Thinking, Fast And Slow? Some Field Experiments to Reduce Crime And Dropout in Chicago

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Introduction

Motivation

- Youth outcomes in the US can vary significantly:
  - For 15-24 year-olds, homicide rate in 2013 was 18 times higher for blacks than whites (71 vs 4 per 100,000).
- Beyond institutional factors, choices and behavior contribute to outcomes.
- Behaviour might be driven by automatic responses.

Automaticity

- Conscious deliberation is mentally costly.
- People develop automatic responses to situations they often face:
  - If grow up in disadvantaged neighborhoods, fighting back when challenged might be the optimal response.
- But such automatic responses might not be optimal in other situations:
  - Communicating with authority figures (e.g. teachers, police).

Becoming A Man- Program Components

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- The fist:
  - 2 participants, one given a ball, other told to get ball from partner.
  - Most attempt to get ball by force.
  - At end of activity, participants asked why they had not simply asked for the ball, instead of using force.
  - Many said that they did not think the partner would have given it to them.
  - Other youth asked if he would have given the ball if asked nicely. Most respond : 'I would have given it, it's just a stupid ball.'

Implementation

Implementation Details

- Carried out in elementary & high schools in Chicago Public Schools (CPS) located in low income, racially segregated areas.
- Male students from 7th to 10th grade with highest risk of failure chosen.
- Program participants meet up once a week during school year for one-hour-long sessions.
- Program implemented twice, 2009-2010 (BAM 1) and 2013-2015 (BAM 2).

BAM 1 & 2 Differences

- BAM 1 (AY 2009-2010):
  - 27 sessions in 1 year.
  - Includes after-school sports sessions.
  - 4 experimental conditions: Random assignment to participation in BAM only, sports program only, both, or control.
- BAM 2 (AY 2013-2015):
  - Up to 45 sessions spread over 2 years.
  - 2 experimental conditions: Random assignment to participation in BAM or control.

Baseline Characteristics

	Study 1		Study 2	
	Control	Treatment	Control	Treatment
No. of students	1,267	1,473	1,048	1,016
Baseline characteristic				
Demographics				
Age	15.70	15.51	14.75	14.81
Black	72%	69%	70%	68%
Hispanic	28%	31%	28%	30%
Schooling				
Grade	9.42	9.29	9.41	9.46
Old for grade	55%	51%	35%	35%
GPA	1.68	1.73	2.11	2.16
Days present	129.86	133.60	148.18	149.78
Learning disability	20%	19%	17%	16%

Notes. Asterisks indicate statistical significance of pairwise treatment-control comparison for a given baseline characteristic controlling for randomization block fixed effects with heteroscedasticity-robust standard errors. Data from Chicago Public Schools administrative data, Illinois State Police arrest records (study 1), and Chicago Police Department arrest records (study 2). Means calculated using non-missing observations for each variable. Pre-program arrests are arrests prior to start of program school year. For study 1, the baseline school year (AY2009–10) was 170 days; for study 2, the baseline year (AY2013–14) was 180 days. GPA is measured on a 0–4 scale. Joint significance tests for equality of all baseline characteristics use only nonmissing data (n for joint tests: study 1 = 2,579, study 2 = 1,770). * $p < .10$, ** $p < .05$, *** $p < .01$.

Baseline Characteristics- cont'

	Study 1		Study 2	
	Control	Treatment	Control	Treatment
Crime				
Any baseline arrests	37%	35%	23%	23%
No. of baseline arrests for:				
Violent offenses	0.35	0.35	0.19	0.18
Property offenses	0.21	0.19	0.14	0.13
Drug offenses	0.17	0.18	0.11	0.14
Other offenses	0.45	0.47	0.29	0.32
p-value on F-test of treatment-control comparison for all baseline characteristics	.409		.991	

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Estimation & Results

Estimation Details

- Outcome Measures:
  - Schooling index comprised of GPA, school attendance, enrollment status at year end (in Z-score form).
  - Whether student graduated on-time.
  - Total arrests and arrests classified by crime type (violent, property, drug & other)
- Participation: Having attended one or more sessions.

BAM 1- Effects on School Engagement & Arrests

	Control mean	Intention to treat	Effect of participation (IV)
BAM study 1 (Program Year 2009–10, $n = 2{,}740$)			
		Year 1 (program offered)	
School engagement index	0	0.0569***	0.1367***
		(0.0215)	(0.0511)
Total arrests per youth per year	0.699	−0.0778*	−0.1869*
		(0.0456)	(0.1087)
Violent	0.167	−0.0345**	−0.0829**
		(0.0165)	(0.0394)
Property	0.077	0.0048	0.0116
		(0.0127)	(0.0303)
Drug	0.151	0.0013	0.0032
		(0.0177)	(0.0422)
Other	0.305	−0.0495*	−0.1188*
		(0.0272)	(0.0648)

Notes. Baseline covariates and randomization block fixed effects included in all model specifications (see text). Heteroscedasticity-robust standard errors in parentheses. School engagement index is equal to an unweighted average of days present, GPA, and enrollment status at end of school year, all normalized to Z-score form using control group's distribution. Year 1 arrest data from start of program school year until start of following school year for both studies. For study 1, the year 2 arrest data runs through July 18 (capturing a ~10 month window) while for study 2, year 2 arrest data run through March 31 (~8 months). * $p < .10$, ** $p < .05$, *** $p < .01$.

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		Year 2 (program not offered)	
School engagement index	0	0.0782***	0.1878***
		(0.0215)	(0.0514)
Total arrests per youth per year	0.595	−0.0643	−0.1543
		(0.0420)	(0.1000)
Violent	0.110	0.0006	0.0013
		(0.0143)	(0.0340)
Property	0.057	−0.0034	−0.0082
		(0.0103)	(0.0245)
Drug	0.164	−0.0196	−0.0471
		(0.0194)	(0.0461)
Other	0.264	−0.0418	−0.1004
		(0.0259)	(0.0617)

Notes. Baseline covariates and randomization block fixed effects included in all model specifications (see text). Heteroscedasticity-robust standard errors in parentheses. School engagement index is equal to an unweighted average of days present, GPA, and enrollment status at end of school year, all normalized to Z-score form using control group's distribution. Year 1 arrest data from start of program school year until start of following school year for both studies. For study 1, the year 2 arrest data runs through July 18 (capturing a ~10 month window) while for study 2, year 2 arrest data run through March 31 (~8 months). * $p < .10$, ** $p < .05$, *** $p < .01$.

BAM 1- Effects on High School Graduation

High school graduation measures	Control mean	Intention to treat	Effect of participation (IV)
Graduated on time	0.339	0.0297*	0.0714*
		(0.0161)	(0.0383)
Ever graduated (transfers = dropouts)	0.414	0.0240	0.0577
		(0.0167)	(0.0397)
Ever graduated (transfers = graduates)	0.582	0.0355**	0.0853**
		(0.0170)	(0.0406)

Notes. $n = 2{,}740$. Table measures graduation from Chicago Public Schools (CPS). First row counts graduation as receipt of diploma on time relative to grade at time of randomization, second and third rows measure graduation status by end of our study period (spring 2015), first assuming anyone who left the district did not graduate (second row) then assuming all 474 verified out-of-district transfers did graduate (third row). Baseline covariates and randomization block fixed effects included in all models (see text). Heteroscedasticity-robust standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$.

Possible Mechanisms

Possible Mechanisms

- BAM program consist of many different components.
- Could alter behavior through channels other than automaticity:
  - Group-activities like 'The Fist' could improve social skills.
  - Program run by older people from similar background $\rightarrow$ mentorship effect.
  - Other program activities could improve self-control, conscientiousness, or students perceived value of schooling.

Testing Alternative Hypotheses

- Use bi-annual survey conducted in all Chicago Public Schools (2011).
- Measures students' perceptions of themselves and school environment.
- Contains questions relevant to alternative theories.
- Note: Response rate somewhat low and differ between treatment and control (42 % vs. 38 %, $p < .05$)
- Do IV estimation as before, but with measure above as outcome variable:
    - No statistically significant effects.

Testing Automaticity Hypothesis

- 2-round dictator game:
  - In first round:
    - Participants given $ 10 in one-dollar bills, told that they play against another student of the school (actually play against RA).
    - Communicate over walkie-talkie with RA.
    - RA says that they will take $ 6 from participant.
  - In second round:
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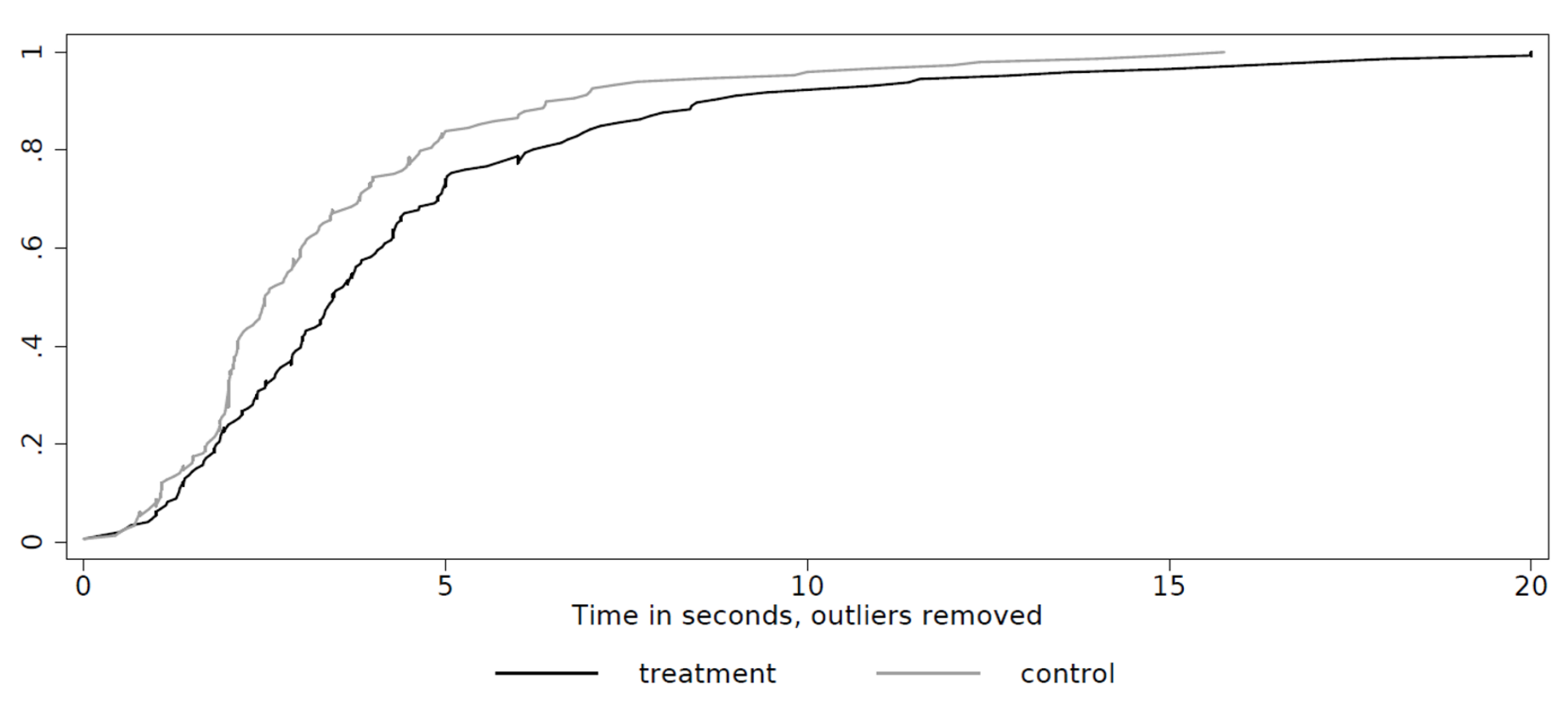
  - In second round:
    - Participant asked by RA how much he wants to take from partner.
- Automaticity hypothesis:
  - BAM participants should take longer time to respond.
  - BAM does not make any hypotheses about how participants should respond.

CDF for Decision Making Times



Conclusion

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- Significant improvements in school performance and arrests during study period.
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- Program seems scalable:
  - Delivered in groups of 15.
  - Manualized & can be delivered by college-educated men without specialized training in psychology.
  - Cost: About $2,000 per participant, often lower.
- But:
  - Do not know which part of program worked, and why.
  - Survey conducted does not have any measure of automaticity.

Questions?