



EVROPSKÁ UNIE
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MSMT
MINISTERSTVO ŠKOLSTVÍ,
MLÁDEŽE A TĚLOVÝCHOVY

ECONOMICS AND GENDER

LECTURE 5

STEREOTYPE THREAT

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1

RIDDLE

- A father and son are in a horrible car crash that critically injures both. They are rushed to the hospital. Just as the boy is about to go under the knife, the surgeon says: “I can’t operate - that boy is my son!”
- *Explain.*



Ugandan chess prodigy's story to become Hollywood film

Lupita Nyong'o and David Oyelowo are tipped to feature in a new Disney production telling the story of Phiona Mutesi's rise from nine-year-old chess enthusiast to international star player



📷 Phiona Mutesi, 15, who is perhaps the best female chess player in Uganda. Photograph: Xan Rice

Source: The Guardian, Tuesday 3 March 2015

**This was written by Lego in the 70s.
They had the right idea...**

To parents

The urge to create is equally strong in all children. Boys and girls.
It's imagination that counts. Not skill. You build whatever comes into your head, the way you want it. A bed or a truck. A dolls house or a spaceship.
A lot of boys like dolls houses. They're more human than spaceships.
A lot of girls prefer spaceships. They're more exciting than dolls houses.
The most important thing is to put the right material in their hands and let them create whatever appeals to them.



British LEGO Ltd., Wrexham, W. Wales
* The names LEGOL, LEGO DUPLO and LEGOLAND are registered trade marks. © 1976 LEGO A/S
Printed in Germany by Mühlbacher & Jöhler, Hamburg - 97561-176

Now?



More Stereotypes?





ENVIRONMENTAL PRESSURE: STEREOTYPE THREAT

7

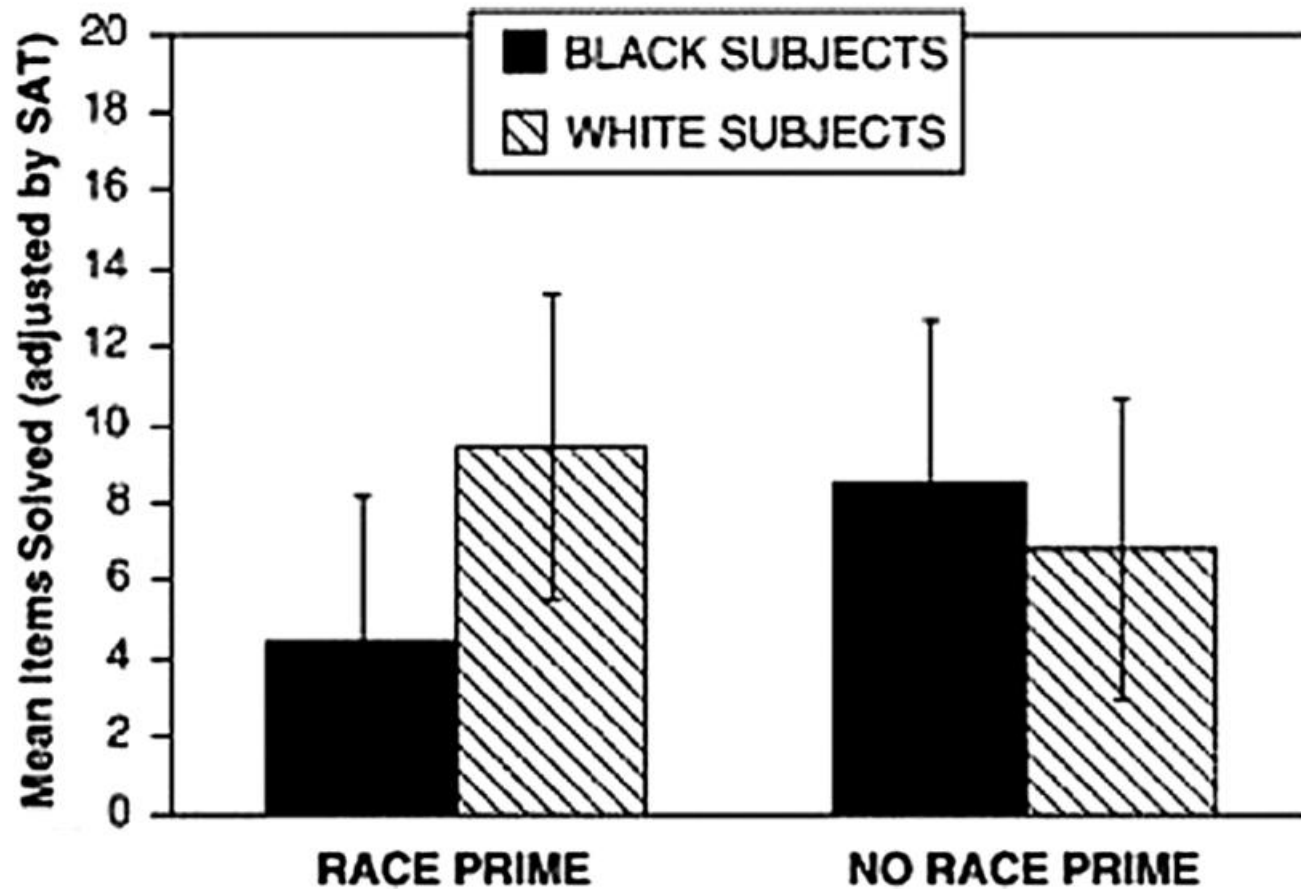
INTELECT OF AFRICAN AMERICANS

STEELE & ARONSON (1995)

- „known“ fact: black students underperform
- 1994: book claiming genetic differences in IQ b/w black and white Americans
- Genetics or culture?

INTELECT OF AFRICAN AMERICANS

STEELE & ARONSON (1995)



INTELECT OF AFRICAN AMERICANS

STEELE & ARONSON (1995)

- Genetics or culture? Evidence against genetics:
- Experiment: series of verbal problems
 - 1. task framed as a diagnostic test of intelligence
 - 2. task framed as a laboratory exercise
- Results:
 - 1. Like in national averages, black underperformed
 - 2. no difference, controlling for past performance
- Another study: only indication of race before a test enough for blacks to underperform

STEREOTYPE THREAT

(SCHMADER ET AL., 2014)

- Principle: Existence of negative stereotype about in-group increases fear of confirming it
 - „black people are stupid“
 - „white men can't jump“
 - „white are worse at math than asians“
 - „women are bad at math“
- Idea: the in-group members pursue too much effort to deny the stereotype
- A psychological burden occupying working memory

STEREOTYPE THREAT: PRE-REQUISITES

(SCHMADER ET AL., 2014)

- Being in situation accenting membership in a stereotyped group surrounded by majority with stereotypes *usually* activates ST
- Subjects have to know about the stereotypes
 - Not need to believe it, just know about it
 - Complete acceptance reduces it
 - Feel as part of the group
- ST biggest for those who invested most in doing well in the part. Domain

STEREOTYPE THREAT: PRE-REQUISITES

(SCHMADER ET AL., 2014)

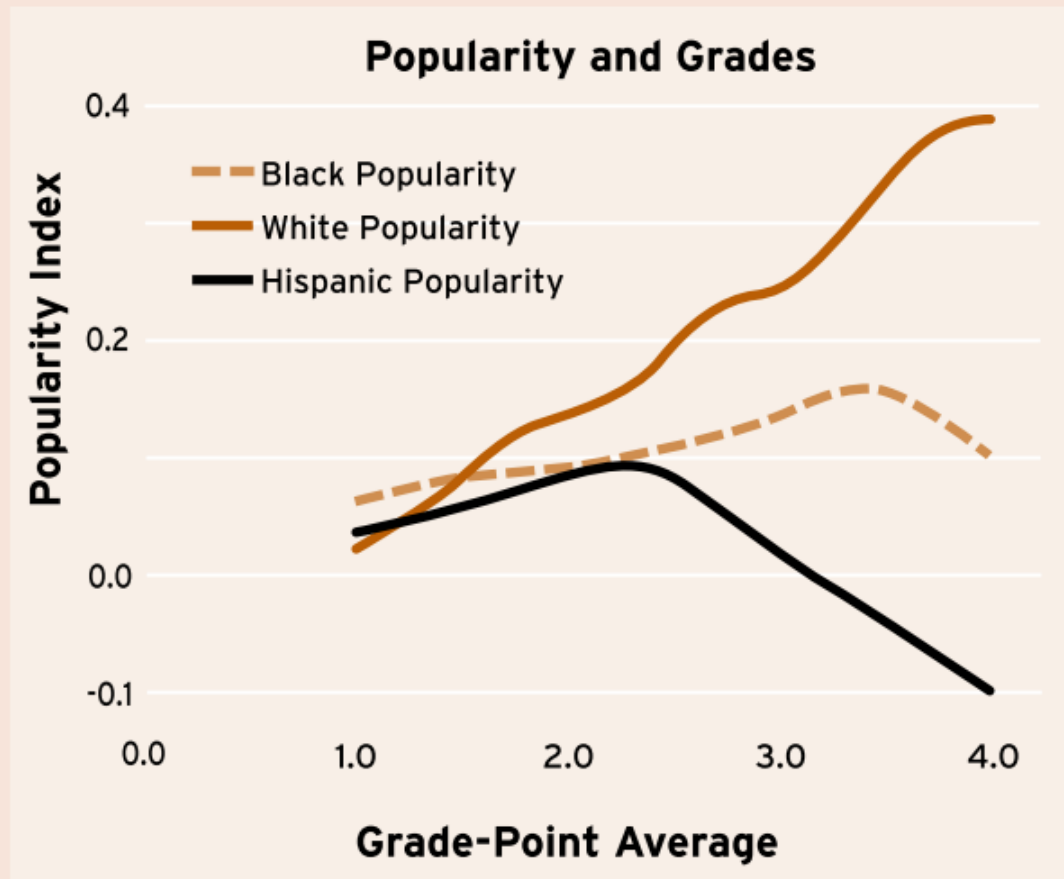
- Fear of confirming stereotype -> debilitating pressure
- Only if task is a challenge
 - Easy task can enhance performance under ST
- Also learning under ST impaired
 - Performance in classes even more difficult
- Depends on strength how subject identifies with the ingroup

ANOTHER PRESSURE: ACTING WHITE (FRYER JR. 2006)

- Persistent differences: whites vs. other ethnics
 - Afro-Americans underperform – school, labor markets
 - Why???
- Acting white – when an Afro-American/Mexican is trying hard at school/at work (a „white“ behavior)
- Potentially important mechanism behind lag of black community in USA
- Achievements ----- social punishment
- Fryer Jr.: let's compare popularity with academic achievements
 - Asking students to write a list of friends, counting how many each appeared
 - Connecting to grades
 - If acting white true, with higher GPA for black students lower popularity

Pressure to Be Average (Figure 1)

The popularity of white students increases as their grades increase. For black and Hispanic students, there is a dropoff in popularity for those with higher GPAs.



Note: A grade of 1.0=D; 4.0=A

SOURCE: Author's calculations from National Longitudinal Study of Adolescent Health data

ACTING WHITE

- Results
 - At low GPA no difference b/w ethnic groups
 - When achieving 2.5 GPA (Bs and Cs), Hispanic losing popularity
 - When achieving 3.5 GPA, black losing popularity
 - Larger effects for boys
- Holds for schools with less than 80% blacks
- Argument against racial integration

- Need for more understanding of this



REMOVING THE THREAT

17

REMOVING THE THREAT



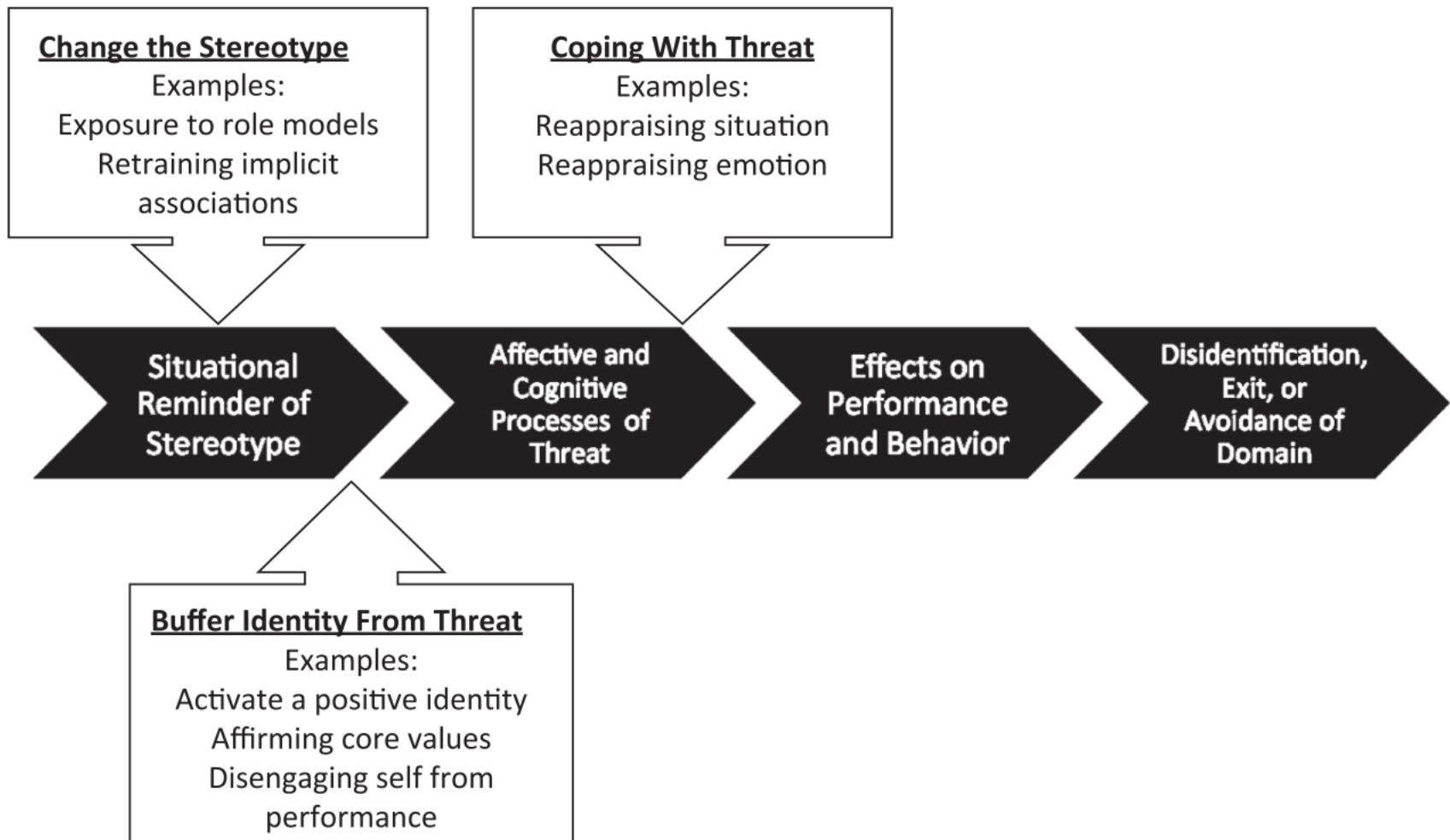
Neil deGrasse Tyson
US Physicist



Hadiyah-Nicole Green
US Physicist

REMOVING THE THREAT

(SCHMADER ET AL., 2014)



REMOVING THE THREAT

(SCHMADER ET AL., 2014)

- Changing the stereotype
 - Role models
 - Stereotype retraining
- Buffering the threat to identity
 - Attenuate the part of identity that is doing good in the domain („positive“ identity)
 - IQ test: Black vs. Student at a prestigious college
 - Emphasize personal identity / downplay group identity
 - Affirming self
 - Restoring sense of self-integrity by reminding that self depends on much more than just e.g. a test
- Coping with the threat
 - Reappraisal of situation/emotion in a positive way



📷 Phiona Mutesi, 15, who is perhaps the best female chess player in Uganda. Photograph: Xan Rice

Source: The Guardian, Tuesday 3 March 2015



REMOVING THE THREAT: QUEEN OF KATWE SCREENING (RILEY 2017)

- secondary-school students preparing to national exams
- Either watched QoK movie or a placebo movie
 - QoK – inspiring movie about a young girl becoming a chess-master
- Aspirational movie increased math performance by 0.11 SD for S4 students
 - 11 p.p. less likely to fail
- For S6 students, score in finals increased by 0.13 SD
- Power of role-model – cost-effective way to improve educational attainment







OVERCOMING STEREOTYPE THREAT

Choose your own example and fill in the worksheet. Think about some of the techniques recommended by psychologists:



- Thinking about a role model
- Making another identity salient
- Adopting a growth mindset
- Using self-evidence

ECONOMISTS REPLICATING ST...?

(FRYER ET AL., 2008)

- Aim: Replication of Spencer et al. (1999)
 - Informing about gender-specificity of math task reduced the performance of women by 50%+ compared to neutral-framing
- Introducing financial incentives
 - \$2 per correct answer
 - Experimenter demand effect vs money
 - Or, to see if further pressure exacerbates ST
- 2x2 design:
 - gender-specific framing x financial incentives
 - SAT, GRE test exams
- 79M, 61F business school students

ECONOMISTS REPLICATING ST...?

(FRYER ET AL., 2008)

	Questions correct		Stress on current test		General test anxiety		Total questions answered		Guess at the end of test?	
	(1) Male	(2) Female	(3) Male	(4) Female	(5) Male	(6) Female	(7) Male	(8) Female	(9) Male	(10) Female
Mean in baseline	8.16	7.25	4.47	3.44	2.57	2.09	16.00	16.94	0.53	0.69
<i>Estimated treatment effect of</i>										
Stereotype threat	1.17 (0.80)	0.87 (0.966)	0.48 (0.73)	1.96* (0.83)	-0.48* (0.21)	0.30 (0.27)	2.38* (0.98)	0.32 (1.35)	0.25* (0.12)	0.15 (0.14)
Financial incentives	1.48 (0.80)	0.32 (1.03)	0.16 (0.73)	1.71 (0.89)	-0.42 (0.21)	0.38 (0.28)	3.04** (0.98)	1.51 (1.43)	0.30* (0.12)	0.23 (0.15)
Stereotype treat and financial incentives	1.85* (0.83)	0.05 (0.92)	0.59 (0.76)	1.04 (0.80)	-0.47* (0.22)	0.41 (0.25)	2.45* (1.02)	0.26 (1.29)	0.29* (0.13)	0.15 (0.14)
<i>Estimated treatment effect of</i>										
Any treatment	1.49* (0.66)	0.40 (0.77)	0.40 (0.60)	1.53* (0.67)	-0.46* (0.18)	0.37 (0.21)	2.63** (0.81)	0.62 (1.08)	0.28** (0.10)	0.17 (0.11)

Notes: The values in this table are regression estimates for dummy variables corresponding to different treatment cells in our 2x2 design, which crosses financial incentives and stereotype threat treatments. The omitted category is our baseline treatment (nonfinancial incentives, no stereotype threat); all estimates are relative to that baseline. The dependent variable is listed at the top of each column. Included in the regressions, but not shown in the table, are controls for race, gender, number of college math classes, self-reported SAT math score, whether the student is getting an MBA, and age. Each entry in the

ECONOMISTS REPLICATING ST...?

(FRYER ET AL., 2008)

Results

- No ST replicated on women
- All treatments improve performance of men
- Significant effect - financial incentives improved performance of men

Conclusion

- Experimenter-demand effect?

ST - MODEL

DEE (2014)

- Extension of Akerlof and Kranton (2002)
- students choose a particular social identity (e.g., leading crowd, nerd, or burnout)
- subsequent utility = social status of chosen identity + how well traits and a chosen level of effort allow one to approximate the ideal of that chosen social identity.
- stereotype threat - apprehension and diminished cognitive performance that may be created by the suspicion about how one is viewed by others

ST - MODEL

DEE (2014)

- Utility of individual $wk(n(t), e) - c(e)$
 - w - return on performance
 - $k(n, e)$ – performance level
 - n – ability
 - e – effort
 - $c(e)$ – disutility of effort
- n - decreasing function of situational threats, t , that create ST anxiety (i.e., $n_t < 0$)
- Comparative static:

$$\frac{\partial e^*}{\partial t} = \frac{wk_{en}n_t}{-(wk_{ee} - c_{ee})} > 0.$$

ST - MODEL

DEE (2014)

- given that ST decreases the productivity of effort (i.e., $n_t < 0$), chosen level of effort will fall only if effort and ability are complements in the production of performance (i.e., $k_{en} > 0$).
 - ST - a negative ability shock
 - Decrease on return to effort
 - Therefore smaller effort
- depends critically on how subjects view the nature of the task

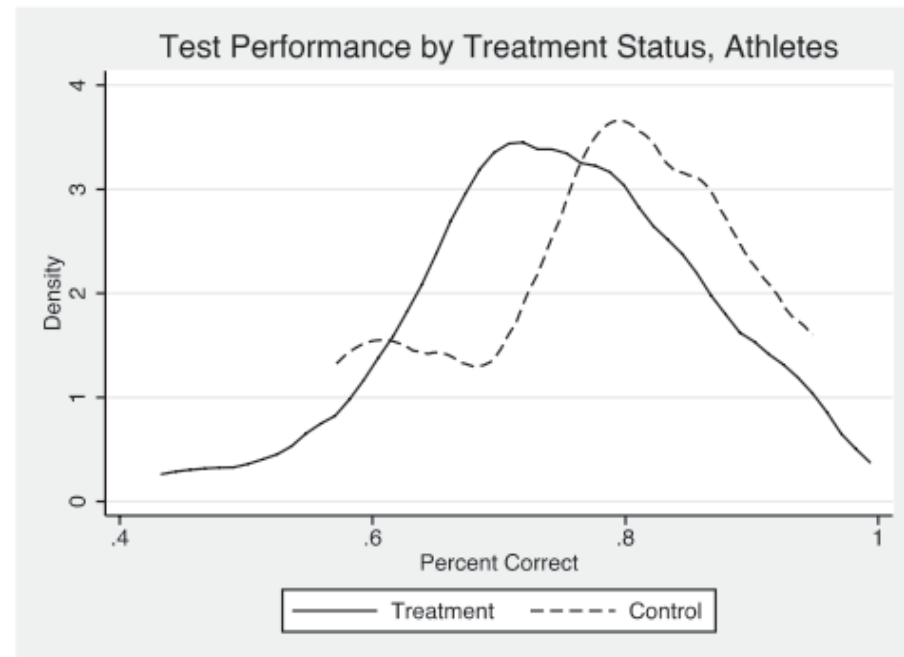
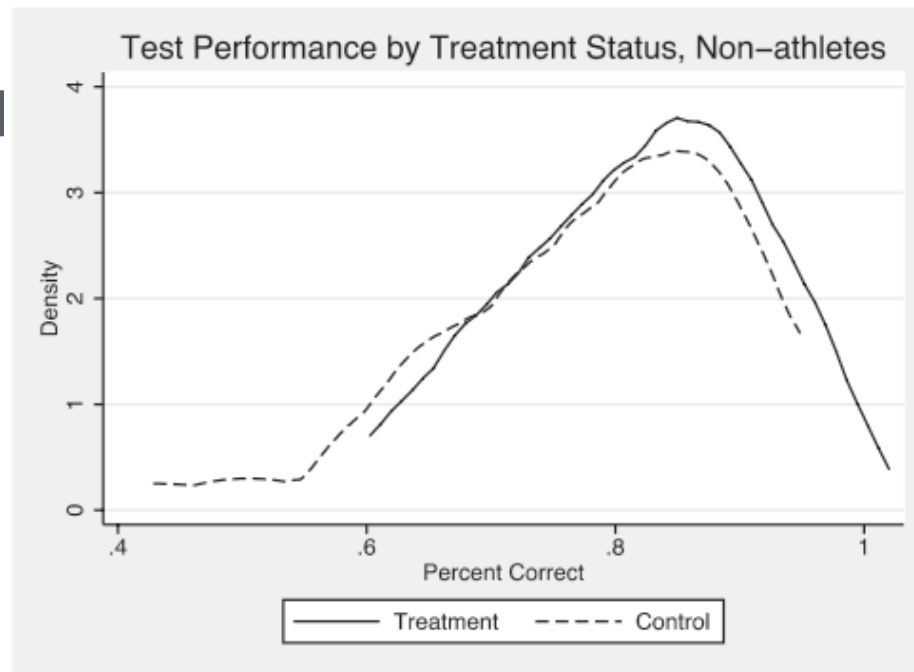
ECONOMISTS REPLICATING...?

DEE (2014)

- ST in student athletes?
- „athletes underperform in SAT/GRE tests“ because have no time to study due to excessive training hours
- 84 Swarthmore college
 - 44% athletes
- Manipulation:
 - “Are you (or have you been) a member of a National Collegiate Athletics Association (NCAA) sports team at the College?”
 - identify the sport(s) played and respond to questions about the frequency they experienced scheduling conflicts between athletics and academic duties
- Test: difficult GRE questions

ECONOMISTS REI DEE (2014)

- Finding: men did, tried to solve more questions
- - more mistakes



ECONOMISTS REPLICATING...?

DEE (2014)

Independent Variable	(1)	(2)	(3)	(4)
Treatment × athlete	-0.0808* (0.048)	-0.0907** (0.041)	-0.0859** (0.041)	-0.0939** (0.042)
Treatment	0.0408 (0.032)	0.0356 (0.027)	0.0355 (0.028)	0.0372 (0.029)
Athlete	0.0173 (0.035)	0.0766** (0.032)	0.0665** (0.032)	0.0634* (0.033)
Female	-0.0496** (0.024)	-0.0483** (0.020)	-0.0446** (0.021)	-0.0440* (0.023)
White Non-Hispanic	0.0414 (0.042)	-0.0376 (0.038)	-0.0473 (0.039)	-0.0512 (0.040)
Asian	0.0797* (0.047)	-0.0030 (0.043)	-0.0037 (0.044)	-0.0110 (0.044)
SAT (Math)		0.0008*** (0.000)	0.0008*** (0.000)	0.0008*** (0.000)
SAT (Reading)		0.0006*** (0.000)	0.0006*** (0.000)	0.0006*** (0.000)
Class fixed effects	No	No	Yes	Yes
Session fixed effects	No	No	No	Yes
R^2	0.125	0.383	0.407	0.434

POLICY INTERVENTIONS: STEREOTYPE THREAT

- Affirmative action & Quotas
 - Now being introduced in Nordic countries
 - Useful?
- Test administration – framing
 - Indicating age, gender & ethnicity after the test
- Education policies
 - Directly provide information to stigmatized
 - Educate teachers

READING LIST

○ Obligatory:

- Schmader, T., & Hall, W. (2015). Stereotype threat in intergroup relations. *APA Handbook of Personality and Social Psychology*, 2, 447–471. <http://doi.org/10.1037/14342-017>

○ Optional:

- Picho, K., & Schmader, T. (2017). When do Gender Stereotypes Impair Math Performance? A Study of Stereotype Threat Among Ugandan Adolescents. *Sex Roles*, 1–12. <http://doi.org/10.1007/s11199-017-0780-9>
- Fryer, R. G., Levitt, S. D., List, J. A., Steele, C. M., & Quinn, D. M. (2008). Study on Stereotype of Financial Incentives Exploring the Impact a Pilot Study Threat : Evidence from. *American Economic Review: Papers and Proceedings*, 98(2), 370–375.
- Dee, T. S. (2014). Stereotype Threat and the Student-Athlete. *Economic Inquiry*, 52(1), 173–182. <https://doi.org/10.1111/ecin.12006>



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