Recycling: *If it is so good, why isn't everyone doing it?*

VICTORIA CAMPBELL-ARVAI

SCHOOL OF NATURAL RESOURCES AND ENVIRONMENT

UNIVERSITY OF MICHIGAN

WHY SHOULD WE CARE about individual and household recycling behaviour?

Growth of cities

"Over the next 20 years, the projected new urban built up area in developing countries alone is 400,000 km2

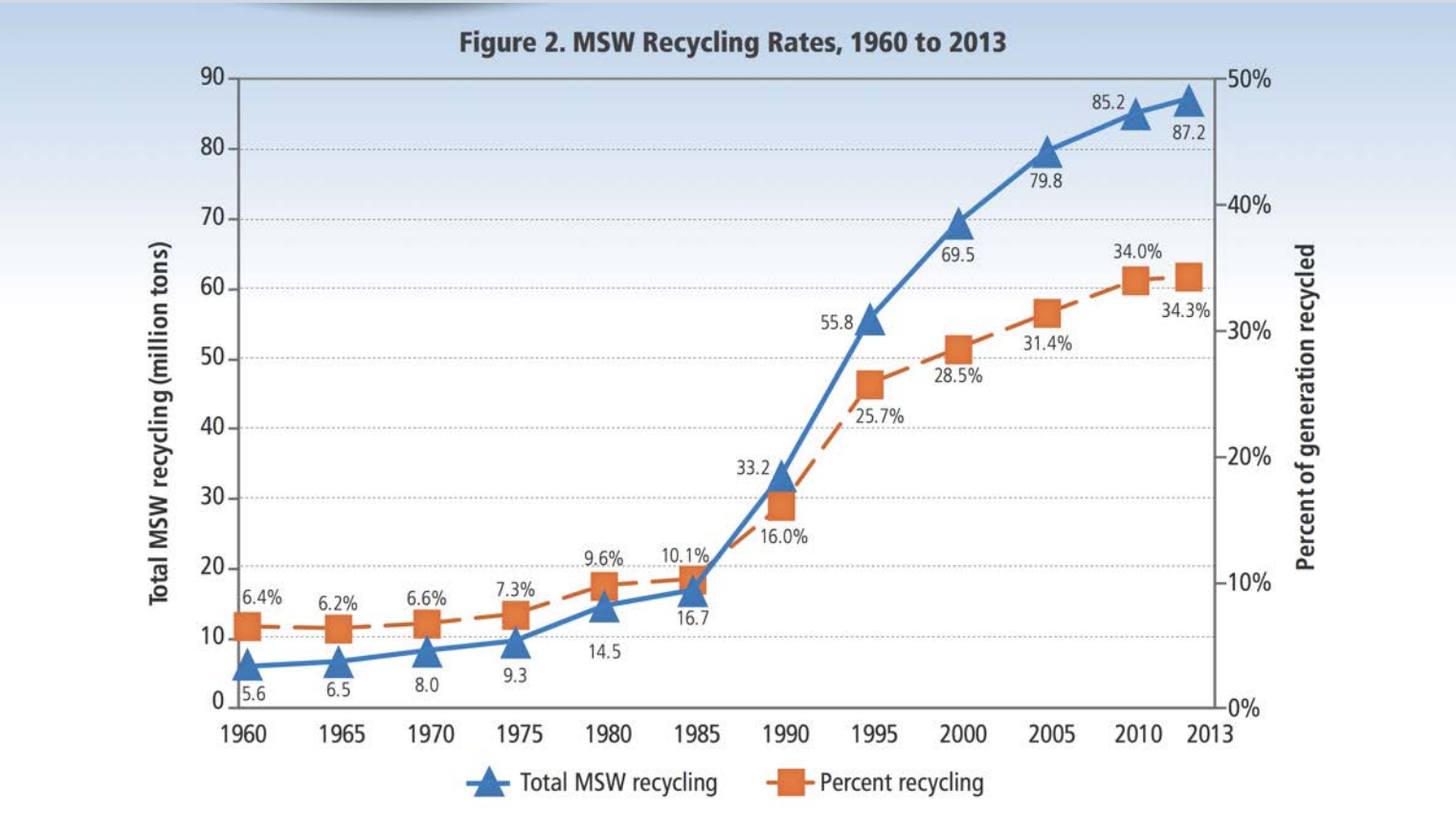
This equals the total urban built up area of the 'entre world' as of the year 2001 – ***we are building a 'whole new world!'***

The equivalent of ***4 Earths*** required if developing country cites urbanize following the models of developed country cites"

Victor Vergara, Lead Urban Specialist, World Bank

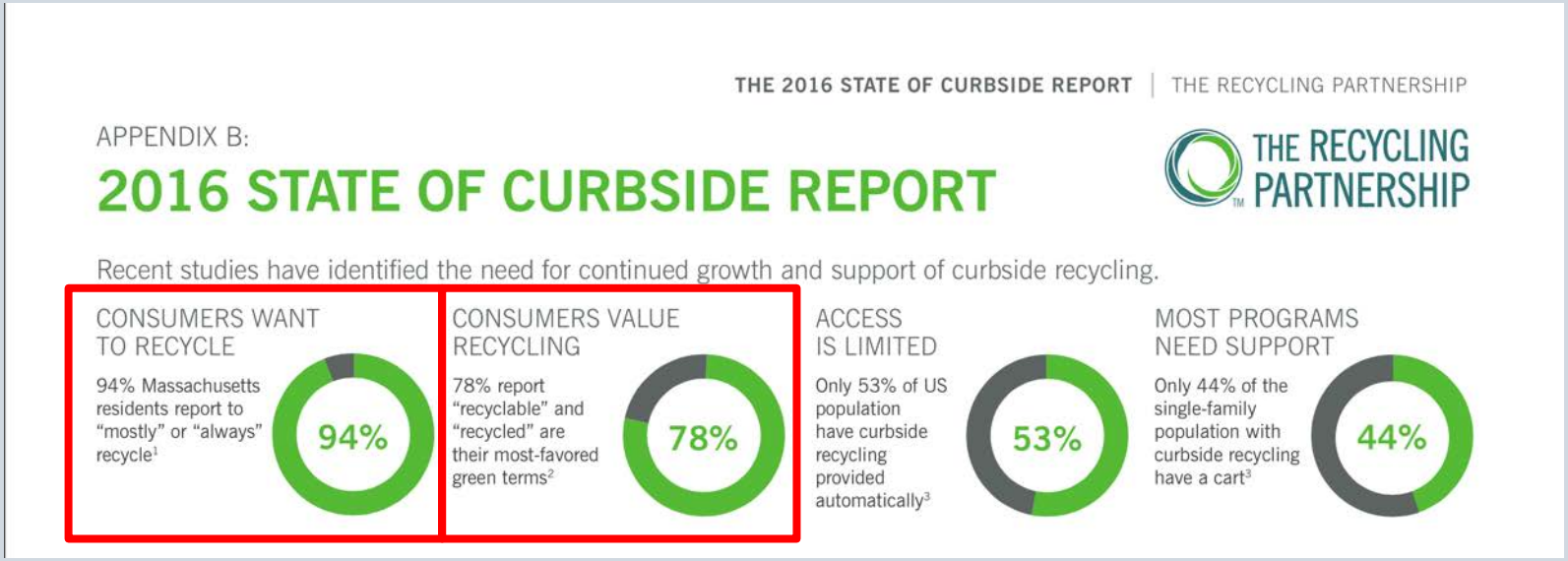



Growth of recycling



From: https://www.epa.gov/sites/production/files/2015-09/documents/2013_advncng_smm_fs.pdf

Popularity of recycling



How do we better match these positive attitudes with behaviours?

LETS GO BACK IN TIME…

RODALE INSTITUTE™

IUCN

WWF

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Earth Day (1970)

Clean Air Act (1967)

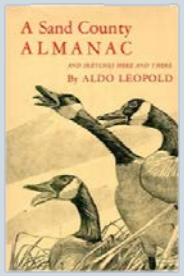
Clean Water Act (1972)

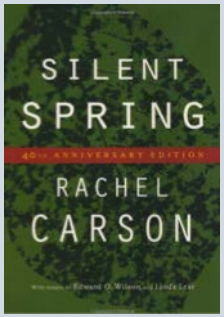
Endangered Species Act (1973)

1962

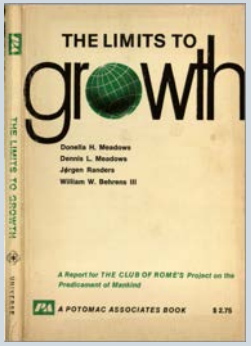
Our Common Future (1986)

1948





1970



2000

IPCC (1988)

World Conservation Strategy (1980)

Stockholm Declaration (1972)

The *New Environmental Paradigm* ***(1978)***

"One result of the recent rise in public concern with environmental problems appears to be normative changes in support of environmental quality…

…On the one hand, there appears to be **greater support for behaviors which tend to improve environmental quality-e.g., recycling, using low-lead gasoline, and conserving energy.**

…On the other hand, there seems to be **growing disapproval of traditional behaviors and lifestyles which encourage environmental degradation-e.g., use of large automobiles, littering, careless consumption of energy, and the purchase of garments made from animal fur."**

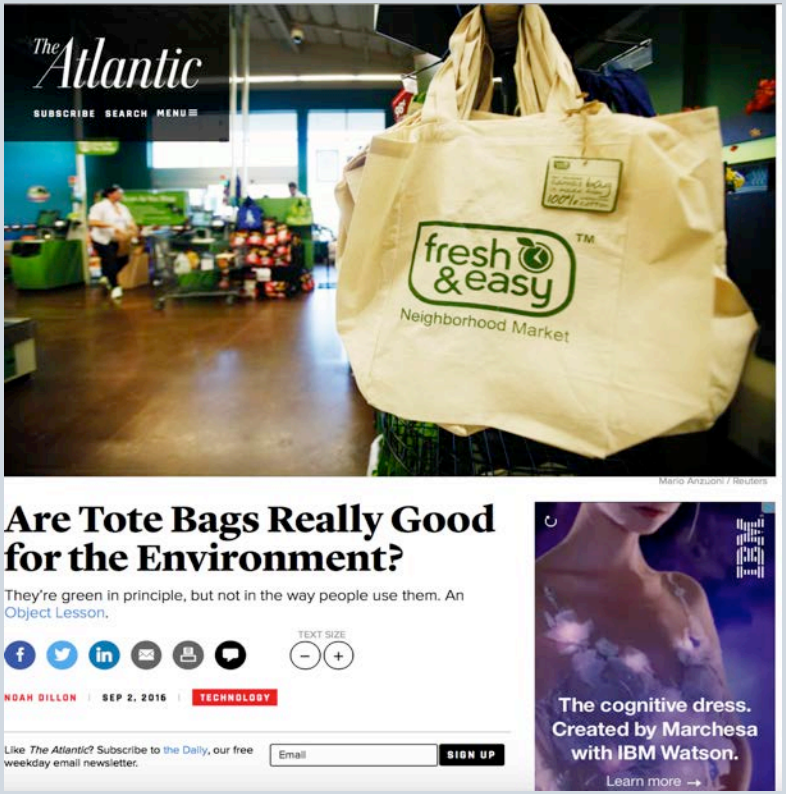
Riley Dunlap and Kent Van Liere

Pro-environmental behaviour (PEB)

"…behavior that is undertaken with the intention to change (normally, to benefit) the environment." (Paul Stern)

Includes:

1. Individual behaviours
2. Policy support
3. Environmental citizenship
4. Environmental activism!



The provision of information

Image: http://www.southernfriedscience.com/?p=18755

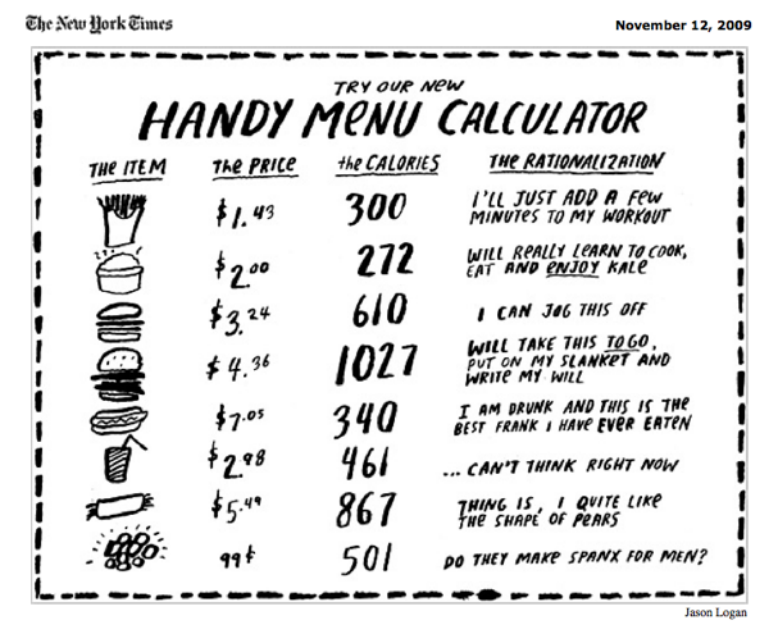
Information deficit model

To encourage desired choices and behaviours, **is providing 'more' or 'better' information sufficient?**

Is the information the solution?

Limited success of information campaigns (but not without value!)

We are constrained by our ability to read, absorb, and respond to information



New York Times Op-Ed: "*Eating by the numbers*" (November 12; 2009)
Julie Downs, George Loewenstein and Jessica Wisdom

The problem with information

COGNITIVE LIMITATIONS, TIME, PERCEPTUAL BIASES, DESCRIPTIVE NORMS

Cognitive limitations

Delicious, but fattening, slice of chocolate cake

From research by Baba Shiv and Alex Fedorikhin

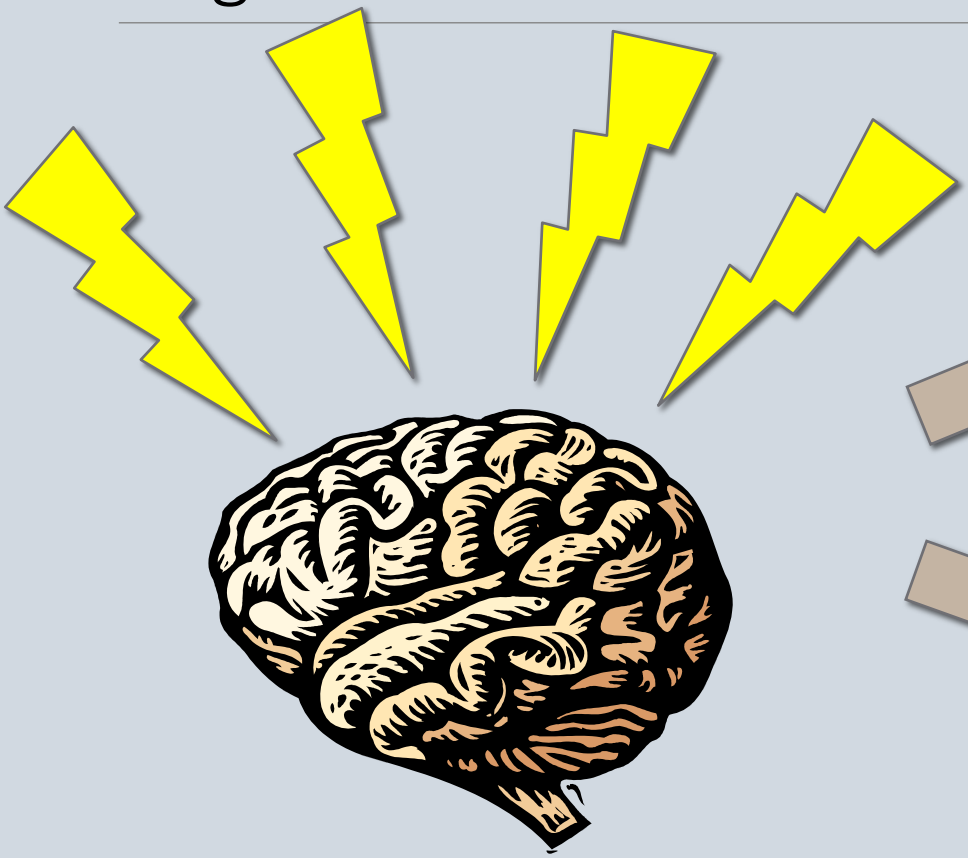
Cognitive limitations

Healthy, but less tasty, bowl of fruit salad

Cognitive limitations

16

Cognitive limitations



1,687,215

Affect

In many circumstances (hungry, tired, distracted, busy) we rely on emotions or **“affect”** to guide our choices and actions

= Positive or negative emotional associations

Comes from our past experiences

An automatic reaction (rather than conscious thought or deliberation)

Time: Now vs later

1 cookie 30 days from now?

2 cookies 31 days from now?

Time: Now vs later

Time: Want vs. should conflict

SHOULD SELF

PLANNING

FUTURE BENEFITS

LONG-TERM COSTS

LOGIC DOMINATES

WANT SELF

ACTION

IMMEDIATE BENEFITS & COSTS

EMOTIONS DOMINATE

From research by Katherine Milkman and colleagues

Perceptual biases: The strength of *status quo*

Loss aversion

We give much more weight to the negative outcomes ☹ of losses,

than to the positive outcomes ☺ of equivalent gains

Endowment effect

Items in our possession have greater value than identical items that are not in our possession

From research by Danny Kahneman and colleagues

Injunctive and descriptive norms

Photo by Mark Green

From research by Robert Cialdini and colleagues.

Descriptive and injunctive norms

Fig. 1.

From research by Linda Steg and colleagues

INDIVIDUAL BEHAVIOUR IN WASTE AND RECYCLING SYSTEMS

Given what we know about how we respond to information and make choices, **what techniques can we employ** to facilitate greater engagement in recycling behaviours?

The tools of a choice architect!

Choice architecture

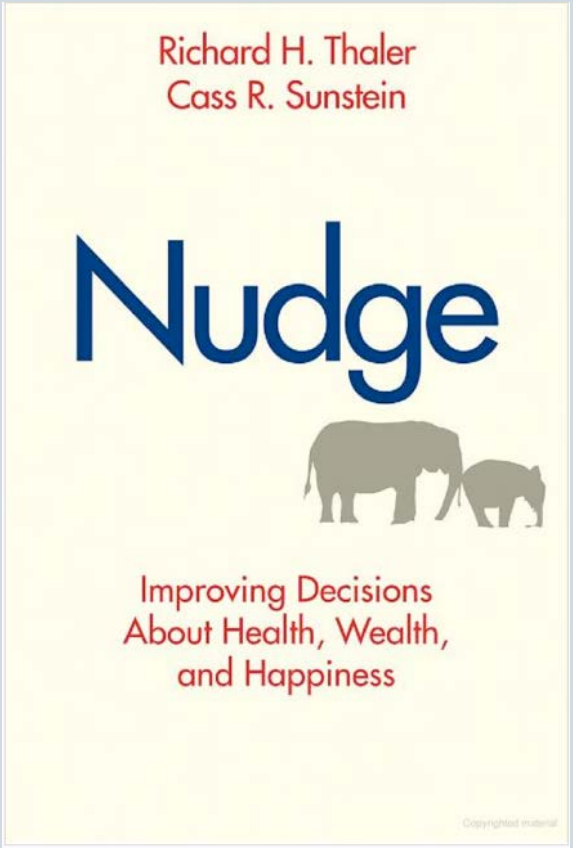
aka ***structuring the decision-making environment***

Acknowledging cognitive limitations, emotional responses, perceptual biases, etc.

Structure the decision-making environment to take advantage of these limitations and biases to:

Encourage beneficial behaviors and choices

Discourage harmful behaviors and choices



Structuring the decision-making environment

Some examples:

- Default options
- Feedback & commitment
- Make it easy & obvious
- Modeling the desired behavior

Structuring the decision-making environment: **Defaults**

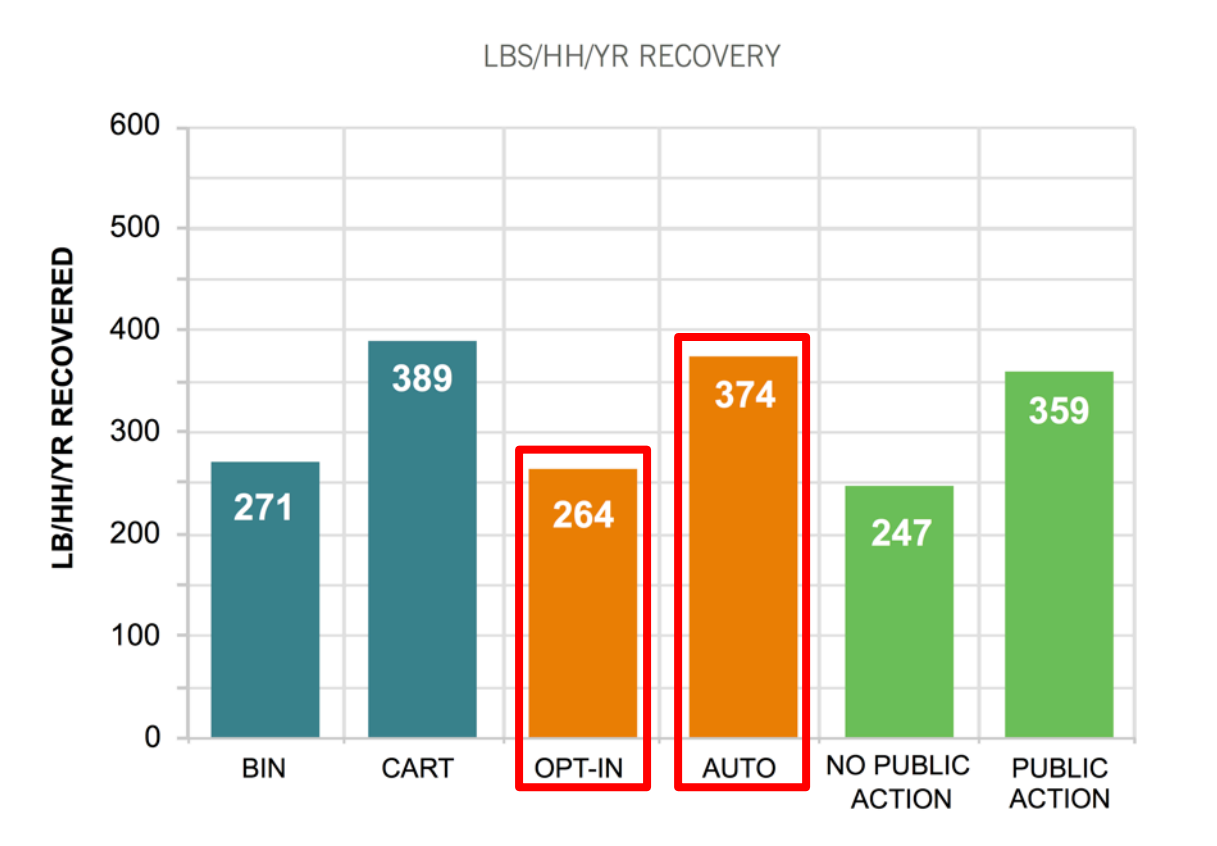
What is a default?

- The option an individual automatically receives if he/she does not specify otherwise

Why do defaults work?

- Status quo bias!

The use of defaults in recycling programs



The Recycling Partnership: "THE 2016 STATE OF CURBSIDE REPORT"

Structuring the decision-making environment: **Feedback**

Provide timely and personalized feedback on how well individuals and communities are performing relative to others or to a set goal

From research by Robert Cialdini and colleagues

Structuring the decision-making environment: **Feedback**

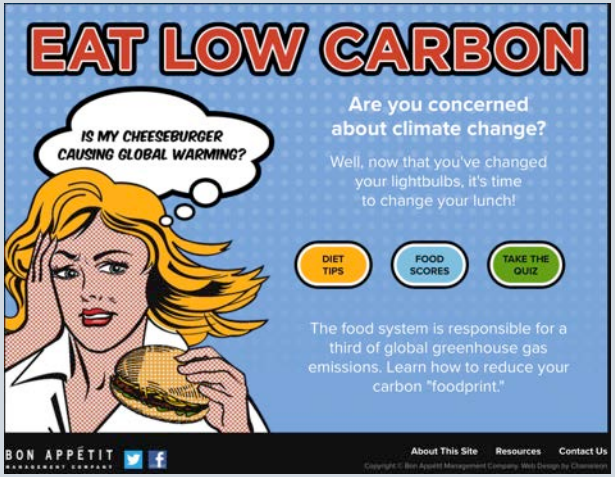
Why does feedback work?

Reduce lag between behavior and outcome

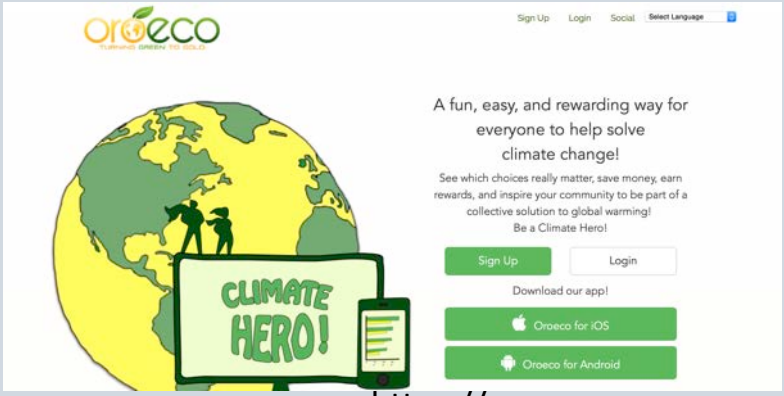
Tap into emotional responses

Reinforce **shoulds** over **wants**

Capitalize on descriptive norms



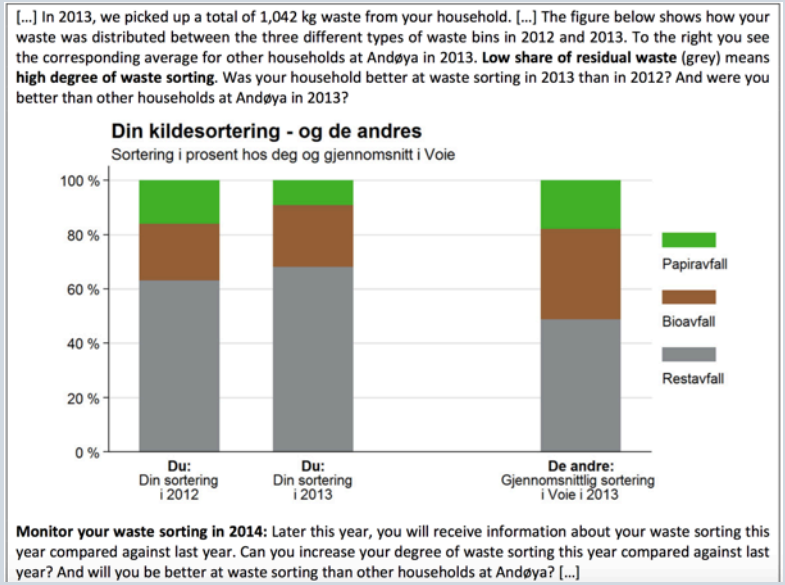
http://www.eatlowcarbon.org



https://www.oroeco.com

The use of feedback in recycling programs

"Nudges to increase recycling and reduce waste"



http://www.nilf.no/publikasjoner/Discussion_Papers/2015/dp-2015-01.pdf

Weigh Your Waste: A Sustainable Way To Reduce Waste

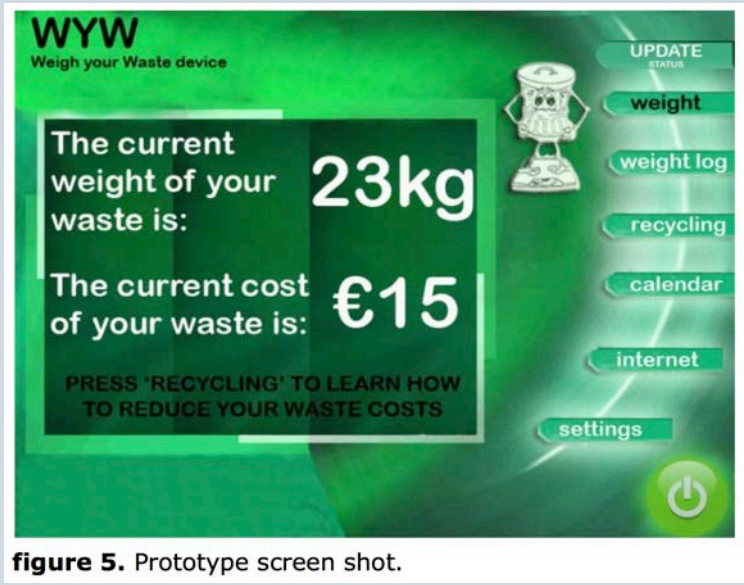


figure 5. Prototype screen shot.

http://dl.acm.org/citation.cfm?id=1520414

Structuring the decision-making environment: **Commitment**

Making a verbal or written pledge to perform a particular behavior or achieve a particular goal

Feedback** is often **bundled with commitment

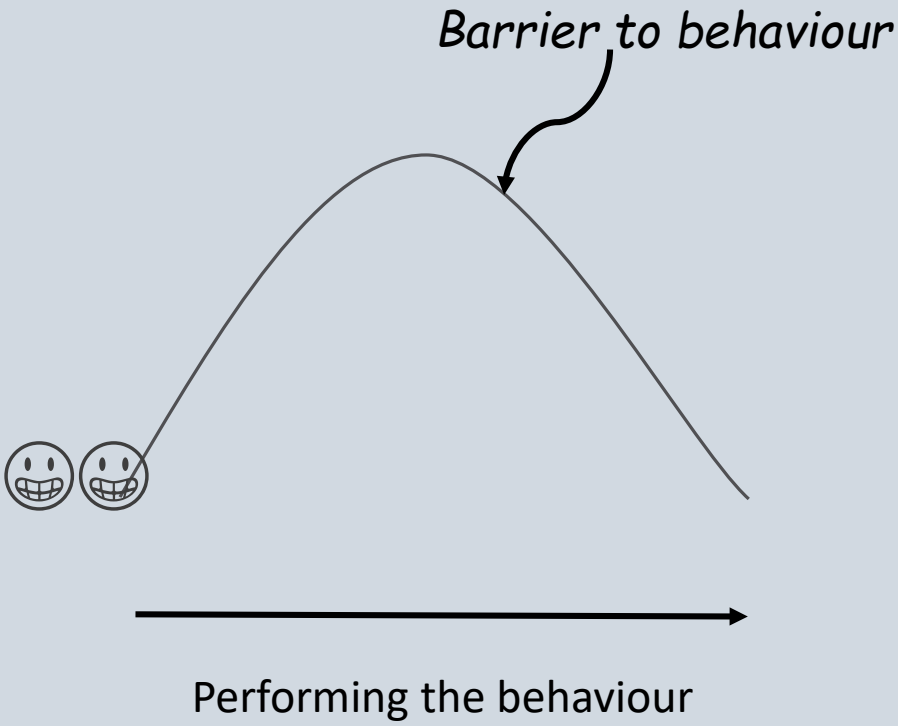
http://chefcontainer.com/pledge/

Structuring the decision-making environment: **Make recycling easy and obvious**

THE 2016 STATE OF CURBSIDE REPORT | THE RECYCLING PARTNERSHIP

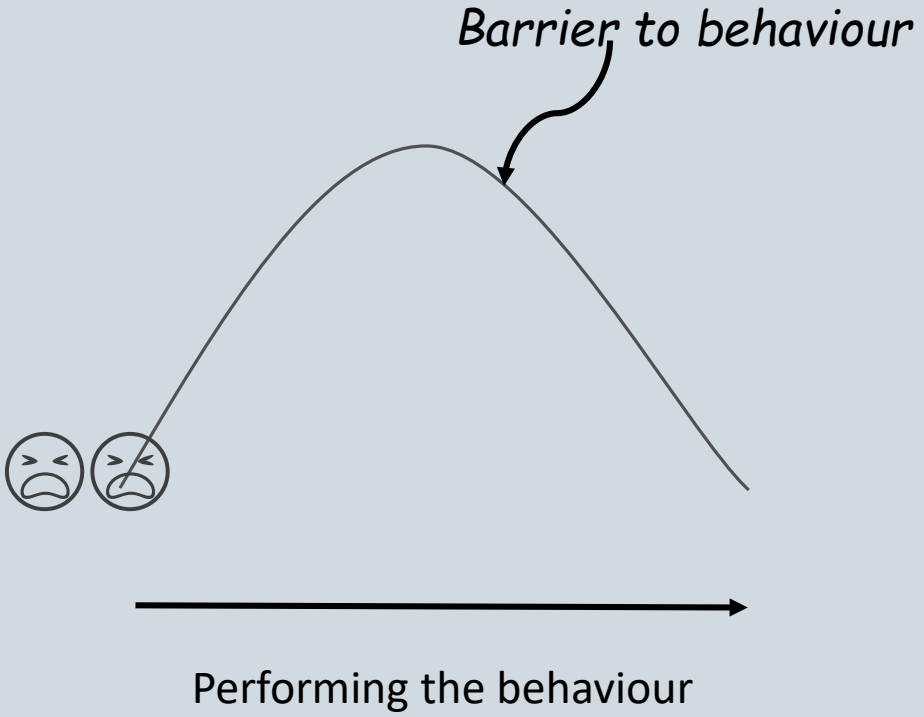
Structuring the decision-making environment: **Make recycling easy and obvious**

Why does “making it easy” work?



Structuring the decision-making environment: **Make recycling easy and obvious**

Why does “making it easy” work?



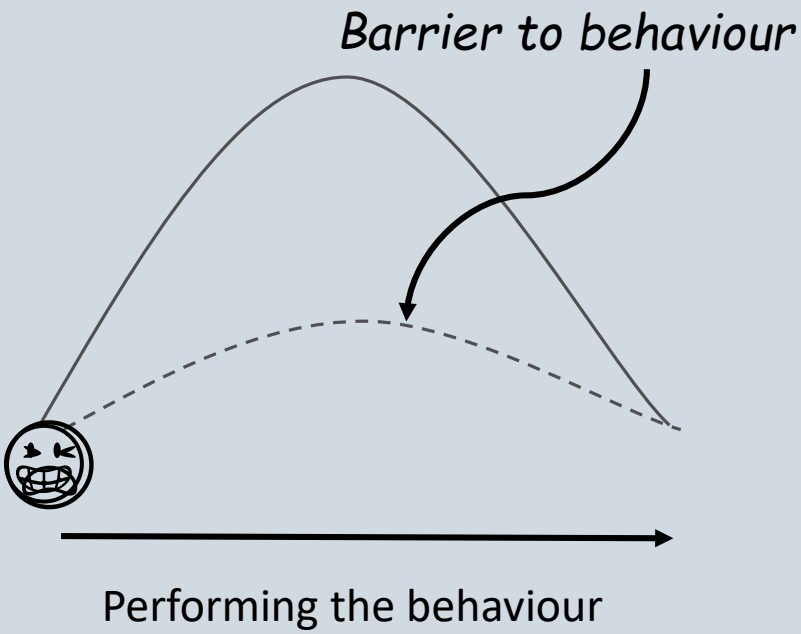
Structuring the decision-making environment: **Make recycling easy and obvious**

Why does “making it easy” work?

Capitalize on status quo bias

Bypass cognitive limitations

Reinforcing ***shoulds*** over ***wants***



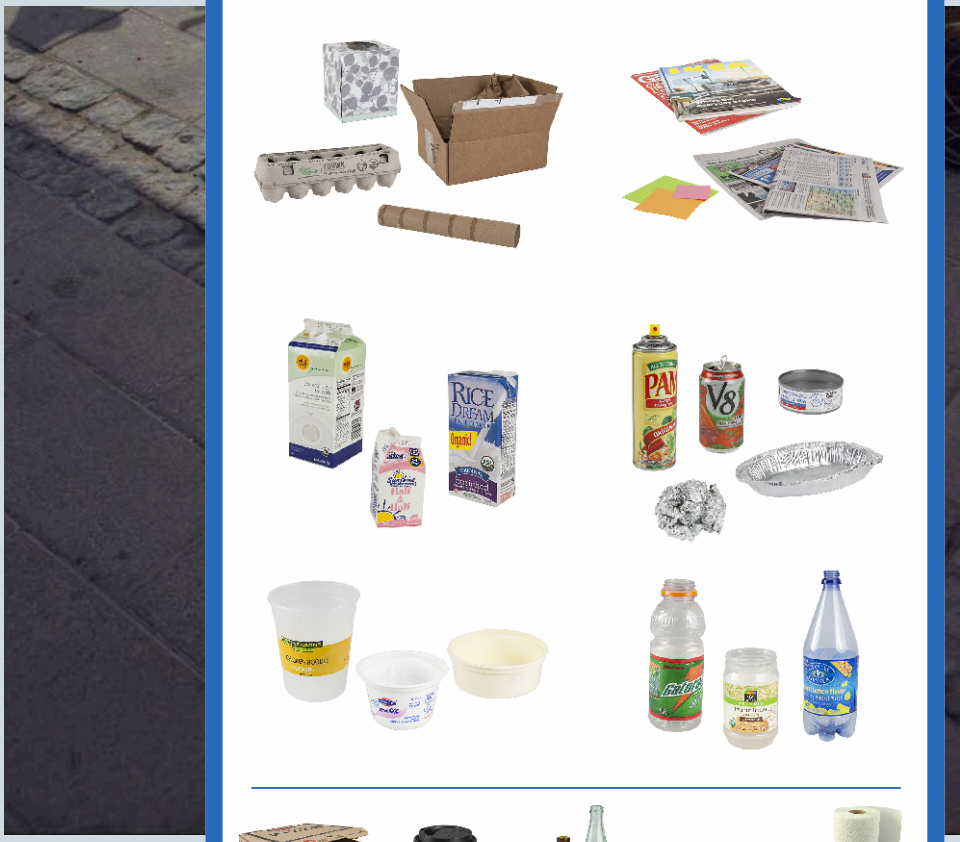
Structuring the decision-making environment: **Make recycling easy and obvious**

Other examples:

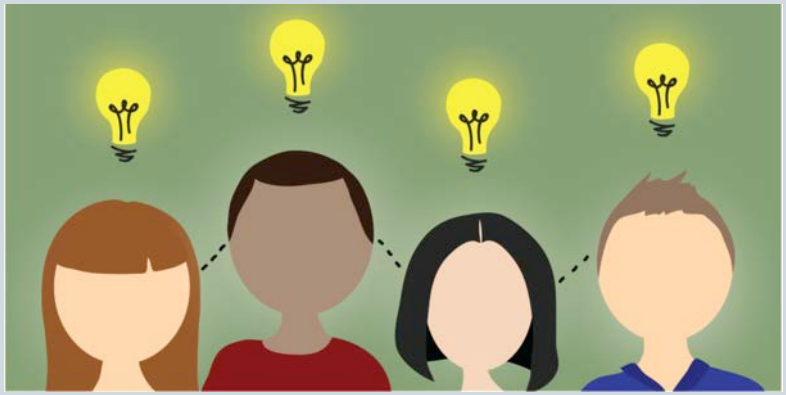
Recycle bin lids that tell you what should go inside

Recycle bins are numerous and close by

Signs and other visual prompts



Structuring the decision-making environment: Social modeling



We learn by observing others

From research by Albert Bandura and colleagues

Structuring the decision-making environment: Social modeling

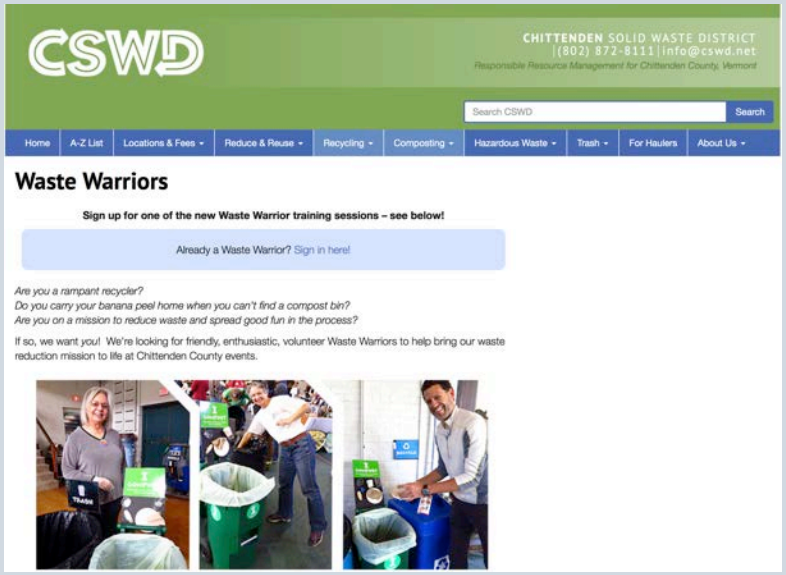
Why does social modeling work?

Overcome cognitive limitations

Reinforce ***shoulds*** over ***wants***

Tap into social norms

Increase our feelings of effectiveness (learn by doing)



So, for a *choice architect*, what works best?

Research to date has shown the most effective tools to be:

Making it easy & Social modeling

The least effective tools:

Feedback and commitment

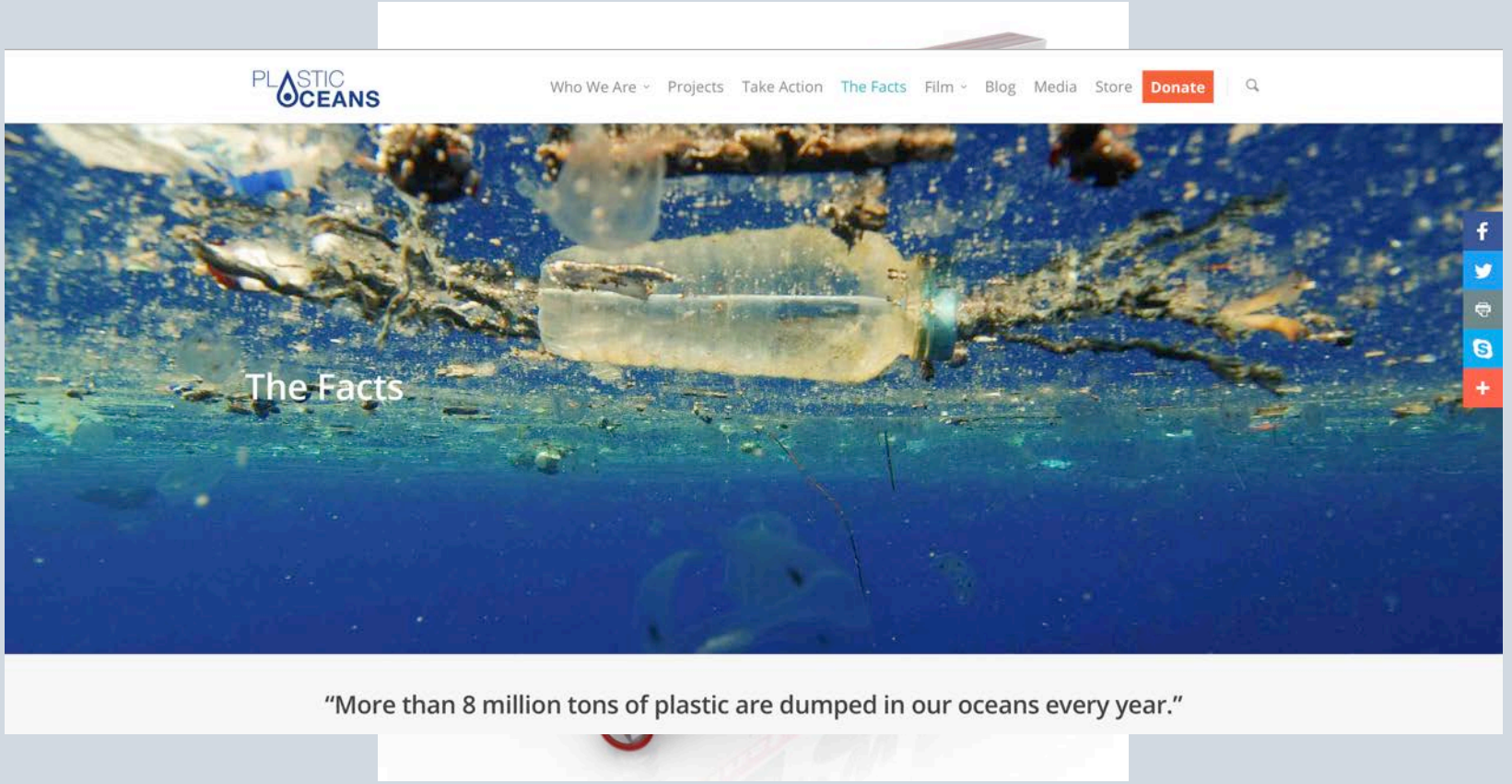
With a caveat…

From research by Varotto and Spagnolli

But remember:

All recycling is local…

And back to…Information!



https://www.plasticoceans.org/the-facts/

To sum up

1. Acknowledge that we don't always *act* in ways that benefit us and are sustainable, despite what we *say*!
2. Be an 'architect' of recycling and composting behaviour.
   i. Make recycling easy and obvious for everyone.
   ii. Use frequent, personalized feedback and reference to social norms to reinforce recycling behaviour.
   iii. Enlist community members to act as 'models' and ambassadors.
3. Use information judiciously
   i. Highlight recycling opportunities and 'how-tos.'
   ii. Tap into what people value.

Thank-you!

VICTORIA CAMPBELL-ARVAI

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