJol lozenges with the beloved opera singer. Just goes to show that somatic markers are hard to erase.

Another time, when I was visiting Eastern Europe, I sat next to the CEO of one of the region's largest banks. How, he asked me, could he boost his bank's awareness? Now, I'd just polished off a large meal and a number of glasses of wine, and that probably contributed to my spontaneously advising him to paint his entire bank—and everything in it—pink. The fact that banks and pink don't go together is exactly why I thought it would work. Six months later, he e-mailed me. He'd done as I'd said. Every branch, every car, every staff uniform, even his tie, was pink—but everyone hated it. What should he do? Stick with it, I said, and in three months you'll notice a difference. Approximately ninety days later, he e-mailed me

again. Now that customers had begun to associate the bank's pink with the comfort and security of a childhood piggy bank, the bank had the highest brand awareness of any bank in the country and had cut their marketing costs in half.

SOME ADVERTISERS CREATE somatic markers in consumers' minds using humor. In an ad for Lamisil, a pill used for foot infection, a yellow-bodied cartoon-like gremlin approaches a set of toes, lifts up one of the big toes and hops underneath, where he's soon joined by his cronies—that is, until the owner of the foot pops a Lamisil. By anthropomorphizing germs in a humorous and memorable way this ad creates a powerful somatic marker that links the brand to powerful germ-fighting.[4]

Because somatic markers are based on past experiences of reward and punishment, fear too can create some of the most powerful somatic markers, and many advertisers are all too happy to take advantage of our stressed-out, insecure, increasingly vulnerable natures. Practically every brand category I can think of plays on fear, either directly or indirectly. We're sold medicines to ward off depression, diet pills and gym memberships to prevent obesity, creams and ointments to quiet fears of aging, and even computer software to ward off the terror of our hard drives crashing. I predict that in the near future advertising will be based more and more on fear-driven somatic markers, as advertisers attempt to scare us into believing that *not* buying their product will make us feel less safe, less happy, less free, and less in control of our lives.

For a fear-driven somatic marker, it's worth looking at Johnson's No More Tears Baby Shampoo. What does it evoke? Fear of the same thing it promises to help you avoid: tears. Memories of stinging red eyes, from childhood onward. I got shampoo in my eyes recently, and guess what? It *still* hurts like hell, at any age. Similarly, I recently ran across an ad for Colgate toothpaste claiming that "emerging scientific research is associating serious gum disease with other diseases such as heart disease, diabetes and stroke." In short, brush with Colgate—or else you'll die!

Or what about attention deficit disorder, and the litany of negative, even catastrophic associations it carries? Fifteen years ago, it barely existed, but today it's being diagnosed left, right, and sideways. I'm not suggesting that some kids don't have it, or can't benefit from treatment, but ADD (and the fear of our children being diagnosed with it) has saturated our culture like a virus. And the result, of course, is millions of parents buying their children drugs. A parent's internal monologue may go something like this: *If my child doesn't take Ritalin or Adderal or Concerta, he won't be able to concentrate in school. He'll fall behind. His grades will suffer. He'll be marginalized by his peers. He'll begin hanging out with other low-performing kids. He won't get into college. He'll drift from job to job. He may even end up in jail. All because I didn't address his ADD when he was in kindergarten.* Fear, in my experience, spreads faster than anything else—and the ads for those drugs have done a very nice job scaring the pants off us.

Of course, not all somatic markers are based on pain and fear. Some of the most effective ones are rooted in sensory experiences, which in fact can often be quite pleasant. So in

the next part of our study, we're going to take on the power of the senses in our everyday buying decisions. In a revolutionary experiment, we'll put somatic markers under an fMRI—and show how one of the most famous sounds in the world can completely destroy an otherwise beloved brand.

8

A SENSE OF WONDER

Selling to Our Senses

LET'S TAKE A STROLL around Times Square. We'll pretend we're tourists, necks craned, eyes drawn irresistibly upward as we ogle the oversized billboards that seem to block out every piece of sky. Red neon news and business tickertapes wrapping around the buildings, twenty-foot-high billboards of men in underwear, women in pink lingerie, oversized bottles of perfume and tequila and diamond-encrusted wristwatches for the well-heeled modern man and woman. Not to mention the phantasmagoric blur of logos, everything from Virgin Records to Starbucks to Skechers to Maxell to Yahoo!. And the same visual assault is taking place in downtown Tokyo, London, Hong Kong, and every other commercial mecca across the world. But what if I told you that much of this visual, in-your-face advertising is, on the part of advertisers, a largely wasted effort? That, in fact, our visual sense is far from our most powerful in seducing our interest and getting us to buy. What if I could prove to you that when working alone, our eyes—

the same ones sneaking a glance at that Nordic god in his skivvies, that petulant beauty in her bikini bottom, that decanter of Chanel, those flashing letters spelling out Swatch, JVC, Planet Hollywood, AT&T, Chase Manhattan, McDonald's, Taco Bell, T-Mobile, and so on—are in fact much less potent than we have long believed?

Today, we are more visually overstimulated than ever before. And in fact, studies have shown that the more stimulated we are, the harder it is to capture our attention.

A brain-scanning company called Neuroco has carried out a study for 20th Century Fox that measured subjects' electrical brain activity and eye movement in response to commercials placed inside a video game. During a virtual stroll through Paris, volunteers viewed ads on billboards, bus stop shelters, and the sides of buses to see which best got their attention. The results: none of them. The researchers found that all the visual saturation resulted only in glazed eyes, not higher sales.

I'm not denying that sight is a crucial factor in why we buy. But as our two upcoming tests would show, sight in many cases isn't as powerful as we first assumed—and smell and sound are substantially more potent than anyone had ever dreamed of. In fact, in a wide range of categories (not just the obvious, like food), sound and smell can be even stronger than sight. And this was the impetus that lay behind the experiment Dr. Calvert and I carried out—the first-ever full-scale study of its kind—to test the enormous (and never before acknowledged) role of our senses in why we buy what we do.

As I've mentioned, advertisers have long assumed that the logo is *everything*. Companies have spent thousands of hours and millions of dollars creating, tweaking, altering, and testing

their logos—and making sure those logos are in our faces, above our heads, and tattooed beneath our feet. That's because marketers have long focused on driving and motivating consumers visually. But the truth of the matter is, visual images are far more effective, and more memorable, when they are coupled with another sense—like sound or smell. To fully engage us emotionally, companies are discovering, they'd be better off not just inundating us with logos, but pumping fragrances into our nostrils and music into our ears as well.

It's called Sensory Branding™.

FOR THE FIRST of two related experiments on brands and our senses, our volunteers would be testing two experimental fragrances on behalf of a well-known fast-food restaurant chain—let's call it Pete's—and choosing which fragrance best complemented a certain menu item.

Over the course of the next month, Dr. Calvert and her team exposed our twenty study subjects to images (including logos) and fragrances of four well-known brands. First the images and fragrances were presented individually, and then at the same time. These included Johnson & Johnson's No More Tears Baby Shampoo, Dove soap, a frosty, ice-filled glass of Coca-Cola, as well as an assortment of images and aromas associated with Pete's and their global chain of fast-food restaurants. By pressing a button on their hand consoles, our volunteers could control the onset of the images and fragrances, and rate the appeal of what they were viewing and smelling on a nine-point scale, ranging from very unpleasant to very pleasant.

After crunching the data, Dr. Calvert discovered that for the most part, when our volunteers were presented with the images and the fragrances individually, they found them equally pleasant to look at as to smell, suggesting that we as consumers are equally seduced by the sight of a product as by its scent. However, when Dr. Calvert presented the images and fragrances at the same time, she found that, in general, subjects rated the image-fragrance combinations to be more appealing than either the image or the fragrance alone. And, even more intriguingly, when Dr. Calvert presented our volunteers with the first of Pete's two experimental fragrances along with an image of a product that seemed incongruous with the smell—say a picture of a Dove soap bar along with the fragrance of scorched canola oil—the "pleasantness" quotient dropped, because the image and the fragrance didn't match up.

The other image-fragrance combination, on the other hand, went over like gangbusters. Just imagine viewing a fish-filet sandwich along with the slightest whiff of lemon, perhaps evoking that summer you spent grilling fresh fish on the beaches of Cape Cod or the Hamptons. Much more pleasant, right? That's because this time around the sight and smell of the product were congruous—a perfect collaboration between the eyes and the nose.

So what is going on in our brains that makes us prefer certain image/smell combinations over others? As Dr. Calvert explained, when we see and smell something we like at the same time—like Johnson & Johnson's Baby Powder combined with its signature vanilla-y scent—various regions of our brains light up in concert. Among them is the right medial orbitofrontal cortex, a region associated with our perception of

something as pleasant or likable. But in cases where a brand matches up poorly with a fragrance—say, Johnson's Baby Shampoo combined with an odor of root beer—there's activation in the left lateral orbitofrontal cortex, a region of the brain connected to aversion and repulsion, which is why our subjects responded so unfavorably to the incongruous combinations. What's more, when we are exposed to combinations that seem to go together, the right piriform cortex (which is our primary olfactory cortex) and the amygdala (which encodes emotional relevance) are both activated. So in other words, when a pleasant fragrance matches up with an equally appealing and congruous visual image, we not only perceive it as more pleasant, we're also more likely to remember it, but if the two are incongruous, forget about it. Literally.

But it was Dr. Calvert's last finding that amazed me the most. On the basis of our sight-and-smell experiment, she concluded that *odor* activates many of the exact same brain regions as the *sight* of a product—even the sight of that product's logo. In short, if you smell a doughnut, you're likely to picture it in your head—along with that Dunkin' Donuts or Krispy Kreme logo. Smell that signature Abercrombie scent? The letters spelling A-B-E-R-C-R-O-M-B-I-E & F-I-T-C-H will flash like a Broadway marquee behind your forehead. So while companies are spending billions of dollars a year saturating our sidewalks, our airwaves, and everyplace else with logos, they'd do just as well in capturing our interest—if not better—by appealing to our sense of smell instead.

How, though, can smell activate some of the same areas of the brain as vision? Again, chalk it up to mirror neurons. If you catch a whiff of French Roast in the morning, chances are good your brain can "see" a cup of Maxwell House coffee

on your kitchen counter. Thanks to mirror neurons, sound, too, can evoke equally powerful visual images. In my lectures, I often ask audiences to close their eyes. After tearing a piece of paper in two, I ask them what just happened. "You just ripped a piece of paper in two," they murmur, their eyes still shut. It's not just that they recognized the sound of ripping paper; they were actually visualizing me rip the paper in half.

As you can see, our senses are incredibly important in helping us interpret the world around us, and in turn play a critical role in our behavior. Play-Doh, Johnson & Johnson's Baby Powder—take a whiff of either of these products and more likely than not, you'll be transported (for better or for worse) back to your childhood. Once when I was giving a lecture, I asked a male member of the audience to sniff a red Crayola crayon. He promptly burst into tears. I asked him gently why he was crying. He told me, and the thousand other people in the room, that as a child, every time he was caught drawing his dream car using his Crayolas, the teacher used to punish him by rapping his knuckles with a ruler. It was the first time he'd smelled a Crayola since. Believe me, that's the very last time I ambush a stranger with a crayon.

If you had to guess, what would you expect one of the most recognized and best-liked fragrances all over the world to be? Chocolate? Lilacs? Money? Try Johnson's Baby Powder, a scent that's beloved everywhere from Nigeria to Pakistan to Saudi Arabia. (Yet practically no one can remember the Johnson & Johnson's logo.) Why Johnson & Johnson's Baby Powder? The power of sensory association. No matter how old you are, if you take a whiff of Johnson & Johnson's Baby Powder, chances are good that all those primal childhood associations will be reignited in your memory. Being fed by your

mother. What it felt like to be held in her arms. These kinds of associations are why some companies use the scent of vanilla—which is found in breast milk (and, not coincidentally, is the most popular scent in the United States)—in their products. Why do you think Coca-Cola chose to roll out Coca-Cola Vanilla and Black Cherry Vanilla Coke lines over any other variety of flavors they could have created? In fact, the scent of vanilla is so appealing, one experiment carried out in a local clothing store in the Pacific Northwest showed that when "feminine scents" such as vanilla were sprayed in the women's clothing sections, sales of female apparel actually doubled.[1]

Of all our senses, smell is the most primal, the most deeply rooted. It's how our ancestors developed a taste for food, sought out mates, and intuited the presence of enemies. When we smell something, the odor receptors in our noses make an unimpeded beeline to our limbic system, which controls our emotions, memories, and sense of well-being. As a result, our gut response is instantaneous. Or as Pam Scholder Ellen, a Georgia State University marketing professor, puts it, "All of our other senses, you think before you respond, but with scent, your brain responds before you think."[2] And though smell preferences vary across cultures (Indians, for example, love sandalwood) and generations (if you were born before 1930, chances are you're fond of fresh-mown grass and horses, whereas if you were born after that, synthetic fragrances such as Play-Doh and even Sweet Tarts likely appeal to you), they are all shaped, to some extent, by our innate associations.[3]

So I suppose it's not surprising that it hasn't taken long for smart marketers to tack on fragrance to products they are selling. Samsung's flagship electronics store in New York City

smells like honeydew melon, a light signature fragrance intended to relax consumers and put them in a South Sea–island frame of mind—maybe so they don't flinch at the prices. Thomas Pink, the British clothier, was once well known for pumping its U.K. stores full of the scent of freshly laundered cotton. British Airways wafts a fragrance known as Meadow Grass into the stale air of its business lounges to try to simulate the feeling of being outdoors, rather than in a stuffy airport. And both peanut butter and Nescafé jars are carefully designed to release the maximum amount of fragrance the moment their lids come off (for Nescafé, this took some tweaking, since freeze-dried coffee by itself doesn't smell like much).

Ever walked into a fast-food restaurant with the intention of ordering the virtuous, artery-friendly iceberg-lettuce salad, but ended up going for the triple-bacon cheeseburger with a side of large fries instead? It was that smell that got you, right? Fresh, juicy, charcoal-y, that seductive aroma seemed to suffuse every pore in your body. You were powerless to resist it.

But that smell you're inhaling comes not from a hot, smoking grill but from a spray canister with a name like RTX9338PJS—code name for the "just-cooked-bacon-cheeseburger-like-fragrance" that the fast-food restaurant was pumping through its vents. Mmm—makes me hungry just thinking about it.

Speaking of food, do you know why most modern supermarkets now have bakeries so close to the store entrance? Not only does the fragrance of just-baked bread signal freshness and evoke powerful feelings of comfort and domesticity, but store managers know that when the aroma of baking bread or doughnuts assails your nose, you'll get hungry—to the point

where you just may discard your shopping list and start picking up food you hadn't planned on buying. Install a bakery, and sales of bread, butter, and jam are almost guaranteed to increase. In fact, the whiff of baking bread has proven a profitable exercise in increasing sales across many product lines. Some Northern European supermarkets don't even bother with actual bakeries; they just pump artificial fresh-baked-bread smell straight into the store aisles from ceiling vents.

Even the subtlest of aromas can have a potent effect on us as shoppers. In a 2005 study, two researchers placed a barely discernible lemon-scented cleaning liquid in a bucket of warm water concealed behind a wall. Half the volunteers unknowingly took their seats in the scented room; the other half plopped themselves down in an unscented room. Then the participants were asked to write down what they planned to do that day. Thirty-six percent of the participants in the scented room listed an activity that related to cleaning, compared to only 11 percent of the people in the unscented room. Next, the authors asked a fresh set of twenty-two college students to fill out an unrelated questionnaire in either the scented or the unscented room. They were then moved to a different room, where they were given an extremely messy, crumbly cookie to eat. Hidden cameras observed that those who had been seated in the scented room made less of a mess—merely smelling the cleanser made the people in the scented room more fastidious in their eating. Yet when questioned afterward, not one of the subjects was remotely aware of the influence of scent on their behavior.[4]

In another study carried out by Dr. Alan Hirsch, researchers placed two identical pairs of Nike running shoes in two separate but identical rooms. One room was pumped full

of a light floral scent; the other wasn't. Volunteers examined the running shoes in each room, then filled out questionnaires. By 84 percent, subjects preferred the running shoes they'd looked at in the florally scented room. Moreover, they assessed the scented Nikes as costing roughly $10 more than the pairs in the unscented room. In a related experiment in Germany, the fragrance of freshly cut grass was sprayed into a home improvement store. From the second the pumps started emitting the grassy mist, 49 percent of all customers surveyed before and after claimed that the staff appeared to be more knowledgeable about the store's products.

And sensory branding is becoming more and more common. A California convenience store chain has experimented with wafting a fresh coffee smell into its parking lots to lure customers inside its stores. Procter & Gamble recently rolled out Puffs facial tissue tinged with the scent of Vicks, attempting to play on consumers' childhood memories of their mothers' treating their colds with Vicks' ointment.[5] Americhip, a leading manufacturer that manages to integrate multisensory technologies into magazine ads and print collateral for today's leading global advertisers, produced an ad for Diet Pepsi that contained sound, taste, and pop-up features. Reader awareness of this three-pronged ad in *People* magazine? One hundred percent—for the first time in the magazine's history. And in conjunction with the BRAND sense agency, Britain's Royal Mail has begun developing a program to enhance their marketing mailings with aromas and flavors. Tear open a flyer from a shampoo company, and through "microencapsulation"—a process that allows a scent to be released when you open an envelope—a fresh shampoo smell will all of a sudden envelop you like a cloud.

How to escape this assault on our noses? By checking into a hotel? Sorry, you're out of luck. Both the Hyatt Park Vendôme and the original Hyatt chains have suffused their rooms and lobbies with their own signature fragrances; the latter even infuses the smell of the macaroons they serve at their restaurants.

Of course, experiments involving fragrance can backfire. In 2006, San Francisco bus shelters equipped with cookie-scent-infused strips for a "Got Milk?" campaign had to be scrapped thirty-six hours later when commuters complained that the smell of chocolate chips and cookie batter was triggering allergic reactions.[6]

And Johnson & Johnson and Play-Doh have played around with their fragrances so much that they've lost the original formulas. In Europe, at least, Johnson & Johnson can no longer re-create its exact original recipe (their competitors' fragrances smell more like the original Johnson & Johnson's Baby Powder than Johnson & Johnson's own signature scent). And when I once contacted Play-Doh to see if I could secure the original smell, I was told that the company has never been able to replicate the original fragrance; they're only about 80 percent there. Sad for us, annoying for them.

CLEARLY, SMELL IS very closely tied to how we experience brands or products. Is the same true of touch? In his best-selling book *Why We Buy,* retail guru Paco Underhill writes about the critical importance of touching clothing before we buy it. We like to stroke, rub, caress, and run our fingers through the garments we're considering before we commit to

buying them—kind of like a sensory test run. Why do you think those tables of clothing at the Gap and Banana Republic are positioned where they are? To be looked at? Of course not. They're there awaiting your fingers.

Or, take electronics. In general, we like our gadgets to be small, compact, and lightweight—James Bond–style. Irrationally, we conclude that the tinier and lighter our digital camera or tape recorder is, the more intricate and cutting-edge the technology inside it must be. Often that's true, up to a point. Certain companies, however, would argue that the heavier a product, the better its quality. A Bang & Olufsen remote control, for example, would weigh perhaps half of what it does if it wasn't stuffed with a completely useless wad of aluminum to make customers believe they're holding something substantial, sturdy, and worthy of the high price. Once, to prove a point, I conducted a test. I gave one hundred consumers two Bang & Olufsen remote controls, one with aluminum inside, the other without it. The immediate reaction from the consumers to the lighter-weight remote? "It's broken." All because of the lack of weight. Even when they found out the lightweight one was completely functional, they still felt its quality was inferior. Or what about Duracell's intriguing idea to design batteries shaped like bullets (the product unfortunately never hit the shelves). Research showed that when men who replaced the normal batteries in their flashlights with the heavy bullet-shaped ones (a process which felt not unlike loading a gun) were asked whether they thought the new batteries were more powerful than traditional ones, every single man answered yes—despite the fact that the bullet design actually substantially weakened the power of the battery. My

point? Whether you prefer your gadgets stuffed with metal, light as air, or heavy as ammo, the feel of a product plays an important role in whether we decide to buy it.

A FEW YEARS back, I traveled to Saudi Arabia on an assignment to brand eggs. Yes, you read that right—eggs. After touching down in Jeddah, a car picked me up and drove into the middle of the 125-degree Fahrenheit Saudi Arabian desert. Two and a half hours later, I found myself standing inside one of the largest egg farms in the world.

My hosts had ferried me out into the desert to advise them on how to create eggs that would most appeal to the visual senses. It would seem a slightly bizarre request, until you realize how many varieties of eggs there are in the world and how much the appearance of eggs has to do with which type we select. For a long time, white eggs were popular among consumers, who associated them with cleanliness, good hygiene, and high standards. Then, gradually—no one knows why exactly—the public had a change of heart. Suddenly white was out, brown was in. It seemed consumers perceived brown eggs as more organic, more natural. But that still left manufacturers with the problem of what to do about the insides of eggs.

A general rule of thumb of the egg industry is that the more yellow a yolk appears, the more it will appeal to consumers. It's instinctual—probably an evolutionary adaptation that kept our ancestors from eating bad eggs. At any rate, when you add coloring to chicken food, color migrates into

the cells of the egg yolk, so egg farmers can enhance the hue of their egg yolks by adding coloring to the grain. My job was to help this company create the perfect yellow. For ethical reasons, I couldn't support the idea of adding artificial coloring to the grain, so instead, I identified a vitamin mixture that could be added to the hens' feed that would produce yolks from light yellow to middling-yellow to the passionate yellow, plus all the variations in between.

So the next time you sit down for breakfast in your local diner, and the waiter sets two fried eggs with gorgeously yellow yolks in front of you, well, I plead guilty.

My point is, colors can be very powerful in connecting us emotionally to a brand. A few years ago, I conducted another little test. I invited six hundred women into a room, and presented each of them with a blue Tiffany's box. There was nothing inside, I have to admit, but they didn't know that. When the women received the box, we measured their heart rate and blood pressure. And guess what? Their heart rates went up 20 percent, like that. The women never saw the logo, just the color—with its powerful associations with engagement, marriage, babies, and fertility.

Perhaps for this same reason, the color pink, with its associations of luxury, sensuality, and femininity, is used to sell everything from sleepwear, underwear, perfume and soaps, to drugstore remedies (got an upset stomach? Pepto-Bismol will neutralize and soothe your indigestion) to toys to computers. That's right, thanks to the unexpected success of a pink laptop manufactured by the Hong Kong company VTech, marketers from Toys "R" Us to the NFL, the NHL and NASCAR are starting to roll out pink versions of their best-selling toys and sports clothing.

Color gets our buying juices going in other ways, too. When Heinz rolled out its EZ Squirt Blastin' Green ketchup in 2001, customers bought more than 10 million bottles of the stuff in its first seven months on the market, the highest sales spike in the brand's history—all because of a simple color change. And when Apple announced "It doesn't have to be beige" in the weeks before they rolled out their candy-colored iMacs (the iMacs and their distinctively childlike colors were in fact literally inspired by candy; Steve Jobs later stated half-jokingly that he wanted people to "lick them"), people started preordering them like crazy. In a study of phone directory advertising, researchers found that colored ads hold customers' attention for two seconds or more, whereas black-and-white images hold our interest for less than one second—a crucial difference in the retail world, when you consider the fact that on average, most products have only one-twentieth of a second to grab our attention before we move on.

A study carried out by the Seoul International Color Expo found that color goes so far as to increase brand recognition by up to 80 percent. When asked to approximate the importance of color when buying products, 84.7 percent of total respondents claimed that color amounted to more than half the criterion they consider when they're choosing a brand. Other studies have shown that when people make a subconscious judgment about a person, environment, or product within ninety seconds, between 62 and 90 percent of that assessment is based on color alone.

A decade ago, when I was working for BBDO, I developed a "choose a new color" ad campaign for M&Ms in Europe. Back then, blue, pink, and white M&Ms didn't exist, so we asked consumers, via the Web, which color they would most

like to have melt in their mouths (not in their hands). In the end they picked blue, and sure enough when Mars rolled out the new color, sales rose.[7] Another time, Mercedes-Benz asked my team to create a new Web site for their fleet of high-end automobiles. So we created a riotously colorful Web site that consumers seemed to love (though the company hated it enough to discontinue it).

Even though sight is not as powerful in getting us to buy as we once believed, much of what we perceive every day is connected to our eyesight. Still, most of the time, we're barely aware of it. Consider a fascinating study by a major French food manufacturer testing two different prototype containers for a diet mayonnaise product aimed at female shoppers. Both containers held the exact same mayo and bore the exact same label. The only difference: the shapes of the bottles. The first was narrow around the middle, and thicker at the top and on the bottom. The second had a slender neck that tapered down into a bulbous bottom, like a genie bottle. When asked which product they preferred, every single subject—all diet-conscious females—selected the first bottle without even having tasted the stuff. Why? The researchers concluded that the subjects were associating the shape of the bottle with an image of their own bodies. And what woman wants to resemble an overstuffed Buddha, particularly after she's just spread diet mayonnaise on her turkey and alfalfa sandwich?

AS FOR SOUND? Well, believe it or not, sound branding has been around since the 1950s. General Electric, for example, created its familiar three-chime sound—the auditory equivalent of a logo—decades ago. Kellogg's, too, has spent many years cultivating a signature sound, even going so far as to hire a Danish lab to design a one-of-a-kind *crunch*, so that any child would be able to hear the difference between the sound of eating generic cornflakes and the Kellogg's brand. And at Bahlsen, a German food company, a development team of 16 researchers works diligently to engineer its own optimal *crunch* for its biscuits and potato chips. They don't take their jobs lightly, either. The biting and chewing noises are transmitted via speakers into the research lab, where they're continuously analyzed, enhanced, and perfected.

More recently, the Ford Motor Company created a new latch system for their Tauruses that makes a recognizable vaultlike sound when the doors close.[8] Did you know that the sound a jar of freeze-dried coffee or a can of Pringles potato chips makes when opened is largely engineered to make you associate the product with lip-smacking freshness? What about the tick-tick-tick of your iPod wheel, or the unmistakable chiming sound it makes when you turn it on and off? Or what about the sounds associated with McDonald's? After the racket of screaming kids, the sounds most associated with the fast food chain are the beep-beep-beep the french fry machine makes when the fries are ready and the scratchy punching sound your straw makes when it penetrates the plastic soda cup. Can you hear it right now? Bet you can, and it's making you crave an ice cold Coke and a large fries.

And of course, nothing sticks in the head like a jingle, no matter how idiotic or downright obnoxious it is. What about this one: "I'm a Pepper, he's a Pepper, she's a Pepper, we're a Pepper; wouldn't you like to be a Pepper, too?" (Dr Pepper). Or the classic "Plop, plop, fizz, fizz—oh, what a relief it is"

(Alka-Seltzer). Consider the Meow Mix jingle. How many times have you gotten that simple "Meow-meow-meow-meow-meow-meow-meow-meow-meow" lodged in your head?

Not convinced of the power of sound? Consider the fact that classical music has been found to deter vandalism, loitering, and even violent crime in Canadian parks, 7-Eleven parking lots, and subways. Figures released in 2006 showed that when classical music was piped over loudspeakers in the London Underground, robberies dropped by 33 percent, assaults on staff by 25 percent, and vandalism of trains and stations by 37 percent.[9]

Sound can even determine whether we pick up a bottle of French Chardonnay over a German Riesling. Over a two-week period, two researchers at the University of Leicester played either accordion-heavy, recognizably French music or a German Bierkeller brass band over the speakers of the wine section inside a large supermarket. On French music days, 77 percent of consumers bought French wine, whereas on Bierkeller music days, the vast majority of consumers made a beeline for the German section of the store. In short, a customer was three to four times more likely to select a bottle of wine that they associated with the music playing overhead than one they didn't. Were customers aware of what they were hearing? No doubt they were, peripherally. But only one out of the forty-four customers who agreed to answer a few questions at the checkout counter mentioned it among the reasons they bought the wine they did.[10]

And the cable channel A&E recently proved the power of sound in advertising by erecting a "sonic" billboard in New York City to promote a new paranormal-themed television series. Broadcasting from two oversized rooftop speakers, dis-

embodied voices hissed "What's that?," "Who's there?," and "It's not your imagination" at startled pedestrians.[11] Creepy as hell, but it got people talking—and watching.

The point is, sounds trigger strong associations and emotions and can exert a powerful influence on our behavior. Which brings us to our second sensory experiment: what happens when a brand is incredibly popular yet is associated with a well-known signature sound that leaves people cold?

WITH ROUGHLY 400 million cell phones in circulation and a 2007 market share of 40 percent,[12] Nokia is one of the most popular brands in the world. As a result, most of us are familiar with the communication giant's famous and unmistakable signature ring tone. Twenty percent of all Nokia subscribers keep the company's default ring tone (the one that played such a prominent part in the hit movie *Love Actually*), and if prompted, 41 percent of all U.K. subscribers can recall or even hum it. Now take into account all the ringing overheard on the crowded streets, in buses, and on TV, and well, it's enough, I'd say, to drive a person—or rather, 80 million Nokia users—mad.

When Nokia phones first hit the market, the company's default tune became instantly popular, largely because it was the first melody people recognized when they were starting to buy mobile phones (in case you are wondering, the simple ditty is based on *Gran Vals,* composed by Francisco Terrega in the nineteenth century). Since then, the tone has taken on an almost viral quality. In fact, if you go onto YouTube, you can observe complete strangers playing the Nokia melody on the

piano, the guitar, or on a clavier. If you're into hip-hop, there's even a gangsta' Nokia remix. One Web site claims that the impact of the Nokia melody is so great that there've been reports of songbirds chirping it over the skies of London.[13]

All this exposure, one would think, could only spell good news for the brand. But I wasn't so sure. I'd begun to notice that when my Nokia phone rang during the day (when I've forgotten to shut it off), I'd get an uncomfortable *yikes* feeling. My nerves would go on edge. I knew I wasn't alone in feeling this way. Even though the Nokia tune is one of the most successfully branded tunes of our time, something told me there was something off-key going on.

I decided to use the brain-scan study to find out what. So Dr. Calvert and I set out to determine whether a signature sound—like the Nokia ring—makes a brand more or less attractive. The latter scenario of this question intrigued me, too. Are there occasions when a sound can completely derail how buyers perceive a brand? As it turned out, the results of this second study on the power of the senses were even more shocking than the first.

We conducted our study across four different product categories: phones, software, airlines, and various images of London. Then we chose, for each category, associated sounds: the Nokia mobile phone ring, British Airways's "Flower Duet" (which is lifted from Leo Delibes's opera *Lakmé),* Microsoft's start-up and sign-off signature sound; as well as William Blake's lordly hymn, *Jerusalem* (with its lyrics about walking "upon England's mountain green"). Then we showed our volunteers ten separate images per brand, ranging from a British airways jet idling on a tarmac to a computer with Windows's signature colored banners, to a Nokia mobile phone. As a

benchmark, we also showed them images unrelated to the signature sounds.

Next, it was time to roll out the tunes. For our generic, benchmark brands, we serenaded our volunteers with melodies ranging from random ring tones to an extract from Bach's Double Violin Concerto.

Dr. Calvert and I once again took seats in the crowded control room as the study got under way. First, we presented individual brands in separate, ten-minute-long segments, or "runs," during which subjects were first presented with the sounds alone, followed by the pictures alone, followed by the images and the sounds simultaneously. Dr. Calvert repeated this sequence five times in a row—asking participants to signal their preferences for the images, sounds, or image–sound combinations (again on a scale of one to nine) using their button boxes as we scanned their brains to test their levels of emotional engagement and their memory encoding for what they had seen and heard.

Our results revealed that, just as with the image–smell combinations in the first experiment, when sounds and images were presented simultaneously, they were perceived more favorably—and left more of an impression—than that sound or image when presented alone. In most cases, when our volunteers viewed the images and heard the tunes—then viewed and heard them together—Dr. Calvert and I witnessed activity in the regions of their brains that signaled they were a) paying close attention; b) liked what they saw and heard; c) found the combination pleasant; and d) would recall the brand, and probably over the long haul, too.

Thus, Dr. Calvert was able to conclude that consumers' attention is increased when they hear a signature tune while see-

ing a highly recognizable image or logo and, what's more, consumers better recall what they're seeing and hearing when the tune and logo are simultaneous than when their eyes and ears are working alone. In other words, when a branded theme tune and a well-known logo are paired together, we both prefer the brand *and* remember it better.

At least this was the case for most of our image–sound combinations, the London images and *Jerusalem,* as well as the British Airways images and the "Flower Duet." (As for Microsoft, our volunteers found the sight of the brand less positive than its signature sound, but when we presented the Microsoft logo and the Microsoft melody jointly to our subjects, preferences did go up slightly.)

In sum, the fMRI results revealed that three out of four of our brands did well when sound and vision were combined in a congruent way. Our volunteers were emotionally engaged, and there was also evidence of long-term memory encoding. One brand, however, fell catastrophically short.

Nokia. The most familiar, ubiquitous ring tone on Planet Earth had flunked the sound test. Sure, our subjects rated the images of Nokia phones favorably—and why not; they're great phones—but the fMRI results showed that there was an across-the-board, negative emotive response to Nokia's famous ring. So much so, in fact, that just hearing the sound actually suppressed the generally enthusiastic feelings our volunteers' brains showed for the sight of Nokia's phones alone. And the subjects' own ratings further confirmed this result—after hearing the ring, subjects indicated a greater preference for the unrelated benchmark images than for the images of the Nokia phones.

In short, Nokia's ring tone was killing the brand.

But why? To shed further light on this question, Dr. Calvert peered inside our subjects' ventrolateral prefrontal cortices—part of the brain's circuits that processes information about emotion. And intriguingly, what she found was that the sound of the Nokia phone transformed the sight of the phone into a negative somatic marker—in other words, the ring evoked powerful negative associations that completely turned the subjects off from the brand.

This finding stayed with me for a long time. I puzzled over it. The problem with Nokia's ring tone, I realized, was that people had grown to fear, resent, and even hate it. Their brains connected that overfamiliar sound with intrusion, disruption, and feelings of annoyance. They connected it not with the lovelorn vagaries of *Love Actually* but with a romantic dinner or tropical vacation shattered by a phone call from a boss or a movie or a yoga class ruined by the ill-timed ring of an unsilenced phone. In short, for many, Nokia's default ring tone had come to hold all the lyrical charm of a nervous breakdown.

So how do you tell one of the most successful cell phone manufacturers in the world that their pride and glory was dampening, if not outright sinking, the popularity of its brand?[14] It felt a bit like informing John Lennon that the Beatles were fantastic, but Paul had to go. Nokia officials were genuinely shocked when I told them—but after their surprise had worn off, they accepted the findings of our fMRI experiment with aplomb. Time will tell if they do anything with our results.

So what is the future of sensory branding? Pretend it's the year 2030. We're at the same crossroads of the world, Times Square. But instead of billboards and flashing letters, we crane

our necks only to see . . . nothing. No twenty-foot-high models. No flashing neon. At the same time, the sidewalk is awash with smells and sounds. A whiff of lemon from a store selling a new, must-have sneaker. A burst of fresh orange from a sporting goods emporium. A clingy perfume wafting from the doors of a just-opened hotel. Is that Vivaldi we're hearing? Sonic Youth? Gregorian chant?

What I'm describing is a subtle sensory assault that doesn't rely exclusively on vision but which summons our nostrils, our eardrums, and our fingertips. Thanks to fMRI, we now know the extent to which the senses are intertwined; that fragrance can make us see, sound can make us smack our lips, and sight can help us imagine sound, taste, and touch—that is, if it's the right pairing of sensory input. For many advertisers, this finding will be a revelation; for consumers, it will validate a strange blurring of the senses that we've always known was there but haven't been able to identify before. Tomorrow's retail world? It will have the distinct smell of cantaloupe, lemongrass, tangerine. It won't be black and white, but in vivid color. It will chirp, waltz, holler, infuse you, and leave you humming. And this assault on your senses will be more effective in winning your mind, your loyalty, and your dollars than you ever thought possible.

Take Alli, GlaxoSmithKline's over-the-counter weight loss treatment. Not only are its colors eye-catchingly vivid (red, blue, yellow and green against a white background), but the uniquely shaped, conveniently portable pill carrier, known as a shuttle, has a gentle, bubbled texture—all of which serves to evoke associations of collaboration and partnership of you and the product embarking on a journey together, hand in hand. Remember, the road to emotion runs through our sensory experiences, and as we've shown in this chapter, emotion is one of the most powerful forces in driving what we buy.

SO FAR, WE have seen many ways in which neuromarketing can shed light on what and why we buy. But can it go so far as to predict the future success or failure of a product? Our next brain-scanning experiment tested the predictive powers of neuromarketing, using the pilot of a TV game show that hundreds of study subjects claimed to hate—but secretly kind of loved.

Americhip have both put enormous effort into the release of this book, which I won't soon forget. And an enormous thank-you to the many other sponsors who were there, always, to support me behind the scenes.

But most importantly, an enormous debt of gratitude to the thousands of people across the globe who volunteered to join me on this mission. Just imagine letting someone inspect your brain in the name of exploring the future. Thanks go as well to the hundreds of project managers, coordinators, and controllers who oversaw this project, as well as to the ethical panels who oversaw and approved every single step we took.

In the end, *Buyology* isn't just my story. It belongs to everyone with a brain who wants to know the science behind why we buy and, most of all, who we are as human beings.

I feel like I'm at an Academy Awards ceremony—where's the statue?

INTRODUCTION

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