

Inequality

The IFS Deaton Review

The role of parenting in child development

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Introduction

In this commentary, we review the findings of two studies, provide some complementary evidence on parenting behaviour, formulate a novel hypothesis about its determinants, and discuss its policy implications.

The study on early childhood development by Cattan et al. (2022) documents substantial inequality in early child development in the UK, and shows how differences that emerge by the age of 3 are reflected in children's achievements and outcomes during adolescence and beyond. The early gaps concern both cognitive and socio-emotional development. Such gaps are highly correlated with the home environment, such as whether children grow up in a single- or two-parent household, their parents' education and language skills, the psychological stress faced by parents, and the parent-child relationship.

The findings suggest an important role of parents' socio-economic status in explaining early development gaps between children from different backgrounds. To further study the relative importance of socio-economic factors, Cattan et al. also directly examine the contribution of an alternative factor, namely, variation in children's genetic endowments. They conclude that a DNA-based measure of genetic endowments does contribute to differences in early development, but only to a lesser degree, explaining less than 6% of the variation in outcomes.

Drawing on this evidence, Cattan et al. conclude that interventions that reduce differences in the initial home environment of young children could go a long way towards reducing inequality in early development.

The study on families and inequalities by Kiernan, Crossman and Phimister (2022) also points to the importance of socio-economic conditions for childhood development. In their study, these conditions include financial resources, parental mental health, and the stability of family relationships. All these factors strongly correlate with measures of child development. Like the previous study, the authors conduct their analysis using UK data.

A salient point in this study is the importance of family structure. In the UK, many children grow up in single-mother families and in families where parents are separated. Almost half of the children in the sample grow up with a biological parent absent for at least some time. For one out of five first children, a biological parent was already missing when at birth. Kiernan et al. document that parental separation and distance from biological parents have a severe impact on child development. This works through multiple channels including financial and time resources devoted to children, and parents' mental health. Separation from biological parents matters for childhood development across the entire social ladder. Family stability is highly correlated with parental education: more-educated parents on average postpone childbearing, marry before having children, and are less likely to separate. Inequality is exacerbated by assortativeness in the marriage market.

The studies of Cattan et al. (2022) and Kiernan et al. (2022) provide novel evidence of the importance of the early childhood experience in shaping children's development outcomes. The studies also point to the role of family stability. In this commentary, we discuss potential policy implications of these findings

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and connect the results to additional evidence from other countries. We also highlight links with the findings of our previous research.

We start by considering the implications of unequal parenting for children's outcomes later in life. The literature on child development has established that the development process is cumulative and that early achievements foster additional learning later on. To highlight this issue, we document how parenting decisions and the family environment correlate with long-run outcomes such as graduating from college. In our analysis, we touch upon a dimension that is less salient in the two chapters: parenting style. We show that parenting style is not a mere by-product of families' socio-economic status. Rather, it is associated with children's outcomes in a way that is distinct from the influence of socio-economic factors such as parents' education and race. We also argue that the choice of parenting styles is responsive to changes in the environment where children grow up.

We show that parenting styles vary systematically across countries with different policies and institutions. This evidence suggests that understanding how parents adjust their behaviour to policy changes is important for drawing useful policy implications. These insights could be especially important for policies aiming to alleviate inequality in early childhood outcomes as parents' endogenous responses could potentially either magnify or dampen the direct effect of policy interventions.

Robust effect of parenting style on children's educational outcomes

A centrepiece of the debate on childhood development is the effect of educational inequality on social mobility. If early differences translate into unequal educational attainments that are closely tied to socio-economic characteristics of families, equality of opportunity is in jeopardy. The study of Cattani et al. (2022) provides a number of interesting insights from an analysis of UK data, although their main analysis is on outcomes when children are still in childhood. To highlight the role of family characteristics and parental behaviour for long-run outcomes, we consider data from the US National Longitudinal Survey of Youth (NLSY97). This is a nationally representative sample of 8,984 men and women born during the years 1980–84 living in the United States in 1997. Participants were between age 12 and 16 at the time of the initial interviews. The NLSY97 contains information on respondents' educational success and also data on the youths' family background and behaviour.

The NLSY97 also contains information about parenting style, which our book, *Love, Money, and Parenting* (Doepke and Zilibotti, 2019), shows to be an important determinant of children's success in education. To measure parenting style, we rely on questions in the NLSY97 that ask children whether or not each of the parents present in the family is supportive and/or strict. Following the classification used in previous studies in the child psychology literature (see, e.g. Maccoby and Martin, 1983), we classify as 'uninvolved' a parent who, according to the interviewed child, is neither supportive nor strict; we classify as 'permissive' a parent who is supportive but not strict; we classify as 'authoritarian' a parent who is strict but not supportive; finally, we classify as 'authoritative' a parent who is both supportive and strict. The NLSY97 data allow us to assess the quantitative importance of parenting style while holding constant other sources of inequality at the family level, such as the educational attainment of the parents. We can also assess the extent to which the effects of education and race are mediated by parenting style. The NLSY97 also allows us to consider racial gaps, an important issue that is also emphasised in Cattani et al. (2022). We first measure raw racial gaps. Then, we study the extent to which these gaps are accounted for by other socio-economic differences across families, including education and the aspects of family structure that are studied by Kiernan et al. (2022).

We focus on completing college as the main outcome variable of interest. The participants are out of the college years by now and, given the high college wage premium, finishing college closely correlates with other outcomes such as lifetime income. For parenting variables, we focus on mothers as our main case, in order to avoid selection issues related to the presence or absence of a father in the household. We regress this outcome on racial dummies, measures of parenting style, family structure, and other socio-economic parental variables. The results are reported in Table 1. In each regression, we report the results for both a linear probability model (OLS estimator) and Probit maximum likelihood for which we

Table 1. Probability of child finishing college

	OLS (1)	Probit (2)	OLS (3)	Probit (4)	OLS (5)	Probit (6)	OLS (7)	Probit (8)
Mother, black	-0.093 ^{***} (0.015)	-0.093 ^{***} (0.015)	-0.097 ^{***} (0.015)	-0.098 ^{***} (0.015)	0.001 (0.015)	0.003 (0.015)	-0.005 (0.015)	-0.004 (0.016)
Mother, Asian	0.196 ^{***} (0.033)	0.196 ^{***} (0.033)	0.201 ^{***} (0.033)	0.201 ^{***} (0.033)	0.138 ^{***} (0.032)	0.162 ^{***} (0.039)	0.142 ^{***} (0.032)	0.167 ^{***} (0.038)
Mother, Hispanic	-0.138 ^{***} (0.023)	-0.138 ^{***} (0.023)	-0.136 ^{***} (0.023)	-0.137 ^{***} (0.023)	-0.041 [*] (0.023)	-0.041 [*] (0.024)	-0.041 [*] (0.023)	-0.042 [*] (0.024)
Mother, permissive			0.112 ^{***} (0.023)	0.113 ^{***} (0.023)			0.075 ^{***} (0.022)	0.083 ^{***} (0.024)
Mother, authoritarian			0.074 ^{***} (0.027)	0.075 ^{***} (0.027)			0.055 ^{**} (0.026)	0.060 ^{**} (0.028)
Mother, authoritative			0.168 ^{***} (0.022)	0.169 ^{***} (0.022)			0.116 ^{***} (0.021)	0.128 ^{***} (0.023)
Two biological parents					0.139 ^{***} (0.013)	0.148 ^{***} (0.014)	0.131 ^{***} (0.013)	0.140 ^{***} (0.014)
Child, age					-0.006 (0.004)	-0.007 (0.005)	-0.005 (0.004)	-0.006 (0.005)
Mother, age					0.008 ^{***} (0.001)	0.009 ^{***} (0.001)	0.008 ^{***} (0.001)	0.009 ^{***} (0.002)
Mother, college or more					0.252 ^{***} (0.012)	0.266 ^{***} (0.013)	0.247 ^{***} (0.012)	0.263 ^{***} (0.013)
Observations	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300

Note: The dependent variable (child finished college) is an indicator variable that switches on when the child has attained a college degree. The OLS regressions are linear probability models. For the Probit model, we report marginal effects. Standard errors are given in parentheses. *, ** and *** indicate 10%, 5% and 1% significance levels, respectively.

report marginal effects. Because the results from the two methods are similar, we comment on the OLS estimates.

We start by documenting racial inequality. We restrict attention to four racial groups: white, black, Asian and Hispanic mother. We exclude mothers from other racial groups because the number of observations is too small. We note that we have only 75 Asian mothers in our sample; however, we retain this category. We use white mothers as the reference group. Our sample has 7,715 observations. We further restrict the sample to the 7,300 observations for which we have complete information on socio-economic and parenting variables.

The probability of finishing college is 9% lower for children of black mothers relative to children of white mothers. The gap is larger (i.e. 14%) for children of Hispanic mothers, while having an Asian mother is associated with a 20% increase in the likelihood of finishing college. These numbers show substantial racial inequality, consistent with the early gaps across racial groups documented for the UK.

A first hypothesis is that the racial gaps reflect differences in parenting styles. However, including parenting style in the regression does not significantly alter the picture (see columns 3 and 4). The most remarkable change is a slight increase in the racial gap for black mothers.

As shown in our book, parenting style correlates significantly with children's academic success. An authoritative mother is associated with a 17% increase in the probability of the child finishing college relative to an uninvolved mother. The correlation of college completion with either a permissive or an authoritarian mother is in-between – both styles are more conducive to success than uninvolved mothers but less conducive to success than authoritative mothers.

The first conclusion is that the effect of parenting style is not driven by mothers from different racial groups adopting different parenting styles. In fact, parenting styles do not exhibit a great deal of variation across racial groups. If anything, conditional on their educational attainment, black mothers are less likely to be uninvolved (the least successful parenting style) and more likely to be authoritative (the most successful parenting style) than white mothers. For Hispanic and white mothers, the probabilities are similar. We find a similar pattern (or lack thereof) for fathers. If parenting styles do not explain the racial gaps, omitted variables could still be an important driving force. Consistent with this hypothesis, when we control for the socio-economic characteristics discussed in Kiernan et al. (2022) (mother's education, mother's age, presence in the family of two biological parents), the effect of black mothers collapses to zero, while that of Hispanic mothers is curtailed by two-thirds and is only significant at the 10% confidence interval. In contrast, the positive effect of Asian mothers remains. The results are shown in columns 5 and 6. Hence, in NLSY97, the lion's share of the racial gaps in academic success appears to be driven by educational gaps and by family structure. When a mother has a college education, the probability that the child finishes college shoots up by 25%. When both biological parents are present, that probability increases by 14%.

Next, we reinsert our measures of parenting style into the vector of explanatory variables (see columns 7 and 8). Interestingly, the coefficients for parenting styles are resilient to the inclusion of the maternal socio-economic control variables. The conditional correlations are both sizeable and statistically significant. For instance, having an authoritative mother increases the probability of the child earning a college degree by 12%–13% relative to having an uninvolved mother. Permissive and authoritarian mothers continue to be in-between, with positive effects of 8% and 6%, respectively. This evidence suggests that inequality in parenting style is not a mere reflection of other socio-economic inequalities. Including in the regression mother's education, age and race, and measures of family stability only has a mild attenuating effect on the coefficients for parenting style.²

² While we find these correlations informative, we refrain from a causal interpretation. Even after controlling socio-economic characteristics, parenting style could in part be a response to the child's academic proficiency. We return to this point later when we argue that parents respond to the environment where children grow up.

We also run regressions including fathers' parenting style and education. The gist of the results is the same. The most remarkable difference is that authoritarian fathers fare just as poorly as uninvolved fathers, while authoritarian mothers do significantly better than non-involved mothers. The effect of the father's education is similar in magnitude to that of the mother's education. As in the regressions with only mothers, the black and Hispanic racial dummies collapse after controlling for parents' education and family structure. In contrast, the effect of parenting style is robust, although less so than for mothers.

In conclusion, the NLSY97 data suggest a robust association between parenting styles and children's academic success that does not hinge on basic socio-economic characteristics of the family including race. The analysis also documents substantial differences across racial groups, which are primarily accounted for by underlying variation in characteristics such as parental education.

We have also considered outcomes other than educational success. In particular, the NLSY97 reports information about alcohol consumption, drug abuse, smoking and general health. For each of these dependent variables, we run regressions similar to those in Table 1. In all cases, we find a highly significant effect of parenting style. In particular, an authoritative parenting style is associated with a lower probability of heavy drinking, consuming street drugs, smoking, and having general health issues. This statistical association is robust to controlling for socio-economic family characteristics.

These findings suggest that what matters for children's outcomes is not just their parents' socio-economic status, but also the choices that these parents make in rearing their children. To understand unequal outcomes, we therefore need to understand how these choices are made and what they respond to, which is the issue we turn to next.

Interpreting inequality in parental inputs: constraints versus objectives

The analysis of the NLSY97 data in the previous section documents the impact of parental characteristics and parental choices (such as parenting style) at a specific point in time and in a specific country with its own specific policies and institutions in place. Similarly, the analysis in Cattani et al. (2022) and Kiernan et al. (2022) document empirical relationships that are conditional on the specific institutional settings that are studied.

Ultimately, studies that document inequalities in child development and education raise important policy issues. Are additional investments in early childhood education or reforms to the education system called for to counteract some of the inequalities that have been documented and to help provide equal opportunities? For answering such policy questions, it is useful to go beyond documenting empirical relationships at a particular place and point in time. Rather, we also need to assess how the inputs that matter for child development will adjust in response to changes in institutions or policies. Many of the variables concerning the home environment, parenting practices and parenting style are ultimately chosen by parents. Most directly, parents determine their parenting practices and have a big impact on the parent-child relationship. Even the economic situation of the family and the family structure is at least in part a choice.

Understanding the effects of potential policy interventions thus requires an understanding of the decision process that underlies parenting choices. In this section, we outline an economic approach to parenting decisions, which we argue can account for a number of empirical regularities. We also describe how this framework can be used for policy analysis.

The economic approach to modelling parenting choices envisions decision-makers as aiming to achieve specific objectives (i.e. to maximise utility) subject to the constraints they face. This approach is very general and places few restrictions on what the decision process may look like – for instance, objectives are not necessarily of a monetary or financial nature and can reflect parents' values, culture and preferences. Nevertheless, the conceptual distinction between constraints and objectives often proves fruitful, and we argue in related work that this is equally true for parenting decisions as in many other realms of behaviour (Doepke, Sorrenti and Zilibotti, 2019).

When we observe parents making different choices, some of the differences can be directly attributed to constraints. For example, parents with a low income may be unable to afford private school for their children, and single parents who are working full-time may have less time to interact with their children every day than others. Cognitive constraints – such as the ability to help children with their maths homework or the possession of soft skills that help parents to convince their children of the importance of acquiring a good education – are also part of the set of constraints. But differences can also arise from different objectives. A parent who hopes for their child to become a lawyer or medical doctor will place a different priority on formal education than a parent who believes that such professions are out of reach. Objectives can be shaped by culture, institutions and the economic environment. For example, if the economic rewards of college education rise sharply over time, more parents will aspire for their children to go to university, and their parenting behaviour will adjust accordingly. In other, less competitive environments, parents may find it appealing to foster their children's independence and creativity – implying a less strict and more permissive upbringing. If parents are primarily concerned about protecting their children from external threats, a prescriptive and hence authoritarian parenting style can result.

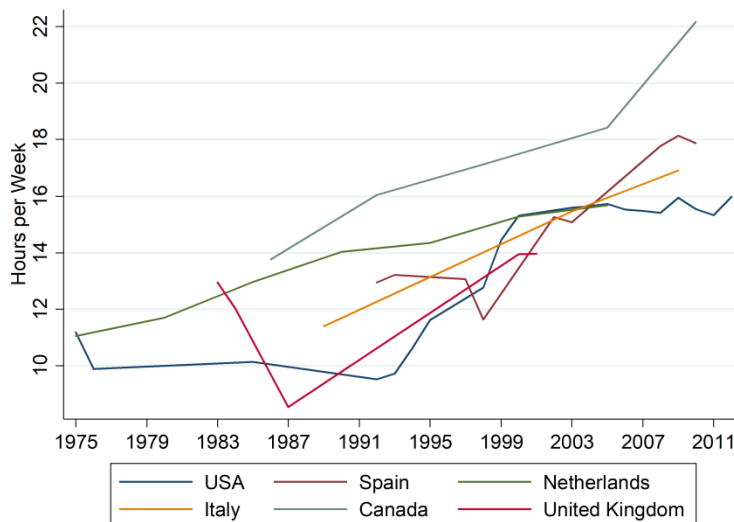
In our work on this issue (e.g. Doepke and Zilibotti, 2017, 2019; Agostinelli et al., 2020), we argue that many differences in parenting behaviour over time and across space can be attributed to parents' responses to a changing economic environment. One example is that in most high-income economies, the returns to education have risen substantially from the 1970s to the 2000s. Parents want their children to do well in life; we would therefore expect that higher returns to education would induce parents to spend relatively more time and effort on pushing their children toward educational achievement. In line with this intuition, Figure 1 shows that the time parents spend on childcare tasks in six high-income economies has risen substantially over the same period.

The time use data also suggest that rising investment in children's education is a major driver of the increase in childcare. In the US data, for example, the time couples spent every week on educational activities, such as reading to children or helping them with homework, rose by a factor of 3.5 from 1976 to 2012. Homework help took up only 17 minutes per week in the 1970s, but more than 1.5 hours in 2021.

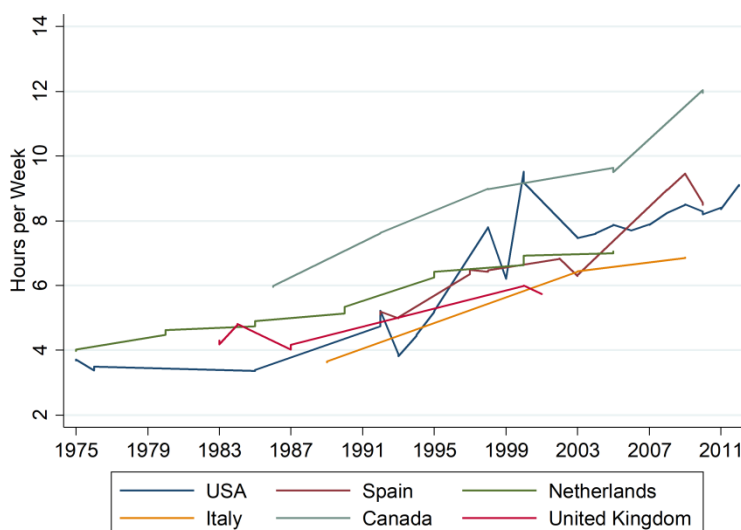
This shift in parenting behaviour also speaks to the origins of inequality of parenting investments within a society. The cases of the United States and the Netherlands are especially informative, because they have long time series of comparable data. In both countries, we observe that educational investments rise over time for all parents, but by a much larger degree for college-educated compared with high-school-educated parents. In the 1970s, college- and high-school-educated parents in the United States spent about the same time on childcare whereas, by 2012, the more-educated parents spent three hours more per week (see also Ramey and Ramey, 2010, who were the first to point out this pattern).

The fact that parenting behaviour shifted so much for all parents suggests that the behaviour of different groups cannot be treated as a constant, but should be viewed as an active choice that responds to the economic conditions that the parents face and that they expect their children to live in. At the same time, the differential trends for more- and less-educated parents suggest that similar economic trends or institutional changes can have unequal effects, depending on the constraints that different parents face. For example, less-educated parents have on average lower income and wealth, so they may be less able to afford the intensive parenting style adopted by many upper middle class parents, which often involves expensive after-school activities or private schooling. There may also be spillovers from one group to the other. For example, if already advantaged parents redouble their efforts to get their children admitted to top colleges, others with lesser means may feel that their children have little chance to keep up no matter what the parents do.

Figure 1. Increase in time spent on childcare in six countries



(a) Mothers



(b) Fathers

Source: Doepke and Zilibotti (2019).

Insights from variation in parenting and children’s outcomes across countries

The ideal way to validate our hypothesis – that parenting style responds to the environment – would be to use randomised interventions. However, random assignment of parents to an environment in which to raise their children is generally infeasible. As a second-best alternative, we can study how parenting decisions vary over time and across countries with different institutional environments.

Our research shows that over the last 40 years parents have increased their time investment in child-rearing during a time of growing economic inequality. The explanation we propose is that this change arose partly in response to a more competitive environment that rewards children’s academic success. Our hypothesis implies that in societies where access to high-quality education is more competitive, success in education is more consequential, safety nets are weaker (such as in the US relative to Western Europe) and parents tend to push their children harder.

In line with our hypothesis, we reproduce here some evidence documented in our earlier research in Doepke and Zilibotti (2019) and Doepke et al. (2019) that parents are less permissive and more authoritative in countries where – and times when – inequality is higher. We focus our analysis on a set of mature industrial economies that are more easily comparable. Our sample includes all countries with available data that were OECD members as of 1994: Australia, Canada, Finland, France, Germany, Great Britain, Italy, Japan, the Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, Turkey and the United States. We use information from the World Values Survey (WVS), where people are asked to select five cardinal child-rearing values (out of a list of ten). The question being asked is the following.

‘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? Please choose up to five!’

The values among which parents can choose are independence, hard work, feeling of responsibility, imagination, tolerance and respect for others, thrift and saving money, determination and perseverance, religious faith, unselfishness, and obedience. To simplify the presentation of the evidence, we use a binary classification of parenting styles. We regard as ‘intensive’ those parents who single out either obedience (a value typically associated with an authoritarian parenting style) or hard work (which is associated with an authoritative parenting style). We classify as ‘relaxed’ those who mention either independence or imagination, and neither obedience nor hard work. Here, intensive parenting combines elements of authoritarian and authoritative parenting style. This classification covers 91% of a sample of 66,632 respondents. Among them, 63% are classified as intensive, and 37% are classified as relaxed. We exclude from the analysis the 9% of respondents who do not mention any of the four above-mentioned values.

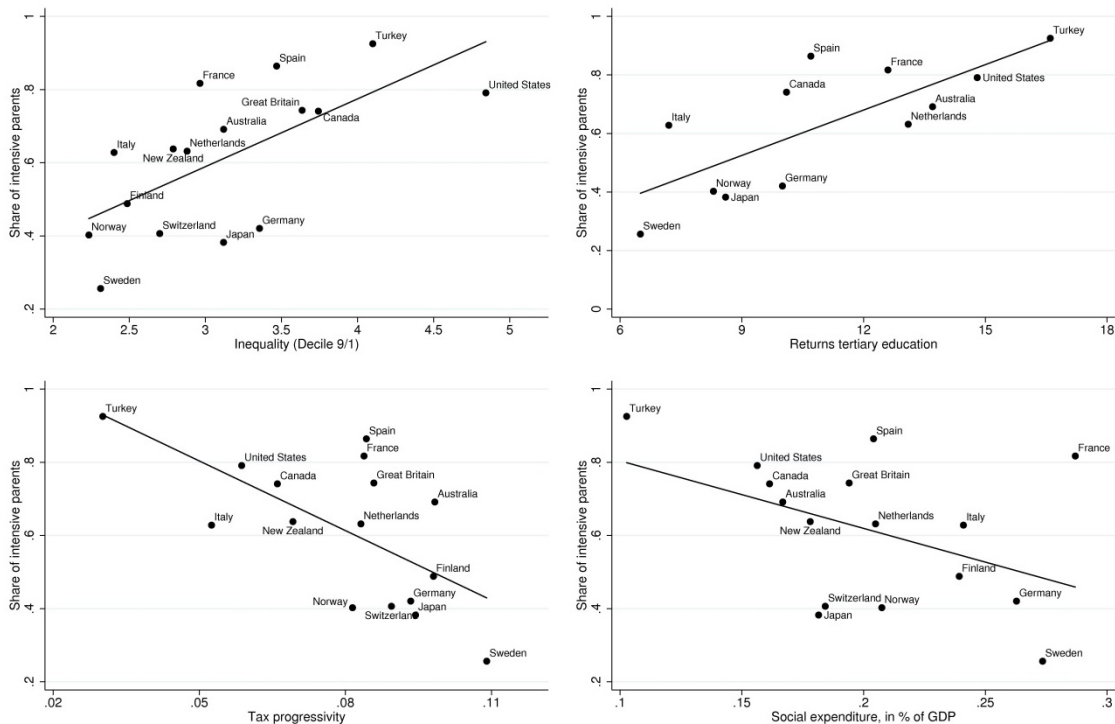
We study how intensive parenting correlates with measures of pre-tax earnings inequality and government-mandated redistribution. In particular, we use: (i) the 90th to 10th percentile ratio in the pre-tax earnings of full-time dependent employees; (ii) the return to tertiary education; (iii) a measure of tax progressivity; (iv) a measure of aggregate social expenditure as a percentage of GDP from the OECD Social Expenditure Database. Details about the source and construction of these variables can be found in Doepke et al. (2019).

Figure 2 plots the results for Wave 5 of the WVS, carried out in 2005, which covers the largest number of countries. In line with our hypothesis, the share of intensive parents increases with pre-tax inequality and the return to education (upper panels) and decreases with the extent of redistribution through tax progressivity and social expenditure. For instance, almost four-fifths of US respondents are intensive – the US has both high inequality and low redistribution. In contrast, the share of intensive parents is about 40% in low- to moderate-inequality countries with a low return to education such as Germany, Japan and Norway, and a mere 25% in a country such as Sweden where inequality and return to education are lowest.

The cross-country results could be driven by heterogeneity and omitted variables such as cultural differences driving both inequality and parenting style. Because cultural differences are persistent, it makes sense to assume they are time-invariant for the years we consider. Therefore, we use multiple editions of the WVS to run panel regressions with time fixed effects. The hypothesis is that within-country changes in inequality are positively correlated with (and, possibly, drive) changes in parenting styles over time. We focus on changes in pre-tax earnings inequality, for which we have better time variation. We expect intensive parenting to increase over time in countries where inequality increases and to decrease over time in countries that become more equal. We perform the regression analysis on individual data. We estimate the following equation:

$$INT_PAR_{ict} = \alpha_c + \alpha_t + \beta \cdot INEQ_{ct} + X'_{ict} \cdot \gamma + \varepsilon_{ict},$$

Figure 2. Inequality, redistribution, and intensive parenting across countries



Source: Doepke et al. (2019).

where i , c and t stand for individual, country and time (wave). The dependent variable INT_PAR is an indicator for parenting style, where $INT_PAR = 1$ indicates that the parent is intensive, whereas $INT_PAR = 0$ indicates that the parent is relaxed. Among the right-hand side variables, α_c is a country fixed effect, α_t is a wave fixed effect, $INEQ_{ct}$ is a time-varying measure of inequality (the 90–10 earnings ratio), X is a vector of individual and country characteristics including gender, age, age squared and the (log of) GDP, and ε is an error term.

We estimate a logistic regression on 45,482 individual observations. Table 2 displays the estimates for β , expressed as odds ratios. All regressions include wave fixed effects with standard errors clustered at the country level. Column 1 displays the basic specification. Column 2 adds the control variables X_{ict} . Column 3 also adds country fixed effects. The odds ratio is significantly larger than unity and stable across specifications. In all cases, higher inequality increases the probability of intensive parenting. In columns 4–6, we repeat the analysis while also including the measures of tax progressivity and social expenditure. The results in columns 4 and 5 confirm that each of the three variables of interest has the predicted effect: income inequality increases the incidence of intensive parenting style, while tax progressivity and social expenditure reduce it (though the effect of the latter is not statistically significant). In the panel regression (column 6), the three effects are less well identified. The effects of inequality and social expenditure conform with the prediction of the theory, but the odds ratios are very high and low, respectively. Tax progressivity is not statistically significant. The results in column 6 reflect the limited time variation for the measures of redistribution, which makes it difficult to obtain reliable estimates in fixed-effect regressions. The results hold true irrespective of whether we include all respondents or only those who are actually parents. The correlations are quantitatively large.

Table 2. Inequality, redistribution, and parenting styles

	Logit intensive					
	(1)	(2)	(3)	(4)	(5)	(6)
Inequality	2.38 ^{***} (0.44)	2.50 ^{***} (0.29)	2.12 ^{**} (0.72)	1.74 ^{***} (0.37)	1.74 ^{***} (0.28)	27.22 ^{**} (35.21)
Tax progressivity				0.20 ^{**} (0.13)	0.24 ^{**} (0.17)	5.35 (5.88)
Social expenditure				0.70 (0.29)	0.58 (0.25)	0.21 ^{**} (0.14)
Controls	No	Yes	Yes	No	Yes	Yes
Country fixed effects	No	No	Yes	No	No	Yes
Observations	45,482	45,482	45,482	32,196	32,196	32,196

Note: The dependent variable is intensive parenting style (indicator). All the models are logistic models and the displayed coefficients are odds ratios. All the models include wave fixed effects. Models in columns 2, 3, 5 and 6 include controls for gender, age, age squared and log of GDP per capita (based on expenditure-side real GDP at chained PPPs, from Penn World Table 9.0). Models in columns 3 and 6 also include country fixed effects. Inequality is defined as the ratio between the 90th and 10th percentiles of gross earnings of full-time dependent employees. Tax progressivity is from International Center for Public Policy, World Tax Indicators, <https://icepp.gsu.edu/what-we-do/research/world-tax-indicators/>. Safety nets are expressed as the aggregate social expenditure as a percentage of GDP. Standard errors (in parentheses) are clustered at the country level. *, ** and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Source: Doepke et al. (2019).

In conclusion, our analysis of the international data supports the hypothesis that parents choose or adapt their parenting style in response to the environment where their children grow up. Our economic hypothesis suggests that parenting style should be viewed as a choice rather than a simple attribute of parents. Parents – more or less consciously – behave differently in different environments.

Beyond the broad macro-economic factors considered here, specific policies that have a direct impact on the economic lives of families should also matter for parenting decisions. A relevant policy dimension is the extent of support available to single parents. The study of Cattan et al. (2022) and family inequalities both point to the important role of family structure (in particular, being raised by a single parent) on children's outcomes and on socio-economic inequality across families more generally. Studies on US data (such as our analysis of NLSY97 data above) come to similar conclusions. However, in a study of the impact of socio-economic status on children's development using German data, Falk et al. (2021) show that while parental investments vary substantially with economic status, being raised by a single parent does not have much of an impact, per se. They link this observation to the robust social safety net in Germany that lowers the economic impact of single parenthood and may place less pressure on single mothers to work full-time. This example underlines that observable differences in parenting and children's outcomes (in this case, differences between one- and two-parent families) are not fixed constants but are responsive to policies and institutions, in a way that is amenable to economic analysis.

Parenting styles across neighbourhoods

In Agostinelli et al. (2020), we document similar correlation patterns between parenting styles and features of the environment across neighbourhoods in the United States. Exploiting variation across

neighbourhoods has pros and cons relative to international data. On the one hand, it reduces omitted variable problems, which are endemic to cross-country comparisons. On the other hand, there are less-sharp differences across institutional environments. Moreover, and arguably more importantly, parents can choose the neighbourhood where they live and rear children.

Our study uses data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), which contains information about children's peer interactions, grades and socio-economic characteristics, as well as various aspects of parenting behaviour.³ We consider two sets of indicators for parenting style. First, we construct parenting style in a way that is broadly comparable with the international analysis in the previous section.⁴ We find that in neighbourhoods with high income inequality, parents are less likely to be permissive and, conversely, more likely to be authoritarian and authoritative.

Next, we focus on a specific dimension of parenting style: interference in peer formation. The idea here is that when the peer environment is nurturing and relatively risk-free, parents do not interfere with the choice of friends of their children. Conversely, when children are exposed to more problematic external influences, parents try to restrict the choice of friends – a behaviour we classify as authoritarian.⁵ Consistent with our hypothesis, we find that parents are more likely to meddle in their children's peer choice when the average quality of the peer group (measured by school grades) is low and, especially, when its variance is high. With the aid of a structural model of peer formation, we also document that parental meddling has the desired effect: an authoritarian parenting style is associated with an improvement over time in the child's set of friends. We also find – consistent with the findings of the child development literature – that an authoritarian parenting style surrounding peer formation has negative effects on other aspects of the process of skill formation. Namely, conditional on friendship formation, an authoritarian parenting style is associated with worse academic outcomes relative to a non-authoritarian style. Arguably, this is caused by the disruption of other aspects of family harmony and trust.

The findings are robust; in particular, they do hold up to controlling for school (neighbourhood) fixed effects and exploiting the variation across cohorts in the quality of peer environment. While one might worry that parents who have different attitudes toward child-rearing self-select in different neighbourhoods, the concern that parents can change location in anticipation of the characteristics of the cohort starting high school seems less severe. We find that, within schools, the exposure to a more problematic and unequal cohort makes parents more authoritarian about friendships.

In Agostinelli et al. (2020), we construct and estimate a structural model of skill formation with parent-child interactions. We find that the adaptive behaviour of parents has large effects on income inequality. In particular, it reduces the interaction of disadvantaged children with school-proficient children and decreases their school success. It also limits the effectiveness of policies aimed to curb inequality of opportunities, such as desegregation busing of children from disadvantaged environments to schools attended by the children of wealthier families. In Agostinelli et al. (2022), we use the same model to study the effect of the COVID-19 pandemic on the inequality in the school performance of children from different socio-economic backgrounds. We find that school closures have a large, persistent and unequal effect on human capital accumulation. While there are other concurrent forces – such as peer effects and heterogeneity in parents' work arrangements – the endogenous response of parenting style has sizeable effects. These studies reinforce the conclusion that it is important to account for changes in parental behaviour in response to policy interventions.

³ Add Health is a nationally representative longitudinal survey of students in grades 7–12 in the United States, which dates back to the 1990s.

⁴ Parents are asked: 'Of the following, which do you think is the most important thing for a boy/girl to learn? Be well-behaved, work hard, think for themselves, help others, be popular.' We classify parents choosing 'be well-behaved' as behaving in an authoritarian fashion; those choosing 'work hard' as authoritative; those choosing 'think for themselves' (a proxy for independence) as permissive. We exclude parents who choose one of the other two categories and check the robustness of the results to alternative plausible classifications of the excluded group.

⁵ We focus on the question: 'Do your parents let you make your own decisions about the people you hang around with?' We classify a parent whose child answers 'no' as adopting an authoritarian parenting style about friends.

Conclusions

In this commentary, we argue that while the home environment is important, so are the incentives for parenting behaviour. These are in part shaped by policies and institutions such as government-mandated redistributive policies and local versus national financing of public schools.

Our discussion is linked to the results of Cattan et al. (2022) regarding the limited role of genetic factors. While we have no way of directly testing the importance of such factors, our findings imply that seemingly large differences in parenting behaviour can arise even in the absence of any hard-wired differences across parents. We believe that Swedish parents behave differently from American or Chinese parents not so much because of Scandinavian genes but rather because they face different incentives and institutions. A particularly telling finding in this regard is that changes in inequality drive changes in parenting behaviour within each country even after controlling for time-invariant heterogeneity capturing factors such as genetic endowments and culture.

While broadening the scope for policy intervention, our research also points at possible reasons for why specific interventions may yield disappointing results. The design of policies must take into account the endogenous response of parents. In some cases, their endogenous response amplifies while in others it dampens the direct treatment effect. Understanding these forces opens new synergies in the research on child development carried out by psychologists, sociologists and economists.

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