

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

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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

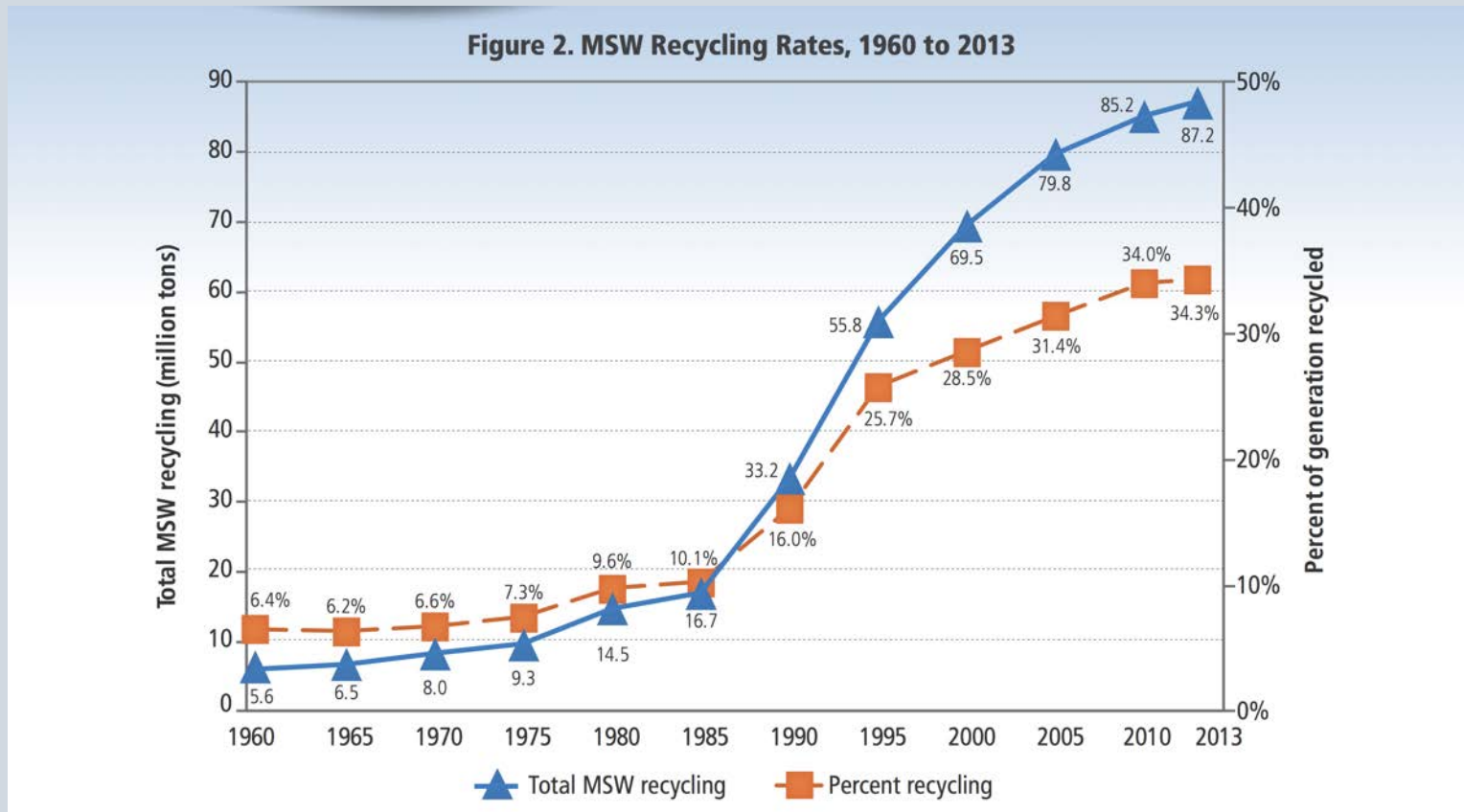
This equals the total urban built up area of the ‘entire world’ as of the year 2001 – ***we are building a ‘whole new world!’***

The equivalent of ***4 Earths*** required if developing country cities urbanize following the models of developed country cities”

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

THE 2016 STATE OF CURBSIDE REPORT | THE RECYCLING PARTNERSHIP

APPENDIX B:

2016 STATE OF CURBSIDE REPORT



Recent studies have identified the need for continued growth and support of curbside recycling.

CONSUMERS WANT TO RECYCLE

94% Massachusetts residents report to "mostly" or "always" recycle¹



CONSUMERS VALUE RECYCLING

78% report "recyclable" and "recycled" are their most-favored green terms²



ACCESS IS LIMITED

Only 53% of US population have curbside recycling provided automatically³



MOST PROGRAMS NEED SUPPORT

Only 44% of the single-family population with curbside recycling have a cart³



How do we better
match these
positive attitudes
with behaviours?

LETS GO BACK IN TIME...



1962



Earth Day (1970)

Clean Air Act (1967)

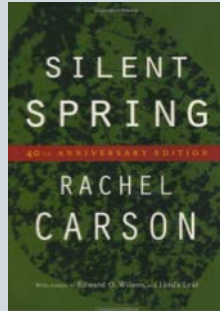
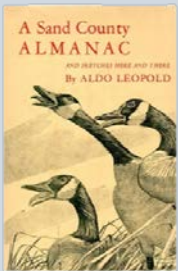
Clean Water Act (1972)

Endangered Species Act (1973)

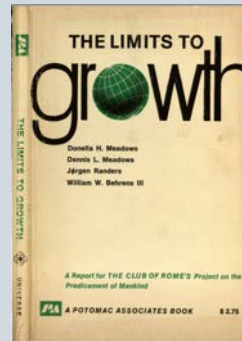
Our Common Future (1986)



1948



1970



IPCC (1988)



2000

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!



Are Tote Bags Really Good for the Environment?

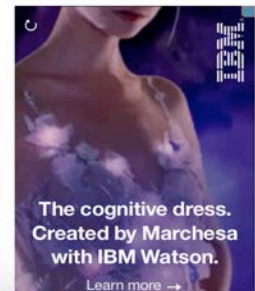
They're green in principle, but not in the way people use them. An Object Lesson.



NOAH DILLON | SEP 2, 2016 | TECHNOLOGY

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The cognitive dress.
Created by Marchesa
with IBM Watson.

Learn more →

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

The New York Times November 12, 2009

TRY OUR NEW
HANDY MENU CALCULATOR

THE ITEM	THE PRICE	THE CALORIES	THE RATIONALIZATION
	\$1.43	300	I'LL JUST ADD A FEW MINUTES TO MY WORKOUT
	\$2.00	272	WILL REALLY LEARN TO COOK, EAT AND ENJOY KALE
	\$3.24	610	I CAN JAG THIS OFF
	\$4.36	1027	WILL TAKE THIS TO GO, PUT ON MY SLANKET AND WRITE MY WILL
	\$7.05	340	I AM DRUNK AND THIS IS THE BEST FRANK I HAVE EVER EATEN
	\$2.98	461	... CAN'T THINK RIGHT NOW
	\$5.49	867	THING IS, I QUITE LIKE THE SHAPE OF PEARS
	99¢	501	DO THEY MAKE SPANX FOR MEN?

Jason Logan

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

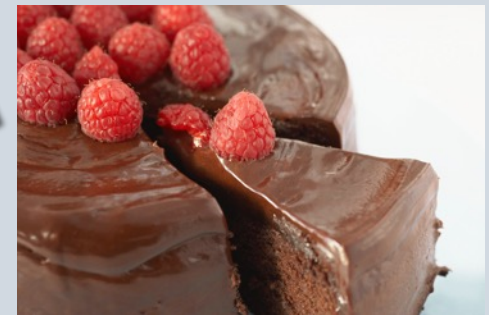
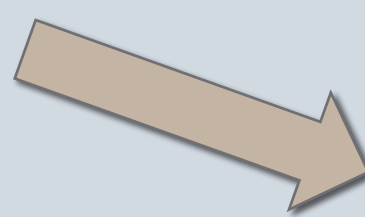
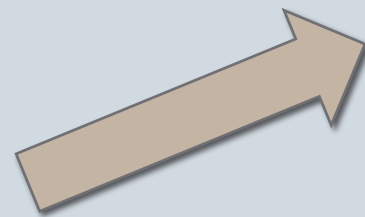
Healthy, but less tasty, bowl of fruit salad



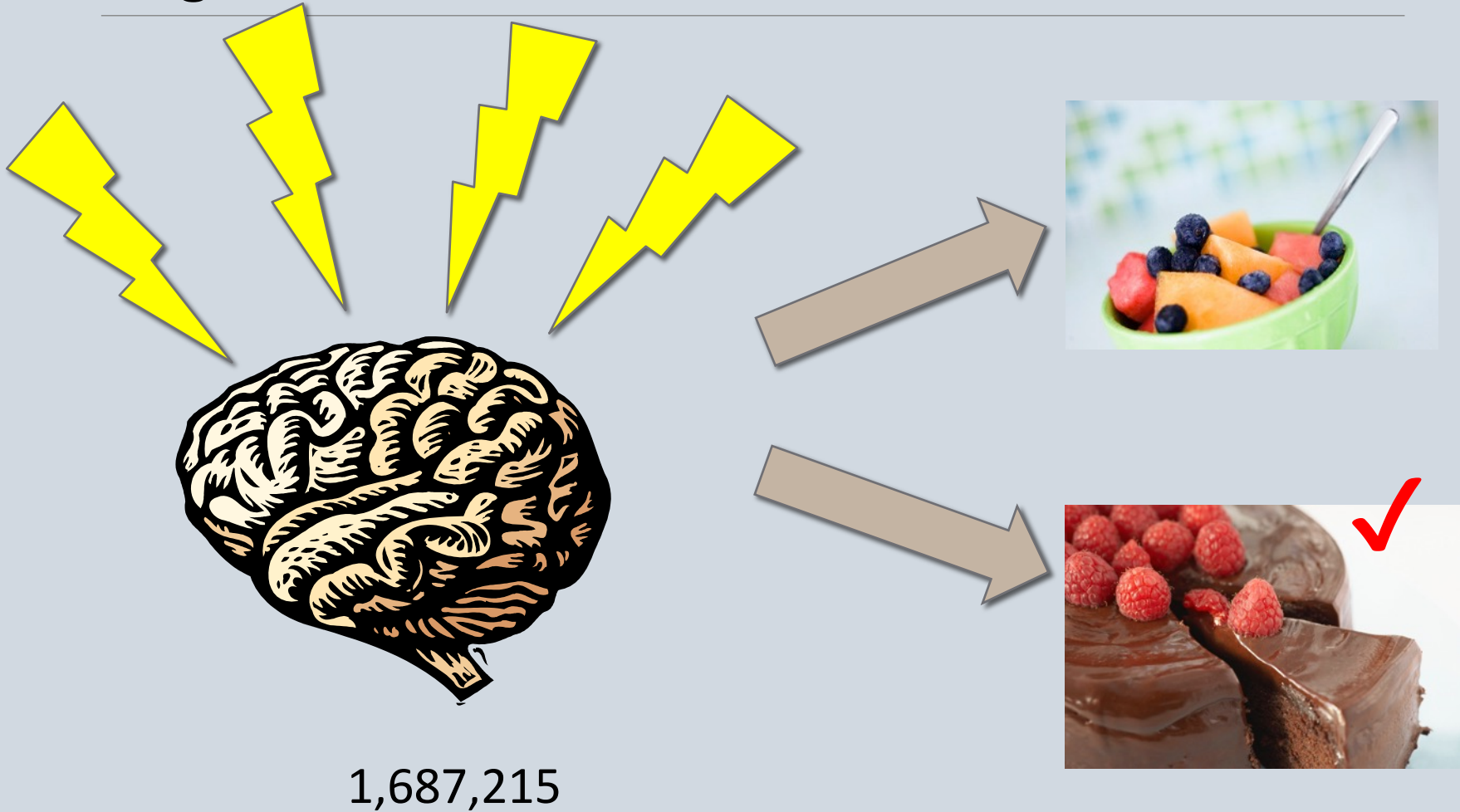
Cognitive limitations



16



Cognitive limitations



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



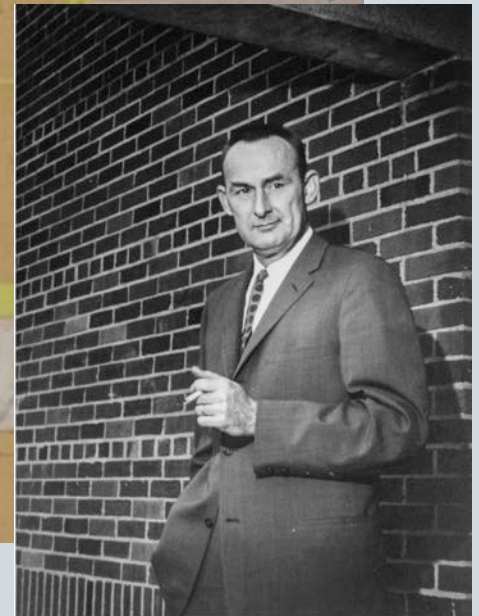
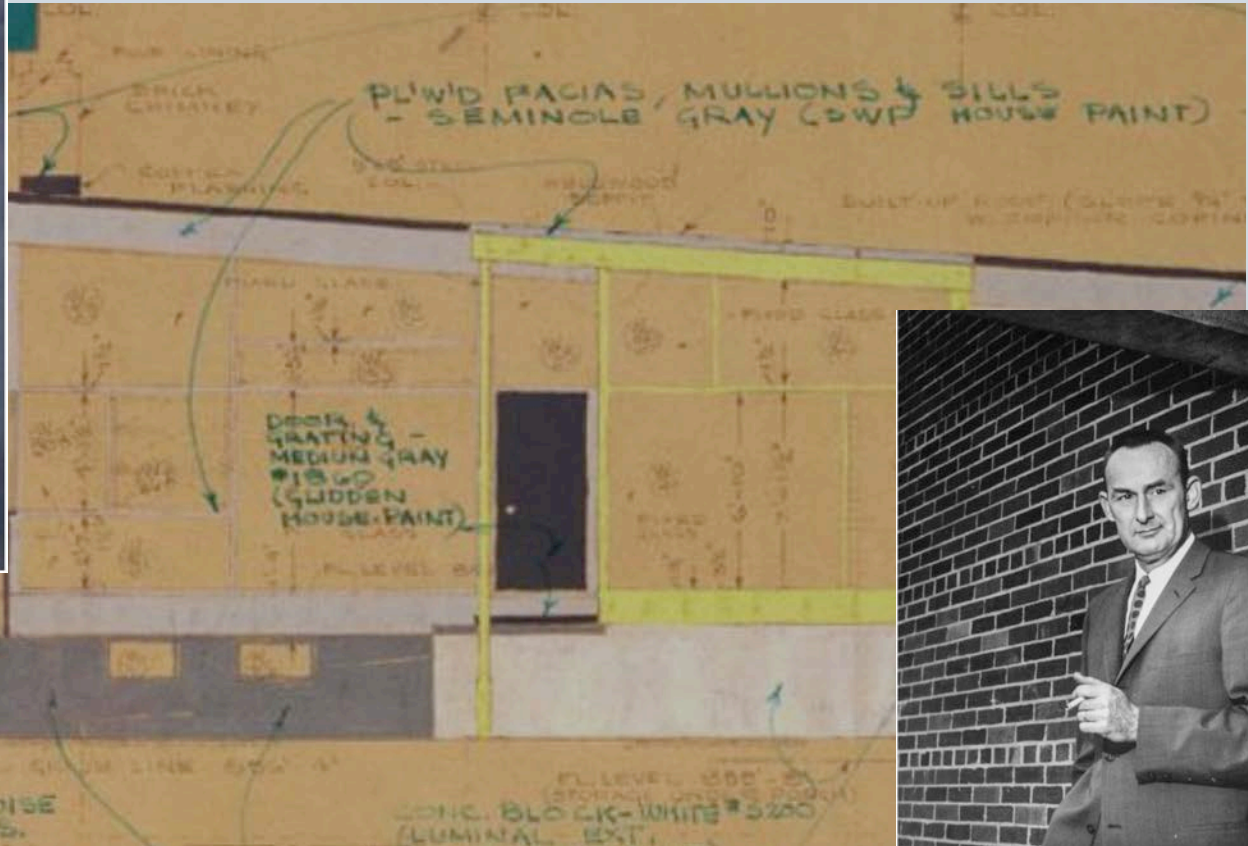
Fig. 1.

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

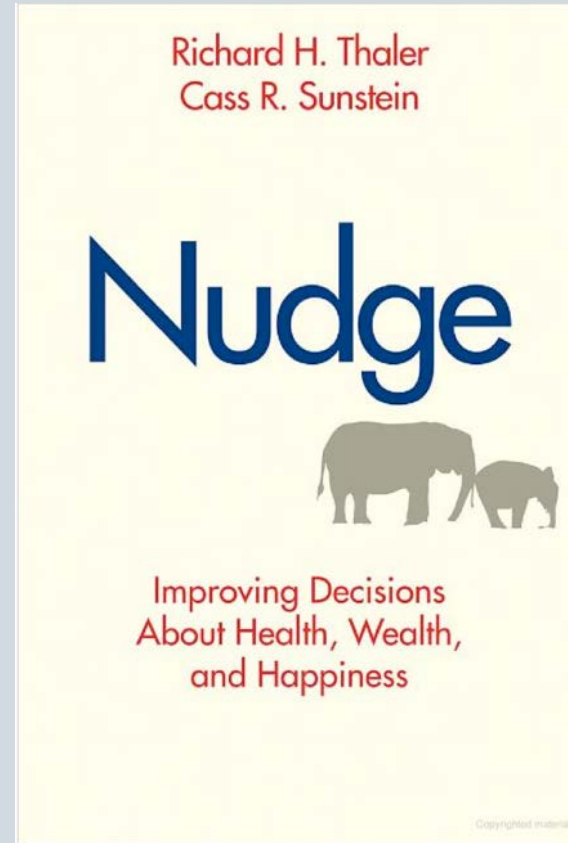
aka *structuring the decision-making environment*

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?

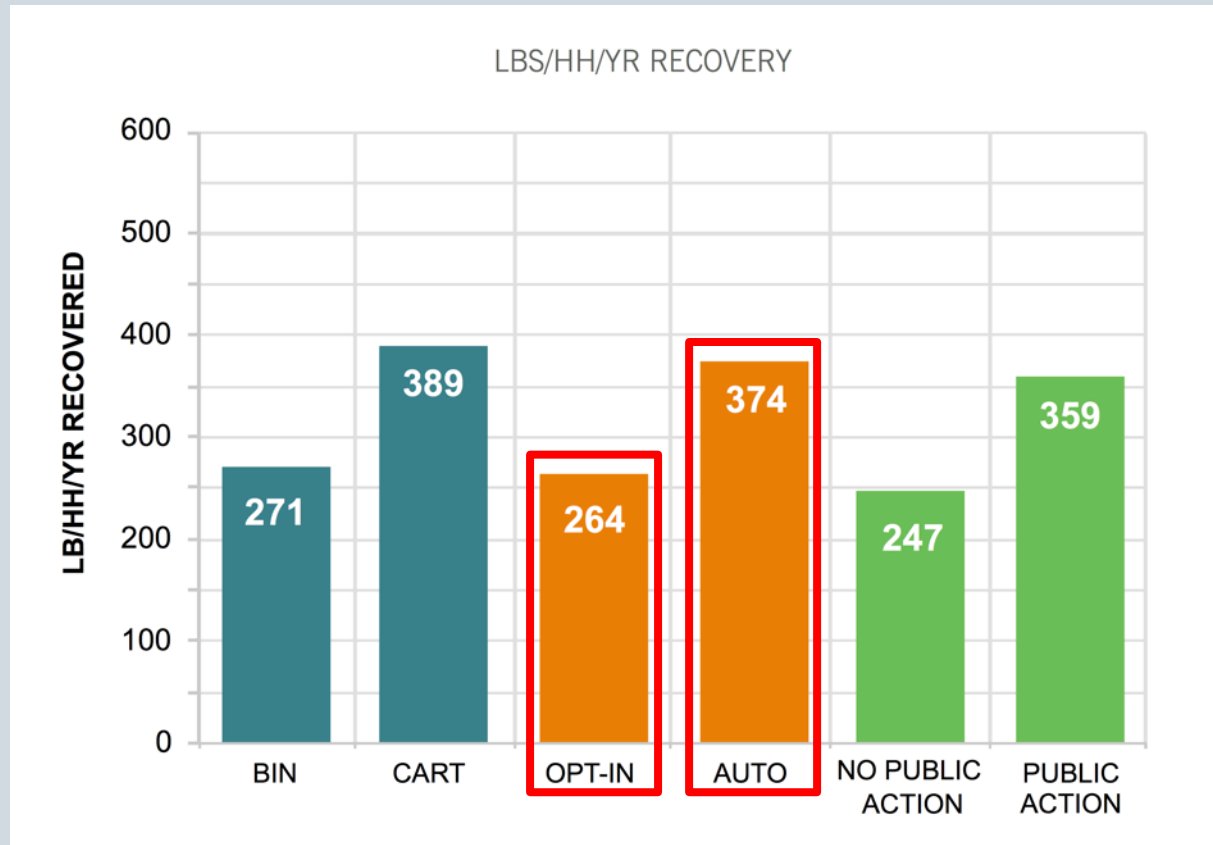
- The option an individual automatically receives if he/she does not specify otherwise

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

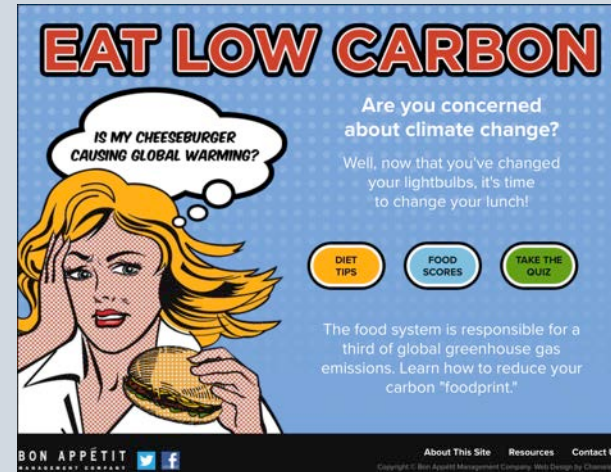
Why does feedback work?

Reduce lag between behavior and outcome

Tap into emotional responses

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

Capitalize on descriptive norms



<http://www.eatlowcarbon.org>

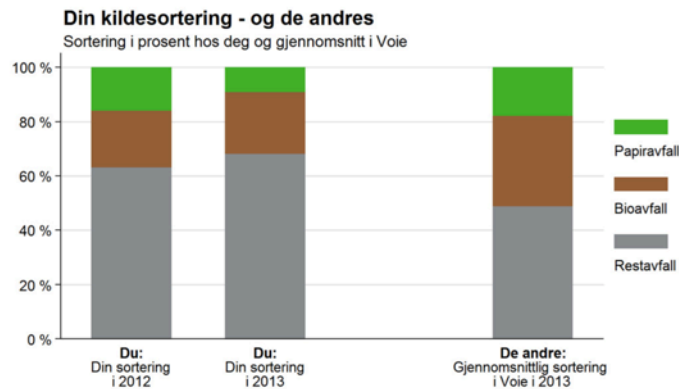


<https://www.oroeco.com>

The use of feedback in recycling programs

“Nudges to increase recycling and reduce waste”

[...] In 2013, we picked up a total of 1,042 kg waste from your household. [...] The figure below shows how your waste was distributed between the three different types of waste bins in 2012 and 2013. To the right you see the corresponding average for other households at Andøya in 2013. **Low share of residual waste (grey) means high degree of waste sorting.** Was your household better at waste sorting in 2013 than in 2012? And were you better than other households at Andøya in 2013?



Monitor your waste sorting in 2014: Later this year, you will receive information about your waste sorting this year compared against last year. Can you increase your degree of waste sorting this year compared against last year? And will you be better at waste sorting than other households at Andøya? [...]

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

The screenshot shows the 'Take the Recycling Pledge' page on the CHEF Container website. The page features a navigation bar with the CHEF logo and links for Home, Recycling, Residential, Commercial, and Request A Quote. The main content area includes a title 'Take the Recycling Pledge', a paragraph explaining the importance of recycling in Michigan, and a section titled 'For the future of the Lakeshore Region, I pledge to:' with three bullet points: 'Learn', 'Act', and 'Share'. A 'Pledge To Recycle' section shows a count of 69 pledges. On the right, there is a graphic of a hand holding a recycling symbol with the text 'Take the pledge!' and three statistics about Michigan's recycling rate.

New: Learn about Chef Container's new programs: Dispose of additional bigged yard waste, garbage, bulk items and "white" goods. [Collection Sticker Program](#)

About Jobs Contact Newsroom Yellow Bag Request Payment

CHEF Home Recycling Residential Commercial Request A Quote

Take the Recycling Pledge

Even though recycling in Michigan is on the rise, our state continues to have the lowest recycling rate of any Great Lake Region. Only you can make the difference. Take the pledge today to recycle the maximum amount you can each week.

For the future of the Lakeshore Region, I pledge to:

- **Learn.** I will find out what materials are collected for recycling in my community at chefcontainer.com
- **Act.** Reduce my personal waste by recycling. Within the next month, I will recycle more.
- **Share.** In the next month, I will encourage one family member or one friend to take the pledge.

Pledge To Recycle

Pledge count thus far: 69

Take the pledge!

- The Michigan recycling rate has increased every year for the past 30 years.
- The current recycling rate is 14.5%.
- Join each other as a community, join us, in recycling more!

<http://chefcontainer.com/pledge/>

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

PROFILE OF THE HIGHEST-PERFORMING CITIES SURVEYED (OVER 400 LBS/HH/YR)



83%

COLLECT IN CARTS



93%

PROVIDE COLLECTION
AUTOMATICALLY



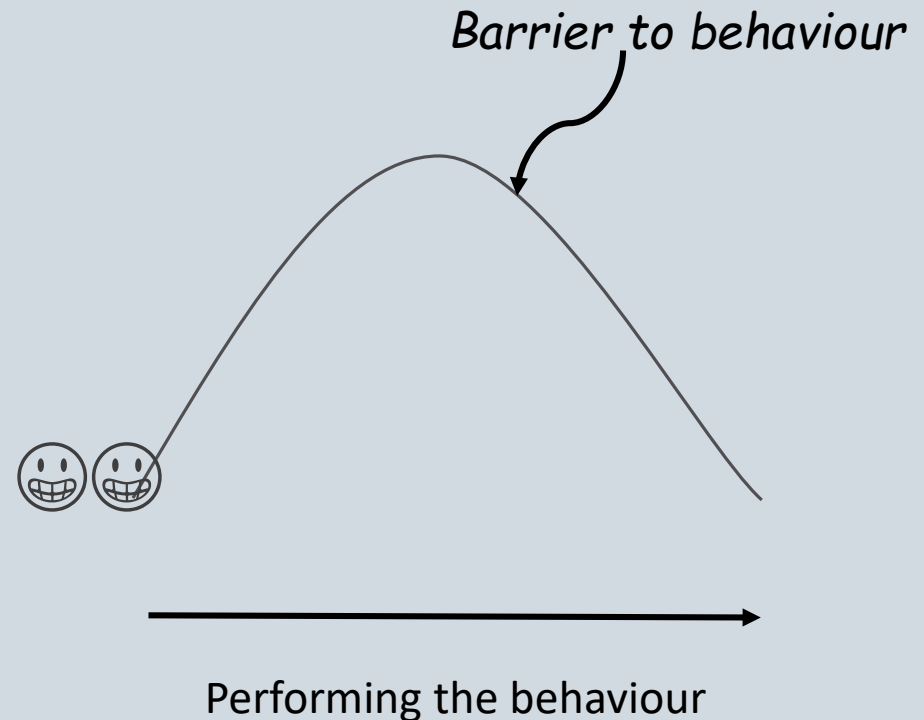
96%

SINGLE-STREAM
COLLECTION

THE 2016 STATE OF CURBSIDE REPORT | THE RECYCLING PARTNERSHIP

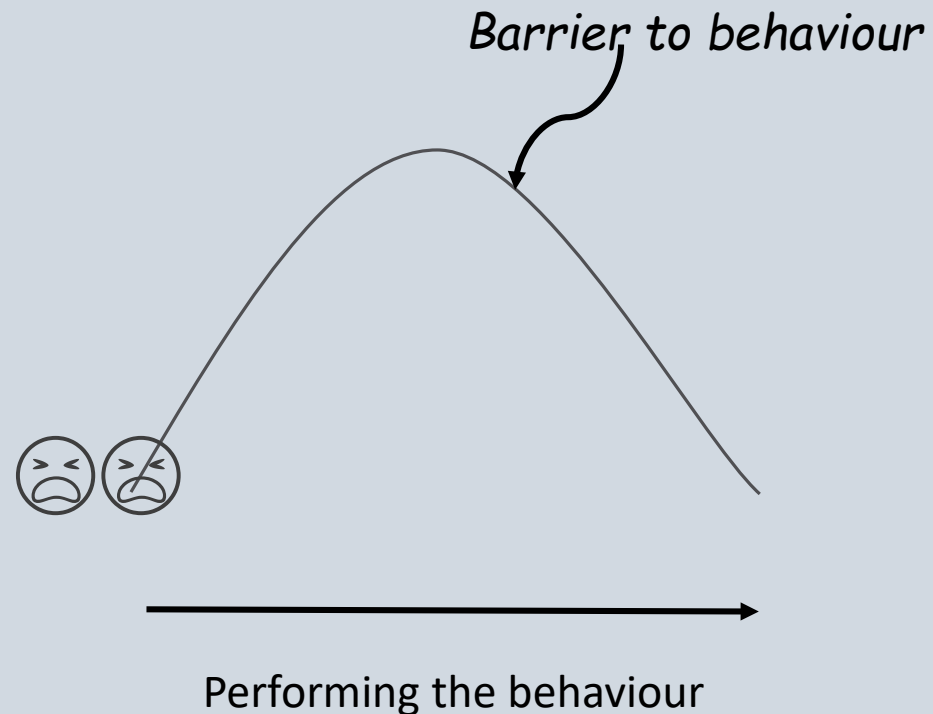
Structuring the decision-making environment: **Make recycling easy and obvious**

Why does “making it easy” work?



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

Why does “making it easy” work?



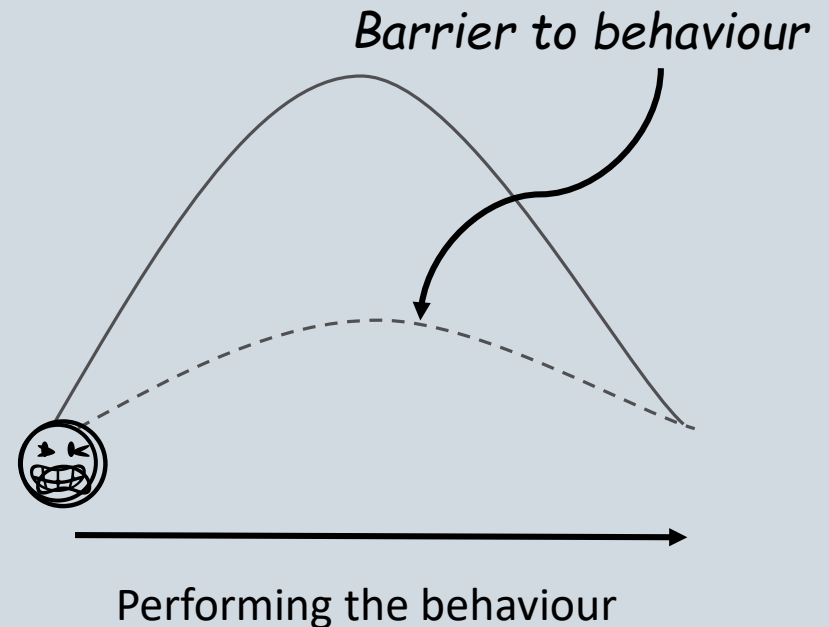
Structuring the decision-making environment: **Make recycling easy and obvious**

Why does “making it easy” work?

Capitalize on status quo bias

Bypass cognitive limitations

Reinforcing *shoulds* over *wants*



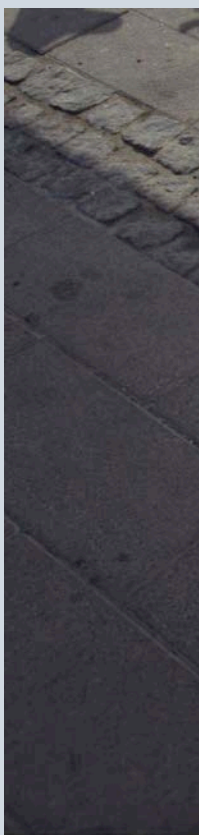
Structuring the decision-making environment: Make recycling easy and obvious

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

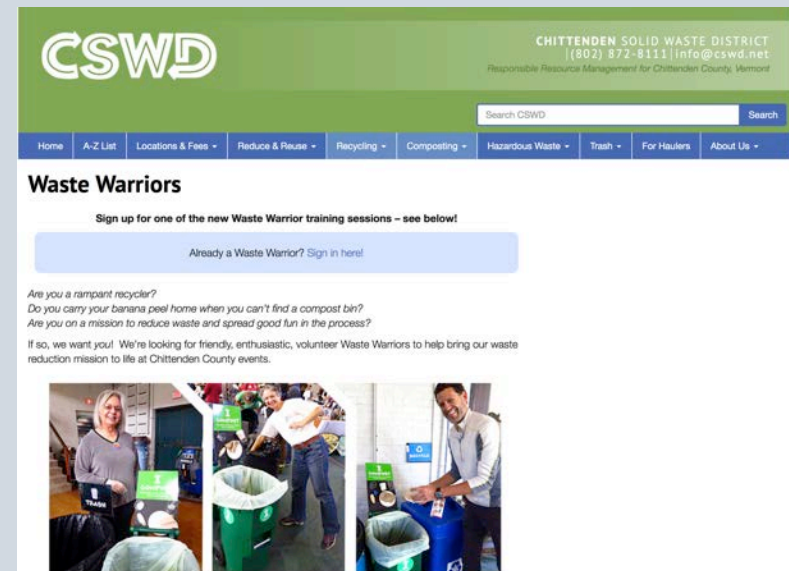
Why does social modeling work?

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!



PLASTIC OCEANS

Who We Are ▾ Projects Take Action **The Facts** Film ▾ Blog Media Store **Donate** 🔍

The Facts

“More than 8 million tons of plastic are dumped in our oceans every year.”

<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!

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