

# How Companies Learn Your Secrets

By Charles Duhigg  
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Andrew Pole had just started working as a statistician for Target in 2002, when two colleagues from the marketing department stopped by his desk to ask an odd question: "If we wanted to figure out if a customer is pregnant, even if she didn't want us to know, can you do that?"

Target sells everything from milk to stuffed animals to lawn furniture to electronics, so one of the company's primary goals is convincing customers that the only store they need is Target. But it's a tough message to get across, even with the most ingenious ad campaigns, because once consumers' shopping habits are ingrained, it's incredibly difficult to change them.

There are, however, some brief periods in a person's life when old routines fall apart and buying habits are suddenly in flux. One of those moments — *the moment, really* — is right around the birth of a child, when parents are exhausted and overwhelmed and their shopping patterns and brand loyalties are up for grabs. But as Target's marketers explained to Pole, timing is everything. Because birth records are usually public, the moment a couple have a new baby, they are almost instantaneously barraged with offers and incentives and advertisements from all sorts of companies. Which means that the key is to reach them earlier, before any other retailers know a baby is on the way. Specifically, the marketers said they wanted to send specially designed ads to women in their second trimester, which is when most expectant mothers begin buying all sorts of new things, like prenatal vitamins and maternity clothing. "Can you give us a list?" the marketers asked.

"We knew that if we could identify them in their second trimester, there's a good chance we could capture them for years," Pole told me. "As soon as we get them buying diapers from us, they're going to start buying everything else too. If you're rushing through the store, looking for bottles, and you pass orange juice, you'll grab a carton. Oh, and there's that new DVD I want. Soon, you'll be buying cereal and paper towels from us, and keep coming back."

Almost every major retailer, from grocery chains to investment banks to the U.S. Postal Service, has a "predictive analytics" department devoted to understanding not just consumers' shopping habits but also their personal habits, so as to more efficiently market to them. "But Target has always been one of the smartest at this," says Eric Siegel, a consultant and the chairman of a conference called Predictive Analytics World. "We're living through a golden age of behavioral research. It's amazing how much we can figure out about how people think now."

The reason Target can snoop on our shopping habits is that, over the past two decades, the science of habit formation has become a major field of research in neurology and psychology departments at hundreds of major medical centers and universities, as well as inside extremely well financed corporate labs. The push to understand how daily habits influence our decisions has become one of the most exciting topics in clinical research, even though most of us are hardly aware those patterns exist. One study from Duke University estimated that habits, rather than conscious decision-making, shape 45 percent of the choices we make every day, and recent discoveries have begun to change everything from the way we think about dieting to how doctors conceive treatments for anxiety, depression and addictions.

There is a calculus, it turns out, for mastering our subconscious urges. For companies like Target, the exhaustive rendering of our conscious and unconscious patterns into data sets and algorithms has revolutionized what they know about us and, therefore, how precisely they can sell.

The process within our brains that creates habits is a three-step loop. First, there is a cue, a trigger that tells your brain to go into automatic mode and which habit to use. Then there is the routine, which can be physical or mental or emotional. Finally, there is a reward, which helps your brain figure out if this particular loop is worth remembering for the future. Over time, this loop — cue, routine, reward; cue, routine, reward —

becomes more and more automatic. The cue and reward become neurologically intertwined until a sense of craving emerges. What's unique about cues and rewards, however, is how subtle they can be. Neurological studies have revealed that some cues span just milliseconds. And rewards can range from the obvious (like the sugar rush that a morning doughnut habit provides) to the infinitesimal (like the barely noticeable — but measurable — sense of relief the brain experiences after successfully navigating the driveway). Most cues and rewards, in fact, happen so quickly and are so slight that we are hardly aware of them at all. But our neural systems notice and use them to build automatic behaviors.

Habits aren't destiny — they can be ignored, changed or replaced. But it's also true that once the loop is established and a habit emerges, your brain stops fully participating in decision-making. So unless you deliberately fight a habit — unless you find new cues and rewards — the old pattern will unfold automatically.

Andrew Pole was hired by Target to use the same kinds of insights into consumers' habits to expand Target's sales. His most important assignment was to identify those unique moments in consumers' lives when their shopping habits become particularly flexible and the right advertisement or coupon would cause them to begin spending in new ways.

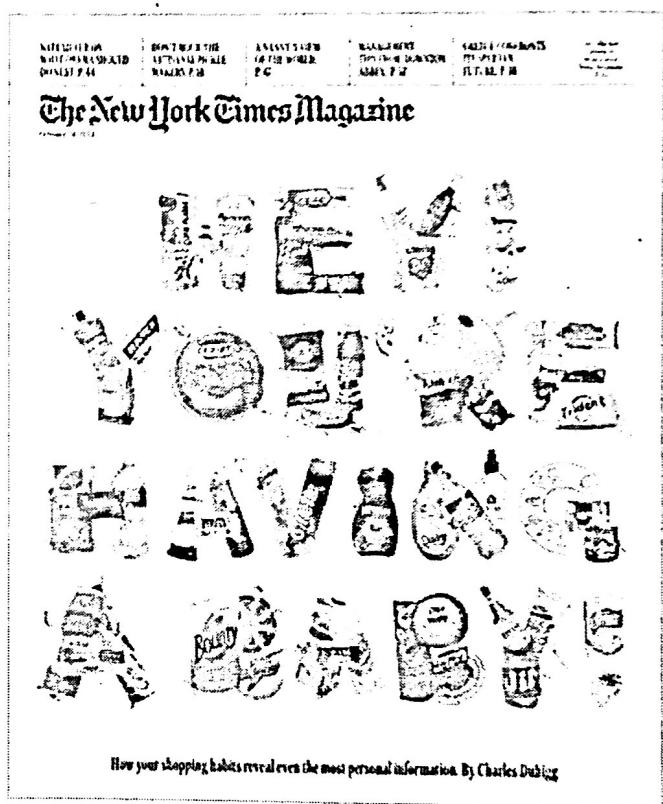
In the 1980s, a team of researchers led by a U.C.L.A. professor named Alan Andreasen undertook a study of peoples' most mundane purchases, like soap, toothpaste, trash bags and toilet paper. They learned that most shoppers paid almost no attention to how they bought these products, that the purchases occurred habitually, without any complex decision-making. Which meant it was hard for marketers, despite their displays and coupons and product promotions, to persuade shoppers to change.

But when some customers were going through a major life event, like graduating from college or getting a new job or moving to a new town, their shopping habits became flexible in ways that were both predictable and potential gold mines for retailers. The study found that when someone marries, he or she is more likely to start buying a new type of coffee. When a couple move into a new house, they're more apt to purchase a different kind of cereal. When they divorce, there's

an increased chance they'll start buying different brands of beer.

Consumers going through major life events often don't notice, or care, that their shopping habits have shifted, but retailers notice, and they care quite a bit. At those unique moments, Andreasen wrote, customers are "vulnerable to intervention by marketers." In other words, a precisely timed advertisement, sent to a recent divorcee or new homebuyer, can change someone's shopping patterns for years.

Among life events, none are more important



than the arrival of a baby. At that moment, new parents' habits are more flexible than at almost any other time in their adult lives. If companies can identify pregnant shoppers, they can earn millions.

The only problem is that identifying pregnant customers is harder than it sounds. Target has a baby-shower registry, and Pole started there, observing how shopping habits changed as a woman approached her due date, which women on the registry had willingly disclosed. He ran test after test, analyzing the data, and before long some useful patterns emerged. Lotions, for example. Lots of people buy lotion, but one of Pole's colleagues noticed that women on the baby registry were buying larger quantities of unscented lotion

around the beginning of their second trimester. Another analyst noted that sometime in the first 20 weeks, pregnant women loaded up on supplements like calcium, magnesium and zinc. Many shoppers purchase soap and cotton balls, but when someone suddenly starts buying lots of scent-free soap and extra-big bags of cotton balls, in addition to hand sanitizers and washcloths, it signals they could be getting close to their delivery date.

As Pole's computers crawled through the data, he was able to identify about 25 products that, when analyzed together, allowed him to assign each shopper a "pregnancy prediction" score. More important, he could also estimate her due date to within a small window, so Target could send coupons timed to very specific stages of her pregnancy.

Pole applied his program to every regular female shopper in Target's national database and soon had a list of tens of thousands of women who were most likely pregnant. If they could entice those women or their husbands to visit Target and buy baby-related products, the company's cue-routine-reward calculators could kick in and start pushing them to buy groceries, bathing suits, toys and clothing, as well. When Pole shared his list with the marketers, he said, they were ecstatic. At which point someone asked an important question: How are women going to react when they figure out how much Target knows?

"If we send someone a catalog and say, 'Congratulations on your first child!' and they've never told us they're pregnant, that's going to make some people uncomfortable," Pole told me. "We are very conservative about compliance with all privacy laws. But even if you're following the law, you can do things where people get queasy." About a year after Pole created his pregnancy-prediction model, a man walked into a Target outside Minneapolis and demanded to see the manager. He was clutching coupons that had been sent to his daughter, and he was angry, according to an employee who participated in the conversation.

"My daughter got this in the mail!" he said. "She's still in high school, and you're sending her

coupons for baby clothes and cribs? Are you trying to encourage her to get pregnant?"

The manager didn't have any idea what the man was talking about. He looked at the mailer. Sure enough, it was addressed to the man's daughter and contained advertisements for maternity clothing, nursery furniture and pictures of smiling infants. The manager apologized and then called a few days later to apologize again.

On the phone, though, the father was somewhat abashed. "I had a talk with my daughter," he said. "It turns out there's been some activities in my house I haven't been completely aware of. She's due in August. I owe you an apology."

Using data to predict a woman's pregnancy, Target realized soon after Pole perfected his model, could be a public-relations disaster. So the question became: how could they get their advertisements into expectant mothers' hands without making it appear they were spying on them? How do you take advantage of someone's habits without letting them know you're studying their lives?

"We have the capacity to send every customer an ad booklet, specifically designed for them, that says, 'Here's everything you bought last week and a coupon for it,'" one Target executive told me. "We do that for grocery products all the time." But for pregnant women, Target's goal was selling them baby items they didn't even know they needed yet.

"And we found out that as long as a pregnant woman thinks she hasn't been spied on, she'll use the coupons. She just assumes that everyone else on her block got the same mailer for diapers and cribs. As long as we don't spook her, it works."

Soon after the new ad campaign began, Target's Mom and Baby sales exploded. The company doesn't break out figures for specific divisions, but between 2002 — when Pole was hired — and 2010, Target's revenues grew from \$44 billion to \$67 billion.

As Pole told me the last time we spoke: "Just wait. We'll be sending you coupons for things you want before you even know you want them."