

The origins of parenting: the role of beliefs, preferences, and constraints

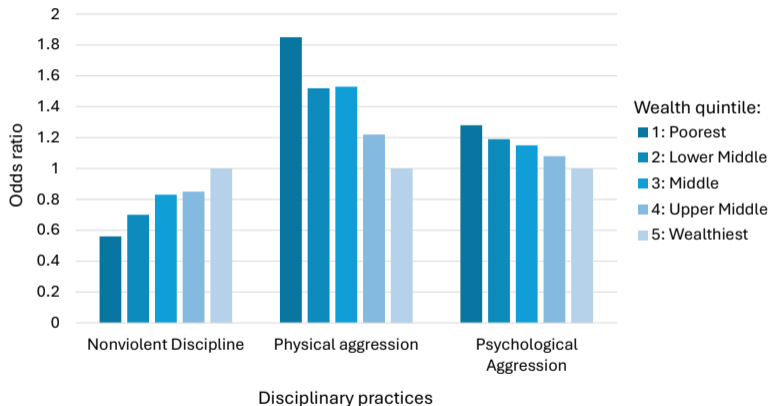
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October 4, 2024

Internal seminar UB

Use of disciplinary practices by household socio-economic status in LMICs



Note: This figure shows adjusted odd-ratios of different punishment indicators by wealth quintiles in for 32 LMICs (low- and middle-income countries) using Multiple Indicator Cluster Survey data between 2010 and 2013. The chart is a graphical representation of the odd ratios estimated in Table 4 of Beatriz and Salhi (2019).

Motivation

Widespread use of harsh discipline as parenting style in LMICs, particularly for families with lower socio-economic status



Harsher discipline methods lead to lower skill outcomes

Fiorini and Keane (2014), Cobb-Clark et al. (2019), Del Bono et al. (2016)



Different parenting styles can contribute to inequality in skill development



Parenting programs aim to promote alternative parenting styles to increase skills and reduce inequality

⇒ To promote alternative styles, one needs to know **why do parenting style choices vary?**

What could influence the choice of parenting style?

- ▶ **Beliefs** about **effectiveness** for skill development:
 - Parenting style (discipline enforcement, level of warmth)
 - Time spend with the child and other investments
 - Skill level of the child
- ▶ **Utility costs** of exerting parenting style (e.g. effort to implement disciplinary actions)
- ▶ **Preferences** for children's outcomes versus consumption or non-parenting time
- ▶ **Constraints**: time or monetary

This paper:

- ▶ Research question: What is the role of parental beliefs, constraints, and preferences for parents in choosing a parenting style?
- ▶ Method: Lab-in-the-field experiment + theoretical model of parental style choice
 - Theoretical model:
 - Parents receive utility from child outcomes and non-parenting time, disutility of exerting parenting style facing time constraint
 - Form beliefs about effectiveness of inputs for skill development: time spend with the child, parenting style chosen, initial skill levels
 - Lab-in-the field: elicit beliefs and costs for parenting styles to estimate choice parameters with model solution
- ▶ Cross-over with RCT of parenting program with 2,400 families to uncover mechanisms of parenting programs

Contribution to the literature

▶ Parental beliefs on skill development

Cunha et al. (2013), Cunha (2015), Boneva and Rauh (2018), Dizon-Ross (2019), Kiessling (2021), Biroli et al. (2022), Giannola (2023)

▶ Parenting style choices

Doepke and Zilibotti (2017), Doepke et al. (2019), Cobb-Clark et al. (2019), Agostinelli et al. (2023)

▶ Parenting training programs

Knerr et al. (2013), Heckman et al. (2013), Britto et al. (2015), Conti et al. (2016), Andrew et al. (2018), Andrew et al. (2018)

→ We elicit **parental beliefs** on parenting style and inputs in a **LMIC** setting (Ghana)

→ We are able to **seperately identify beliefs, preferences** and **costs** influencing choices

→ We set it in context of a **parenting intervention** to uncover its impact **mechanisms**

Sample and context

- ▶ 2,400 parents of adolescents in Greater Accra, Ghana
- ▶ Semi-urban setting
- ▶ 37% of parents have no or primary education
- ▶ Sample part of RCT evaluating a family program promoting:
 - positive parenting strategies (alternative forms to harsh discipline, praise)
 - better communication between parents and adolescents

Experimental design

What could influence the choice of parenting style?

- ▶ **Beliefs** about **effectiveness** for skill development:
 - Parenting style (discipline enforcement, level of warmth)
 - Time spend with the child and other investments
 - Skill level of the child→ Elicited by **hypothetical belief scenarios**
- ▶ **Utility costs** of exerting parenting style (e.g. effort to implement disciplinary actions)
- ▶ **Preferences** for children's outcomes versus other activities (time spend)
- ▶ **Constraints**: time
→ Elicited by **hypothetical cost scenarios**

Belief scenarios

- ▶ **Goal:** elicit beliefs about effectiveness of inputs (time, initial skills) given parenting style
- ▶ Respondents are asked about **expected child outcomes:** income, probability to go to university and care for parents when they grow old
- ▶ **Variation:** type of **parenting style**, **time spend** with child, initial **skills** (rank in class)
- ▶ **Parameters to be recovered:** Beliefs about effectiveness of investments and skill **inputs** on future outcomes depending on parenting style

Belief scenarios: setting

Child A



Low initial skills

Child B



High initial skills

Scenarios - Expected outcome of child A and B if:

1. Low time investments + Authoritarian style (low warmth, harsh discipline)
2. Low time investments + Authoritative style (high warmth, no harsh discipline)
3. High time investments + Authoritarian style
4. High time investments + Authoritative style

Belief scenarios: example

At school, Mary is among the **bottom 3 in her class**, while Sarah is among the **top 3 in her class**. Since Mary and Sarah were young children, each parent **spends 15 minutes** with their adolescent every day. Parents of both children, Mary and Sarah, set high expectations for their adolescent and **do not encourage them often when they do well**. They **do not allow** their children to **express their opinion**. At the same time, they tell them **often that they must follow their rules**. If the adolescent misbehaves the parent **punishes the adolescent without an explanation**. If they punish them, they do that e.g. **by shouting or withdrawing food or other privileges**.

→ Respondents asked for: expected income, likelihood to go to college and be close to parents

Cost scenarios:

- ▶ **Goal:** elicit preferences for child outcomes and disutility from parenting style
- ▶ Respondents are **asked** to advice a hypothetical parents on how to **split** their time between **time spend with the child** and **other tasks/leisure**
- ▶ They are also **asked** to advice how to interact with the child (**parenting style**) given the described situation
- ▶ **Variation:** Amount of **time available**
- ▶ **Parameters to be recovered:** **Preference** for child outcome vs non-parenting time, **disutility** of exerting style (cost)

Cost scenarios: short example

Imagine this parent and their adolescent are at home, and the adolescent wants to talk with the parent about an argument with another adolescent at school. Their adolescent tells the parent that another adolescent has called them a bad name and made them feel upset.

1. The parent has **2.5 hours** available at home. **How much time** would you advise this parent to **spend with the adolescent**? How much time should they spend doing other things?
2. Also, please tell us how the parent should approach the conversation with the adolescent.
 - 2.1 You advise the parent to tell the adolescent that they should **not have an argument** with other adolescents and make troubles. If the adolescent gets into trouble, the parent should **punish the adolescent severely**.
 - 2.2 You advise the parent to **try to understand** why the adolescent had an argument, how they feel about it and discuss with the adolescent what they could do if the situation happens again. Also, you advise to **explain** to the adolescent that it is **not good to get into troubles** and there **will be some consequences** if the adolescent gets into trouble again. However, the parent also adds that as a parent **you are happy that they shared** this situation.

Summary of outcomes

Theoretical model

Parents' Choices and Utility Maximization

- ▶ Parents choose:
 - Mutually exclusive **parenting style s** :
 - authoritative style w (*high warmth, no harsh discipline*)
 - authoritarian style d (*low warmth, harsh discipline*)
 - Depending on style:
 - **time spend with child l**
 - **non-parenting time n**
- ▶ Parents derive utility from:
 - Expected **child skills θ** , **non-parenting time**, **disutility** from exerting parenting style γ
 - Form **beliefs** on expected **child skills** based on their inputs and initial skills θ_0
- ▶ Face **time budget constraint**: Maximum amount of time to spend T

Maximization Problem for Parent i

$$\max_{n_i, l_i, s_i} \{U_i = \ln(n_i) + \beta\delta \ln(\theta_i) + \gamma_d \mathbf{1}\{s_i = d\}\}$$

$$\text{subject to: } T_i = n_i + l_i$$

where:

- n_i : Time spent on non-parenting activities
- l_i : Time spent with child
- $s_i \in \{w, d\}$: Parenting style (w authoritative, d authoritarian)
- θ_i : Child's life outcome
- β : Discount factor
- δ : utility derived by child's life outcome
- γ_d : cost of exerting authoritarian style vs authoritative (e.g. effort)
- T_i : available time

Parents' beliefs on skill development

- ▶ Parents form **beliefs** on how skills θ develop:
 - Influence expected skills: **initial skills** θ_0 and **time spend** I (inputs)
 - **Effectiveness** of **inputs** varies by **parenting style** s
 - Beliefs of parents on effectiveness of inputs vary
- ▶ These beliefs influence their expected outcome of the child and hence expected utility of a parenting style choice

Skill development

Human Capital (Skill) Production Function:

$$\theta_i = \theta_0^{\alpha_s} I_i^{\nu_s}$$

where:

- ▶ θ_0 : Initial level of child skills.
- ▶ I_i : Time investment in parenting.
- ▶ α_s : Productivity of initial skills (depends on parenting style s).
- ▶ ν_s : Productivity of time investments (depends on parenting style s).

→ Beliefs on α_s and ν_s can vary across parents and influence choices

Estimation strategy

Outline of estimation strategy

1. Estimate parameters for **beliefs on effectiveness** of inputs using **belief scenarios** with OLS
2. Estimate **preference parameter** using **cost scenarios** and **model solution** with OLS
3. Estimate **disutility of parenting style** using **cost scenarios** and **model solution** with Logit

Beliefs on effectiveness of inputs

k Scenarios with expected outcomes θ_i varying parenting style s , time inputs l and initial skill level θ_0 for each respondent i (controlling for respondent fixed effect μ_i):

$$\theta_{i,k} = \alpha_0 + \alpha_1 \theta_{0,k} + \alpha_2 l_k + \alpha_3 l_k \times \theta_{0,k} + \mu_i + \epsilon_{i,k} \quad (1)$$

→ α_1 describes beliefs about effectiveness of skills

→ α_2 describes beliefs about effectiveness of time inputs

→ α_3 describes beliefs about complementarity of skills and time inputs

Preferences for child outcomes

Using the **model solution** for optimal choices, one can derive the following equation to estimate:

$$\frac{l_i}{\beta \nu_s} = \delta n_i \quad (2)$$

- **Cost scenarios** will give how much time parents spend with child l_i vs non-parenting time n_i
- **Effectiveness of time input ν_s** : estimated from the **belief scenarios** and can be plugged in
- **Discount factor β** : estimated with **data** from earlier survey rounds eliciting **time preferences**
- **Preferences for child outcomes: δ** : to be estimated with the equation

Utility costs of exerting style

Parents choose authoritarian style d if their utility U for style d is higher than for style w :

$$s_d = \begin{cases} 1 & \text{if } U_d > U_w, \\ 0 & \text{if } U_w \leq U_d. \end{cases} \quad (3)$$

Which means:

$$\underbrace{\ln(n_{i,d}) + \beta\delta \ln(\theta_{i,d})}_{\text{Utility of non-parenting time and child outcome}} + \underbrace{\gamma_d}_{\text{Cost for style } d} > \underbrace{\ln(n_{i,w}) + \beta\delta \ln(\theta_{i,w})}_{\text{Utility of non-parenting time and child outcome}} \quad (4)$$

→ Only unknown parameter at this stage: γ_d

How to estimate γ_d

- ▶ Logit model with parenting style choices from cost scenarios
- ▶ Using model solution and estimated parameters to calculate utility of non-parenting time and child outcomes
- ▶ Parameter to estimate: disutility of exerting style γ_d (constant)

Conclusion

Questions we aim to answer:

- ▶ Do parents **choose** a certain **parenting style** because:
 - they believe their time inputs are **more effective** then?
 - they believe the style is more effective given the **skill level** of the child?
 - the style is **less costly** for them to exert?
- ▶ Would parents choose **inputs differently** when they are **less time constraint**? With **different beliefs** or **lower perceived costs**?
- ▶ Do beliefs, costs and preferences **vary** by **child gender** or **socio-economic status**?
- ▶ Can **parenting training programs** shift **beliefs**, **preferences** or **costs** associated with parenting style, and hence impact how parents interact with their children?

Summary

- ▶ Lab-in-the-field experiment in Ghana with 2,400 parents
- ▶ Elicit preferences, constraints, costs and beliefs around parenting styles
- ▶ Aim to identify what drives choices of parenting style to inform the design of parenting programs
 - Part of sample treated with parenting training: test for differences in beliefs about effectiveness and perceived costs of parenting styles and other potential mechanisms

Thank you!

If you have any further feedback, please feel free to contact me!

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Appendix

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