Fostering Social Change Through Dynamic Norms: Encouraging Counternormative Sustainable Behaviors

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behavior, energy & climate change becc 2019 Conference Nov 17 - 20 Sacramento, CA

Social Norms: a Tool & a Hurdle

Descriptive behavioral norms suggests:

It's competent, efficient, enjoyable, socially approved, etc.

'…it must be the norm for some reason.'

Self Persuasion → **Conformity to Norms**

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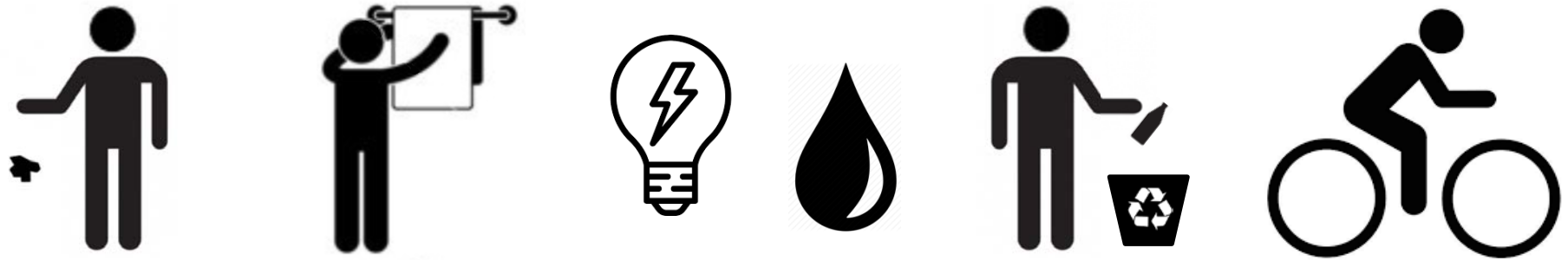
"Most people do _____."



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- Driving alone
- Regular meat consumption
- Disposing working products
- Frequent flying
- Switch to solar / renewables
- Buying disposable products

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Norms *perpetuate* unsustainable behavior.

Meat Consumption & Social Norms

Undeniably common, valued, and salient:

- Eat meat in public and with close others
- It’s the default on restaurant menus
- Generally accepted morally (most people do not believe it’s wrong)
- It’s celebrated (e.g. holidays)
- Vegetarians & vegans are (still) generally derogated

Meat Consumption & Social Norms

Static & Dynamic Norms

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Static Norm Information

- Current prevalence or frequency of a behavior others engage in
- Attitudes, opinions or beliefs of others

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Dynamic Norm Information

- Trends in norms, changes in others' behavior over time
- Changes in attitudes, opinions or beliefs over time

Exploring Dynamic Norm Effects

Do people conform to dynamic norms information, even when it goes against existing norms?

I.e. Can witnessing others change help dislodge problematic norms?

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Do people conform to dynamic norms information, even when it goes against existing norms?

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How do dynamic norm interventions compare to traditional static norm interventions to increase sustainable behavior?

I.e. Is a growing majority more influential than a static one?

Study 1: Interest in Counternormative Behavior

(Sparkman & Walton, 2017 *Psych Science*)

Meat Consumption

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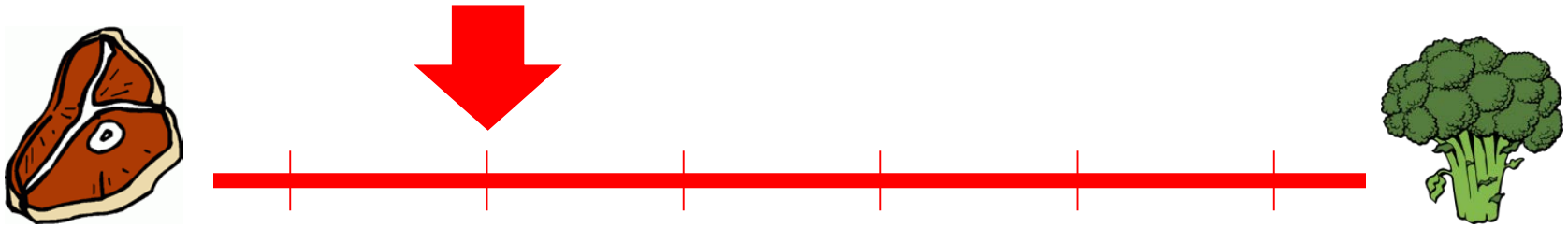
Meat Consumption

What the norm is now



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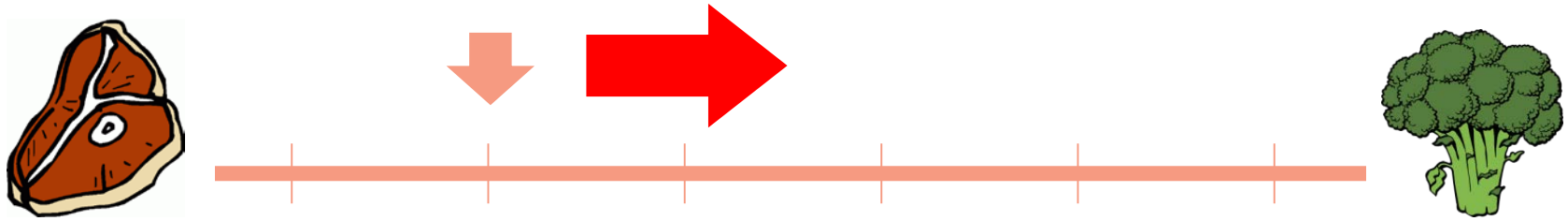
Meat Consumption

~~What the norm is now~~ Where the norm is going



Study 1: Design

118 US participants from MTurk, randomly assigned to condition:

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Dynamic: "In the last 5 years, 30% of Americans have started to make an effort.."

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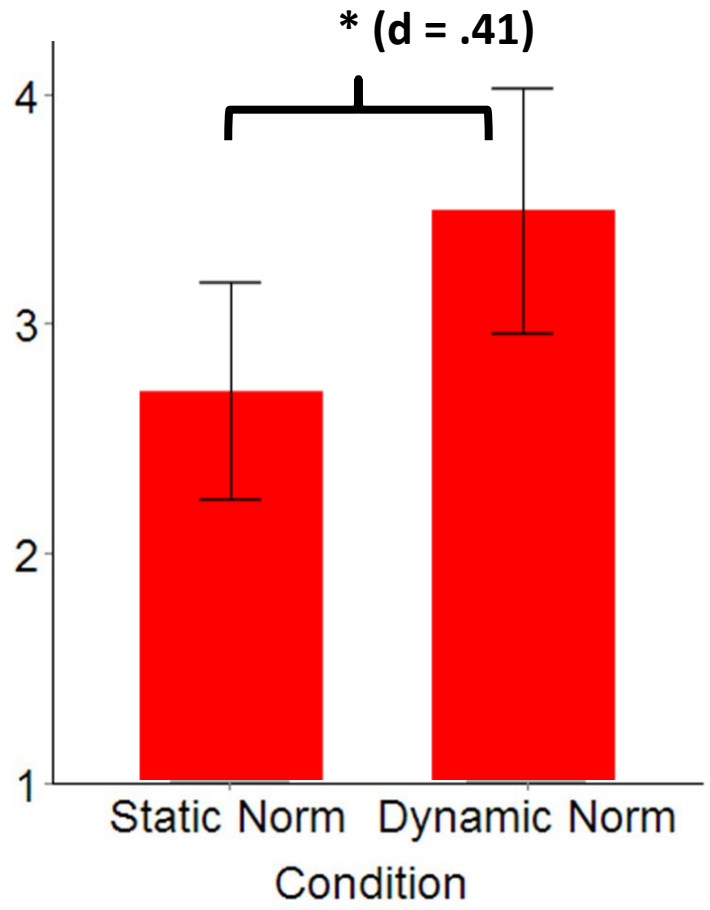
Outcome Measure: "How interested are you in eating less meat?"

Study 1: Results

Interest in Eating Less Meat



Note: Bars = 95% CIs

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Study 2: Psychological Processes

Why is learning that others are starting to eat less meat influential?

“Preconformity” ?

In the future, the norms may be different. (Future Descriptive Norm)

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If people believe change is not easy:

Change → **Effort** → **Importance to others**

(Current Prescriptive Norm)

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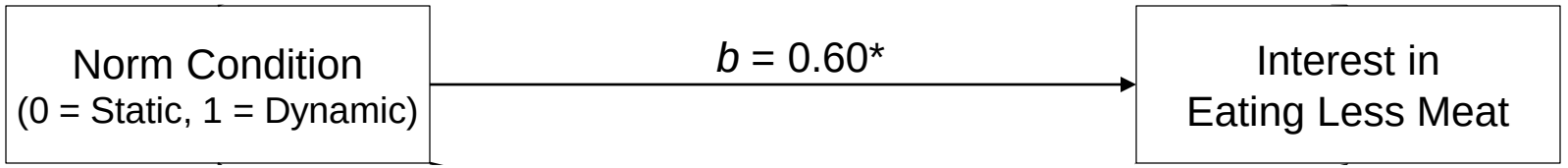
Repeated Study 1 procedure + process measures

Study 2: Results



Mediational Analyses (5k Bootstrap, Simultaneous)

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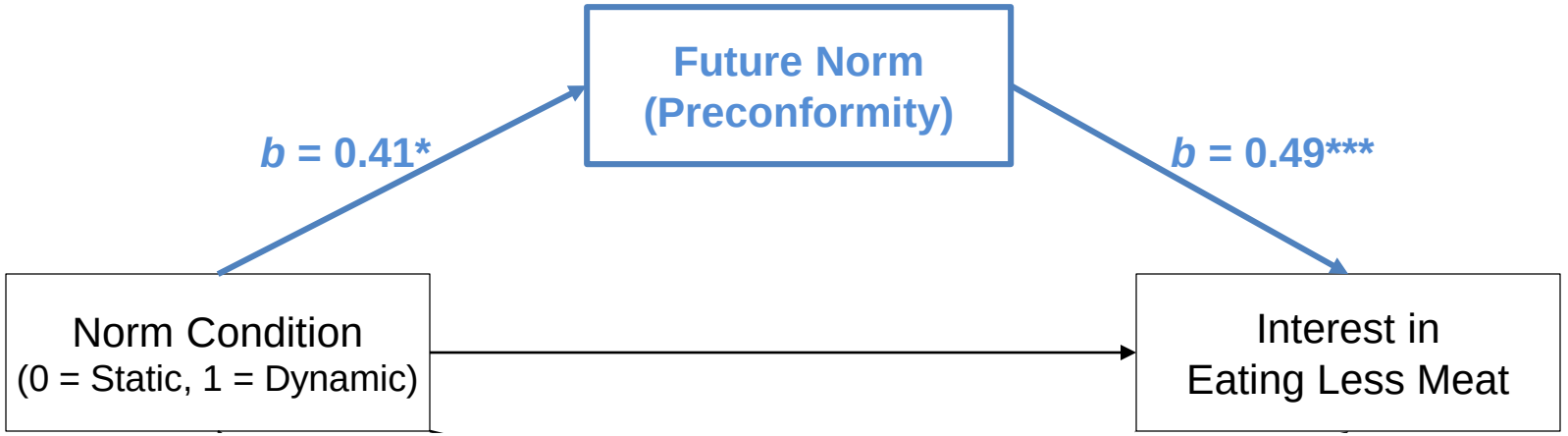

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- **Future Norm:** $z = 2.24^*$ (indirect effect = 0.20)

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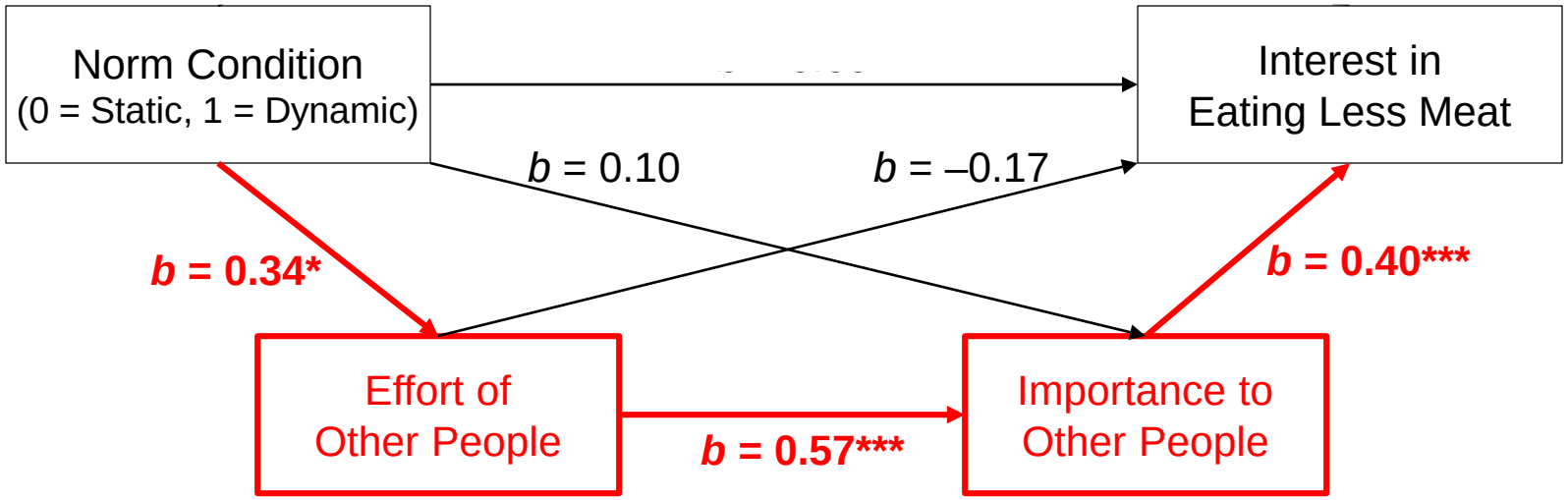

Mediational Analyses (5k Bootstrap, Simultaneous)

- **Future Norm:** $z = 2.24$* (indirect effect = 0.20)
- **Effort & Importance:** $z = 1.98$* (indirect effect = 0.08)

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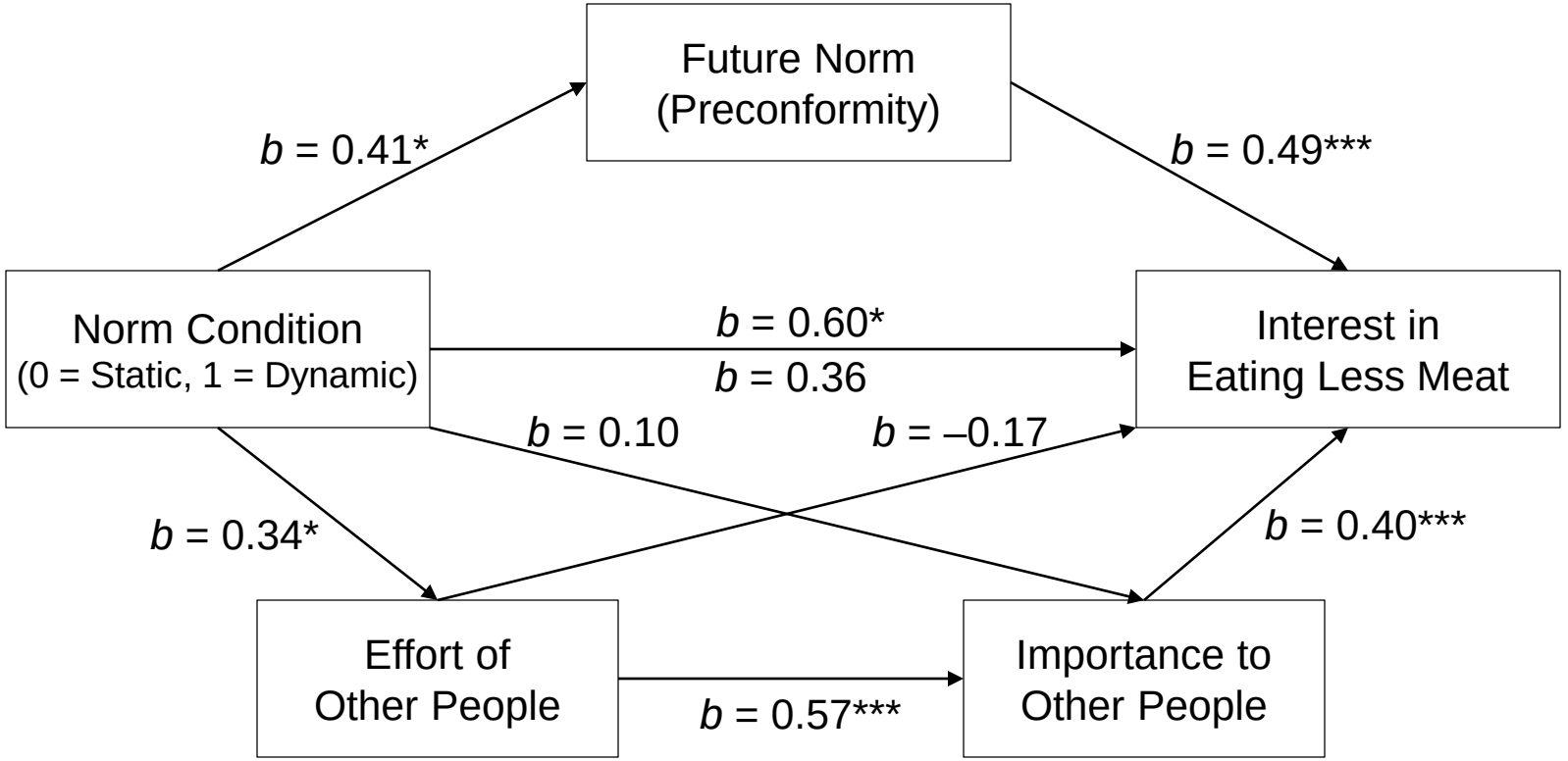
Study 2: Results



Mediational Analyses (5k Bootstrap, Simultaneous)

- **Total mediation:** $z = 2.84^{**}$ (indirect effect = 0.28)

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Study 2: Results

Test the causal effect of "preconformity":

Manipulate the mediator (future descriptive norms) directly

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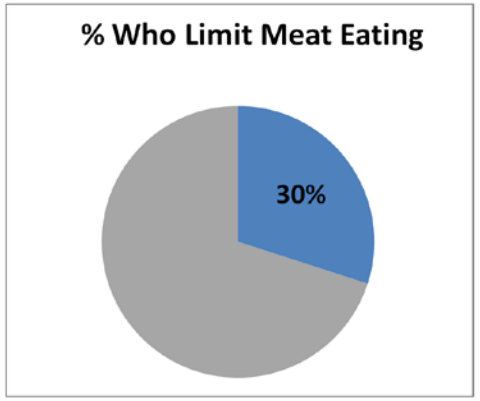
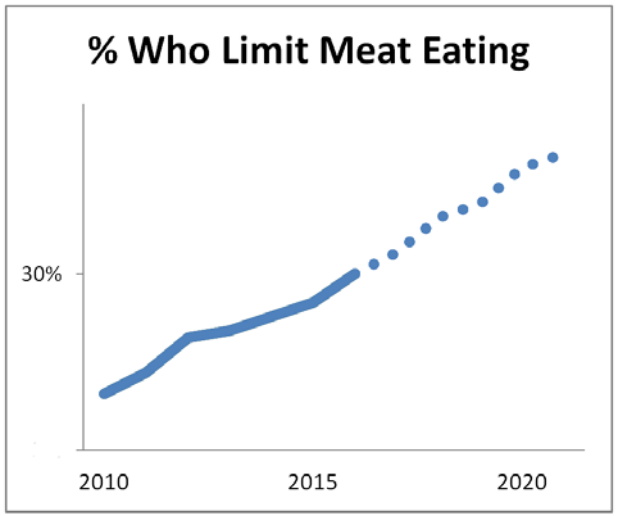
Follow up: Study 3

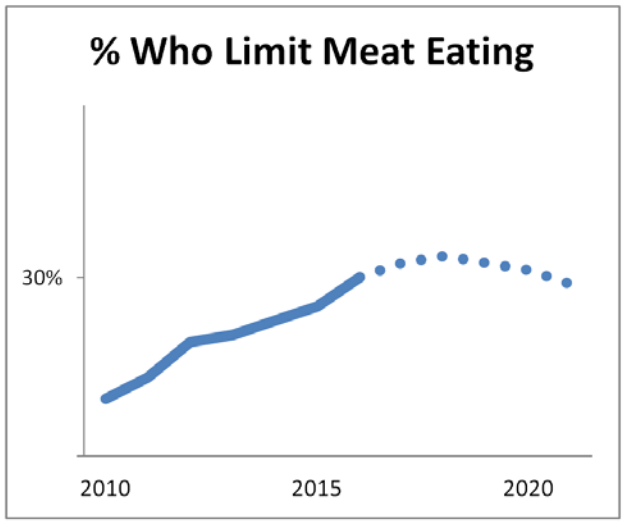
Static



Dynamic with growth



Dynamic w/out growth



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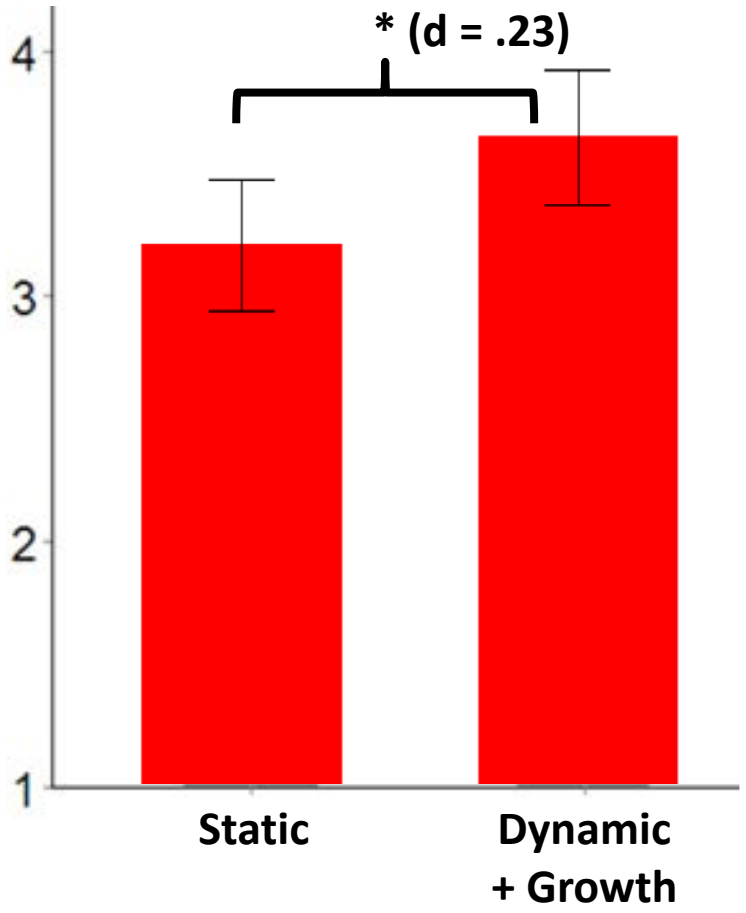
Study 3: Results

Interest in Eating Less Meat



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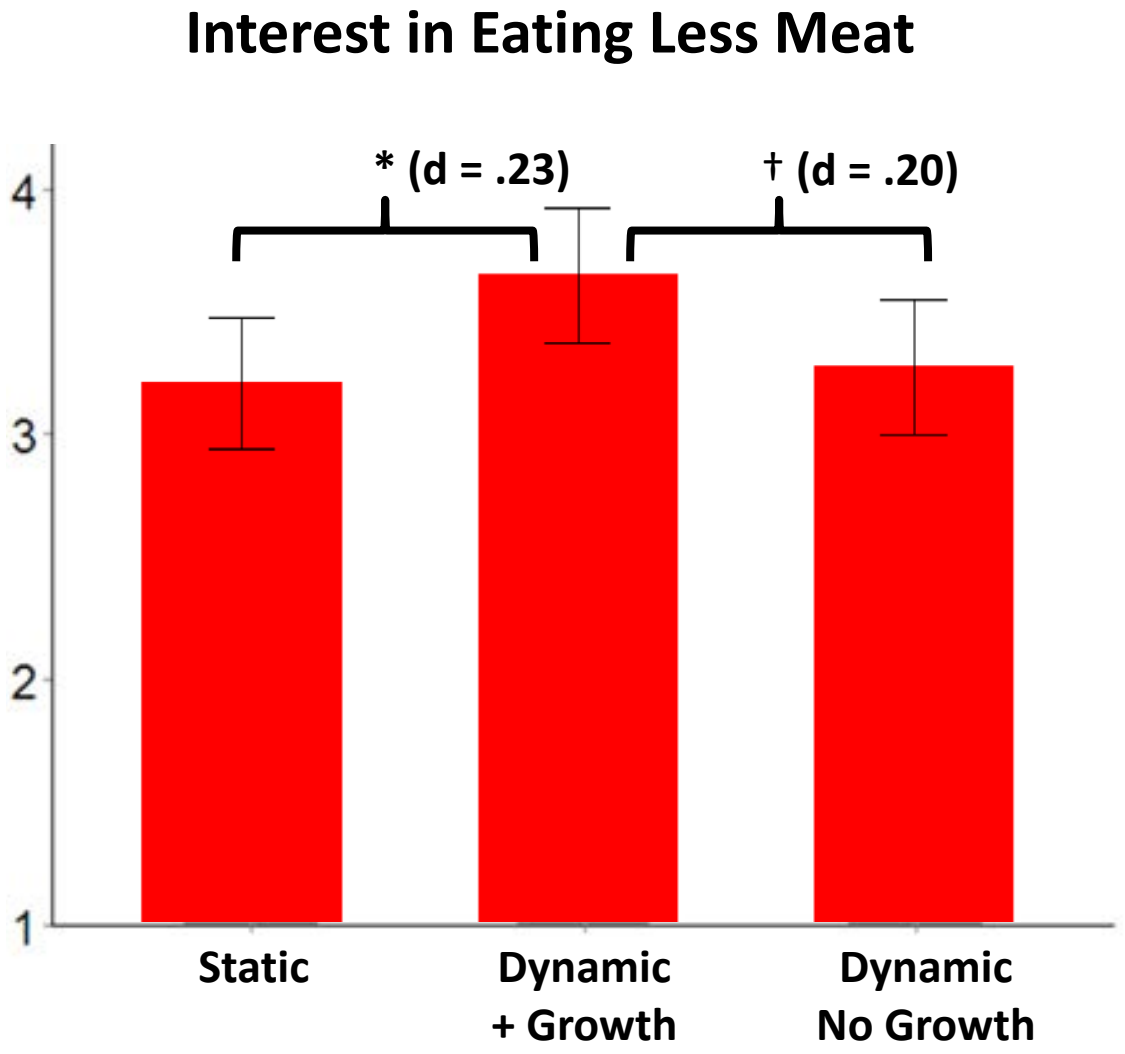

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Study 4: Counternormative Behavior Change

(Sparkman & Walton, 2017 *Psych Science*)

Can dynamic norms lead people to eat less meat?

Study 4: Design

N= 303 Café Patrons, randomly assigned:

(Survey on “Consumer Research”)

Bytes Cafe Lunch Coupon:

$5 Off Your Lunch!

Must be used on date issued. Must be 18 + to participate. May only participate once.

Coupon Code 1041958

Study 4: Design

N= 303 Café Patrons, randomly assigned:

Static:

“30% of Americans make an effort to limit
their meat consumption.”

Dynamic:

“In the last 5 years, 30% of Americans have started...”

Control:

“In the last 5 years, 30% of Americans have started…
to limit the amount of time they spend on Facebook.”

Asked: “Why do you think this is?”

Bytes Cafe Lunch Coupon:

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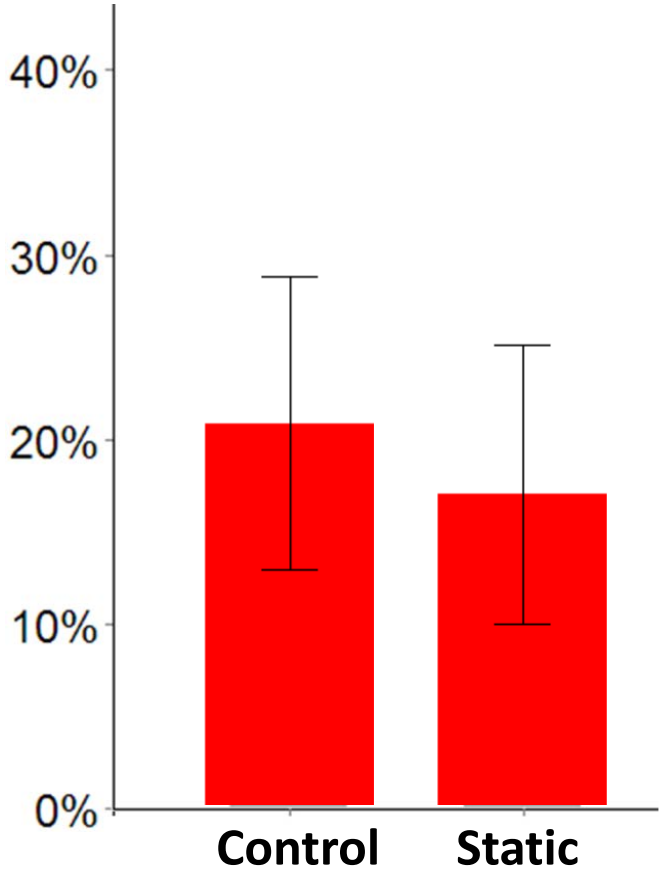
Study 4: Results

Orders of Meatless Dishes



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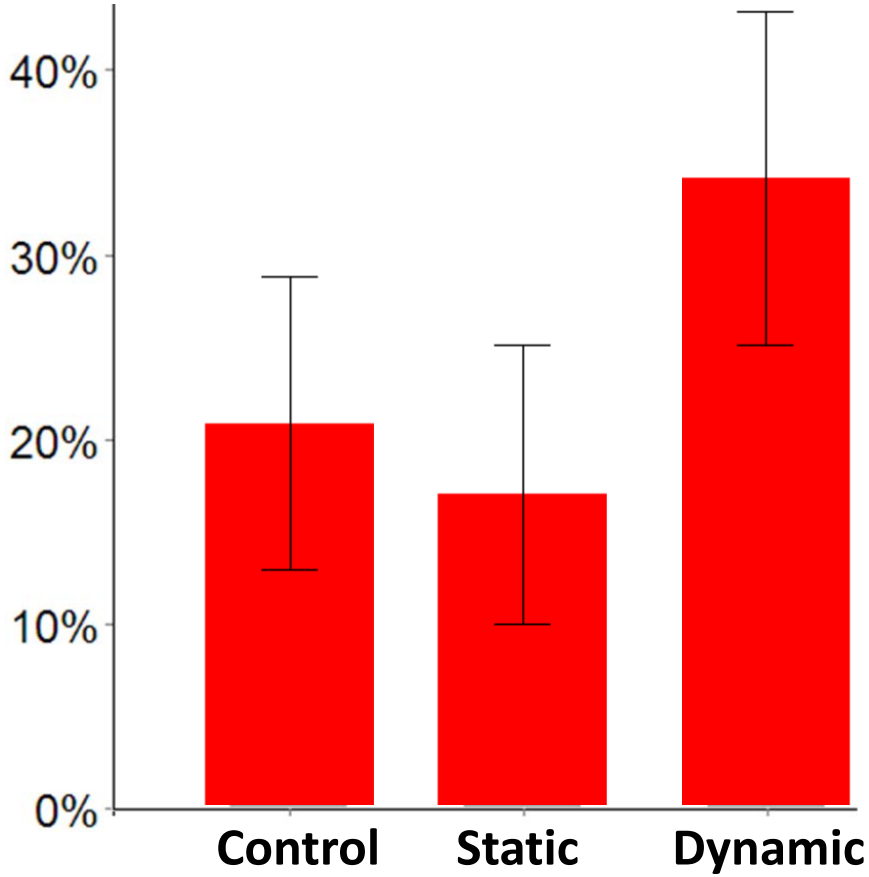

**χ^2 (1, *N*=304)= 7.53

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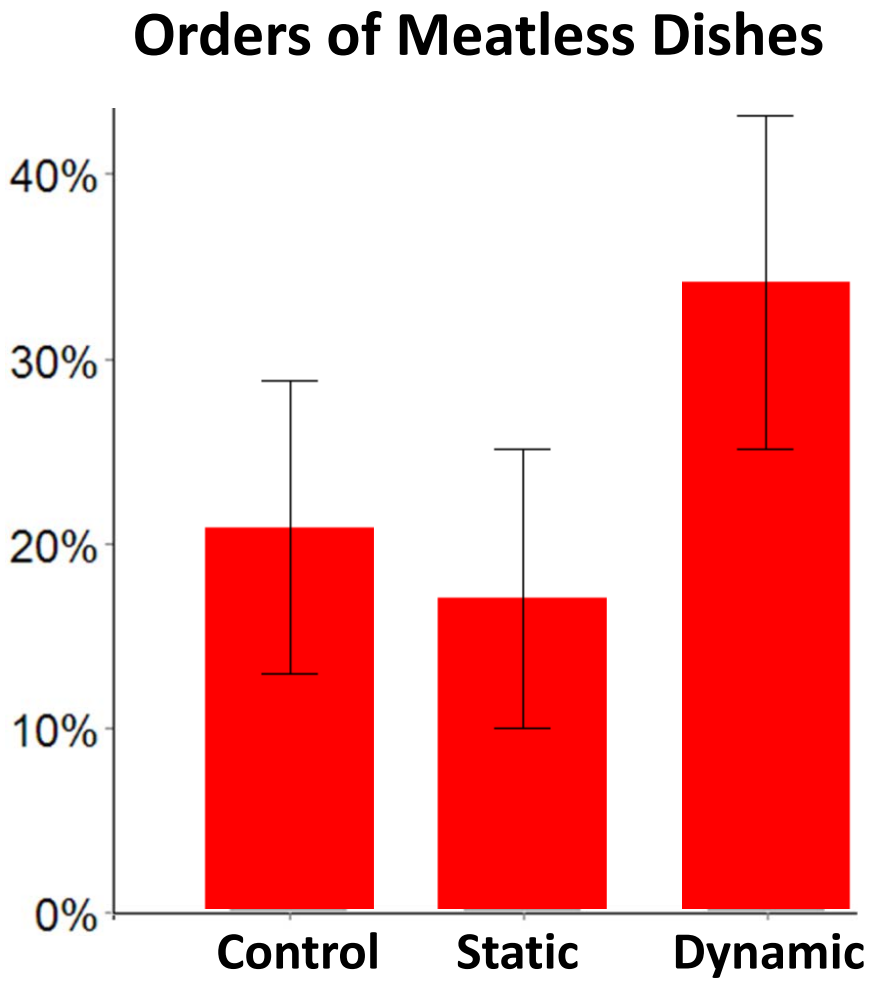

From 17% to 34%

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Study 5: Static VS Dynamic Norm Appeals

(Sparkman & Walton, 2017 *Psych Science*)

Can dynamic norms help create change when desirable behavior is already the norm?

Is a *growing* majority more influential than a static one?

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Water Conservation:

Full loads = Fewer loads

Study 5: Design

3 Graduate couples complexes, residents assigned by lottery.

(Identical layout, including a laundry facility in the basement)

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Randomly Assigned:

Static Norm Intervention	Dynamic Norm Intervention	Control (No Intervention)

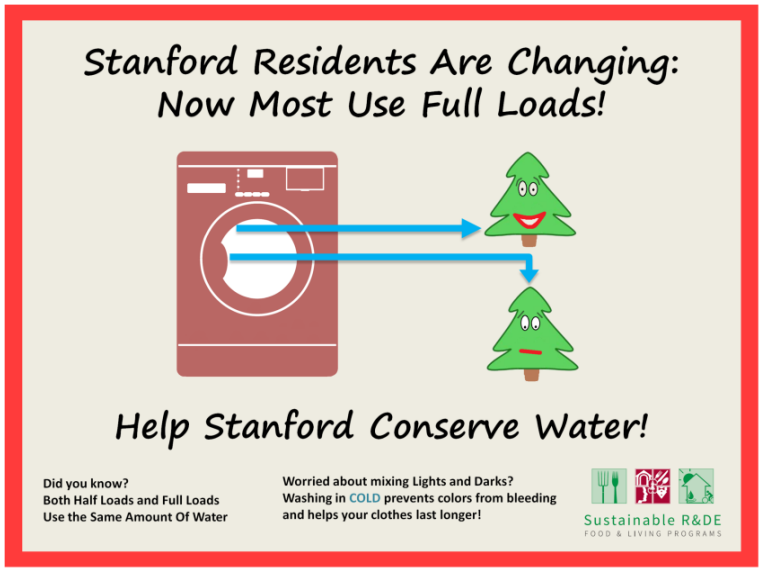
Study 5: Design

Static Norm

Study 5: Design

Static Norm

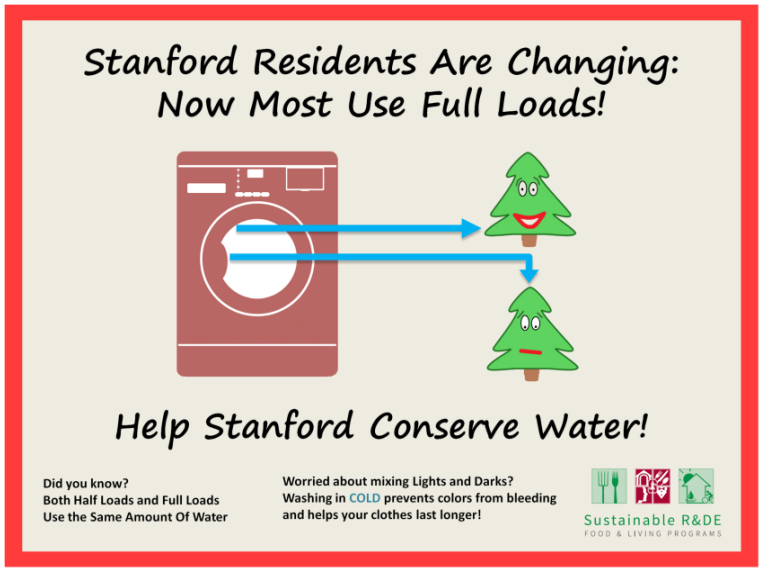
Dynamic Norm

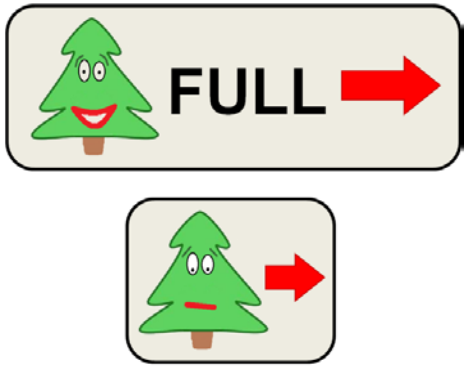


Study 5: Design

Static Norm

Dynamic Norm





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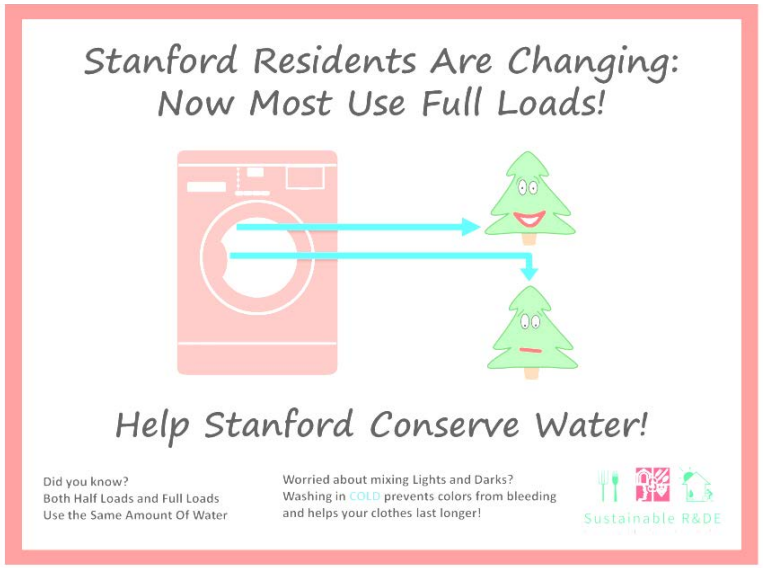

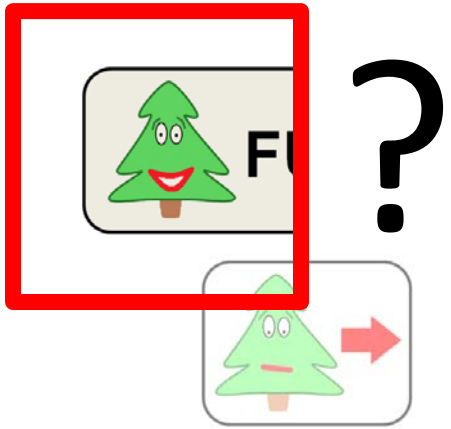

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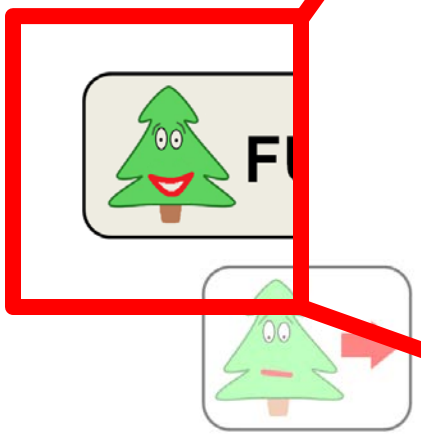

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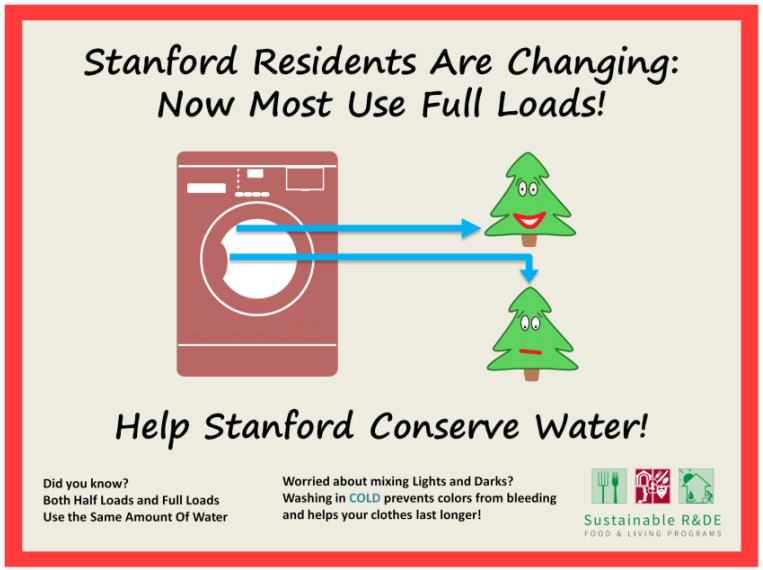

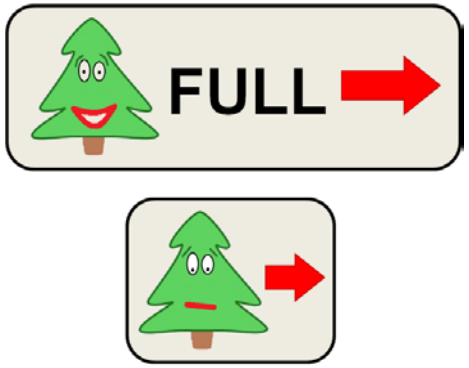

Assessment:
Loads over 6 weeks

Loads / machine / day
3 weeks before & during intervention

Study 5: Results

Condition	Reduction in loads
Control	**2.5%**
Static Norm	**9.7%**
Dynamic Norm	**28.5%*** **

Mixed Model Analysis:

Negative binomial mixed-model regression with random effects for machine and date)
N=1260 Observations

Dynamic vs Control: $z = 3.98$***
Dynamic vs Static: $z = 2.85$**
Static vs Control: $z < 1$

†$p<.1$, *$p<.05$, **$p<.01$, ***$p<.001$

Why Are Dynamic Norms Effective?

Common Psychological Barriers to Behavior Change

(Sparkman & Walton, 2019)

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Social influence, informational influence

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Dynamic norms invite us to reconsider..

Broader Implications

- Hope for entrenched environmental problems (where norms are bad):
  - Many sustainable behavior are not the norm now—but *are increasing over time*
  - Current energy & water use levels are not great—but some *are improving*

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- Hope for entrenched environmental problems (where norms are bad):
  - Many sustainable behavior are not the norm now—but *are increasing over time*
  - Current energy & water use levels are not great—but some *are improving*
- Stronger effects than prior norm techniques
  - Both for normative and counternormative behavior
  - Witnessing change helps resolve common psychological barriers to change

Future Work

Dynamic Norm Menu Project:

vina
enoteca

We proudly make all of our pasta, bread, and pizza dough in house

We've noticed that our customers are starting to choose our meatless dishes for lunch more often.

We delight in bringing you the best of Italian food inspired by California's bounty: all of our dishes feature carefully sourced ingredients and fresh produce.

ANTIPASTI

- add grilled chicken breast $8 -

CAPRESE | 12
heirloom tomatoes, mozzarella di bufala espuma, basil sponge

GAZPACHO | 9
heirloom tomatoes, compressed watermelon, croutons

INSALATA DI STAGIONE | 9
mixed baby lettuce, shaved seasonal vegetables, golden balsamic vinaigrette

PROSCIUTTO E PESCHE | 13
24 month Prosciutto di Parma, stone fruit, saba, candied almonds

PRIMI

SPAGHETTI CACIO E PEPE | 15
spaghetti pasta, mixed peppercorn pan sauce, pecorino romano

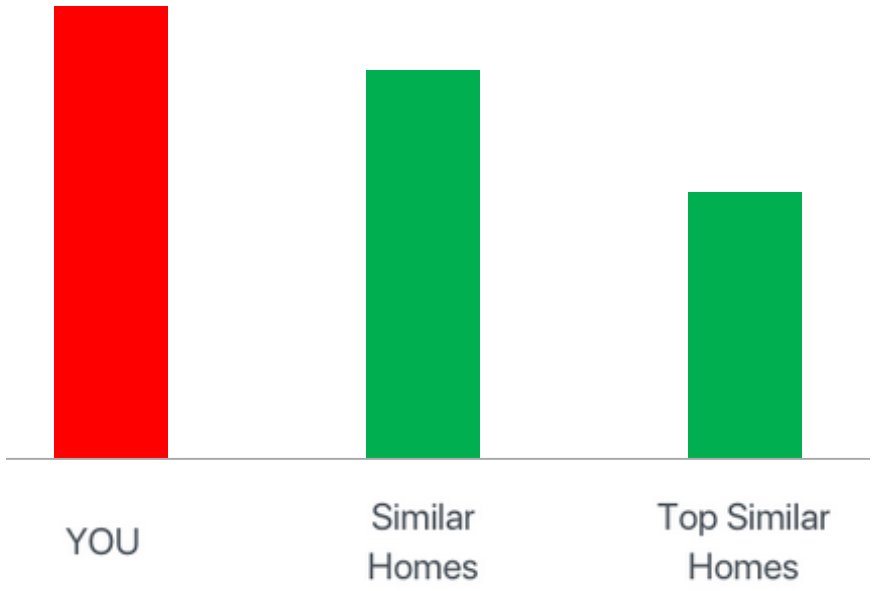
CAMPANELLE | 15
campanelle beet pasta, carrot puree, carrot top pesto, walnuts

TAGLIETELLE VERDI BOLOGNESE | 19

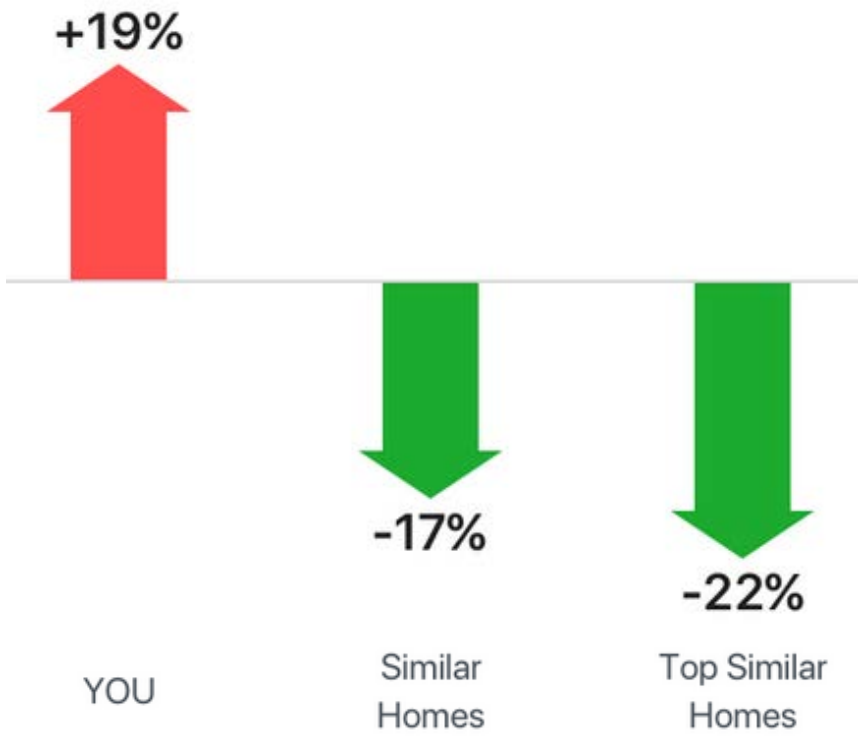
Future Work

Social Norm Feedback for Utilities

Static Norm



Dynamic Norm



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Thank You

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