

# A Science Is Born

## ONE

Comfortable shoes, the American commercial camouflage uniform—khaki pants, olive polo shirt, no aftershave and good, thick, dun-colored socks.

Okay, stroll, stroll, stroll . . . stop.

Get out the clipboard and pen.

Shhh. Stay behind that potted palm. This is the first track of the day.

The subject of study is the fortyish woman in the tan trench coat and blue skirt. She's in the bath section. She's touching towels. Mark this down—she's petted one, two, three, four of them so far. She just checked the price tag on one. Mark that down, too. Careful, her head's coming up—blend into the aisle. She's picking up two towels from the tabletop display and is leaving the section with them. Get the time. Now, tail her into the aisle and on to her next stop.

It's another day of fieldwork; the laboratory, another troubled department store. The focus of our analysis is the domestic department as per the science of shopping. But let's start by addressing a fundamental question: Since when does such a scholarly discipline even exist?

Well, if, say, anthropology had devoted a branch to the study of modern shoppers in situ, a fancy Latin way of saying shoppers out shopping, interacting with retail environments (not only stores, but also banks and restaurants), including but not limited to every rack, shelf, counter and table display of merchandise, every sign, banner, brochure, directional aid and computerized interactive informational fixture, the entrances and exits, the windows and walls, the elevators and escalators and stairs and ramps, the cashier lines and teller lines and counter lines and restroom lines, and every inch of every aisle—in short, every nook and cranny from the farthest reach of the parking lot to the deepest penetration of the store itself—that would be the start of the science of shopping. And if anthropology had already been studying all that . . . and not simply studying the store, but what, exactly human beings do in it, where they go and don't go, and by what path they go there; what they see and fail to see, or read and decline to read; and how they deal with the objects they come upon, how they shop, you might say—the precise anatomical mechanics and behavioral psychology of how they pull a sweater from a rack to examine it, or read a box of heartburn pills or a fast-food restaurant menu, or deploy a shopping basket, or react to the sight of a line at the ATMs . . . again, as I say, if anthropology had been paying attention, and not just paying attention but then collating, digesting, tabulating and cross-referencing every little bit of data, from the extremely broad (How many people enter this store on a typical Saturday morning broken down by age, sex and size of shopper group?) to the extremely narrow (Do more male supermarket shoppers under thirty-five who read the nutritional information on the side panel of a cereal box actually buy the cereal compared to those who just look at the picture on the front?), well, then we wouldn't have had to try to invent the science of shopping.

But anthropology didn't pay attention to those details, and so down the hall from my office is a room containing around fifty cameras, mostly video but with some still and digital cameras and a couple of old-fashioned Super 8 time-lapse film cameras thrown in. Next to them are piled cases of blank 8mm videotapes, two hours per tape, five hundred tapes to a case. We go through about fourteen cases, seven thou-

sand tapes, a year. (In 1992, when we shot a lot of time-lapse Super 8 film—about \$60,000 worth—Kodak told us we were the single largest consumer of Super 8 film in the world.) We also have maybe a dozen handheld computers on which we take down the answers from the thousands of shopper interviews we conduct, and there are some odd laptops in there, too, plus all manner of tripods, mounts, lenses and other camera accessories, including lots of duct tape. Oh, and hard-shell cases for everything, because it all travels. A lot. We have enough gear in that room to equip a major university's school of social anthropology or experimental psychology, assuming the university has a deserved reputation for generating tons of original research gathered all over the globe.

Despite all that high-tech equipment, though, our most important research tool is a low-tech piece of paper we call the track sheet, in the hands of the individuals we call trackers. Trackers are the field researchers of the science of shopping, the scholars of shopping, or, more precisely, of *shoppers*. Essentially, trackers stealthily make their way through stores following shoppers and noting everything they do. Usually, a tracker begins by loitering inconspicuously near a store's entrance, waiting for a shopper to enter, at which point the "track" starts. The tracker will stick with the unsuspecting individual (or individuals) as long as the shopper is in the store (excluding trips to the dressing room or the restroom) and will record on the track sheet virtually everything he or she does. Sometimes, when the store is large, trackers work in teams in order to be less intrusive.

Befitting a science that has grown up in the real world, meaning far from the ivory towers of academia, our trackers are not all taken from the usual researcher mold. In the beginning we hired graduate environmental psychology students, but we found they were sometimes unsuited to the work and tended to come to the job burdened with textbook theories they wanted to apply. As a result, they often didn't possess the patience necessary to simply watch what shoppers do. The other problem we had with grad students involved stamina: While we don't work in the dusty heat of Mesopotamia, twelve hours on your feet under the fluorescent lights at Kmart is no picnic either. Fieldwork

in any physical or social science is difficult. We found that, for our purposes, smart, creative people—artists, actors, writers, a puppeteer—often have what it takes. Beyond the fact that they have no theories to uphold or demolish, their professional skills are often rooted in their ability to observe. Also, it does not hurt that they have flexible schedules, so that when that Brazilian brewer or Australian tampon manufacturer or American fast-food operator happens to call, they have the open calendar and curiosity to be willing to go take a look.

When we find someone we think has the temperament and the intelligence for this work, we first put him or her through a training session. There's a lot to learn—how do I watch and simultaneously take notes, for instance, or how can I tell whether someone is reading a sign or just staring at the mirror next to it? We have to teach the most important tracker skill of all: How do I stand close enough to study someone without being noticed? It's crucial to our work that shoppers don't realize they're being observed. There's no other way to be sure that we're seeing natural behavior. Fact is, we're all still surprised by how close you can stand to someone in a store and still remain invisible. We find that positioning yourself behind the shopper is a bad idea—we all know the sensation that we're being watched. But if you stand to the side of a shopper, his or her peripheral vision "reads" you as just another customer—harmless, in other words, and barely worth noticing. From that position you can get close enough to see exactly what a shopper is doing. You can be sure that he's touched, say, nine golf gloves, not eight or ten. Then we throw the tracker hopefuls out into the real world, in a store setting, to see them in action. Most of them wash out at this point—you can teach technique, but not the intelligence or the slight case of fascination required to do this work well. Over half of our core group of thirty U.S. trackers have been with us for more than five years, some for a decade or more. It's hard work, but addictive, too. In teams of three to ten people, led by a member of our staff, they crisscross the United States and Canada, as well as Europe, South America and Australia, visiting every kind of retail business imaginable, from banks to fast-food restaurants to high-fashion boutiques to hangar-size discounters and everything in between. To make our international

work easier and more efficient, for three years we have had research teams based out of Milan, Italy, and for two years out of Sydney, Australia.

In addition to measuring and counting every significant motion of a shopping trip, the trackers must also contribute incisive field notes describing the nuances of customer behavior, making intelligent inferences based on what they've observed. These notes add up to yet another, this time anecdotal, layer of information about a given environment and how people use it.

The forms our trackers use have evolved over the two decades we've been doing this research. They are the key to the entire enterprise, an achievement in the art of information storage and retrieval, nondigital division. Our earliest track sheets could record maybe ten different variables of shopper behavior. Today we're up to around forty. The form is reinvented for every research project we undertake, but typically it starts with a detailed map depicting the premises we're about to study, whether it's a store, a bank branch, a parking lot (for a drive-thru project) or just a single section or even just one aisle of a store. The map shows every doorway and aisle, every display, every shelf and rack and table and counter. Also on the form is space for information about the shopper (sex, race, estimates of age, description of attire) and what he or she does in the store. Using the system of shorthand notation, a combination of symbols, letters and hash marks, a tracker can record, for instance, that a bald, bearded man in a red sweater and blue jeans entered a department store on a Saturday at 11:07 a.m., walked directly to a first-floor display of wallets, picked up or otherwise touched a total of twelve of them, checked the price tag on four, then chose one, moved at 11:16 to a nearby tie rack, stroked seven ties, read the contents tags on all seven, read the price on two, then bought none and went directly to the cashier to pay. Oh, wait, he paused for a moment at a mannequin and examined the price tag on the jacket it wore. We'd mark that down, too, just as we'd note that he entered the cashier line at 11:23 as the third person in line, waited two minutes and fifty-one seconds to get to the register, paid with a credit card and exited the store at 11:30. Depending on the size of the store and the length of the typical shop-

per's stay, a tracker can study up to fifty shoppers a day. Usually we'll have several trackers at a site, and a single project may involve the simultaneous study of three or four locations in separate cities over a series of different weekends.

By the end of a job, an incredible amount of information has been crammed onto those sheets. They come back to the office where the job captain spends a day "cleaning" the forms—making sure that each hash mark is visible and that every box that should be filled out has been. Then our data department spends another day or so entering all the information, every single notation on every track sheet, into a data base.

Over the years we've spent tens of thousands of dollars and countless frustrating hours with computer programmers, trying to come up with a data base system that could handle the kind of work we do. The big problem is that while we crunch the same numbers in the same ways from job to job, each project usually requires us to do something a little differently—to collect different kinds of data, or to devise new comparisons of facts we've uncovered. We've hired fancy consultants who've spent six months at a crack with us, trying to build us a computer system. They ask us to list everything we want our program to do, but every week we add six new things to the list that negate all their work from the previous month. And, of course, our turnaround time must be swift, so there's no time to change the system completely for each job—we may need to do one new comparison for a project today and then not have to perform that function again for seven months.

Until recently, most of our work was done in Microsoft Excel. Excel is not a data base program but a spreadsheet program, intended to help accountants do relatively simple flat calculations. Excel's beauty is its open architecture—you can get in there under the hood and tinker, and soup it up. And that's exactly what we've done. It's as though Microsoft built a very nice bicycle ten years ago and we've turned it into a data-busting all-terrain vehicle. Today we run much of our work in File-Maker and SPSS, but still vet it in Excel.

When the videotapes come back from the sites, it's someone else's job to screen every foot. Depending on the size of the store, we may

have ten cameras running eight hours a day trained on specific areas—a doorway, for example, or a particular shelf of products. We videotape around twenty thousand hours' worth of store time annually. The video produces even more hard data; if, for example, a study is meant to determine in part how a particular cash register design affects worker fatigue, we may use the video and a stopwatch to time how long it takes for a clerk to ring up a sale at 10 a.m. compared to 4 p.m.

The list of particulars we're capable of studying—what we call the deliverables—grows with every new project we take on. At last count, we've measured close to nine hundred different aspects of shopper-store interaction. As a result of all that, we know quite a few facts about how human beings behave in stores. We can tell you how many males who take jeans into the fitting room will buy them compared to how many females will (65 percent to 25 percent). We can tell you how many people in a corporate cafeteria read the nutritional information on a bag of corn chips before buying (18 percent) compared to those lunching at a local sandwich shop (2 percent). Or how many browsers buy computers on a Saturday before noon (4 percent) as opposed to after 5 p.m. (21 percent). Or how many shoppers in a mall housewares store use shopping baskets (8 percent), and how many of those who take baskets actually buy something (75 percent) compared to those who buy without using baskets (34 percent). And then, of course, we draw on all we've learned in the past to suggest ways of increasing the number of shoppers who take baskets, for the science of shopping is, if it is anything, a highly practical discipline concerned with using research, comparison and analysis to make stores and products more amenable to shoppers.

Because this science has been invented as we have gone along, it's a living, breathing field of study. We never quite know what we'll find until we find it, and even then we sometimes have to stop to figure out what it is we've seen.

For example, we discovered a phenomenon known as the butt-brush effect almost accidentally. As part of an early study for Bloomingdale's

in New York City, we trained a camera on one of the main ground-floor entrances, and the lens just happened to also take in a rack of neckties positioned near the entrance, on a main aisle. While reviewing the tape to study how shoppers negotiated the doorway during busy times, we began to notice something weird about the tie rack. Shoppers would approach it, stop and shop until they were bumped once or twice by people heading into or out of the store. After a few such jostles, most of the shoppers would move out of the way, abandoning their search for neckwear. We watched this over and over until it seemed clear that shoppers—women especially, though it was also true of men to a lesser extent—don't like being brushed or touched from behind. They'll even move away from merchandise they're interested in to avoid it. When we checked with our client, we learned that sales from that tie rack were lower than they expected from a fixture located on a main thoroughfare. The butt-brush factor, we surmised, was why that rack was an underperformer.

As I was delivering our findings to the store's president, he jumped up from the conference table, grabbed a phone, called down to the floor of the store and had someone move that tie rack immediately to a spot just off the main aisle. A few weeks later the head of store planning called me to say that sales from the rack had gone up quickly and substantially. Since that day we've found countless similar situations in which shoppers have been spooked by too-close quarters. In every case, a quick adjustment was all that was needed.

Another such "accident" of patient observation and analysis happened during a supermarket study we performed for a dog food manufacturer. When we staked out the pet aisle, we noticed that while adults bought the dog food, the dog treats—liver-flavored biscuits and such—were often being picked out by children or senior citizens. We realized that for the elderly, pets are *like* children, creatures to be spoiled. And while feeding Fido may not be any child's favorite chore, filling him up with doggie cookies can be loads of fun. Parents indulged their little ones' pleas for treats here just as they did over in the cookie aisle.

Because no one had ever noticed who exactly was buying (or lobby-

ing for the purchase of) pet treats, they were typically stocked near the top of the supermarket shelves. As a result, our cameras caught children climbing the shelving to reach the treats. We witnessed one elderly woman using a box of aluminum foil to knock down her brand of dog biscuits. Move the treats to where kids and little old ladies can reach them, we advised the client. The client did so, and sales went up overnight.

Even the plainest truths can get lost in all the details of planning and stocking a store. A phrase I find myself using over and over with clients is this: The obvious isn't always apparent.

While studying the cosmetics section of a drugstore chain, we watched a woman in her sixties approach a wall rack, study it carefully and then kneel before it so she could find the one item she needed—concealer cream, which, because of its lack of glamour, was kept at the very bottom of the display. Similarly, in a department store we watched an overweight man try to find his size of underwear at a large aisle display—and saw him stoop dangerously low to reach it, down near the floor. In both cases, logic should have dictated that the displays be tailored to the shoppers who use them, not to the designers who made them. Move the concealer up, we advised, and put something aimed at teen shoppers down near the floor—the teens will find their products wherever they're stocked.

In some studies, we synthesize every bit of information we can possibly collect into a comprehensive portrait of a store or a single department. A major jeans manufacturer wanted to know how its product was sold in department stores, so in one weekend we descended on four sites, two in New England and two in Southern California. Each department was similar—the jeans section was a square area that held from eight to twelve tabletop displays and some wall shelving. We started by drawing a detailed map of each, showing the displays and the aisles leading into and out of the sections, but also where any signs or other promotional materials were posted. During that weekend we tracked a total of 815 shoppers and observed many more on camera, both video and time-lapse. We paid particular attention to the "doorways"—our term for any path leading into or out of an area of a store.

Until the client knew which paths were most popular, it was impossible to make informed decisions about where to stock what, or where to place the merchandising materials meant to lure shoppers.

By the time our study was completed, we could say which percentage of customers used which paths into each of the sections. Once we knew that, it was clear, for instance, that much of the signage was misplaced—common sense dictated that it be positioned to face the main entrance of the store, but we found that most jeans shoppers came upon the section from a completely different direction. Even the client's big neon logo and a monitor showing rock videos were facing the wrong way if their job was to signal the greatest number of shoppers. We tracked shoppers from table to table, seeing where they stopped, what signs they read, whether they noticed the video monitors, and how they handled the merchandise, including whether they took anything to the dressing rooms. If they seemed to be showing jeans to a companion, we noted that, too. Some of the shoppers captured on video were also questioned by our interviewers, so that their demographic information and their attitudes and opinions could be correlated with their behaviors—to see, for example, whether young shoppers with high school educations who say they depend on name brand when choosing jeans read price tags. After the research is done and the numbers are crunched and analyzed, we see what sense can be made of what we've learned. For example, if we were to find that a high percentage of male shoppers buy from the first rack of jeans they encounter, and that shoppers tend to enter the section through the aisle leading from men's accessories rather than from the women's side of the store or from the escalator, then we would advise our client to ask for the display table nearest men's accessories. Or maybe there's another determining factor—maybe men who are accompanied by females and entering the section from the women's department buy more jeans than men who are alone. In that case, the best table would be nearest the women's merchandise. But no one knows for sure until we collect the data.

In other instances we're hired to study some small retail interaction in great detail. One such project was commissioned by a premium

shampoo maker that wanted to know about the decision-making process of women shoppers who buy generic or store-brand beauty products. The client was interested in the "value equation" women bring to each shopping experience—how does the shopper who buys from the generics section at the supermarket in the morning and then from Nordstrom in the afternoon decide which product she'll buy where? Does she judge that her skin deserves the premium brand but her hair can settle for the generic? Once upon a time only the budget-conscious bought store brands, but now you find them in everyone's shopping basket. Let's call her shopper number 24, a thirtysomething woman in yellow pants and white sweater, accompanied by a preschool girl, who enters the health and beauty aisle of a supermarket at 10:37 a.m. on a Wednesday morning. She has a handbasket, not a shopping cart, and has already selected store-brand vitamin C capsules, a large container of Johnson's Baby Powder and a packet of snapshots she picked up at the photo-processing booth. She is also holding a shopping list and the store circular. She goes directly to the shampoo shelves and picks up a bottle of Pantene brand, reads the front label, then picks up a bottle of the store brand and reads the front label, then reads the price tag on the Pantene, then reads the price on the store brand, and then puts the store brand in her basket and exits the section forty-nine seconds after she entered it. In that brief encounter, there was lots of data to collect—what she touched, what she read and in what order, about twenty-five different data points in all. If, in one day, we track a hundred shoppers in that store's health and beauty aisle, it can amount to 2,500 separate data entries. As the woman exits the section, we interview her, asking twenty questions in all. So each of the twenty-five data points has to be cross-tabulated with each of her twenty answers—a cross-tab challenge, take it from me.

No university, to my knowledge, has ever attempted behavioral research in the retail environment to the degree that we have. My old colleagues in the world of academia regard what we do with envy and horror—envy because we get to do what we do and get paid for it, horror because we actually stick our necks out and are held accountable for the success or failure of our suggestions. After almost twenty years of

work, our client list is as blue-chip as they come, and while we do get it wrong sometimes, three-quarters of our clients who buy us once come back for more.

I make much of the "accidental" nature of my involvement in the science of shopping. More than twenty years ago I was a student and admirer of one of America's most esteemed social scientists, William H. Whyte, author of such highly influential books as *The Organization Man*, *The Last Landscape*, *City—Rediscovering the Center* and *The Social Life of Small Urban Spaces*. He was also the founder, in the early '70s, of the Street Life Project and, in 1974 with Fred Kent and Robert Cook, of the Project for Public Spaces, or PPS, where I worked for two years. PPS, based in New York City, continues to make significant contributions to the preservation and ongoing good health of the urban landscape.

William H. Whyte, or "Holly," as he is known, was, in his active days, a quixotic, beloved figure. He had the gray hair and aristocratic mien of an old-fashioned WASP banker, yet he had fallen in love with the streets of New York City and worked hard to learn how people might best use them. Whyte's greatest contribution was his research into how people use public spaces—streets, parks, plazas and so on. Using time-lapse photography, hidden trackers and interviews, he and his associates would stake out some urban plaza or mini-park, say, and study it, minute by minute, over the course of several days. By the time they finished, they could tell you everything about every bench, ledge, path, fountain and shrub, especially how people interacted with them, using them as places to lunch, sun, socialize, people-watch, nap or just happily and peacefully loiter. Whyte and his colleagues would measure everything—the ideal width of a ledge for sitting, how sunlight, shade and wind affect park use and how a public space's surroundings, the office towers or construction sites or schools or neighborhoods, determine the quality of life there.

Whyte was, essentially, a scientist of the street—one of the first, which is amazing when you think of how long streets existed before he

came along. His work has been used to make public spaces better and more useful to citizens, which in turn has made cities better. Whyte's methods were a kind of lens through which a physical environment could be studied and improved, and my work on behalf of shopping owes a great deal to his methods and to my early work with PPS.

Back in 1977 I was a part-time instructor at City University of New York, teaching courses in fieldwork techniques for the department of environmental psychology. I was also working in an establishment of which I was a part-owner, the Ear Inn, a bar in downtown Manhattan. There I had a friend and customer who had been hired to design a system of signage at Lincoln Center, the performing arts complex that's home to the Metropolitan Opera House, the New York State Theater, Avery Fisher Hall and a number of other performance venues. He told me they needed someone to look into the usage and circulation patterns of the underground concourse that connected all the buildings to parking garages and the subway. There was a small, makeshift gift shop down there at the time, but Lincoln Center wanted to see if a larger store might be viable there. First, though, they needed to make sure that a store wouldn't create congestion in the pedestrian walkways. With my friend's help, I got the job.

So I recruited a few of my students to help and we took some cameras, staked out our observation spots and went to work counting and mapping. The crowding question was easy enough to answer—we roped off an area exactly the size of the store they wanted to build, then watched and filmed pedestrians streaming through during the busiest times. Four weeks after I started, the report was submitted and the board of directors at Lincoln Center approved the construction of a complex of shops and tour facilities in the underground concourse. It prospers to this day.

Lincoln Center took most of my suggestions. One recommendation I made was to place benches in the concourse, particularly for Lincoln Center's senior visitors. My client declined to take this advice at first, but within six months, in response to seniors' complaints, the benches were installed. I also strongly recommended that they double the size of the ladies' room, and Lincoln Center's male management declined to

take that advice. Today, twenty years later, the line at the ladies' room still goes out the door during busy times. Shameful.

As I was compiling the data to write the report and looking at the many hours of film I had shot, I realized that from one of the camera positions I was able to examine the functionality of the temporary gift shop, from browsing to purchase. There, as I watched, two customers lined up to pay. One looked to be a wealthy woman, probably an operagoer, who had piled a small tower of boxes on the counter. Next to her was a teenage girl whose purchase required just one small brown paper bag. I couldn't see enough to tell exactly what was going on, but I was intrigued.

I visited the shop next day and talked to the clerk, who told me that the woman was the wife of a Mexican diplomat who had decided to buy some fancy music boxes as gifts to take home with her. The boxes were expensive, and she was buying about a dozen of them, for a total sale of close to \$9,000. She needed to pay quickly, before intermission ended, and she had to arrange to have the boxes delivered to her. There was also the matter of having the sales tax waived owing to her diplomatic status. A complicated transaction, to say the least.

But this had to wait while the clerk handled the transaction with the teenage girl, who had arrived at the register first bearing her selection—a ballerina pen.

It was clear even to an academic like me that the cash register procedure could stand a little reorganization and clarification. These two transactions should not be competing for the same clerk's attention. And then the lightbulb clicked on. Why not take the tools of the urban anthropologist and use them to study how people interact with the retail environment?

A few years earlier I had witnessed an argument between the esteemed sociologist and author Erving Goffman and Jack Fruin, the chief engineer of the Port Authority of New York and New Jersey, who was at that moment in the midst of a gigantic undertaking, the planning and construction of Newark International Airport. Jack was expressing his frustration with the world of academia—he was attempting to get scholar-experts to help his engineers and architects in their work, but instead of the clear-cut advice he had hoped to receive, he was getting

buried under the academics' discomfort at applying their knowledge to practical design problems. Goffman held the intellectual high ground in their argument, but I clearly remember thinking, I'd have a lot more fun working for Jack than for Erving. Erving's hiding in his ivory tower. Jack is out there *doing* stuff.

Not long after the Lincoln Center assignment, I was sitting with some friends at a nightclub in Greenwich Village. One of the guys at our table was a young executive with Epic Records, a division of CBS, and I described to him my bright idea of measuring what happens in stores—the thought that there might be something worth learning by turning scientific tools on shopping. And over the course of a few beers my idea must have sounded interesting because the guy said, "Send me a proposal!"

Full of ambition the next morning, I rose early, dragged out my typewriter and drafted a plan. I sent it over, then waited. For, oh, about a year. Of course I tried writing again and telephoning during that time, but no one ever returned my calls. These were the dark ages of the science of shopping, remember.

And then, out of the blue, I heard from a woman who was in charge of market research for CBS Records. She said that they had found my proposal in a dusty file somewhere and were all quite fascinated by it, and was I still interested in studying a record store?

Sure, I said, inwardly rejoicing that a major American corporation was actually going to underwrite—to the tune, I think, of about \$5,000—my research into the habits of the modern shopper. I immediately called a few of my students, assembled some notebooks and time-lapse cameras and made my way to a record store in a northern New Jersey mall.

Now, almost two decades and several hundreds of thousands of hours of videotape and much personal observation later, that study seems almost charmingly rudimentary. But at the time it felt as though the discoveries came flying fast and furious.

For instance, in the late '70s, when the study was being done, traditional singles—45 rpm records—were still big sellers. The store, wisely, displayed the *Billboard* magazine chart of best-selling singles near the



racks of records, as a stimulus to sales. But our film showed that most buyers of 45s were young adolescents—and the chart was hung so high on the wall that the kids had to stand on their toes and crane their necks to see what exactly was at the top of the chart. We suggested to the manager that the chart be lowered, and a week later he called to say that sales of 45s had gone up by 20 percent. Just like that! Lower the chart! It worked!

We spent a lot of time that weekend watching people in line to pay at what the retail industry calls cash/wraps. Regardless of what store designers and merchandise managers think, in many ways the cash/wrap area is the most important part of any store. If the transactions aren't crisp, if the organization isn't clear at a glance, shoppers get frustrated or turned off. Many times they won't even enter a store if the line to pay looks long or chaotic.

At this store there were several big displays of new releases as soon as you walked in—just a few feet from the cashier. Which was fine as long as the store was empty, but if customers were in line, their bodies completely hid the displays. Put up a stanchion and a velvet rope to keep the line off to one side, we suggested, and again our advice had an instant effect—sales of records from the displays went up immediately.

Doesn't all this sound just the least bit obvious? It does to us, too, especially after we've spent so much time watching and filming and timing and interviewing and so on. Until then, however, these are the kinds of problems that remain hidden in plain view.

While watching the record store customers, we noticed an odd pattern: The LP section (this was pre-CD, remember) was always more crowded than cassettes, but sales were split evenly between the two formats. As we followed customers, the reason became clear—because the LP covers were bigger, it was easier to read the song lists and see the photos, so cassette shoppers would browse in LPs, make up their minds and then go to the tapes section to find their choices. Our suggestion was to make the aisles wider in LPs, so that shoppers wouldn't feel crushed and rushed, a definite sales-killer. Also, we thought the store should invest in more durable carpet for the sections that got significantly more traffic.

My final memory from that study comes from a film clip I still show to audiences: a young man shoplifting classical music tapes. Only after watching him take the tapes over and over on the film did I notice that the bag he slipped them into was from a chain that had no location at that mall. I passed on that tidbit to the client's security executive and told him that they should be watchful whenever such "wrong" bags were spotted in their stores. I got back a note saying that they had discovered several thousand dollars in theft using that method of detection.

That first attempt at understanding how stores worked turned up enough to make me realize I was on to something. To my surprise, things that seemed logical and obvious to me were delightful insights to my clients. It was clear that I had stepped into a world of business where what I did had value, but I knew nothing of the consequences or, really, the context. At that point, almost twenty years ago, I knew a science existed—all I had to do was start looking for it. Somewhere out there was something the retail world was going to call the science of shopping.

Before the science of shopping existed, there were at least two other ways to measure what takes place in a store. The most common way of viewing a store is to simply examine "the tape"—the information that comes from the cash registers, which tells what was bought, when and how much of it. This is how virtually every retail undertaking, from the largest, most sophisticated multinational chain to the corner newsstand, does it. It's a fine way to see how the store as a whole has done this quarter, or this year, or on any given day, or even time of day, and is, in the end, the measure of a store's overall health and growth (or decline) that counts. The information that comes out of a register has gotten distinctly more sophisticated over the past two decades. Thanks to scanning of universal product codes, the development of customer loyalty cards and links to credit card receipts, stores and marketers know a lot about what sells and who buys it. However, register-based data has two basic problems. The first is that the industry is much more adept at

collecting it than at designing systems or processes to use that data in a timely fashion. The second is that the view from the register back into the body of the store is distinctly myopic.

When businesspeople attempt to infer too much from the tape, it can be downright misleading. Here's a good example, from a chain drugstore in an enclosed regional mall in Massachusetts. This was one of the first mall stores owned by this particular company, so management was eager to see the results. Based solely on total sales, our client was pleased overall, and in particular with how the analgesic section of the store was performing.

But based on our many previous studies of both drugstores and the analgesic category, one crucial figure was on the low side. The closure rate—the percentage of shoppers who bought—was below what we expected. In other words, plenty of customers stopped at the aspirin section and picked up and read the packages, but too few of them actually bought aspirin. The conversion rate for aspirin is usually high—it's not the kind of product you idly browse; you tend to go to that aisle only when you're in need. So we spent some time tracking and videotaping the aspirin shelves.

Over the course of three days, a pattern emerged. The aspirin was displayed on a main aisle of the store, on the path to some refrigerated cases of soft drinks, which tended to draw a great many customers to that part of the store. That might lead one to expect that the aspirin would sell well, but just the opposite happened. The main customers for cold drinks were teenagers, and our observation showed many of them entering and making a beeline for the coolers. In fact, this was a favorite place for the mall's young employees to grab a quick cold soda during breaks.

These young shoppers were supremely uninterested in aspirin. The shoppers, often seniors, who *did* want aspirin stood a little nervously at the shelves, searching for their usual brand or figuring out which was the better deal while trying to stay clear of the teenagers racing down the aisle on ten-minute breaks. In fact, a substantial number of aspirin shoppers became so irritated or rattled by the teenagers that they would prematurely break off their browsing and walk away empty-handed. It was

a modified version of the butt-brush effect—the shoppers weren't being jostled exactly, just a little rattled. You could see it plainly on the videotape—some customers were practically cringing and hugging the shelves, not the ideal shopping position. And when we timed shoppers, we found that they were spending less time at the shelves than our experience led us to expect.

This is something that comes up in our work all the time: A store has more than one constituency, and it must therefore perform several functions, all from the same premises. Sometimes those functions coexist in perfect harmony, but other times—especially in stores selling diverse goods, like cold drinks and patent medicines—those functions clash. A perfect example is a Harley-Davidson dealership—where a roughly 3,000-square-foot showroom has to make room for well-off male-menopause victims looking to recover their virility by buying bikes, blue-collar gearheads who are there for spare parts and teenage dreamers interested in the Harley-logo fashions. All three groups want nothing to do with one another. When a premise's functions clash, a way must be found to accommodate as many uses as possible. In this drugstore, we advised our client about what we had learned and suggested a counterintuitive move—that the over-the-counter drug section be relocated to a quieter corner of the store. Fewer total customers would come upon it, we knew, but more aspirin would be sold. When they moved the shelves, sales rose by over 15 percent. We also recommended moving the snack food section closer to the front of the store—a move that has now become a drugstore industry standard.

We performed research for a large bookstore that had recently put a large table of discounted books just inside the entrance, where every customer would see it first thing. And it performed admirably—almost everyone stopped for at least a cursory browse, and the percentage who bought at least one book was high. Which meant that, according to the cash register tape, the table was a resounding success.

Except that as we tracked shoppers, we found that the number who would go to the table and then travel through the rest of the store was lower than it should have been. In a case like this, every hour on the hour a tracker would hurry through the entire store and note how

many shoppers were in each section, including the register area; the coffee shop and so on. This is the density check that we perform as part of every store study, and it tells us a great deal: It gives an instant snapshot of the store's "population" and where people are drawn or not; it suggests when something about the architecture or the layout may be inhibiting shoppers from visiting certain areas; it shows how shoppers move (or fail to) through the premises. And, in fact, taken section by section, the number of shoppers who were penetrating the rest of the store was uniformly down. Also, our track sheet maps of customer travels began showing a telltale shallow loop—shoppers would enter, hit the bargain table, then maybe visit one or two more displays, but never stray far from the front of the store before heading to the cashier. This was no coincidence, needless to say—customers were choosing from the discount table, then going directly to the register, paying for their bargains and leaving without even browsing the best-sellers or any of the other books selling at the normal profit margins. Our shopper interviews turned up an unfortunate side effect, too: Thanks to the prominence of the bargain table, the store was gaining a reputation as a discounter rather than as the place to go for the hot new book. The success of the table was causing the failure of the rest of the store.

So much for what can be learned from the register tape.

The second means of discovering information, employed by most of the rest of the world interested in market research, is to poll or simply ask people questions (on the phone or in person) about what they just saw, or did, or considered doing. Then, after a long list of questions, basic demographic information is taken (age, education, income, sex, race, and so on). From those two, a big fat binder full of suppositions is assembled: Forty-year-old Caucasian college-educated married mothers of two living in Northeast suburbs and driving station wagons would prefer Jif even more if it were low-fat, for example. Or, men who buy Coke at convenience stores say they would notice their brand less often if it were any color but red. Or, one-quarter of all college graduates eat pasta once a week. The possibilities for cross-referencing are endless, and there is much marketing wisdom to be gotten from such studies. But they don't really reveal much about what happens in a store, when

shoppers and goods finally come together under the same roof. There are surveys that do ask customers for information about what they saw and did inside a store, but the answers are often suspect. Sometimes people just don't remember every little thing they saw or did in a store—they weren't shopping with the thought that they'd have to recall it all later. In a fragrance study we performed, some shoppers interviewed said they had given serious consideration to buying brands that the store didn't carry. In a study of tobacco merchandising in a convenience store, shoppers remembered seeing signs for Marlboro even though no such signs were in that store.

If we went into stores only when we needed to buy something, and if once there we bought only what we needed, the economy would collapse, boom.

Fortunately, the economic party that has been the second half of the twentieth century has fostered more shopping than anyone would have predicted, more shopping than has ever taken place anywhere at any time. You almost have to make an effort to avoid shopping today. Stay out of stores and museums and theme restaurants and you still are face-to-face with Internet shopping twenty-four hours a day, seven days a week, along with its low-rent cousin, home shopping on TV. Have to steer clear of your own mailbox, too, if you're going to duck all those catalogs.

As a result, every expert agrees, we are now dangerously overretailed—too much is for sale, through too many outlets. The economy even at its strongest can't keep up with retailing's growth. Judging from birthrates, we are generating stores considerably faster than we are producing new baby shoppers.

Retailers are not opening stores in the United States to serve new markets anymore. They are opening stores to try to steal someone else's customers. As the competition gets heated, there is a need for an edge—a science, if you will.

There's another reason that the science of shopping is a force today. Generations ago, the commercial messages intended for consumers'

ears came in highly concentrated, reliable form. There were three TV networks, AM radio only, a handful of big-circulation national magazines and each town's daily papers, which all adults read. Big brand-name goods were advertised in those media, and the message got through loud, clear and dependably. Today, we are nearing a hundred TV channels, and we have remote controls and VCRs to allow us to skip all the ads if we choose to. There's FM radio now, a plethora of magazines catering to each little special interest, a World Wide Web of infinitely expanding sites we can visit for information and entertainment and a shrinking base of daily newspaper readers, all of which means that it is harder than ever to reach consumers and convince them to buy anything at all.

Simultaneously, we are witnessing the erosion of the influence of brand names. Not that brands don't have value, but that value is not the blind force it used to be. A generation or two ago, you chose your brands early in life and stuck by them loyally until your last shopping trip. If you were a Buick man, you bought Buicks. If you were a Marlboro woman, you smoked Marlboros. You chose your team—Coke or Pepsi, Maytag or Speed Queen, Camay or Ivory—and stayed with it. Today, in some ways, every decision is a new one, and nothing can be taken for granted.

That means that while branding and traditional advertising build brand awareness and purchase predisposition, those factors do not always translate into sales. The standard tools of marketing work, they just don't work anywhere near as well as they used to. Many purchasing decisions are made, or can be heavily influenced, on the floor of the store itself. Shoppers are susceptible to impressions and information they acquire in stores, rather than just relying on brand-name loyalty or advertising to tell them what to buy.

As a result, an important medium for transmitting messages and closing sales is now the store and the aisle. That building, that place, has become a great big three-dimensional advertisement for itself. Signage, shelf position, display space and special fixtures all make it either likelier or less likely that a shopper will buy a particular item (or any item at all). The science of shopping is meant to tell us how to make use of all

those tools: How to design signs that shoppers will actually read and how to make sure each message is in the appropriate place. How to fashion displays that shoppers can examine comfortably and easily. How to ensure that shoppers can reach, and want to reach, every part of a store. It's a very long list—enough to fill a book, in my opinion.

Finally, our studies prove that the longer a shopper remains in a store, the more he or she will buy. And the amount of time a shopper spends in a store depends on how comfortable and enjoyable the experience is. Just as Holly Whyte's labors improved urban parks and plazas, the science of shopping creates better retail environments—ultimately, we're providing a form of consumer advocacy that benefits our clients as well.

## What Retailers Don't Know

### TWO

It might be useful right about now to pause and look at the science of shopping from the perspective not of the scientist but of the practitioner—that is, the retailer. He or she is certainly part of the equation we're studying, the provider of shopping experiences, as it were. The retailer is also the one who's expected to absorb all our lessons and then apply the principles of what we've learned. And since it's his or her own store we study, it's fair to ask: How much doesn't the retailer already know?

Well, more than you might think. For example, it's testament to the still vastly uncharted state of the untamed retail environment that an extremely intelligent and able man, a senior executive in a multibillion-dollar chain could be so very wrong when asked this simple question:

How many of the people who walk into your stores buy something?

You'd know that, wouldn't you, if you were he? You think so, but, trust me, this fellow is no slouch in the knowing department. He knows quite a bit that goes on in his chain's thousands of stores, and he learns more on a daily basis—genuinely important things like total tickets

(number of transactions *and* their dollar value), and average sale amount, and sales in any given store compared to sales on the same day the year before, and sales within the various regions, and profitability by item and category and store and maybe even phase of the moon.

He knows all that.

When I asked how many of the people who walk into his stores buy something, his answer was: All of them, pretty damn near. And when I say it was his answer, I mean it was also the answer of the huge, PC-networked, data-chewing, number-crunching, cipher-loving organization at his command. Everybody there agreed: What we call the conversion or closure rate—the percentage of shoppers who become buyers—was around 100 percent. After all, this corporation reasoned, their outlets were destination stores, so people didn't go there unless they had some very specific purchase in mind. Hence, they believed, the only time shoppers *didn't* buy was when their selection was out of stock.

In fact, the very concept of conversion rate, implying as it does that shoppers need to be somehow transformed—"converted"—into buyers, was alien to this man and this corporation (as it still is to many other successful companies and executives).

I was asking the question because we had just performed a large-scale study of this chain's stores. And I knew the conversion rate, based on our having spent hundreds of hours counting, among other things, the number of shoppers who entered and the number who made purchases. It was a very good conversion rate for stores of this kind. But it was about half of what this man thought it was. To be precise, 48 percent of shoppers bought something.

The man, because he believes in the value of information, was taken aback but eager to hear more. Some in his organization, though, were incredulous, outraged, insulted and certain that we had made a terrible miscalculation. So they performed their own homegrown version of our study, standing at the door of a store or two, counting the number of people who went in and the number who emerged holding bags.

Their result was identical to ours. Which, in the end, was very positive news for them. It meant that a good company could change some

very specific things and become even better. If you talk to the executive, he'll say that our study brought about "a fundamental change in some of the long-held beliefs and opinions of this company." At any rate, they've begun to do some things differently in store layout, display, merchandising and staffing, and I have no doubt that they'll improve their conversion rate and make more money as a result.

Our findings were also important to that company's big picture. We showed that meaningful growth—which Wall Street demands and everybody else is pretty fond of, too—can be stimulated at the store level without having to expand the empire, an expensive strategy that always runs out of gas sooner or later.

Conversion rates vary wildly depending on what kind of store or product we're talking about. In some sections of the supermarket, conversion rate probably is around 100 percent (I'm thinking of dairy or toilet paper here). In an art gallery full of big-ticket paintings, maybe one shopper in a hundred will buy something, and that's plenty. Whatever's being sold, though, I think it's impossible to dispute that conversion rate is a critically important measure of performance. Marketing, advertising, promotion and location can bring shoppers in, but then it's the job of the merchandise, the employees and the store itself to turn them into buyers. Conversion rate measures what you make of what you have—it shows how well (or how poorly) the entire enterprise is functioning where it counts most: in the store. Conversion rate is to retail what batting average is to baseball—without knowing it, you can say that somebody had a hundred hits last season, but you don't know whether he had three hundred at-bats or a thousand. Without conversion rate, you don't know if you're Mickey Mantle or Mickey Mouse.

Still, a great many businesspeople don't know from conversion rate. It's not one of the ways of measuring a business that business schools emphasize. It's not about profit margins or return on investment or money supply or any of that. It's all about what happens within the four walls of the store. I can think of other underutilized ways to measure what happens inside a store.

Once I asked a major cosmetics executive how much time women actually spent shopping for makeup per store visit.

"Oh, about ten minutes," he said.

"Hmm," I replied, knowing from the study we had just completed for him that the average shopper spent two minutes in the cosmetics section. The average shopper who bought something spent only thirty seconds more.

Now, the amount of time a shopper spends in a store (assuming he or she is shopping, not waiting in a line) is perhaps the single most important factor in determining how much she or he will buy. Over and over again, our studies have shown a direct relationship. If the customer is walking through the entire store (or most of it, at least) and is considering lots of merchandise (meaning he or she is looking and touching and thinking), a fair amount of time is required. In an electronics store we studied, nonbuyers spent 5 minutes, 6 seconds in the store, compared to 9 minutes and 29 seconds for buyers. In a toy store, buyers spent over 17 minutes, compared to 10 for nonbuyers. In some stores buyers spend three or four times as much time as nonbuyers. A great many factors contribute, one way or the other, to length of shopping trip, and studying them is most of what we do. The majority of the advice we give to retailers involves ways of getting shoppers to shop longer. But you've got to know how long people spend shopping your store or your product before you can know how to increase it.

Here's another good way to judge a store: by its interception rate, meaning the percentage of customers who have some contact with an employee. This is especially crucial today, when many businesses are cutting overhead by using fewer workers, fewer full-timers and more minimum-wagers. All our research shows this direct relationship: The more shopper-employee contacts that take place, the greater the average sale. Talking with an employee has a way of drawing a customer in closer.

We studied a large clothing chain where the interception rate was 25 percent, meaning that three-quarters of all shoppers never spoke a word to a salesperson. That rate was dangerously low—it meant that in all probability customers were becoming frustrated wandering the stores, lost or confused or just in need of information, trying (and trying) to find a clerk with an answer. It also meant that employees

couldn't have been spending much time actively selling anything. They were stocking the shelves and ringing up transactions and not finding time to do much in between. This was practically a guarantee that the store was underperforming. It was also a telling clue as to why.

Here's a final measure, a real simple one: waiting time. This, as we discuss elsewhere, is the single most important factor in customer satisfaction. But few retailers realize that when shoppers are made to wait too long in line (or anywhere else), their impression of overall service plunges. Busy executives hate to wait for anything, but some don't realize that normal people feel the same way. One housewares chain's vice president was startled when we showed him video in which a woman who had just spent twenty-two minutes shopping in his store joined a very long checkout line, stood there until it dawned on her that she was in cashier hell, and abandoned her full cart and exited the place. We weren't surprised—we see this happen all the time. We once did a job for a bank that was about to institute a policy where customers made to wait five minutes or more would receive \$5. After studying the teller lines over the course of two days, we informed the client that this policy would cost them about triple what they had set aside. They dropped the plan and went to work on shortening the wait.

This final matter doesn't involve any particular way to measure a store, but it's a remarkable example of businessperson ignorance: They often don't really know who their shoppers are. I've already discussed the pet treats manufacturer whose product was typically stocked high on shelves, unaware that its main buyers were old people and children. We studied a chain of family-style restaurants whose outlets had too many tables for two and not enough tables for four, which caused headaches during busy times—all because no one had ever bothered to count the size of dining groups. In another family-style chain we studied, each restaurant devoted roughly 10 percent of its floor space to counter seating. During slow times it went unused because lone diners preferred tables, where they could read newspapers or magazines. During busy times it went unused because parties of two, three or four wanted to sit at tables. The counters were empty even as groups of diners stood in line waiting for tables.

The matter of retailers not knowing who shops in their stores comes up all the time. A newsstand in Greeley Square in New York City wanted to increase sales and planned to do so by expanding the space devoted to magazines. We pointed out that a large percentage of its customers were either Korean—the square borders on a large Korean enclave—or Hispanic. Stock Korean-language magazines (Korean papers already sold well) and soft drinks popular in the Latino market, we advised, and sales rose immediately.

This related issue comes up all the time in New York, Los Angeles and other big cities: foreign shoppers in need of a break from stores and restaurants. Almost no accommodation is made for Asian shoppers, despite their numbers and tendency to spend a lot of money on luxury goods. But there are no sizing conversion charts, no currency exchange rates posted, not even a little sign or two in Japanese or Korean telling shoppers which credit cards are accepted. Smart retailers would reward employees who learned a little Japanese, German, French or Spanish—even just a handful of phrases would make a difference, as anyone who has shopped in a foreign country would realize. Restaurants should have menus in Japanese and German on hand.

But it doesn't have to involve anything so exotic for retailers to be woefully clueless about who's in their stores. I loved visiting the national chain drugstore branch in Washington, D.C., where there was a large assortment of dye and other hair products for blonds—in a store where over 95 percent of shoppers are African-Americans. I also was amused in a Florida-based drugstore chain's Minneapolis branch, where a full assortment of suntan lotion was on prominent display—in October.