





## **LEARNING GOALS:**

At the end of the seminar, students should be familiar with methodologies to:

- 1. Identify promising behavioral mechanisms behind a complex social problem;
- 2. Test the most relevant mechanisms with the audience of policies targeted at that problem; and
  - 3. Identify opportunities to augment policy tools with such behavioral insights.

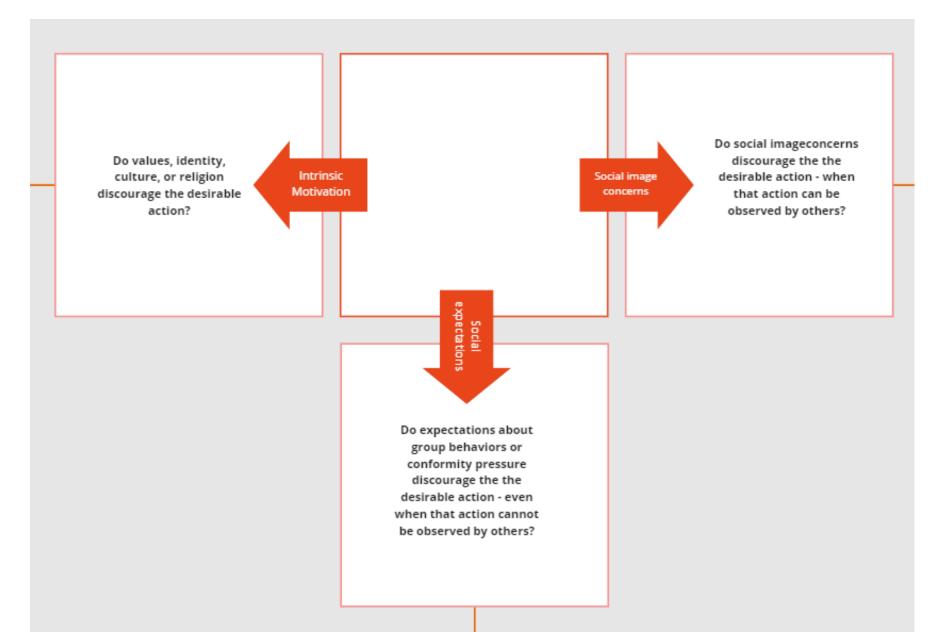
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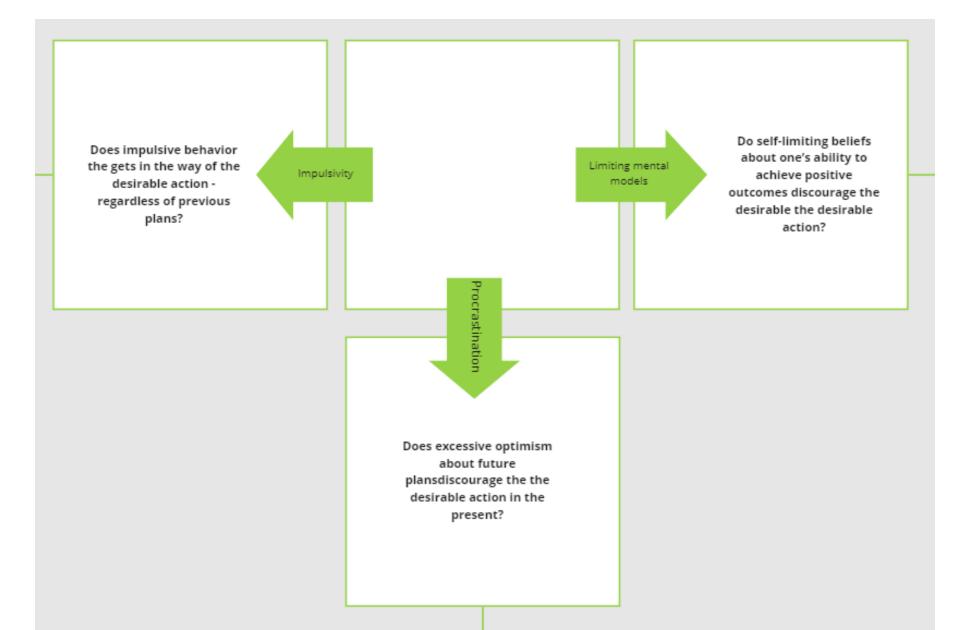
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# MSI FRAMEWORK

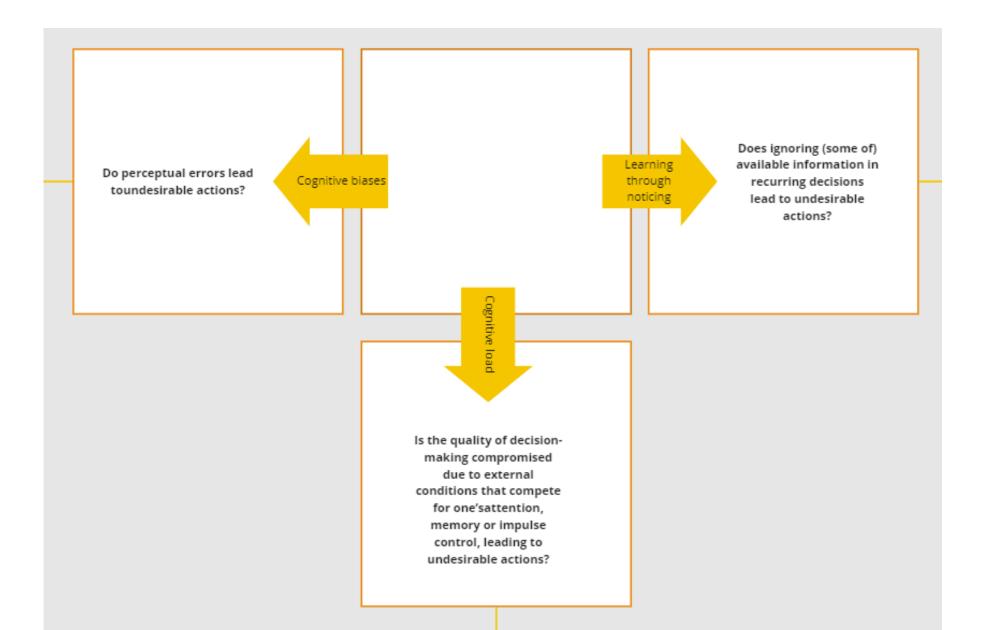
## MOTIVATION



## SELF-CONTROL



## INATTENTION



# IN PRACTICE

#### **GROUP WORK**

- 4 groups
- Each group should pick a wicked social problem:
  - Creates externalities and inequality
  - > Affects a population you have access to
  - Resistant to business-as-usual pricing, regulatory, and/or information policies

#### STRUCTURAL DIAGNOSTICS

- With the 'ideal citizen' in mind
  - What structural mechanisms affect the problem?
  - What typical policies address those mechanism?

#### BEHAVIORAL DIAGNOSTICS

- With the 'real citizen' in mind
  - Which behavioral mechanisms affect the problem?

#### BEHAVIORAL MECHANISMS

Do social image group behaviors or concerns discourage Do values, identity, conformity pressure the the desirable culture or religion discourage the the action - when that discourage the desirable action - even action can be desirable action? when that action observed by others? cannot be observed by others? Self-limiting beliefs Impulsivity Procrastination Do self-limiting beliefs Does impulsive Does excessive about one's ability to behavior the gets in optimism about achieve positive the way of the future plans outcomes discourage desirable action discourage the the the desirable the regardless of previous desirable action in the desirable action? plans? present? **Cognitive biases Cognitive load** Learning-through-noticing Is the quality of Does ignoring (some decision-making Do perceptual errors of) available compromised due to lead information in external conditions to undesirable recurring decisions that compete for lead to undesirable actions? one's executive actions? functions, leading to undesirable actions? Plausibility → https://miro.com/app/board/uXjVPjLT3tg=/ **Feasibility** 

Intrinsic motivation

Social expectations

Do expectations about

Social image concerns

#### BEHAVIORAL DIAGNOSTICS

- With the 'real citizen' in mind
  - Which behavioral mechanisms affect the problem?

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#### BEHAVIORAL MECHANISMS

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Intrinsic motivation

Social expectations

Do expectations about

group behaviors or

Social image concerns

Do social image

#### BEHAVIORAL DIAGNOSTICS

- With the 'real citizen' in mind
  - Which behavioral mechanisms affect the problem?
  - Which augmented policies address those mechanisms?
    - Sheds light on feasibility, to help selected which mechanisms should be tested

## NUDGES

### **DEFINITION:**

Nudge is an intervention that modifies the choice architecture, inducing the desirable choice while still preserving freedom of choice.

⇒ Libertarian Paternalism

## INATTENTION

#### PROBLEM: INEFFICIENT TAXES

American Economic Review 2009, 99:4, 1145–1177 http://www.aeaweb.org/articles.php?doi=10.1257/aer.99.4.1145

Salience and Taxation: Theory and Evidence

By Raj Chetty, Adam Looney, and Kory Kroft\*



#### **MECHANISM: INATTENTION**

American Economic Review 2009, 99:4, 1145–1177 http://www.aeaweb.org/articles.php?doi=10.1257/aer.99.4.1145

Salience and Taxation: Theory and Evidence

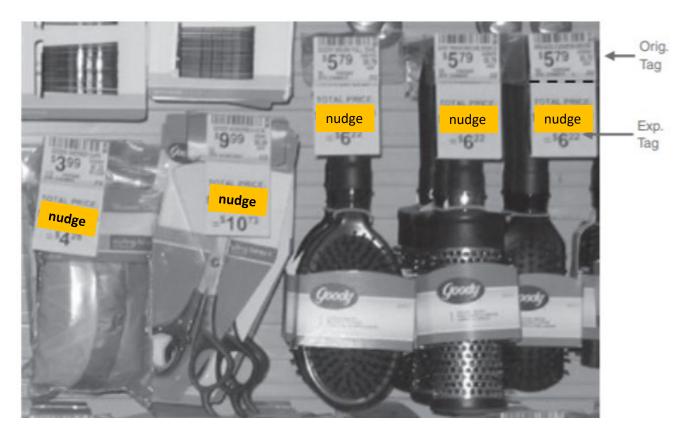
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Typical customer accurately

Not about inaccurate beliefs

8% lower sales!

Tag

Exp.

#### PROBLEM: HIGH INCARCERATION RATES

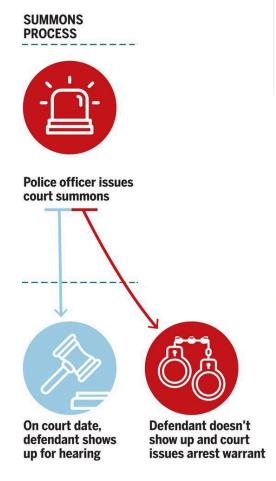




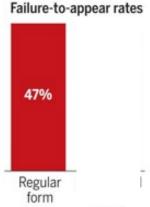
47%

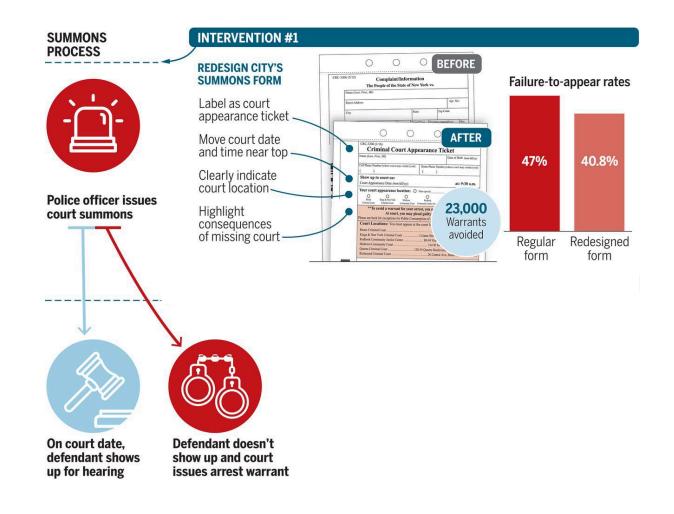
Regular form

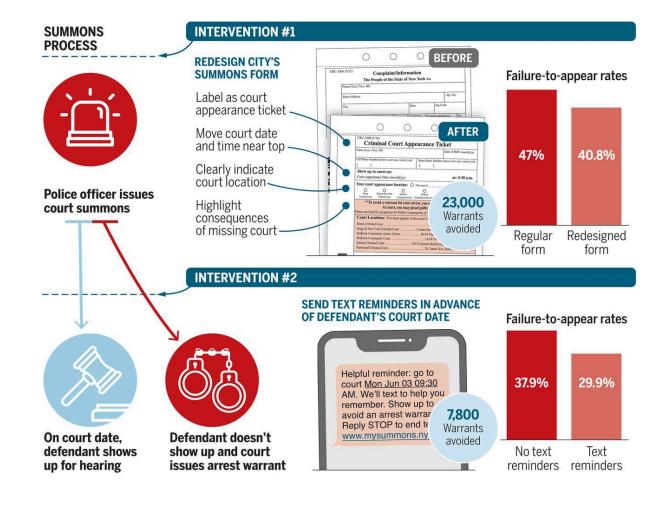
#### MECHANISM: INATTENTION











#### PROBLEM: HIGH TRUANCY RATES

Are the Effects of Informational Interventions Driven by Salience?

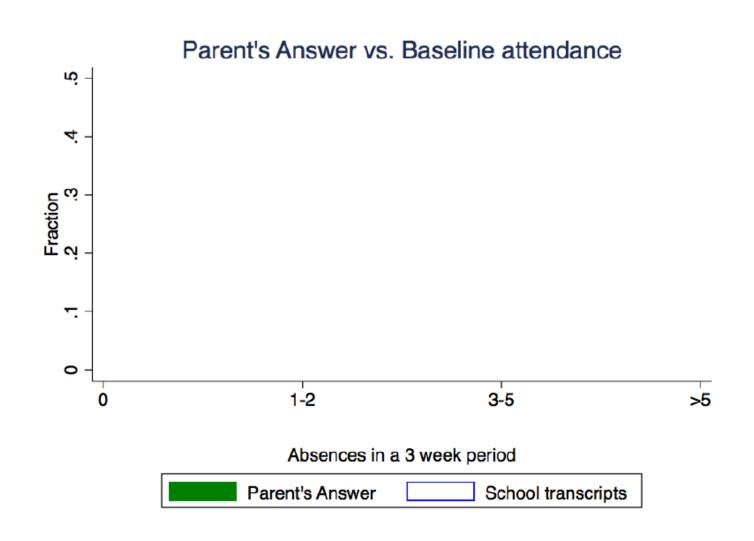
University of Zurich, Department of Economics, Working Paper No. 350, Revised version

104 Pages • Posted: 15 Jul 2020 • Last revised: 12 Feb 2021

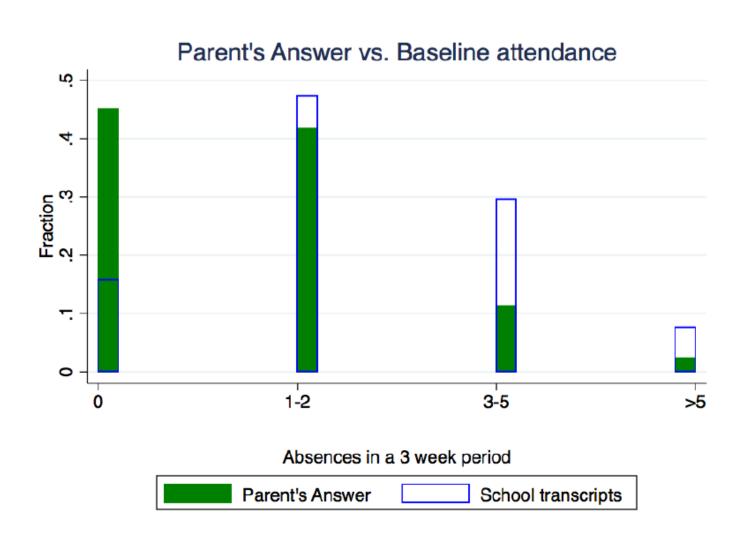




#### MECHANISM: LEARNING THROUGH NOTICING



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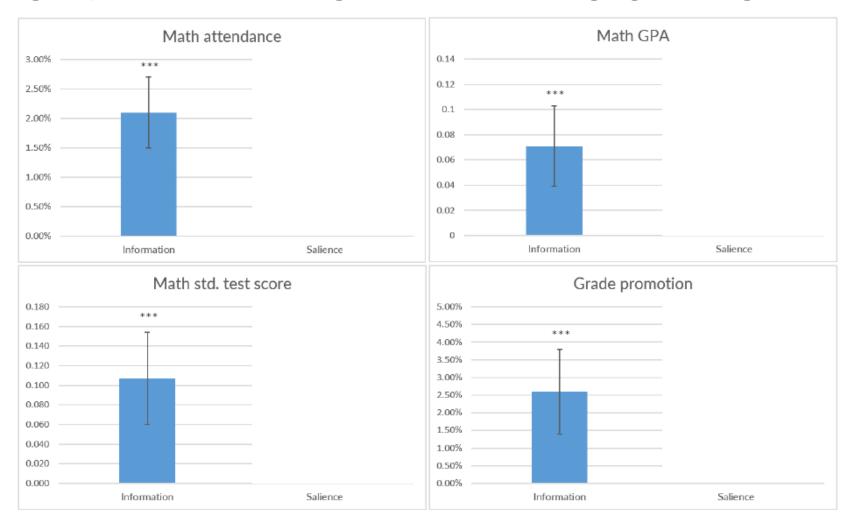


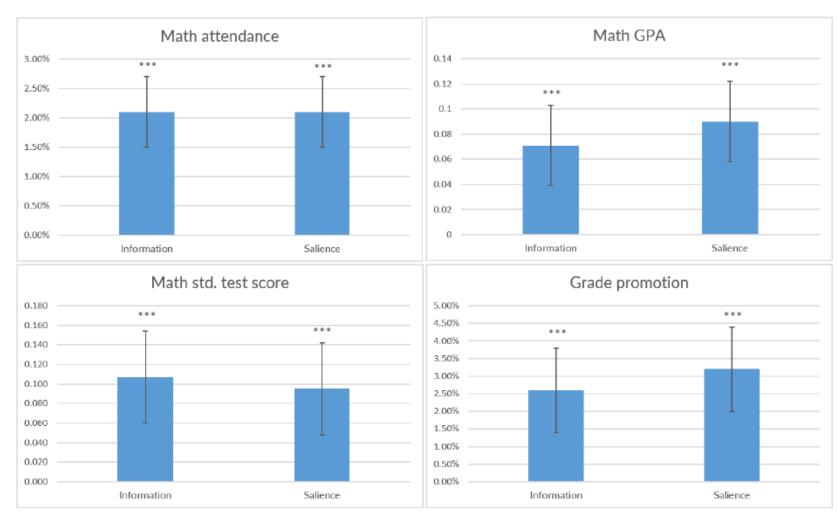
Joice Toyota

Guilherme Lichand

Filomena Siqueira

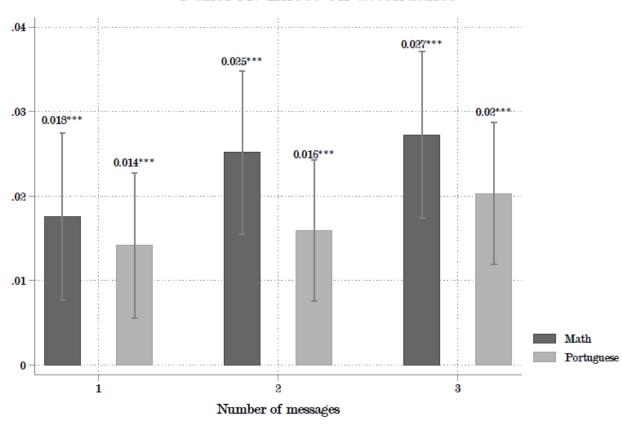
Control	Salience	Information
	Attending classes every day is important for Filomena's grades	Joice was absent less than 3 times in the previous 3 weeks



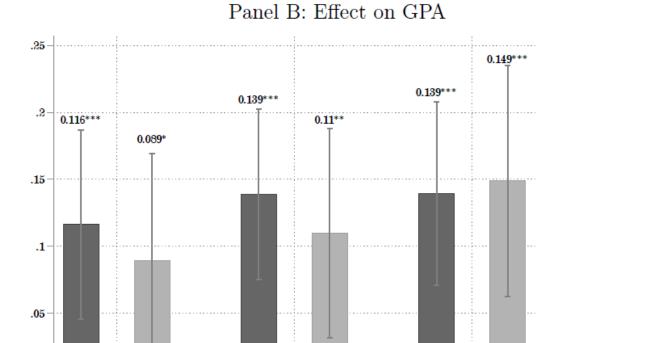


#### INFORMATION VS. ATTENTION





#### INFORMATION VS. ATTENTION



Number of messages

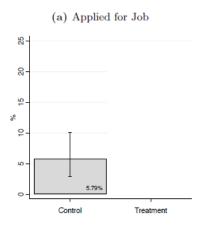
Math Portuguese

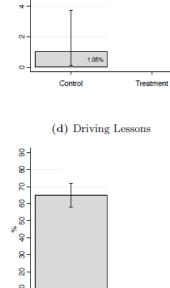
## MOTIVATION

### PROBLEM: LOW FEMALE LFP RATES

#### Misperceived Social Norms: Female Labor Force Participation in Saudi Arabia\*

Leonardo Bursztyn $^{\dagger}$  Alessandra L. González $^{\ddagger}$  David Yanagizawa-Drott $^{\S}$ 

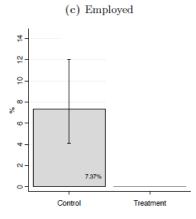




Control

Treatment

(b) Interviewed for Job



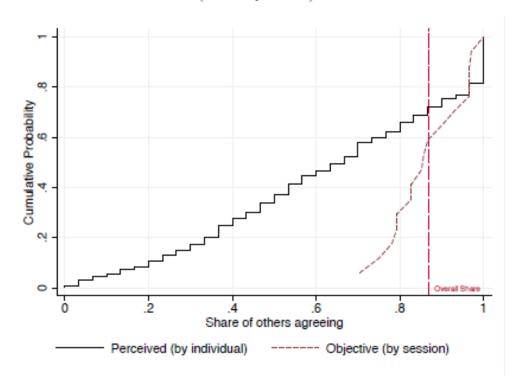
### MECHANISM: SOCIAL EXPECTATIONS

Misperceived Social Norms: Female Labor Force Participation in Saudi Arabia\*

Leonardo Bursztyn<sup>†</sup> Alessandra L. González<sup>‡</sup> David Yanagizawa-Drott<sup>§</sup>

Figure 2: Misperceptions about Others' Beliefs (Working Outside the Home)

(Main Experiment)



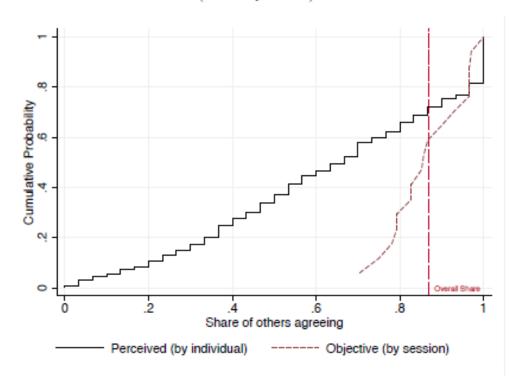
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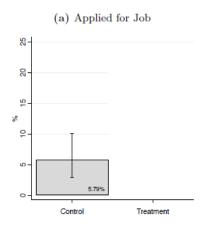


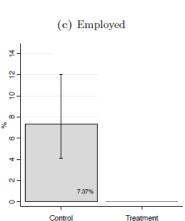


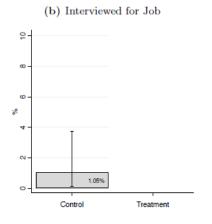
### **NUDGE: MODIFYING SOCIAL EXPECTATIONS**

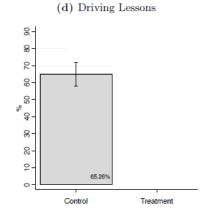
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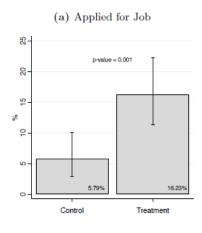


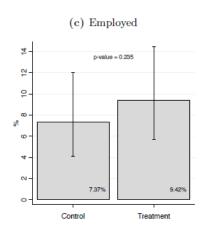


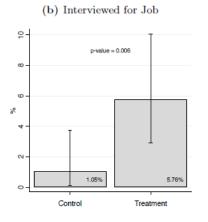
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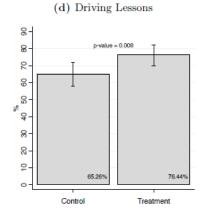
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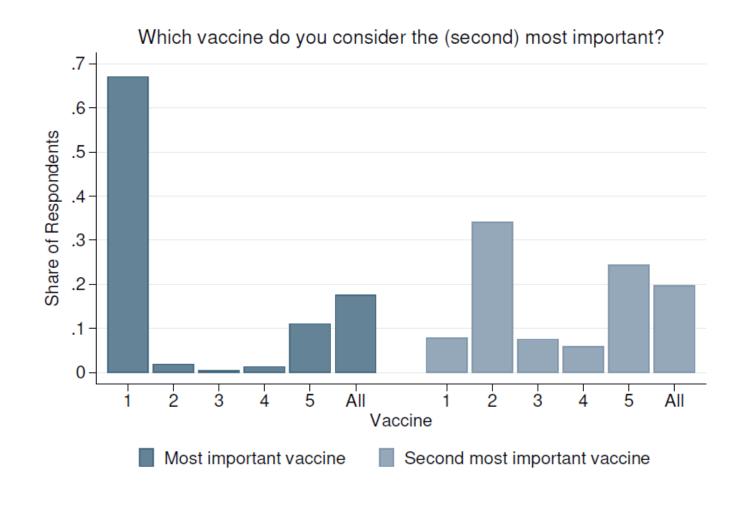




### PROBLEM: LOW VACCINE TAKE-UP RATES

Social Signaling and Childhood Immunization: A Field Experiment in Sierra Leone

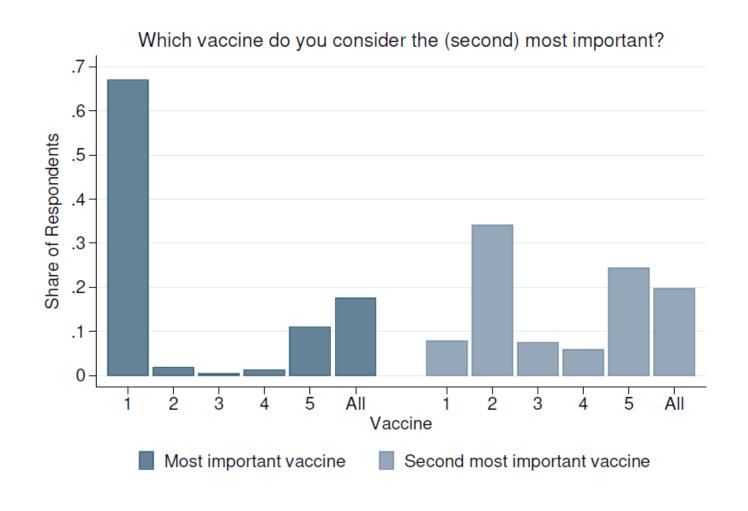
> Anne Karing\* University of California, Berkeley



### MECHANISM: SOCIAL IMAGE CONVERNS

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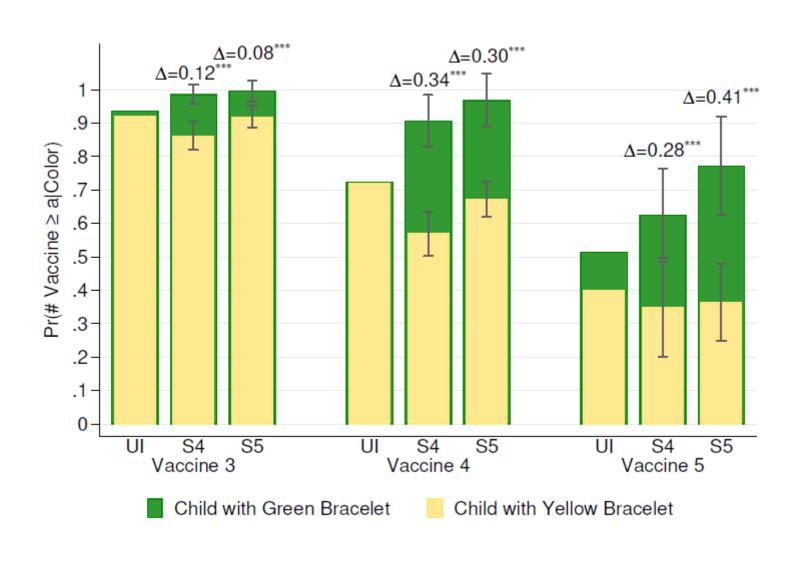
### **NUDGE: INCREASING VISIBILITY**

Social Signaling and Childhood Immunization: A Field Experiment in Sierra Leone

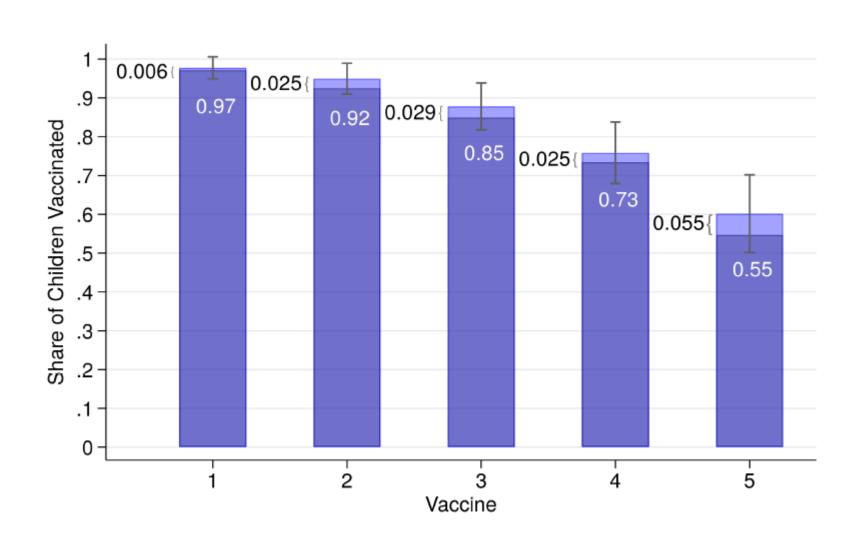
	Vaccine 1	2	3	Vaccine 4	Vaccine 5
	Hand Out			Exchange	Exchange
Control					
Signal at 4	Yellow  1st visit	:	••••	Green  4th visit	4th visit
Signal at 5	1st visit	:		1st visit	5th visit
Uninformative Bracelet	1st visit 1st visit		••••	→ 1st visit → 1st visit	→ 1st visit → 1st visit

Anne Karing\* University of California, Berkeley

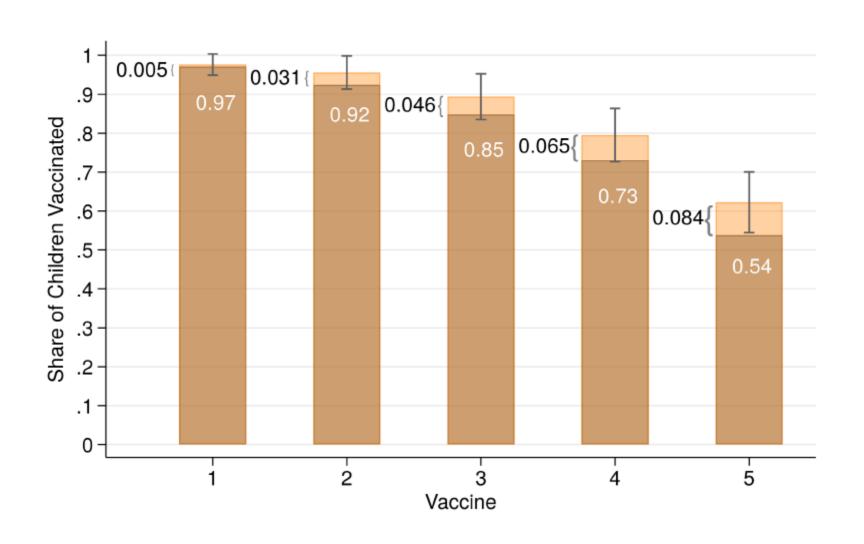
### INTERPRETING SOCIAL SIGNALS



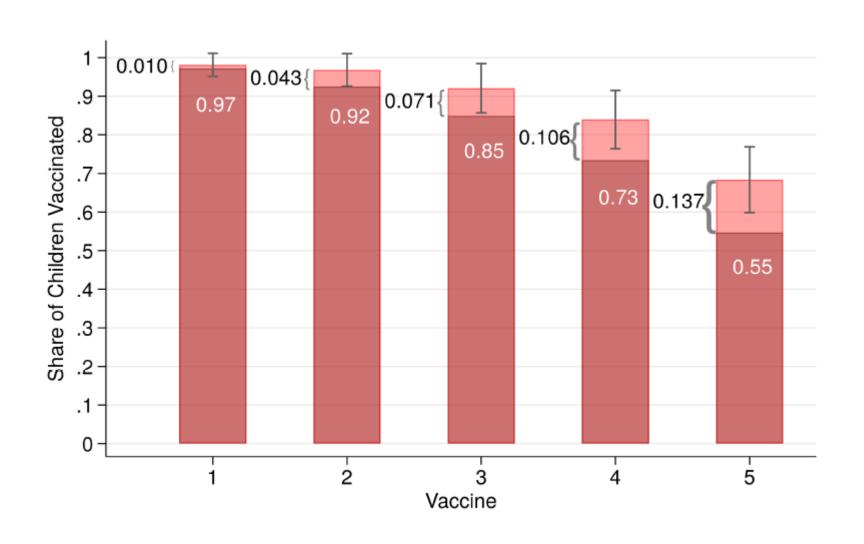
### **NUDGE: ATTENTION REALLOCATION**



### **NUDGE: INCREASING VISIBILITY**



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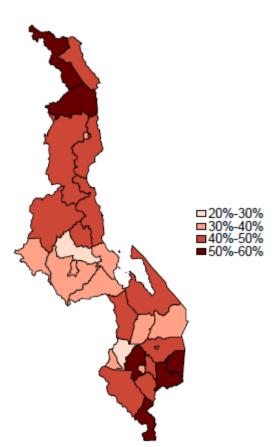


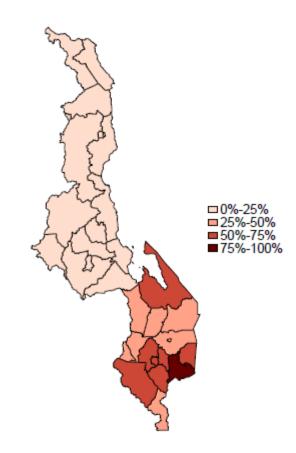
### PROBLEM: VIOLENCE AGAINST CHILDREN

Harming to Signal: Child Marriage vs.
Public Donations in Malawi\*

Girl's Marriage Sexual Initiation Rituals

Simon Haenni<sup>†</sup>



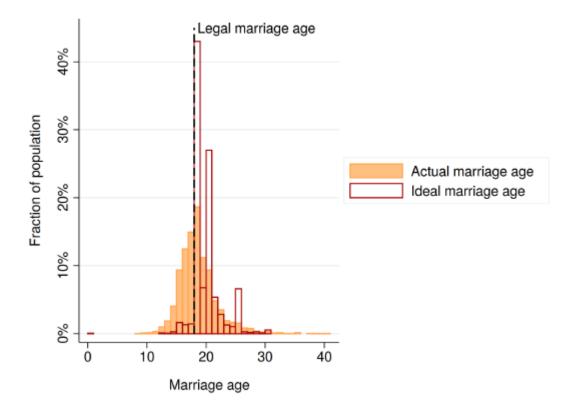


### MECHANISM: SOCIAL IMAGE CONCERNS

Harming to Signal: Child Marriage vs.
Public Donations in Malawi\*

Simon Haenni<sup>†</sup>

Figure 1: Distribution of actual and ideal marriage age for females in Malawi

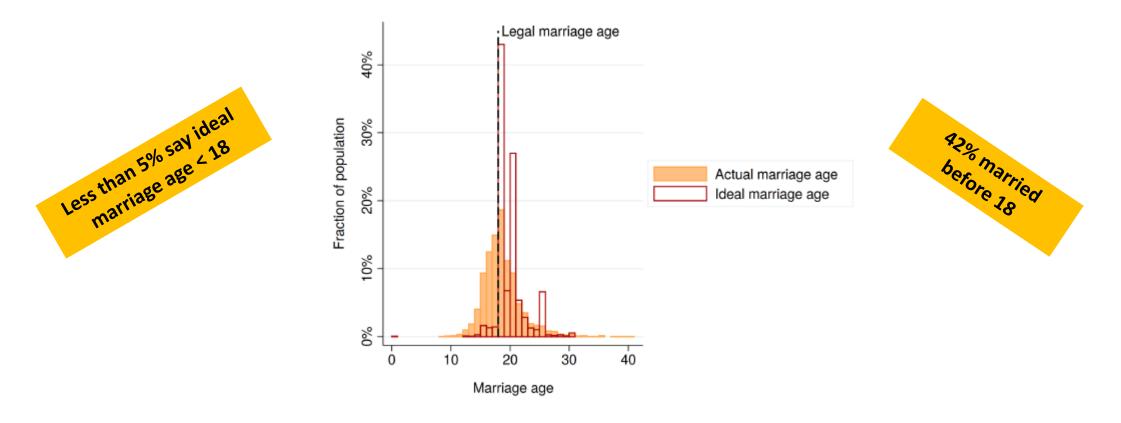


### MECHANISM: SOCIAL IMAGE CONCERNS

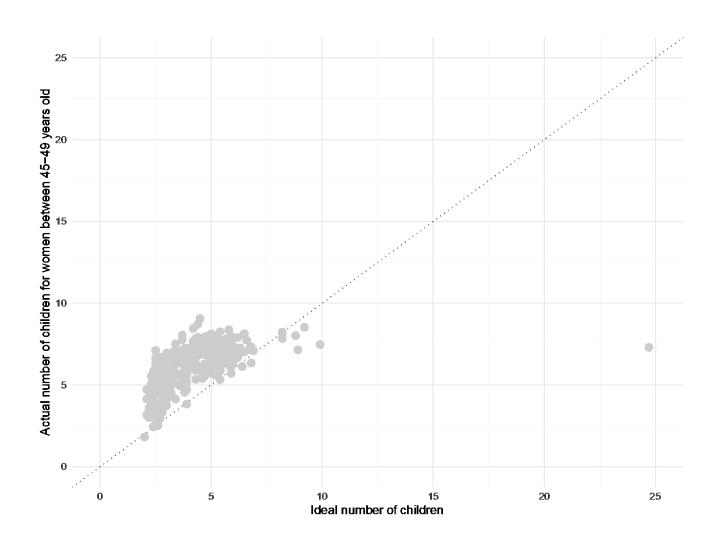
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Figure 1: Distribution of actual and ideal marriage age for females in Malawi



### MECHANISM: SOCIAL IMAGE CONCERNS



# NUDGE: INCREASING VISIBILITY OF ALTERNATIVE SIGNALS



Harming to Signal: Child Marriage vs.
Public Donations in Malawi\*

Simon Haenni<sup>†</sup>

# NUDGE: INCREASING VISIBILITY OF ALTERNATIVE SIGNALS



Harming to Signal: Child Marriage vs.
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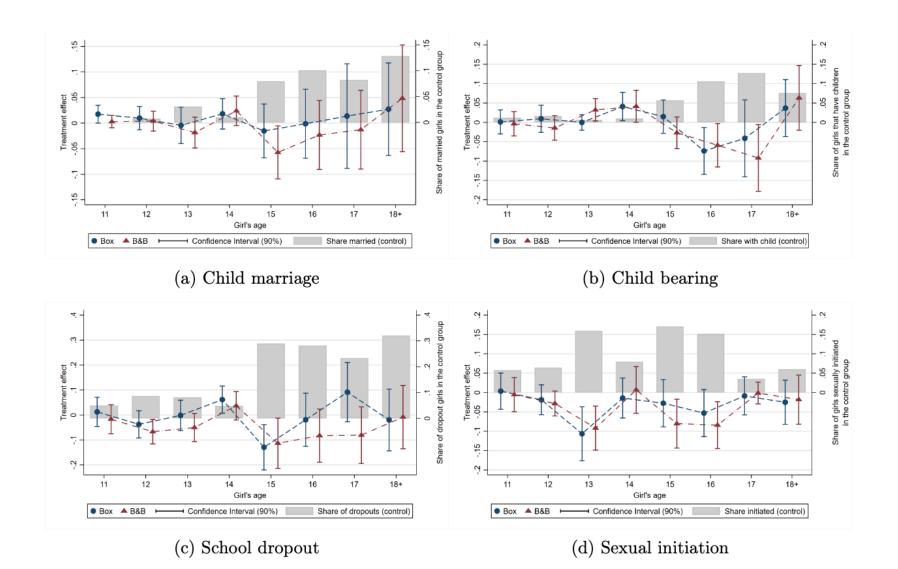
### **PLACEBO**



Harming to Signal: Child Marriage vs. Public Donations in Malawi\*

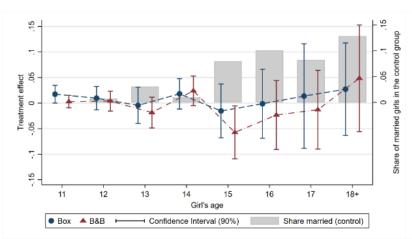
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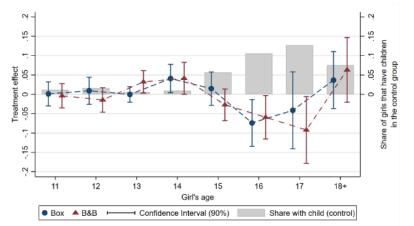
# NUDGE: INCREASING VISIBILITY OF ALTERNATIVE SIGNALS



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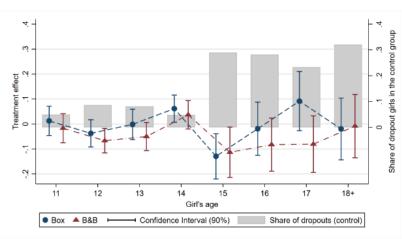




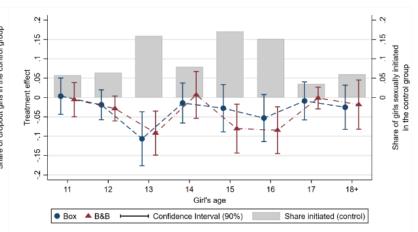




(a) Child marriage



(b) Child bearing



(c) School dropout

(d) Sexual initiation

## SELF-CONTROL

### PROBLEM: HIGH VIOLENT CRIME RATES

## Preventing Youth Violence and Dropout: A Randomized Field Experiment



### PROBLEM: HIGH VIOLENT CRIME RATES

## Preventing Youth Violence and Dropout: A Randomized Field Experiment

	Control Group Mean	Treatment Group Mean
	N = 1267	N = 1473
Demographics		
Age	15.70	15.51
Black	0.72	0.69
Hispanic	0.28	0.31
Schooling		
Grade	9.42	9.29
Old for Grade	0.55	0.51
GPA	1.68	9.29 0.51 1.73 133.60 0.20 0.35
<b>Total Days Present</b>	129.86	133.60
IEP	0.21	0.20
Arrests		
Ever Arrested	0.37	0.35
Number of Arrests for:		
Violent Crime	0.35	0.35
Property Crime	0.21	0.19
Drug Crime	0.17	0.18
Other Crime	0.45	0.47

### **MECHANISM: IMPULSIVITY**

## Preventing Youth Violence and Dropout: A Randomized Field Experiment



# NUDGE: COGNITIVE BEHAVIORAL THERAPY (CBT)

## Preventing Youth Violence and Dropout: A Randomized Field Experiment

Table II. Program Participation

	All Treatment	In-School Only	In- & After- School	After-School Only	Control
Ever Attended	0.49	0.54	0.65	0.21	0.05
<b>Total Sessions Attended</b>	6.64	6.94	9.69	1.94	0.55
Total Sessions   Ever Attended	13.47	12.80	14.97	9.26	11.34
25th Percentile of Attenders	4	5	5	2	3
75th Percentile of Attenders	20	15	22	11	18

# NUDGE: COGNITIVE BEHAVIORAL THERAPY (CBT)

## Preventing Youth Violence and Dropout: A Randomized Field Experiment

**Table III. Effect of Treatment on Arrests** 

Arrest Type	СМ	ITT	LATE	Lower-Bound LATE	ССМ	
	Year 1					
Violent	0.167	-0.0336**	-0.0806**	-0.0521**	0.184	
		(0.0165)	(0.0394)	(0.0254)		
Property	0.077	0.0050	0.0120	0.0078	0.066	
		(0.0128)	(0.0303)	(0.0196)		
Drug	0.151	0.0026	0.0062	0.0040	0.094	
		(0.0178)	(0.0424)	(0.0274)		
Other	0.305	-0.0480*	-0.1151*	-0.0744*	0.320	
		(0.0267)	(0.0636)	(0.0411)		
			Year 2			
Violent	0.110	-0.0005	-0.0013	-0.0008	0.09	
		(0.0143)	(0.0340)	(0.0220)		
Property	0.057	-0.0032	-0.0076	-0.0049	0.05	
		(0.0103)	(0.0245)	(0.0159)		
Drug	0.164	-0.0181	-0.0435	-0.0281	0.17	
		(0.0192)	(0.0457)	(0.0295)		
Other	0.264	-0.0417	-0.0999	-0.0646	0.29	
		(0.0258)	(0.0614)	(0.0397)		



# NUDGE: COGNITIVE BEHAVIORAL THERAPY (CBT)

## Preventing Youth Violence and Dropout: A Randomized Field Experiment

Sara Heller, Harold A. Pollack, Roseanna Ander & Jens Ludwig

Table IV. Effect of Treatment on School Engagement and Performance

	СМ	ITT	LATE	Lower-Bound LATE	ССМ
_			Year 1		
Index	0	0.0585***	0.1403***	0.0906***	0.218
		(0.0216)	(0.0511)	(0.0330)	
Index Elements					
Days Present	0	0.0450	0.1055	0.0688	0.410
		(0.0280)	(0.0648)	(0.0423)	
GPA	0	0.0595*	0.1312**	0.0885**	0.166
		(0.0305)	(0.0665)	(0.0448)	
Still in School	0	0.0502	0.1205	0.0778	0.147
		(0.0345)	(0.0818)	(0.0529)	
			Year 2		
Index	0	0.0786***	0.1887***	0.1219***	0.039
		(0.0217)	(0.0517)	(0.0334)	
Index Elements					
Days Present	0	0.0470	0.1012	0.0697	0.189
		(0.0350)	(0.0743)	(0.0512)	
GPA	0	0.1012***	0.1999***	0.1456***	-0.225
		(0.0388)	(0.0760)	(0.0552)	
Still in School	0	0.0416	0.0997	0.0644	0.136
		(0.0348)	(0.0826)	(0.0535)	

Persistent effects!

Program does more than preventing incarceration

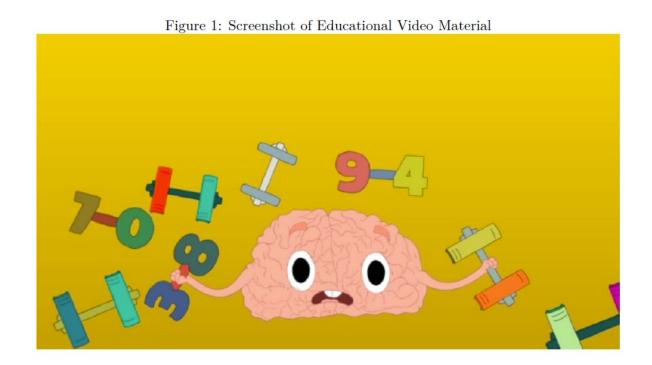
#### PROBLEM: POOR LEARNING OUTCOMES

Ever Failed, Try Again, Succeed Better: Results from a Randomized Educational Intervention on Grit

### **MECHANISM: FIXED MINDSET**

Ever Failed, Try Again, Succeed Better: Results from a Randomized Educational Intervention on Grit

Ever Failed, Try Again, Succeed Better: Results from a Randomized Educational Intervention on Grit



Ever Failed, Try Again, Succeed Better: Results from a Randomized Educational Intervention on Grit

Sule Alan, Teodora Boneva, Seda Ertac

"Find pairs that sum up to 100"

Figure 2: Example of Easy Task

80	7	
70	95	
5	20	
10	30	
93	90	

Ever Failed, Try Again, Succeed Better: Results from a Randomized Educational Intervention on Grit

Sule Alan, Teodora Boneva, Seda Ertac

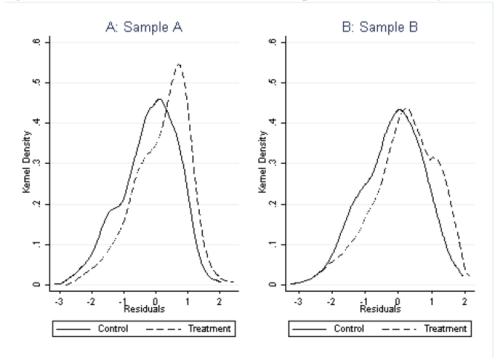
"Find pairs that sum up to 100"

Figure 3: Example of Difficult Task

17	86	23	12
71	42	27	38
51	62	83	30
77	59	46	67
81	58	29	54

Ever Failed, Try Again, Succeed Better: Results from a Randomized Educational Intervention on Grit

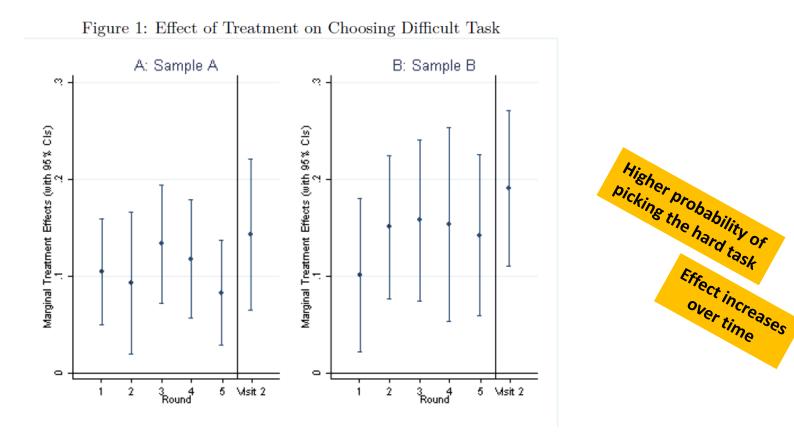
Figure 3: Effect of Treatment on Self-Reported Malleability Beliefs





### **NUDGE: MUDANDO MODELOS MENTAIS**

Ever Failed, Try Again, Succeed Better: Results from a Randomized Educational Intervention on Grit



### **NUDGE: MUDANDO MODELOS MENTAIS**

Ever Failed, Try Again, Succeed Better: Results from a Randomized Educational Intervention on Grit

Sule Alan, Teodora Boneva, Seda Ertac

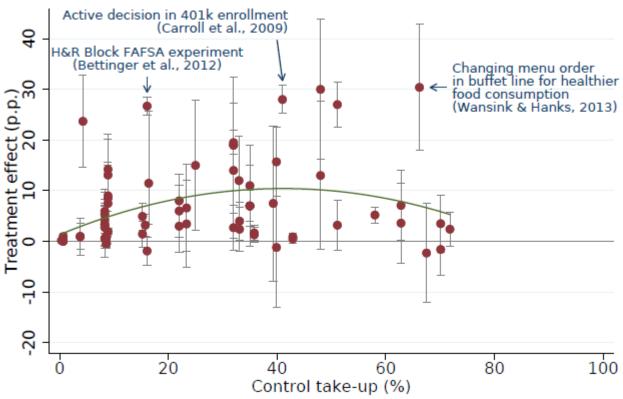
Table 9: Treatment Effect on Standardized Test Scores (Sample B)

	Math Test Score	Turkish Test Score
Treatment	0.276***	0.134**
	(0.09)	(0.05)
Gender (Male=1)	0.037	-0.124**
	(0.05)	(0.04)
Raven Score	0.368***	0.230***
	(0.04)	(0.04)
Risk Tolerance	-0.039*	-0.014
	(0.02)	(0.01)
Turkish score (pre)	$0.207^{***}$	0.249***
	(0.04)	(0.02)
Math score (pre)	0.193***	0.263***
	(0.04)	(0.03)
Class size	-0.009*	-0.006
	(0.00)	(0.00)
Control Mean	-0.04	0.01
N	1203	1206



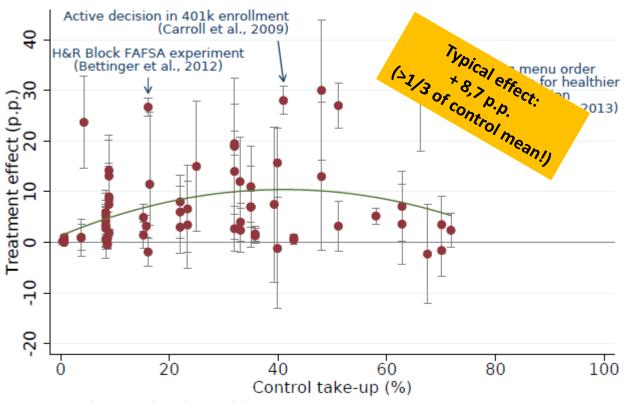
# LIMITATIONS

(a) Academic journals sample



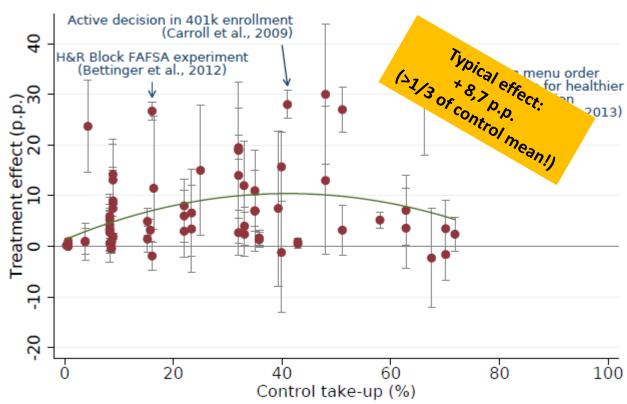
Sample: 71 nudges (26 trials) 3 nudges with treatment effects >40 p.p. excluded 95% confidence intervals and quadratic fit shown

(a) Academic journals sample

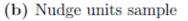


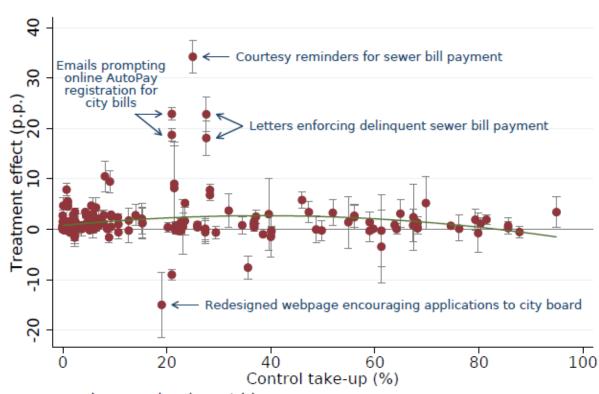
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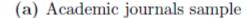


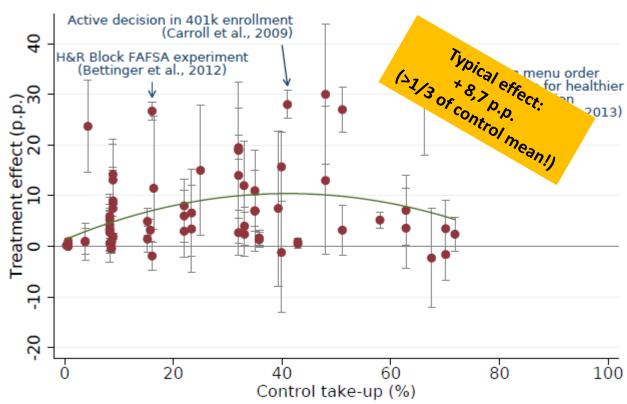
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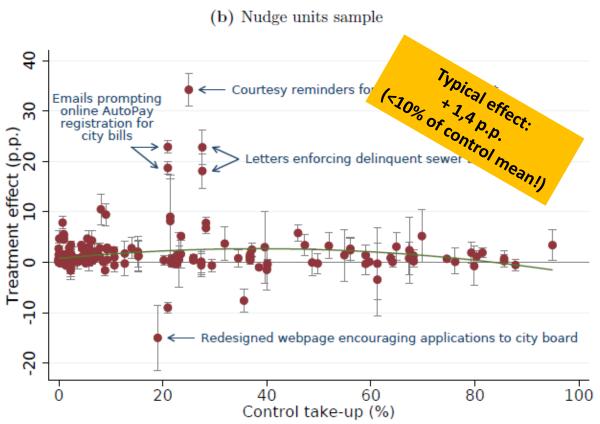


Sample: 239 nudges (124 trials) 4 nudges (2 trials) with missing control take-up data are not shown. 95% confidence intervals and quadratic fit shown





Sample: 71 nudges (26 trials) 3 nudges with treatment effects >40 p.p. excluded 95% confidence intervals and quadratic fit shown



Sample: 239 nudges (124 trials) 4 nudges (2 trials) with missing control take-up data are not shown. 95% confidence intervals and quadratic fit shown

# WHEN YOU ONLY HAVE A HAMMER....

#### Self-Control and Its Discontents: A Commentary on Duckworth, Milkman, and Laibson

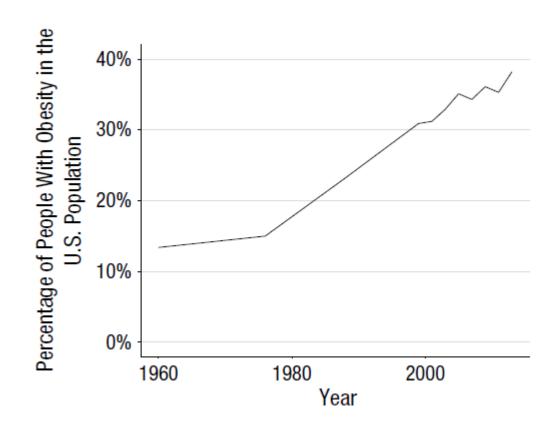
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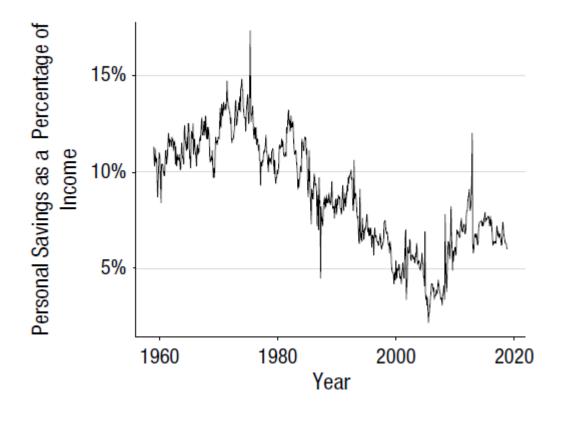
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#### George Loewenstein

Department of Social and Decision Sciences, Carnegie Mellon University





## ... EVERYTHING LOOKS LIKE A NAIL

#### Self-Control and Its Discontents: A Commentary on Duckworth, Milkman, and Laibson

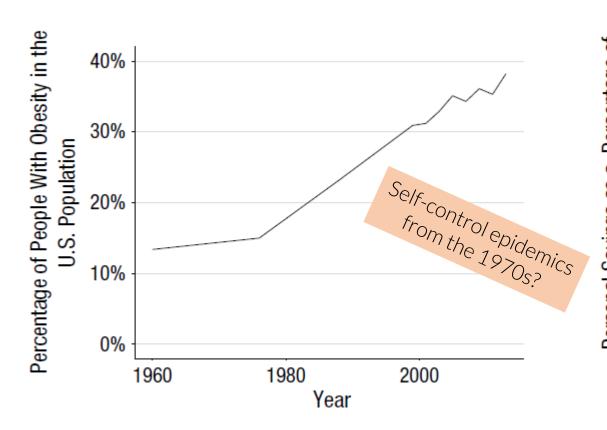
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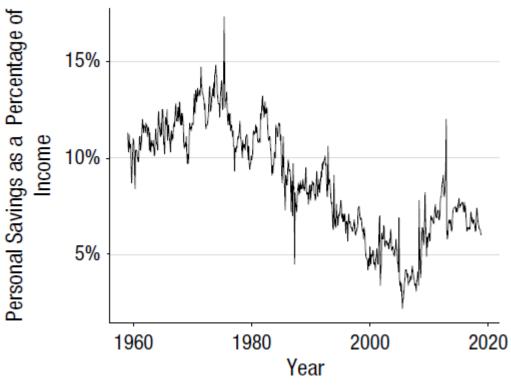
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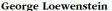
# TRADITIONAL POLICY TOOLS MATTER!

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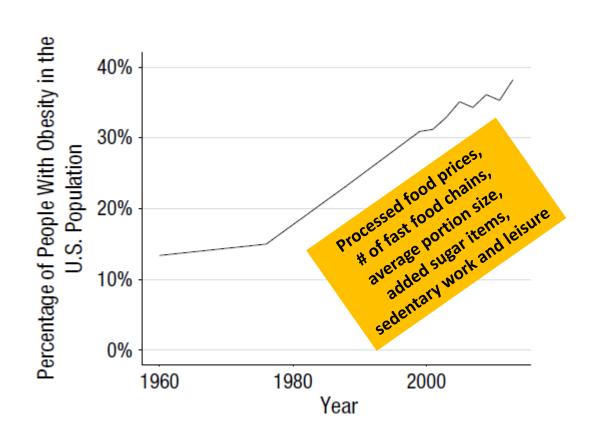
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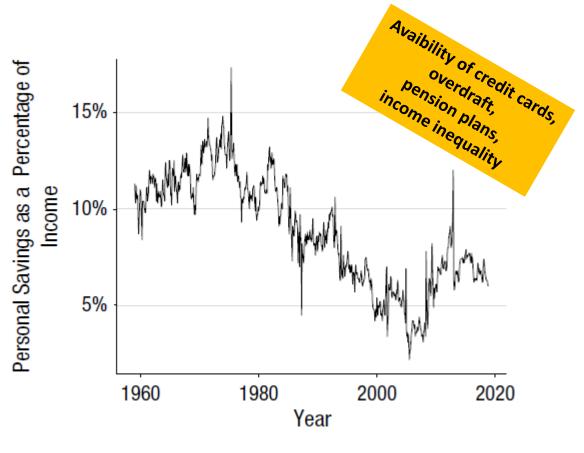
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# PRIX FRAMEWORK

# PRI<sub>X</sub> FRAMEWORK

Augmenting policy tools with behavioral insights

	Traditional policies
Pricing policies	
Regulatory policies	
Information policies	

# PRI<sub>X</sub> FRAMEWORK

Augmenting policy tools with behavioral insights

	Traditional policies	Augmented policies		
		Motivation	Self-control	Inattention
Pricing policies				
Regulatory policies				
Information policies				

# PRI<sub>X</sub> FRAMEWORK

### Augmenting policy tools with behavioral insights

	Traditional	Augmented policies		
	policies	Motivation	Self-control	Inattention
Pricing policies	Taxes/fines to discourage negative externalities  Subsidies/discounts to encourage positive externalities	Reframing expenses or rewards	Adjusting the timing of costs or rewards	Changing the visibility of prices
Regulatory policies	Bans/restrictions on activities with negative externalities  Mandates/promotion of activities with positive externalities	(Dis)association between behavior and identity	Tying hands  Earmarking expenses  and resources	Setting defaults  Removing/inserting  decoy options
Information policies	Updating incorrect beliefs	Changing the visibility of an action (or of its alternatives)  Correcting incorrect beliefs about what others think	Changing mental models	Changing communication features

# IN PRACTICE

#### BEHAVIORAL MECHANISMS

concerns discourage Do values, identity, conformity pressure the the desirable culture or religion discourage the the action - when that discourage the desirable action - even action can be desirable action? when that action observed by others? cannot be observed by others? Self-limiting beliefs **Impulsivity** Procrastination Do self-limiting beliefs Does impulsive Does excessive about one's ability to behavior the gets in optimism about achieve positive the way of the future plans outcomes discourage desirable action discourage the the the desirable the regardless of previous desirable action in the desirable action? plans? present? **Cognitive biases Cognitive load** Learning-through-noticing Is the quality of Does ignoring (some decision-making Do perceptual errors of) available compromised due to lead information in external conditions to undesirable recurring decisions that compete for lead to undesirable actions? one's executive actions? functions, leading to undesirable actions? Plausibility → <a href="https://miro.com/app/board/uXjVPjLT3tg=/">https://miro.com/app/board/uXjVPjLT3tg=/</a> **Feasibility** 

Intrinsic motivation

Social expectations

Do expectations about

group behaviors or

Social image concerns

Do social image

