

EC555: Family Macroeconomics

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Bargaining over Relocation

Jiwon Lee (WP 2026): long-distance moves often trade off the careers of spouses.

- Australian household panel (HILDA, 2002–2019), intact couples; relocation is move of more than 100 miles.
- Each spouse separately reports whether they would prefer to stay or leave.
- Regress moving at t on the couple's preferences at $t - 1$:

$$\text{Moved}_{h,t} = \beta_0 + \beta_f \text{She Leave/He Stay}_{h,t-1} + \beta_m \text{She Stay/He Leave}_{h,t-1} + \beta_a \text{Both Leave}_{h,t-1} + \epsilon_{h,t}$$

- Same idea as the fertility intentions in Doepke and Kindermann (AER 2019).

Children Shift Who Can Veto a Move

	No child	Child 0–4
She Stay/He Leave (β_m)	0.038* (0.023)	0.079*** (0.024)
She Leave/He Stay (β_f)	0.038* (0.020)	0.029 (0.019)
Both Leave (β_a)	0.166*** (0.030)	0.097*** (0.028)

- Without children: veto model.
- With young children: husband decides.

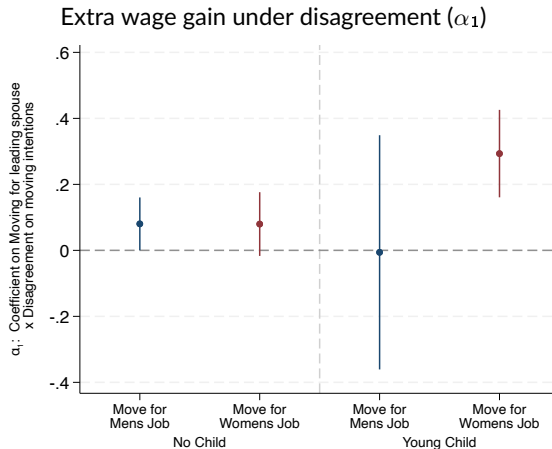
Is Disagreement a Binding Constraint?

- If a spouse can veto, a move against that spouse's wishes may require a larger gain to bring them along.
- Test: job-related moves, where one spouse leads and the other is tied. Regress the leading spouse's wage growth on moving for that spouse's job, interacted with ex-ante disagreement:

$$\Delta \log w_{i,t} = \alpha_0 + \alpha_1 \text{Moved for } i\text{'s job}_{h,t} \times \text{Disagree}_{h,t-1} \\ + \alpha_2 \text{Moved for } i\text{'s job}_{h,t} + \alpha_3 \text{Disagree}_{h,t-1} + \text{controls} + \varepsilon_{i,t}$$

- $\alpha_1 > 0$: moves under disagreement happen only if the leading spouse gains more.

Is Disagreement a Binding Constraint?



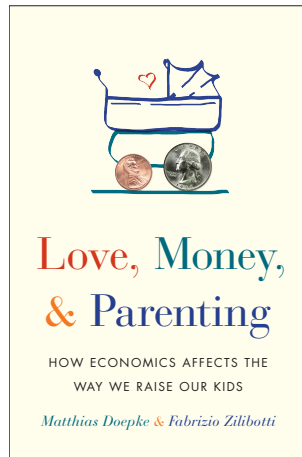
- Without children: moderate extra gain for both husbands and wives.
- With a young child: a move for the wife's job against the husband's wishes requires a large wage gain; a move for the husband's job does not.

The Economics of Parenting

- Initial focus on parental decisions on fertility and human capital.
- But parents decide on other things, too:
 - Transmission of values and attitudes.
 - Parenting style.
 - Decisions that shape peer effects.
- These decisions have been the focus of my work on the economics of parenting with Fabrizio Zilibotti and others.

The Economics of Parenting Style

- Parenting style as a choice: Doepke and Zilibotti (Econometrica 2017).
- Book for a general audience: Doepke and Zilibotti (Princeton University Press 2019).
- Survey: Doepke, Sorrenti, and Zilibotti (Annual Review of Economics 2019).



Parenting Style in Developmental Psychology

- Three parenting styles (Baumrind (Genetic Psychology Monographs 1967)):
 - Permissive parenting
 - Authoritative parenting
 - Authoritarian parenting
- Also: neglectful parenting (Maccoby and Martin (Handbook of Child Psychology 1983)).
- Focus in psychology is on effects of parenting style on children.

The Economic Perspective

- Focus on how parents choose a parenting style in response to incentives shaped by economic conditions and institutions.
- Parents have altruistic and paternalistic motives.
- Parenting style is about how parents manage conflict and disagreement with their children.

A Model of Parenting Style

- A single parent and a single child. Each period (childhood and adulthood) comprises two subperiods.
- Parent maximizes:

$$V(S) = U_1(C_1, L_1|A) + U_2(C_2, L_2|A) + Z((1 - \gamma)v + \gamma\tilde{v}).$$

- S is a skill vector including cognitive and noncognitive skills, $S = \{H, A\}$.
- Parent derives utility from the child in two different ways.
 1. The child's actual lifetime utility v (altruism)
 2. A different function $\tilde{v}$ based on her own preferences (paternalism).

A Model of Parenting Style

- The child's value function is:

$$v = u_1(c_1, l_1|a_1) + u_2(c_2, l_2|a_2) + zV'(S') .$$

- In a dynastic model, $V = V'$.
- The parent's paternalistic concern for the child is:

$$\tilde{v} = \tilde{u}_1(c_1, l_1|A) + \tilde{u}_2(c_2, l_2|A) + zV'(S') ,$$

- The parent can shape the child's choices through molding her preferences a_1, a_2 (persuasion) or by shaping her choice set $\mathcal{X}_t$ (coercion).

Disagreement

- Key implication of paternalism: parent may **disagree** with the child.
- **Parenting Style** is the manner in which this disagreement is resolved:
 1. A parent who lets the child have her own way is **permissive**.
 2. A parent who molds the preferences of the child is **authoritative**.
 3. A parent who restricts the choice of the child (small $\mathcal{X}_t$) is **authoritarian**.

The Tradeoff in Choosing a Parenting Style

- Indoctrinating and restricting children takes effort and undercuts altruistic motive:
→ Be **permissive** when stakes are low.
- For authoritarian strategy to work, need to exert control and know what to do:
→ Be **authoritarian** when stakes are high and parents have control and information.
- Otherwise, indoctrination is the only option:
→ Be **authoritative** when stakes are high, but children have to make big decisions on their own.

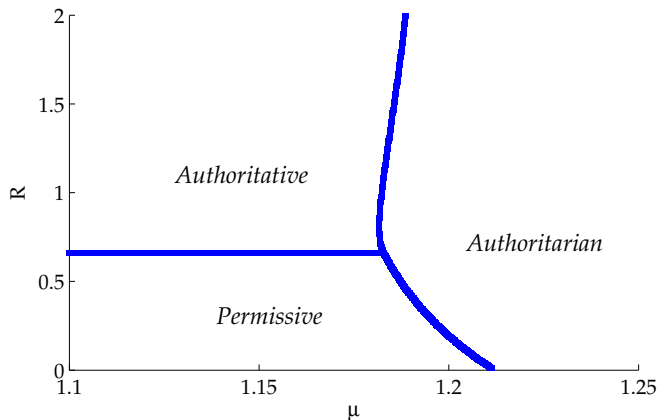
Getting Kids to Apply Themselves

The tradeoff in Doepke and Zilibotti (Econometrica 2017):

- Children decide how much effort to put into education and which career to choose—follow in the parent's footsteps or follow their own inclination.
- Parents would like their kids to work hard, but can exert direct control only if the children choose to remain in their occupation.
- Variation (over time or space) in the Return to Education R and the Incumbency Premium μ .

Equilibrium Parenting Style

Parenting style by return to education R and incumbency premium μ



Application to History of Parenting

Until the nineteenth century: **authoritarian parenting** (e.g., corporal punishment widely recommended).

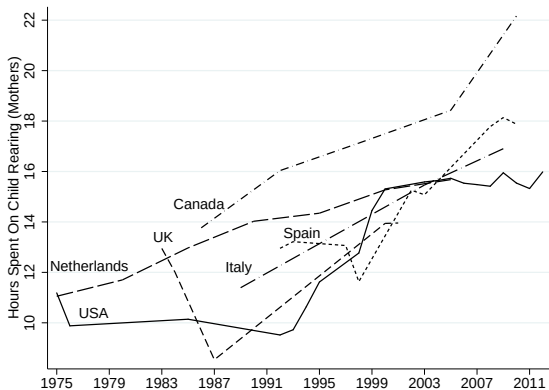
- The Bible:
 - *“He who spares the rod hates his son, but he who loves him is careful to discipline him”* (Proverbs 13:24)
- Plumb (Past and Present 1975):
 - *“of two hundred counsels of advice on child-rearing prior to 1770, only three failed to recommend that fathers beat their children”*



Application to History of Parenting

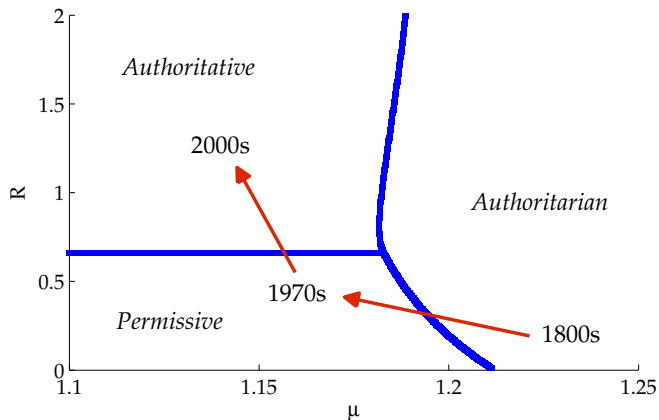
- Twentieth century until 1970s: increasingly **permissive** parenting.
- Since the 1980s: rise of **authoritative** and intensive parenting.
- Especially among upper middle class parents: *rug rat race*, *helicopter parenting*, *tiger moms*.

Weekly hours spent on child rearing, mothers



History of Parenting in the Model

Parenting style by return to education R and incumbency premium μ

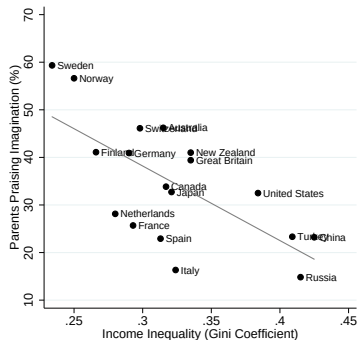


Application to Parenting Across Countries

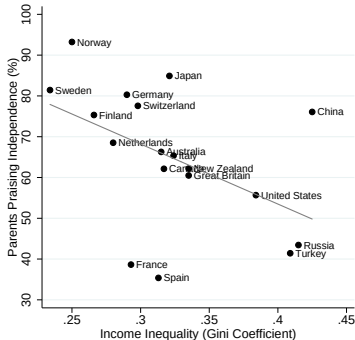
- Intensive parenting styles (**authoritarian** and **authoritative**) are associated with high stakes.
- World Values Survey question: *"Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important?"*
- Examine correlation of answers with inequality, especially: **imagination**, **independence**, **hard work**, and **obedience**.

Inequality and Parenting Values

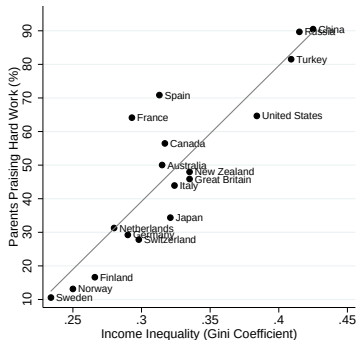
Imagination



Independence



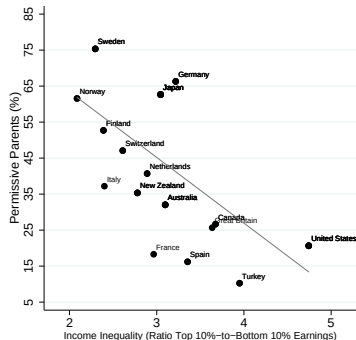
Hard work



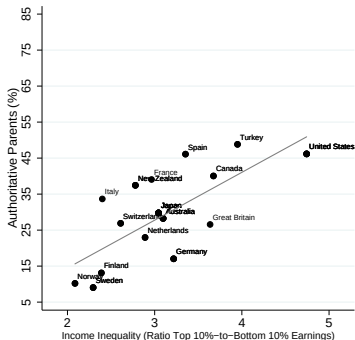
Share of parents who consider the quality especially important (World Values Survey) vs. Gini coefficient.

Inequality and Parenting Styles

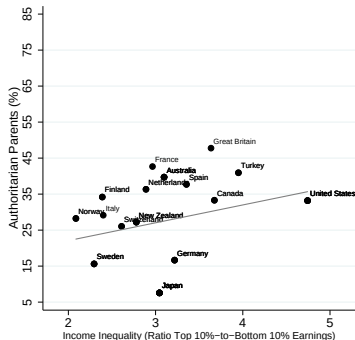
Permissive



Authoritative



Authoritarian



Share of parents by parenting style vs. ratio of top 10% to bottom 10% earnings.

Parenting and Peer Effects

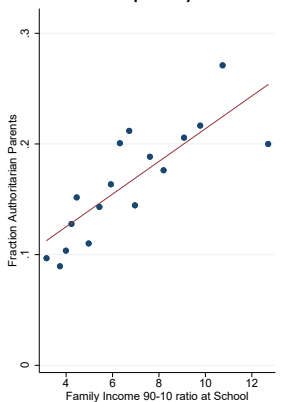
- Question in Add Health in-home survey:

“Do your parents let you make your own decisions about the people you hang around with?”

- If child answers “No,” parent is classified as **authoritarian about friends** (14 percent of parents in Add Health).

Parents Intervene when Potential Peers are Heterogeneous

Authoritarian parents vs. school
inequality



Dependent variable: authoritarian about friends			
	(1)	(2)	(3)
Mean GPA within grade	-0.135*** (0.039)		-0.049 (0.038)
SD GPA within grade		0.389*** (0.078)	0.249*** (0.089)
Controls	No	No	Yes
School FE	Yes	Yes	Yes

Parenting with Neighborhood and Peer Effects

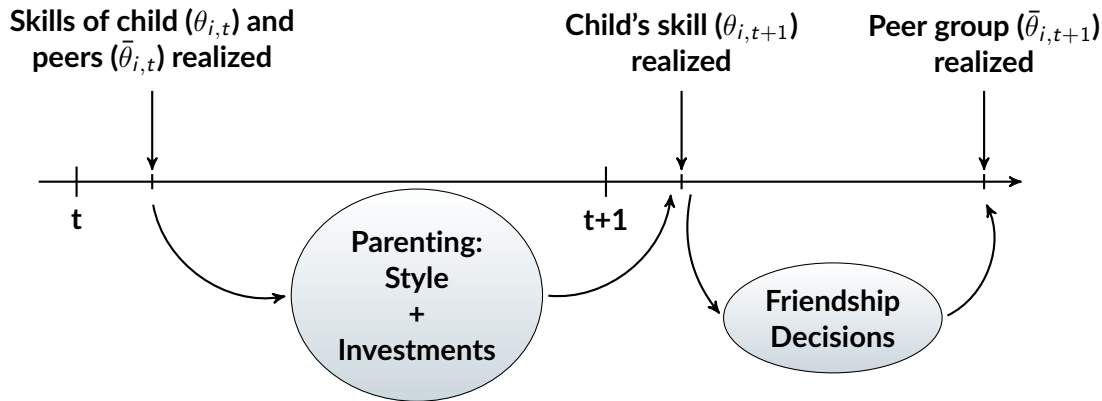
Agostinelli, Doepke, Sorrenti, and Zilibotti (JPE 2026):

- Develop model of parenting with peer effects.
 - Parents care about skills; kids care about fun with friends; parents can penalize befriending low-skill peers.
- Match the model to the data.
- Policy analysis: moving children to a better environment.

Setting: Parenting through the High School Years

- Parents and children. Initial heterogeneity in child skills, varies across schools and neighborhoods.
- Parent decides about:
 - Authoritarian versus nonauthoritarian parenting style.
 - Authoritative time investments (continuous variable).
- Child decides about:
 - Who to be friends with ...
 - ...taking as given the parent's behavior.

Timeline



Technology of Skill Formation

$$\theta_{i,t+1} = A(t) \cdot \left[\alpha_4 \theta_{i,t}^{\alpha_6} + \alpha_5 \left[\alpha_1 \bar{\theta}_{i,t}^{\alpha_3} + \alpha_2 l_{i,t}^{\alpha_3} \right]^{\frac{\alpha_6}{\alpha_3}} \right]^{\frac{1}{\alpha_6}}$$

- Next-period skill ($\theta_{i,t+1}$) depends on:
 - Current stock of skills ($\theta_{i,t}$)
 - Peer effects ($\bar{\theta}_{i,t}$)
 - Parental investments ($l_{i,t}$)

Technology of Skill Formation

$$\theta_{i,t+1} = A(t, P) \cdot \left[\alpha_{4,P} \theta_{i,t}^{\alpha_{6,P}} + \alpha_{5,P} \left[\alpha_{1,P} \bar{\theta}_{i,t}^{\alpha_{3,P}} + \alpha_{2,P} l_{i,t}^{\alpha_{3,P}} \right]^{\frac{\alpha_{6,P}}{\alpha_{3,P}}} \right]^{\frac{1}{\alpha_{6,P}}}$$

- Next-period skill ($\theta_{i,t+1}$) depends on:
 - Current stock of skills ($\theta_{i,t}$)
 - Peer effects ($\bar{\theta}_{i,t}$)
 - Parental investments ($l_{i,t}$)
 - Parenting style ($P_{i,t} \in \{0, 1\}$)
- Captures idea that authoritarian parenting may disrupt skill accumulation

The Child's Problem: Forming Friendships

- The child's value function:

$$v_t^n(\theta_{i,t}, \bar{\theta}_{i,t}) = \max \{ E [u(f_{i,t+1}) + b v_{t+1}^n(\theta_{i,t+1}, \bar{\theta}_{i,t+1})] \}$$

- Utility of potential new friendship of i and j :

$$f_{i,j,t+1} = g(\theta_{i,t+1}, \theta_{j,t+1}, P_{i,t}, \eta_{i,j,t+1})$$

- Friendship forms if there is mutual agreement:

$$f_{i,j,t+1} > 0 \quad \& \quad f_{j,i,t+1} > 0$$

- Total friendship utility:

$$f_{i,t+1} = \sum_{j \in \mathcal{X}_{i,t+1}} f_{i,j,t+1}$$

The Child's Problem: Forming Friendships

- Functional form for friendship utility:

$$f_{i,j,t+1} = \gamma_0 + \gamma_1 \ln \theta_{i,t+1} + \gamma_2 \ln \theta_{j,t+1} + \gamma_3 (\ln \theta_{i,t+1} - \ln \theta_{j,t+1})^2 + \\ \gamma_4 \mathbb{1}(\theta_{j,t+1} < \theta_{i,t+1}) (\ln \theta_{i,t+1} - \ln \theta_{j,t+1})^2 P_{i,t} + \eta_{i,j,t+1}$$

- Allows for **homophily bias**: tendency to befriend similar kids
- Authoritarian parenting style **sanctions lower-skill peers**

The Parent's Problem: Paternalism versus Altruism

- The parent's value function:

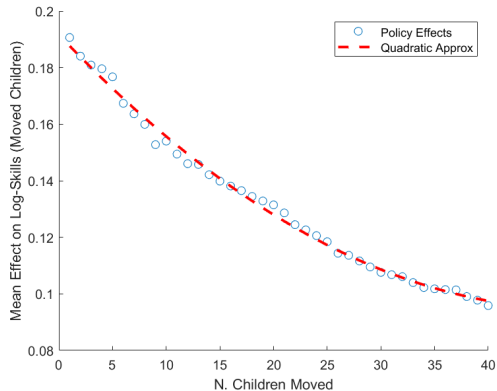
$$V_t^n(\theta_{i,t}, \bar{\theta}_{i,t}) = \max_{P_{i,t} \in \{0,1\}, l_{i,t} \geq 0} \left\{ E \left[U(l_{i,t}, P_{i,t}, \epsilon_{i,t}) + \right. \right. \\ \left. \left. Z [\lambda \tilde{u}(\theta_{i,t}, P_{i,t}) + (1 - \lambda) u(f_{i,t+1})] + B \times V_{t+1}^n(\theta_{i,t+1}, \bar{\theta}_{i,t+1}) \right] \right\}$$

- Cost of investing in skills: $U_l(l_{i,t}, P_{i,t}, \epsilon_{i,t}) < 0$
- Cost of influencing friendships: $U(l_{i,t}, 1, \epsilon_{i,t}) < U(l_{i,t}, 0, \epsilon_{i,t})$
- Final continuation utility: $V_{T+1}^n = v_{T+1}^n(\theta_{i,T+1})$

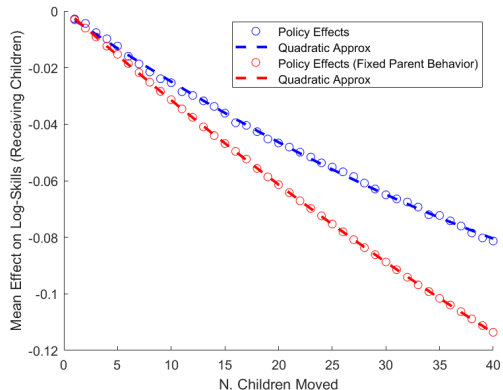
Elusive Gains from Integration

Reducing inequality through integration is difficult, in large part because parents push back.

Effect on skills of moved children



Effect on skills of children in receiving neighborhood



What is Macro about This?

Family decisions matter for macro outcomes, and classic equilibrium macro mechanisms play a crucial role:

1. Expectations of the (distant) future shape decisions.
2. Equilibrium interactions matter both in the present and for future expectations.
3. Policy effects cannot be properly understood without taking general equilibrium into account.

Other Recent Issues where Family-Macro Interaction is Key

- **Long-run implications of Covid learning loss** (Fuchs-Schündeln, Krueger, Ludwig, Popova 2022, Jang and Yum 2023; Agostinelli et al. 2022).
- **Endogenous segregation and macroeconomic inequality** (Durlauf and Seshadri 2017, Fogli and Guerrieri 2019, Eckert and Kleineberg 2021, Gregory, Kozlowski, Rubinton 2022, Fogli, Guerrieri, and Prato 2023, Monge-Naranjo, Ludwig, Syrichas 2023).

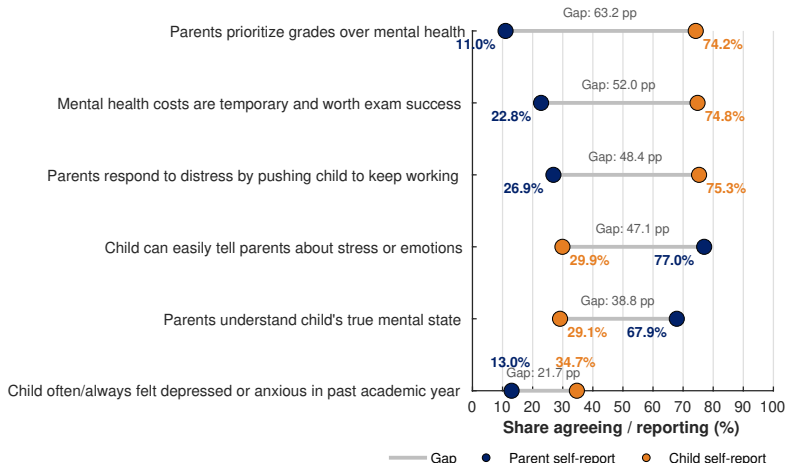
Educational Competition and Child Mental Health

Gu and Zhang (WP 2026): parenting under intense competition for scarce elite college slots (China).

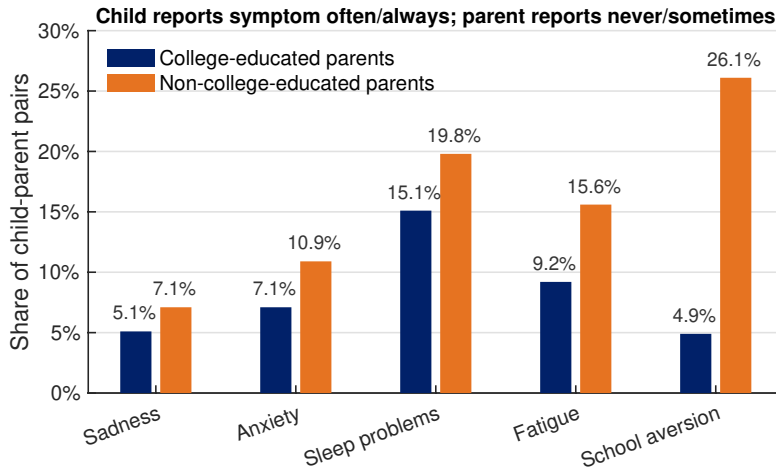
- Admissions are rank-based: parents invest heavily in exam-oriented skills (tutoring, cram schools).
- Data (China Family Panel Studies and an own parent-child survey):
 - Adolescent mental health deteriorates sharply during the school years.
 - Tutoring raises cognitive skills but lowers mental health; the trade-off is strongest in lower-income families.
 - Parents underperceive their children's mental health problems.

Parents Underperceive Children's Mental Health Problems

Share agreeing or reporting, parent vs. child self-reports (%)



Underawareness Is More Prevalent in Lower-SES Families



What the Paper Does with These Facts

- Life-cycle heterogeneous-agent model with dynastic altruism (as in **Lee and Seshadri (JPE 2019)**, **Daruich (JPE 2026)**), with cognitive skills and mental health.
- Tutoring raises cognitive skills but harms mental health; college admission depends on the rank of cognitive skills, with fixed capacity.
- **Rat-race externality**: parents do not internalize that their investment lowers other children's admission chances $\Rightarrow$ too much exam-oriented investment, too little mental health.

The Technology of Skill Formation

Cunha and Heckman (AER 2007); Cunha, Heckman, and Schennach (Econometrica 2010); survey: Heckman and Mosso (Annual Review of Economics 2014).

Skills θ_t (cognitive and non-cognitive) evolve with parental and other investments I_t :

$$\theta_{t+1} = f_t(\theta_t, I_t).$$

- **Self-productivity**: $\partial f_t / \partial \theta_t > 0$. Skills beget skills; non-cognitive skills also foster cognitive skills.
- **Dynamic complementarity**: $\partial^2 f_t / \partial \theta_t \partial I_t > 0$. Early investment raises the return to later investment.
- Early disadvantage is easier to remedy early than late; parents' own skills are an important input.

Evidence from Early Childhood Interventions

- Long-run returns to intensive programs for disadvantaged children:
 - Perry Preschool: social rate of return of 7–10% (Heckman, Moon, Pinto, Savelyev, and Yavitz (JPubE 2010)).
 - Abecedarian/CARE: benefit-cost ratio of 7.3 (García, Heckman, Leaf, and Prados (JPE 2020)).
 - Jamaica home visits: earnings 25% higher as adults (Gertler et al. (Science 2014)).
 - Head Start passes a cost-benefit test once substitution from other preschools is accounted for (Kline and Walters (QJE 2016)).
- **Parents respond**: in a home-visiting RCT in Colombia, skill gains are explained by increased parental investments (Attanasio, Cattan, Fitzsimons, Meghir, and Rubio-Codina (AER 2020)); see also Attanasio, Meghir, and Nix (REStud 2020) for India.
- Interventions change the environment in which parents make choices: need to model parental behavior, as in the parenting models of this lecture.

Parental Beliefs about the Returns to Investment

- Parents' beliefs about the technology of skill formation differ widely and predict investment:
 - Higher-income mothers expect larger effects of investment; expectations during pregnancy predict investment a year later (Cunha, Elo, and Culhane (JoE 2022)).
 - UK parents believe returns are higher later in childhood, and that investments at different ages are substitutes; perceived returns to early investment rise with income (Boneva and Rauh (JEEA 2018)).
- Beliefs can be shifted: information interventions raise parental investment and child outcomes (List, Pernaudet, and Suskind (Nature Communications 2021)).
- Beliefs are another reason for socioeconomic gaps in parenting, alongside preferences and constraints (compare parental underawareness in Gu and Zhang (WP 2026)).

The Broader Literature

- **Class gaps in parenting**: more educated parents spend more time with children despite higher opportunity costs (**Guryan, Hurst, and Kearney (JEP 2008)**; **Ramey and Ramey (BPEA 2010)**); in sociology, “concerted cultivation” (**Lareau (2011)**; **Kalil (2015)**).
- **Neighborhoods**: moving to a lower-poverty area as a young child raises adult earnings (**Chetty, Hendren, and Katz (AER 2016)**); effects scale with years of exposure (**Chetty and Hendren (QJE 2018)**).
- **Nature vs. nurture**: for quasi-randomly placed adoptees, family environment explains 14% of the variance in education, more for behaviors such as drinking (**Sacerdote (QJE 2007)**).
- **Transmission of preferences**: children’s risk and trust attitudes resemble their parents’ (**Dohmen, Falk, Huffman, and Sunde (REStud 2012)**).
- **Surveys and macro**: **Almond, Currie, and Duque (JEL 2018)**; parental time and intergenerational mobility: **Yum (IER 2023)**.