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Linnæus University

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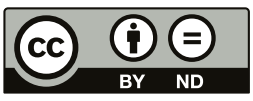

How Parenting Styles Shape Children's Lifetime Outcomes*

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Abstract

This study examines how parenting styles predict children's lifetime outcomes. Using a Swedish dataset which combines rich survey information on parenting styles with administrative records tracking children over five decades, we find that authoritarian parenting is negatively associated with children's long-term success, especially regarding their educational attainment. The results for other parenting styles are more mixed. Authoritarian parenting remains a robust predictor of adverse outcomes even when accounting for ability and family background. We identify children's knowledge accumulation and parental educational expectations as key mechanisms explaining these results.

Keywords: Child Rearing; Human Capital; Skill Formation
JEL: I24; J13; J24; R20

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1. Introduction

It is widely believed that the way in which parents choose to raise their children is one of the most consequential decisions they make to shape their children's future opportunities (Belsky, 1984; Spera, 2005). This presumption is also the main motive for why many early childhood programs, such as the Perry Preschool and Carolina Abecedarian Projects, include child rearing skills as a key component of their curriculum (García and Heckman, 2023). The theoretical literature suggests several reasons for why we can expect parenting style to predict children's outcomes. Economists have recently formalized many of the mechanisms proposed by development psychologists. In most of these models, a parent derives utility from the child's well-being and from the child's alignment with their own preferences (Doepke et al., 2019). Parenting styles influence children's decisions by fostering preferences or controlling actions. For example, they may encourage qualities such as patience, trust, and perseverance through persuasion. Alternatively, parents can push their children to leave school early, study more, pursue a particular career, associate with certain peers, or engage in specific activities expanding or limiting their options (Burton et al., 2002; Hao et al., 2008; Lundberg et al., 2009; Cosconati, 2009; Cunha, 2014; Doepke and Zilibotti, 2017).

Despite the efforts in both economics and psychology, we still lack even a basic understanding of how well different parenting styles predict children's lifetime outcomes, and hardly any empirical evidence exists regarding the mechanisms that produce these associations.[1] The main reason for this is limited data availability. By necessity, estimating how parenting styles predict children's lifetime outcomes requires rich data connecting measures of parenting style, ideally collected during childhood, to children's outcomes in adulthood. This effectively rules out recently constructed datasets. Moreover, the choice of parenting style may be influenced by factors endogenous to the child's outcomes, such as inherent ability, which is typically not included in most data sets. Finally, to effectively isolate the link between a particular parenting style and children's outcomes, data should ideally include measures of all major parenting styles.

This paper provides the first attempt to quantify how parenting styles predict a wide range of children's lifetime outcomes. We draw on close to ideal data from the *Stockholm Birth Cohort*

[1] Results from sibling correlations showing that at least half of the variation in outcomes among siblings is not accounted for by standard observed parental characteristics is sometimes refereed to as suggestive evidence of the importance of parenting style (Björklund et al., 2010; Deutscher and Mazumder, 2023).

(SBC) covering almost 3,000 children from the 15,000 individuals born in 1953 in the Stockholm metropolitan region. The data host detailed measures of parenting styles collected at age 15, linked to both administrative and other survey data that span over five decades. Using these data, it is possible to analyze differences in outcomes relating to parenting styles over the child's lifetime. Additionally, the survey questions in the SBC allow us to gauge the potential mechanisms underlying these differences. While many previous studies rely on data which only contain dichotomous information on (sometimes one of) these parenting styles (often authoritarian), the SBC data include rich information, measured by multiple survey items, on the central types of parenting styles. This feature of the data allows us to assess the relative importance of each style. The non-dichotomous nature of the multiple survey questions implies that our measures of parenting styles are not mutually exclusive. Instead, families may, to a varying extent, incorporate elements of all central parenting styles. We argue that this approach more accurately reflects the complexities of parenting, and elaborate on this reasoning in the method section.

We steer clear of claims about causality in the study and focus exclusively on the predictive power of parenting styles on children's outcomes. We do so since parenting styles are likely intertwined with a range of other factors that influence children's outcomes, making it infeasible to disentangle these from broader measures of parenting behavior. A novel feature of the data is that they include information on parental background (e.g., education and income) and, importantly, on child cognitive ability. Adjusting for family background in the analysis is crucial because it alleviates concerns that the survey responses parents have given might simply reflect differences in socioeconomic status. Moreover, parenting styles are usually not thought to be formed in a vacuum; for instance, parental responses to innate child ability are likely key in determining children's lifetime outcomes. Based on this, we investigate predictions of parenting styles and children's outcomes conditional on child ability. Including information on baseline cognitive capabilities means that we are able to rule out that the parenting styles we capture are manifested purely as a response to child academic proficiency.

Our definition of parenting styles used in the empirical analysis dates back to the seminal work by Baumrind (1967), who characterizes three central types of styles: "Authoritarian" (coercive), "Authoritative" (persuasive), and "Permissive" (indulgent). Later research added a fourth type,

"Neglecting" (uninvolved) (McCoby, 1983). In other words, parents can choose to be authoritarian by restricting their children's choices and demanding obedience, (2) to be authoritative by persuading children to follow their rules and investing in changing children's preferences, (3) to be permissive by focusing on child happiness and allowing children to make their own choices, and/or (4) to neglect their children. Parenting styles thus, in part, relate to how parent-child disagreements are resolved. In addition, parenting decisions related to parenting styles involve choices such as time investments and residential neighborhood, which in turn influence their children's peer group. The empirical literature typically emphasizes measures of parenting principles, and there is evidence that these are closely connected to actual parenting practices (e.g., Winstanley and Gattis, 2013).

Consistent with prior research (Doepke and Zilibotti, 2017), our results indicate that authoritarian parenting predicts adverse child outcomes, especially in education. A one standard deviation rise in authoritarian parenting lowers university graduation by 6.1 pp. (-16.4%). Moreover, authoritarian parenting also predicts outcomes observed in the long-run when the children are 37–46 years of age. We find a significantly greater uptake of unemployment benefits and some indications of lower odds of the child ever becoming a parent later in life. A possible explanation for the findings lies in the children's knowledge accumulation, as well as the educational preferences and investments made by authoritarian parents for their children. These parents consistently express less interest in their children obtaining further education. For instance, a one standard deviation increase in authoritarian parenting raises the likelihood of the parent agreeing with the statement that it would be nice if the child left school and started working soon by 4.1 pp. (35.0%). These results hold when conditioning on family background and child ability, suggesting that authoritarian parenting is not merely a response to socio-economic status or low innate child academic ability. For other styles of parenting, we find weaker or less consistent patterns in predicting lifetime outcomes.[2]

Our findings contribute to the emerging literature linking parenting styles to children's outcomes. Predating this, there is a long tradition in developmental psychology, public health, and sociology of relating children's outcomes to the nature of the parenting that they have experienced (e.g., McLoyd, 1998; Guo and Harris, 2000; Brooks-Gunn and Markman, 2005; Berger et al., 2009; Kelly et al., 2011). In terms of theoretical work, Doepke and Zilibotti (2017) developed a model of

[2]The main exception is that permissive parenting consistently predicts lower long-run labor earnings (-4.7 percent). Later, however, we show that these earnings predictions vary greatly for each parenting style by parental SES.

parenting in which parenting style is the equilibrium outcome of parents' investments in instilling marketable skills in their children, while Cunha (2014) models parenting style as the combination of parental investments and the institutional environment chosen by parents to best raise their children. Others have modeled parenting style in a game-theoretic framework in which parents actively choose the control they exert (or patience they display) in an effort to prompt their child to display good behavior, study hard, and avoid risky behavior (e.g., Burton et al., 2002; Hao et al., 2008; Cosconati, 2009; Lundberg et al., 2009).

The empirical research has focused on the interaction between parenting styles and peer effects (Agostinelli et al., 2020), time preferences (Brenøe and Epper, 2022), and socioeconomic status and child IQ (Falk et al., 2021). Cobb-Clark et al. (2019) model parenting styles and find that effective parenting styles negatively correlate with socioeconomic disadvantage. Zumbuehl et al. (2021) show that parental investments affect offspring's preferences and traits. Kiessling (2021) finds that US parents perceive positive returns to warmness as opposed to exerting control. Furthermore, Tungodden and Willén (2023) find that parents differentially expose their children to competitive environments by child gender. Doepke and Zilibotti (2017) is one of few studies to document the link between parenting styles and children's educational attainment. Their results show that authoritarian parenting is associated with lower chances of finishing college compared to permissive and authoritative parenting. Research in psychology tends to focus more on children's behavioral outcomes, often measured simultaneously as the parenting style; see e.g., McCoby (1983).

Our study stands out from previous research in several key ways. First, the rich dataset we use allows us to explore the role of parenting styles across a broad range of child outcomes, spanning five decades of the child's life. Second, we provide novel insights into the underlying mechanisms driving these associations, while simultaneously controlling for child ability. Third, unlike most studies that examine only a single parenting style, we are able to jointly estimate the role of all three major parenting styles, using multiple measures of stated parenting behavior and parental preferences for each style. Finally, our analysis is conducted within an institutional context marked by low inequality and high social mobility (Brandén and Nybom, 2020). As a result, the findings we report may represent a conservative estimate, suggesting that in settings with higher inequality, parenting styles could have an even stronger influence on children's long-term trajectories.

2. Data and empirical method

2.1 Data

The data used in the study are taken from the Stockholm Birth Cohort (SBC), which includes survey data on all children born in Stockholm County in 1953 who still lived in Stockholm in 1966. 15,118 children were born in 1953 in Stockholm County. As expected, some children had moved from the county at the time of the school survey (approximately 1%), and about 9% were absent from school on the day the survey was administered, which leaves 13,606 observations. During one school day, pupils at practically all schools in the county completed two extensive questionnaires and tests of their cognitive ability. An important aspect of this survey is that it took place at school, giving it a mandatory character. As a result, the non-response rate is only 9% (the percentage of pupils absent on that particular school day). The low non-response rate and comprehensive coverage enhance the study's external validity.[3]

These survey data were subsequently matched to administrative data, covering a range of outcomes including labor market activity, educational attainment, family formation, and health.[4] The data include information on the individuals up to year 2001.[5] In this study, we use the SBC Family Study subsample, comprising about 3,000 children, and the detailed survey questions on parenting styles. These data stem from interviews held with a selected subsample of the children's mothers in 1968, when the children were 15 years of age. The non-response to the household survey was low: approximately 7% of the parents did not respond to all questions. As a result, we have full parental information for 2,847 children. In the empirical analysis, we re-weight the Family Study subsample to match the original SBC sample.[6]

[3]At the time when the data were collected, the Stockholm metropolitan area covered about one quarter of the Swedish population. Lindahl (2011) compares summary statistics for the SBC data and a nationally representative sample of individuals also born in 1953 and finds similar income averages and variances.

[4]The data have no personal identification codes. Instead, a unique identifier is created using 13 variables. To verify the matches, data on birth year of parents was used. In the end, 96% of the original cohort was successfully matched. See Stenberg and Vågerö (2006) for a description of the matching procedure.

[5]The SBC data have, for instance, previously been used to investigate the role of parental background and the links between time discounting and children's lifetime outcomes (Björklund et al., 2010; Golsteyn et al., 2014; Åkerlund et al., 2016). Björklund et al. (2010) also include some questions on "parental firmness" in the analysis. However, the focus of the study is fundamentally different compared to the present paper in the sense that the aim is to decompose sibling correlations in log earnings.

[6]See Online Appendix B for an outline of the institutional context in which the SBC data was collected.

As discussed, we follow previous research and define parenting styles as "Authoritarian" (coercive), "Authoritative" (persuasive), and "Permissive" (indulgent) (Baumrind, 1967). We first classify each individual survey question, where the answers are given on a five-point Likert scale, as belonging to one of the three parenting style question bundles.[7] Following this, we verify that the individual questions are aptly classified by showing that they all correlate strongly (positively) with the other questions in their particular parenting style bundle, and by calculating a measure of internal consistency for the bundles of questions (Cronbach's alpha). We then run the PCA for each of the three bundles and retain the first component.[8] Moreover, in order to ensure that the PCA is capturing consistent styles, we follow the standard rules in psychology by dropping individual survey questions with a low factor loading (< 0.3).[9]

The specific survey questions and our classification are shown in Table A1. The table shows that many parents seem to provide similar answers to a given question, and this appears to be particularly pronounced for the authoritative style. This means that we have less variation to work with for the authoritative parenting style compared to the other styles with more discriminatory answers, which could attenuate the predictions. However, the PCA method is still expected to capture the remaining rich variation which is central to the *bundle of questions* we classify as belonging to either style. This approach stands in contrast to other methods classifying parents based on dichotomous questions on their parental involvement and warmth, with the benefit that our approach captures parenting styles with greater nuance than the dichotomous approaches.

Online Appendix A provides more details on how we identify the three parenting styles based on the 20 survey questions outlined in Table A1.

2.2 Empirical method

In the empirical analysis, we regress child outcomes on the three measures of parenting styles created by the PCA. The questions underlying each parenting style category are verified to be strongly

[7]The answer categories ranges from 1 "Quite wrong" to 5 "Quite right."

[8]Only the first components of each PCA have an Eigenvalue greater than one, which implies that we are capturing one particular style with each PCA. Although, the Eigenvalue of the permissive style first principal component is lower (than that of authoritarian and authoritative) at 0.84. This implies that our measure of permissive parenting is more noisy, which may attenuate our estimates.

[9]The distribution of parenting style index values can be seen in Figure A1.

correlated and to show signs of internal consistency (Cronbach's alpha) at generally acceptable levels.[10] One concern may be that the specific bundles of questions in the SBC, and the principal component we derive from these, are driving our results. Therefore, we also verify that reduced measures based on two core questions per parenting style, which we consider to be unambiguous in their parenting style classification, provide highly similar quantitative and the same qualitative results as our preferred (extensive) measure based on all questions. We interpret this as evidence that our measures accurately capture the intended parenting styles. Moreover, since our measures of parenting styles show no correlation with a child's birth order, we regard them as stable over time for each parent.[11]

As discussed earlier, we use the first principal component of each bundle of questions as measures of the parenting styles in our analyses. Our measures capture parenting styles with more nuance than a dichotomous (yes/no) measure. Consequently, parents are not exclusively permissive, authoritative, or authoritarian, but their style can instead contain elements of each style to some degree. We argue that this is an accurate representation of the complex realities of parenting, which to some extent can contain elements of all central parenting styles. We thus include all three measures of parenting styles in all regressions to obtain predictions for each style holding the other two constant. In other words, we control for, e.g., the authoritarian and authoritative elements of a permissive parent to capture the permissive style prediction (and vice versa). The parenting style principal components are standardized to a mean of zero and a standard deviation of one so that parameter estimates can be interpreted in terms of standard deviations. Including all three (standardized) parenting style measures in the same regression also provides a transparent way to assess the relative predictive power of individual styles on children's lifetime outcomes. The regression equation used to estimate our results is defined as:

$$y_i = \beta_0 + \beta_1 Authoritarian_i + \beta_2 Authoritative_i + \beta_3 Permissive_i + \boldsymbol{X_i'\beta} + \varepsilon_i$$

[10]The Cronbach's alpha measure is the greatest in magnitude for authoritarian parenting (0.63). Although this level is generally considered to be rather low, this indicates that the classified survey questions exhibit internal consistency. For the remaining two styles, the alphas range from 0.53–0.59. While there exists no general criteria for acceptable alphas, most of the literature considers alphas below 0.5 as unreliable; see e.g., Kline (2013). One way of interpreting the alphas is that our data identify authoritarian parenting as the clearest, most internally consistent style of parenting, and that the other two measures are more noisy.

[11]The correlation results between child birth order and parenting styles is available upon request.

We control for parental SES (earnings in 1963 and educational attainment), parental age at birth, child gender, and classroom fixed effects through the vector $\boldsymbol{X_i'}$. Importantly, we also run empirical specifications controlling for child spatial ability to account for the fact that the choice of parenting styles may be endogenous with respect to child academic ability.[12] Spatial ability, which is measured through a test similar to Raven Progressive Matrices, is believed to be closely related to fluid intelligence (speeded performance).[13] Spatial ability is likely to represent a more predetermined measure of ability that is harder for parents to affect by investments in knowledge acquisition. This should reduce the risk that parenting styles are simply a reaction to low academic ability of the children. Standard errors are clustered at the classroom level. The classroom fixed effects account for differences in peer group quality and neighborhood since most children attended the school closest to their home.

In order to investigate potential channels of the relationship between parenting styles and outcomes, we add measures of mathematical and verbal ability, which are closely relate to crystallized intelligence (knowledge accumulation), to the regression. This, in part, captures teacher quality, parental involvement, peer effects and personality traits (Borghans et al., 2011). In addition, we investigate the relationship between parenting styles and a number of questions regarding educational preferences of parents and the children, the home environment, child occupational choice following in their parents' footsteps, and patience of the child.

2.3 Descriptive statistics

We present descriptive statistics of the full sample and separately by families with above-mean value of the individual parenting styles in Table 1. These descriptives show that families exhibit both similarities and differences in average characteristics by their parenting style: for instance, children have parents similarly aged, and are equally patient by parenting style. Some elements differing by parenting style are that children with authoritarian parents have scores in verbal and mathematical ability about 0.5–0.6 (0.1–0.2) deciles lower than those of children with more authoritative (permissive) parents, and that their fathers report the lowest earnings in year 1963 of all parenting styles. This indicates that using child cognitive ability and parental earnings as

[12] Including ability polynomials up to the third degree produces highly similar results as using decile fixed effects.
[13] The spatial ability test consists of 40 unfolded figures that are to be folded mentally.

controls could be important in capturing family background discrepancies and potential responses to child ability differing by parenting style. In addition, academic proficiency could be an important mechanism in the relationship of parenting styles and children's lifetime outcomes.

3. Results

3.1 Parenting styles and children's lifetime outcomes

Unadjusted predictions. The predictions of children's lifetime outcomes by parenting styles using a measure of parenting styles based on an extensive set of items and a measure based on the two core questions per style, excluding all controls, can be seen Table C1 (in Appendix C). We analyze a broad set of outcomes for the children, including having attained a university degree or high school degree, log cumulative earnings during the 1990s (ages 37–46), unemployment benefits in 1990, not having received any welfare contributions during the 1990s, and ever becoming a parent by year 2001.[14] The unadjusted predictions reveal a strong association between authoritarian parenting and consistently poorer long-run outcomes, and, to a lesser extent, a similar pattern for permissive parenting. There is also some evidence that authoritative parenting is linked to a higher likelihood of completing high school. The subsequent predictions, beginning with Table 2, add controls for family background, classroom-level fixed effects, and child spatial ability controls to remove any socioeconomic and child ability gradient interacting with parenting styles.[15]

Predictions conditional on family background and spatial ability. The adjusted predictions in Table 2 show that having more authoritarian parents still consistently predicts a lower likelihood of graduating from university and high school. Specifically, a one standard deviation increase in authoritarian parenting predicts a decrease in the likelihood of having completed an education equivalent to at least two years of university studies by 6.1 pp. (-16.4% relative to the mean of the dependent variable for the full SBC sample). For high school completion, we predict a decrease of 2.8 pp. (-3.3%). Likewise, we find an increase in the amount of received unemployment benefits by

[14] The log cumulative earnings outcome is winsorized at 5% and 95% to exclude potential outliers.

[15] Generally, excluding controls leads to a greater magnitude of the predictions for all parenting styles. This indicates that parenting styles are influenced by child intelligence. Omitting child intelligence from the analysis thus partly drives the relationship between parenting styles and educational attainment.

73%, an increase in the risk of receiving welfare contributions by 7%, and a decrease in the chances of becoming a parent by 2%, but neither of the latter two estimates are statistically significant. Interestingly, it appears that the link between the authoritarian parenting style and labor earnings is weak. When analyzing log cumulative earnings during the 1990s, the predicted association is close to zero. It should be noted, however, that the results on earnings and welfare recipiency could be an artifact from a substantial economic crisis during the early-mid 1990s or the compressed Swedish wage distribution. Moreover, we find no association between parenting styles and outcomes from the military draft, such as cognitive and non-cognitive skills, leadership ability, height, or BMI, suggesting that these traits are largely determined prior to, or unaffected by, parental behavior.[16]

In contrast to the findings for authoritarian parenting, variations in authoritative and permissive parenting provide fewer statistically significant predictions of children's lifetime outcomes conditional on the controls. The two exceptions are that a standard deviation more permissive parenting predicts a lower likelihood of completing a university education (-11.0%) and lower earnings of about 4.7 percent. We do not find that any of the three central parenting styles are clearly linked with improved lifetime outcomes when accounting for family background and spatial ability. A potential reason for this could be that there is little added benefit of a more pronounced parenting style conditional on these factors.[17] Overall, the results indicate that authoritarian parenting stands out as being the strongest consistent predictor of adverse lifetime outcomes, though permissive parenting is to a greater extent than the other styles linked with lower earnings.

Importantly, the results are virtually unchanged when using the coarser measures of parenting based on two core questions for each style. A notable difference is that authoritarian parenting, based on this measure, predicts a statistically significant lower likelihood of ever becoming a parent (-4%). The fact that the results are remarkably robust to only using two core survey questions strongly indicates that the results are robust to our classification of survey questions to specific parenting styles.[18]

[16]These latter results are available upon request.

[17]Alternatively, our lack of using neglecting parents as a baseline comparison category or the noisiness of the measure we use may attenuate the estimates compared to the previous literature. The variation we have at our disposal may also not fully capture the warmth linked to authoritative parenting.

[18]The predictions for educational attainment are also highly similar when only including families with parenting style values within $\pm$ 2SD of the standardized indices in Table C2.

Heterogeneous predictions by parental SES and child gender. Unlike what Tungodden and Willén (2023) show in their experimental setting for exposure to competitive environments, our findings regarding the parenting styles do not differ systematically by child gender; see Table C3. For parental SES, however, we find that authoritarian parenting is associated with lower labor earnings for high-SES families, but an increase in earnings for low-SES families. We elaborate on the details in Online Appendix C.

3.2 Mechanisms

Predictions conditional on mathematical and verbal ability. We proceed by investigating the extent to which the added controls for child mathematical and verbal ability (crystallized intelligence) affect our predictions. We show predictions conditional on family background and all three measures of child ability at age 13 in Table 3. Spatial ability, the baseline ability control, can be interpreted as a measure capturing the child's fluid intelligence. Arguably, fluid intelligence is influenced less by educational investments, experience, and knowledge acquisition, and is hence less likely to be directly affected by parenting styles. Controlling for this type of intelligence allows us to compare children of similar cognitive ability. By including measures of the child's mathematical and verbal skills at age 13, we also control for crystallized intelligence. Controlling for crystallized intelligence allows us to investigate whether parenting styles affect outcomes via knowledge accumulation.

In general, the addition of more extensive ability controls that capture crystallized intelligence reduces the magnitude of the predictions for educational attainment by about 30%. For instance, the prediction from having more authoritarian parents on the likelihood of completing a university education decreases by one third (from -6.1 pp. to -4.1 pp.) with the added ability controls. However, the predictions for authoritarian parenting still remain statistically significant regardless of the new ability controls. These results suggest that parenting styles are partly related to educational outcomes through the process of knowledge accumulation, but that child academic proficiency alone cannot account for the full link between authoritarian parenting and children's outcomes. This means that parenting styles per se capture an additional component beyond parental socioeconomic background, child ability, and children's knowledge accumulation.

3.3 Other mechanisms

As discussed earlier, economic theory suggests that parents can influence a child's decisions by either fostering particular preferences (Burton et al., 2002; Becker et al., 2016) or by shaping the set of possible actions available to them, either by restricting or broadening their options (Cosconati, 2009; Lundberg et al., 2009). More specifically, parents may encourage qualities such as patience or try to mold educational preferences (Baumrind, 1967). Alternatively, they may directly try to influence their children's decisions, such as forcing them to leave school early, study more, or pursue a particular career (Lamborn et al., 1991; Doepke et al., 2019). Our data provide an opportunity to examine the significance of several of these potential channels by showing how families differ by parenting style. For our purpose, it is useful to group these mechanisms into the following categories: *educational preferences* of parents and the children, *home environment*, *child occupational choice following in their parents' footsteps*, and *patience*. Our data are particularly well-suited to study the role of educational preferences. Table 4 presents these mechanisms, though they are likely interrelated, complicating full disentanglement.

Educational preferences. Several studies highlight that parenting styles may be connected to parental expectations about the importance of academic achievements (Cobb-Clark et al., 2019). The results in Table 4 show that more authoritarian parents consistently report that it would be nice if their child left school to start working soon (0.041, s.e. 0.008), and are less likely to view a lack of schooling as an obstacle in life (-0.062, s.e. 0.012). Interestingly, all of the aforementioned results hold conditional on child ability and parental background. However, more authoritarian parents are not more or less likely to want their child to pursue a high school degree when we condition on the child's academic ability. This suggests that more authoritarian parents change or react to their child's academic ability, which in turn affects the parent's preference for the child to continue with their education.

We also report the link between parenting styles and children's stated educational preferences in the same table. In line with the parental preferences, children with more authoritarian parents are not more or less likely to report planning to apply to high school in the future and report no differing interest in school work. This suggests that it is not child ability or preferences driving

the main findings on later educational attainment. Rather, it is more likely that the educational preferences of (authoritarian) parents in general affect the human capital predictions.

In contrast, authoritative parents are more likely to express sentiments valuing higher education in general, even conditional on child ability. Permissive parenting, on the other hand, does not predict any significant differences in parental educational preferences. The same lack of association is observed in children's educational preferences when parents are more authoritative or permissive.

Home environment. An alternative explanation for why children with more authoritarian parents perform worse in terms of educational attainment relates to the home environment and parent-child relationship (Baumrind, 1967).[19] If authoritarian parents differ by family structure, or by having a worse relationship with their children, this could constitute an environment less conducive for further studies. We find no link between authoritarian parents being more or less likely to be married, or to report having a good mother-child relationship. We do find some evidence that authoritarian parents are more likely to report having a good father-child relationship, conditional on family background and child ability. There is no significant correlation between authoritative or permissive parenting and the parent-child relationship.

These results imply that authoritarian parenting is associated with a similar family environment as the other parenting styles, and interestingly that if the mother (who is the focal interview person) is more authoritarian, she is more likely to report a better father-child relationship. There is no link, however, between the mother-child relationship and authoritarian parenting. In other words, the child is more likely to foster a good relationship with the father when the mother is authoritarian. In the end, these results imply that a worse parent-child relationship or differing family environment are not driving the results on children's educational attainment.

Child occupational choice following in their parents' footsteps. A key prediction from the existing literature relates to occupational choice differing by parenting style (Doepke et al., 2019). Table 4 shows that there is no clear link between parenting style and the likelihood that the child expresses a desire to follow in their father's footsteps in terms of their occupation. However, the

[19]Recent evidence has underscored the importance of family structure and the home environment in affecting children's long-run educational attainment (e.g., Laird et al., 2020; Hertegård, 2025).

negative point estimate for authoritarian parenting (p-value 0.124) could indicate that children are discouraged to follow in the footsteps of more authoritarian parents. Authoritarian and authoritative parents are not more or less likely to try to suppress their children's choice set of future occupations by reporting fewer acceptable future occupations. Permissive parents, on the other hand, have the widest acceptable child choice set of all styles. It is, however, hard to tell if more or fewer acceptable future occupations represent "molding" by authoritative parents or "coercion" by authoritarian parents, since the survey question does not allow us to distinguish between how parents manifest these preferences toward the child (e.g., via persuasion, coercion, or not at all).

Patience. A frequent source of conflict between parents and children arises from differences in time preferences where parents often encourage children to prioritize long-term goals, while children may be more inclined to seek instant gratification (Baumrind, 1991; Doepke and Zilibotti, 2017). We follow Golsteyn et al. (2014) and measure patience with an indicator for the children responding that they are indifferent, certainly or almost certainly prefer SEK 1,000 in five years time versus SEK 100 today.[20] The results show a small and insignificant link between parenting style and patience. This result could indicate that parents have little capacity to affect their children's time preferences.

4. Conclusion

This paper uses matched survey-register data to examine how parenting styles predict children's lifetime outcomes. We find that authoritarian parenting is strongly linked to adverse outcomes, particularly with respect to educational attainment. A key contribution is showing that these results hold even after accounting for family background and child ability. We also show that children's knowledge accumulation and parental educational preferences are driving factors of this relationship.

Our findings align with economic models highlighting the role of parents in shaping children's futures. While we avoid causal claims, the results have policy relevance. Interventions for at-risk families and programs with child-rearing components can potentially address these disparities.

Future research should validate these findings across settings while exploring additional

[20]The implied discount rate for being indifferent between the two options is 58%.

mechanisms. Regarding Sweden's 1950s–70s context of low inequality and high mobility, these results likely represent a lower bound. In conclusion, further studies across diverse settings are needed to better understand how parenting styles influence children's lifetime outcomes.

References

Agostinelli, Francesco, Matthias Doepke, Giuseppe Sorrenti, and Fabrizio Zilibotti, "It takes a village: The economics of parenting with neighborhood and peer effects," Technical Report, National Bureau of Economic Research 2020.

Åkerlund, David, Bart HH Golsteyn, Hans Grönqvist, and Lena Lindahl, "Time discounting and criminal behavior," *Proceedings of the National Academy of Sciences*, 2016, *113* (22), 6160–6165.

Baumrind, Diana, "Child care practices anteceding three patterns of preschool behavior," *Genetic Psychology Monographs*, 1967.

_ , "The influence of parenting style on adolescent competence and substance use," *The Journal of Early Adolescence*, 1991, *11* (1), 56–95.

Becker, Gary S, Kevin M Murphy, and Jörg L Spenkuch, "The manipulation of children's preferences, old-age support, and investment in children's human capital," *Journal of Labor Economics*, 2016, *34* (S2), S3–S30.

Belsky, Jay, "The determinants of parenting: A process model," *Child Development*, 1984, pp. 83–96.

Berger, Lawrence M, Christina Paxson, and Jane Waldfogel, "Income and child development," *Children and Youth Services Review*, 2009, *31* (9), 978–989.

Björklund, Anders, Lena Lindahl, and Matthew J Lindquist, "What more than parental income, education and occupation? An exploration of what Swedish siblings get from their parents," *The BE Journal of Economic Analysis & Policy*, 2010, *10* (1).

Borghans, Lex, Bart HH Golsteyn, James Heckman, and John Eric Humphries, "Identification problems in personality psychology," *Personality and individual differences*, 2011, *51* (3), 315–320.

Brandén, Gunnar and Martin Nybom, "Intergenerationell rörlighet. Tidigare forskning och utvecklingen i Sverige," Technical Report, IFAU-Institute for Evaluation of Labour Market and Education Policy 2020.

Brenøe, Anne Ardila and Thomas Epper, "Parenting values and the intergenerational transmission of time preferences," *European Economic Review*, 2022, *148*, 104208.

Brooks-Gunn, Jeanne and Lisa B Markman, "The contribution of parenting to ethnic and racial gaps in school readiness," *The future of children*, 2005, pp. 139–168.

Burton, Peter, Shelley Phipps, and Lori Curtis, "All in the family: A simultaneous model of parenting style and child conduct," *American Economic Review*, 2002, *92* (2), 368–372.

Cobb-Clark, Deborah A, Nicolas Salamanca, and Anna Zhu, "Parenting style as an investment in human development," *Journal of Population Economics*, 2019, *32* (4), 1315–1352.

Cosconati, Marco, "Parenting style and the development of human capital in children." PhD dissertation, University of Pennsylvania 2009.

Cunha, Flavio, "Subjective rationality, parenting styles, and investments in children," in "Families in an era of increasing inequality: Diverging destinies," Springer, 2014, pp. 83–94.

Deutscher, Nathan and Bhashkar Mazumder, "Measuring intergenerational income mobility: A synthesis of approaches," *Journal of Economic Literature*, 2023, *61* (3), 988–1036.

Doepke, Matthias and Fabrizio Zilibotti, "Parenting with style: Altruism and paternalism in intergenerational preference transmission," *Econometrica*, 2017, *85* (5), 1331–1371.

_ , Giuseppe Sorrenti, and Fabrizio Zilibotti, "The economics of parenting," *Annual Review of Economics*, 2019, *11* (1), 55–84.

Falk, Armin, Fabian Kosse, Pia Pinger, Hannah Schildberg-Hörisch, and Thomas Deckers, "Socioeconomic status and inequalities in children's IQ and economic preferences," *Journal of Political Economy*, 2021, *129* (9), 2504–2545.

García, Jorge Luis and James J Heckman, "Parenting promotes social mobility within and across generations," *Annual Review of Economics*, 2023, *15* (1), 349–388.

Golsteyn, Bart HH, Hans Grönqvist, and Lena Lindahl, "Adolescent time preferences predict lifetime outcomes," *The Economic Journal*, 2014, *124* (580), F739–F761.

Guo, Guang and Kathleen Mullan Harris, "The mechanisms mediating the effects of poverty on children's intellectual development," *Demography*, 2000, *37* (4), 431–447.

Haerpfer, Christian, Ronlad Inglehart, Alejandro Moreno, Christian Welzel, Kseniya Kizilova, Jaime Diez-Medrano, Marta Lagos, Pippa Norris, Eduard Ponarin, Bi Puranen et al., "World values survey trend file (1981–2022) cross-National Data-set. Madrid, Spain & Vienna, Austria," *JD systems Institute & WVSA Secretariat*, 2022.

Hall, Caroline, "The effects of reducing tracking in upper secondary school: Evidence from a large-scale pilot scheme," *Journal of Human Resources*, 2012, *47* (1), 237–269.

Hao, Lingxin, V Joseph Hotz, and Ginger Z Jin, "Games parents and adolescents play: Risky behaviour, parental reputation and strategic transfers," *The Economic Journal*, 2008, *118* (528), 515–555.

Hertegård, Edvin, *The Rising Educational Penalties of Parental Divorce Across Generations*, Swedish Institute for Social Research (SOFI), 2025.

Kelly, Yvonne, Amanda Sacker, Emilia Del Bono, Marco Francesconi, and Michael Marmot, "What role for the home learning environment and parenting in reducing the socioeconomic gradient in child development? Findings from the Millennium Cohort Study," *Archives of Disease in Childhood*, 2011, *96* (9), 832–837.

Kiessling, Lukas, "How do parents perceive the returns to parenting styles and neighborhoods?," *European Economic Review*, 2021, *139*, 103906.

Kline, Paul, *Handbook of psychological testing*, Routledge, 2013.

Laird, Jessica, Nick Fabrin Nielsen, and Torben Heien Nielsen, "Differential Effects of the Timing of Divorce on Children's outcomes: Evidence from Denmark," 2020.

Lamborn, Susie D, Nina S Mounts, Laurence Steinberg, and Sanford M Dornbusch, "Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families," *Child Development*, 1991, *62* (5), 1049–1065.

Lindahl, Lena, "A comparison of family and neighborhood effects on grades, test scores, educational attainment and income—evidence from Sweden," *The Journal of Economic Inequality*, 2011, *9*, 207–226.

Lundberg, Shelly, Jennifer L Romich, and Kwok Ping Tsang, "Decision-making by children," *Review of Economics of the Household*, 2009, *7*, 1–30.

McCoby, EE, "Socialization in the context of the family: Parent-child interaction," *Handbook of Child Psychology*, 1983, *4*, 1–101.

McLoyd, Vonnie C, "Socioeconomic disadvantage and child development," *American Psychologist*, 1998, *53* (2), 185.

Spera, Christopher, "A review of the relationship among parenting practices, parenting styles, and adolescent school achievement," *Educational Psychology Review*, 2005, *17*, 125–146.

Stenberg, Sten-Åke and Denny Vågerö, "Cohort profile: the Stockholm birth cohort of 1953," *International Journal of Epidemiology*, 2006, *35* (3), 546–548.

Tungodden, Jonas and Alexander Willén, "When parents decide: Gender differences in competitiveness," *Journal of Political Economy*, 2023, *131* (3), 751–801.

Winstanley, Alice and Merideth Gattis, "The Baby Care Questionnaire: A measure of parenting principles and practices during infancy," *Infant Behavior and Development*, 2013, *36* (4), 762–775.

Zumbuehl, Maria, Thomas Dohmen, and Gerard Pfann, "Parental involvement and the intergenerational transmission of economic preferences, attitudes and personality traits," *The Economic Journal*, 2021, *131* (638), 2642–2670.

Tables

Table 1: Descriptive statistics for the full sample and by above-mean (positive) parenting styles value.

	Full SBC sample	Authoritarian	Authoritative	Permissive
Share female	.492	.487	.480	.483
Number of siblings	1.667	1.675	1.628	1.687
Patience indicator	.865	.856	.863	.856
Mother's year of birth	1924.674	1924.752	1924.548	1924.543
Earnings mother (in 1963)	4372.446	4259.748	4369.553	4221.130
Father's year of birth	1922.145	1922.481	1922.138	1922.178
Earnings father	24159.530	21445.530	24308.880	22102.580
Share university education	.372	.282	.344	.295
Share high school graduates	.839	.799	.839	.812
Spatial skill decile	4.658	4.131	4.568	4.286
Verbal skill decile	4.658	3.992	4.592	4.207
Math skill decile	4.610	4.052	4.580	4.160
Mortality by 2001	.027	.026	.027	.023
Obs.	3,034	1,744	1,813	1,628

Note: "Patience indicator" is an indicator derived from a survey answer eliciting whether the child has an implied discount factor below 58% at age 13. Likewise, the skill measures are from a test taken at age 13 (the same day as the survey).

Table 2: Parenting styles (extensive and reduced) and children's lifetime outcomes.

Style definition:	**Extensive measure**					
Outcome:	University education	High school education	Log earnings 1990s	Unempl. ben. 1990	No welfare 1990s	Ever parent
Authoritarian	−0.061***	−0.028***	0.015	0.695*	−0.013	−0.014
	(0.016)	(0.011)	(0.022)	(0.399)	(0.010)	(0.015)
Authoritative	−0.003	0.005	0.006	−0.113	0.012	−0.014
	(0.014)	(0.012)	(0.017)	(0.241)	(0.012)	(0.014)
Permissive	−0.041***	−0.007	−0.047**	−0.080	0.007	−0.017
	(0.014)	(0.010)	(0.019)	(0.339)	(0.011)	(0.015)
Mean dep. var.	0.372	0.839	10.218	0.958	0.822	0.630
Obs.	2,733	2,733	2,694	2,722	2,810	2,722
Background & Ability	✓	✓	✓	✓	✓	✓
Style definition:	**Two core questions**					
Outcome:	University education	High school education	Log earnings 1990s	Unempl. ben. 1990	No welfare 1990s	Ever parent
Authoritarian	−0.067***	−0.023**	0.009	0.353	−0.004	−0.025*
	(0.016)	(0.010)	(0.020)	(0.284)	(0.010)	(0.014)
Authoritative	0.007	0.006	−0.002	0.314	0.002	0.007
	(0.012)	(0.010)	(0.017)	(0.258)	(0.011)	(0.013)
Permissive	−0.033***	−0.004	−0.038**	−0.186	0.004	−0.006
	(0.012)	(0.009)	(0.017)	(0.351)	(0.010)	(0.014)
Mean dep. var.	0.372	0.839	10.218	0.958	0.822	0.630
Obs.	2,805	2,805	2,765	2,793	2,797	2,794
Background & Ability	✓	✓	✓	✓	✓	✓

Note: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$. Standard errors in parentheses are clustered at the classroom level. "University education" is an indicator for completing at least two years of university studies by year 2001. "High school education" is an indicator capturing having at least a high school degree by year 2001. "Log earnings 90s" denotes the natural logarithm (+1) of cumulative earnings 1990–1999 (winsorized at the 5th and 95th percentile). "Unempl. ben. 1990" captures the amount received in unemployment benefit in 1990, before the economic crisis. "No welfare 1990s" captures if the individual did not receive any welfare contributions during 1990–1999. "Ever parent" captures parental status in year 2001. "Background & Ability" capture parental earnings in 1963, educational attainment, birth cohort, child gender, child spatial ability decile at age 13 indicators, and classroom fixed effects.

Table 3: Parenting styles (extensive and reduced) and children's lifetime outcomes including crystallized intelligence controls.

Style definition:	**Extensive measure**					
Outcome:	University education	High school education	Log earnings 1990s	Unempl. ben. 1990	No welfare 1990s	Ever parent
Authoritarian	−0.041***	−0.021**	0.029	0.763*	−0.007	−0.011
	(0.016)	(0.011)	(0.022)	(0.437)	(0.010)	(0.015)
Authoritative	−0.007	0.002	0.003	−0.139	0.010	−0.013
	(0.014)	(0.012)	(0.017)	(0.242)	(0.012)	(0.013)
Permissive	−0.029**	−0.002	−0.037**	−0.068	0.012	−0.014
	(0.014)	(0.010)	(0.019)	(0.319)	(0.012)	(0.014)
Mean dep. var.	0.372	0.839	10.218	0.958	0.822	0.630
Obs.	2,733	2,733	2,694	2,722	2,810	2,722
Background & Ability	✓	✓	✓	✓	✓	✓
Verbal & Mathematics	✓	✓	✓	✓	✓	✓
Style definition:	**Two core questions**					
Outcome:	University education	High school education	Log earnings 1990s	Unempl. ben. 1990	No welfare 1990s	Ever parent
Authoritarian	−0.047***	−0.015	0.024	0.375	0.002	−0.022
	(0.015)	(0.010)	(0.019)	(0.307)	(0.010)	(0.014)
Authoritative	0.005	0.004	−0.004	0.299	0.002	0.008
	(0.012)	(0.010)	(0.017)	(0.256)	(0.010)	(0.013)
Permissive	−0.022*	0.000	−0.031*	−0.162	0.007	−0.003
	(0.012)	(0.009)	(0.017)	(0.337)	(0.010)	(0.014)
Mean dep. var.	0.372	0.839	10.218	0.958	0.822	0.630
Obs.	2,805	2,805	2,765	2,793	2,797	2,794
Background & Ability	✓	✓	✓	✓	✓	✓
Verbal & Mathematics	✓	✓	✓	✓	✓	✓

Note: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Standard errors in parentheses are clustered at the classroom level. "University education" is an indicator for completing at least two years of university studies by year 2001. "High school education" is an indicator capturing having at least a high school degree by year 2001. "Log earnings 90s" denotes the natural logarithm (+1) of cumulative earnings 1990–1999 (winsorized at the 5th and 95th percentile). "Unempl. ben. 1990" captures the amount received in unemployment benefit in 1990, before the economic crisis. "No welfare 1990s" captures if the individual did not receive any welfare contributions during 1990–1999. "Ever parent" captures parental status in year 2001. "Background & Ability" capture parental earnings in 1963, educational attainment, birth cohort, child gender, child spatial ability decile at age 13 indicators, and classroom fixed effects. "Verbal & Mathematics" controls include verbal and mathematics ability decile fixed effects at age 13.

Table 4: Parenting style and mechanisms, including extensive ability controls.

Mechanism type:	**Parental preferences**			**Child preferences**		
Outcome:	Nice if child left school and started working soon	Want child to try to pass high school	An obstacle in life to lack schooling	Plan to apply to high school	Interest in school work	Feeling safe at school
Authoritarian	0.041***	−0.001	−0.062***	−0.010	0.012	−0.051
	(0.008)	(0.012)	(0.012)	(0.015)	(0.080)	(0.077)
Authoritative	−0.012	0.013	0.048***	0.015	0.056	0.056
	(0.010)	(0.015)	(0.015)	(0.015)	(0.082)	(0.067)
Permissive	0.005	−0.001	0.003	−0.009	0.063	0.049
	(0.009)	(0.011)	(0.013)	(0.014)	(0.085)	(0.064)
Mean dep. var.	0.117	0.739	0.783	0.498	5.066	6.398
Obs.	2,732	2,731	2,732	2,699	2,722	2,721
Background & Ability	✓	✓	✓	✓	✓	✓
Verbal & Mathematics	✓	✓	✓	✓	✓	✓

Mechanism type:	**Home environment**			**Occ. following and patience**		
Outcome:	Mother married	Good mother-child relationship	Good father-child relationship	Pr(Occ. following)	Share child occupational choice set ok	Patience indicator
Authoritarian	0.003	0.001	0.018**	−0.024	0.001	−0.000
	(0.010)	(0.003)	(0.007)	(0.015)	(0.009)	(0.011)
Authoritative	0.005	0.004	0.000	0.005	−0.010	−0.008
	(0.009)	(0.003)	(0.006)	(0.016)	(0.007)	(0.011)
Permissive	0.011	−0.006	−0.006	0.007	0.022***	0.006
	(0.009)	(0.004)	(0.007)	(0.014)	(0.007)	(0.010)
Mean dep. var.	0.886	0.981	0.959	0.165	0.731	0.865
Obs.	2,733	2,733	2,444	2,070	2,706	2,733
Background & Ability	✓	✓	✓	✓	✓	✓
Verbal & Mathematics	✓	✓	✓	✓	✓	✓

Note: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Standard errors in parentheses are clustered at the classroom level. "Background & Ability" capture parental earnings in 1963, educational attainment, birth cohort, child gender, and child spatial ability at age 13 indicators. "Verbal & Mathematics" controls include verbal and mathematics ability decile fixed effects at age 13.

Additional Material: Online Appendix A. Identifying parenting styles in the data

This Online Appendix describes in detail how we identify the three central parenting styles in the data by principal component analysis (PCA) based on the 20 survey questions on parenting behavior and attitudes in the SBC Family Study outlined below. For the sake of clarity, we start by recapitulating the description provided in Section 2 and then proceed by explaining how we measure each parenting style.

We first classify each individual survey question, where the answers are given on a five-point Likert scale, as belonging to one of the three parenting style question bundles.[21] Following this, we verify that the individual questions are aptly classified by showing that they all correlate strongly (positively) with the other questions in their particular parenting style bundle, and by calculating a measure of internal consistency for the bundles of questions (Cronbach's alpha). We then run the PCA for each of the three bundles and retain the first component.[22] Moreover, in order to ensure that the PCA is capturing consistent styles, we follow the standard rules in psychology by dropping individual survey questions with a low factor loading (< 0.3).[23]

The specific survey questions and our classification are shown in Table A1. As shown in this table, many parents seem to provide similar answers to a given question.[24] This appears to be particularly pronounced for the authoritative style, where roughly 32% of all parents have given the highest answer to all questions pertaining to this parenting style (see Figure A1b). This means that we have less variation to work with for the authoritative parenting style compared to the other styles with more discriminatory answers, which could attenuate the predictions. However, the PCA method is still expected to capture the remaining rich variation we have at our disposal which is central to the *bundle of questions* we classify as belonging to either style. As previously discussed, this approach stands in contrast to other methods classifying parents based on dichotomous (yes/no) questions on their parental involvement and warmth. The benefit of our approach is that it captures parenting styles with greater nuance than the dichotomous approaches. Next, we outline the parenting styles and provide examples of the underlying survey questions.

Authoritarian parenting. "Authoritarian parenting" focuses on fostering obedience and reverence from the child to the parent through coercion. This paternalistic parenting style expects children to follow strict rules established by the parents, and failure to do so usually results in punishment. In total, we classify six of the twenty questions as capturing this style of parenting. Due to having a low factor loading in the PCA, we exclude one survey question (Question #10 in Table A1) and are left with five questions defined as capturing authoritarian parenting. As a

[21] The answer categories ranges from 1 "Quite wrong" to 5 "Quite right."

[22] Only the first components of each PCA have an Eigenvalue greater than one, which implies that we are capturing one particular style with each PCA. Although, the Eigenvalue of the permissive style first principal component is lower (than that of authoritarian and authoritative) at 0.84. This implies that our measure of permissive parenting is more noisy, which may attenuate our estimates.

[23] The distribution of parenting style index values can be seen in Figure A1.

[24] For instance, more than half of the survey questions have an average answer greater than 4 on the 1–5 scale, and the questions we end up not using due to low factor loading are generally those with a (divergingly) low average answer. The generally similar answers also manifest as a positive correlation between the parenting styles ranging from 0.25 to 0.4 (see Figure A2).

robustness check, we also define a reduced measure based on two core survey questions that we believe to unambiguously capture an authoritarian parenting style (we do the same for authoritative and permissive parenting).[25] The two core (unambiguous) survey questions that we identify as capturing authoritarian parenting are as follows: "Children must learn to obey." and "Children must revere their parents." We then test both the extensive and reduced measures in the empirical analysis to ascertain that the results are not driven specifically by our classification of the individual survey questions. Again, we argue that the measures we define are highly relevant in capturing the central parenting styles, especially when considering the bundle of questions included in the extensive or core measures.

Authoritative parenting. "Authoritative parenting," unlike authoritarian parenting, is defined as focusing on the importance of rules and guidelines for children. This democratic parenting style is underpinned by persuasion and promotes rules and stability without exercising coercion. Eight of the twenty questions are defined as capturing this parenting style. Due to having a low factor loading in the PCA, we exclude Question #9 (see Table A1) and are left with seven questions classified as capturing authoritative parenting for the extensive measure. The core questions for authoritative parenting are: "Children must have firm rules." and "You have to be consistent when raising children."

Permissive parenting. The child-centered permissive parenting style instead sets the child's needs as fundamental and highlights the importance of keeping the child happy. We classify the remaining six questions as belonging to this parenting style. We then exclude two questions due to them having a low factor loading (Questions #5 & #20 in Table A1) and use the remaining four questions to capture this parenting style. The two core survey questions related to permissive parenting include: "The most important thing is that the child is happy and content." and "If only the child feels loved, nothing else matters."

Other styles of parenting. The fourth and last central parenting style defined in social psychology is usually termed "Neglecting" (or uninvolved), which is difficult to capture in survey material in general and not included in the SBC in particular. Thus, this parenting style is not included in this study.[26]

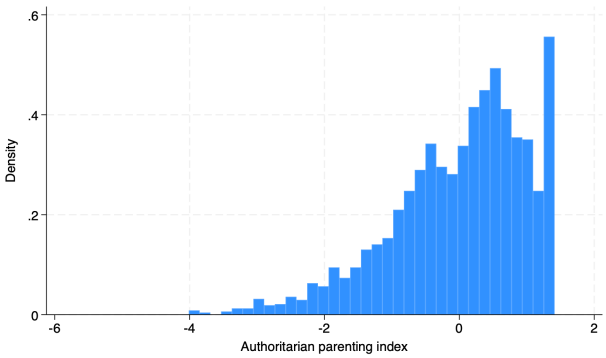
[25] Also, the two questions for each style have the highest Cronbach's alpha and inter-item correlation of the possible question pairs, which suggests that they capture central parenting styles.

[26] Although, we note that this style of parenting tends to be linked with the most adverse children's outcomes of all parenting styles (Doepke and Zilibotti, 2017). Since this style is often used as the baseline comparison, it is reasonable that the other styles are linked with more favorable outcomes for children (relative to the neglecting families).

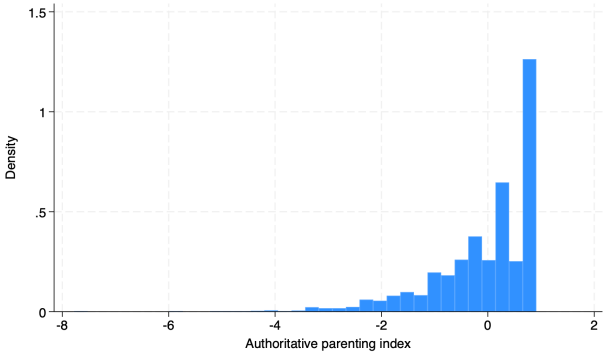
Table A1: Parenting style subquestions.

#	Question text in survey	Classification	Core question	Low factor loading	Mean (SD)
1	"Children must learn to obey"	Authoritarian	Yes		4.44 (0.80)
2	"Parents must not quarrel when the children are listening"	Authoritarian			3.91 (1.24)
3	"The most important thing is that the child is happy and content"	Permissive	Yes		4.21 (0.96)
4	"The child must learn how to manage on its own"	Authoritative		✓	4.40 (0.63)
5	"Children ought to have things their way"	Permissive		✓	1.67 (0.77)
6	"Children should be taught the difference between right and wrong"	Authoritative			4.93 (0.27)
7	"Children should be taught to think before acting"	Authoritative			4.73 (0.50)
8	"The principal aim of child rearing is to develop the child´s personality"	Authoritative			4.63 (0.59)
9	"Children must have firm rules"	Authoritative	Yes		4.58 (0.65)
10	"When a child does not understand its own good, one has to force it"	Authoritarian		✓	3.01 (1.16)
11	"Children must revere their parents"	Authoritarian	Yes		3.70 (1.22)
12	"Children should be taught self-control"	Authoritarian			3.77 (1.00)
13	"You have to be consistent when raising children"	Authoritative	Yes		4.63 (0.60)
14	"The most important is that parents are fond of their children"	Permissive			4.89 (0.38)
15	"Too much freedom is not good for the child"	Authoritarian			3.77 (1.10)
16	"If only the child feels loved, nothing else matters"	Permissive	Yes		3.52 (1.14)
17	"One must give the child time"	Authoritative			4.83 (0.40)
18	"One must keep one´s promises"	Authoritative			4.93 (0.27)
19	"Parents must see to it that they are liked by the children"	Permissive			3.82 (1.15)
20	"Excitement and variation are more important to the child than safety"	Permissive		✓	1.67 (0.94)

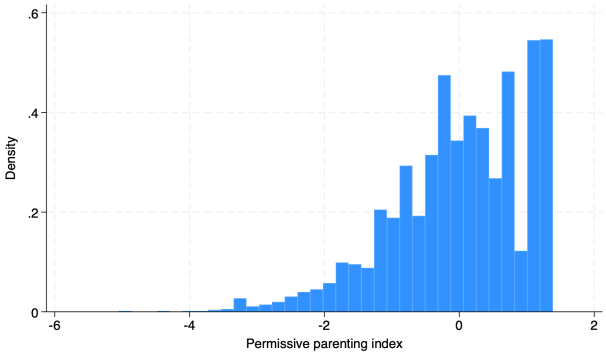
Note: The parenting styles are classified based on the 20 questions (1–5 scale answers). The value 5 captures "Definitely right", value 4 "Generally right", value 3 "Indifferent", value 2 "Generally wrong", and value 1 "Definitely wrong". We present the sample mean (SD) and define two core (unambiguous) questions for each style.



(a) Authoritarian parenting index.

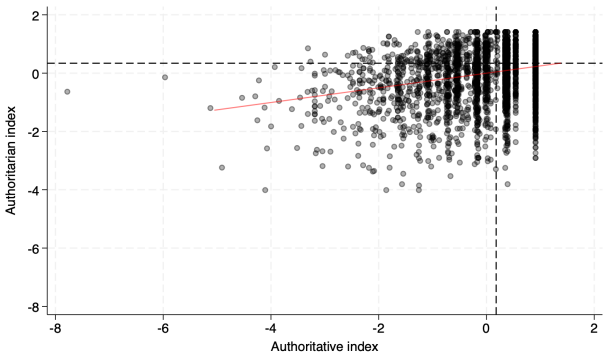


(b) Authoritative parenting index.

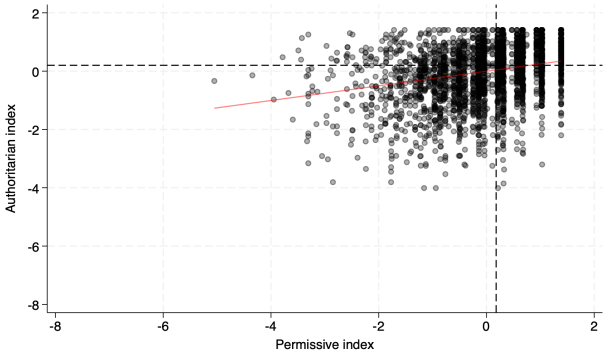


(c) Permissive parenting index.

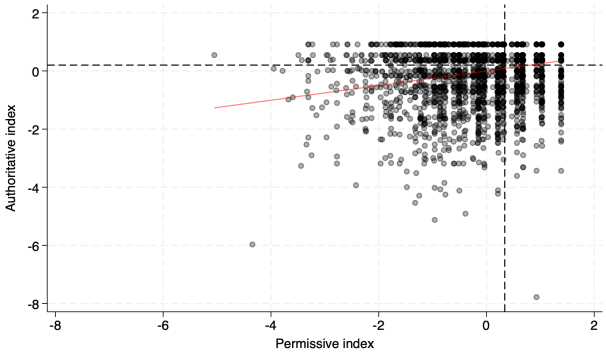
Figure A1: Histograms of parenting style indices.
The figures show the distribution of the extensive parenting style indices (based on all survey questions) used in the empirical analysis. The indices are standardized to be mean-zero standard deviation one.



(a) Authoritarian and authoritative index ($\rho = 0.34$).



(b) Authoritarian and permissive index ($\rho = 0.40$).



(c) Authoritative and permissive index ($\rho = 0.25$).

Figure A2: Scatter plots of parenting style index values.
The figures shows pairwise scatter plots presenting the (standardized) index values for the parenting styles of all families. The correlation coefficients (ρ) are added for each pair. The dashed lines represent the cut-off for above-mean values of each style. About 725 families (out of close to 3,000) have above-median parenting style index value for all three parenting styles. Conversely, 530 have below-median value for all three styles.

Additional Material: Online Appendix B. Institutional context

This Online Appendix explains the institutional environment in which the data was collected.

It is important to note that the data pertains to a birth cohort born in 1953. Since then, Swedish norms and the institutional context have likely shifted significantly toward more child-centered approaches to parenting. A prime example of this is the ban of corporal punishment in the home, which was enacted in 1979. This means that the SBC children grew up in a setting more likely to be conducive to authoritarian parenting, compared to a Swedish child growing up today. However, Swedish parenting values in 1968 may align more closely with contemporary parenting values in other countries. Using data from the World Values Survey, we find suggestive evidence on the share in each country who regard child obedience as important. This rate was substantially higher in the earlier survey waves of the 1980s and early 1990s in Sweden compared to the rate observed today. In fact, the earlier responses in Sweden are strikingly similar to the rates recently reported in countries like the US, Canada, and Australia (Haerpfer et al., 2022).[27]

Another important factor to note is that educational attainment has increased substantially over time in Sweden, especially when comparing to cohorts born before the SBC in 1953. After completing compulsory schooling, Swedish students can, if they choose to do so, enroll in high school education. In 1960, 10% of the cohort graduated from high school in a given year. By 1980, 85% completed high school (Hall, 2012). The SBC sample, born in 1953, was part of this increasing trend. Although not having fully converged to modern levels of cohort high school completion rates (usually greater than 90%), almost 84% of the SBC cohort ended up graduating from high school (or attaining some equivalent education). This means that the educational outcomes in the SBC are somewhat lower than, but still comparable to, the educational attainment seen in contemporary cohorts. The same pattern generally follows for university studies. This dampens the concerns that the SBC is very different compared to modern cohorts in terms of educational attainment.

[27] See Figure B1 for the time series data on the share deeming child obedience being important in Sweden, the US, Canada, and Australia. In the early 2020s, the share of Swedish parents deeming child obedience important was as low as 7%, while ranging from 13–25% in the 1980s and early 1990s. The recent values from the US, Canada, and Australia range from 15–21%.

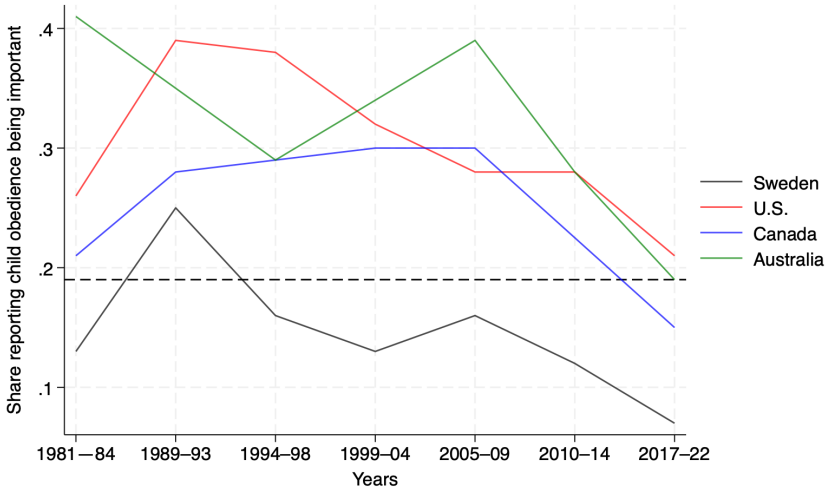


Figure B1: Time series of respondents reporting child obedience as important.
The figure shows the time series of respondents in each country reporting child obedience being deemed as important. The time series start from the early 1980s and range up until 2022. The included countries are: Sweden, the US, Canada, and Australia. The data are provided by the World Values Survey (Haerpfer et al., 2022).

Additional Material: Online Appendix C. Additional results

We test for heterogeneity by parental SES by interacting an indicator for above-median parental earnings in 1963 with the parenting styles, in addition to controlling for the main effect of above-median parental earnings. Likewise, child gender is captured using an indicator for being female. These results are shown in Table C3.

Unlike what Tungodden and Willén (2023) show in their experimental setting for exposure to competitive environments, our findings regarding the parenting styles do not differ systematically by child gender. For parental SES, however, the test yields somewhat mixed results across parenting styles: High parental SES gives predictions substantially stronger in magnitude for authoritarian parenting on ever becoming a parent. Notably, there is a stark difference in the prediction of log earnings by parental SES: Authoritarian parenting is associated with lower labor earnings for high-SES families, but an increase in earnings for low-SES families. For permissive parenting, however, high parental SES is more strongly linked with a smaller drop in labor earnings than children with permissive parents of low SES. These results suggest that authoritarian parenting is less effective for high-SES families in terms of labor earnings, possibly because positively selected children in these families respond poorly to a coercive and controlling parenting style. Conversely, permissive parenting appears to be more favorable for high-SES families, where the high-SES children could be expected to do well under a more relaxed parenting regime.

In order to test that outliers are not driving our results, we also do a robustness test of only including families with parenting style index values in the range of $\pm$2SD in Table C2. These results are highly similar to the main findings using all families, which indicates that outliers in terms of parenting styles are not driving the predictions.

Table C1: Parenting styles and children's lifetime outcomes excluding all controls.

Style definition:	**Extensive measure**					
Outcome:	University education	High school education	Log earnings 1990s	Unempl. ben. 1990	No welfare 1990s	Ever parent
Authoritarian	−0.097***	−0.044***	−0.026	0.459**	−0.029***	−0.028**
	(0.013)	(0.010)	(0.017)	(0.216)	(0.009)	(0.012)
Authoritative	0.009	0.018**	0.017	0.040	0.020**	−0.005
	(0.011)	(0.008)	(0.013)	(0.175)	(0.009)	(0.010)
Permissive	−0.041***	−0.012*	−0.043***	0.033	−0.013	−0.018
	(0.011)	(0.007)	(0.015)	(0.248)	(0.009)	(0.011)
Mean dep. var.	0.372	0.839	10.218	0.958	0.822	0.630
Obs.	2,733	2,733	2,694	2,722	2,725	2,722
Style definition:	**Two core questions**					
Outcome:	University education	High school education	Log earnings 1990s	Unempl. ben. 1990	No welfare 1990s	Ever parent
Authoritarian	−0.114***	−0.047***	−0.037**	0.271	−0.026***	−0.038***
	(0.012)	(0.009)	(0.015)	(0.186)	(0.008)	(0.010)
Authoritative	0.017	0.019**	0.011	0.203	0.010	0.011
	(0.010)	(0.009)	(0.014)	(0.230)	(0.008)	(0.010)
Permissive	−0.027***	−0.001	−0.030**	−0.047	−0.010	−0.010
	(0.010)	(0.007)	(0.014)	(0.280)	(0.008)	(0.011)
Mean dep. var.	0.372	0.839	10.218	0.958	0.822	0.630
Obs.	2,805	2,805	2,765	2,793	2,797	2,794

Note: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Standard errors in parentheses are clustered at the classroom level. "University education" is an indicator for completing at least two years of university studies by year 2001. "High school education" is an indicator capturing having at least a high school degree by year 2001. "Log earnings 90s" denotes the natural logarithm (+1) of cumulative earnings 1990–1999 (winsorized at the 5th and 95th percentile). "Unempl. ben. 1990" captures the amount received in unemployment benefit in 1990, before the economic crisis. "No welfare 1990s" captures if the individual did not receive any welfare contributions during 1990–1999. "Ever parent" captures parental status in year 2001.

Table C2: Parenting styles and children's lifetime outcomes for families with parenting style index values ± 2SD of each style.

Style definition:	**Extensive measure**					
Outcome:	University education	High school education	Log earnings 1990s	Unempl. ben. 1990	No welfare 1990s	Ever parent
Authoritarian	−0.071***	−0.037**	0.007	0.995*	−0.017	0.001
	(0.018)	(0.015)	(0.030)	(0.516)	(0.017)	(0.020)
Authoritative	0.001	0.013	0.014	0.188	0.001	−0.009
	(0.017)	(0.015)	(0.023)	(0.341)	(0.015)	(0.019)
Permissive	−0.036**	−0.002	−0.034	−0.292	0.019	−0.025
	(0.017)	(0.013)	(0.024)	(0.552)	(0.017)	(0.019)
Mean dep. var.	0.356	0.832	10.215	1.022	0.820	0.620
Obs.	2,419	2,419	2,386	2,408	2,412	2,408
Background & Ability	✓	✓	✓	✓	✓	✓
Style definition:	**Two core questions**					
Outcome:	University education	High school education	Log earnings 1990s	Unempl. ben. 1990	No welfare 1990s	Ever parent
Authoritarian	−0.079***	−0.023*	0.007	0.718*	−0.012	−0.007
	(0.019)	(0.014)	(0.027)	(0.415)	(0.015)	(0.019)
Authoritative	0.007	0.010	0.004	0.624	0.002	0.019
	(0.016)	(0.013)	(0.021)	(0.433)	(0.013)	(0.018)
Permissive	−0.022	−0.002	−0.030	−0.355	0.009	−0.008
	(0.015)	(0.012)	(0.021)	(0.543)	(0.013)	(0.017)
Mean dep. var.	0.356	0.832	10.215	1.022	0.820	0.620
Obs.	2,419	2,419	2,386	2,408	2,412	2,408
Background & Ability	✓	✓	✓	✓	✓	✓

Note: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Standard errors in parentheses are clustered at the classroom level. "University education" is an indicator for completing at least two years of university studies by year 2001. "High school education" is an indicator capturing having at least a high school degree by year 2001. "Log earnings 90s" denotes the natural logarithm (+1) of cumulative earnings 1990–1999 (winsorized at the 5th and 95th percentile). "Unempl. ben. 1990" captures the amount received in unemployment benefit in 1990, before the economic crisis. "No welfare 1990s" captures if the individual did not receive any welfare contributions during 1990–1999. "Ever parent" captures parental status in year 2001. "Background & Ability" capture parental earnings in 1963, educational attainment, birth cohort, child gender, child spatial ability decile at age 13 indicators, and classroom fixed effects.

Table C3: Parenting styles and heterogeneous predictions w.r.t. parental SES and child gender.

Split:	**Parental SES**					
Outcome:	University education	High school education	Log earnings 1990s	Unempl. ben. 1990	No welfare 1990s	Ever parent
Authoritarian × SES	0.007	−0.026	−0.076*	0.778	0.007	−0.056*
	(0.039)	(0.021)	(0.043)	(0.610)	(0.024)	(0.029)
Authoritarian	−0.064**	−0.015	0.057*	0.268	−0.015	0.015
	(0.025)	(0.016)	(0.033)	(0.330)	(0.019)	(0.022)
Authoritative × SES	0.003	0.025	−0.009	−0.225	−0.030	−0.003
	(0.028)	(0.021)	(0.034)	(0.428)	(0.021)	(0.025)
Authoritative	−0.004	−0.007	0.010	0.012	0.027*	−0.012
	(0.019)	(0.016)	(0.024)	(0.334)	(0.016)	(0.019)
Permissive × SES	−0.036	0.010	0.061*	−0.554	0.029	0.031
	(0.028)	(0.022)	(0.036)	(0.842)	(0.021)	(0.029)
Permissive	−0.022	−0.012	−0.076***	0.202	−0.006	−0.033
	(0.018)	(0.017)	(0.027)	(0.319)	(0.016)	(0.022)
Mean dep. var.	0.372	0.839	10.218	0.958	0.822	0.630
Obs.	2,733	2,733	2,694	2,722	2,725	2,722
Background & Ability	✓	✓	✓	✓	✓	✓
Split:	**Child gender**					
Outcome:	University education	High school education	Log earnings 1990s	Unempl. ben. 1990	No welfare 1990s	Ever parent
Authoritarian × Female	−0.015	0.022	0.027	−0.816	−0.011	0.024
	(0.031)	(0.022)	(0.041)	(0.674)	(0.022)	(0.034)
Authoritarian	−0.053***	−0.040***	0.001	1.081*	−0.007	−0.026
	(0.020)	(0.015)	(0.034)	(0.574)	(0.016)	(0.025)
Authoritative × Female	−0.005	0.010	−0.019	0.356	0.021	−0.007
	(0.029)	(0.021)	(0.036)	(0.520)	(0.023)	(0.029)
Authoritative	−0.001	0.000	0.016	−0.281	0.001	−0.010
	(0.019)	(0.019)	(0.028)	(0.326)	(0.016)	(0.020)
Permissive × Female	−0.011	0.020	0.007	0.714	−0.004	0.005
	(0.031)	(0.019)	(0.039)	(0.605)	(0.021)	(0.030)
Permissive	−0.036*	−0.016	−0.050*	−0.424	0.010	−0.020
	(0.022)	(0.015)	(0.027)	(0.530)	(0.017)	(0.022)
Mean dep. var.	0.372	0.839	10.053	0.958	0.822	0.630
Obs.	2,733	2,733	2,694	2,722	2,725	2,722
Background & Ability	✓	✓	✓	✓	✓	✓

Note: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Standard errors in parentheses are clustered at the classroom level. "Background & Ability" capture parental educational attainment, birth cohort, child spatial ability at age 13 decile indicators, classroom fixed effects, and the main effects (child gender and above-median parental earnings).