Promoting Recycling Behavior

What Works.

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Recycling Facts and Figures

▶ Average American generates 4.5 pounds of trash per day
▶ Diversion rates vary widely
  - CA at 60% diversion
▶ Many notable programs
  - Ready-Set-Recycle (competition in Alameda, CA)
  - Fork it over! (Portland, OR)
  - Green-Dot (Germany, and Europe)
  - Anheuser-Bush “Brewing a Better Environment”
  - Organics recycling in Halifax, Canada
MSW Recycling Rates

MSW recycled and composted and the recycling rate as a percent of overall MSW. (Source: EPA)

- Total MSW Recycled & Composted
- Recycling Rate
Share of each major wastestream that was recycled or composted in 2013

- Lead-acid batteries
- Corrugated boxes
- Other steel packaging
- Steel cans
- Newspapers
- Yard trimmings
- Major appliances
- Beer and soft drink cans
- Beer and soft drink bottles
- Other paper products
- Rubber tires
- Consumer electronics
- Wine and liquor bottles
- TOTAL
- PET plastic bottles and jars
- HDPE plastic bottles
- Other paper packaging
- Wood packaging
- Other plastic containers
- Towels, sheets and pillowcases
- Other glass bottles and jars
- Clothing and footwear
- Plastic bags, sacks and wraps
- Carpets and rugs
- Small appliances
- Food wastes
- Misc. nondurable goods
- Other plastics packaging
- Misc. durable goods
- Furniture, furnishings

The Science of Behavior

- Review of behavioral science
- 40 years of data on proenvironmental behavior (35 with recycling)
- 253 experimental treatments (primarily recycling, conservation)
- 10 types of behavior change strategies
- Differentiated public recycling, curbside recycling, central recycling
## Strategies to Promote Recycling

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What Works

- Goal setting
- Pledge
- Feedback
- Cognitive dissonance
- Social modeling
- Rewards
- Instructions
- Justification
- Prompts
- Convenience

Note: Meta analysis of recycling studies, combined across three types of programs. N=41 public, N=52 curbside, N=18 central collection. Osbaldiston & Schott (2012)
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1. Information is (generally) not sufficient

- Knowledge-deficit model
- Knowledge is (often) correlated with behavior
- Education and information can increase knowledge
- Increasing knowledge will (typically) not result in behavior change.
2. Pledges and Commitments

- Can be a very useful tool for promoting recycling.
- Public and durable
- Specific (time, place, material)
- Be mindful of individuals who choose not to commit.
2. Pledges and Commitments

“We, the residents of the 2\textsuperscript{nd} floor, are willing to participate in the paper recycling project sponsored by the Reed College Environmental Group. It is understood that any recyclable paper can be placed in the “RECYCLE” garbage can. We commit ourselves to participating in this recycling project for the next four weeks.” - Wang & Katzev
For America Recycles Day 2018, I pledge to:

**Learn**
I will find out what materials are collected for recycling in my community.

**Act**
Within the next month, I will reduce the amount of waste I produce, I will recycle more, and I will buy products made with recycled content.

**Share**
In the next month, I will encourage one family member or one friend to take the #BeRecycled pledge.
3. Financial Incentives

- Incentives can change behavior
- Pay-as-you-Throw
- But:
  1. Framing behavior as transaction creates expectations
  2. Behavior and context specific
  3. Size matters
  4. Undermining
  5. Unintended consequences
4. Infrastructure

- Make it EASY
- Reduce uncertainty (shapes of the holes, signage)
- Allow people to anticipate
  - Entry and exit locations
- Proximal to behavior
- Remove barriers
  - for example, lids
5. Signage

- Signs can make a big difference
  - Can help, but can also hurt
- Positive, simple behavior, already motivated, prompts, proximal
- Mindful of contextual norm
6. Persuasion

- Can have a role, but perhaps limited
- “Behaving people into thinking differently”
- Some evidence for personal norms (moral obligation).
- Hard to promote through messaging, better to induce behavior first
Social Norms
Normative Social Influence
--Curbside recycling
7. Social Norms

- Curbside recycling (Schultz, 1999)
- Field experiment with 600 households for 8 weeks
- Information, no treatment control, descriptive normative feedback
- Baseline (4 weeks), intervention (4 weeks), follow-up (4 weeks)
Normative-based Messages

Note: Change from baseline to follow-up for the normative feedback condition is significant (p<.05), and corresponds to a 19% increase in recycling rates!

Scaling with Home Waste Reports

We Want Your:

- Paper & Cardboard
- Plastic, Glass, Metal
- Organics

Your Weekly Average

Tips to Reduce Household Waste
- Buy products with recyclable packaging
- Recycle by using reusable products
- Buy in Bulk

Comments or Questions?

- Phone: 760-750-3022
- Email: info@trashtracker.com

* Other similar households are all single-family households in Solana Beach that are serviced by EDCO's curbside recycling program on the www.edco-ca.com website.
## Scaling with Home Waste Reports

<table>
<thead>
<tr>
<th></th>
<th>July</th>
<th>August</th>
<th>September</th>
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<tbody>
<tr>
<td><strong>Difference in Differences</strong></td>
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<td></td>
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<tr>
<td>Percentage Change Compared to Baseline</td>
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<td></td>
<td></td>
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<tr>
<td>RECYCLING</td>
<td>0%</td>
<td>0%</td>
<td>-8%</td>
</tr>
<tr>
<td>TRASH</td>
<td>-3%</td>
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<tr>
<td></td>
<td>12%</td>
<td>6%</td>
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Throwing in the Towel
Help us conserve our natural resources!

DO YOU NEED FRESH TOWELS?

If you would like your towels replaced, please leave your used towels in the basket.

Towels left hanging on the towel rack tell us that you wish to reuse them.

Using towels more than once saves hundreds of pounds of detergent and thousands of gallons of water each year.

We are committed to doing our share to protect the environment.

THANK YOU for helping us to conserve water and save the environment!
Many of our guests have expressed to us their approval of conserving energy. When given the opportunity, nearly 75% of hotel guests choose to reuse their towels each day. Because so many guests value conservation and are in the habit of conserving, this hotel has initiated a conservation program.

Washing towels every day uses a lot of energy, so reusing towels is one way you can conserve.

If you would like your towels replaced, please leave your used towels in the basket on the bathroom floor. Towels left hanging on the towel rack tell us that you want to reuse them.

PLEASE REUSE YOUR TOWELS

* If you have questions, please call the front desk *
Social Norm Messages

Many of our guests have expressed the need for approval by leaving their towels on the rack when they are not in the bathroom. This request has increased our energy consumption and is not in line with our energy conservation efforts. We have been recently 
renovated and the new facilities are energy efficient. Washing towels takes twice the energy as running water is one way we can save energy. 

If you would like our towels replaced, please leave your room and towels in the bathroom with the towel rack on the bathroom door. Toss it in laundry or the towel rack all so that you want it again.
Results
Number of towels taken out of the room on the first towel replacement day.

A 25% reduction in the number of towels used!

Note: Data also tested in HLM with participant “nested” within room. ICC=.07; At level 2, treatment effect (γ_{01}=-.57, t(142.14)=-3.25, p<.001)

Take the #BeRecycled Pledge

76,455 people have signed this pledge.

Be the 76,456th!

Here's what others have committed to recycle in 2018, what action will you take?
HERE'S WHAT OTHERS HAVE COMMITTED TO RECYCLE IN 2018,
WHAT ACTION WILL YOU TAKE?

11% CARTONS
4% SHAMPOO BOTTLES
28% PLASTIC BAGS AND WRAPS
28% PLASTIC BOTTLES AND CAPS
21% UNWANTED MAIL
8% MOBILE DEVICES

LATEST PLEDGES

"I'm all about recycling styrofoam or any #!
"I love recycling to keep the planet beautiful and
"As an elementary custodian, I pledge to
Conclusions

- Recycling is a behavior
- Behavioral scientists have been studying recycling for 35+ years
- Some clear lessons
- Encourage programs to draw on this knowledge
- Get to know your local behavioral scientist
References


