

[What, why, and which experiments?],
[Moving beyond simple experiments], [Making it happen],
[Zero variable cost data and MusicLab], [3 Rs]

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- 1) Introduction
- 2) Observing behavior
- 3) Asking questions
- 4) Running experiments
- 5) Mass collaboration
- 6) Ethics
- 7) The future

Optimization experiments vs Understanding experiments

Optimization experiments + Understanding experiments

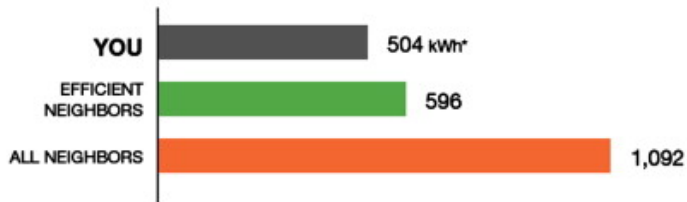
The Constructive, Destructive, and Reconstructive Power of Social Norms

P. Wesley Schultz,¹ Jessica M. Nolan,² Robert B. Cialdini,³ Noah J. Goldstein,³ and Vidas Griskevicius³

<http://dx.doi.org/10.1111/j.1467-9280.2007.01917.x>

Last Month Neighborhood Comparison

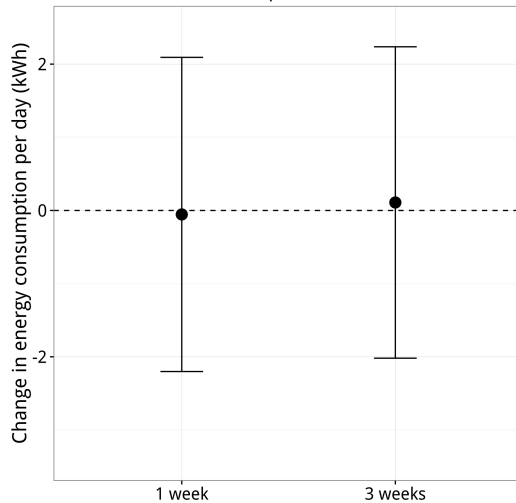
Last month you used **15% LESS** electricity than your efficient neighbors.

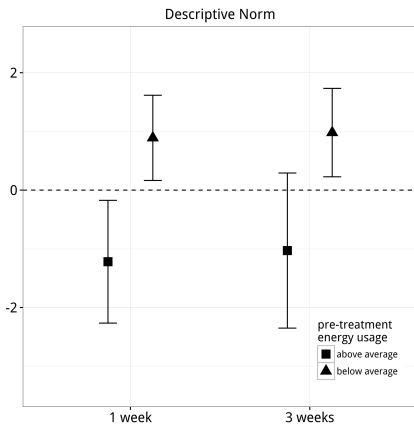
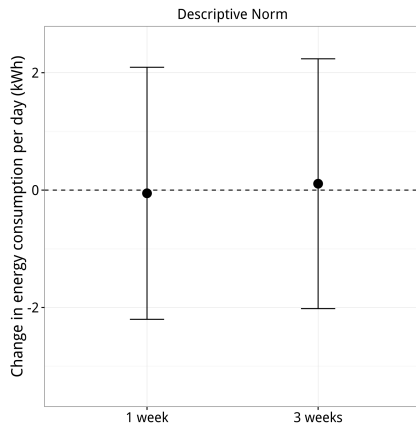


* kWh: A 100-Watt bulb burning for 10 hours uses 1 kilowatt-hour.

Figures from Allcott (2011)

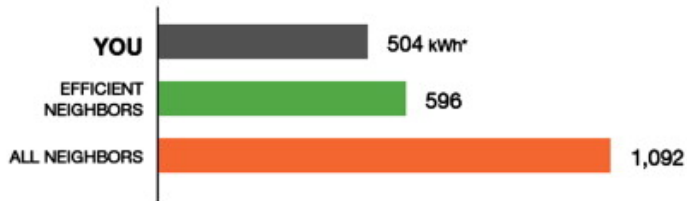
Descriptive Norm





Last Month Neighborhood Comparison

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* kWh: A 100-Watt bulb burning for 10 hours uses 1 kilowatt-hour.

YOUR EFFICIENCY STANDING:



GREAT 😊😊

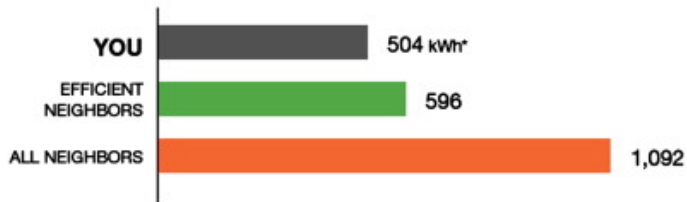
GOOD 😊

BELOW AVERAGE

Figures from Allcott (2011)

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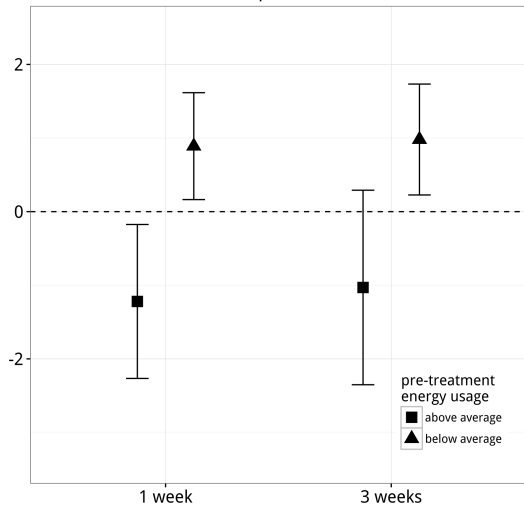
* kWh: A 100-Watt bulb burning for 10 hours uses 1 kilowatt-hour.

YOUR EFFICIENCY STANDING:

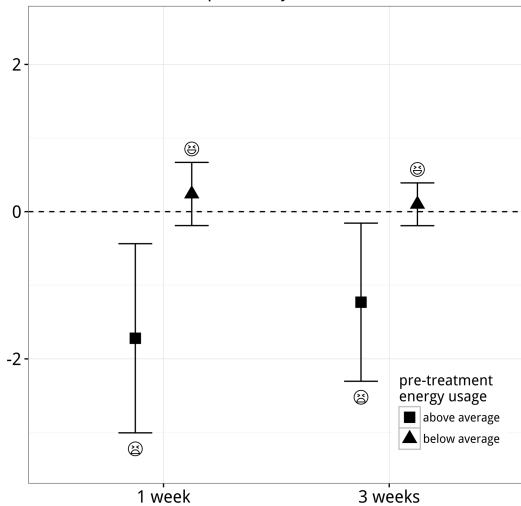


Figures from Allcott (2011)

Descriptive Norm



Descriptive + Injunctive Norm



If you want to move beyond simple experiments:

- ▶ Validity
- ▶ Heterogeneity of treatment effects
- ▶ Mechanisms

Validity

Validity

- ▶ statistical conclusion validity
- ▶ internal validity
- ▶ construct validity
- ▶ external validity

Heterogeneous treatment effects

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- ▶ lots of people, lots of pre-treatment information: stop treating people like widgets
- ▶ beware of fishing (preregistration, data splits)
- ▶ Lots of new methods in this area

Mechanisms

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- ▶ The mechanism through which citrus prevents scurvy vitamin C
- ▶ Not as easy as scurvy and limes, “Enough already about black box experiments”
[Green et al \(2010\)](#)

Mechanisms

- ▶ Eating citrus prevents scurvy
- ▶ The mechanism through which citrus prevents scurvy vitamin C
- ▶ Not as easy as scurvy and limes, “Enough already about black box experiments”
[Green et al \(2010\)](#)
- ▶ Experiments specifically designed to test mechanisms: [Ludwig et al \(2011\)](#), [Imai et al \(2012\)](#), [Pirlott and MacKinnon \(2016\)](#)

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