Effects of Childhood Peers on Personality Skills

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ABSTRACT

- We study the effects of primary school peers on personality skills.

- Identification: classroom-level exposure to disadvantaged (left-behind) peers, aided by random classroom assignment in Chinese schools

- 10%pt decrease in the proportion of disadvantaged peers → approx. 0.2 sd increase in consciousness, emotional stability, social skill

- Evidence suggests personality skills → personality skills channel

INTRODUCTION

- Known: childhood peers → academic achievement (short run)
- Known: childhood peers → schooling, earnings (long run)
- **Unknown**: childhood peers → (??) → long run outcomes
  - Academic achievement doesn't explain enough
  - Some suggest personality/noncog skill but without evidence
- **Unknown**: childhood peers ?→? personality/noncog skill
  - We know there's association
  - No causal evidence
- **We show**: childhood peers are inputs in pers. skill production
- **We show**: peers pers. → own pers. (suggestive evidence)

IDENTIFICATION

- Compare across primary school classrooms
- Exposure to left-behind children (LBC) in China
- Left-behind children: parents migrate away for higher income to fund basic household consumption, "making ends meet"
- In our sample, LBC are disadvantaged in pers skills
- **Concern**: (1) selection bias; (2) reverse causality
- **Response (1)**: **random class assignment at grade 1, 4**
  - Chinese government mandate + our interviews with schools
- **Response (2)**: (a) outcome measured in grade 4—6, peers LB status defined by grade 1 status; (b) school-cohort-wave FE; (c) migrants' remittances not spent on children's education.
- Restrict sample to never-LB children (receiver) to remove bias from mechanical correlation (Angrist 2014)
- Extensive balance tests

ESTIMATION

$$Y_{it} = \alpha + \gamma_1 \overline{LB}^{class1a}_{-i,1a} + \gamma_2 \overline{LB}^{class4a}_{-i,1a} + \theta X_{it} + \rho_{sct} + \varepsilon_{it},$$

- Classroom proportion of left-behind peers in 1st-semester-1st-grade and 1st-semester-fourth-grade.
- Student-level, teacher-level, parent-level controls
- Error term clustered at school-cohort level
- Data: panel of 2017, 2018 waves from 17 primary schools in Mianzhu county, Sichuan province, China.
- Survey: students, parents, teachers, including Big Five Inventory, novel social skill measure
- Administrative data: test scores, classroom assignments, teacher characteristics

BASELINE RESULTS

Dependent =	Consc (1)	Agree (2)	Extro (3)	Openn (4)	E.Stability (5)	Social (6)
Proportion of 1a-Peers LB in 1a	0.252 (0.285)	0.114 (0.327)	0.065 (0.394)	0.226 (0.324)	0.579 (0.427)	0.065 (0.313)
Proportion of 4a-Peers LB in 1a	-1.824 (0.520)	-1.904 (0.629)	-0.688 (0.482)	-0.518 (0.632)	-2.370 (0.606)	-1.469 (0.599)
F-Test for Two LB Proportions p-Value for F-Test	6.2 [0.004]	4.6 [0.013]	1.1 [0.337]	0.4 [0.673]	7.7 [0.001]	3.2 [0.050]

Dependent =	Math (1)	Chinese (2)	IQ (3)
Proportion of 1a-Peers LB in 1a	-0.302 (0.248)	-0.262 (0.270)	0.207 (0.279)
Proportion of 4a-Peers LB in 1a	0.022 (0.264)	-0.091 (0.241)	0.384 (0.314)
F-Test for Two LB Proportions p-value for F-Test	1.2 [0.321]	0.5 [0.605]	1.1 [0.333]

	(1)	(2)	(3)	(4)	(5)	(6)
N	3087	3087	3087	3087	3087	3087
Individuals	2272	2272	2272	2272	2272	2272
Class-Cohorts	181	181	181	181	181	181
School-Cohorts (Clusters)	64	64	64	64	64	64
Schools	18	18	18	18	18	18

- **10 percentage point reduction in 4th grade LB peers → 0.18 SD improvement in conscientiousness** in grades 4—6.
- Similar effects on agreeableness, emotional stability, social skill
- **No effects on test scores, IQ**
- No effects from 1st-grade peers
  - Not sure if fadeout, absence of effects, etc.

HETEROGENEITY

Dependent =	Consc (1)	Agree (2)	Extro (3)	Openn (4)	E.Stability (5)	Social (6)
Proportion of 1a-Peers LB in 1a	0.280 (0.287)	0.130 (0.319)	0.083 (0.390)	0.245 (0.323)	0.586 (0.422)	0.103 (0.315)
Proportion of 4a-Peers LB in 1a	-1.684 (0.527)	-1.995 (0.615)	-0.661 (0.508)	-0.620 (0.654)	-2.360 (0.635)	-1.524 (0.614)
× (Test in 3b < Average)	-0.621 (0.110)	-0.167 (0.147)	-0.313 (0.177)	-0.448 (0.157)	-0.348 (0.148)	-0.333 (0.115)
× (Mother's Educ ≤ 6 or Unknown)	0.134 (0.269)	0.114 (0.260)	0.077 (0.265)	0.432 (0.260)	0.282 (0.237)	-0.026 (0.258)
× Girl	0.036 (0.274)	0.196 (0.286)	0.091 (0.198)	0.202 (0.258)	0.026 (0.223)	0.308 (0.225)
Other Controls School-Cohort-Wave FE	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
N	3087	3087	3087	3087	3087	3087

- More negative effects on those with low baseline scores
- Not much other evidence of heterogeneity
- Also considered nonlinear effects (not shown here; in the manuscript)
  - More effects when LB proportion low
- A long list of robustness checks
  - Effects not due to peers' SES, other characteristics

MECHANISMS

- We have peer LB → pers
- Peer pers. → pers?
- Peer acad. → pers?
- Need peers' pers, acad before the 4th grade
- Do not have peers' pers before the 4th grade
- Response: show that LBC have low pers, but not low acad
- "Suggestive evidence"

Step 1: 4th grade peers' pre-determined characteristics → peers' current outcomes, showing:
4th grade peers LB →   4th grd peers pers
4th grade peers LB → **not** 4th grd peers academic achiev.

$$\overline{Y}^{Academic,class4a}_{-i,t} = \alpha_1 + \gamma_{11}\overline{Test}^{class4a}_{-i,3b} + \gamma_{12}\overline{LB}^{class4a}_{-i,1a} + \theta_1 X_{it} + \rho_{sct} + \varepsilon_{1,it},$$

$$\overline{Y}^{Personality,class4a}_{-i,t} = \alpha_2 + \gamma_{21}\overline{Test}^{class4a}_{-i,3b} + \gamma_{22}\overline{LB}^{class4a}_{-i,1a} + \theta_2 X_{it} + \rho_{sct} + \varepsilon_{2,it},$$

Step 2: 4th grade peers pre-determined charac.→ own current outcomes, showing:
4th grade peers LB   →   own pers
4th grade peers acad →**not** own pers
4th grade peers LB   →**not** own academic achievement

$$Y^{Academic}_{i,t} = \alpha_1 + \gamma_{11}\overline{Test}^{class4a}_{-i,3b} + \gamma_{12}\overline{LB}^{class4a}_{-i,1a} + \theta_1 X_{it} + \rho_{sct} + \varepsilon_{1,it},$$

$$Y^{Personality}_{i,t} = \alpha_2 + \gamma_{21}\overline{Test}^{class4a}_{-i,3b} + \gamma_{22}\overline{LB}^{class4a}_{-i,1a} + \theta_2 X_{it} + \rho_{sct} + \varepsilon_{2,it}.$$

Dependent:	4a-Classmates'		Self's	
	Academic (1)	Personality (2)	Academic (3)	Personality (4)
4a-Classmates' Test Scores in 3b	0.518 (0.067)	0.475 (0.274)	0.056 (0.115)	0.071 (0.292)
4a-Classmates' Being LB in 1a	0.107 (0.178)	-1.308 (0.653)	0.201 (0.225)	-1.686 (0.615)
Other Controls School-Cohort-Wave FE	✓	✓	✓	✓
N	3087	3087	3087	3087

- Implicit assumption: 3rd grade skills ≈ 4th grade skills

CONCLUSION

- Peers in childhood → personality skill development
- Pers skill could be channels to LR effects of childhood peers
- Nature vs. nurture: another nurture win
- Consider personalities as peer effects outcomes and measures of peer quality
- Counteract negative side effects of detracking, desegregation by education programs that improve personalities (there are many; most early childhood interventions; Elango et al. 2016)