

## MAGAZINE

### WHAT WORKS

# How Behavioral Science Solved Chicago's Plastic Bag Problem

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Antonio Perez/Chicago Tribune

By LEIGH GIANGRECO

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**L**ike a lot of cities seeking to reduce the unrecyclable plastic waste that has burdened their landfills and fouled their waterways, Chicago officials had two basic policy remedies to pick from: a ban or a fee. And like a lot of cities, they made that choice based largely on gut instinct and voter preference. They picked a ban but soon after it went into effect in August 2015, officials discovered it was having some unintended and unwelcome consequences.

“It was only a matter of months,” said Paul Sajovec, chief of staff to Alderman Scott Waguespack, “because people pretty quickly realized that it wasted more plastic.”

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The ban applied to only thin, single-use plastic bags, prompting stores to find alternatives like paper bags, which are less likely to wind up in local waterways but **cost more** energy to manufacture than plastic. One independent grocer gave out 9,500 fewer plastic bags a week after the ban, **according to the Illinois Retail Merchant Association**, but those bags were twice the thickness—negating the benefit of the ban. In all, it was a real-time confirmation of a 2017 study by the University of Sydney: plastic bag bans tend to increase purchases of both plastic trash bags and paper bag use.

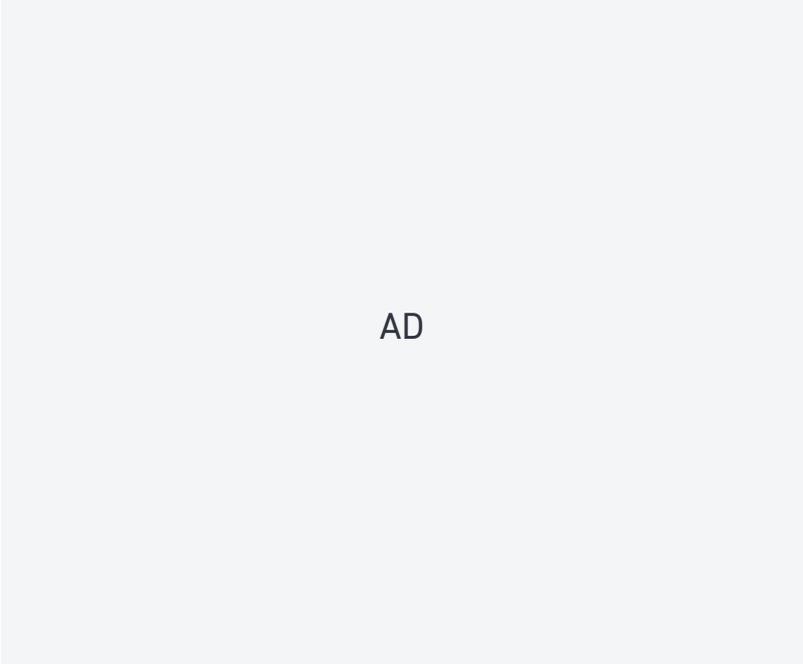
There was some anecdotal evidence consumers were changing their behavior by bringing their own reusable bags but the law was generally earning [mixed reviews](#). Politicians and environmentalists wanted more impact. Retailers were frustrated at the increased cost of bagging supplies.

“The silver lining in that bad policy was it brought retailers to the table,” said Jordan Parker, founder and director of Bring Your Bag Chicago, an environmental advocacy group that helped shape the new legislation.

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In November 2016, the city repealed the ban, replacing it with a 7-cent fee on paper and plastic bags. In a short period of time, Chicago had effectively become a municipal laboratory to study which of the two basic policy remedies works best. What researchers found when they examined the data was that consumers are less motivated by emotional appeals to save the environment and more by the impact on their pocketbook—even when it’s just a few cents. Over the course of the first year, Chicagoans reduced their disposable bag usage from 2.3 bags per trip to 1.8 bags per trip—a nearly 28 percent difference, [according to a 2018 study](#) by the University of Chicago, New York University and the non-profit ideas42.

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Tatiana Homonoff, an assistant professor of economics and public policy at New York University, and her research team surveyed shoppers inside Chicago and its neighboring suburbs, which were not subject to a bag fee, before and after the city's tax went into effect. When she asked *why* they brought a reusable bag, shoppers would tick off environmentalist talking points such as the pile of garbage twice the size of Texas floating in the Pacific Ocean. But when Homonoff asked customers *when* they started bringing their own bag they answered, "After the tax was passed."

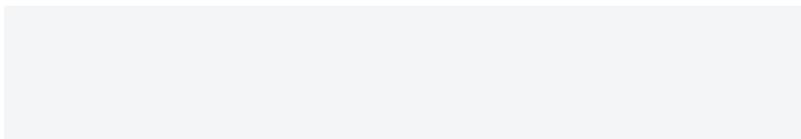
"Sometimes these informational campaigns can work," she said. "Telling people about the environmental ills of plastic isn't going to work." At least not on its own.



Washington, D.C. resident Takia Holmes carries a jumble of groceries to her car without using a plastic bag, which would have cost her an extra nickel. | Bill O'Leary/The Washington Post via Getty Images

To understand the bag tax's success, Homonoff points to a phenomenon in behavioral economics known as loss aversion. The painful experience of loss is more effective at changing habits than a positive gain. During her surveys, customers often said they wouldn't bring a reusable bag if they could save a nickel but would bring a bag if it meant avoiding a 5-cent charge.

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“You do see this asymmetry when we’re talking about a bonus versus a tax,” she said.

Interestingly, that small but painful fee proved effective on customers across all demographics and income levels, she added.

“It’s not to say that it only works when it’s a big financial burden, then you would expect the drop in low-income neighborhoods but not high-income neighborhoods,” she said. “This tells me that it’s not just about the financial burden of this, that maybe there’s something behavioral.”

Knowing that the modest fee can work at different income levels could also help policymakers understand how to calculate the most palatable tax for consumers. In Seattle, the plastic bag industry goaded voters to [reject a 20-cent plastic bag fee](#). The city ultimately replaced the fee with a hybrid solution that banned plastic bags and charged 5 cents for larger paper bags. In the four years after the policy went into effect, [the city of Seattle](#) reported a 50 percent reduction of plastic bags going to city dumps. However, the same

report noted that about half of convenience stores and grocery stores were out of compliance.

The takeaway, Homonoff says, is that while you might get a bigger change if you have a large tax, you can change consumer habits with a small tax as well.

Parker agreed that even a modest tax can force people to think twice about the environment.

“These tiny slaps on the wrist are effective at making people care,” she said. “The data points to money. If they feel like they’re losing money, the loss aversion is so much more powerful when changing human behavior.”

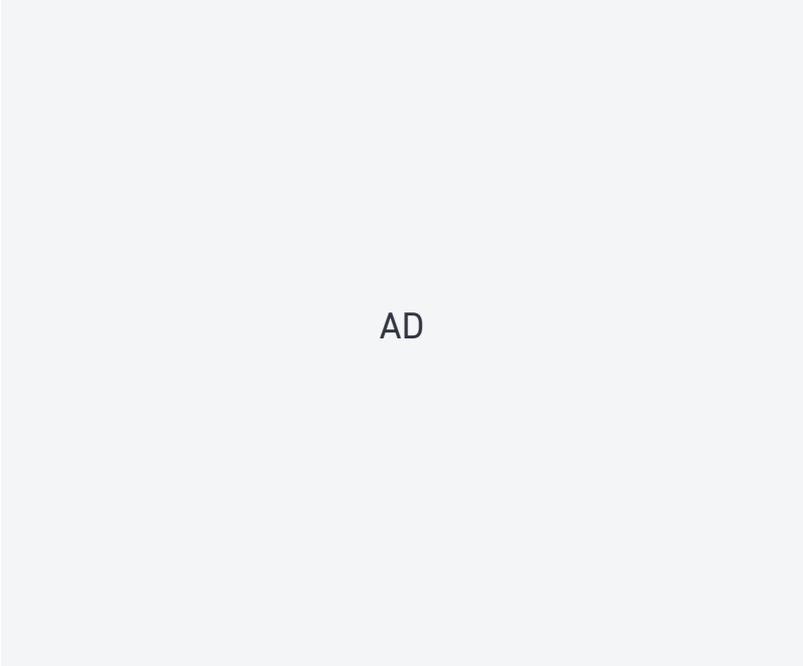
The city had initially projected the fee would garner \$9.2 million in revenue. Instead, the tax collected just \$5.6 million in the first year. (Unlike some municipalities that dedicate revenue from the bag fee to environmental cleanups, Chicago retailers collect 2 cents while the city retains the other 5 for its general operating budget.)

While revenue climbed to \$6.4 million in 2018, the [city’s fiscal year 2020 budget](#) overview projects that number will decline to \$5.9 million in 2019 and will stabilize the following year. That drop doesn’t bother the city’s budget experts, who argue the tax wasn’t really about the revenue in the first place.

“It really was trying to encourage people to bring reusable bags

when shopping,” said Susie Park, the city’s budget director. “The decline in revenue is potentially a good thing, because it shows a change in behavior. So we’re hoping that continues.”

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Evidence of the fee's success is anecdotal in other cities, such as Washington, D.C., that have implemented one. In Washington, the Anacostia River has served as the poster child for the city's 5-cent fee. The waterway is the intended recipient of the tax's revenue and despite [evidence that some of the funds](#) earmarked for cleaning the river have floated down other revenue streams, local politicians say there is less plastic clogging the river.

Even as Chicago acknowledges its bag tax hasn't beefed up the city's coffers, its performance hasn't dissuaded the state government from eyeing a similar fee as a potential revenue source. In February, Illinois Governor J.B. Pritzker proposed a 5-cent tax on plastic checkout bags across the state, [a fee his administration expects](#) would garner between \$19 million and \$23 million. State Rep. Ann Williams, a Democrat whose district encompasses parts of northern Chicago neighborhoods, introduced a [bag tax bill in the Illinois House of Representatives](#) earlier this year. Williams noticed a dramatic change in behavior in her home district after the tax, but can't say the same for the state capital, where there's no disposable bag policy. Her new habits, she said, travel with her.

"I'm throwing stuff in my purse," she said. "... I absolutely try and there's that guilt factor."

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