THE "MERE REMINDER" EFFECT OF VISUALLY SALIENT CALORIE LABELING

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BACKGROUND

- Preventing obesity at the population level has been a challenge for policy making

- Recent focus of policy making on calorie labeling:

  - Many policy makers believe that calorie labeling reduce people's calorie consumption through providing information

- Inconsistent results of the effectiveness of calorie labeling from past studies:

  - Non-restaurant settings: (-58.16 kcal; $p = 0.01$)

  - Restaurant setting: (-6.70 kcal; $p = 0.331$)

RESEARCH QUESTION

- Can calorie labeling effectively reduce people's calorie consumption?
  - Average total calories per transaction

- Does effective calorie labeling reduce calorie overconsumption through providing additional information? (Or through prompting people to think about their own health and diet?)

- Through influencing choice architecture? (or spend?)
  - Avg. Calorie per USD spent
  - Choice architecture (% of bottled sugar drinks)

DESIGN: A 9-WEEK EXPERIMENT

- At four cafeterias on the campus of the University of Chicago: Harris, GCIS, Stuart, and Law

- 4 "poster weeks", each followed by a week of "washout" period + 1 coupon week:

  - "poster weeks": Week 1, 3, 5, 8

  - "washout weeks": Week 2, 4, 7, 9

  - coupon week: Week 6

- Posters are exhibited at the cafeterias on a rotational basis to eliminate the confounding effect of the cafeterias

4 SETS OF SIGNAGE

Do you know?*

Total Per-Meal (3 meals per day)
Calorie recommended
is typically between
650 to 800 Calories.

*Depends on age, gender, and activity level. US Department of Agriculture and US
Department of Health and Human Services, Washington, 7th ed., 2010

Signage 1

Do you know?*

Albacore Tuna
Wrap *has*
320 Calories

Turkey & Gouda
Wrap *has*
500 Calories

Chicken Caesar
Salad *has*
190 Calories

*Source: UChicago Dining

Signage 2

Do you know?

Calorie information is
available for many of
the pre-packaged items
we carry in this café.

Signage 3

Do you know?

Do you know how
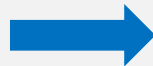many **Calories** are
there in your lunch
today?

Signage 4

DATA PROCESSING

CHK 254   GST 0
1263 Carmona   142
TRN 13/24189   FEB02'15 8:05AM
Law Sch Cafe

Main
1 Coffee Sm   1.69
XXXXXXXXXXXX0422   XX/XX
Visa   1.85
Subtotal   1.69
Tax   0.16
Total Paid   1.85
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Raw Data: Electronic Checks

- Data Scraping + Parsing:
  - Subtotal
  - Item Names
  - Item Prices
  - Cafeteria
  - Check#
  - Date

- Calorie information lookup

- Ready for analysis:
  - Check-level and day-level
  - OLS and WLS linear regressions

RESULTS: CALORIE PER TRANSACTION

				Confounders	
	Model 1	Model 2	Model 3	Model 4	Model 5
Variable	*Qtr*	*Qtr + cafe*	*cafe:Qtr*	*cafe:Qtr + WkofQtr*	*cafe:Qtr + WkofQtr + DayofWk*
Intercept	-10.85	-37.38**	-46.64***	-49.13***	-50.22***
Subtotal	72.28***	79.02***	76.75***	76.67***	76.90***
2014Spring	1.30	2.11	13.98***	12.59***	12.59***
2014Winter	11.22***	12.63***	19.21***	16.32***	16.27***
Coupon	9.42.	8.93	7.10	4.19	4.34
Signage1	-5.92	-5.30.	-5.58.	-9.21*	-9.25* ←
Signage2	-0.26	-0.03	-0.44	-1.54	-1.68
Signage3	-0.86	-0.25	-0.24	-1.74	-1.84
Signage4	-7.06	-7.36.	-6.73.	-8.82*	-8.99* ←
R^2	0.821	0.846	0.885	0.892	0.894

*$p < .05$ **$p < .01$ ***$p < .001$

RESULTS: CALORIE PER USD SPENT

	Confounders				
	Model 1	Model 2	Model 3	Model 4	Model 5
Variable	Qtr	Qtr + cafe	cafe:Qtr	cafe:Qtr + WkofQtr	cafe:Qtr + WkofQtr + DayofWk
Intercept	69.9693***	71.027***	67.1724***	66.2732***	66.282***
2014Spring	0.0939	0.132	2.4906***	2.2266***	2.201***
2014Winter	2.2269***	2.318***	3.6558***	2.9821***	2.943***
Coupon	2.1768.	1.963.	1.6192	1.0654	0.995
Signage1	-1.3487	-1.271	-1.3319.	-2.0912*	-2.13*
Signage2	0.0701	0.216	0.0556	-0.0888	-0.154
Signage3	-0.2351	-0.206	-0.1743	-0.364	-0.405
Signage4	-1.6327	-1.663.	-1.5242.	-1.8547*	-1.912*
R^2	0.111	0.206	0.414	0.454	0.462

$*p < .05$ $**p < .01$ $***p < .001$

OTHER RESULTS

- Sales / Spend: None of the posters had a statistically significant influence on either total sales of the cafeterias or people's average level of spend during exhibition

- % of bottled sugary drinks: no significant change
  - The choice architecture of hot food / snacks? (follow-up analysis)

DISCUSSION

- Conclusion:

  Effective labeling works primarily as a reminder, by prompting people to consider nutrition rather than by providing new information.

- Implication on policy making:

  Instead of focusing on the accuracy of the informational content, providing approximate but salient calorie information may be more effective.