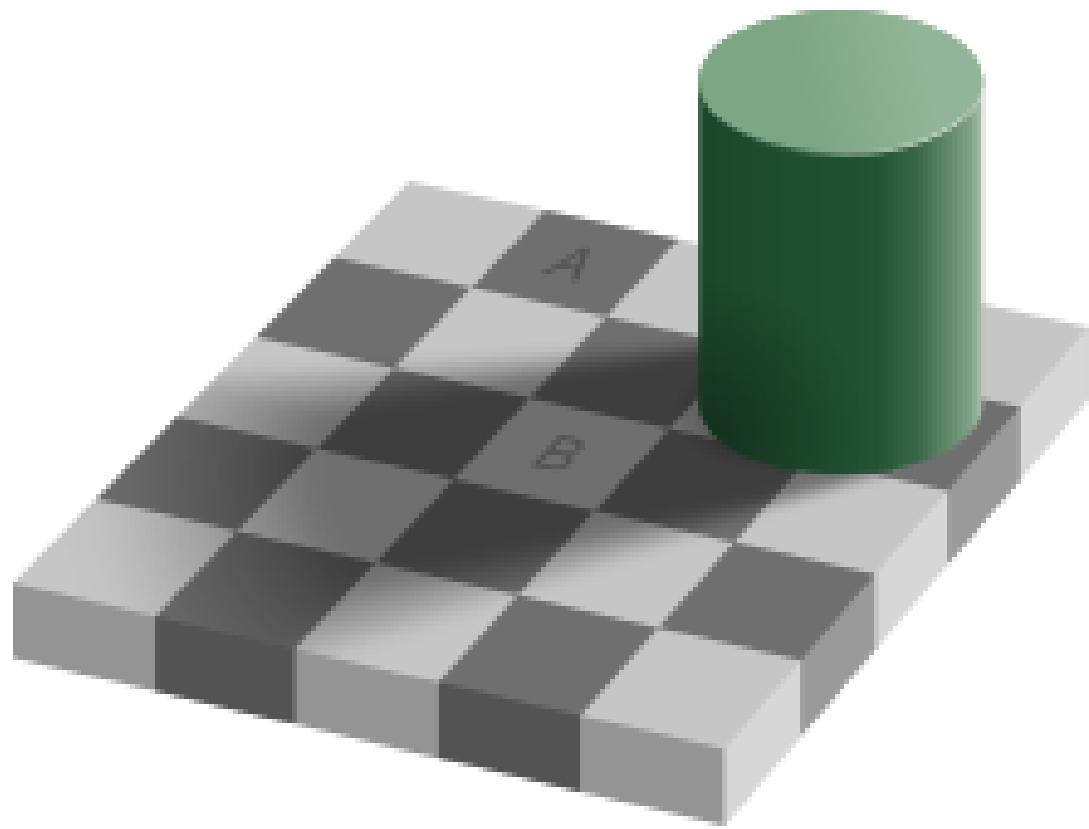
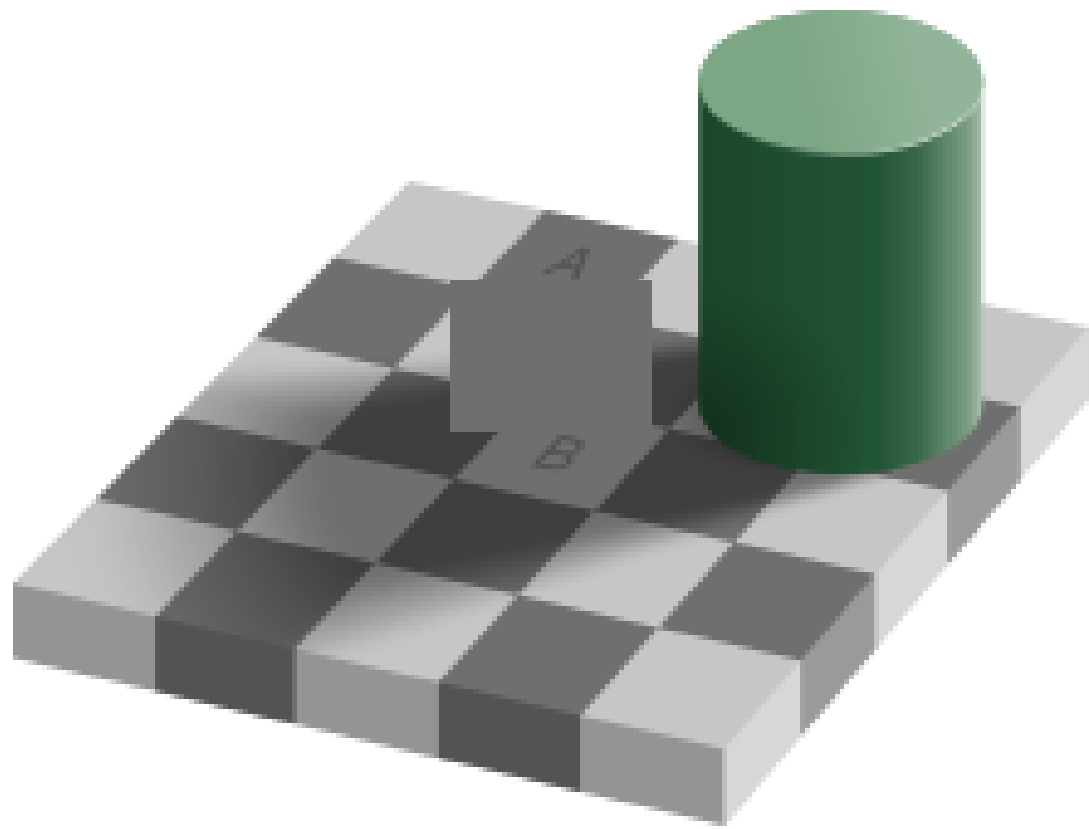


**Barreiras não-financeiras  
ao acesso e sucesso do  
estudante no Ensino  
Superior**

**Qual quadrado é mais escuro?**



**Qual quadrado é mais escuro?**



# Funcionamento do cérebro

So a typical adult human brain runs on around 12 watts—a fifth of the power required by a standard 60 watt lightbulb. Compared with most other organs, the brain is greedy; pitted against man-made electronics, it is astoundingly efficient. IBM's Watson, the supercomputer that defeated *Jeopardy!* champions, depends on ninety IBM Power 750 servers, each of which requires around one thousand watts.

– **Scientific American**, “Does Thinking Really Hard Burn More Calories?”, 18/07/2012

# **O cérebro precisa ser eficiente**

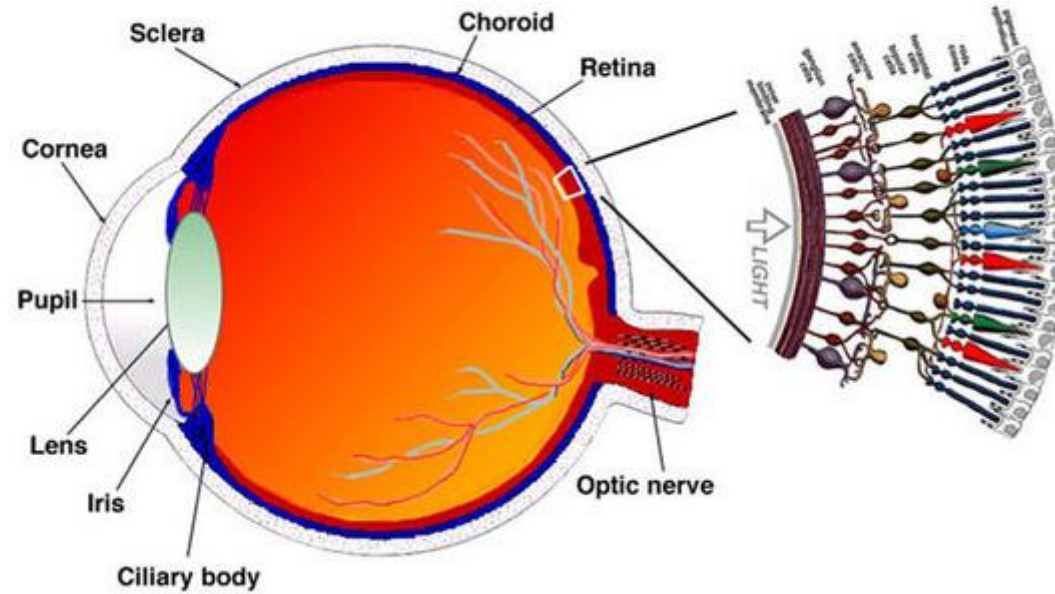
O cérebro precisa alocar energia limitada (banda mental) para suas funções executivas:

- Atenção
- Memória de trabalho
- Controle de impulsividade

Banda mental é limitada

➤ Alocação eficiente?

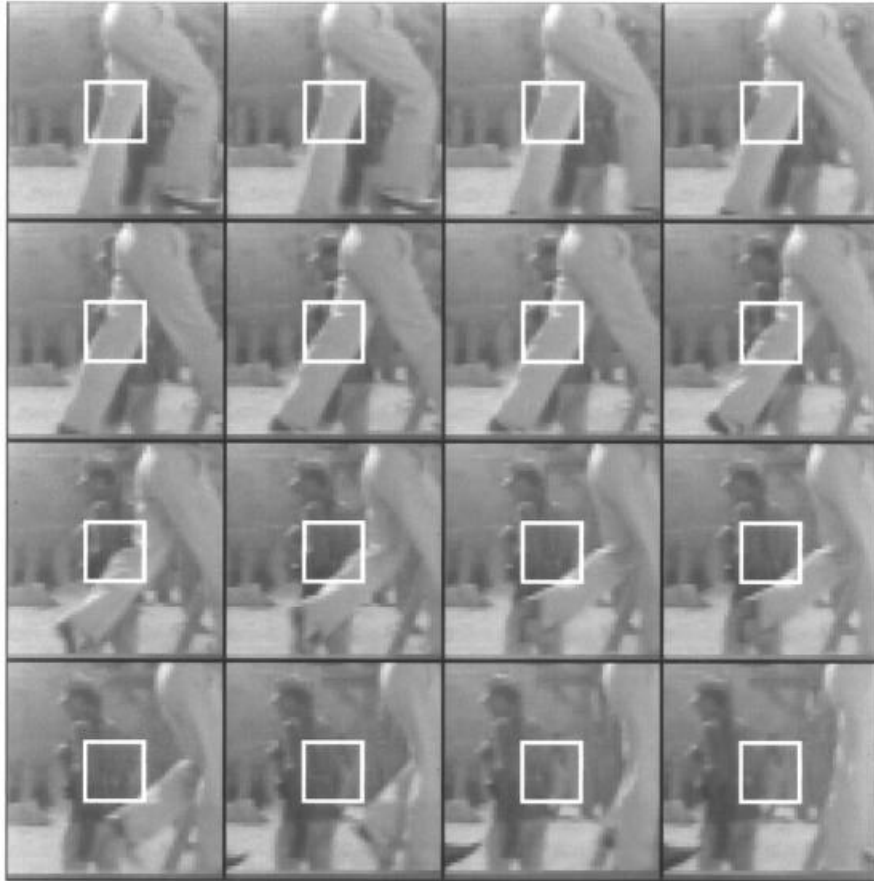
# Codificação eficiente



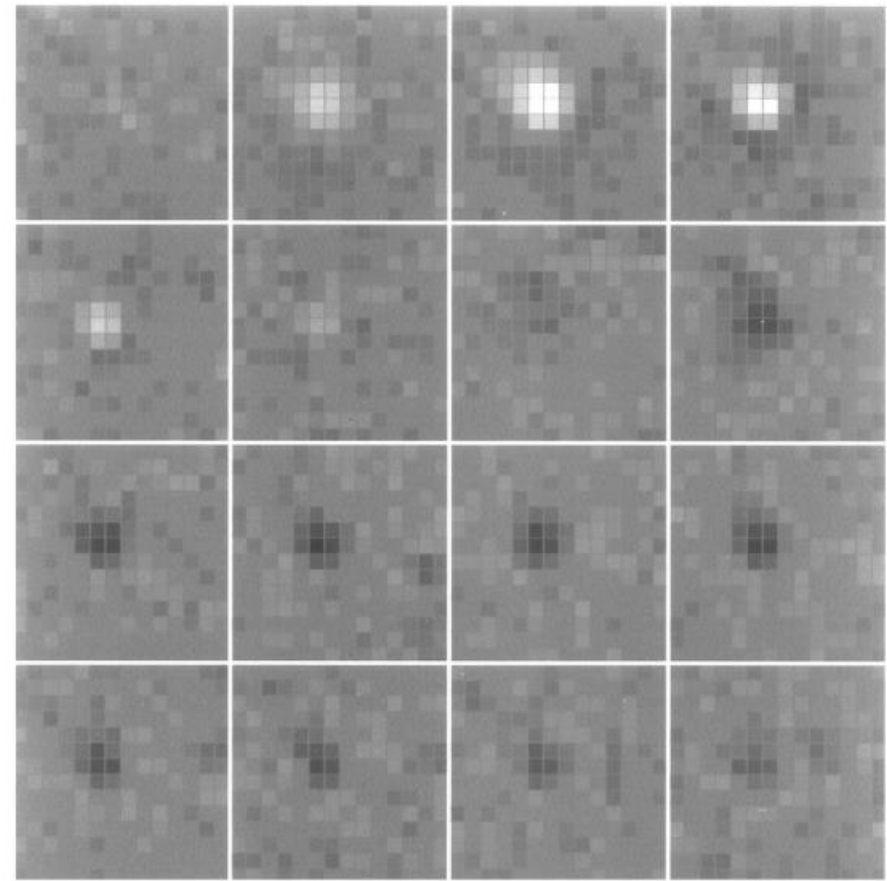


# Codificação eficiente

**a**



**b**



[J Neurosci.](#) 1996 May 15; 16(10): 3351–3362.

PMCID: [PMC6579125](#)

doi: [10.1523/JNEUROSCI.16-10-03351.1996](#)

PMID: [8627371](#)

Efficient Coding of Natural Scenes in the Lateral Geniculate Nucleus:  
Experimental Test of a Computational Theory

[Yang Dan](#),<sup>1</sup> [Joseph J. Atick](#),<sup>2</sup> and [R. Clay Reid](#)<sup>1</sup>

# **Codificação eficiente**

**Compressão da informação baseada em:**

1. Defasagem
2. Compressão da informação
3. Contraste



# **Decodificação eficiente**

Descompressão da informação baseada em:

1. Contraste
2. Modelo

# **Decodificação eficiente**

**Descompressão da informação baseada em:**

1. **Contraste**
2. **Modelo**

- **Luminosidade**
- **Velocidade**
- **Sonoridade**

# **Decodificação eficiente**

**Descompressão da informação baseada em:**

1. **Contraste**
2. **Modelo**

- **Luminosidade**
- **Velocidade**
- **Sonoridade**

**... Numerosidade?**

# Decodificação eficiente



Cognition

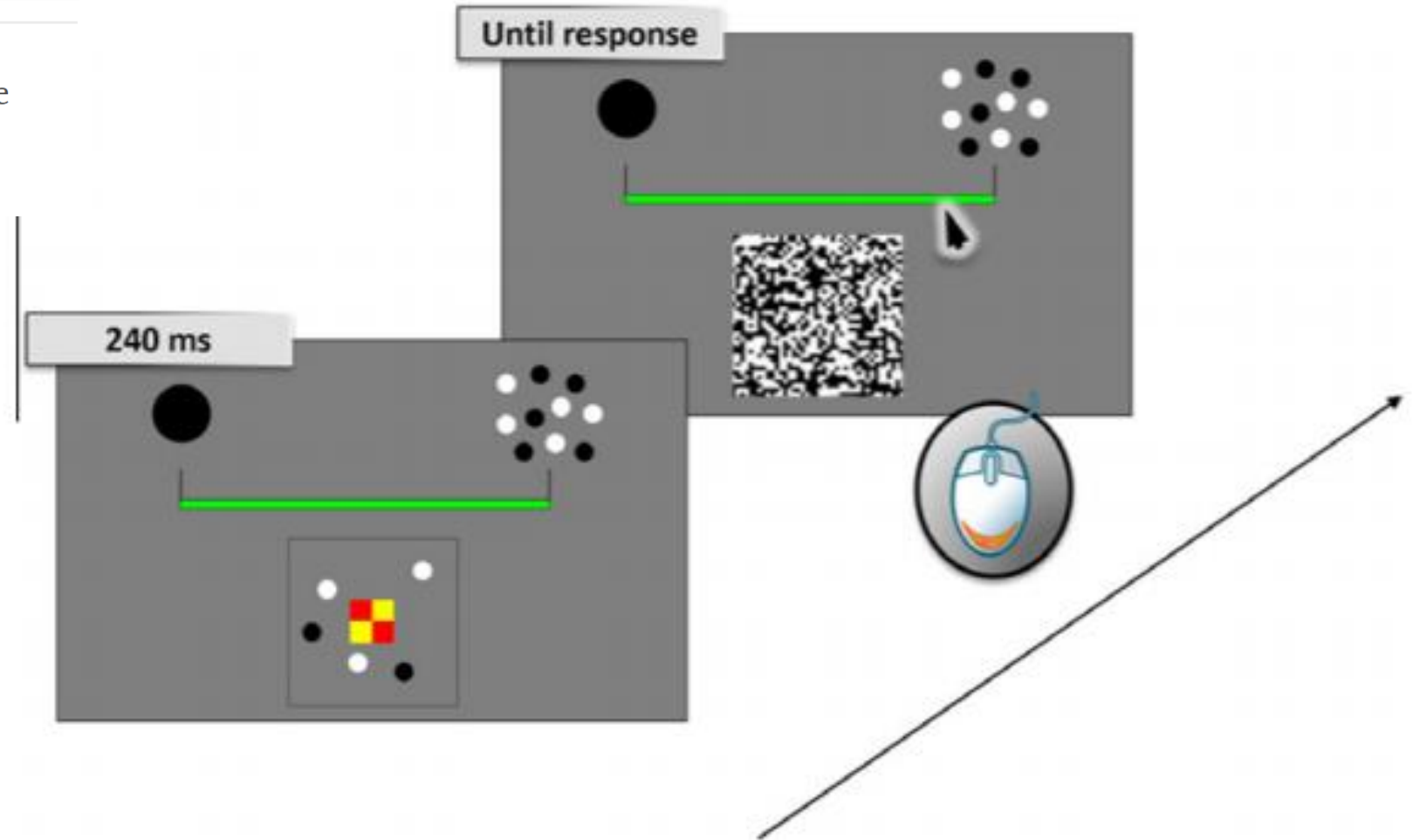
Volume 122, Issue 3, March 2012, Pages 454-459



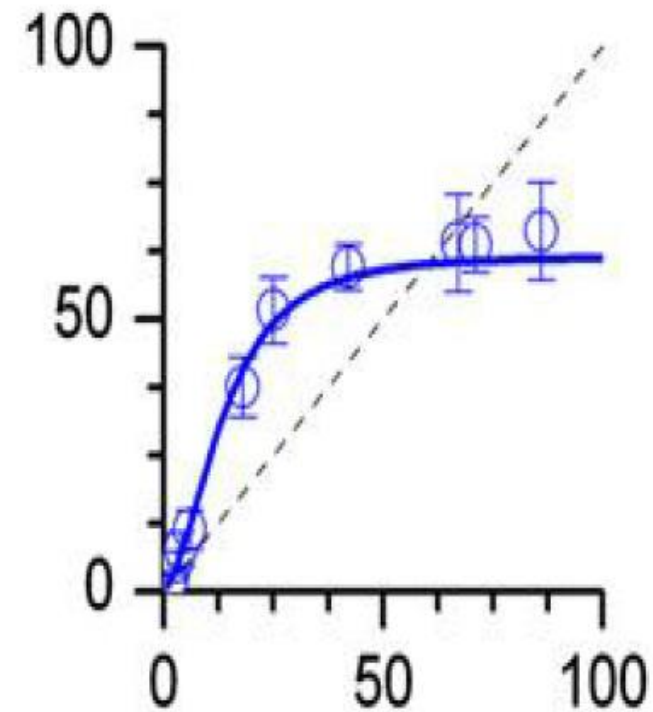
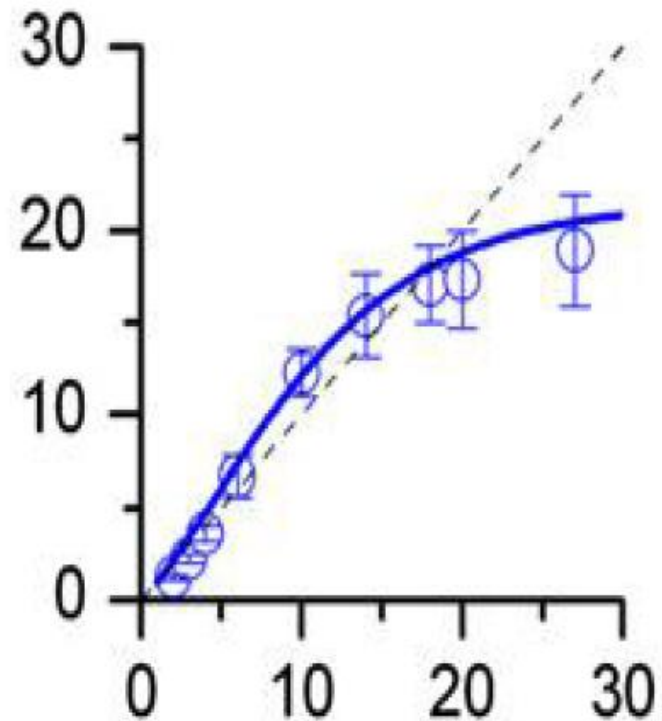
Brief article

## Linear mapping of numbers onto space requires attention

Giovanni Anobile<sup>a</sup>, Guido Marco Cicchini<sup>b</sup>, David C. Burr<sup>a, b</sup> ✉

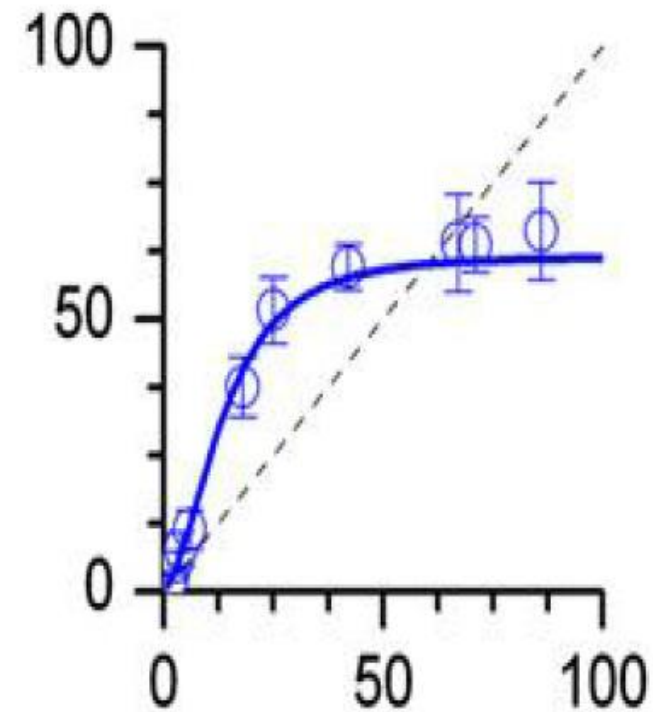
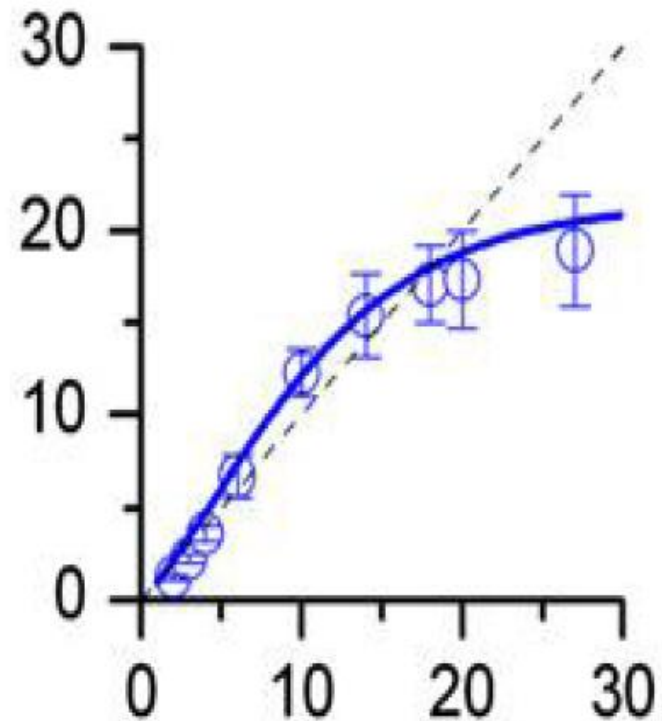


# Decodificação eficiente



# Decodificação eficiente

- Viés conservador (modelo)
- Tendência central (contraste)



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One year subscription to the print edition of *The Economist* and online access to all articles from *The Economist* since 1997.



# O que as pessoas escolhem... Por quê?



# **Vieses/heurísticas “EFICIENTES”**

- Viés de status quo (modelo)
- Ancoragem (modelo)
- Aversão à perda (modelo)
  
- Efeito isca (contraste)
- Efeito dotação (contraste)
- Acessibilidade (contraste)

# Fazendo compras nos Estados Unidos



# Fazendo compras nos Estados Unidos

*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\*



# Fazendo compras nos Estados Unidos

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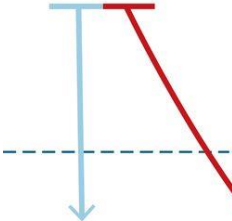
**Vendas 8% mais baixas!**

# Encarceramento elevado

## SUMMONS PROCESS



Police officer issues court summons



On court date, defendant shows up for hearing



Defendant doesn't show up and court issues arrest warrant

SHARE

RESEARCH ARTICLE



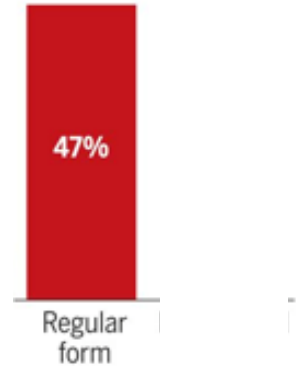
## Behavioral nudges reduce failure to appear for court

Alissa Fishbane<sup>1</sup>, Aurelie Ouss<sup>2,\*</sup>, Anuj K. Shah<sup>3</sup>

+ See all authors and affiliations

Science 06 Nov 2020:  
Vol. 370, Issue 6517, eabb6591  
DOI: 10.1126/science.abb6591

### Failure-to-appear rates



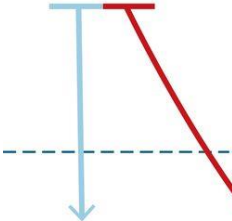


# Desatenção

## SUMMONS PROCESS



Police officer issues court summons



On court date, defendant shows up for hearing



Defendant doesn't show up and court issues arrest warrant

SHARE

RESEARCH ARTICLE



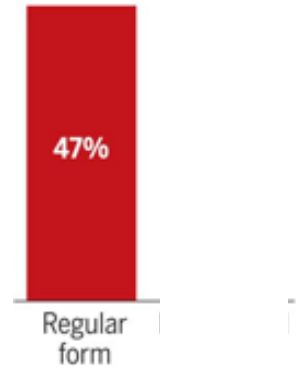
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DOI: 10.1126/science.abb6591

### Failure-to-appear rates



# Realocando atenção

SUMMONS PROCESS



Police officer issues court summons



On court date, defendant shows up for hearing

INTERVENTION #1

REDESIGN CITY'S SUMMONS FORM

Label as court appearance ticket

Move court date and time near top

Clearly indicate court location

Highlight consequences of missing court

**BEFORE**

CRC-3206 (9/12) Complaint Information  
The People of the State of New York vs.

Name (Last, First, MI) \_\_\_\_\_ Apt. No. \_\_\_\_\_  
Street Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

**AFTER**

CRC-3206 (1/16) Criminal Court Appearance Ticket

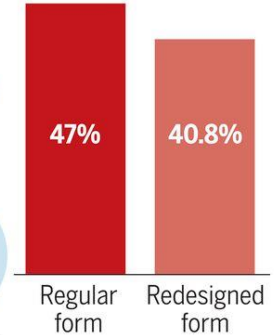
Name (Last, First, MI) \_\_\_\_\_ Date of Birth (mm/dd/yy) \_\_\_\_\_  
Cell Phone Number (where court may contact you) \_\_\_\_\_ State Phone Number (where court may contact you) \_\_\_\_\_  
Show up to court on: \_\_\_\_\_  
Court Appearance Date (mm/dd/yy) \_\_\_\_\_ at: 9:30 a.m.  
Your court appearance location:  Other (write) \_\_\_\_\_  
 Kings County Criminal Court  
 Queens County Criminal Court  
 Richmond County Criminal Court  
 Westchester County Criminal Court  
 Albany County Criminal Court  
 Rensselaer County Criminal Court  
 Saratoga County Criminal Court  
 Schenectady County Criminal Court  
 Warren County Criminal Court  
 Hamilton County Criminal Court  
 Fulton County Criminal Court  
 Schoharie County Criminal Court  
 Otsego County Criminal Court  
 Delaware County Criminal Court  
 Madison County Criminal Court  
 Fulton County Criminal Court  
 Schoharie County Criminal Court  
 Otsego County Criminal Court  
 Delaware County Criminal Court  
 Madison County Criminal Court

**\*\*To avoid a warrant for your arrest, you must appear at the court. At court, you may plead guilty. Please see back for exceptions for Public Consumption et al.**

**Court Locations: You must appear at the court at:**

Brockport Criminal Court \_\_\_\_\_  
Kings & New York Criminal Court \_\_\_\_\_ 1 Centre St.  
Rensselaer Community Justice Center \_\_\_\_\_ 88 W. 5th St.  
Madison Community Court \_\_\_\_\_ 114 W. 5th St.  
Queens Criminal Court \_\_\_\_\_ 120-55 Queens Boulevard  
Richmond Criminal Court \_\_\_\_\_ 20 Central Ave., Staten Island

Failure-to-appear rates



23,000 Warrants avoided

# Realocando atenção

## SUMMONS PROCESS



Police officer issues court summons



On court date, defendant shows up for hearing



Defendant doesn't show up and court issues arrest warrant

### INTERVENTION #1

#### REDESIGN CITY'S SUMMONS FORM

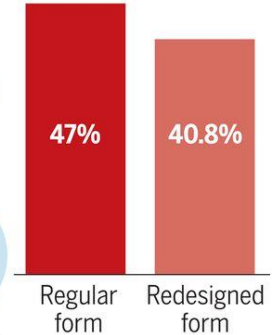
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Move court date and time near top

Clearly indicate court location

Highlight consequences of missing court

#### Failure-to-appear rates



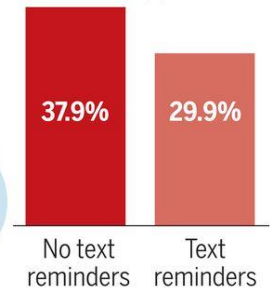
### INTERVENTION #2

#### SEND TEXT REMINDERS IN ADVANCE OF DEFENDANT'S COURT DATE



7,800 Warrants avoided

#### Failure-to-appear rates



# Para além da desatenção: Modelos mentais

## Growth mindset tempers the effects of poverty on academic achievement

Susana Claro<sup>a,1</sup>, David Paunesku<sup>b</sup>, and Carol S. Dweck<sup>b,1</sup>

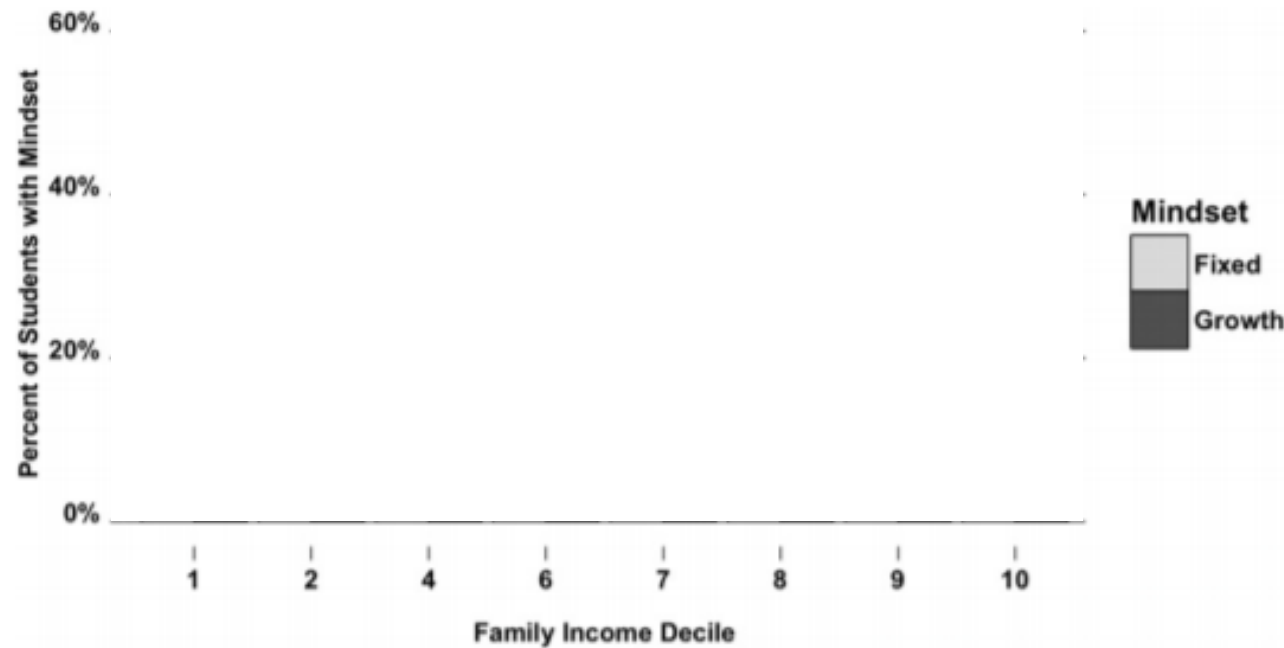
Você concorda com as seguintes afirmações?

- “Sua inteligência é algo que você não consegue mudar muito”
- “Você pode até aprender coisas novas, mas a inteligência de alguém é algo que não pode ser mudado”

# Mentalidade 'fixa' e 'de crescimento'

## Growth mindset tempers the effects of poverty on academic achievement

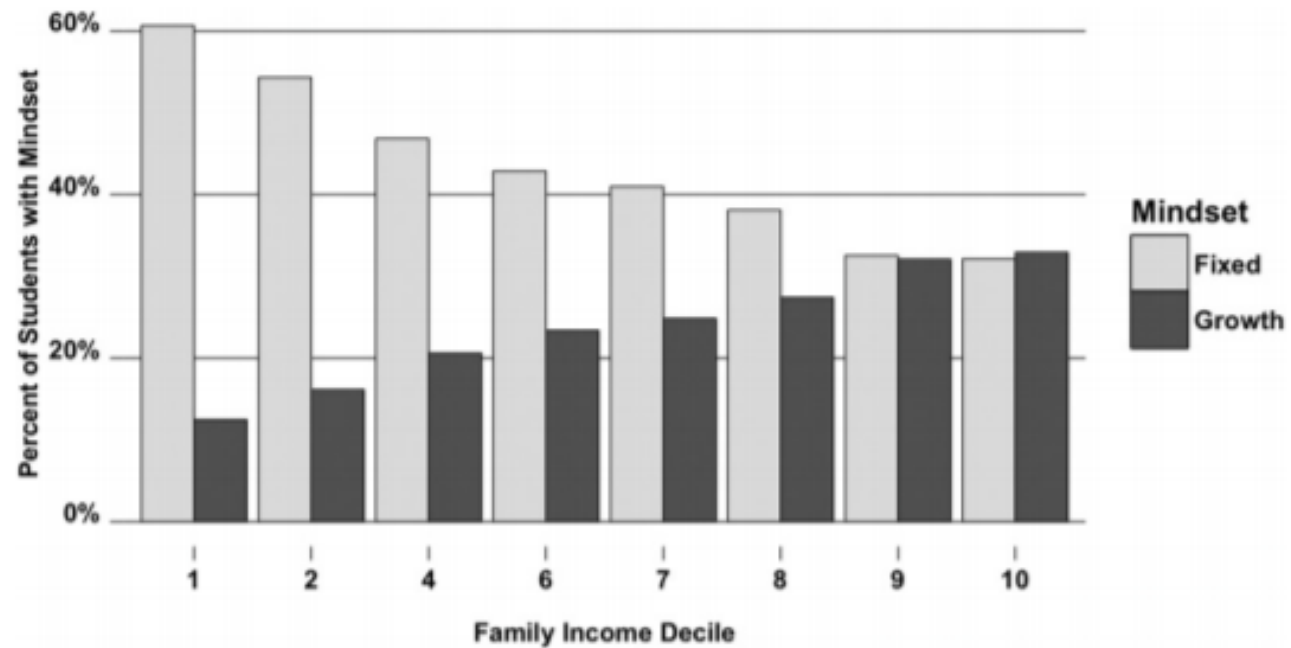
Susana Claro<sup>a,1</sup>, David Paunesku<sup>b</sup>, and Carol S. Dweck<sup>b,1</sup>



# Mentalidade 'fixa' e 'de crescimento'

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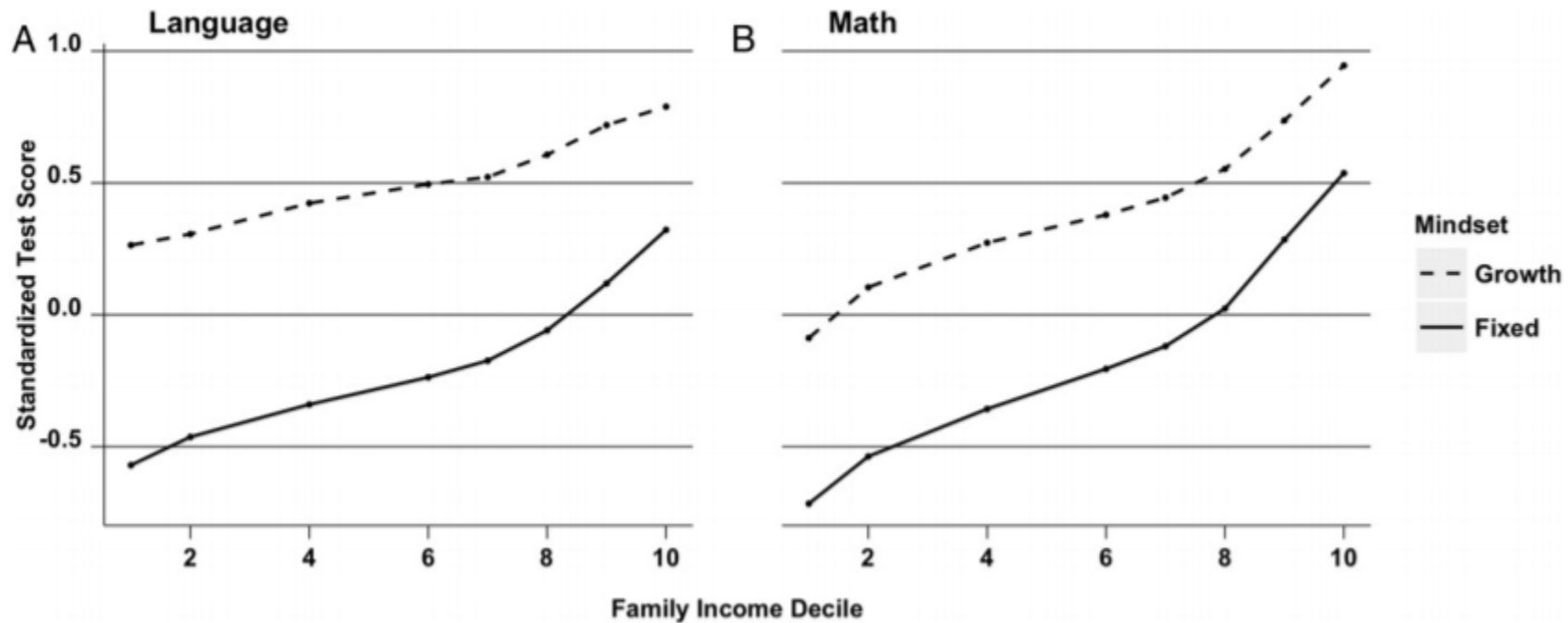
Susana Claro<sup>a,1</sup>, David Paunesku<sup>b</sup>, and Carol S. Dweck<sup>b,1</sup>



# Consequências

## Growth mindset tempers the effects of poverty on academic achievement

Susana Claro<sup>a,1</sup>, David Paunesku<sup>b</sup>, and Carol S. Dweck<sup>b,1</sup>



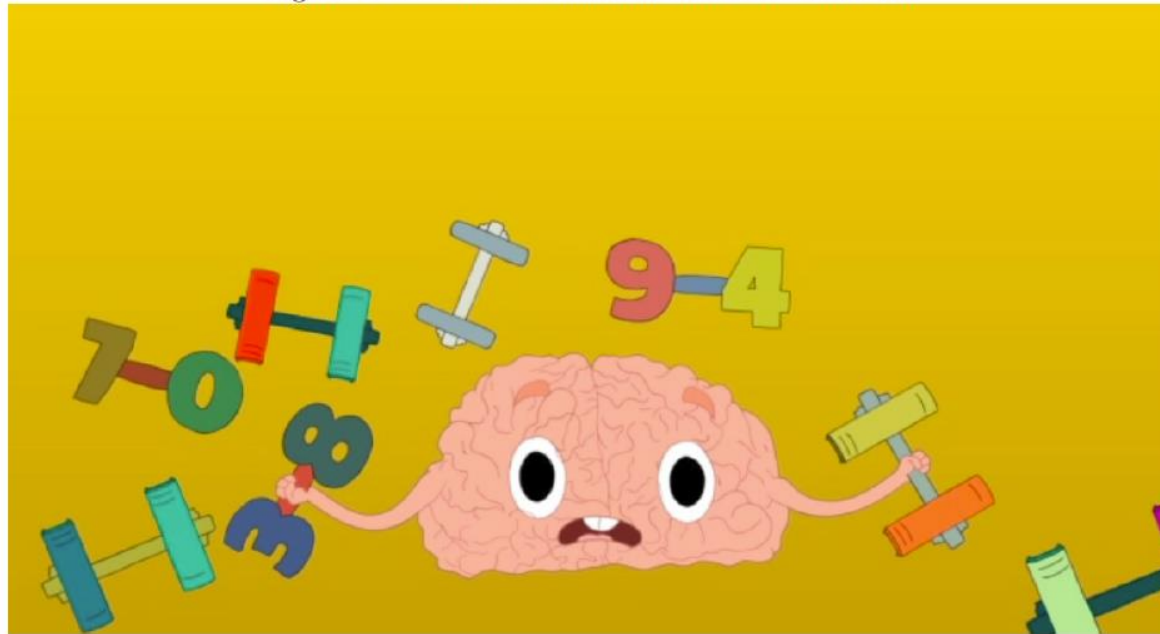


# Mudando modelos mentais

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

Sule Alan, Teodora Boneva, Seda Ertac

Figure 1: Screenshot of Educational Video Material



# Mudando modelos mentais

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

Sule Alan, Teodora Boneva, Seda Ertac

“Encontre pares que somam 100”

Figure 2: Example of Easy Task

80	7
70	95
5	20
10	30
93	90

# Mudando modelos mentais

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

Sule Alan, Teodora Boneva, Seda Ertac

“Encontre pares que somam 100”

Figure 3: Example of Difficult Task

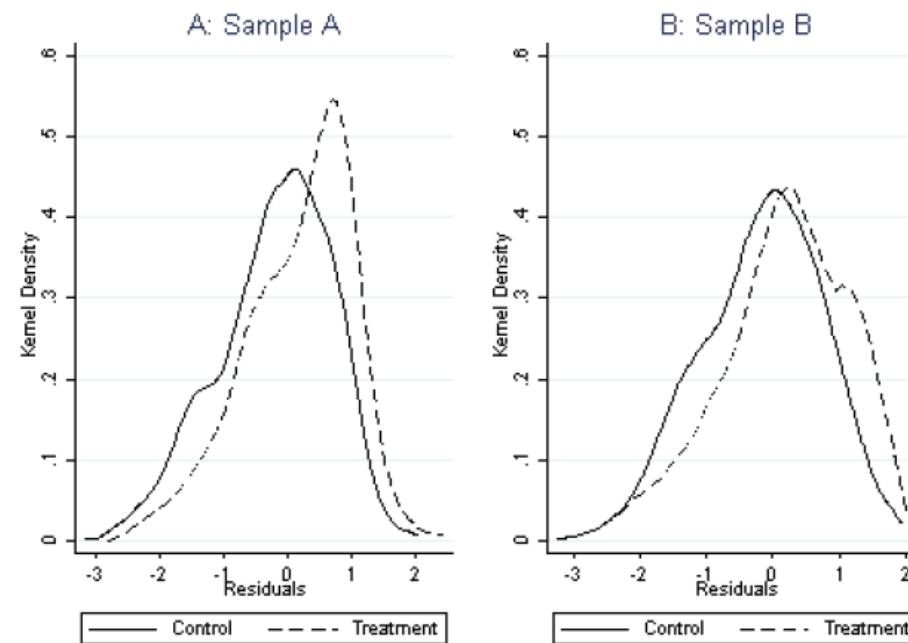
17	86	23	12
71	42	27	38
51	62	83	30
77	59	46	67
81	58	29	54

# Mudando modelos mentais

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

Sule Alan, Teodora Boneva, Seda Ertac

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



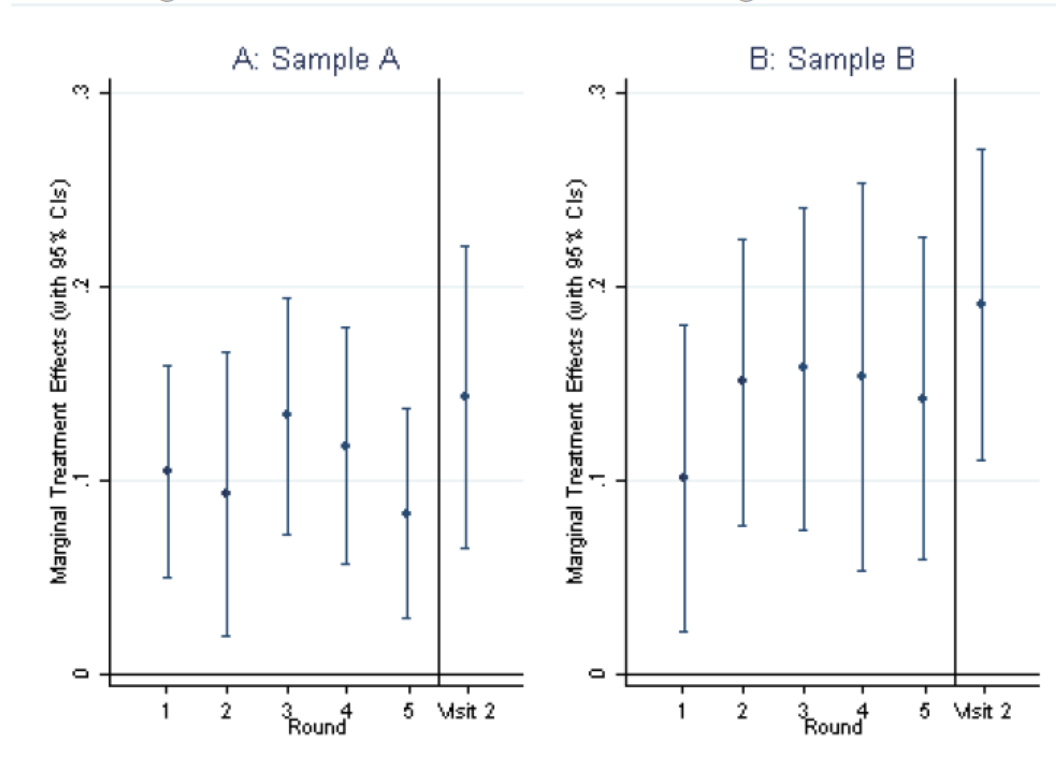
Intervenção faz inteligência ser percebida como mais maleável

# Mudando modelos mentais

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

Sule Alan, Teodora Boneva, Seda Ertac

Figure 1: Effect of Treatment on Choosing Difficult Task



Maior probabilidade de escolher a tarefa difícil

Efeito aumenta com o tempo

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

Notas aumentam!  
Em matemática, como se estivessem  
mais de meio ano mais avançados na escola

# No Ensino Superior...

## Addressing Non-Financial Barriers to College Access and Success: Evidence and Policy Implications

---

Susan Dynarski, Aizat Nurshatayeva, Lindsay C. Page &  
Judith Scott-Clayton

- Desafios para:
  - Identificar e aplicar para universidades
  - Completar o processo de aplicação
  - Começar o curso mesmo depois de aceito

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- Desafios para:
  - Identificar e aplicar para universidades
  - Completar o processo de aplicação
  - Começar o curso mesmo depois de aceito
- Que barreiras explicam esses desafios diante de retornos esperados tão altos de ter um diploma universitário no Brasil?



# No Ensino Superior...

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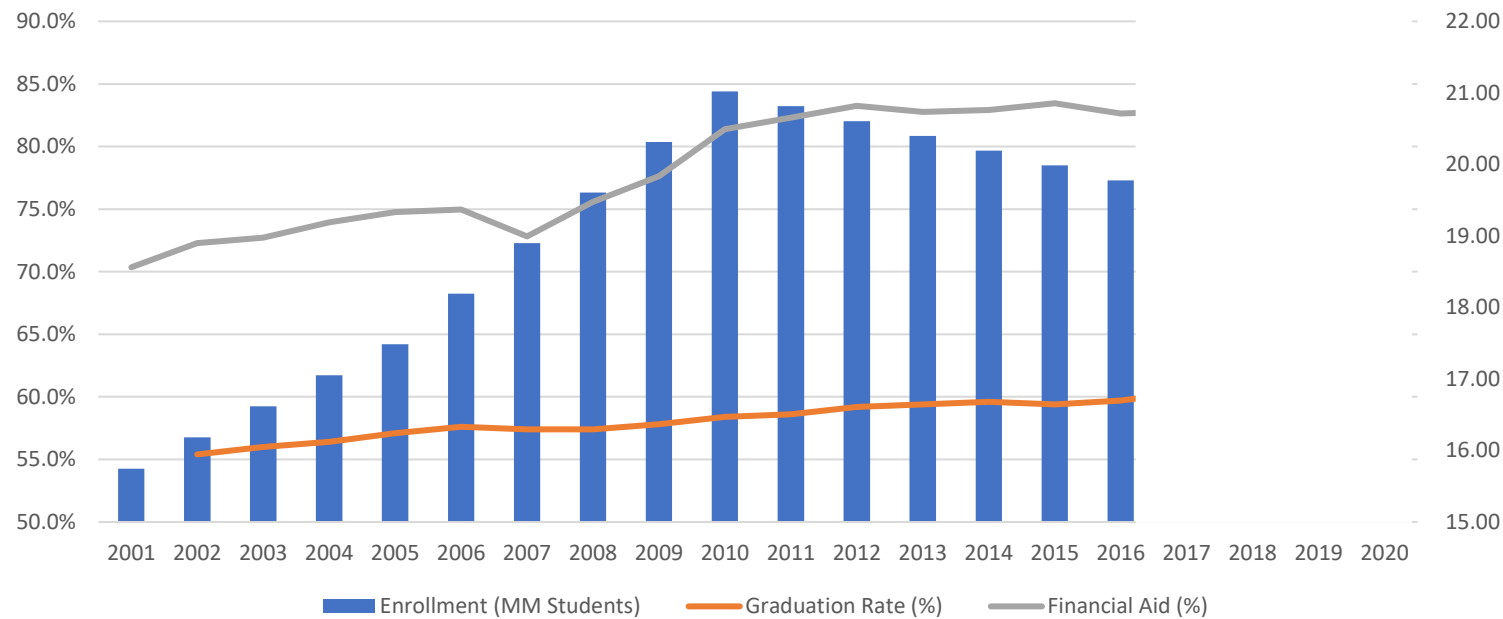
- Barreiras:
  - Desatenção
    - Volume de informações disponíveis sobre cursos, apoio financeiro, colocação subsequente
  - Modelos mentais
    - Aspirações distorcidas (e.g., *role models* baseados em classe econômica em vez de perfil acadêmico)
    - Currículo invisível, mentalidade fixa e pertencimento

# No Ensino Superior...

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- Consequências:



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Judith Scott-Clayton

- Intervenções:
  - Desatenção
    - Como realocar atenção do estudante para tornar as decisões mais críticas mais salientes?
  - Modelos mentais
    - Como moldar aspirações e mentalidades para impulsionar o sucesso do estudante?

# Exemplos

## Success Program



The College Success Program is designed to provide guidance to students who enroll in commonly-attended regional colleges. College students are advised and mentored on campus for up to 6 years. The purpose of this innovative program is to ensure that students have the support they need to earn a degree. We focus on academic, financial, career, and personal challenges - the main causes of students leaving school. Students who participate in our Success Program graduate within 6 years at rates up to 43 percentage points higher than students who receive support only with college applications.

### Services

In order to help incoming freshmen to succeed in college, Bottom Line provides transitional programming each summer for our new class of soon-to-be college students. From reviewing how to read a college syllabus to talking about life on a college campus, we try to get our students ready to begin pursuing a degree. This summer transitional program is designed so students show up on campus clear of any last minute surprises and ready to learn. Our transition program includes:

- ◆ Peer group building events with students from their college
- ◆ Assistance with enrollment, housing, and class registration
- ◆ Financial Aid advising
- ◆ General problem solving

## Zobaida's Story

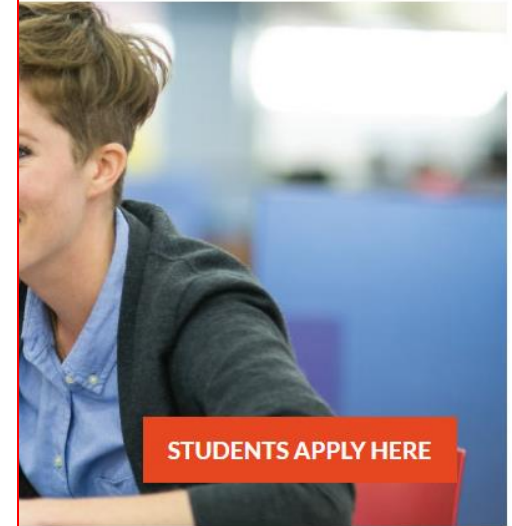


# Exemplos

## Success Program

Once on campus, Bottom Line advisors provide holistic support students according to our DEAL model, designed to help students in four areas.

Degree	<ul style="list-style-type: none"><li>◆ Select a suitable major</li><li>◆ Assess credits to graduation and track progress</li><li>◆ Interpret syllabi to succeed in class</li><li>◆ Identify strategies to improve performance</li><li>◆ Connect with tutoring, advising, and other resources</li></ul>
Employability	<ul style="list-style-type: none"><li>◆ Find a career path</li><li>◆ Write and update resume and cover letter</li><li>◆ Connect with Bottom Line Internship partners</li><li>◆ Build a unique professional "brand"</li><li>◆ Secure internships and part-time jobs</li></ul>
Affordability	<ul style="list-style-type: none"><li>◆ Renew scholarships and financial aid</li><li>◆ Determine how to pay balances</li><li>◆ Resolve problems with bills</li><li>◆ Assess loan debt</li><li>◆ Make smart financial decisions</li></ul>
Life	<ul style="list-style-type: none"><li>◆ Stay connected through monthly campus visits and frequent calls and emails</li><li>◆ Stay positive with cards and care packages</li><li>◆ Stay determined to work hard and achieve goals</li><li>◆ Connect students to resources</li><li>◆ Cope with life circumstances</li></ul>



### Zobaida's Story

[Watch the video](#)

# Exemplos



## SITE-BASED

### Flagship

Our primary, site-based college access and success program. Eligible students receive at least six years of near-peer coaching support to navigate and overcome the most common barriers to getting into and through college. [Explore our 8 regional Flagship program locations](#)



## SITE-BASED

### Navigate

A tech-connected hybrid version of our Flagship program. Partner high schools located outside urban centers are matched with trained near-peer coaches to support eligible students to get into college and succeed while they're there.

Navigate is currently offered in [Wisconsin](#), [Minnesota](#), [Oregon](#) and [Texas](#).



## SITE-BASED

### Connects College Partnerships

Customized partnerships that support the college recruitment, enrollment, persistence and retention of College Possible students on partner institutions' campuses.

Connects college partnerships are currently offered in [Minnesota](#), [Oregon](#), [Philadelphia](#) and [Texas](#).



## NATIONAL

### Catalyze

This flexible program enhances existing student support teams by embedding our near-peer coaching model right on partner campuses, helping deliver improved first-to-second-year persistence and degree completion of eligible students.

[Learn more at CollegePossible.org/Catalyze](#)

# Exemplos



## NATIONAL

### CoPilot

An industry-leading student information system built on the Salesforce platform that provides student support professionals with 360-degree insight into the academic, financial and social well-being of their students.

[Learn more at GetCoPilot.org](https://getcopilot.org)



## SITE-BASED

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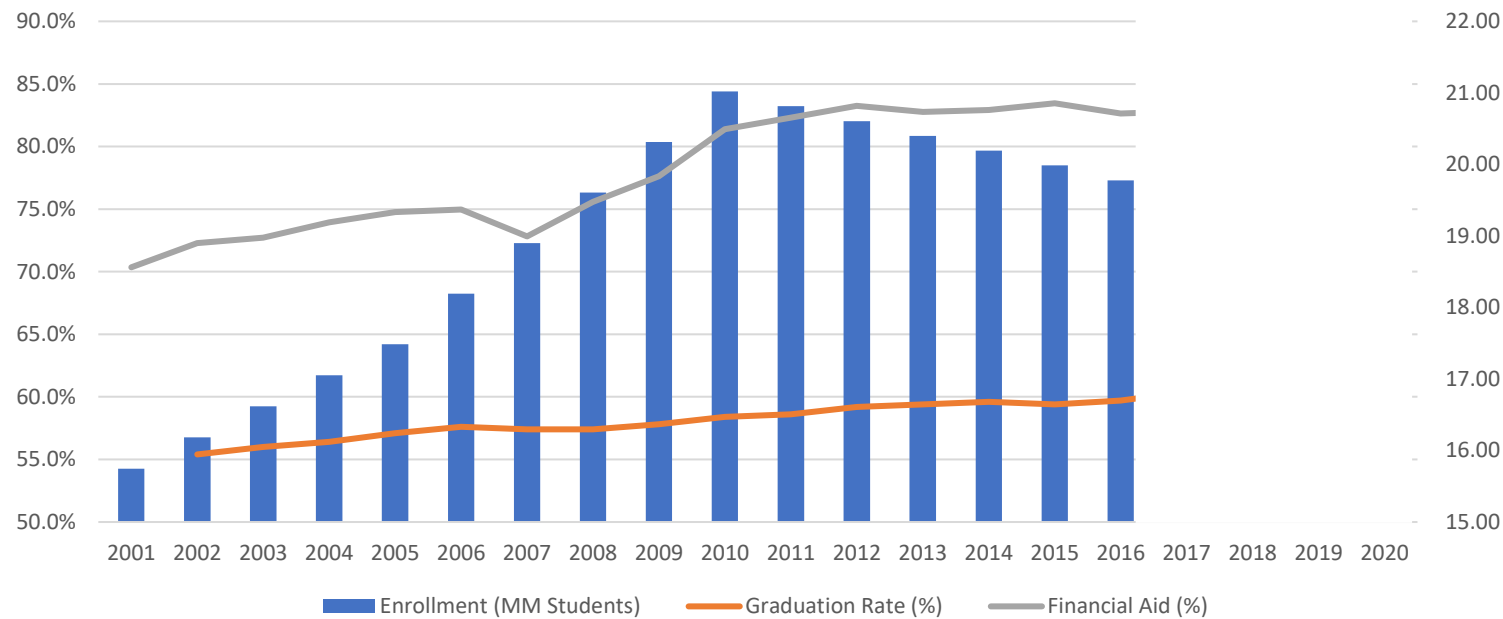


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- Impactos:



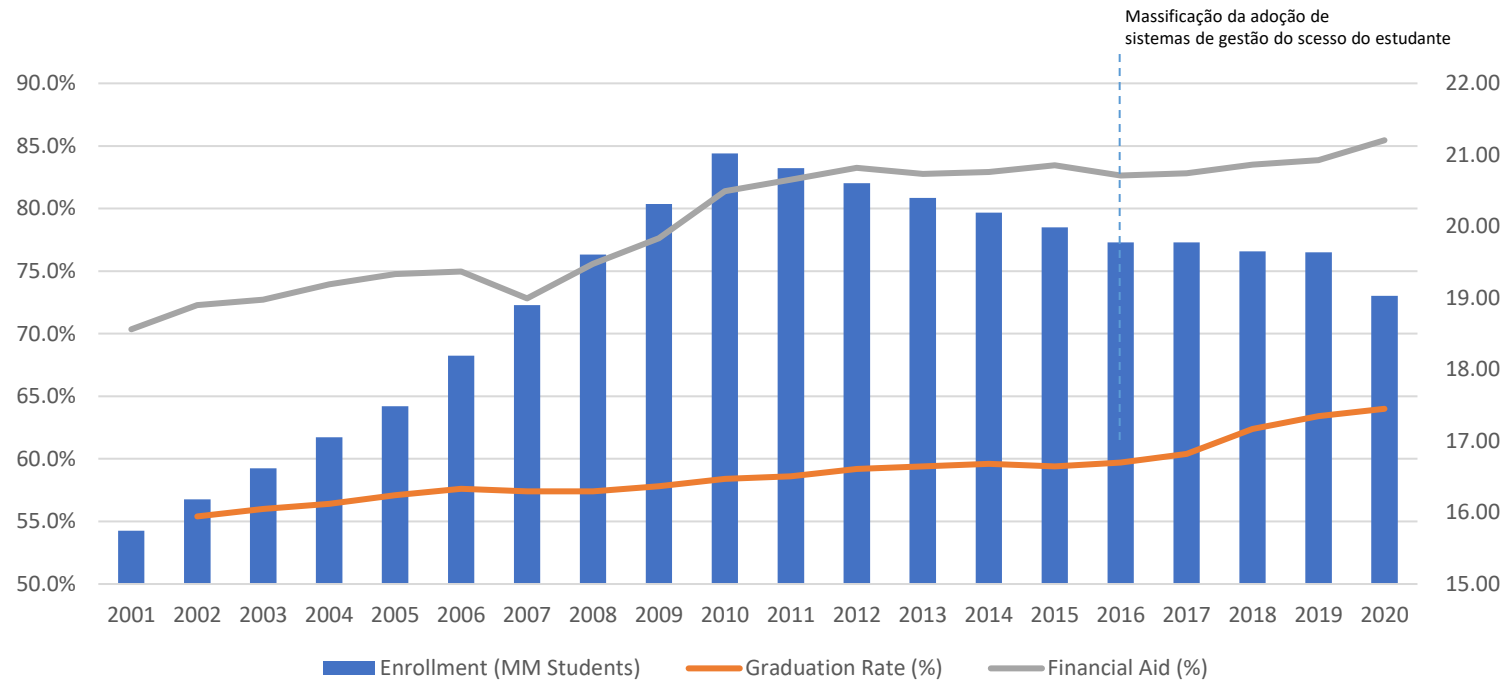


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Judith Scott-Clayton

- Impactos:





**Quer saber mais?**  
**<http://lichand.info>**