

# The Behavioral Economics of Recycling

by Remi Trudel

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We all know we should recycle, but even committed recyclers can be erratic, cleaning and sorting bottles one day, and tossing glass in the trash the next. Why? It turns out that an array of biases sway our decisions about what to place in the green bin and what to throw away.

Two such biases emerged in research my colleagues and I recently conducted on disposal habits. First, we found that people are more likely to recycle items that haven't been distorted—like undented soda cans and paper that hasn't been torn into pieces (we call this the “distortion bias”). Second, they are more likely to recycle items linked to an element of their identity—a Starbucks cup with their name on it, for example (the “identity bias”). A third factor affects not what we recycle, but how much we do: People who know they are going to recycle after completing a task that generates waste use far more resources than they otherwise would have.

My colleague Jennifer Argo and I first noticed the distortion bias when we examined the contents of the recycling and trash bins in 22 academic offices. In general, intact pieces of paper were recycled; paper fragments were trashed. We confirmed the finding through several subsequent experiments, including two in which participants believed they were evaluating a new pair of scissors. All were given instruction sheets for the evaluation; some were asked to cut up the sheets as part of the evaluation while others weren't. All were then asked to dispose of the waste on their way out. Participants with uncut pieces of paper generally put them into the recycling bin; those left with paper fragments put them in the trash. We attained similar results with aluminum cans—intact cans were recycled, dented or crushed cans were trashed.

What explains this bias? When an item is sufficiently distorted or changed in size or form, people perceive it as useless—as something without a future. So they throw it in the trash. This partially explains why so much recyclable material winds up in landfill instead. Though we have all been trained to recycle many common items, the EPA estimates only about 65% of paper and 55 % of aluminum gets recycled. By making people aware of this bias, we could potentially change disposal behavior. And sustainability minded companies could improve recycle rates through innovations in packaging that, for example, increase ease in opening and decrease distortion, which could improve the likelihood that packaging will be recycled and even reused.

Our exploration of the identity bias was motivated by a trip to a coffee shop where the barista misspelled my name on the coffee cup. Writing patrons' names on cups has become standard at many coffee shops, linking the product with some piece of their identity. To test this, Jennifer Argo, Matthew Meng, and I asked a group of volunteers to sample and evaluate juice. Participants were asked their names, which we then spelled either correctly (Sarah, Paul, Ashley) or intentionally misspelled (Saruh, Pawl, Ashlee) on their cups. Those whose names were spelled correctly were significantly more likely to recycle their cup than those whose names were misspelled. We conducted several other studies with different products and different ways of linking the product to consumers' identities—like using

American flags or university logos that link people to important group identities. We consistently found that people are more likely to recycle than discard identity-linked products - and that trashing these products can lower self-esteem. As might be expected, it feels bad to throw a piece of yourself in the trash, so people avoid it. By creating an identity link or making an existing link stronger, we might make consumers less likely to trash recyclable items. Many firms already link products to our identities but may not be aware of the disposal consequences. For instance, Coca-Cola's "Share a Coke" campaign, where consumers find their names on bottles of Coke, is likely to increase recycle rates for those who drink from a bottle with their name on it.

Sometimes the option to recycle may bias how much of an item we use. For example, my colleague Monic Sun and I examined how much people consume when they have the option to recycle versus throw away. Research subjects were instructed to use as much or as little of a product as they wanted. In one study they wrapped gifts; in another they used scrap paper to solve math problems, and in another they selected a gift. In each experiment, half of the participants could recycle what they used; the other half could only discard it. We consistently found that people used far more resources (wrapping paper, scrap paper, plastic cups, plastic packaging) when they knew they were going to recycle.

How can we account for this? Our findings suggest that the positive emotions associated with recycling can overpower the negative emotions, like guilt, associated with wasting. As a result, consumers feel comfortable using a larger amount of a resource when recycling is an option. Conserving resources in one domain may lead you to waste resources in another—in effect, giving yourself a pass because of your prior good behavior - a phenomenon known in social science as “moral licensing.”

To recycle or to trash? The success of recycling depends on the answer billions of people give to that question daily. As we've learned from behavioral economists in recent years, many of our decisions are, in the words of Dan Ariely, “predictably irrational.” So it is with

this decision. But by bringing our disposal biases to light, we can alter individual behavior, spur the creation of packaging that encourages recycling, and increase the effectiveness of environmental policies and campaigns.

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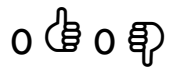
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**Anthony Petrilli** 9 months ago

As a graduating senior, I've noticed that the amount of recycling depends on the number of recycling bins available and their locations. As students pour out of the classrooms, they plop recyclable materials into trash bins. Why? Are they not smart enough to know the value of recycling? Have they not been taught this? The fact that a trash bin by itself invites deposits. A trash bin next to a recycling bin invites less deposits, yet the recyclable material still ends up in the trash bin. This is a two-fold problem. First, education is a key. If the students don't understand the impact that trashing recyclable materials has on the environment and the economy, they never will recycle. Into my fifties, I like to relate this to the technology that is ever-

present in today's culture. Because the generation of today has it available, they will take advantage of it if it serves a purpose of ease and convenience that they can benefit from. If you placed a deposit on every item sold on campus that is recyclable, you would see much less of it in the trash! That's something they can understand. Second, because there are so few recycling bins located around campus, they are not used to placing recyclable materials into such bins. Placing recycling bins next to each trash bin encourages participation, but education and awareness are paramount to make the process work. You can't appreciate how much a bee sting hurts until you get stung.

REPLY



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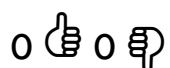
**Stephen Milford** 9 months ago

With a gangbuster title "Behavioral Economics of Recycling" I must say I was expecting a far more robust investigation of behavioral drivers in the industry, rather than consumer association with a container's form and association with its recyclability. It worthy in its pointing out that consumer education on recyclables is lacking, which is beyond dispute. More interesting, perhaps, would be to look at how hard consumers look for a trash can for a particular malformed item or a non-recyclable, vs contaminating a recyclable container.

I had hoped the article would go far more in depth in the full economic cycle of waste and recycling management and the behavioral drivers and nudges that exist at the variety of disposal resources that are not residential. As has been repeatedly established, post-consumer/residential recyclables are the least desirable and most costly for re-manufacturers to process due largely to cross contamination, mixed media and inability for collection processes to provide constructive feedback on a household by household basis to improve the recyclable stream.

The best behavioral nudge I've ever seen was a fast food establishment in Sweden that had silhouette cut outs for each container, utensil, and service component (down to drink lids, condiment packets and straw wrappers) in a station that was front and center when you ordered your food...it was a brilliant means of letting customers start with the end in mind relating to the packaging and utensils for their meals.

REPLY





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**Jacquelyn Ottman** a year ago

In order to achieve zero waste, recycling behavior must be part of a change in consumption culture rooted equally if not moreso in the the 'other 2 R's' of Reduce and Reuse. Consumers need to be educated that recycling is a holistic activity with its own economic and environmental impacts. To 'close the loop', manufacturers and consumers must be incentivized to respectively, make and buy items made from recycled content. Beyond encouraging more reuse among individuals (e.g., refillable bottles, reusable cloth bags) community-based reuse (e.g., swap meets, Freecycle.org) are great ways to begin the consumption culture process because they can help build social connections and build economic resilience in addition to cutting down on waste.

REPLY



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**MARCO LUCISANO** a year ago

I was heavily involved in a study on consumer attitudes, trends and drivers in the broader area of sustainable material development earlier this year. One of the things we asked was related to what measures society should take to make the world more sustainable. Creating more effective systems for recycling materials was highlighted as by far the best measure for making the world more sustainable, among twelve possible answers, in all countries surveyed (Sweden, Germany, US, Brazil and China). My colleagues and I work with development of new materials and new processes and strategies for material recycling from a technical point of view. It is great to put our work in the context of your results. Now I am intrigued by the thought of how one could combine these insights on the behavioural economics of recycling with technology and engineering and with design of and communication about systems for material recycling.

REPLY

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