

How Behavioral Science Can Inform Financial Decision-making

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The three C's

- Context
- Construal
- Capacity

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 -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

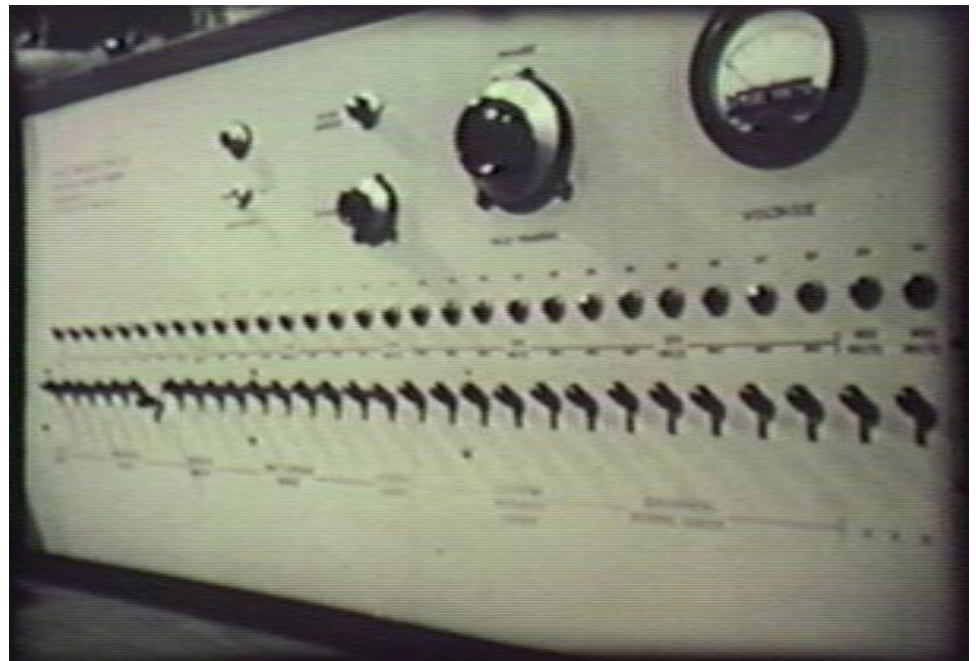
Prods:

“please continue”

“the experiment requires that you continue”

“it is absolutely essential that you continue”

“you must go on” ...



135

105

VOLTS

VOLTS

MAX

MAX

MAX

MAX

MAX

MAX



STRONG
SHOCK

VERY STRONG
SHOCK

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

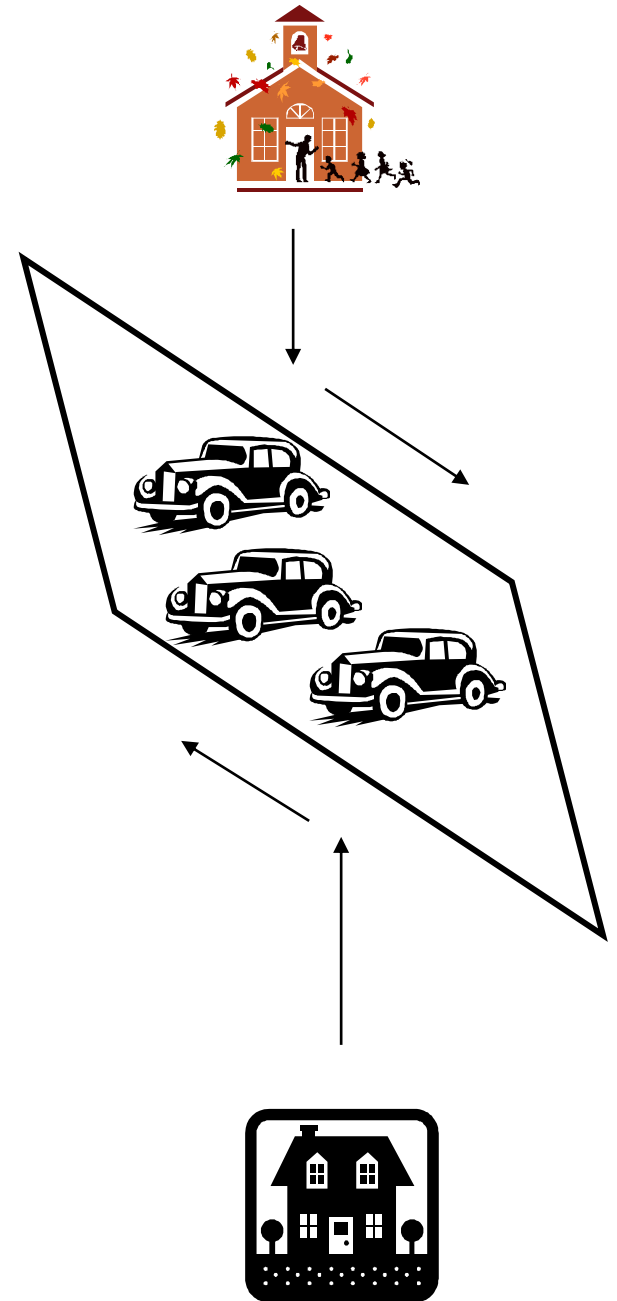
Instead:

Every participant obeyed up to 300 volts!

65% went all the way to 450 volts!

The Power of the Situation

The Tendency to Underestimate
the Power of the Situation





POINT LO
HANDICAP
TO UPPER
LOCATED
24 HOUR





(Bettinger, Long, Oreopoulos & Sanbonmatsu, 2009)

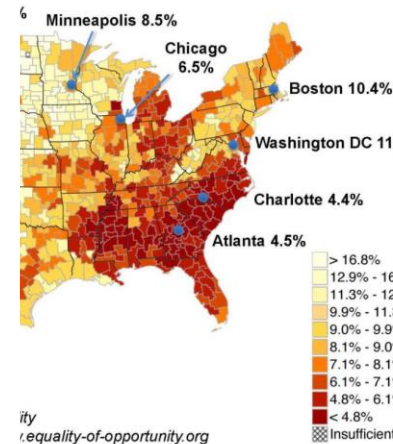
A failure to appreciate the power of Context!!!



The prisoners, Patton observes, have “no sense of human relationships,” and live in filth like “lazy locusts.” Patton marvels “that beings alleged to be made in the form of God can look the way they do or act the way they act.” “Some believe that the Displaced Person is a human being, which he is not, and this applies particularly to the Jews, who are lower than animals.”

(Lichtblau, 2014)

Forward Mobility in the United States
5th Starting from the Bottom Fifth by Metro Area



form, a disease of
extreme poverty, is thriving
in the US south. Why?



Construal

A trivial but profound fact:

Decisions are not about objective states of the world,
but about our mental representations of those states.

The Pleasure of Driving a Nice Car

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

Reported intensity of 10 (averaged) positive emotions (0=not at all; 6=very much.

(Schwarz & Xu, 2011)



The poor (along with homeless and welfare recipients are stereotyped as low on and competence (and several other traits...)

(Fiske et al.)

- both “fast” and “slow”...



Stimuli

36 rich / poor pairs

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



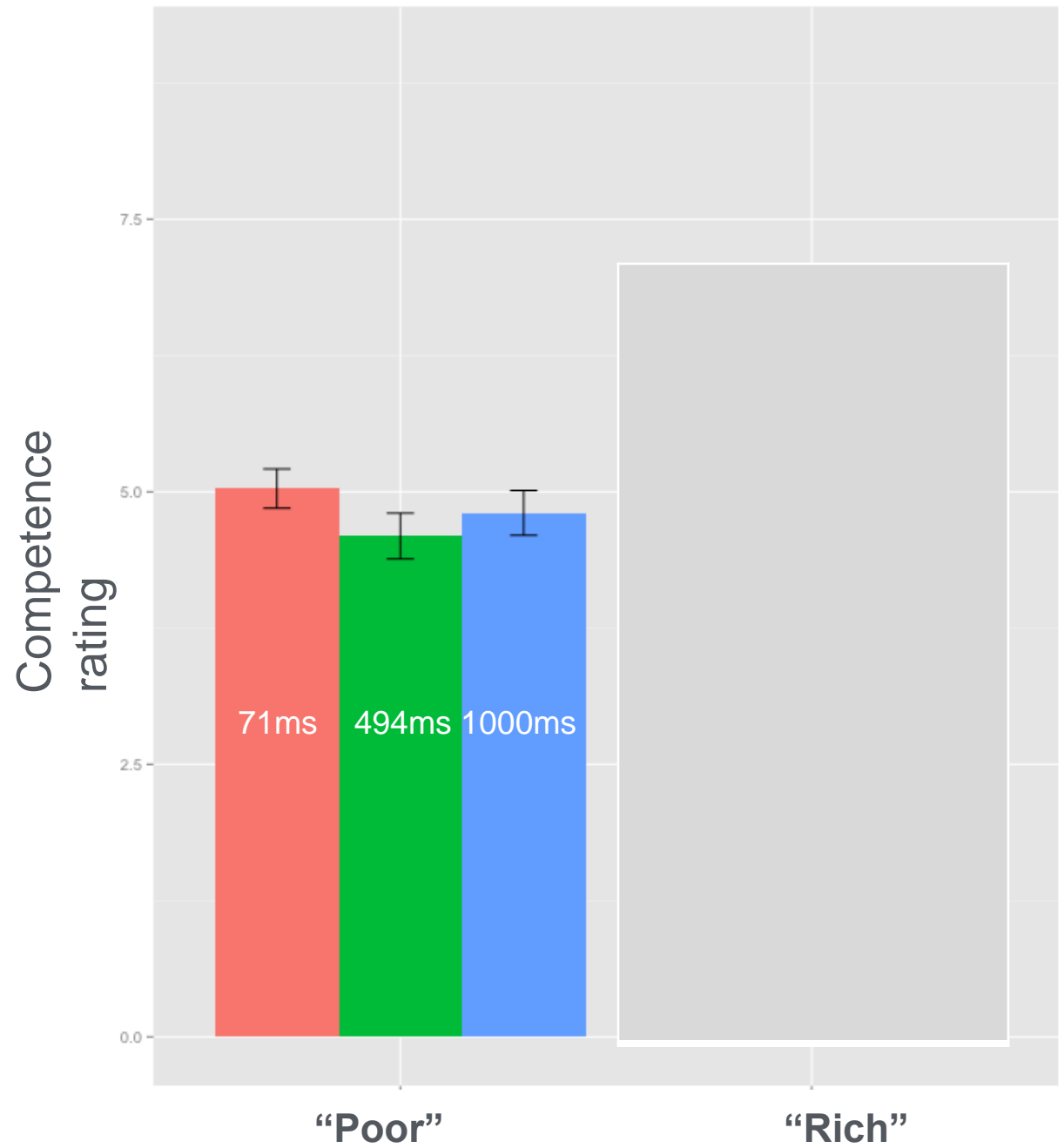
(Oh, Shafir, & Todorov, 2017)

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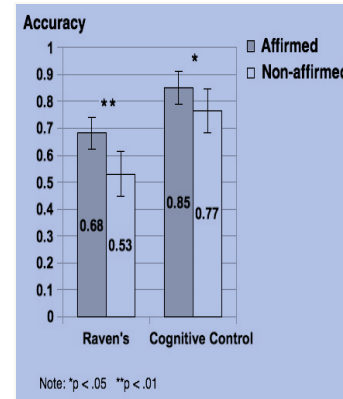
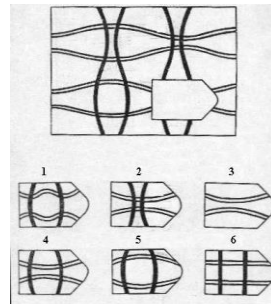


How competent is this person?



(Oh, Shafir, & Todorov, 2017)

Affirmation...



Offered welfare benefits packages:

Stopped to consider:

Of those, took the information:

(Total take up:)

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

Positive Net worth:
Who is better off?

Asset & Debt Levels

	High (\$20,000 assets, \$10,000 debt)	Low (\$11,000 assets, \$1,000 debt)
Positive Net Worth (\$10,000)	WORSE	BETTER

Negative Net worth: Who is better off?

Asset & Debt Levels

	High (\$10,000 assets, \$20,000 debt)	Low (\$1,000 assets, \$11,000 debt)
Negative Net Worth (-\$10,000)	BETTER	WORSE

Who is better off? (Positive Net Worth)

\$130k assets
\$0 debt

(\$130k net worth)

>

\$790k assets
\$625k debt

(\$165k net worth)

Who is better off? (Negative Net Worth)

\$715k assets
\$875k debt

\$0k assets
\$145k debt

(-\$160k net worth)
worth)

>

(-\$145k net

The nature of experience and expectation...

- Malleable...constructed...
- Recalling vacations, medical procedures,...
- Coming up with \$2000 within 30 days...
- Evaluating consumption...
- etc.

Suppose you bought a case of a good 1982 Bordeaux in the futures market for \$20 a bottle. The wine now sells at auction for about \$75 a bottle. You have decided **drink** a bottle of this wine with dinner. Which of the following best captures your feeling of the cost to you of drinking this bottle? (Check one).

- a) Drinking the bottle does not feel like it costs me anything.
I paid for the bottle already, many years ago, and probably don't remember exactly what I paid for it anyway. **32%**
- b) ...feels like it costs me \$20, the amount I roughly remember paying **17%**
- c) ...feels like it costs me \$20, the amount I originally paid for it,
plus whatever the interest would have been on the money I paid. **6%**
- d) ...feels like it costs me \$75, the amount it would take to replace it. **18%**
- f) ...feels like I saved \$55, because I am able to drink a \$75
bottle for which I only paid \$2 **27%**



(Shafir & Thaler, 2006)

Which answer would you choose if instead of giving the bottle away, you dropped the bottle and **broke** it? How much would it feel like you had lost in this case?

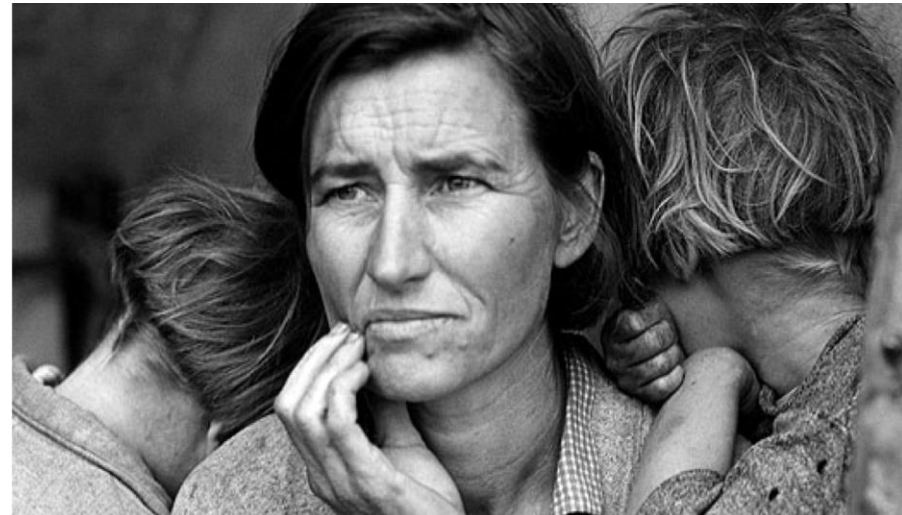
- | | |
|---|-----|
| (a) \$0 | 9% |
| (b) \$20 | 25% |
| (c) \$20 plus interest | 9% |
| (d) \$75 | 56% |
| (e) a \$55 saving (relative to a bottle recently) | 1% |





SCARCITY

A source of demand on cognitive capacity...



(Very!) Limited Bandwidth



(Strayer et al., *Human Factors*, 2006)



(Bronzaft & McCarthy, 1975; Bronzaft, 1981)



(Hyman et al., 2010)

Processing load	% choose cake
Low (remember only 2 digits)	41%
High (remember 7 digits)	63%

(Shiv and Fedorikhin, 1999)

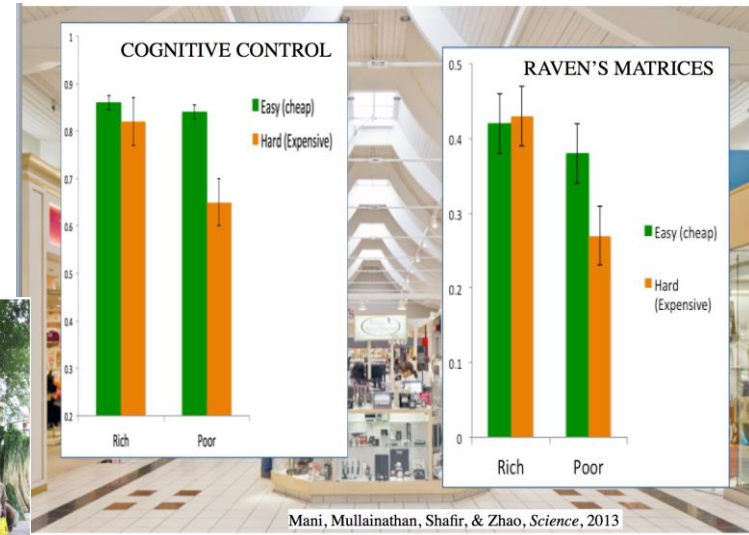
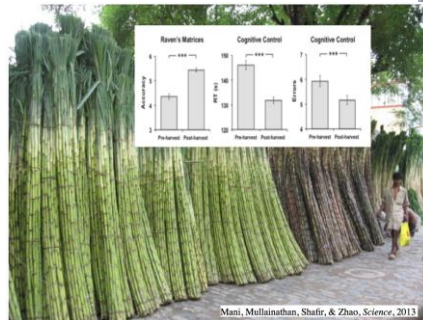
The Scarcity mindset

Poverty hijacks the focus and content of thoughts, and leaves reduced bandwidth (both “fast” & “slow”)

(Mani et al., 2013; Mullainathan & Shafir, 2013; Shah et al. 2012)

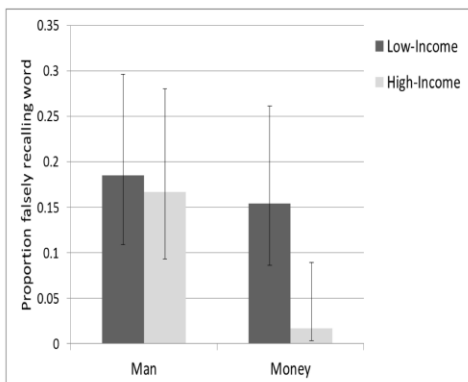


Tunneling...



Mani, Mullainathan, Shafir, & Zhao, *Science*, 2013

Reduced capacity



A visit to the doctor

Imagine that you have been feeling sick lately and finally decide to go see a..appointments to see the doctor in the coming months

(Shah et al., 2017)

Thinking & worrying...



(Cheek, Wu, & Shafir, 2018)

Identify ink color for *RETIREMENT* (versus *ALUMINUM*)

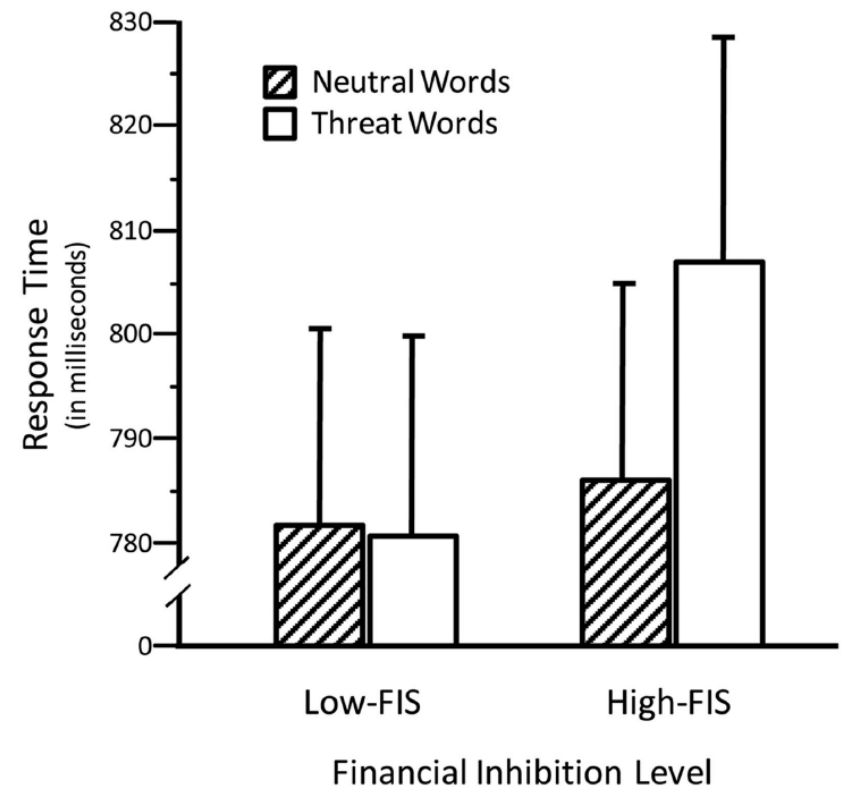
Financial inhibition scale (FIS) used to assess respondents' degree of *retirement-linked financial fears and worries*.

Words in threat category:

401K, elderly, finances, investing, nest egg, pension, poverty, retirement, and saving.

Words in the neutral category:

aluminum, elevator, lemonade, nephew, rose, sailboat, trumpet, and waltz.



(Gutierrez & Hershey, 2013)

Investment Type	Time Horizon	Risk / Reward	Hypothetical \$1,000 Investment
Savings	0+ Years	Low	At the end of 1 year Dist: \$1,081 Rebal: \$1,052
Mutual Fund	2+ Years	Medium	At the end of 2 years Dist: \$1,254 Rebal: \$1,053
Mutual Fund	6+ Years	High	At the end of 5 years Dist: \$3,184 Rebal: \$1,054



System Design & Implementation

Don't Wait! Protect Your Data & Increase Your Security Now

4. Increase employee engagement in retirement planning	38% of employees who received guidance from Fidelity took action
5. Measure retirement readiness	53% of not-for-profit plan sponsors have established a retirement readiness metric to measure readiness and communicate to employees

Account	Regular Savings	Children's Savings	MMDA (Money Market Deposit Account)	Preferred Advantage MMDA
Opening Deposit	\$100	\$2	\$1,000	\$25,000
Minimum Balance	\$100	None	\$1,000	\$25,000
Monthly Service Fee	\$7.50 if minimum balance not maintained	None	\$10 if minimum balance not maintained	\$20 if minimum balance not maintained
Limitations	Limit 6 transfers or withdrawals per statement cycle unless made in person, by mail, or by ACH or card	Limit 6 transfers or withdrawals per statement cycle unless made in person, by mail, or by ACH or card	Limit 6 checks, transfers or withdrawals per statement cycle unless made in person, by mail, or by ACH or card	Limit 6 checks, transfers or withdrawals per statement cycle unless made in person, by mail, or by ACH or card

Medicaid and Medicare Savings Programs Eligibility Pathways and Benefits for Medicaid Beneficiaries, 2010

Pathway to Eligibility	Income Eligibility Level ¹ (individual/ couple)	Asset Limit ² (individual/ couple)	Covered Costs and Benefits ³
Full Medicaid	<100% of poverty (\$64,086/individual; varies by state)	\$1,000/\$1,600 (varies by state)	Medicaid benefits, Medicaid Part A and Part B premiums and cost sharing
Qualified Medicare Beneficiary (QMB)	<100% of poverty (\$64,086/individual; varies by state)	\$6,000/\$12,000	Medicaid Part B premiums and cost sharing
Specified Low-Income Medicare Beneficiary (SLMB)	100%-120% of poverty (\$12,000/individual; varies by state)	\$6,000/\$12,000	Medicaid Part B premiums
Qualified Individual (QI)	100%-120% of poverty (\$12,000/individual; varies by state)	\$6,000/\$12,000	Medicaid Part B premiums
Qualified Disabled and Working Individual (QDWI)	<100% of poverty (\$64,086/individual; varies by state)	\$6,000/\$12,000	Medicaid Part B premiums
National Coverage			
Medically Ready ⁴	Must spend income down to a specified level to qualify		
Poverty Level	<100% of poverty	\$1,000/\$1,600	Medicaid benefits, Medicaid Part A and Part B premiums and cost sharing
Special Income Rule for Nursing Home Residents	Institutionalized individuals with income <100% of the SSI level		
HCBS Waiver	Must be eligible for institutional care		

¹2010. SSI is Supplemental Security Income. HCBS is home and community based services. ²Applicants are allowed a 60-day disregard from any resources that their income is measured against the poverty level. ³States have flexibility in which assets, income, and/or assets limits. ⁴Asset limits for QMB, SLMB, QI, and QDWI include \$1,300 per person for burial expenses. ⁵Cost sharing is limited up to the amount Medicaid pays, at state discretion. ⁶Medicaid benefits may be reduced based on the SSI level.

PORTFOLIO INSURANCE: Can You Afford To Go Without It?

Portfolio Insurance is being termed the most important new investment product of the decade. Billions of dollars of pension fund, endowment, and trust assets now enjoy the security of Leland O'Brien Rubenstein's security protection programs, without missing the potential for further upside gain. With the market at new highs, isn't it time to consider locking in your gains?

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4. Guaranteed	4. Guaranteed
5. Guaranteed	5. Guaranteed
6. Guaranteed	6. Guaranteed
7. Guaranteed	7. Guaranteed
8. Guaranteed	8. Guaranteed
9. Guaranteed	9. Guaranteed
10. Guaranteed	10. Guaranteed

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providing a better future for both o employee alike. For us, that not on volumes, it says it all."

Career opportunities are available country in the following

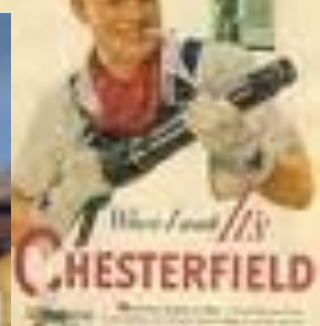
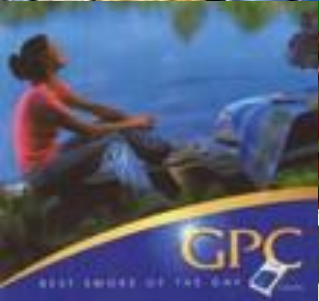
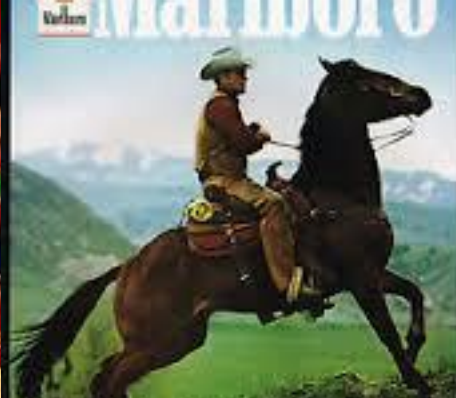
- Claims
- Underwriting
- Accounting/Finance
- Sa
- Lo
- In
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Qualify in 5 minutes. Grow in as little as 12 days

Limited Time Offer - We will pay your application fee!

Loan Amount	Term
\$10,000	12 mos
\$20,000	24 mos
\$30,000	36 mos



What's Advertising Content Worth? Evidence from a Consumer Credit Marketing Field Experiment (Bertrand, Karlan, Mullainathan, Shafir, Zinman; *Quarterly Journal of Economics*, 2010)




Account Number 105349191

BUSINESS HOURS
MON - FRI 08:00 - 18:00
SAT 08:00 - 12:00

SIYASIKHULUMA
ISIZULU

A special rate for you.



Congratulations! As a valued client, you are eligible for a special interest rate on your next cash loan from [REDACTED]. This is a limited time offer so please come in by 31 October 2003 to take advantage of this offer. You can use this cash to pay off a more expensive debt, repair your home, buy an appliance, pay for school or for anything else you want.

Enjoy low monthly repayments with this offer! For example:

Interest Rate	Loan Amount	Loan Term	Monthly Repayment
10.50%	R2000.00	4 Months	R710.00

LOAN AVAILABILITY SUBJECT TO TERMS & CONDITIONS
LOAN AVAILABILITY SUBJECT TO TERMS & CONDITIONS


Loans available in other amounts. There are no hidden costs. What you see is what you pay.

If you borrow elsewhere you will pay 10% more in interest payments on a R2000, 4 month loan!

How to apply:


Bring your ID book and latest payslip to your usual branch, by **31 October 2003** and ask for

To extend your deadline, call 0860 333 0004 or SMS 0860 222 334.



PS: Unfortunately, if you have already taken a loan since the date this letter was issued, you do not qualify for this offer

WIN
10 CELLPHONES
UP FOR GRABS
EACH MONTH!



Behavioral (“Marketing”) Manipulations:

- # of loan examples shown
 - subtle peripheral cues; photos

Some results:

1 vs. 4 examples: ~ 2.3 percent. points

For males: female picture = ~ 3.2 points

The economist [analyst, activist, FinTech expert, anybody..] may attempt to ignore psychology, but it is sheer impossibility for him to ignore human nature... If the economist [policy analyst, activist, FinTech expert..] 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

Thank you!

Pareto optimality (a basic principle of welfare economics):

Assumption: More is better

In fact: More -- but relatively less -- can be bad.

Why? Relative, rather than absolute, evaluations...

2-tier welfare law

Assumption: Move to seek higher welfare

In fact: Just as likely to move to lower-benefit states

Why? Safety, family contacts, job opportunities

(CA family of 3: \$565; Mississippi \$120...)

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*.

Payday Loans, a debt trap...

Extremely high interest; Repeated loans

Access to such loans (Melzer, 2011):

- increases difficulty of paying bills
- increases delays medical / dental care, etc.

Extremely popular: More payday loan & check cashing stores nationwide than McDonald's, Burger King, Sears, J.C. Penney, and Target stores combined!

People have suggested:

Culture. Education. Self-control.

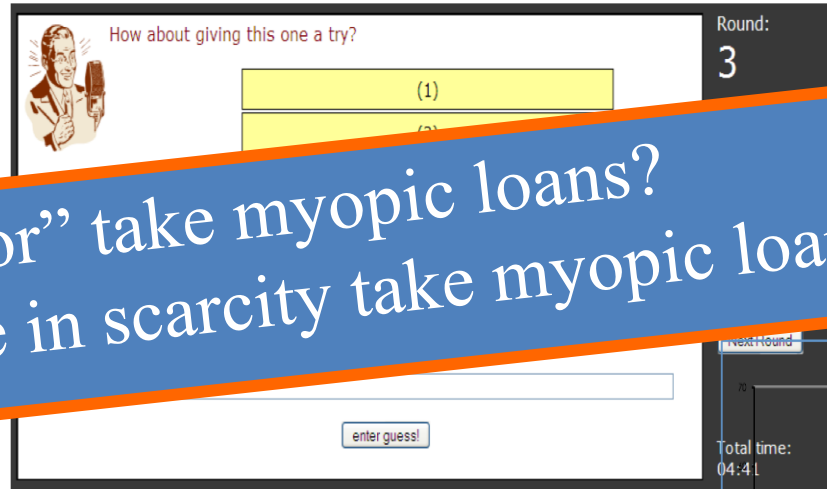


20 rounds

“Rich”: 50 sec / rnd (1000 sec total)

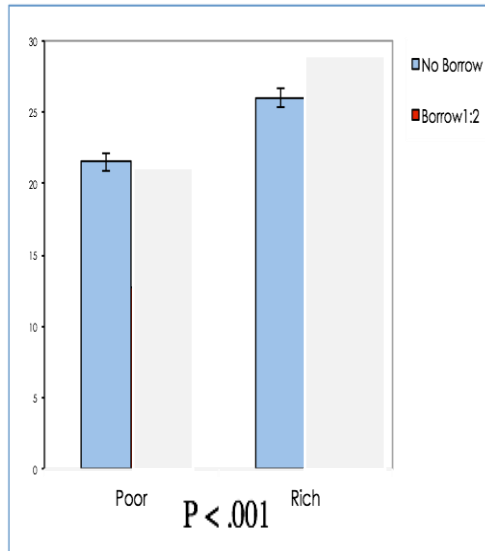
“Poor”: 15 sec / rnd (300 sec total)

No borrowing vs. High Interest Borrowing

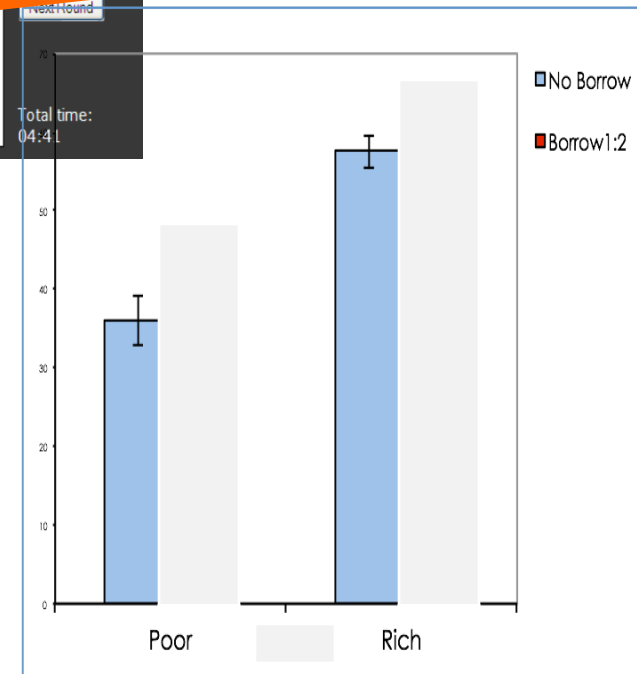


“The poor” take myopic loans?
People in scarcity take myopic loans!

Rounds Completed



Points Earned



(Shah, Mullainathan, & Shafir, *Science*, 2012)