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## Behavioral Economics: Nudges for healthier lives

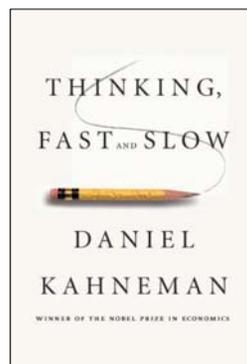
October 15, 2014

Jason Riis

Visiting Assistant Professor of Marketing  
Wharton  
University of Pennsylvania

## Thinking Fast and Slow

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## Fast Brain and Slow Brain

Fast (automatic) system

**... can be tricked!**

Slow (reflective) system

**... can be triggered!**



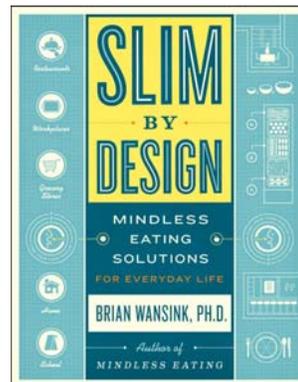
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## Fast Brain and Slow Brain

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**... can be tricked!**



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### Fast Brain and Slow Brain

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<p style="text-align: center;">Fast (automatic) system</p> <p style="text-align: center; border: 1px solid red; color: red; padding: 2px;">... can be tricked!</p>	<p style="text-align: center;">Slow (reflective) system</p> <p style="text-align: center; border: 1px solid red; color: red; padding: 2px;">... can be triggered!</p>
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<p><b>“Weak Nudge”</b> (bypasses self control)</p> <ul style="list-style-type: none"> <li>• <i>Healthy, small portions as <u>default</u></i></li> <li>• <i>... more <u>salient</u></i></li> <li>• <i>... are <u>rewarded</u></i></li> </ul>	<p><b>“Strong Nudge”</b> (Directive ... but not too directive)</p> <ul style="list-style-type: none"> <li>• <i><u>Invitations</u> for healthy, small portions</i></li> <li>• <i><u>Directive labels</u> for ...</i></li> <li>• <i><u>Feedback</u> for ...</i></li> <li>• <i><u>Fresh starts</u> for ...</i></li> <li>• <i><u>Pre-commitment</u> for ...</i></li> </ul>
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### Trigger 1: Invitation to Downsize

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FEBRUARY 2012 31:2 HEALTH AFFAIRS

By Janet Schwartz, Jason Riis, Brian Elbel, and Dan Ariely

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## Inviting Consumers To Downsize Fast-Food Portions Significantly Reduces Calorie Consumption

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## Pilot study: Attitudes to portions

How big are the portions at the restaurants you typically visit? (N=142)		
<i>Usually too small</i>	<i>Usually about right</i>	<i>Usually too large</i>
4%	59%	37%

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## Pilot study: Attitudes to portions

At the restaurants you go to, how often do you specifically request a smaller portion than is offered on the menu? (N=81)		
<i>Almost never</i>	<i>Often</i>	<i>Most of the time</i>
89%	10%	1%

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## Pilot study: Attitudes to portions

If the restaurants you go to started offering optional “downsized” portions at a very small discount, how often would you accept? (N=61)

<i>Almost never</i>	<i>Often</i>	<i>Most of the time</i>
38%	51%	11%

## Field Experiment at Panda Express: Questions

- Do customers spontaneously request smaller portions?
- Do customers accept strong nudges to take smaller portions for no discount or for a nominal discount? (Can the slow brain be triggered?)

## Ordering a meal at Panda Express

Step 1

Order meal size



Step 2

Order side dish



Step 3

Order entrée(s)



Step 4

Pay

Fried rice	Steamed rice
Chow mein	Mixed veggies

Orange chicken	Beijing beef	BBQ pork	...
Mushrm chicken	Broccoli beef	Country tofu	...



## How the nudge worked

Step 1

Order meal size



Step 2

Order side dish



Step 3

Order entrée(s)



Step 4

Pay

Fried rice	Steamed rice
Chow mein	Mixed veggies

Orange chicken	Beijing beef	BBQ pork	...
Mushrm chicken	Broccoli beef	Country tofu	...



*"Would you like to cut more than 200 calories from your meal by taking a half portion of your side dish?"*

## Panda Express



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## Panda Express



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## Panda Express



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## Study 1 Design

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	BASELINE	BASELINE	<u>NUDGE</u> no discount	<u>NUDGE</u> no discount		
	BASELINE	BASELINE	<u>NUDGE</u> 25¢ discount	<u>NUDGE</u> 25¢ discount		

*"Would you like to cut more than 200 calories from your meal (and save 25¢) by taking a half portion of your side dish?"*

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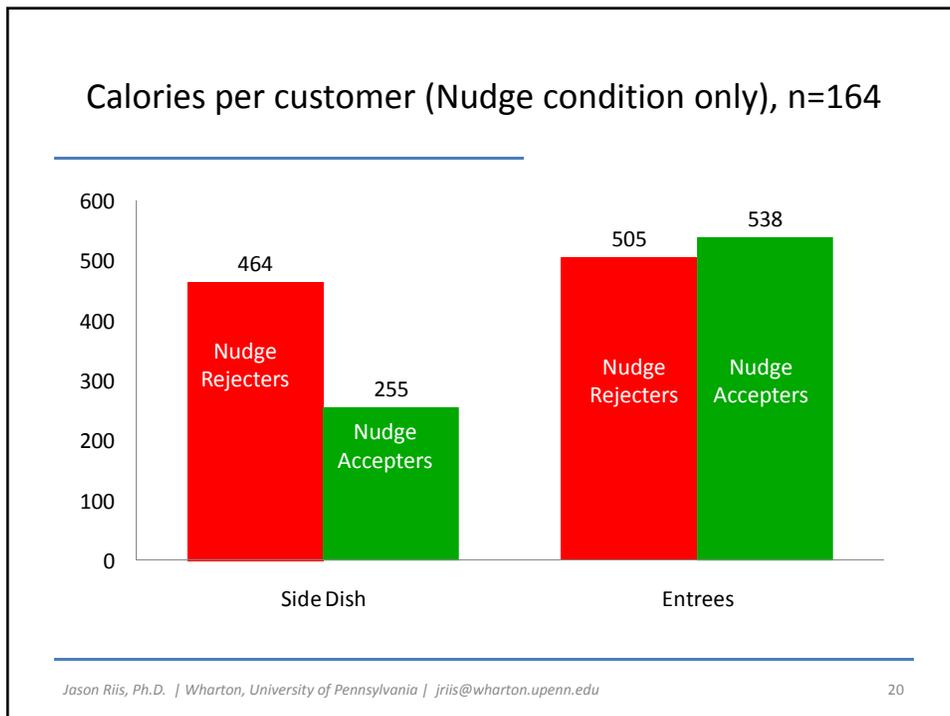
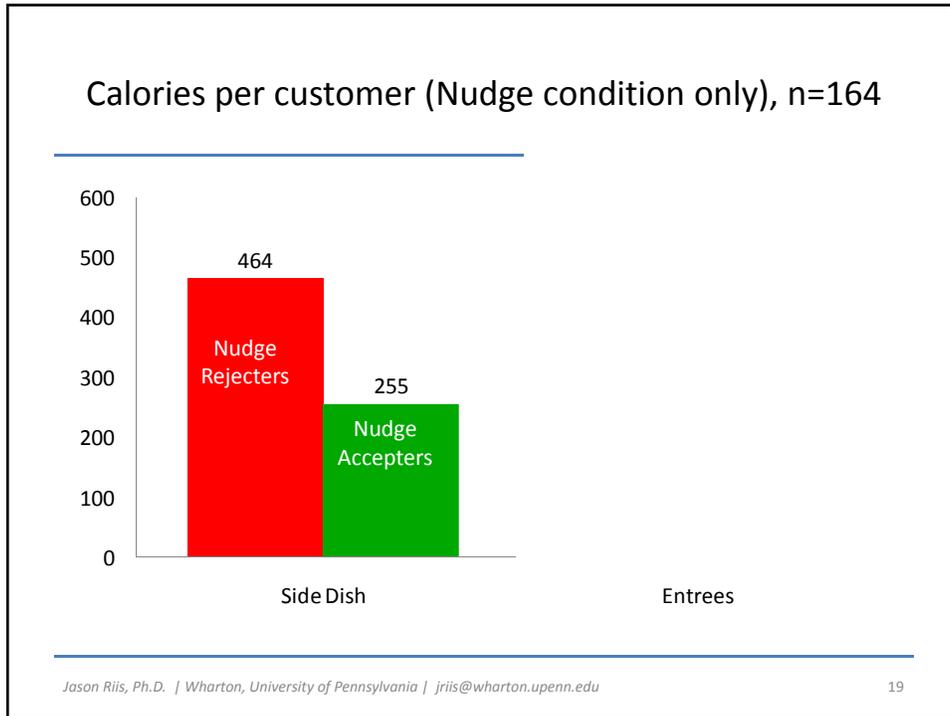
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### Proportion taking half sized side dish portion

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	BASELINE <b>1%</b>	BASELINE	NUDGE <i>no discount</i> <b>35%</b>	NUDGE <i>no discount</i>		
	BASELINE <b>4%</b>	BASELINE	NUDGE <i>25¢ discount</i> <b>32%</b>	NUDGE <i>25¢ discount</i>		

### Proportion taking half sized side dish portion

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			NUDGE <i>no discount</i> <b>35%</b>	NUDGE <i>no discount</i>		
			NUDGE <i>25¢ discount</i> <b>32%</b>	NUDGE <i>25¢ discount</i>		



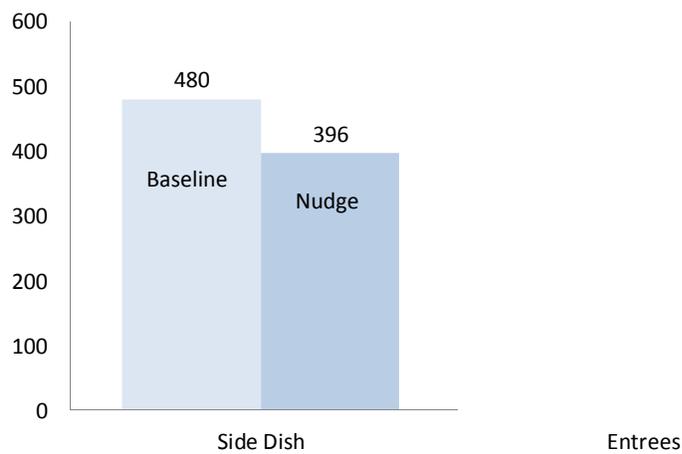
### Proportion taking half sized side dish portion

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	BASELINE	BASELINE	<u>NUDGE</u> <i>no discount</i>	<u>NUDGE</u> <i>no discount</i>		
	BASELINE	BASELINE	<u>NUDGE</u> <i>25¢ discount</i>	<u>NUDGE</u> <i>25¢ discount</i>		

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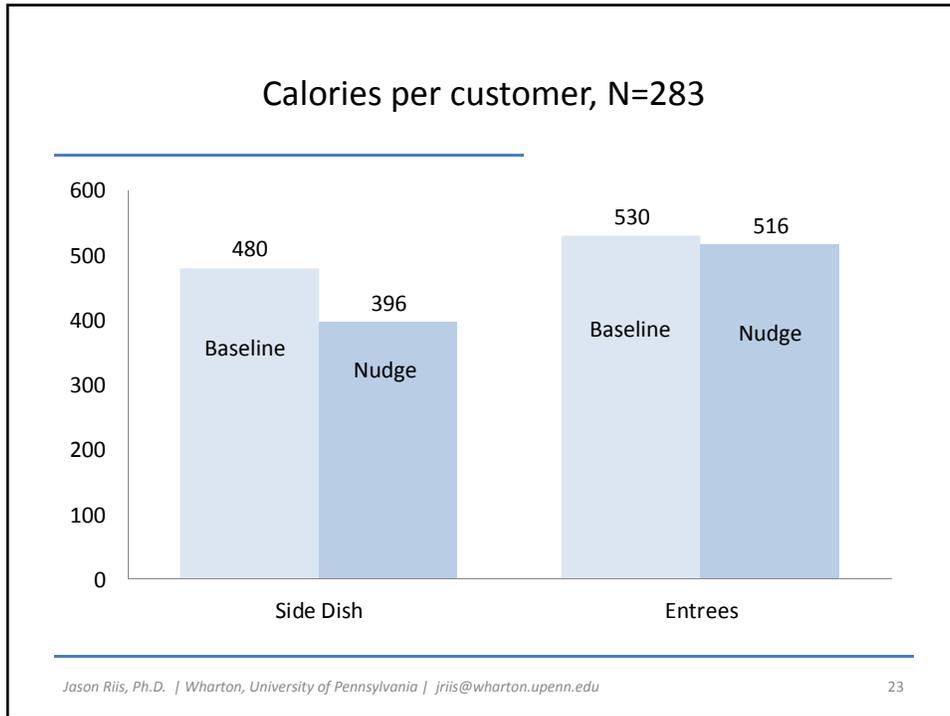
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### Calories per customer, N=283



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### Fast Brain and Slow Brain

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Slow (reflective) system

... can be triggered!

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“Weak Nudge”  
(bypasses self control)

- Healthy, small portions as default
- ... more salient
- ... are rewarded

“Strong Nudge”  
(Directive ... but not too directive)

- Invitations for healthy, small portions
- Directive labels for ...
- Feedback for ...
- Fresh starts for ...
- Pre-commitment for ...

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Co-authors from MGH:

- Anne Thorndike
- Lillian Sonnenberg
- Susan Barraclough
- Doug Levy

AJPH - March, 2012

**A 2-Phase Labeling and choice architecture intervention to improve healthy food and beverage choice**

AJPM - September, 2012

**Food choices of minority and low-income employees: A cafeteria intervention**

AJPM - February, 2014

**Traffic-light labels and choice architecture: Long-term effectiveness in promoting healthy food choices**

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## Trigger 2: Directive labels (Traffic Light Labels)

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## Setting: Main cafeteria, Massachusetts General Hospital (MGH)

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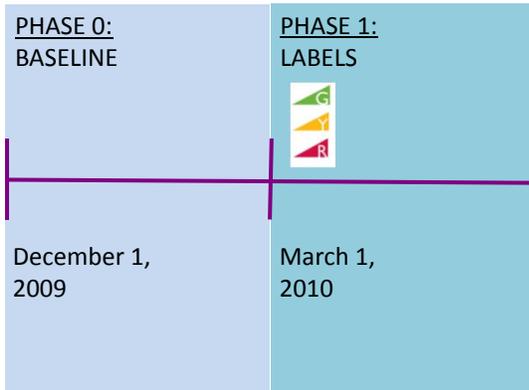
- 6,000 visitors / day
- \$30,000 revenue / day
- 2 years of cash register data.

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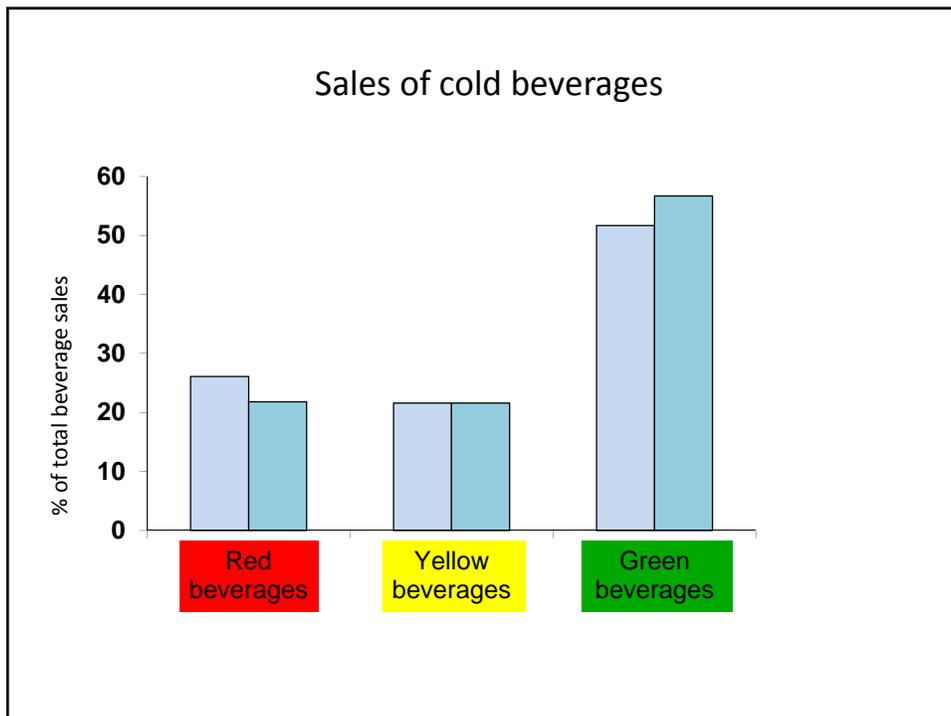
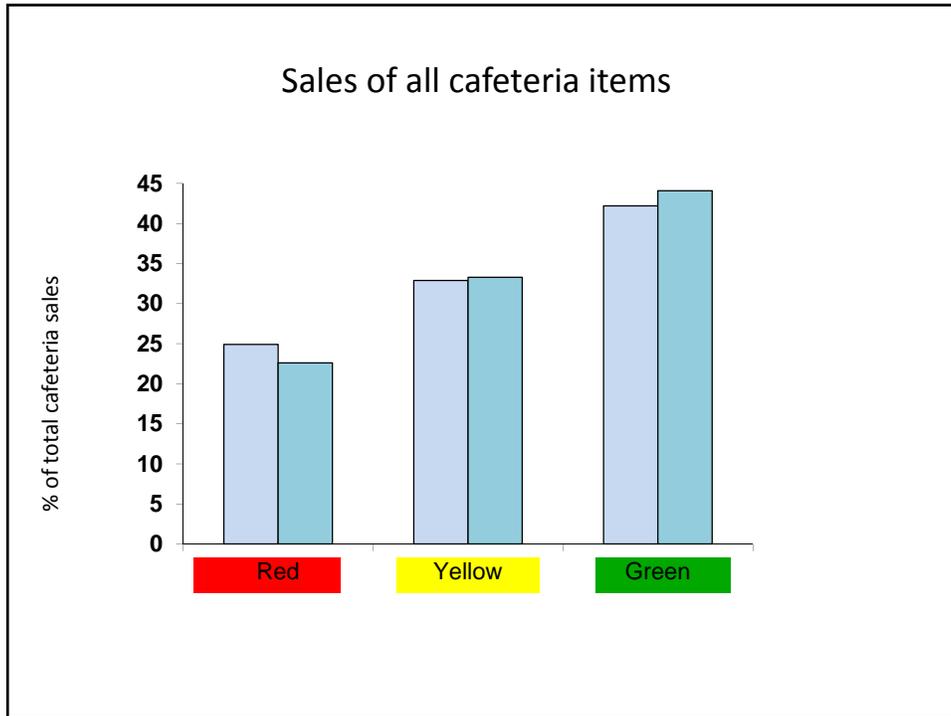
## Study Design and Timeline

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“Trigger” the slow brain or ...  
just provide new information

Surprising Red



6%  
guessed  
RED  
(on Mturk)



Unsurprising Red



98%  
guessed  
RED  
(on Mturk)

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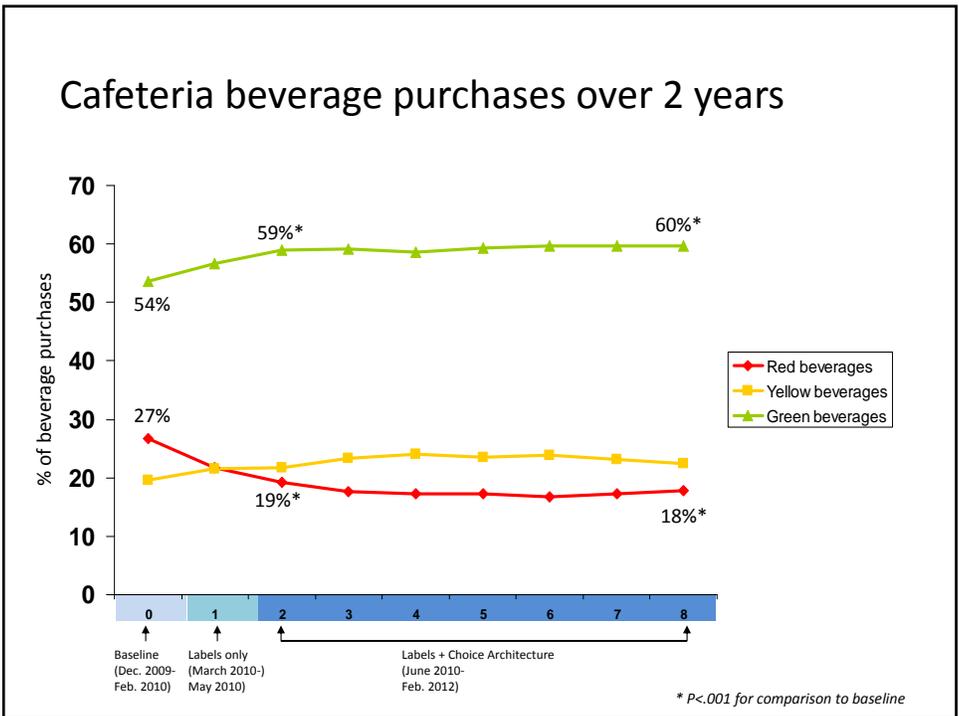
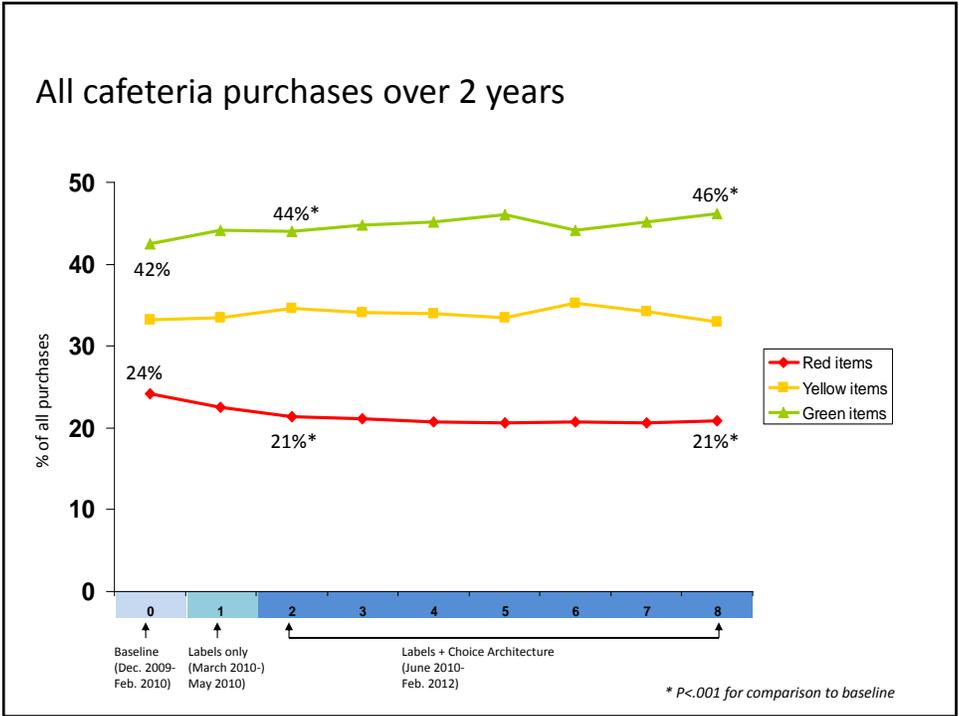
MORE response to Surprising Reds?

NO

	Baseline	Labels
<b>Surprising Reds</b>	6.9%	6.3%
<b>Unsurprising Reds</b>	13.5%	9.2%

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### “Weak Nudge”

(bypasses self control)

- Healthy, small portions as *default*
- ... more *salient*
- ... are *rewarded*

### “Strong Nudge”

(Directive ... but not too directive)

- *Invitations* for healthy, small portions
- **Directive labels for ...**
- *Feedback* for ...
- *Fresh starts* for ...
- *Pre-commitment* for ...

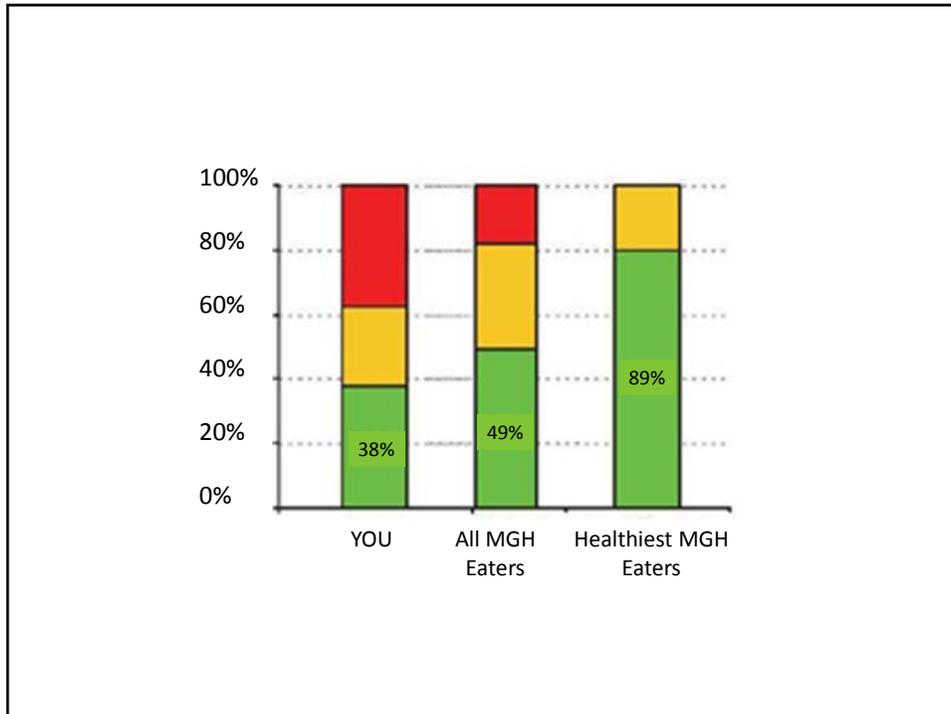
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## Trigger 3 Feedback about healthy eating



- Monthly letter: (Oct 1, Nov 1, Dec 1)
- Feedback (absolute):  
% green you bought last month
- Feedback (peer comparison):  
You vs. “All” and “Healthiest”

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### Proportion of green cafeteria purchases from baseline to end of follow-up

*This paper is under review so I can't share the results in this format, except to say that feedback led to healthier consumption patterns.*

*If you are interested in learning more, feel free to contact me:  
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## Trigger 4: Fresh starts at temporal landmarks

### Temporal landmarks:

*"...emerge from and stand in marked contrast to the seemingly unending stream of trivial and ordinary occurrences that happen to us everyday..."*  
(Shum, 1998)

#### *General*

*New years*

*First day of month*

*First day of week*

*First day of spring*

*National holiday*

#### *Personal*

*Birthday*

*30<sup>th</sup> birthday*

*First day of new job*

*Job anniversary*

*Wedding anniversary*

*Forthcoming at Management Science (with Hengchen Dai and Katy Milkman)*

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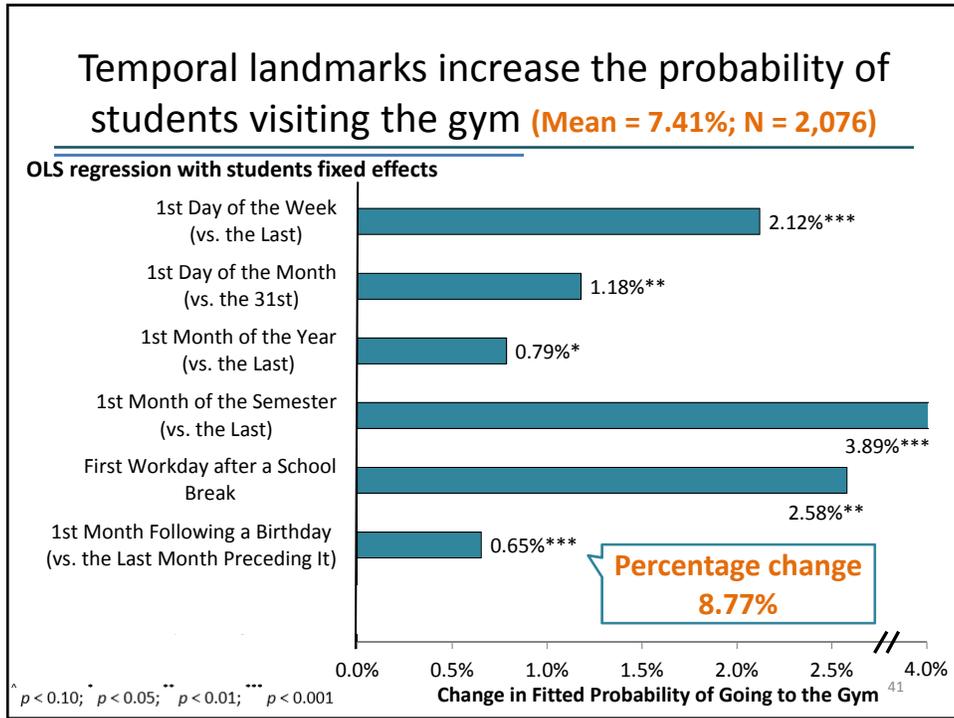
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## Gym attendance

2,076 undergraduates; Sep 2010 – Dec 2011



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- APPLICATIONS -

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- Social media (temporal landmarks)
- School cafeterias
- Workplace cafeterias and workplace wellness
- Corner stores
- Supermarkets