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NUMBERS RULE YOUR WORLD

HOW TO USE BIG DATA TO YOUR ADVANTAGE

NUMBER SENSE

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Excerpt from

PART 3

ECONOMIC DATA

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How Much Did You Pay for the Eggs?

Recall when you last shopped for groceries. Do you remember what you purchased, and how much you paid for each item in your shopping cart? If you bought a carton of milk or juice, do you know if the price you paid was over or under the average? When you answered the previous question, what did you mean by the average? Was it the normal price at the specific store, or the median price among several stores in your neighborhood, or something else? Do you remember if the milk was one of the store's weekly specials? Do you remember if you redeemed a clipped coupon? Do you remember if you picked up a new brand of juice because of a promotional offer? Did you switch from Tropicana to Odwalla, or from Minute Maid to SunnyD?

If you are like the average shopper, you'll have difficulty coming up with these answers. When it comes to remembering prices, we are hopeless.

Businesses have long known—and exploited—our price amnesia. In the late 1980s, two marketing professors, Peter Dickson and Alan Sawyer, collaborated with a large supermarket chain to measure just how clueless consumers were about purchases they made only 30 seconds or fewer ago. Researchers intercepted shoppers immediately after they placed certain target products—such as coffee, toothpaste, and margarine—into their shopping carts. Almost everyone consented to answering a few questions when offered a $1 gratuity for participation. To raise the chance of finding price-conscious shoppers, part of the study was conducted in late January, when household budgets were stretched after the winter holidays. Did people know how much the stuff in their shopping carts cost? Were they aware of any special deals that applied to those items? The results of the 800 or so interviews conducted at four different branches of the chain were disturbing.

After arriving at the display, the average shopper moved along within 12 seconds, but the majority could not name the correct price of the item they just took off the shelves. The average error was 15 percent of the real price. One out of five shoppers could not even offer a guess of the price. Their awareness of special discounts was even poorer. This supermarket chain heavily advertised specials in newspapers and on television, using the phrase "Cost Cutter Bonus Buy" accompanied by a scissors symbol. In addition, the management placed bright-yellow labels with the slogan and scissors right next to the standard black-and-white price labels on the store shelves. And yet, three out of five had no clue if the item in their shopping cart was on special or not; estimates of the price reduction given by those who could suffered an average error of 47 percent.

The jaw-dropping findings didn't stop here. The researchers learned that people who shopped frequently for an item were equally as hopeless as the rest. Finally, the professors performed an aided brand awareness test, similar to the one mentioned in Chapter 1, on the hunch that some shoppers could recognize the special price label even if they could not recall the exact price. In yet another surprise, only 54 percent of the participants managed to pick out the correct price label from a choice of three.

This line of research asks deep questions of the foundations of modern economics. In a market economy, prices are supposed to capture all there is to know about supply and demand. Producers and consumers are predicted to respond to these prices. When a half or more of the population are blatantly inattentive to price tags, we wonder if the economic profession has gotten this core assumption wrong. Dickson and Sawyer thought consumers with stronger motivation to consider prices would perform better in their study, but it turned out those who shopped at the inner-city store were even more clueless about the amount they spent on groceries. Marketing experts have long ago abandoned many economic principles that are at odds with reality. Behavioral economists are now tackling this kind of challenge, and their insights may well modernize the foundations of the discipline.

Now, take the side of the store manager. For a gallon of milk, we require a target price of $3.50 over the next four weeks. We can, unimaginatively, set a fixed price of $3.50. But a good portion of our customers love the game of coupons and deals. We can, for example, charge a normal price of $3.60, and one day a month, run an irresistible bargain price of $1.50. Alternatively, we can advertise a weekly special of $3.00 on a regular price of $3.60. All three pricing schemes produce an average price of $3.50. Which strategy would yield the most revenues? The winner depends on how our customers respond to discounting. That in turn depends on how they process the prices. Here are a number of possibilities to consider:

- *Availability*: People take what comes to mind first. Behavioral psychologists Daniel Kahneman and Amos Tversky, whom we met in Chapter 5, are champions of this theory.
- *Recency*: Perception is affected by the most recent price encountered.
- *Frequency*: Customers remember the price that appears most often.

- *Average*: Customers have a mental image of the average price. This suggests that they intuitively sense the average value of a set of numbers.
- *Median*: Customers have a mental image of the median price. This requires that they spontaneously discard extreme values.
- *Extremes*: Perception is swayed by unusually large or small numbers.
- *Losses*: Customers pay undue attention to price increases because they regard price increases as financial losses.
- *Numerosity*: Customers perceive a better deal when savings are divided into numerous small installments rather than applied in total to a single purchase.

There is as yet no definitive research on how consumers perceive prices. It's not even clear that everyone favors the same set of heuristics. The decision criteria may vary by the type of purchase. For durable goods not replaced often, like stoves and ovens, it's irrelevant to talk about frequency, average, median, or numerosity. Big-ticket items and petty spending surely are not given equal consideration. Perhaps Kahneman and Tversky's perspective is the broadest: All the other criteria pinpoint which price becomes "available."

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