Observing the observers

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Juanjuan Zhang

A kidney transplant is a lifesaving operation—and yet every year in the United States, about 10 percent of donated kidneys go unused, after being rejected by multiple potential recipients.

Why is this? According to Juanjuan Zhang, an associate professor at the MIT Sloan School of Management, the potential recipients who reject seemingly viable kidneys are engaging in "observational learning," the cognitive process of intuiting answers based on limited information—and sometimes drawing the wrong conclusions from those observations.

More specifically, when a first possible recipient rejects a kidney, it can set off a series of decisions made by patients who think that if other people rejected the organ, there must be something wrong with it. But that is not necessarily the case: Potential kidney recipients know if a kidney has been rejected—but they cannot talk to other patients to find out the reasons for those decisions, which are made quickly (since kidneys have about a two-day period in which they can be transplanted).

Someone who declines a transplant "could have been ill, or there might have been a religious holiday," Zhang says. "There could be reasons that have nothing to do with the kidney's quality. But people only observe previous rejections."

Zhang studied this process and, in a widely read 2010 paper, asserted that our tendency to lean on observational learning was, in this case, detrimental. "As a result, even though [people] are making inferences in a rational way, they make mistakes, in aggregate," she says. "Kidneys are rejected overly often, even though they are medically useful."

Zhang is an associate professor of marketing—not the field, perhaps, where one would expect to find someone studying kidney donations. But, she believes, we see observational learning all the time—in real estate, for instance, when potential buyers pass up good properties, or in drafts in professional sports, where highly touted prospects can endure long waits before being picked. For a business executive or a policymaker, understanding such episodes of contagion is vital to understanding consumers.

"Each of us will have some private information, based on our worldview, our experience, and so on," Zhang says. "We have our own expertise. But we don't perfectly communicate our information with others. I study how information transmits between people."

'Colleagues … knew the paper inside and out'

Zhang was raised in China, where her parents were college professors. "I grew up on a college campus," she says. "My entire life I've been surrounded by professors and students."

Even so, she did not automatically lean toward academia as a vocation. "My parents gave me a lot of freedom of choice," she says. But while studying economics as an undergraduate at Tsinghua University in Beijing, Zhang became intrigued by the riddles of marketing.

"I became interested in marketing in a class I took called 'Marketing Management' at Tsinghua," Zhang says. "That's exactly the same class I'm teaching right now [at MIT]. Teaching the class carries a special meaning for me."

After graduating from Tsinghua in 2000, Zhang entered the PhD program at the University of California at Berkeley, where she received her degree in 2006. While there, she became aware of the kidney-rejection data; her doctoral thesis was devoted to the subject.

Zhang applied for multiple jobs while finishing her doctorate, but landed at MIT after a successful job talk where she presented her kidney research. While Zhang clearly made a good impression, she was equally impressed by her audience.

"My current colleagues, sitting in the audience with our doctoral students, knew the paper inside and out," Zhang says. "The scholarly quality of my colleagues was truly impressive."

Of the atmosphere at MIT, she says, "What had struck me on day one remains true—the intellectual attraction." Seven years after joining MIT, she was granted tenure earlier this year.

Think strategically, not just tactically

Zhang says she aims to get students to think about the subjects she teaches "more systematically and more deeply. They tend to think of marketing as a very tactical thing to do, but after taking the class, they should approach marketing more strategically."

That is, marketing is based around not just short-term promotions, but longer-term initiatives. To this end, Zhang has started studying the value of what she calls "de-marketing"—less emphasis on overtly selling products in the short run, and more emphasis on positioning a brand over the long term.

To take an example of this, Zhang suggests, suppose you are looking for a place to eat on Newbury Street, the popular shopping thoroughfare in Boston's Back Bay, and you see two equally crowded, similar-looking restaurants. The first restaurant has a worker out front, handing out flyers offering discounts for your meal. That might appeal to you—but alternately, it may turn you toward the second restaurant, which may appear superior precisely because it is not relying on a discount to draw customers.

"You may think, as a consumer, that the popularity of the first restaurant may be as a result of the promotion, while for the second restaurant, the popularity is more organic," Zhang says. Generating that sense of substantive quality may be a better aim for a restaurant—and for many kinds of businesses.

"If you are allocating a marketing budget, maybe you can spend less money in a conspicuous way, and more money in the background," Zhang says.

Zhang is currently engaged in research covering a wide range of topics,

from real estate to microloans and food labels. She is also starting a new study of the kidney-donation process. But all these studies are linked by how "people transmit information in the marketplace" in indirect ways, as Zhang puts it.

"That's basically the theme of my research so far, how we learn from seeing," she says.

More information: mitsloan.mit.edu/faculty/detai … php?in_spseqno=41264

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