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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? ”

Pole has a master’s degree in statistics and another in economics, and has been obsessed with the intersection of data and human behavior most of his life. His parents were teachers in North Dakota, and while other kids were going to 4-H, Pole was doing algebra and writing computer programs. “The stereotype of a math nerd is true,” he told me when I spoke with him last year. “I kind of like going out and evangelizing analytics.”

As the marketers explained to Pole — and as Pole later explained to me, back when we were still speaking and before Target told him to stop — new parents are a retailer’s holy grail. Most shoppers don’t buy everything they need at one store. Instead, they buy groceries at the grocery store and toys at the toy store, and they visit Target only when they need certain items they associate with Target — cleaning supplies, say, or new socks or a six-month supply of toilet paper. But 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.”

The desire to collect information on customers is not new for Target or any other large retailer, of course. For decades, Target has collected vast amounts of data on every person who regularly walks into one of its stores. Whenever possible, Target assigns each shopper a unique code — known internally as the Guest ID number — that keeps tabs on everything they buy. “If you use a credit card or a coupon, or fill out a survey, or mail in a refund, or call the customer help line, or open an e-mail we’ve sent you or visit our Web site, we’ll record it and link it to your Guest ID,” Pole said. “We want to know everything we can.”

Also linked to your Guest ID is demographic information like your age, whether you are married and have kids, which part of town you live in, how long it takes you to drive to the store, your estimated salary, whether you’ve moved recently, what credit cards you carry in your wallet and what Web sites you visit. Target can buy data about your ethnicity, job history, the magazines you read, if you’ve ever declared bankruptcy or got divorced, the year you bought (or lost) your house, where you went to college, what kinds of topics you talk about online, whether you prefer certain brands of coffee, paper towels, cereal or applesauce, your political leanings, reading habits, charitable giving and the number of cars you own. (In a statement, Target declined to identify what demographic information it collects or purchases.) All that information is meaningless, however, without someone to analyze and make sense of it. That’s where Andrew Pole and the dozens of other members of Target’s Guest Marketing Analytics department come in.

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. “It’s like an arms race to hire statisticians nowadays,” said Andreas Weigend, the former chief scientist at Amazon.com. “Mathematicians are suddenly sexy.”

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**Andrew Pole was hired** by Target to use the same kinds of insights into consumers’ habits to expand Target’s sales. His assignment was to analyze all the cue-routine-reward loops among shoppers and help the company figure out how to exploit them. Much of his department’s work was straightforward: find the customers who have children and send them catalogs that feature toys before Christmas. Look for shoppers who habitually purchase swimsuits in April and send them coupons for sunscreen in July and diet books in December. But Pole’s 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.

And 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.

One Target employee I spoke to provided a hypothetical example. Take a fictional Target shopper named Jenny Ward, who is 23, lives in Atlanta and in March bought cocoa-butter lotion, a purse large enough to double as a diaper bag, zinc and magnesium supplements and a bright blue rug. There’s, say, an 87 percent chance that she’s pregnant and that her delivery date is sometime in late August. What’s more, because of the data attached to her Guest ID number, Target knows how to trigger Jenny’s habits. They know that if she receives a coupon via e-mail, it will most likely cue her to buy online. They know that if she receives an ad in the mail on Friday, she frequently uses it on a weekend trip to the store. And they know that if they reward her with a printed receipt that entitles her to a free cup of Starbucks coffee, she’ll use it when she comes back again.

In the past, that knowledge had limited value. After all, Jenny purchased only cleaning supplies at Target, and there were only so many psychological buttons the company could push. But now that she is pregnant, everything is up for grabs. In addition to triggering Jenny’s habits to buy more cleaning products, they can also start including offers for an array of products, some more obvious than others, that a woman at her stage of pregnancy might need.

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. Soon, Pole was getting invited to meetings above his paygrade. Eventually his paygrade went up.

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.”

When I approached Target to discuss Pole’s work, its representatives declined to speak with me. “Our mission is to make Target the preferred shopping destination for our guests by delivering outstanding value, continuous innovation and exceptional guest experience,” the company wrote in a statement. “We’ve developed a number of research tools that allow us to gain insights into trends and preferences within different demographic segments of our guest population.” When I sent Target a complete summary of my reporting, the reply was more terse: “Almost all of your statements contain inaccurate information and publishing them would be misleading to the public. We do not intend to address each statement point by point.” The company declined to identify what was inaccurate. They did add, however, that Target “is in compliance with all federal and state laws, including those related to protected health information.”

When I offered to fly to Target’s headquarters to discuss its concerns, a spokeswoman e-mailed that no one would meet me. When I flew out anyway, I was told I was on a list of prohibited visitors. “I’ve been instructed not to give you access and to ask you to leave,” said a very nice security guard named Alex.

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?

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**After Andrew Pole** built his pregnancy-prediction model, after he identified thousands of female shoppers who were most likely pregnant, after someone pointed out that some of those women might be a little upset if they received an advertisement making it obvious Target was studying their reproductive status, everyone decided to slow things down.

The marketing department conducted a few tests by choosing a small, random sample of women from Pole’s list and mailing them combinations of advertisements to see how they reacted.

“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.

“With the pregnancy products, though, we learned that some women react badly,” the executive said. “Then we started mixing in all these ads for things we knew pregnant women would never buy, so the baby ads looked random. We’d put an ad for a lawn mower next to diapers. We’d put a coupon for wineglasses next to infant clothes. That way, it looked like all the products were chosen by chance.

“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.”

In other words, if Target piggybacked on existing habits — the same cues and rewards they already knew got customers to buy cleaning supplies or socks — then they could insert a new routine: buying baby products, as well. There’s a cue (“Oh, a coupon for something I need!”) a routine (“Buy! Buy! Buy!”) and a reward (“I can take that off my list”). And once the shopper is inside the store, Target will hit her with cues and rewards to entice her to purchase everything she normally buys somewhere else. As long as Target camouflaged how much it knew, as long as the habit felt familiar, the new behavior took hold.

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. In 2005, the company’s president, Gregg Steinhafel, boasted to a room of investors about the company’s “heightened focus on items and categories that appeal to specific guest segments such as mom and baby.”

Pole was promoted. He has been invited to speak at conferences. “I never expected this would become such a big deal,” he told me the last time we spoke.

**A few weeks** before this article went to press, I flew to Minneapolis to try and speak to Andrew Pole one last time. I hadn’t talked to him in more than a year. Back when we were still friendly, I mentioned that my wife was seven months pregnant. We shop at Target, I told him, and had given the company our address so we could start receiving coupons in the mail. As my wife’s pregnancy progressed, I noticed a subtle upswing in the number of advertisements for diapers and baby clothes arriving at our house.

Pole didn’t answer my e-mails or phone calls when I visited Minneapolis. I drove to his large home in a nice suburb, but no one answered the door. On my way back to the hotel, I stopped at a Target to pick up some deodorant, then also bought some T-shirts and a fancy hair gel. On a whim, I threw in some pacifiers, to see how the computers would react. Besides, our baby is now 9 months old. You can’t have too many pacifiers.

When I paid, I didn’t receive any sudden deals on diapers or formula, to my slight disappointment. It made sense, though: I was shopping in a city I never previously visited, at 9:45 p.m. on a weeknight, buying a random assortment of items. I was using a corporate credit card, and besides the pacifiers, hadn’t purchased any of the things that a parent needs. It was clear to Target’s computers that I was on a business trip. Pole’s prediction calculator took one look at me, ran the numbers and decided to bide its time. Back home, the offers would eventually come. 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.”