



Behavioral Economics is the New Green

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Summary

- Why: The Problem \leftrightarrow The Opportunity
- How: Methodology
- The Traditional Economics Solution
- The Behavioral Economics Solution
- Stanford's programs

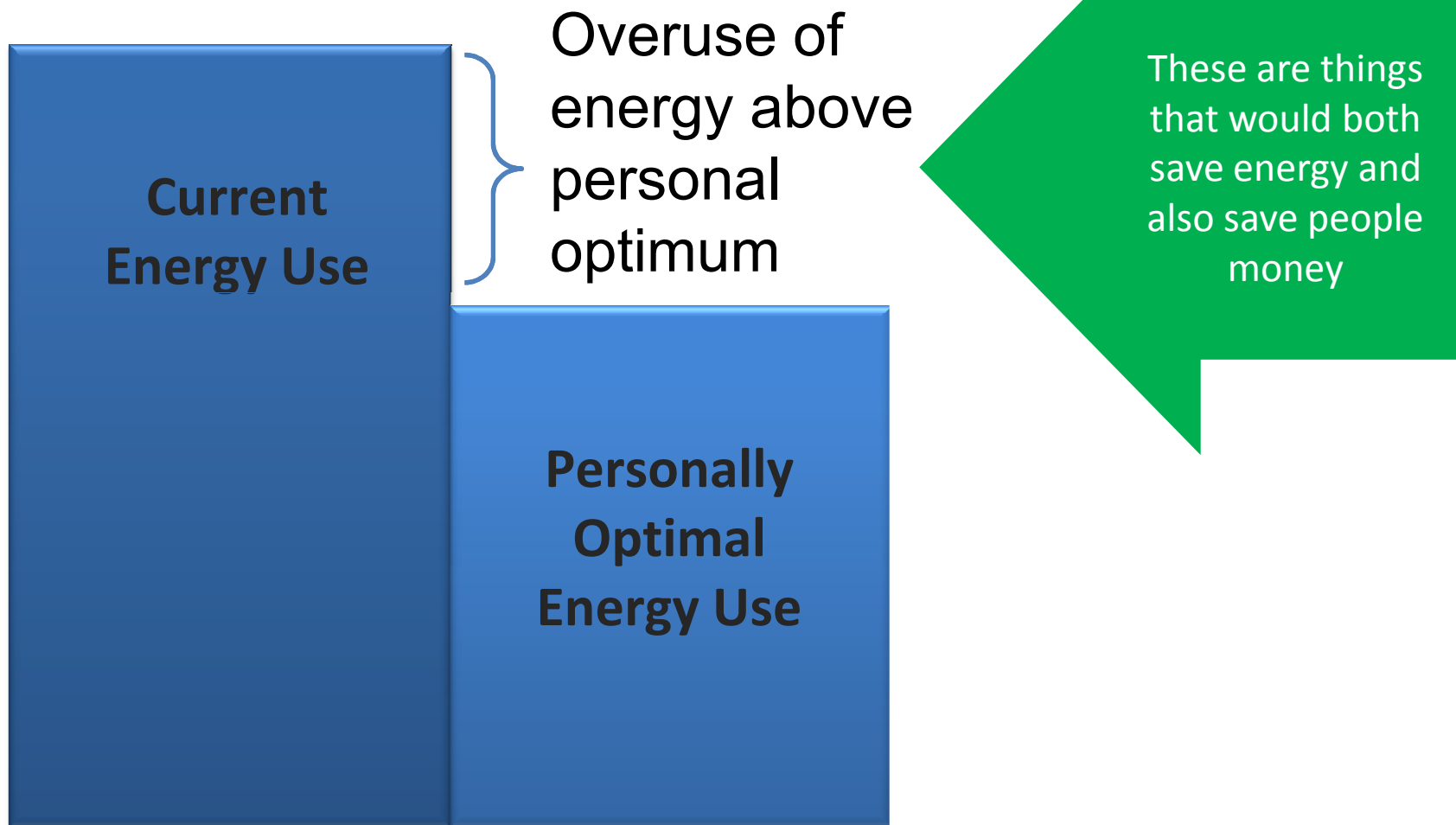


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The Problem ↔ The Opportunity

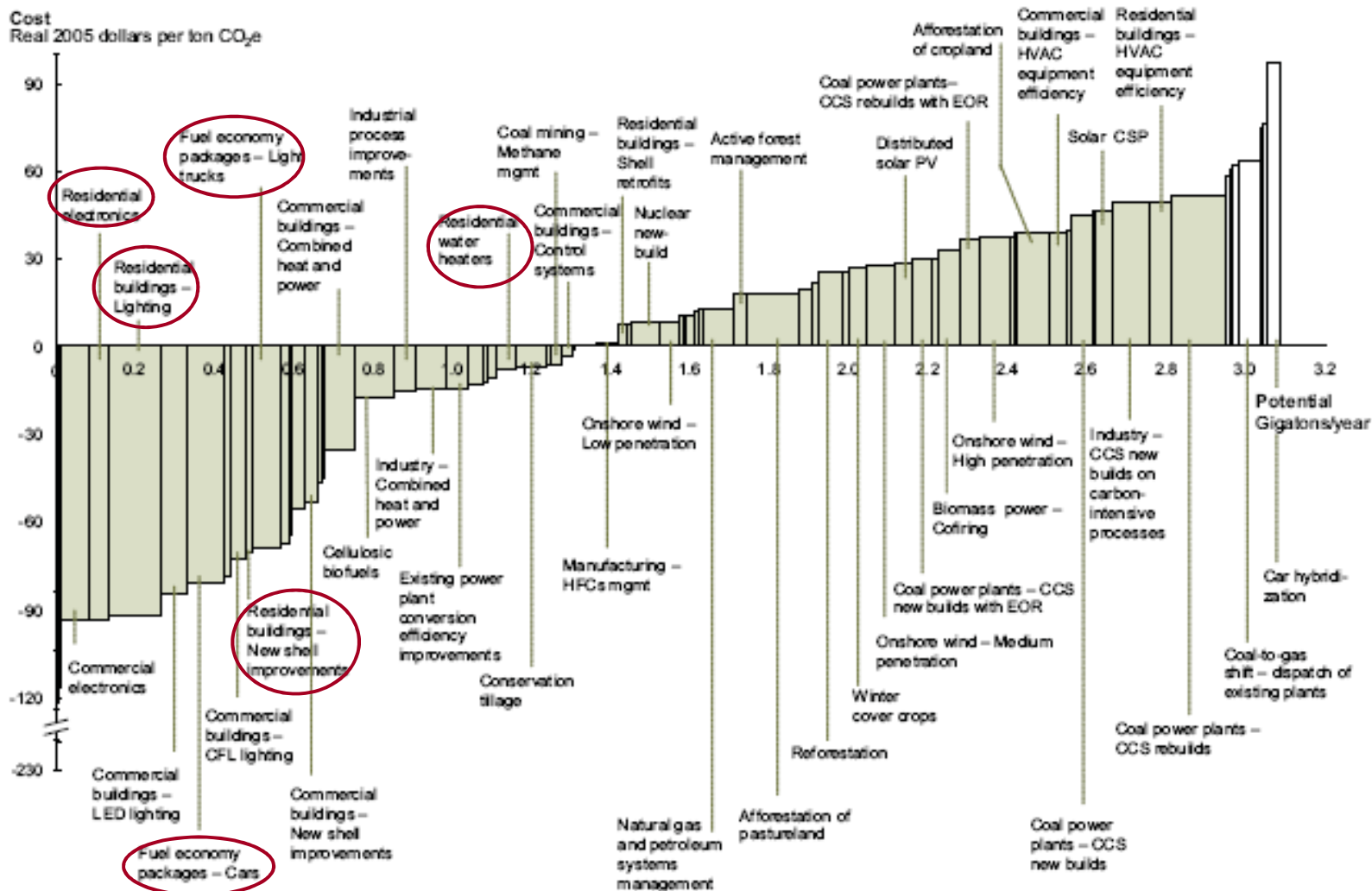




The Problem ↔ The Opportunity

U.S. MID-RANGE ABATEMENT CURVE – 2030

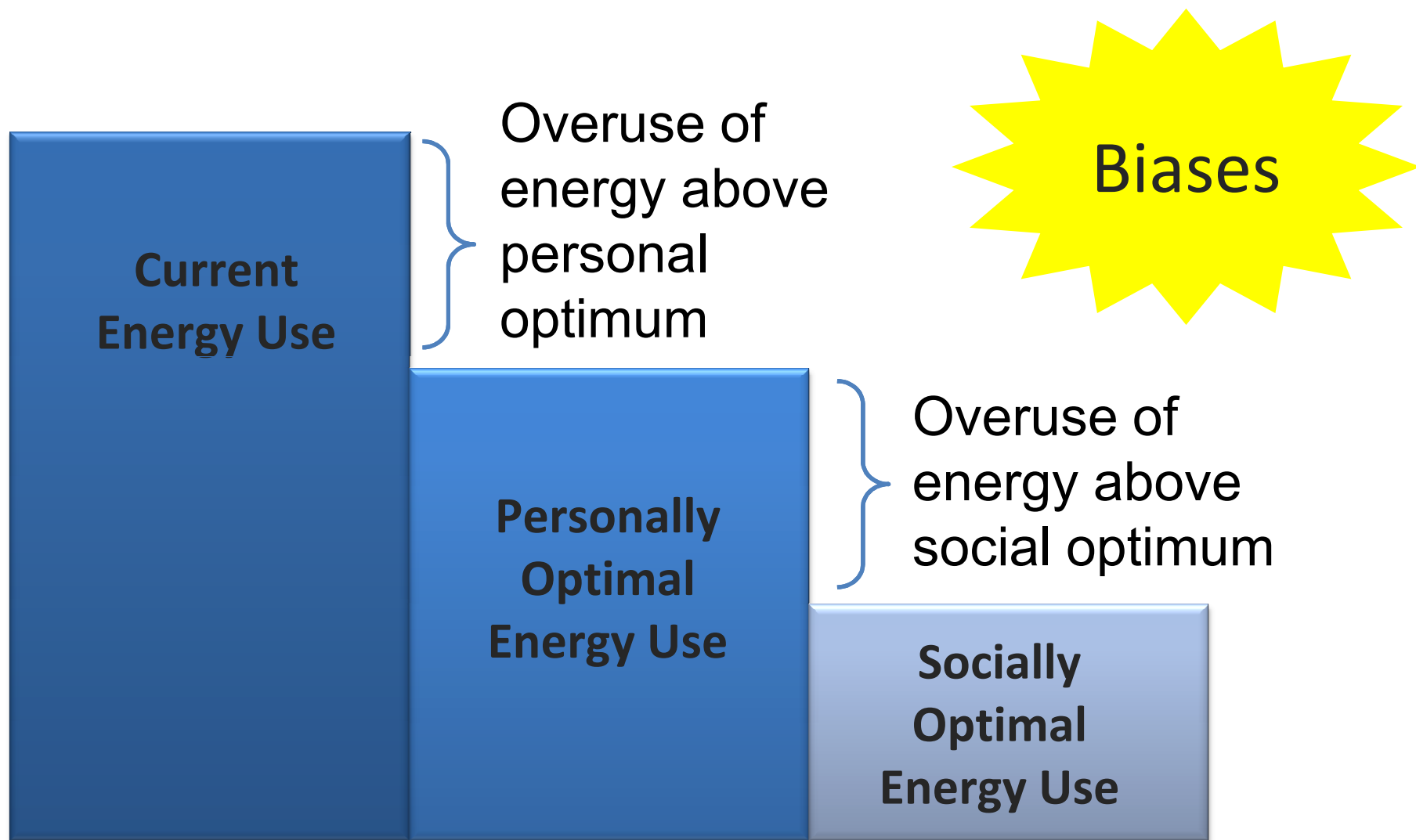
Abatement cost < \$50/ton



Source: McKinsey analysis

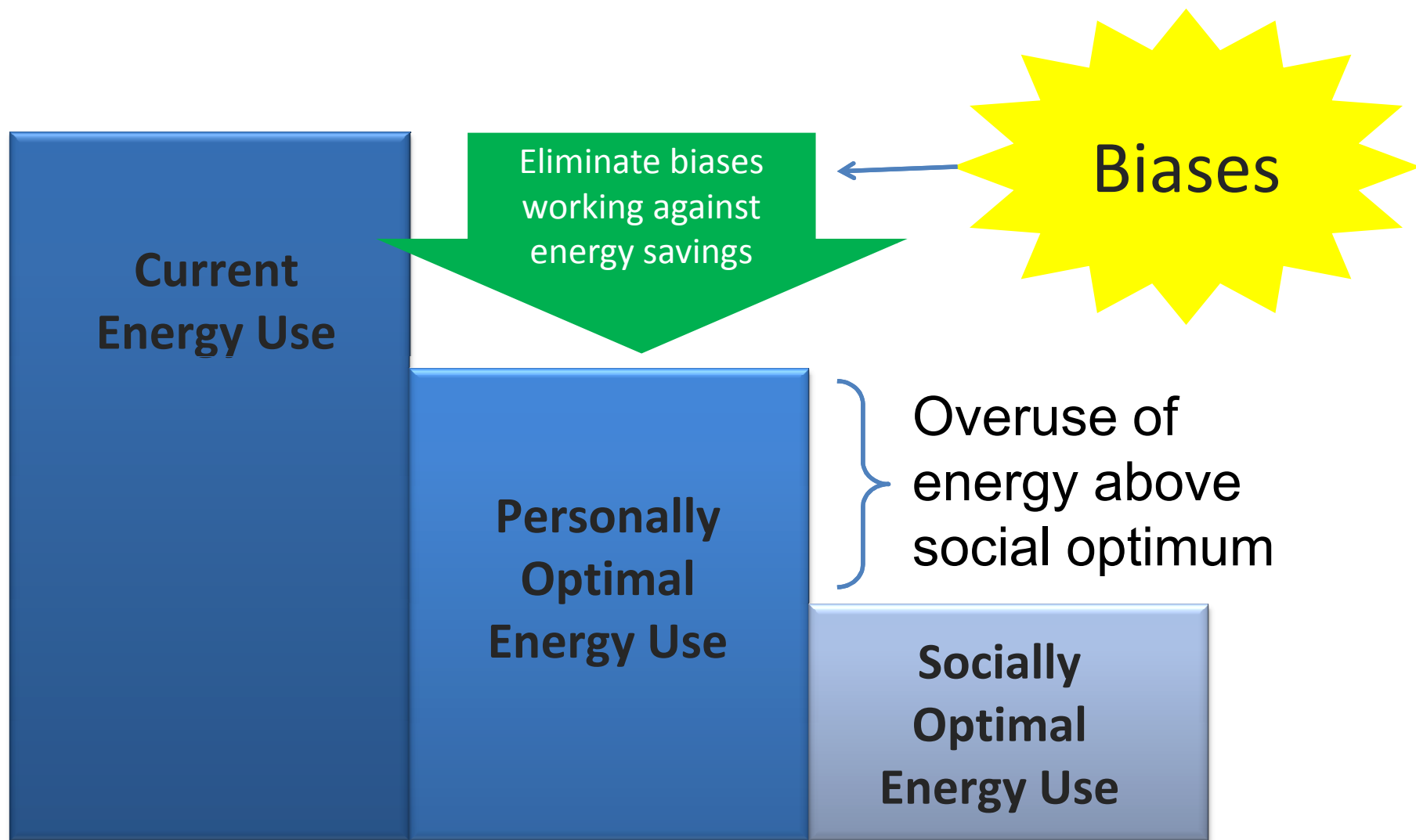


The Problem ↔ The Opportunity



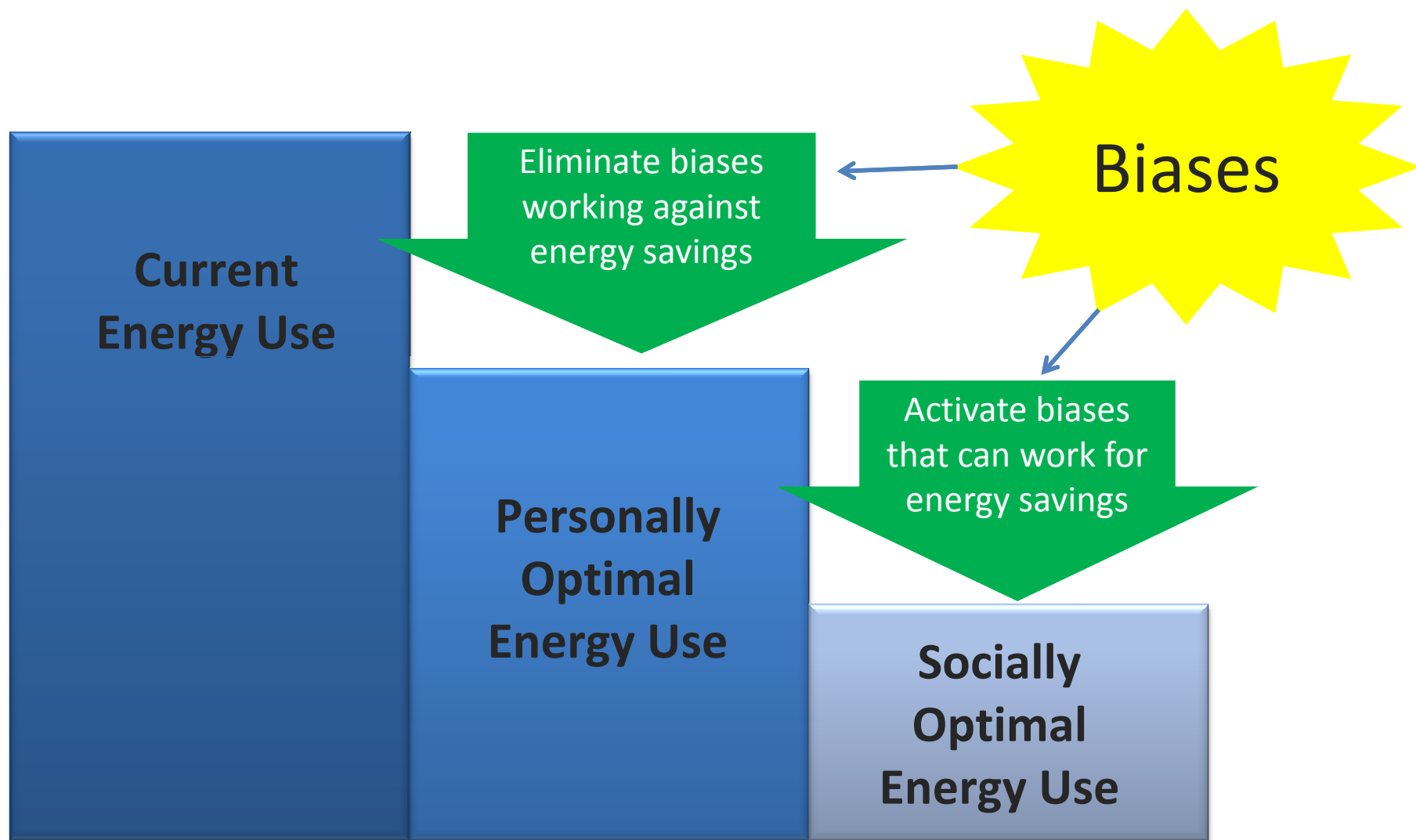


The Problem ↔ The Opportunity





The Problem ↔ The Opportunity





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Methodology

Program implementation & evaluation

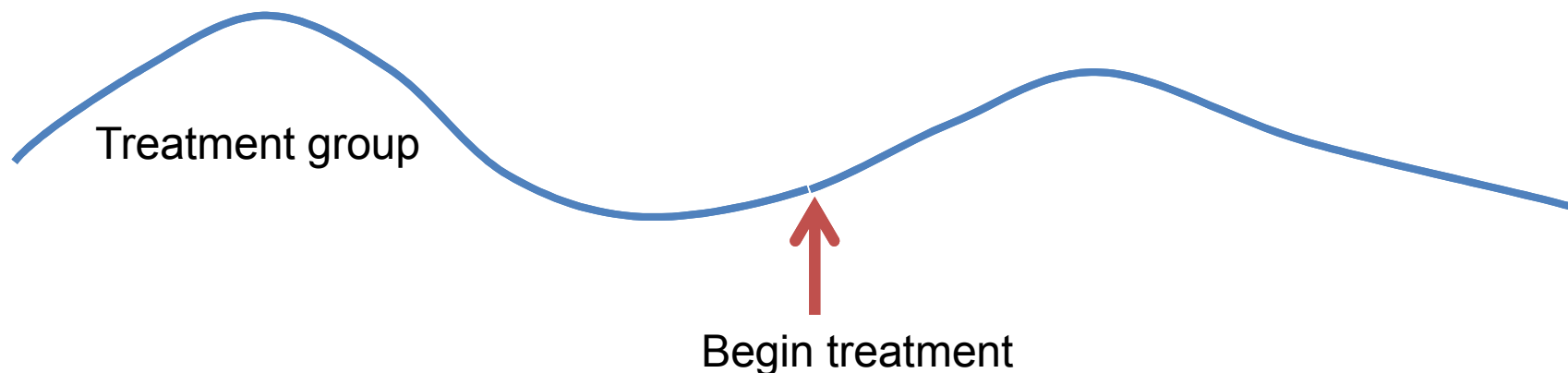
- Randomized Controlled \leftrightarrow Measurable, Attributable
- Cost/Benefit
- Target people and target behaviors



Methodology: Randomized Controlled Study → Quantification

Randomized Controlled Study ↔ Measurable, Attributable

- Control group: best proxy for how the treatment group would have behaved without the program
- If the **only difference** between the treatment group and the control group is the treatment group gets the program and control group doesn't → any difference in energy use must be due to program → Measurable

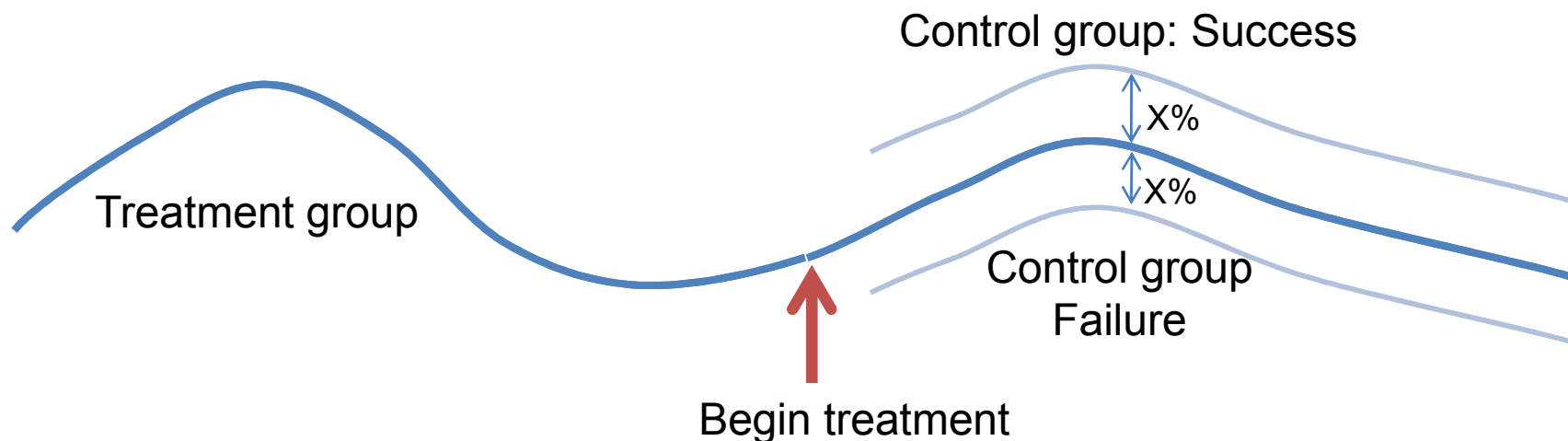




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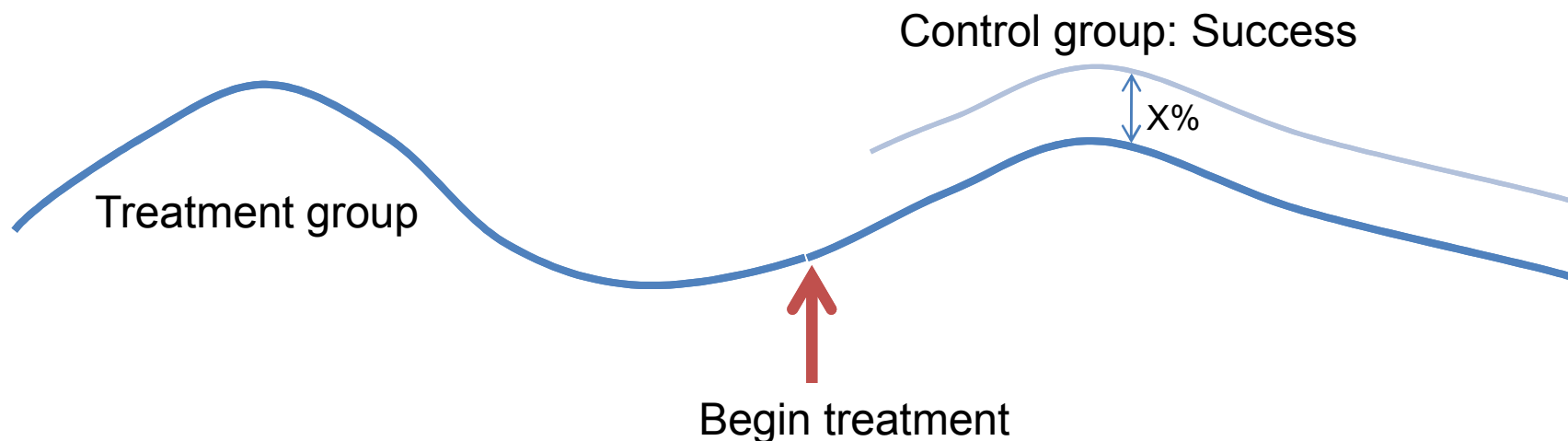




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- Randomize assignment into control group and treatment group
 - Selection Bias: people who opt in are likely to be “green” people who use less energy to start with

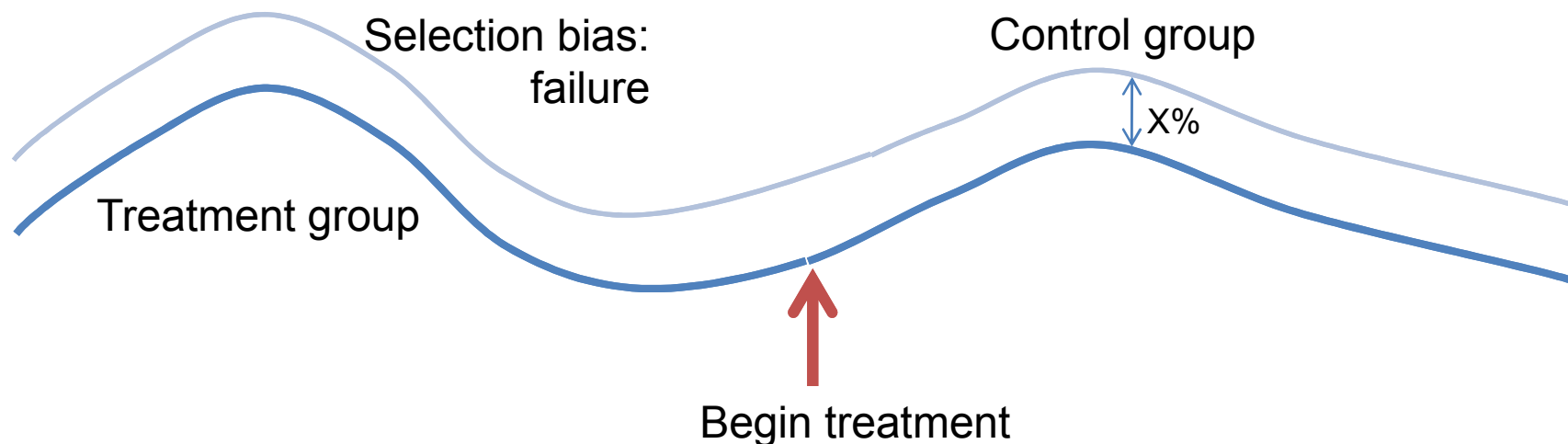




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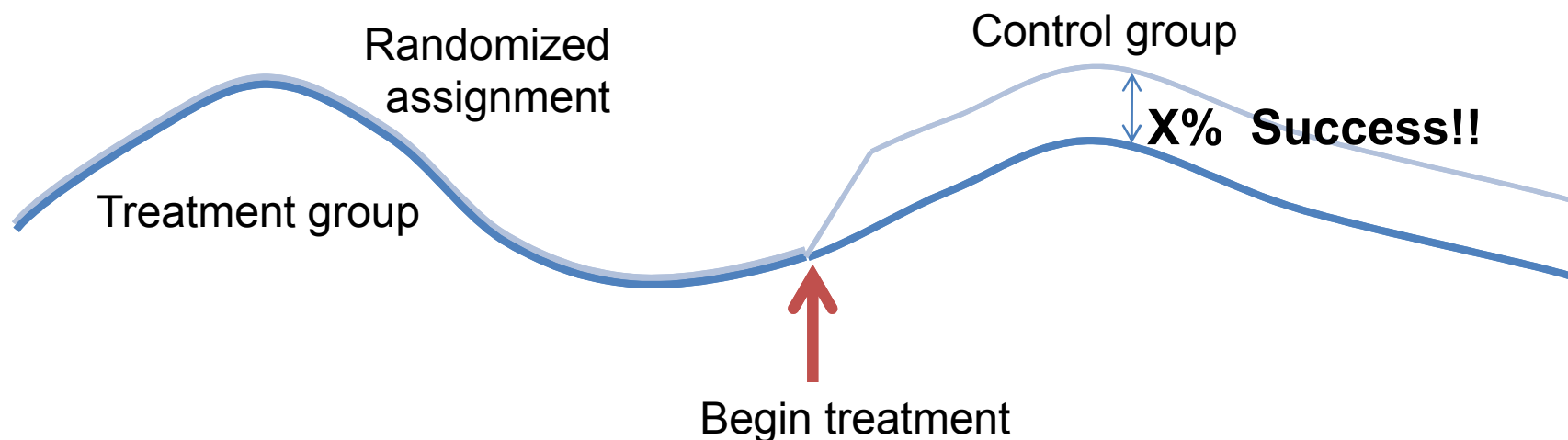




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Methodology: Cost/Benefit Analysis

- It's not what program gets the biggest reduction (door to door)
- Not what is the cheapest (billboards)
- It's what gets the biggest reduction per dollar spent
- Always look for the cheapest kwh savings

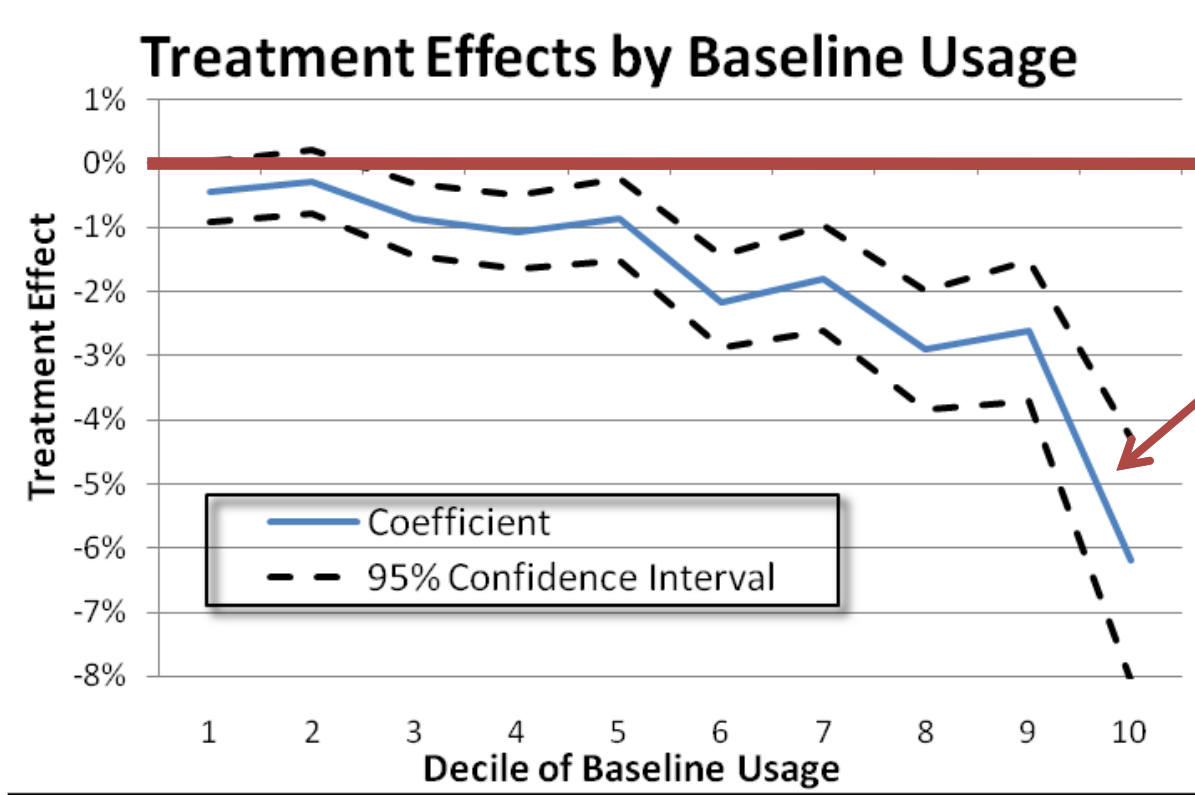


Methodology: Segmentation

Target people: segmentation

- Different messages to different segments
- Example: OPower, high energy consumers

O
P
O
W
E
R



High energy users save the most energy with treatment



Methodology: Examples

- Randomized controlled study, cost/benefit, segmentation
- If you have one more \$, where do you spend it?
- Examples:
 - Peak times (summer months)
 - High potential reductions – high impact (big appliances)
 - High probability of changing behavior (low sacrifice)
 - Persistence (focus on one time behaviors)



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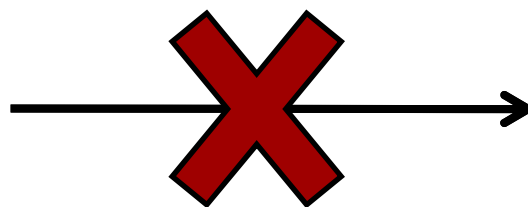
Traditional Economics

- In standard economic theory, people are *rational maximizers*: given incentives and complete information, they make the best possible decision (consume personally optimal amount of energy).
- In that case, giving people information is the only thing that's necessary to change their behavior → down to personally optimal level of energy use
- The only way to get people to reduce down to socially optimal is through taxes (or equivalent incentive change)
- A lot of public service campaigns are based on this belief: provide information, people will change their behavior
- Typically, success is measured by surveys of if people are aware of the message or the information



Information Campaigns Are Not The Solution

Information
&
Awareness



Behavior Change

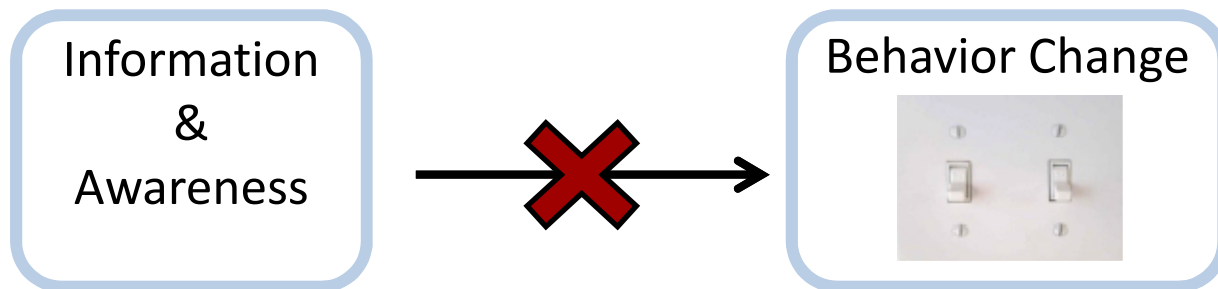


However, this assumption is false in many important situations: information & awareness of “the right thing to do” doesn’t necessarily lead to behavior change!

- Energy
- Addiction
- Saving for retirement
- Welfare take-up by poor
- Voting
- Vaccinations
- Consistent medication
- Optimal loan take-up



Information Campaigns Are Not The Solution



Evidence: hundreds of studies (several environmental)

- Tetanus inoculation, Leventhal, Singer, and Jones (1965)
- Conservation, Ester 1985
- Vining and Ebreo 1990
- Werner and Makela 1998
- Wicker 1969
- Energy, Geller 1981
- Water, Geller, Erickson, and Buttram 1983
- Environmental behavior, Finger 1994
- Litter, Bickman 1972
- Environmental behavior Dietz and Stern 2000
- Environmental behavior, Midden, Meter, Weenig & Zieverink (1983)
- Environmental behavior Jordan, Hungerford, & Tomera (1986)
- Auto emissions Tedeschi, R. G., Cann, A., & Siegfried, W. D. (1982)
- Energy, Archer, D., Pettigrew, T., Costanzo, M., Iritani, B., Walker, I. & White, L. (1987)
- Recycling, De Young, R. (1989)
- McKenzie-Mohr & Smith (1999)
- Stern (2000)
- Oskamp 1995



Information Example 1

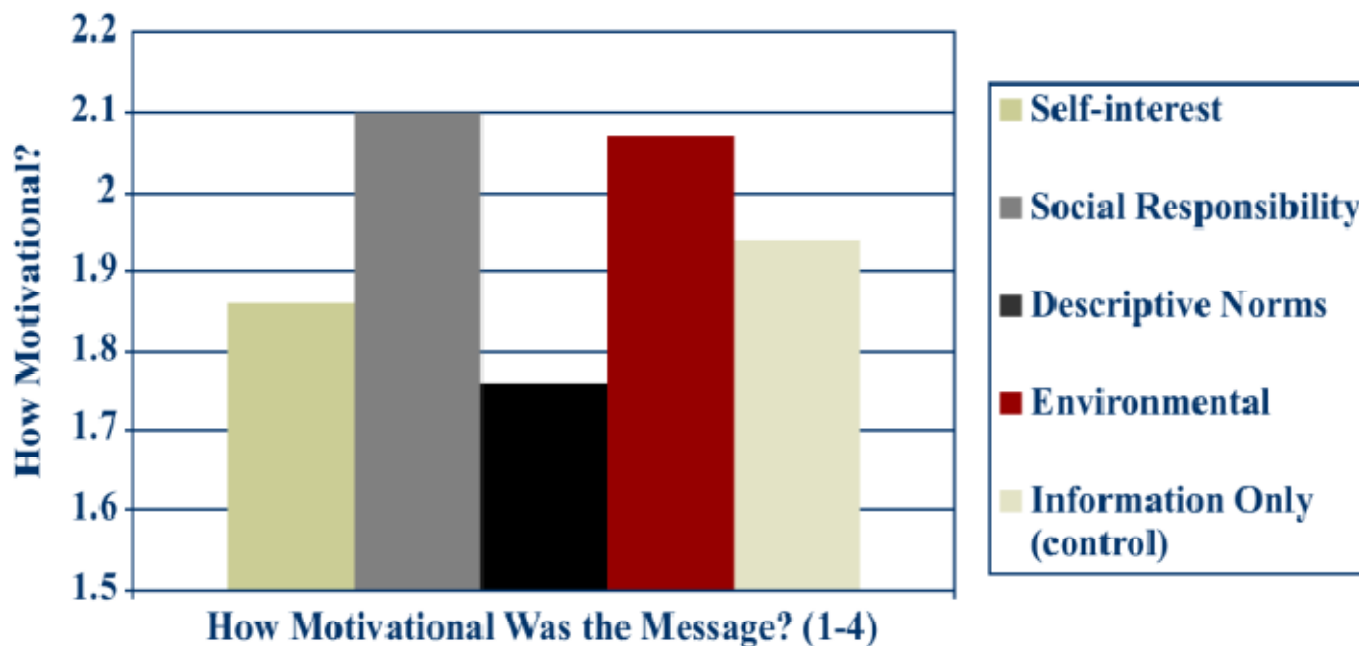
Example: Doorhanger experiment

- Randomized, controlled
- Each household received tips and information plus:
 1. Save money by conserving energy
 2. Protect the environment by conserving energy
 - 3. Join your neighbors in conserving energy**
 4. Do your part to conserve energy for future generations
 5. Conserve energy
- Survey: how motivating was this message?



Information Example 1

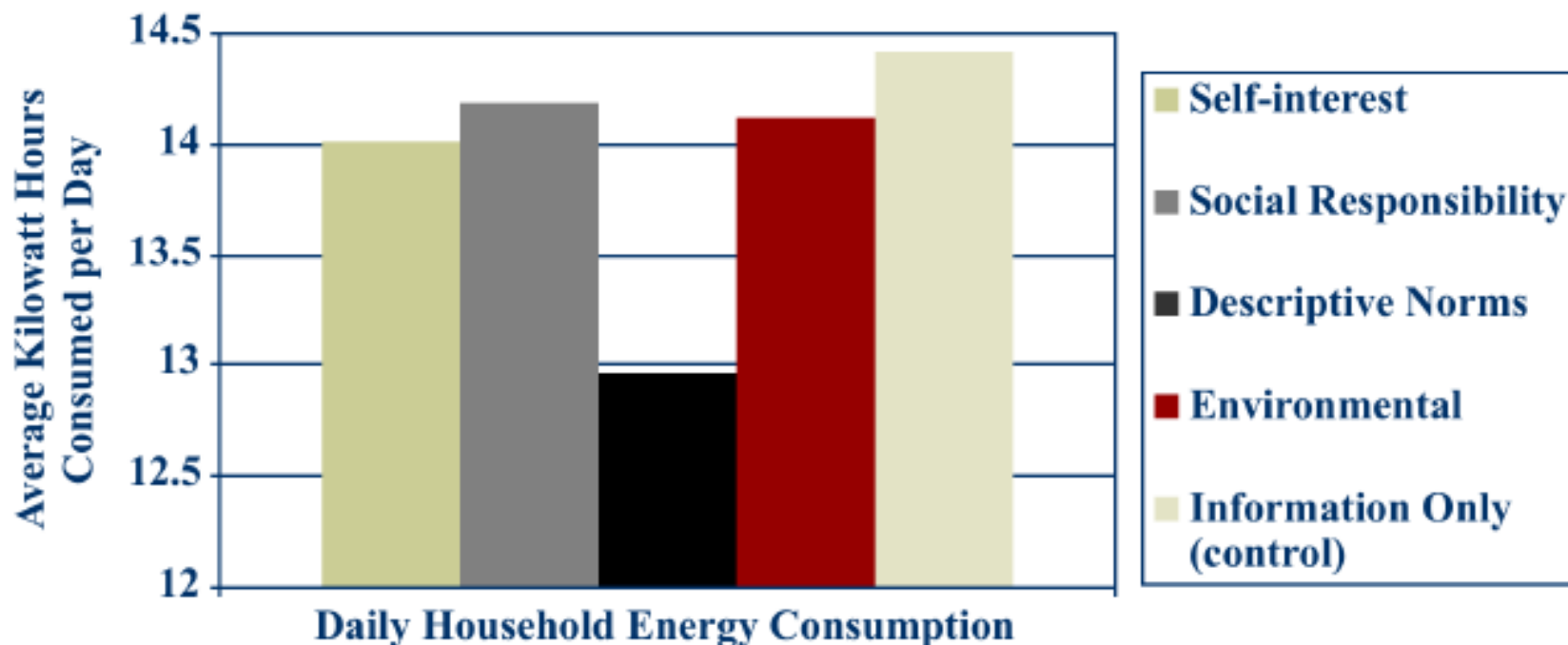
Survey: which is most motivational?





Information Example 1

Actual outcome – energy use:



People can't predict their own behavior: you can't even survey people and ask them what message works the best



Information Example 2

Example: loans in South Africa

- Randomized controlled study
- For males, a picture of a female (vs. a picture of a male) → higher take up, same effect as lowering interest rate by 4.5%
- One choice vs many choices: one choice → increased demand by 9%, same effect as lowering interest rate by 2.3%
- Presentation, not information is what matters





Traditional Economics

Behavioral Economics

Traditional Economics

- Why doesn't information change behavior when it's in people's own economic best interest?
- If traditional economic model doesn't correctly predict behavior, what is the correct framework for understanding how people *actually* make decisions?

→ Behavioral Economics

- Five important biases that behavioral economists have identified that are important for energy decisions
- Incorporate these biases into programs and marketing campaigns to make them more effective



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 - **A framework for how people *actually* make energy decisions**
 - **Five behavioral biases**
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#1: Dynamic Inconsistency

- There is something particularly special about “right now” – instant gratification
- *Continually* delay unpleasant costs until tomorrow in order to have immediate gratification
- Example: My resolution: cook more / eat out less
 - Plan: this week, I will cook three days
 - Monday: not tonight
I’ll do it tomorrow
 - Tuesday: not tonight
I’ll do it tomorrow...





#1: Dynamic Inconsistency

- Example: turning up the thermostat in the summer
- Plan: next month, you'll turn the thermostat up by 3 degrees
- First day of month: not today, tomorrow
- Second day of month, not today tomorrow....



#1: Dynamic Inconsistency

- Example: similar problem is public health campaign to stop smoking
- Future benefit (no cancer), immediate cost
- Try to focus on immediate benefits rather than long term benefits



#1: Dynamic Inconsistency

- Main point: even if people are aware that they should get home weatherization/ replace lights with CFLs / turn down their thermostats, they continually procrastinate.
- Traditional products & marketing campaigns don't have this problem:
 - Traditional products: benefit today, cost in future (in credit card bill or empty checking account at end of month) → instant gratification is to buy now
 - Dynamic inconsistency works in favor of traditional products
 - Energy savings: cost today, benefit in future (in monthly bill or in future generations) → instant gratification is to procrastinate



#2: Social Preferences

- People tend to care about the beliefs and payoffs of other people
- Example: voting
 - Similar to energy - effortful, small personal benefit, hard to motivate people
 - Use social pressure

Dear Registered Voter:

WHAT IF YOUR NEIGHBORS KNEW WHETHER YOU VOTED?

Why do so many people fail to vote? We've been talking about the problem for many years, but it only seems to get worse. This year, we're taking a new approach. We're sending this mailing to you and your neighbors to publicize who does and who does not vote.

The chart shows the names of some of your neighbors, showing whether they voted in the past. After the August 8 election, we intend to mail an updated chart. After that, you and your neighbors will all know who voted and who did not.

DO YOUR CIVIC DUTY — VOTE!

	Aug 04	Nov 04	Aug 05
MAPLE DR			
9995 JOSEPH JAMES SMITH	Voted	Voted	_____
9995 JENNIFER KAY SMITH		Voted	_____
9997 RICHARD B JACKSON		Voted	_____
9999 KATHY MARIE JACKSON		Voted	_____
9999 BRIAN JOSEPH JACKSON		Voted	_____
9991 JENNIFER KAY THOMPSON		Voted	_____



#2: Social Preferences

- Publicize voting record
- Randomized, controlled experiment

Results:

- 8% increase in voter turnout
- As effective as door to door canvassing
- Cost/Benefit: much cheaper!



#2: Social Preferences

Example - Iowa natural gas consumption

- Randomized, controlled experiment
- Control group: conservation tips, plea to reduce energy consumption
- Treatment group: tips and plea + informed that their names and energy consumption would be published in a newspaper
- Treatment group saved more gas - an average of 433 cubic feet of natural gas.



#2: Social Preferences

Example: Recycling Public Service Announcement (PSA) in an Arizona community

- Randomized controlled study
- Control group: No PSA
- Treatment group (four communities): PSAs depicted a scene in which the social norm was recycling – most people were doing it, and most people spoke disparagingly of a single person who didn't recycle.
- Treatment group recycled 25.35% more than control group.



#2: Social Preferences

Many other examples of randomized controlled studies:

- Energy (Nolan, Schultz, Cialdini, Griskevicius, & Goldstein 2008)
- Peer group influences one's decision to participate in 401k plans and the choice of the mutual fund vendor (Duflo & Saez 2002)
- Worker productivity increases if a peer worker is productive (Mas & Moretti 2009)
- Theft from petrified forest reduced by messages that no one else is taking rather than info (Cialdini 2003)
- People litter more if see someone else litter (Reno & Kallgren 1990)
- Guests re-use hotel towels more if given message that others also are (Goldstein, Cialdini, & Griskevicius, 2005)



#2: Social Preferences

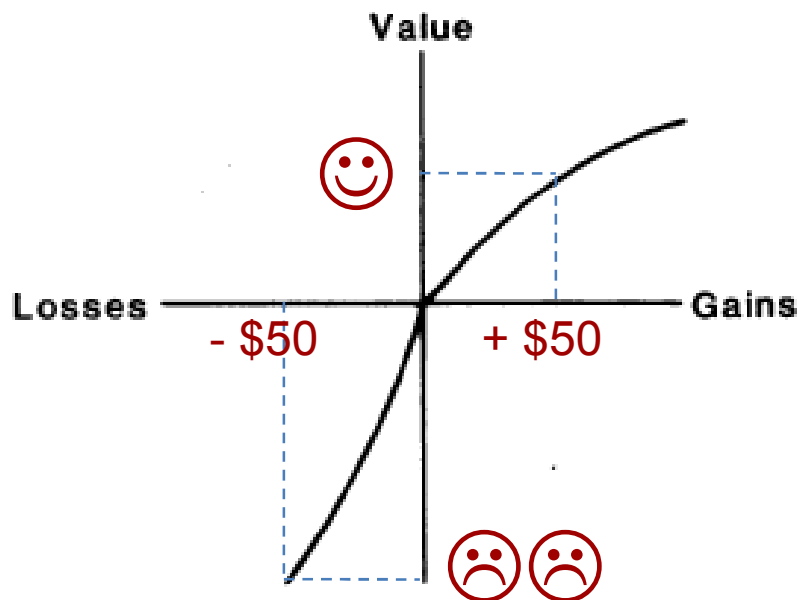
- Main point: people tend to do what other people do, regardless of what information they have, and regardless of that they predict that they will do
- Knowing actions of others, and having your actions known by others, is very motivating



#3: Gain vs. Loss Frames

- Loss aversion:

“The aggravation that one experiences in losing a sum of money appears to be greater than the pleasure associated with gaining the same amount.”
- Kahneman and Tversky, 1979



- Sometimes can frame same situation as gain or loss



#3: Gain vs. Loss Frames

- Example: factory workers in China
 - Randomized controlled field experiment
 - A bonus will be paid in 4 weeks
 - Loss Frame: \$100 Bonus, but for every week that production is low, bonus is reduced by \$20.
 - Gain Frame: \$20 Bonus, but for every week that production is high, bonus is increased by \$20.
 - Same incentive structure, different frame
 - Higher productivity with loss frame



#3: Gain vs. Loss Frames

Example: similar problem – get women to obtain a mammogram

- Randomized controlled study
- Gain frame: Video on “The Benefits of Mammography”
- Loss frame: Video on “The Risks of Neglecting Mammography”
- 12 months later, 14.7% more women who saw the loss-framed video obtained a mammogram



#3: Gain vs. Loss Frames

- Main point: a loss frame is likely to be more motivating than a gain frame
- Example: Energy PSA
 - If you replace your old fridge, you will save \$100 per year
 - If you don't replace your old fridge, you will waste \$100 per year
 - No cost, high effect



#4: Bounded Rationality

- Cognitive limits → hard to solve complex problems
- Too much information is overwhelming , and can de-motivate decision making
- Example: choice overload
- 6 jams to taste: 12% bought jam





#4: Bounded Rationality

- Cognitive limits → hard to solve complex problems
- Too much information is overwhelming, and can de-motivate decision making
- Example: choice overload
- 6 jams to taste: 12% bought jam
- 24 jams to taste: 2% bought jam
- Overwhelmed by decision → make no decision (don't buy)





#4: Bounded Rationality

- One choice vs many choices of loans: one choice → increased demand by 9%, same effect as lowering interest rate by 2.3% (Bertrand, Karlan, Mullainathan, Shafir & Zinman 2005)
- Retirement savings: as number of 401k fund options decreases, participation increases (Iyengar, Jiang, and Huberman 2004)
- Expert physicians were more likely to decline prescribing a new osteoarthritis medication when they had to choose between two new medications than when only one new medication was available (Redelmeier and Shafir, 1995).



#4: Bounded Rationality

EPA for Concerned Citizens

[Share](#)

Protect the Environment

Take action - United We Serve - Learn more about programs that offer volunteer opportunities to protect the environment.

Learn about Your Right to Know - Right-to-know laws provide information about possible chemical exposures. Discover resources EPA provides the public in the spirit of right-to-know.

Search for and Comment on Regulations - Our proposed regulations are almost always open to the public for comment. Your participation leads to better regulations.

At Home and in the Garden - Tips for home safety, avoiding potential risks, and preventing pollution by recycling and conserving water and energy

At Work - Information about preventing pollution in your workplace, and raising awareness of health and safety issues.

At School - Whether you are a student or a teacher in a class about the environment, EPA has lots of educational resources to offer you.

While Shopping - Find helpful information on how to choose makes and models that will reduce pollution, save energy and money.

In Your Community - Learn how to protect your neighborhood's natural resources, and get information on air and water quality in your community. [Search your ZIP code area](#) for information about facilities, emissions, and more.

On the Road - Consumer information about the environmental impacts of transportation plus tips on cleaner cars, saving gas and improving mileage, boating pollution prevention tips, and more.

Think Globally - Learn about environmental issues that impact our world.

Act Locally - Learn about programs, opportunities, and tools to help you get involved and make a difference in your community.

Report a Violation or Emergency - Information on potential environmental violations and how to report a suspicious situation. To report oil and chemical spills, call the National Response Center at 1-800-424-8802. [Information on natural disasters](#)

Information by Audience

- **Businesses and Non-Profits**
- **Concerned Citizens**
- **Media**
- **Partners**
- **Scientists and Researchers**
- **Students and Educators**
- **State and Local Governments**
- **Tribes**

Question of the Week

What would you like us to ask as question of the week?

[Share your thoughts](#)



Environmental Tip of the Day

Leaky faucets can waste thousands of gallons of water each year, like money down the drain. Repair or replace old or damaged fixtures.

[Fix that leak!](#)
[More tips you can use](#)
[Play audio podcast](#)



#4: Bounded Rationality

Saving Energy

Energy Star products for your home - Choosing energy-efficient products can save families about 30% (\$400 a year) while reducing our emissions of greenhouse gases. Whether you are looking to replace old appliances, remodel, or buy a new house, you can help. Energy Star is the government's backed symbol for energy efficiency. The Energy Star label makes it easy to know which products to buy without sacrificing features, style or comfort that today's consumers expect.

Here are some steps you can take:

- Turn off appliances and lights when you leave the room.
- Use the microwave to cook small meals. (It uses less power than an oven.)
- Purchase "green power" for your home's electricity. (Contact your power supplier to see where and if it is available.)
- Have leaky air conditioning and refrigeration systems repaired.
- Cut back on air conditioning and heating use if you can.
- Insulate your home, water heater and pipes.

1 of 10 pages

Reducing Air Pollution and Greenhouse Gas Emissions

Addressing air pollution in your home - The choices you make at home affect the amount of pollution outside your home as well as inside. Learn what you can do to pollute less and all the while save some money.

Climate change: what you can do at home and in the garden - Making a few small changes in your home and yard can lead to big reductions of greenhouse gas emissions and save money.

1 of 10 pages

Conserving Water

Choose water-efficient products and test your WaterSense - A family of four uses 400 gallons of water every day. EPA's WaterSense program helps conserve water for future generations by providing information on products and programs that save water without sacrificing performance.

Here are some steps you can take:

- Don't let the water run while shaving or brushing teeth.
 - Take short showers instead of tub baths.
 - Keep drinking water in the refrigerator instead of letting the faucet run until the water is cool.
 - Scrape, rather than rinse, dishes before loading into the dishwasher, wash only full loads.
 - Wash only full loads of laundry or use the appropriate water level or load size selection on the washing machine.
 - Buy high-efficient plumbing fixtures & appliances.
 - Repair all leaks (a leaky toilet can waste 200 gallons a day).
 - Water the lawn or garden during the coolest part of the day (early morning is best).
 - Water plants differently according to what they need. Check with your local extension service or nurseries for advice.
 - Set sprinklers to water the lawn or garden only - not the street or sidewalk.
 - Use soaker hoses or trickle irrigation systems for trees and shrubs.
 - Keep your yard healthy - dethatch, use mulch, etc.
 - Sweep outside instead of using a hose.
 - Landscape using "rain garden" techniques to save water and reduce stormwater runoff.
- Video: "Reduce Runoff: Slow It Down, Spread It Out, Soak It In"**

1 of 10 pages

- **Reduce:**
 - Buy permanent items instead of disposables.
 - Buy and use only what you need.
 - Buy products with less packaging.
 - Buy products that use less toxic chemicals.
- **Reuse:**
 - Repair items as much as possible.
 - Use durable coffee mugs.
 - Use cloth napkins or towels.
 - Clean out juice bottles and use them for water.
 - Use empty jars to hold leftover food.
 - Reuse boxes.
 - Purchase refillable pens and pencils.
 - Participate in a paint collection and reuse program.
 - Donate extras to people you know or to charity instead of throwing them away.
- **Recycle:**
 - Recycle paper (printer paper, newspapers, mail, etc.), plastic, glass bottles, cardboard, and aluminum cans. If your community doesn't collect at the curb, take them to a collection center.
 - **Recycle electronics.**
 - **Recycle used motor oil.**
 - Compost food scraps, grass and other yard clippings, and dead plants.
 - Close the loop - **buy recycled products and products that use recycled packaging.** That's what makes recycling economically possible.

Learn more:

Reducing and recycling wastes, including syringes and other medical wastes, and used oil.

Recycling and disposing of hazardous materials properly - Find out how to recycle compact fluorescent bulbs, pesticides, and other common household wastes that contain hazardous materials.

1 of 10 pages

Ensuring Safe Drinking Water

Actions You Can Take to Reduce Lead in Drinking Water - This publication offers information and solutions to many common questions surrounding lead in your drinking water.

Cleaner Water through Conservation - Explains the relationship between the quantity of water and its quality and discusses how developing water-use efficiency programs can help states and local communities achieve cleaner water through conserving water.

Drinking Water - The home page for the Office of Ground Water and Drinking Water.

Drinking Water and Health: What you need to know - This EPA publication (EPA 816K-89-001) answers many basic questions about drinking water systems.

Drinking Water Contaminants - EPA sets standards for approximately 90 contaminants in drinking water. This Web site contains more detailed information on specific contaminants.

Local Drinking Water Information - This page gives consumers an easy way to find information about their drinking water supplier, their sources of drinking water, and what their state drinking water program is doing.

Private Drinking Water Wells - Learn how to test and protect your private well water.

Water on Tap - How safe is my drinking water? Where does my drinking water come from, and how does it get to my home? What can I do to help protect my drinking water? This publication examines these questions and offers information on protecting your drinking water.

Buying and Maintaining an Environmentally Friendly House

Energy Efficient Homes and Heating and Cooling Systems - This resource discusses home products such as air conditioners, furnaces, and thermostats, and illustrates the savings for homeowners who buy Energy Star products.

Home Buyer's and Seller's Guide to Radon - This Guide answers important questions about radon and lung cancer risk. It also answers questions about testing and fixing radon hazards for anyone buying or selling a home.

How to Buy an Energy Efficient Home - This document describes the Energy Star Homes Program and how you can reduce pollution by saving energy.

Residential Energy Efficiency - This program shows effective ways to reduce home energy consumption and allows users to calculate how much they will save by making their homes more energy efficient.

EPA's Clean Energy Site - Clean energy is energy derived from highly efficient, clean technologies, including renewable, "green" power, and combined heat and power. The EPA's Clean Energy Programs are designed to improve the national foundation of information on Clean Energy. Creating networks between the public and private sector, providing technical assistance, and recognition of environmental leaders that adopt Clean Energy practices.

1 of 10 pages

Lawn and Garden Care

Lawn and Garden and Tips for a Waste-Free Lawn and Garden - Learn about many things you can do to reduce waste and conserve resources from caring for your lawn and garden equipment greening.

Your Yard and Clean Air - This document provides tips on how you can prevent pollution in your own backyard by adopting practices that will help protect the environment now and in the future.

Green Landscaping with Native Plants - This site provides a wizard that answers commonly asked questions about landscaping with native wild flowers and grasses in the Great Lakes region.

The Hidden Hazards of Backyard Burning (PDF) (2 pp. 272K, About PDF) - This EPA publication (EPA 530-F-03-012) informs citizens of the health hazards of burning household waste, burn barrels and open piles and providing alternatives to burning.

Natural Landscaping - Online publication explaining natural landscaping ideas.

Greenscaping - EPA's GreenScapes Program can show you how to reduce the environmental impacts of landscaping your lawn and property by grasscycling, mulching, and composting.

Composting - Discusses what composting is, what compost can be used for, and other related topics.

Compost Yard Trimmings and Some Food Scraps - Food scraps and yard trimmings can be turned into natural additives for lawns and gardens, and can significantly reduce the amount of waste that goes in a landfill.

The Natural Landscaping Alternative: An Annotated Slide Collection - Native plants provide beautiful, hardy, drought resistant, low maintenance landscape while benefiting the environment. This Annotated Slide Collection contains fifty slides selected for their ability to define natural landscaping and explain its benefits, to illustrate applications of natural landscaping, and to demonstrate installation and management techniques.

1 of 10 pages



#5: Small Rewards

- Different types of motivation: money, altruistic, fun.....
- Not additive: small monetary rewards can “crowd out” internal motivation
- Offering people a small amount of money can actually *reduce* their effort
- Example: Volunteer work collecting donations door to door (randomized controlled)
 - Group 1: volunteers not paid for their effort (internal motivation)
 - Group 2: pay volunteers 1% of the total amount collected (internal motivation + small external motivation)
 - Group 2 collected 35% *less*



#5: Small Rewards

- Example: energy use
 - Many energy decisions involve extremely small monetary rewards
 - Example:



Reward: 1 cent





#5: Small Rewards

- It's hard to get people to care about the monetary rewards of saving energy
- Don't focus on the small monetary savings



Recap

- Implement randomized, controlled studies
- Information and awareness don't equal behavior change
- Try to focus on immediate rewards
- Appeal to social comparisons, social norms
- Simple information (too many choices)
- Frame as losses rather than gains
- Avoid emphasizing small monetary gains



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- **Stanford's programs**



Project 1: Smart Incentives

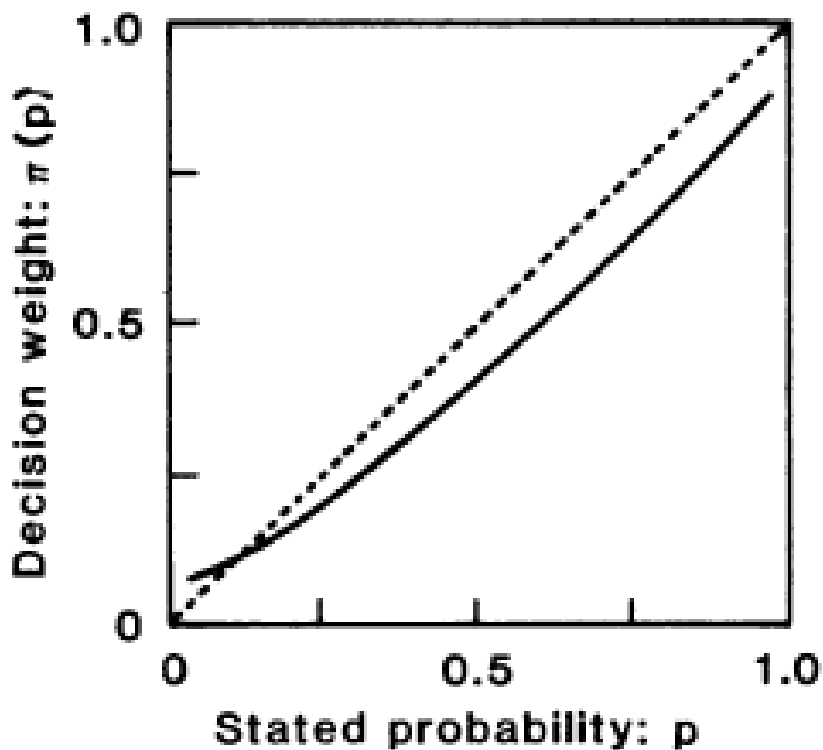
What incentive structure is the most motivating for energy reduction?

- Use creative and novel incentive mechanisms that incorporate behavioral tendencies
- Goal: motivate households to find ways to reduce energy consumption



Project 1: Smart Incentives

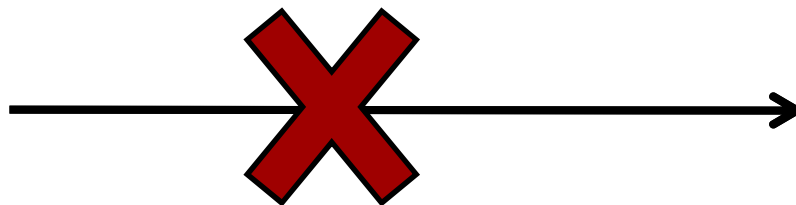
- People tend to overestimate small probabilities





Project 1: Smart Incentives

Turn off
lights



Small rewards are
not motivating

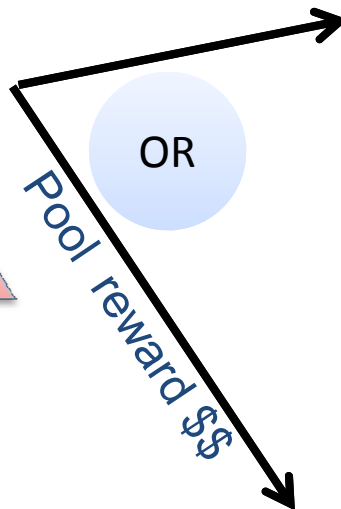
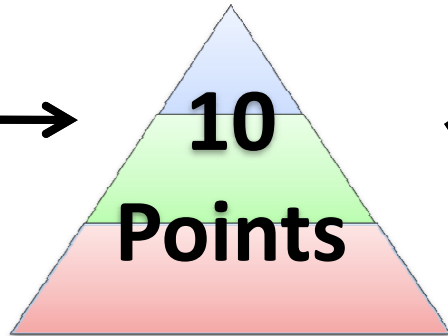
Fixed Reward: 1 cent





Project 1: Smart Incentives

Turn off
lights



Fixed Reward: 1 cent



Same cost in
expected value

Random Reward: 1 in 100,000 chance at \$1000





Project 1: Smart Incentives

The image shows a screenshot of a Facebook group page. At the top, the Facebook logo and navigation links (Home, Profile, Account) are visible. A search bar is present. On the left, there is a sidebar with group management options: Message All Members, Promote Group with a..., Edit Group Settings, Edit Members, Invite People to Join, Create Group Event, and Leave Group. Below this is a text box for writing about the group. The main content area features a large white callout box containing two posts:

- Alan Timber** Just installed CFLs in all my lights...my GreenScore is now 86%!
April 10, 2010 at 1:14pm [Delete](#)
- Sarah Lake** Nice! Which brand of CFLs did you get?
April 10, 2010 at 1:14pm [Delete](#)

Below the callout box, there are other posts and a sidebar on the right. One post by **Anna Abigail** is visible, dated December 12, 2009. The right sidebar includes a 'Gaming' section and an event for 'San Francisco May 6-7, 2010' with a logo of a stylized 'S' and 'F'.



Project 1: Smart Incentives

Options

- Allow users to form groups, win \$\$ as a group, compete against other groups or teams (use social preferences)
- Use pooled money for community project instead of random reward
- Reduce peak consumption: bonus points for reducing energy at specific times



Project 1: Smart Incentives

Similar concept in medical domain:

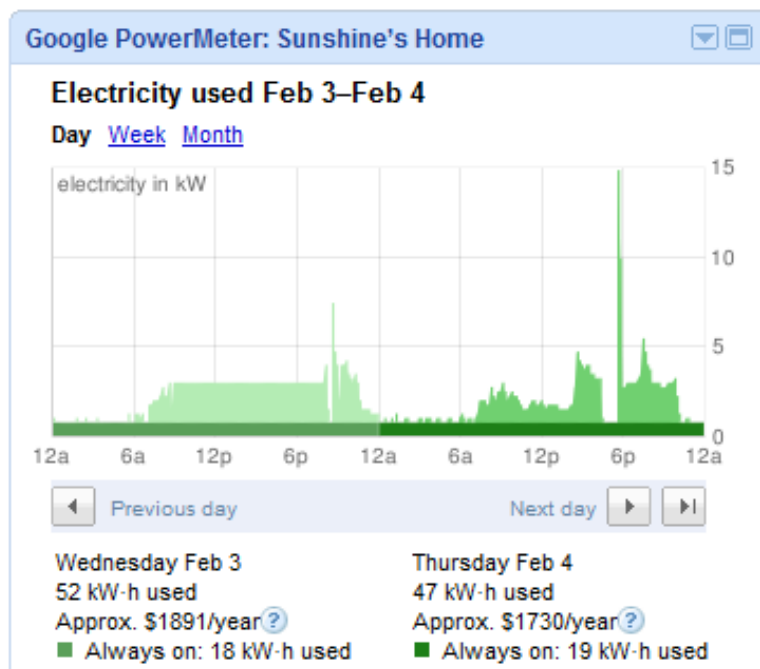
- Ensuring compliance (make sure people take medication on time)
- Want to avoid ER visits
- Example: in Philadelphia, wafarin (anti-blood clot medication)
- Computerized pillbox: can win \$10 or \$100 each day



Project 2: Information Display

How do different presentations of energy information affect people's behavior?

- Question 1: Does instant feedback motivate energy savings?
- Randomized controlled experiment to test effectiveness of Google's PowerMeter





Project 2: Information Display

- Question 2: What other information should be displayed?
- Add information to activate tendencies:
 - Activate social tendencies



- Gain vs. loss frame
- Avoid overwhelming people with information
- What and how much information is most motivating?



Project 3: Message Framing

How does the framing of messages motivate people's energy behavior?

- Low cost changes, one word vs. another
- Field experiment: which frames work, which work best
- Randomize the message people receive
- Focus on durable goods (appliances)



Project 3: Message Framing

- Gain – Loss Frame:
“You are losing money by not replacing your fridge”
- Social Preferences:
“Your refrigerator uses 26% more energy than your neighbors’ refrigerators”
- Focus on internal motivation (not small rewards):
“Reduce your energy waste – replace your old fridge”



Many other projects

- Massive Multiplayer Online Game



- Community based social marketing
- Goal setting
- Voluntary market





Behavior, Energy & Climate Change Conference (BECC)

- www.beccConference.org
- Nov 14-17 in Sacramento, CA
- The focus: practical applications of social and behavioral research to achieve viable solutions to energy/climate challenges
- People: senior-level policymakers, social scientists, program implementers, media, energy experts



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