

# Scarcity & Behavior

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Princeton University

Toronto, Nov. 2, 2015



## **The plan:**

- **The “behavioral” view of human nature**
- **The psychology of scarcity**
- **Some policy implications**
  - **Discussion...**

Much of behavioral research is driven by  
a simple yet profound fact...

Decisions are not about objective states of the world, but about our mental representations of those states (aka, “construal”)



# The Pleasure of Driving a Nice Car

	<b>BMW</b>	<b>Honda Accord</b>	<b>Ford Escort</b>	<b>Significance</b>
Students predict (cars mentioned)	4.53	3.10	1.91	<b>&lt; .001</b>
Fac/staff report (cars mentioned)	4.99	4.21	3.38	<b>&lt; .01</b>
Web Survey report (cars mentioned)	4.88	4.19	3.50	<b>&lt; .01</b>
Episodic reports Fac / Staff (cars unmentioend)				
Episodic reports Web Survey (cars unmentioend)				

Reported intensity of 10 (averaged) positive emotions (0=not at all; 6=very much); higher values indicate more positive feelings while driving. (Schwarz & Xu, 2011)

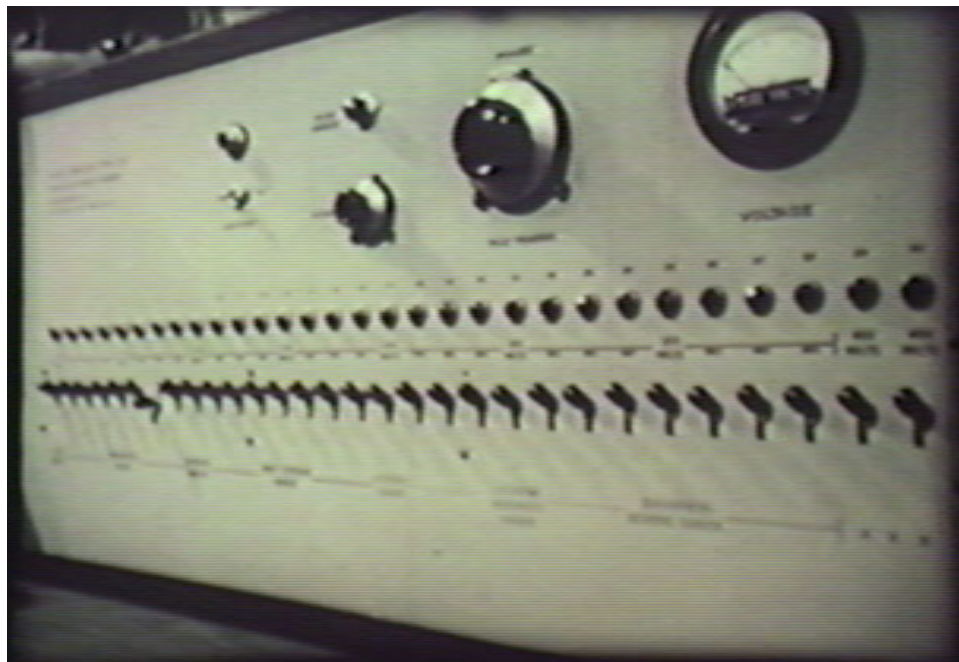
# Milgram's Obedience Studies

“Teachers” punish “learners” (confederates) errors with a shock generator...



Voltage increased with each incorrect answer, from 15 volts (“mild shock”), to 375 volts (“Danger: severe shock”), to 450 volts (“XXX”)

- 75, 90, 105 volts: grunts
- 150 volts: “Get me out of here! I told you I had heart trouble. My heart’s starting to bother me now. I refuse to go on!”
- 270 volts: screams of agony ...
- 330 volts: silence



1000

1000

100  
VOLTS

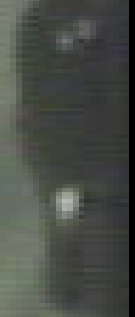
1000

1000

1000

100  
VOLTS

1000



STRONG  
SHOCK

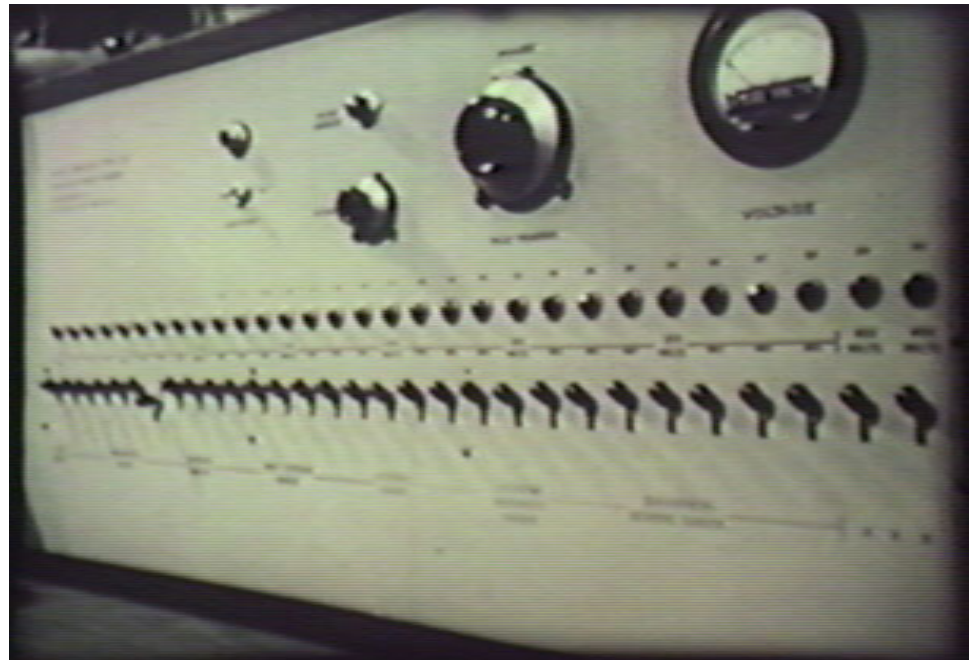
VERY STRONG  
SHOCK



Voltage increased with each incorrect answer, from 15 volts (“mild shock”), to 375 volts (“Danger: severe shock”), to 450 volts (“XXX”)

- 75, 90, 105 volts: grunts
- 150 volts: “Get me out of here! I told you I had heart trouble. My heart’s starting to bother me now. I refuse to go on!”
- 270 volts: screams of agony ...
- 330 volts: silence

Prods: “please continue”  
“the experiment requires that you continue”  
“it is absolutely essential that you continue”  
“you must go on” ...



At what point will the “teacher” refuse to obey?

Milgram asked psychiatrists, students, and other adults for their predictions:

- everyone predicted disobedience
- average prediction: 135 volts
- no one predicted they would go beyond 300 volts
- psychiatrists predicted 1/1000 would go to 450 volts

Instead:

Every participant obeyed up to 300 volts!

65% went all the way to 450 volts!

The Power of the Situation

Our Tendency to Underestimate the Power of the Situation



24  
HOUR

FITNESS

FITNESS  
WORLD'S BEST  
WORLD'S LARGEST  
WORLD'S BEST  
WORLD'S LARGEST

WORLD'S BEST  
WORLD'S LARGEST

FITNESS

24  
HOUR

POINT LO...  
HANDICAP  
TO UPPER  
LOCATED  
24 HOUR

**FAFSA**

2010-2011 FAFSA Form

Section 1: Student Information

Section 2: Financial Information

Section 3: Assets

Section 4: Income

Section 5: Expenses

Section 6: Other Information

Section 7: Signature

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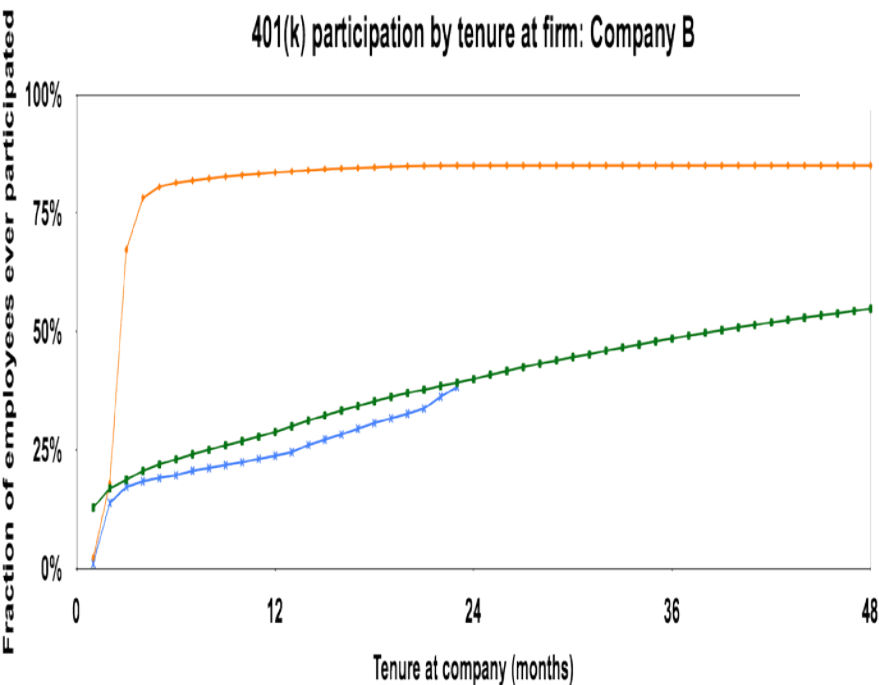
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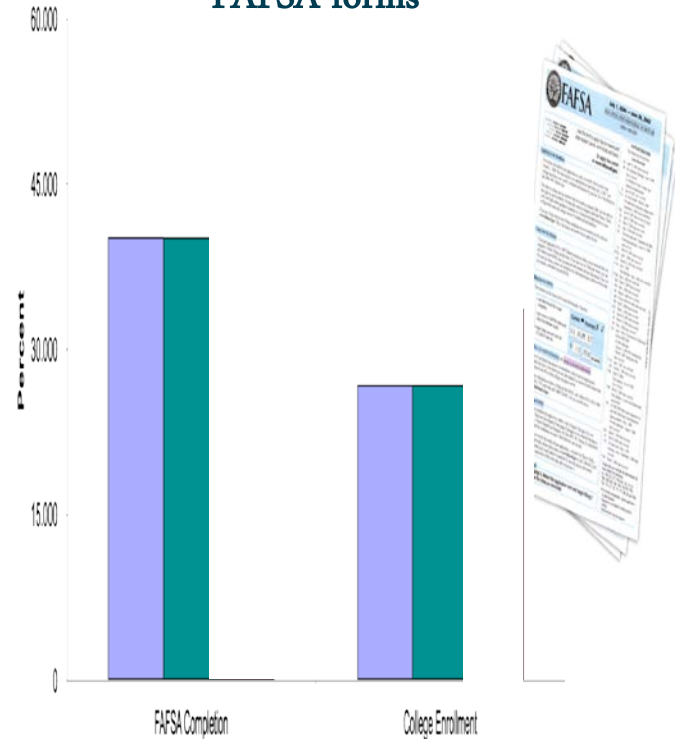
# Manipulations designed to influence ease with which intentions are translated into behavior

## Retirement Savings

401(k) participation by tenure at firm: Company B



## FAFSA forms



(Bettinger, Long, Oreopoulos & Sanbonmatsu, 2009)



# **Social and Behavioral Sciences Team**

## **Annual Report**

Executive Office of the President  
National Science and Technology Council



September 2015

# Executive Order -- Using Behavioral Science Insights to Better Serve the American People

EXECUTIVE ORDER

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USING BEHAVIORAL SCIENCE INSIGHTS TO  
BETTER SERVE THE AMERICAN PEOPLE

A growing body of evidence demonstrates that behavioral science insights -- research findings from fields such as behavioral economics and psychology about how people make decisions and act on them -- can be used to design government policies to better serve the American people.

BARACK OBAMA

THE WHITE HOUSE,  
September 15, 2015.





## Adherence...

Low income: One of the most consistent correlates of low adherence

## Weeding...

High return: losses due to uncontrolled weed growth (>25%...)  
Consistent finding: Poor less likely to weed



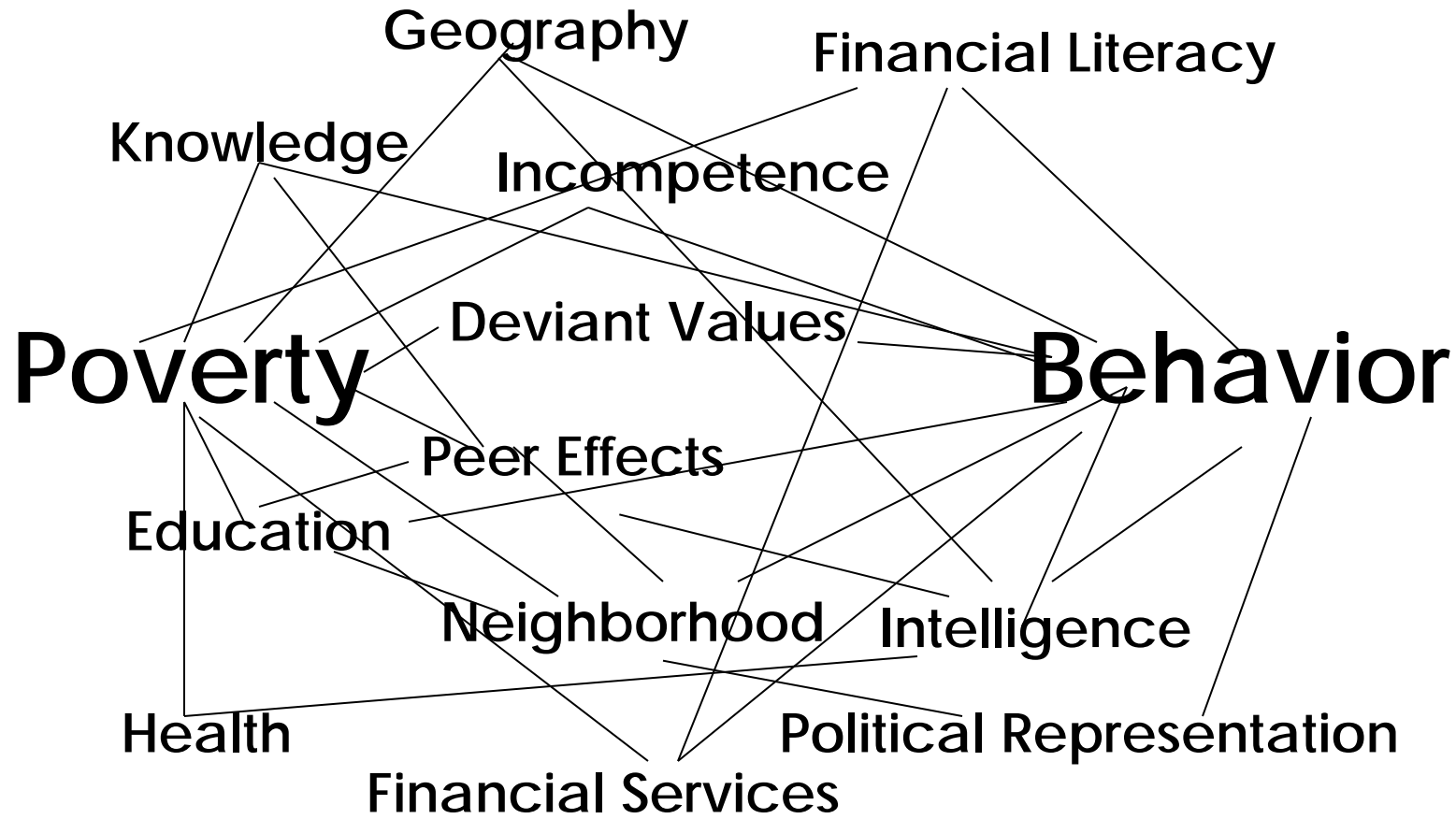
## Parenting...

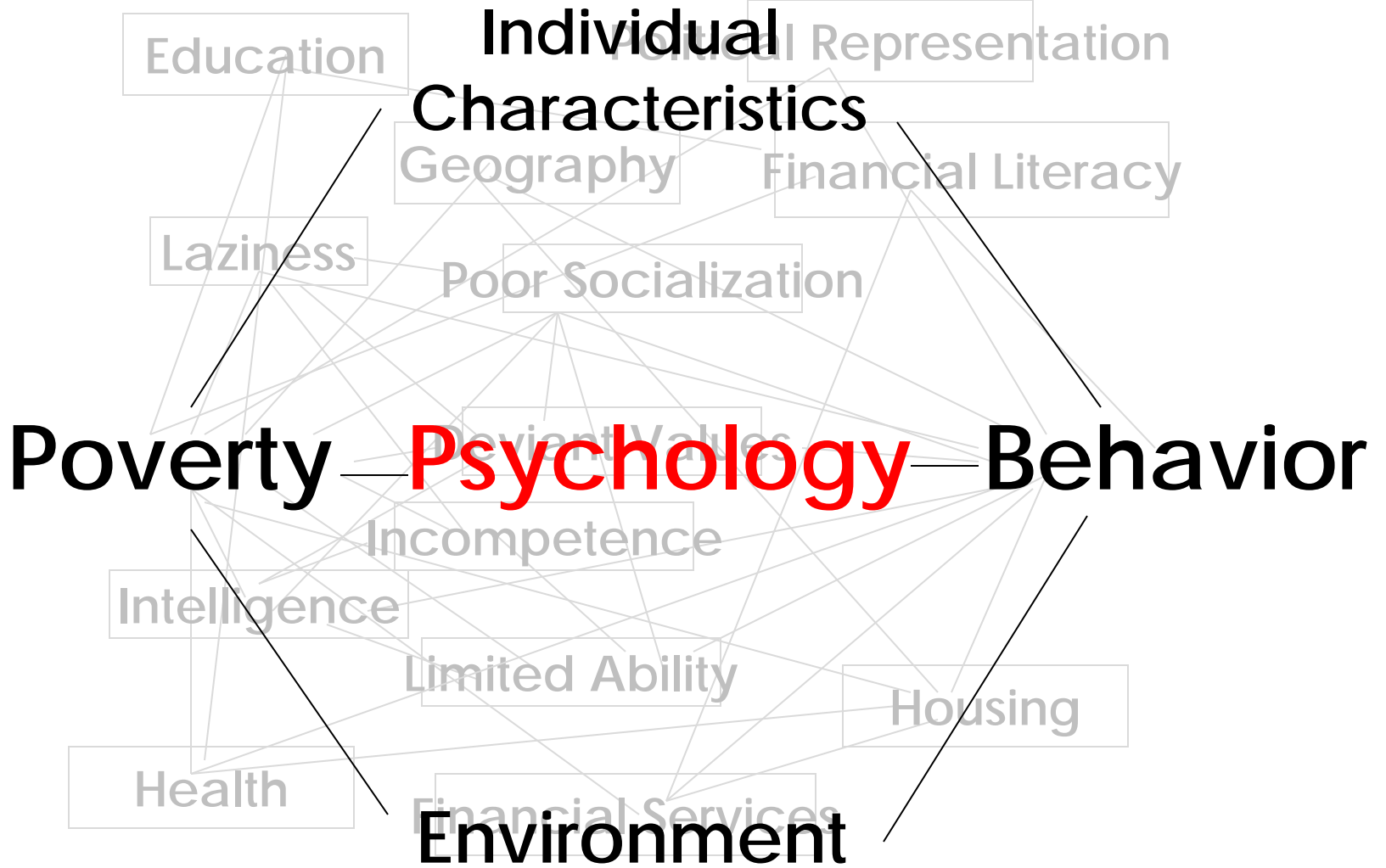
Attention, consistency, engagement,...  
Consistent finding: Poor are worse parents

## Payday Loans...

Short-term high (extremely high) interest loans...







# The psychology of scarcity

Contexts of scarcity produce their own psychology.

Focus (“tunnel”) on what don’t have enough of.  
Leaves less mind for other things...

This psychology, in contexts of scarcity,  
characteristic behaviors...



# Poor in...

## Money

## Time

Tradeoffs:

If I buy this, what do I *not* buy instead?

If I do this, what do I not do instead?

Temptations:

Basic goods turn into “luxuries”

Basic activities turn into “luxuries”

Indulgences:

Given what you owe, what are you doing spending?!

Given what you owe, what are you doing here schmoozing?!..

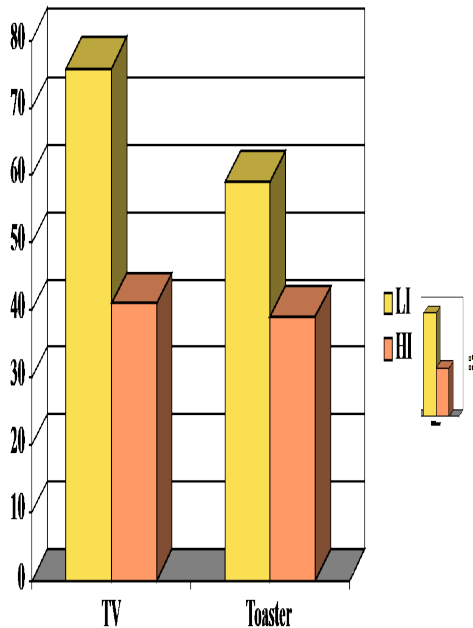
More consequential:

When there's lack of slack, bad tradeoffs, giving into temptation / indulging - all more consequential!...

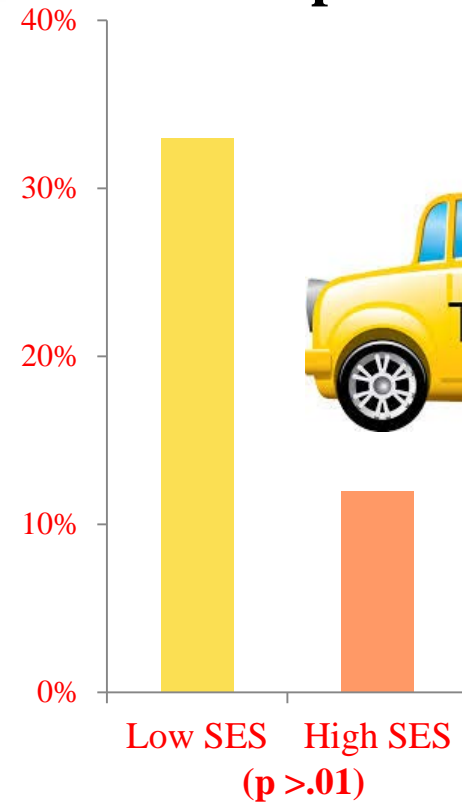
Shop w. greater attention / care



Think more about tradeoffs



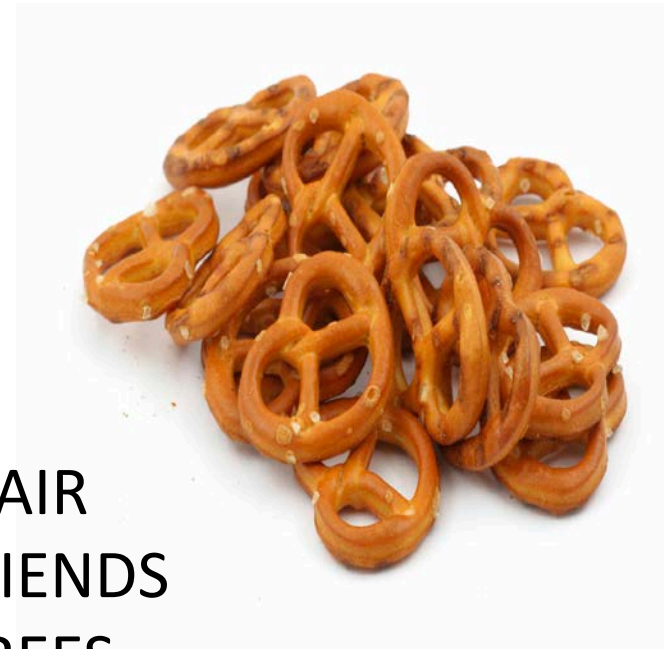
Know prices better



# SCARCITY IS TOP OF MIND

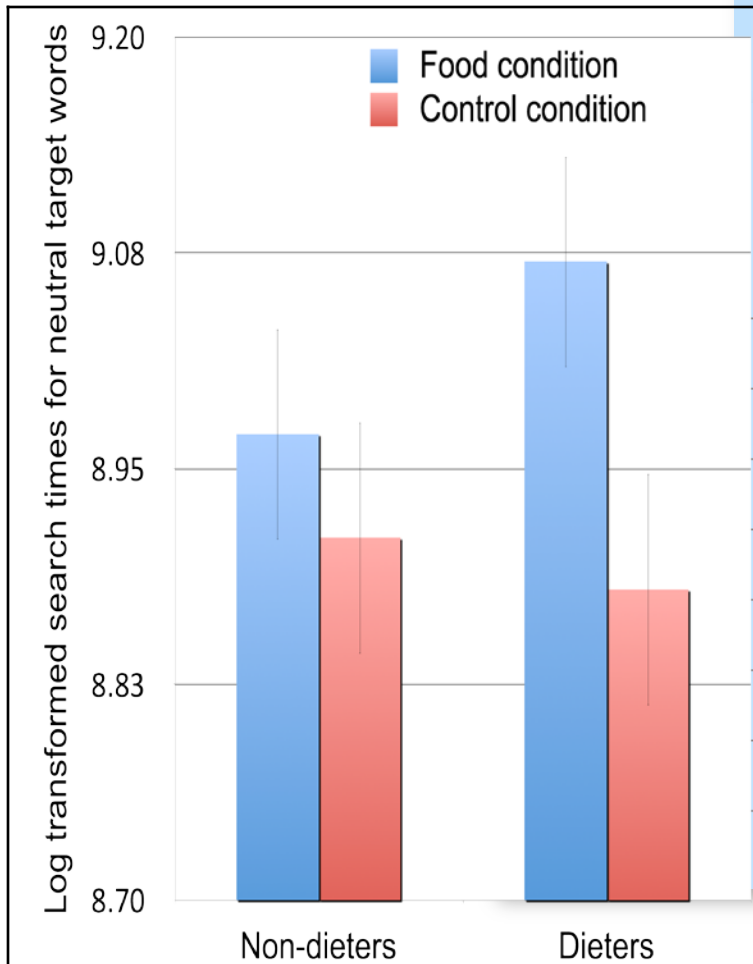


WATER  
JUICE  
SODA  
THIRST



CHAIR  
FRIENDS  
TREES  
TALKING

# Search times – *for neutral targets* – by condition and group



**Word Search**

G	P	P	O	F
T	R	R	C	Q
E	C	H	Q	L
E	D	O	V	V
R	T	F	Z	A
T	F	V	G	A
S	C	R	F	P

**STREET**

- TREE
- PICTURE
- CLOUD
- CARPET
- LAMP
- DAYTIME
- RAIN
- VACUUM
- DOOR

**CAKE**

- TREE
- DONUT
- CLOUD
- SWEETS
- LAMP
- INDULGE
- RAIN
- DESSERT
- DOOR





# SCARCITY

A source of demand on cognitive capacity...





(Bronzaft & McCarthy, 1975; Bronzaft, 1981)

# FINANCIAL CHALLENGES

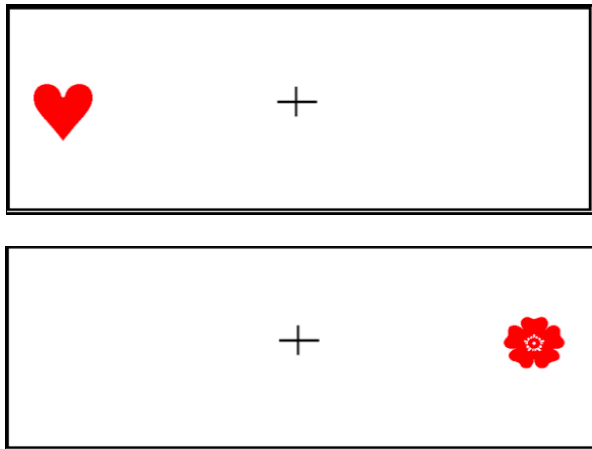
(in a NJ mall...)



## COGNITIVE CONTROL TASK

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press the same side as the heart  
press the opposite side as the flower

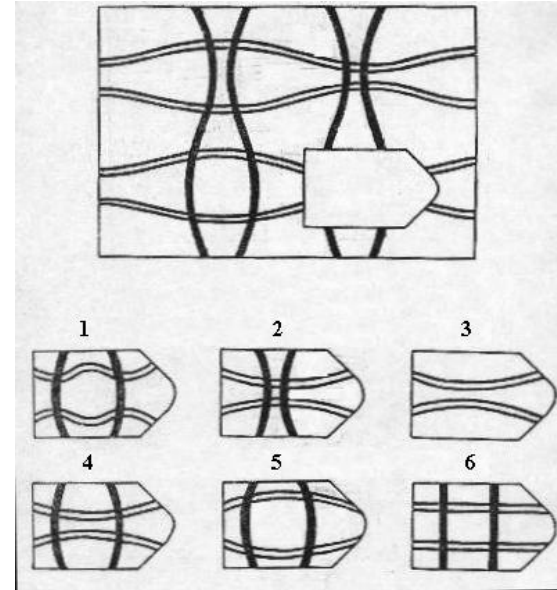


Measures cognitive control & executive function...

*“Driving test”...*

## RAVEN'S PROGRESSIVE MATRICES

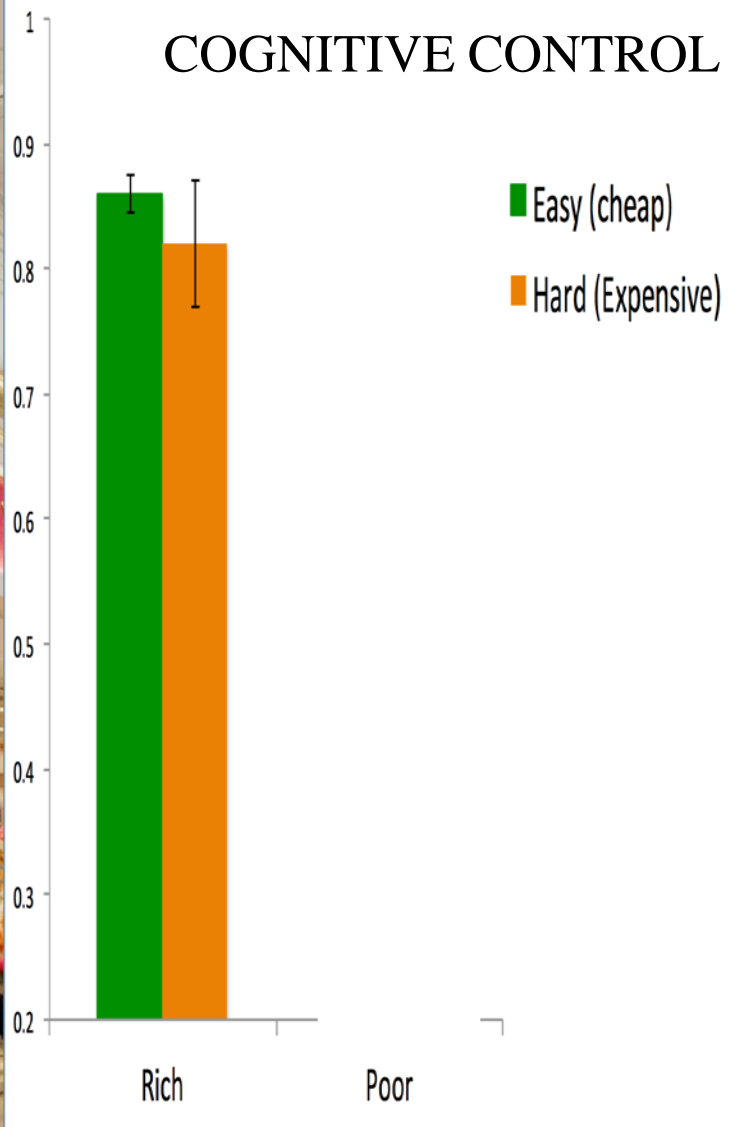
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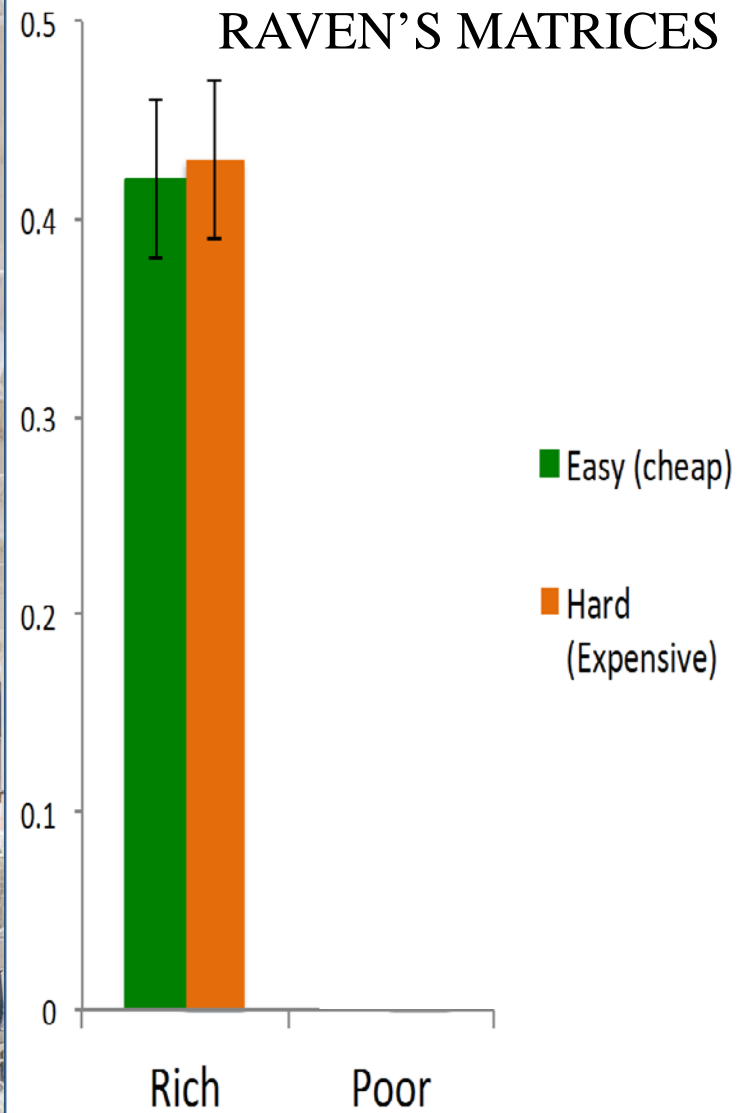
“Measures high-level observation skills, clear thinking ability, and intellectual capacity.”

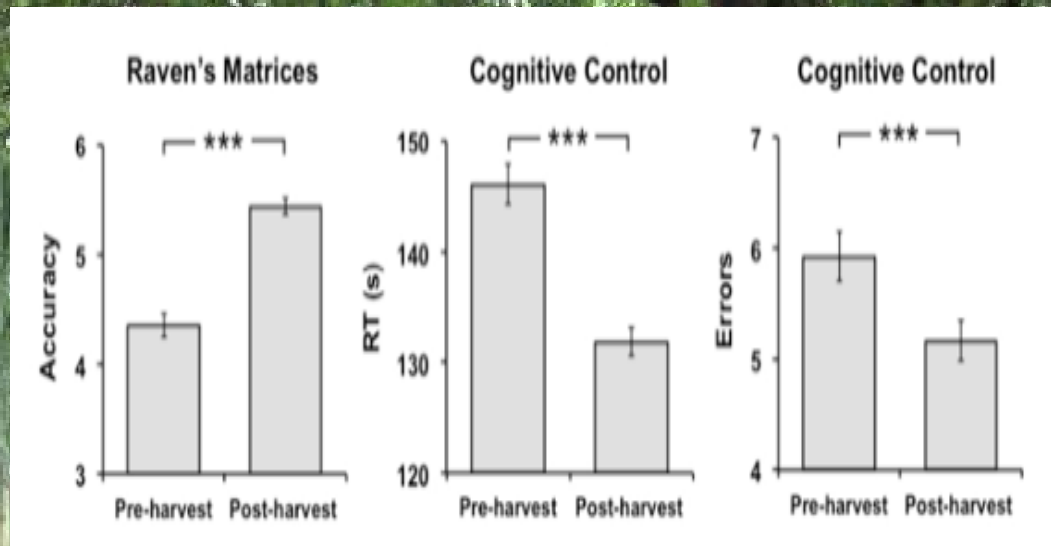
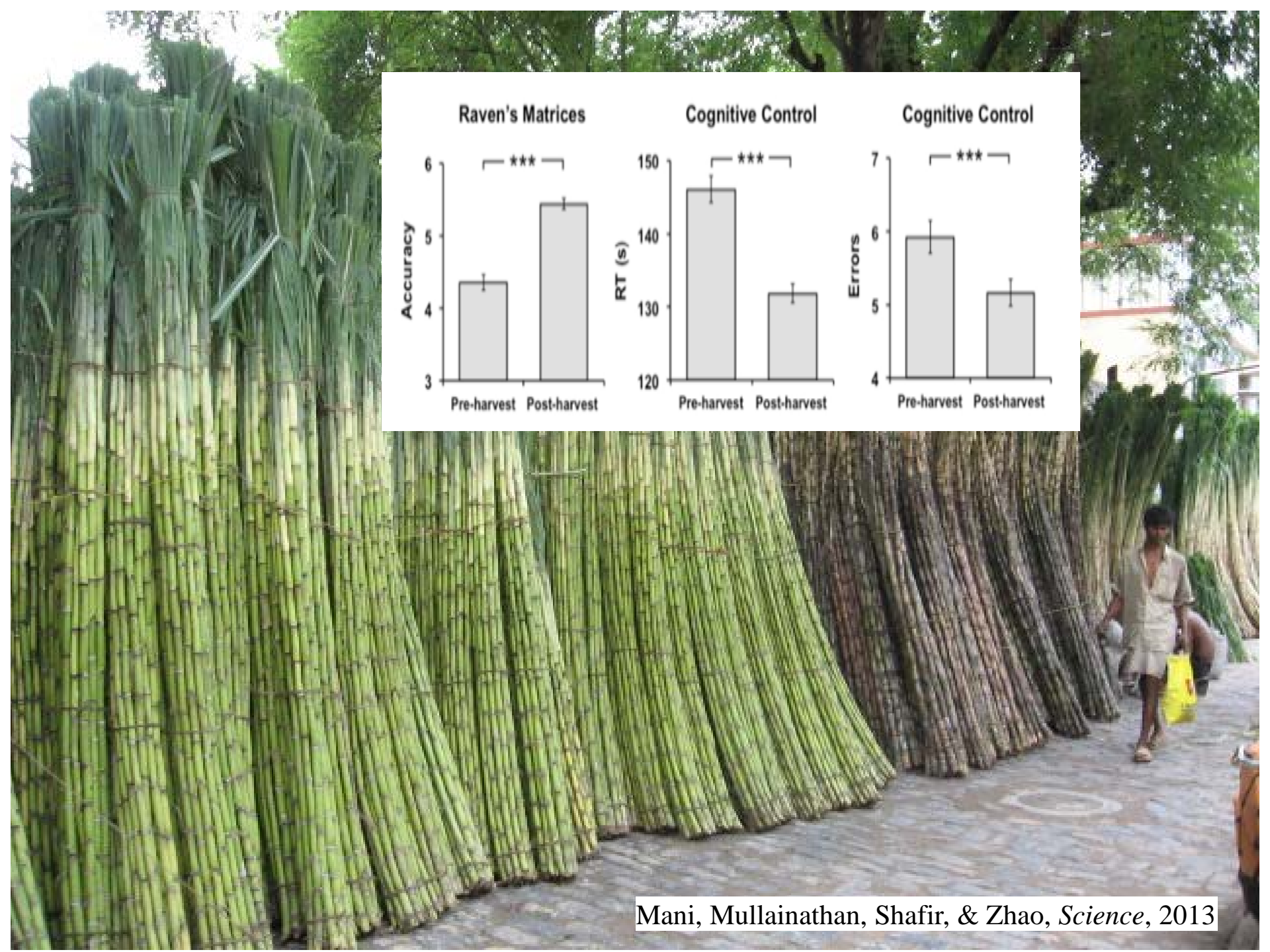
*“Intelligence test”...*

## COGNITIVE CONTROL



## RAVEN'S MATRICES





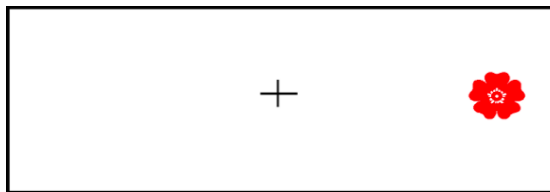
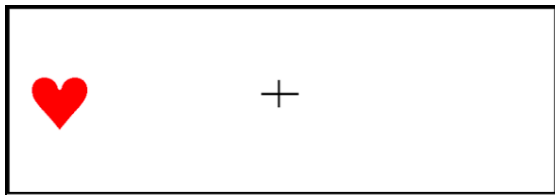
- Scarcity (poverty) is always there, creating cognitive / emotional load, distracting, demanding attention, challenging performance
- It not only gets no respect – it get disrespected!
- It not only gets little (standard) help – it gets sabotaged!



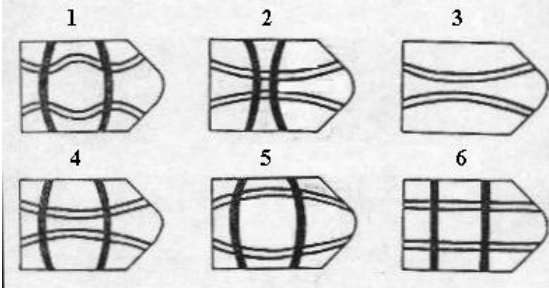
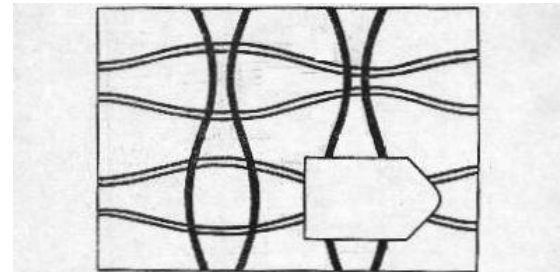
## Cognitive control task

*press the same side as the heart*

*press the opposite side as the flower*



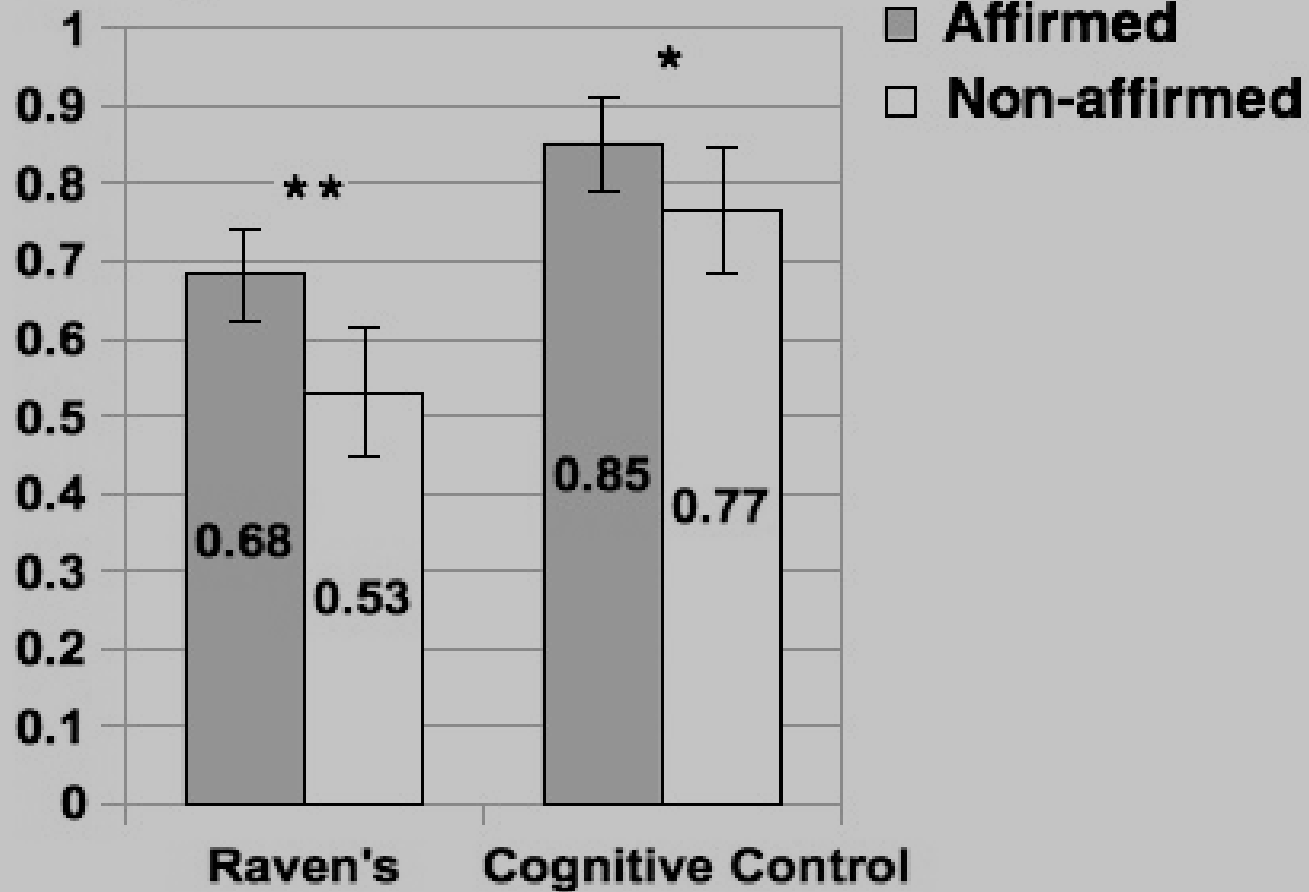
## Raven's Progressive Matrices





# Results

## Accuracy



Note: \* $p < .05$  \*\* $p < .01$



Affirmation in the context of welfare benefits programs (EITC and local VITA sites) ...

	Condition:		
	<u>Neutral</u>	<u>Affirmation</u>	
Stopped to consider:	44%	58%	
Of those, took the information:	36%	79%	$p=.03$
(Total take up:)	<u>16%</u>	<u>46%</u>	$p<.01$

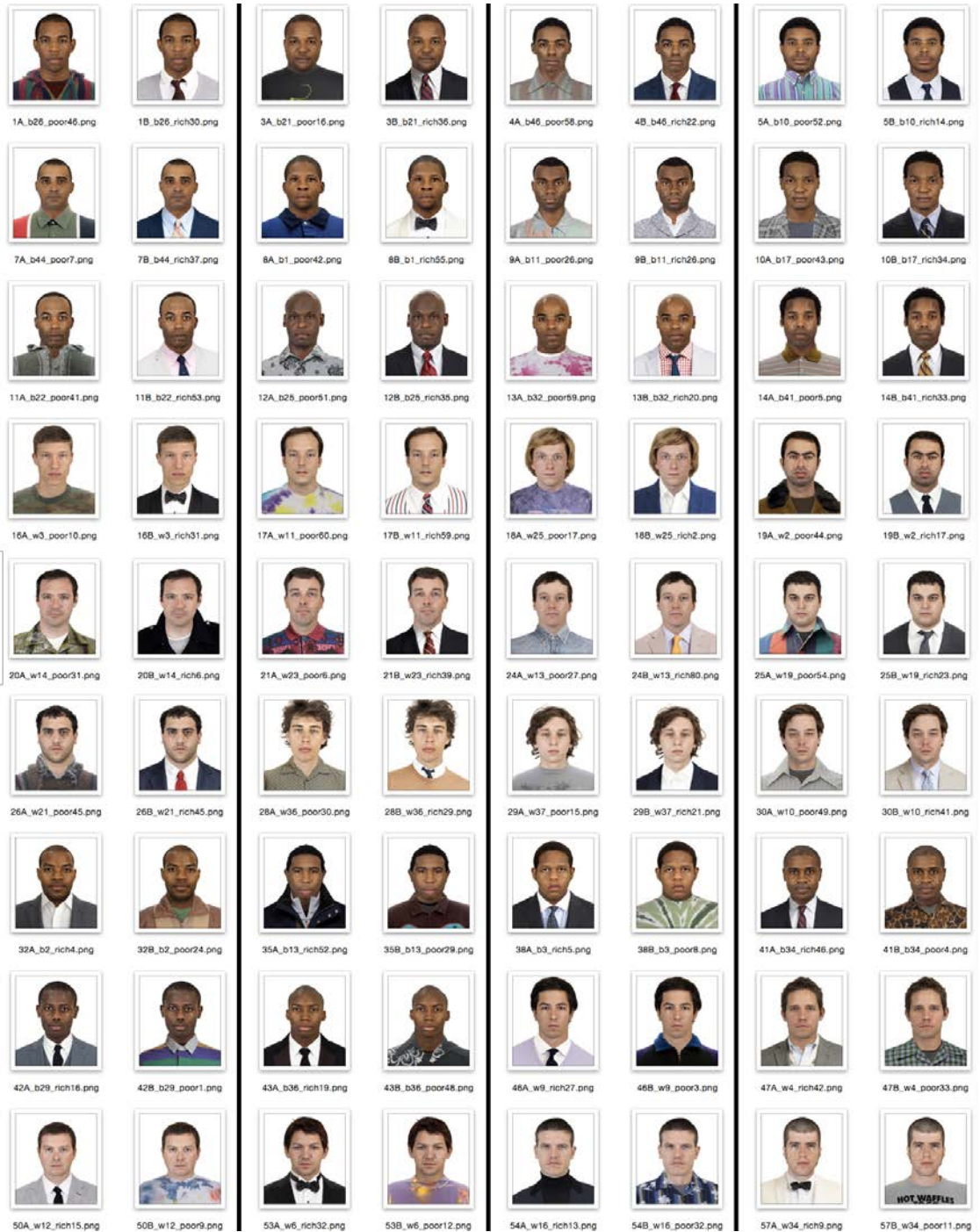




# Stimuli

36 rich / poor pairs

(Where “rich” is judged richer than “poor”)

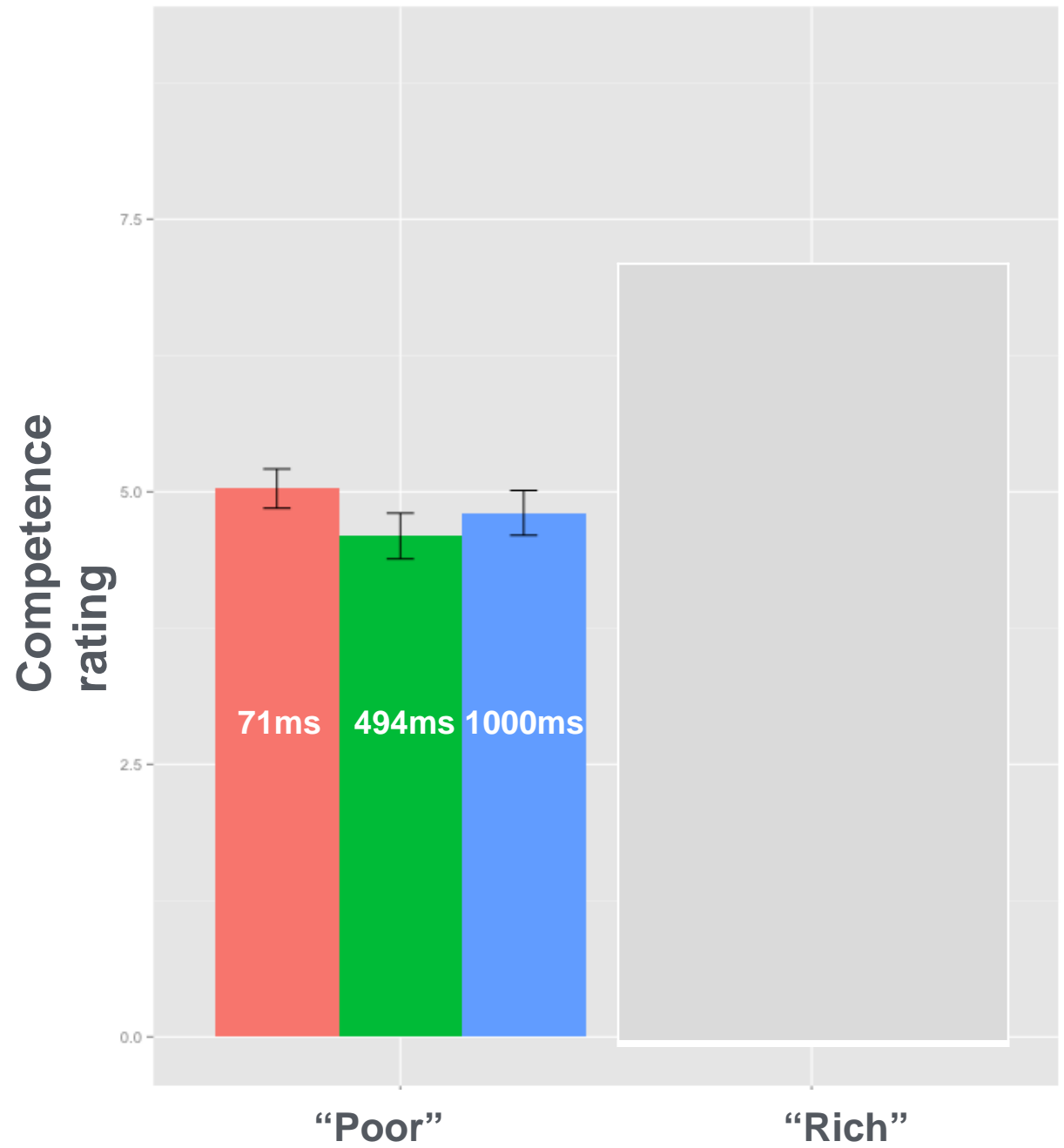


(Oh, Shafir, & Todorov, 2015)





**How competent is this person?**



(Oh, Shafir, & Todorov, 2015)





Scarcity: a function of one's environment (not just income)!

buffer savings, insurance to deal w. shocks, family/friends,  
can mean less scarcity challenges at same level of income

Bad design of programs can make things more difficult...

- “Character obstacles” - time, self-presentation, planning...
- Lifetime welfare limits (SNAP); Penalize but fail to motivate
- (Predatory) Payday loans

Institutions/contexts (Prosper Canada!) can ease...

predictability (work hours, salary), Banking, Defaults, Transportation,  
Child care, Insurance, Low-interest loans

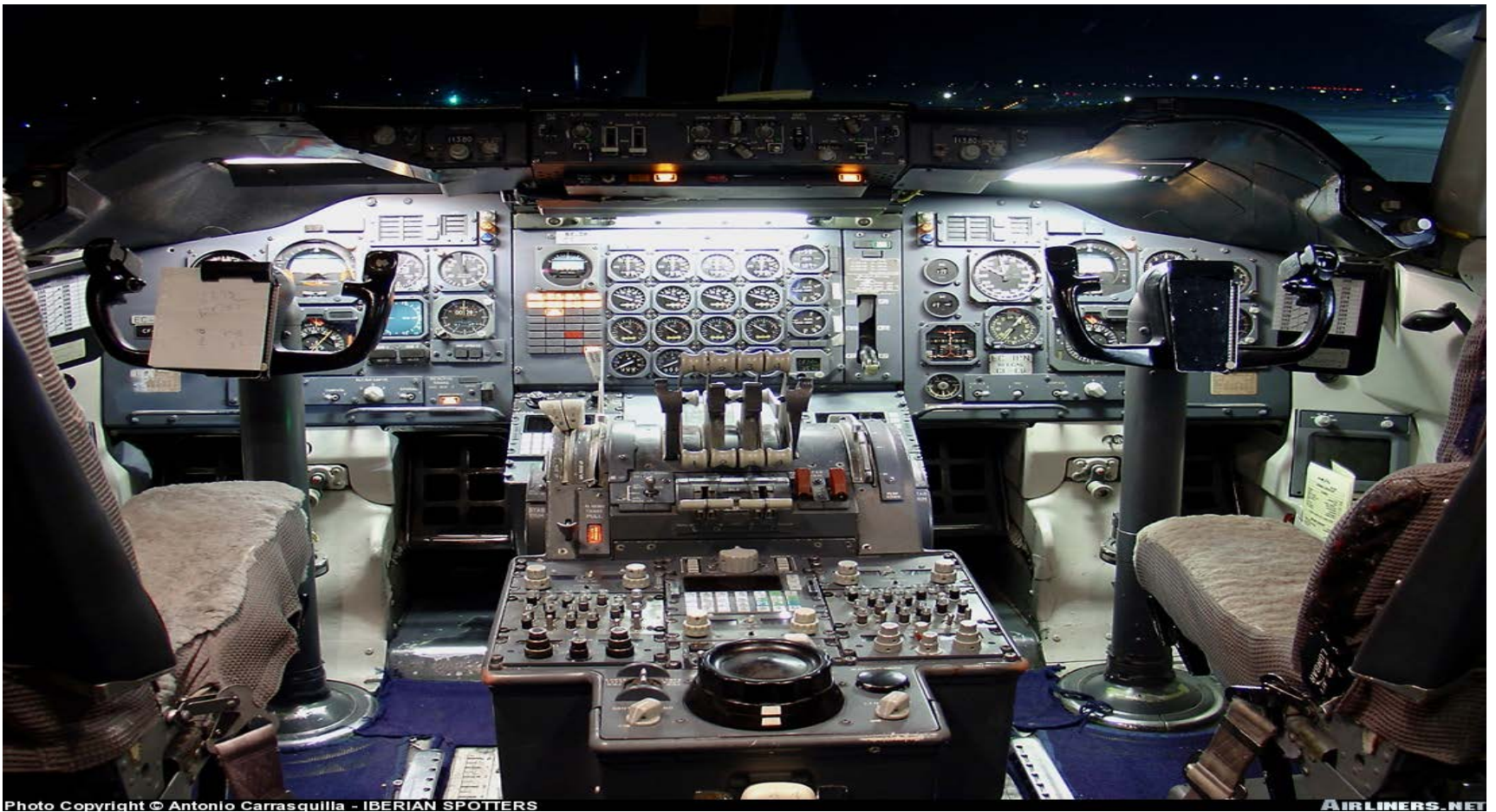


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AIRLINERS.NET

Design life's cockpit with scarcity & bandwidth in mind...

Because it's the only bandwidth we've got!...

The economist [policy analyst, activist, anybody..] may attempt to ignore psychology, but it is sheer impossibility for him to ignore human nature... If the economist [policy analyst, activist,..] borrows his conception of man from the psychologist, his constructive work may have some chance... But if he does not, he will not thereby avoid psychology. Rather, he will force himself to make his own, and it will be bad psychology.

John Maurice Clark, *Journal of Political Economy*, 1918

# Attitude towards management of homeless patients in emergency departments...



Frequent visits & high dissatisfaction

Common concern: If experience quality is high, will return for all wrong reasons

Other possibility: Have disturbing problems; will stop coming if satisfied...

# of subsequent visits: ~1/3 lower for **Compassionate** rather than **Conventional** care (~2.5 visits / patient / year;  $p < .02$ )

“A randomized trial of compassionate care for the homeless in an emergency department.” Redelmeier, D., Molin, J-P., Tibshirani, R.J. *The Lancet*.

**Thank you!**