Public misperceptions and effective behaviors

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Overview

Understand how people interact with technology and nature

Perceptions of energy consumption
- Most effective behavior?
- Accuracy of perceptions?
- Factors that predict accuracy?
  (Attari et al., 2010)

Ease of adopting effective behaviors
  (Attari et al., 2011)

What I want to do vs. what you should do
  (Attari et al., Working paper, Talk tomorrow @ 1:45pm)
Behaviors deemed “most effective” by participants

<table>
<thead>
<tr>
<th>Behaviors</th>
<th>Percentage of participants</th>
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<td>19.6</td>
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<td>Drive less / Bike / Use public transportation</td>
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<tr>
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Actual vs. Perceived Energy Consumption

Perceived Energy Used or Saved (Wh)

Actual Energy Used or Saved (Wh)
Actual vs. Perceived Energy Consumption

(Attari et al., 2010)
Laptops overestimated 2x

(Attari et al., 2010)
Dishwashers underestimated 800x (Attari et al., 2010)
Actual vs. Perceived Energy Consumption

(Attari et al., 2010)
Generally non-significant parameters:
Climate change attitudes, uses more energy than average, owns car, owns home, political views, gender, age, income, and education

Predictors of accurate perceptions of energy consumption:
- Numeracy
- Pro-environmental attitudes

Accurate perceptions are positively influenced by numeracy and pro-environmental attitudes, and negatively influenced by environmental behaviors.
So...what are the most effective behaviors?

The Short List (Gardner and Stern, 2008)

The Behavioral Wedge (Dietz et al., 2009)
Ease of energy-saving behaviors

- Summer thermostat
- Watch 25% less TV
- Fridge setting
- Line dry clothes
- Efficient washer
- Insulated windows
- Efficient heating unit
- 2 bulbs to 75-watt
- 85% to CFLs
- Tune car
- Cut highway speed
- Winter thermostat
- Washer setting

Actual percentage of energy saved ("Short List")

Ease or difficulty of energy-saving behaviors

Extremely easy
Neither easy nor difficult
Extremely difficult

(Attari et al., 2011)
Ease of energy-saving behaviors

(Tune car)

Buy a more fuel efficient car

Carpool to work

Insulated windows

Line dry clothes

TV

2 bulbs to 75-watt

Winter thermostat

Washer setting

Fridge setting

Summer thermostat

Efficient heating unit

Cut highway speed

Watch 25% less TV

Efficient washer

(Attari et al., 2011)
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(Attari et al., 2011)
Findings:
“In your opinion, what is the most effective thing that you could do to conserve energy in your life?”

- Participants state:
  55% “curtailment”
  12% “efficiency”

Gardener and Stern (2008): “efficiency saves more energy than curtailment”
Findings:
Major misperceptions in energy consumption

- People have small overestimates for low-energy behaviors and large underestimates for high-energy behaviors

⇒ many implications for technology, education, and policy
Findings:
Predictors of perceptions

- Participants who are numerate and pro-environmental $\Rightarrow$ accurate perceptions

- Participants who engage in environmental behaviors $\Rightarrow$ inaccurate perceptions
Possible reason: focusing effect
Findings: 
Ease of behavior adoption

- Most participants found the 15 ‘short list’ behaviors relatively easy to do
- Should focus on behaviors that are easier than others and also save the most energy
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