

Compensatory Parental Time Investment: A Survey Experiment on Beliefs and Distributional Preferences*

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Abstract

We study the determinants of parental educational time investment using a representative survey in the Netherlands. Informed by a simple model of parental time allocation, we design hypothetical scenarios to elicit beliefs about the human capital production function and preferences over within-family allocations of parental time and child outcomes. On average, respondents favor higher educational time investments in lower-ability children. Our results suggest that this compensating investment is driven by a perceived substitutability between ability and investment as well as distributional preferences including a desire to equalize educational outcomes between siblings. We further test the malleability of parental investment behavior in an information provision experiment that randomly assigns respondents to receive either a low or high estimate of the heritability of primary school achievement. Respondents strongly update their beliefs in response to the information, but the treatment does not significantly alter perceived returns to investment, distributional preferences, or time allocations.

Keywords: Parental investment, Beliefs, Inequality preferences, Information experiment, Sibling inequality

JEL Codes: D13, I24, I26, J24

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1 Introduction

Parental investment is a key determinant of the educational development of children (Doepke *et al.*, 2019). An important dimension of parental investment, particularly in early and middle childhood, is the time parents spend with their children on activities conducive to human capital development. More educated parents, on average, allocate substantially more time to such activities, thereby contributing to the persistence of socioeconomic disparities across generations (Guryan *et al.*, 2008). Yet, parental investments and child outcomes also vary meaningfully within families (Yi *et al.*, 2015; Attanasio, 2026): sibling correlations in education typically lie between 0.4 and 0.6 (Björklund and Salvanes, 2011; Mazumder, 2008; Atav *et al.*, 2026), implying that around half of education inequality arises among siblings in the same family. By directing relatively more time toward either lower- or higher-ability children, parents can mitigate early-life disparities or, alternatively, amplify them. This raises a foundational question: when confronted with differences in their children’s early abilities, do parents behave in a compensatory or reinforcing manner? And what underlying beliefs, preferences, or information constraints shape these intra-household investment strategies?

In this paper, we study how parental time investment during primary school responds to child ability using survey vignettes that exogenously vary child ability. We study variations in time allocation across two dimensions: between educational and non-educational activities, and between siblings. Follow-up scenarios featuring discrete investment choices between two hypothetical siblings allow us to identify parental inequality aversion in investments and outcomes. Respondents’ predictions of final test scores conditional on abilities and time inputs reveal their perceived human capital production function. Jointly, this survey framework uncovers how beliefs and attitudes shape how parents respond to child ability.

We then study the malleability of these beliefs and attitudes using an information provision experiment. In particular, we investigate the causal effect of beliefs about the relative importance of genetic endowments (“nature”) compared to upbringing (“nurture”) for child development. While extensive research underscores the importance of both dimensions (Biroli *et al.*, 2026; Houmark *et al.*, 2024), less is known regarding how beliefs about their relative importance are distributed. On one extreme, people may think of a child’s DNA as a “blueprint” that determines all later developments. On the other extreme, they may think of the child as a “blank slate” that develops solely in response to environmental influences.¹ Earlier studies suggest that nature-nurture beliefs affect perceptions of the effectiveness of interventions and fairness considerations in other domains (Dar-Nimrod and

¹*Blueprint: How DNA Makes Us Who We Are* (Plomin, 2019) and *The Blank Slate: The Modern Denial of Human Nature* (Pinker, 2003) are the titles of two popular books that discuss the roles of genes and environments for human development.

Heine, 2011; Pogliano, 2024). However, to what extent these deeper beliefs affect parental investment decisions is not known. Our information provision experiment exploits variation in published heritability estimates by randomly informing respondents about either a low or a high estimate. Thereby, the experiment sheds light on whether fundamental beliefs on the importance of nature and nurture affect parental time investments, and whether this runs through the perceived production function and/or inequality preferences.

We design vignettes based on hypothetical families to study parental investment decisions and their underlying motivations. Hypothetical scenarios offer several advantages. First, observational data alone are insufficient to identify the determinants of parental investment without imposing strong assumptions (Almås *et al.*, 2024). Different combinations of the perceived human capital production function and distributional preferences can generate identical compensating or reinforcing investment patterns. Second, drawing inferences from subjective measures of children’s abilities is challenging as parents’ perceptions of their children’s abilities are often biased (Dizon-Ross, 2019). Further, child ability is endogenous to parental investment, and even characteristics measured very early in life, such as birth weight, may be affected by prenatal investments (Sanz-de Galdeano and Terskaya, 2023). Our approach addresses these issues by exogenously varying child ability in the hypothetical scenarios.

We focus on primary school education in the Netherlands. This is a particularly relevant time period for at least three reasons. First, parents begin to receive formal feedback from teachers about their children’s school performance, which could affect their investment decisions. Second, educational investments are more productive early in life (Cunha and Heckman, 2007), making primary school a critical period from a skill development perspective. Third, primary school marks the point at which educational performance becomes relevant for later educational trajectories due to tracking. In the Netherlands, children typically attend primary school from age 4 to 12. In the final year, students take a standardized test which, together with the teacher recommendation, determines their secondary school track. As a result, relatively small differences in performance at the end of primary school can have large consequences for subsequent educational outcomes as well as later-life outcomes such as earnings and health (Heckman *et al.*, 2018; Borghans *et al.*, 2020).

The results from our representative survey in the Dutch LISS panel ($N = 1997$) show that respondents predominantly favor compensating educational time investment in response to ability differences. At the same time, they perceive investments to be more effective for lower-ability children, suggesting that beliefs about the production function may be driving compensatory investment behavior of parents. Using an additional survey module, we further elicit within-family distributional preferences, and show that compensating investment

is also partly driven by a desire to equalize test scores, a direct preference for investing in the lower-ability child and a preference for maximizing total educational achievement among siblings. In sum, higher perceived returns to investment in lower-ability children and within-family distributional preferences both contribute to parents spending more time with the lower-ability child. At the same time, respondents also express a desire to equalize investments, leading them to allocate a positive amount of time to the higher-ability child.

Our information provision experiment yields a strong first-stage effect on posterior heritability beliefs. Respondents exposed to the high heritability treatment believe that genes account for 24 percentage points more of the differences in primary school performance than respondents in the low heritability treatment group. Despite the strong shift in beliefs about the relative importance of nature and nurture, we see surprisingly small and statistically insignificant effects on parental time investments, the perceived human capital production function and distributional preferences. This result suggests that heritability beliefs are not a main driver of parental time investment, nor of its distribution across siblings who differ in their ability. Moreover, heritability beliefs also do not seem to fundamentally alter deeper perceptions of the shape of the production function or aversion to inequality.

Our study contributes to the literature on how parents respond to differences in children’s endowments. Seminal theoretical work highlights two competing forces: reinforcing investment driven by complementarities between endowments and investment (Becker and Tomes, 1976), and compensating investment motivated by parental inequality aversion (Behrman *et al.*, 1982). Empirical evidence using cohort data is mixed, with studies documenting reinforcing, compensating, or domain-specific responses (e.g., Adhvaryu and Nyshadham, 2016; Frijters *et al.*, 2013; Bharadwaj *et al.*, 2018; Fan and Porter, 2020; Nicoletti and Tonei, 2020; Yi *et al.*, 2015). More recent work uses genetic measures fixed at conception to address endogeneity concerns, but also yields conflicting findings (Breinholt and Conley, 2023; Houmark *et al.*, 2024; Sanz-de Galdeano and Terskaya, 2023), leading Attanasio (2026) to conclude that the evidence on resource allocation within families is still scarce.

Our main contribution is to advance this literature by jointly identifying the roles of the perceived human capital production function and distributional preferences in parental time investment decisions. Closely related studies by Giannola (2024) and Berry *et al.* (2025) take important steps in this direction. Giannola (2024) uses hypothetical investment choices and elicits beliefs about returns to infer parental preferences for equality under functional-form assumptions on the production function, while Berry *et al.* (2025) experimentally varies tutoring returns between siblings to separate preferences for equality in outcomes from preferences for equality in investments. Compared with Giannola (2024), we *measure* aversion to inequality in outcomes rather than inferring it indirectly through functional form assump-

tions. Moreover, we measure both aversion to inequality in outcomes as well as inputs. Compared with Berry *et al.* (2025), we do not just quantify aversion to inequality in outcomes and inputs, but additionally show how the perceived production function influences parental investment decisions alongside these distributional consequences. An important advance over both papers is the heritability information experiment. In particular, our paper asks whether telling people that school performance is largely genetic makes them reduce investment in their children or change how to allocate time between siblings. This speaks to a lively debate on the consequences of genetic information reaching the wider public (Harden, 2022; Trejo and Martschenko, 2026), and improves our understanding on the formation of beliefs about the returns to investment and distributional preferences, on which the evidence to date is surprisingly thin (Di Tella *et al.*, 2007; Giannola, 2024).

Our paper thereby contributes to a growing literature, primarily in social psychology, suggesting that beliefs about genetics shape perceptions of malleability and fairness (Dar-Nimrod and Heine, 2011). Such beliefs influence a wide range of attitudes and behaviors, from self-control and medical judgments to redistribution and punitive preferences (e.g., Dar-Nimrod *et al.*, 2014; Lebowitz and Appelbaum, 2017; Pogliano, 2024; Cheung and Heine, 2015). Research on parental beliefs about the genetic basis of child development is limited and has focused exclusively on non-cognitive outcomes (e.g., Rivera *et al.*, 2021). We extend this literature by studying how beliefs about the role of genetic endowments in children’s cognitive development shape parental time investment in educational activities. Understanding whether and how parental investment responds to these beliefs is crucial for evaluating the potential impact of reducing information constraints and its implications for within- and between-family inequalities.

The remainder of this paper proceeds as follows. Section 2 presents the theoretical framework that guides our survey design explained in Section 3. In Section 4, we discuss the results on parental time allocation and its determinants based on the hypothetical scenarios, while Section 5 reports the findings of the information provision experiment. Section 6 discusses the findings and concludes.

2 Conceptual framework

In this section, we develop a simple conceptual framework to model parental time investment during primary school. Our model builds on a similar framework for parents with two children developed in Berry *et al.* (2025). While the outcome variable in Berry *et al.* (2025) is child earnings, we study educational performance at the end of primary school. We conceptualize parental time investment as the number of hours per week that parents spend

on individual educational activities with their children. We distinguish this from other family activities that do not have an educational purpose. This distinction is intended to make the opportunity cost of educational time more salient and to emphasize its investment aspect.

2.1 Child human capital production function

Child i 's human capital H develops as a function of its initial ability A at the start of primary school, parental investment I during the period of primary school, and other factors X , which may capture peer or teacher influences, for example. The true production function (Equation 1) can deviate from parents' perceived production function (Equation 2) (Attanasio *et al.*, 2022a). Here, we assume no specific functional form of the (perceived) human capital production function.

$$H_i = f(A_i, I_i, X_i) \quad (1)$$

$$\mathbb{E}[H_i] = g(A_i, I_i, X_i) \quad (2)$$

2.2 Parental utility function

Parents choose investment levels to maximize their utility U .² We distinguish between a scenario with one child and a scenario with two children. Due to potential within-family distributional considerations in the latter, the utility function differs between the two scenarios.

Singleton scenario: The utility of parents with one child i is simply a function of the child's expected educational outcome H and the parents' opportunity cost C associated with investment I . By assuming that C is increasing in I , we capture the investment aspect of parenting: parents make a costly choice today so that their children benefit in the future. α and κ capture the relative weight parents place on the different components of the utility function.

$$U(I_i) = \alpha \mathbb{E}[H_i(I_i)] - \kappa C(I_i) \quad (3)$$

Siblings scenario: With more than one child, parents may also care about the distribution of H and I between the siblings. While early models of parental investment only incorporated parental preferences for outcome equality (e.g., Behrman *et al.*, 1982), more recent models distinguish these from preferences for equality in investments (Berry *et al.*, 2025). Equation 4 characterizes the utility function of parents with two children that differ in their baseline

²We assume a unitary household model, that is, we do not model the relative weight of both parents in the utility function.

ability, where I_L and I_H denote investment in the lower- and higher-ability child, respectively, and H_L and H_H their human capital. The model allows for separate preferences over the sum of test scores (α), inequality in test scores (β) and inequality in investments (γ). Independent of the motive to equalize H , parents may also have a preference δ for investing relatively more in one child based on the child's characteristics Z .³

$$\begin{aligned}
U(I_L, I_H) = & \alpha(\mathbb{E}[H_L(I_L)] + \mathbb{E}[H_H(I_H)]) \\
& - \beta|\mathbb{E}[H_L(I_L)] - \mathbb{E}[H_H(I_H)]| \\
& - \gamma|I_L - I_H| \\
& + \delta(Z_L, Z_H)(I_L - I_H) \\
& - \kappa C(I_L + I_H)
\end{aligned} \tag{4}$$

The utility of parents with two children increases in the expected sum of educational outcomes of both children, and it decreases in the differences in investment and expected outcomes between children as well as parents' opportunity cost of time investment.

2.3 Predictions

How do changes in the components of the utility function translate into investment decisions? The predictions in the Singleton scenario are straightforward. An increase in the perceived return to investment ($\frac{\partial \mathbb{E}[H]}{\partial I}$) increases the utility associated with a certain level of investment and thus the utility-maximizing level of parental investment. A higher perceived complementarity ($\frac{\partial^2 \mathbb{E}[H]}{\partial A \partial I}$) increases investment if the child's perceived ability is high. Based on reported investment choices across children with randomly varying ability levels, the singleton scenario can therefore cleanly identify the influence and shape of the perceived production function of child human capital. To maximize their utility, parents choose the level of investment at which $\alpha \frac{\partial \mathbb{E}[H]}{\partial I} = \kappa \frac{\partial C}{\partial I}$.

In the Siblings scenario, the prediction is more complex. Following Berry *et al.* (2025), we build intuition by considering cases in which parents place full weight on one component of the utility function, and zero weight on the others, subject to the time budget constraint $I_L + I_H \leq \bar{I}$:

- $\alpha = 1$: In this scenario, parents are pure efficiency maximizers, and therefore invest more time in the higher-ability child if ability and investment are complements in the production of human capital ($\frac{\partial^2 \mathbb{E}[H]}{\partial A \partial I} > 0$). They invest more in the lower-ability child

³In our survey, this must be ability itself or a factor perceived to correlate with ability, since we hold all other characteristics (e.g., age, gender) constant across siblings (Section 3).

if ability and investment are perceived substitutes ($\frac{\partial^2 \mathbb{E}[H]}{\partial A \partial I} < 0$). In case of decreasing marginal returns to investment, parents may still invest some time in the sibling with the lower perceived return.

- $\beta = 1$: In this scenario, parents are extremely averse to inequality in outcomes, and therefore invest more time in the lower-ability child to equalize outcomes. At a very high level of compensating investment, it is possible that the expected outcome of the lower-ability child exceeds that of the higher-ability child. In that case, parents may choose to invest some of their time in the high ability child.
- $\gamma = 1$: In this scenario, parents are extremely averse to inequality in investments, and therefore divide time equally.⁴
- $\delta = 1$: In this scenario, parents have a clear preference for child L, and therefore invest only in child L.
- $\delta = -1$: In this scenario, parents have a clear preference for child H, and therefore invest only in child H.
- $\kappa = 1$: In this scenario, parents place an extremely high weight on the costs of investment, and therefore do not invest in educational activities.

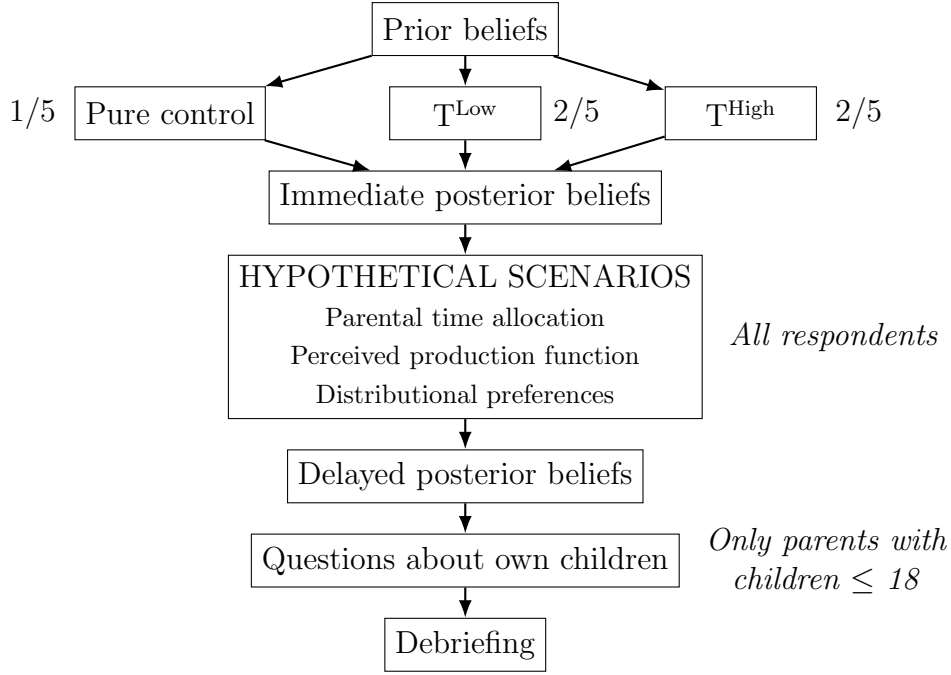
It follows from these scenarios that even when parents put weight on only one component of the utility function, investment allocation choices can be consistent with different combinations of beliefs and preferences. Compensating investment, for example, may arise under returns maximization and perceived substitutability, but may also be the result of a strong desire for outcome equality. When multiple preferences play a role, predictions depend on the combination and strength of parameters. We quantify the importance of the parameters empirically in Section 4.3.

3 Survey design

This section describes our survey design. All questions are phrased at language level B1 to ensure comprehension among all respondents. Figure 1 summarizes the survey flow.

⁴In decisions with uncertain outcomes, risk aversion and investment inequality aversion might be conflated, with both preferences predicting more equal investment choices. However, we identify γ from discrete choices with known outcomes, where risk aversion is not relevant.

Figure 1: Survey flow



Notes: This figure summarizes the flow of the survey. After the elicitation of prior heritability beliefs, respondents are randomly assigned within strata to a pure control group (1/5 of the sample), which receives no information, or to one of two information treatments (2/5 each), which inform respondents about a heritability estimate of primary school performance of 27% (T^{Low}) or 70% (T^{High}). The questions about own children are only asked to respondents with at least one child aged 0–18.

3.1 Hypothetical scenarios

Using hypothetical scenarios allows us to obtain clean measures of beliefs and preferences while holding constant confounding factors that vary between respondents (Cunha *et al.*, 2022). An additional advantage is the applicability to both parents and non-parents. Comparing both groups allows us to address the potential concern that parents’ answers partly rationalize their own past investment choices.

3.1.1 Description of hypothetical families

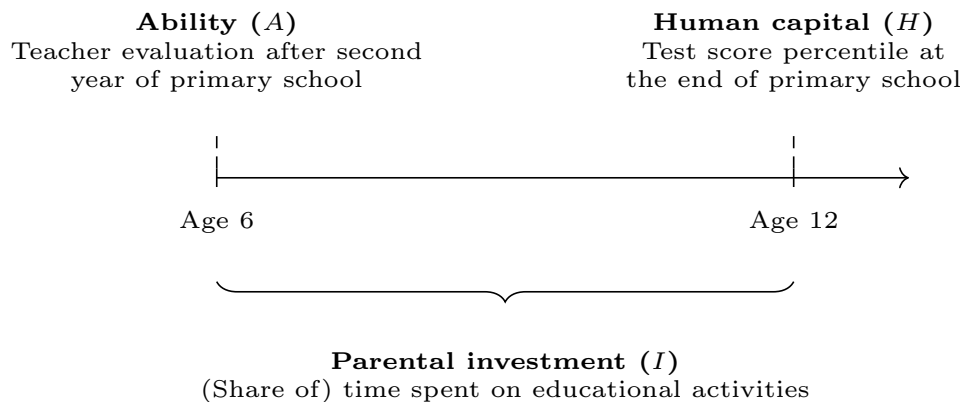
We introduce scenarios of hypothetical families designed to measure the parameters relevant to parental investment decisions described in Section 2. Figure 2 visualizes the setup and maps the constructed timeline to the parameters of the human capital production function.

In all scenarios, the children are 6 years old and have just finished their second year of primary school.⁵ We randomize child gender across respondents. The parents are 35 years

⁵In the Netherlands, children typically enter primary school at age 4. The first two years are similar to kindergarten and formal instruction starts in the third year (“Groep 3”).

old, and both work 32 hours per week in an office job. As is typical for Dutch primary schools, the children attend school (including before/after-school care) for three full days (Monday, Tuesday, and Thursday, until 5pm) and for two shorter days (Wednesday and Friday, until 1pm). Since investment decisions are fundamentally different for parents with one child versus multiple children due to potential distributional concerns, we design scenarios of two families: one with a single 6-year-old child (Singleton scenario) and one with two 6-year-old siblings (Siblings scenario). In the Singleton scenario, ability is randomized between respondents. In the Siblings scenario, one of the siblings has high ability (child H) and one has low ability (child L). In both scenarios, we define low and high ability as the teacher evaluation that the child belongs to the five weakest or best students of a total of 25 students in class.

Figure 2: Setup of hypothetical scenarios



Notes: This figure maps the timeline of the hypothetical scenarios to the inputs and output of the human capital production function. *Ability* (A) is the teacher evaluation at age 6 that the child belongs to the five weakest (child L) or the five best (child H) out of 25 students in class. *Parental investment* (I) is the number of hours per week parents spend on educational activities with the child during primary school. *Human capital* (H) is the percentile in the standardized test at the end of primary school.

Both the Singleton and Siblings scenario allow us to measure attitudes toward appropriate levels of parental time investment as well as the perceived human capital production function. Only the Siblings scenario additionally allows us to measure attitudes toward inequalities between siblings. The Siblings scenario, however, poses the challenge that age differences can confound parental investment responses to differences in ability. For example, if parents choose to invest more in the younger sibling who also appears to be more able, the reason for differential investment is unclear. With twins, age differences are not a concern. However, people may think differently about the unequal treatment of twins compared to regular siblings. To address these concerns, we randomly assign respondents to three equally sized groups. In one group, the siblings are fraternal (i.e., non-identical) twins. In the other two

groups, one child has just turned 6 years old while the other child will soon turn 7 years old so that they are both in the same class. In one of these latter two groups, the younger sibling is the low-ability child, and in the other group the older sibling is the low-ability child.

3.1.2 Parental time allocation

To measure attitudes about appropriate levels of parental time investment and its allocation among siblings, we ask respondents to indicate how many hours per week (between Monday and Friday) the parents should spend with each child on two types of activities: educational activities aimed at improving their school performance, and other family activities dedicated to spending time together. Spending more time on educational activities comes at the cost of having less time to spend on other family activities. This cost characterizes the investment aspect of parenting relative to spending time with the children. Previous research confirms that the different types of activities have different implications for child development. Using US time diary data, Hsin and Felfe (2014) find that educational activities are positively associated with children’s cognitive development, while unstructured activities are not. Fiorini and Keane (2014) also differentiate educational activities from other activities and confirm using Australian data that educational time with parents has a more positive influence on cognitive development than other activities. We obtain values for the endorsed number of hours in six distinct cases: for both types of activities and for the three children (singleton and siblings). We set the maximum number of hours respondents can indicate for each hypothetical family to 40 hours per week.

3.1.3 Perceived human capital production function

To measure the perceived human capital production function, we elicit expectations about child outcomes under different investment scenarios. A similar measurement approach has been used and validated in previous studies (Attanasio *et al.*, 2022a; Boneva and Rauh, 2018). We focus on performance in a mandatory standardized test at the end of primary school. Together with the teacher recommendation, the test result determines secondary school track placement. In the Singleton scenario, we elicit expectations about the performance in this test if the parents invest either 2 or 6 hours per week in educational activities with their child. In the Siblings scenario, we elicit expectations for both child L and child H if the parents spend 1 or 3 hours on educational activities with each child. Across both scenarios, the parents thus spend on average 4 hours in total per week on educational activities. To avoid that parents make assumptions about other activities and their influence on test scores, we fix the number of hours on other family activities to 3 hours per child. In the Siblings

scenario, we randomize whether respondents first see the scenario in which parents invest more in the low or high ability child.

3.1.4 Distributional preferences

We then elicit respondents’ attitudes toward inequalities between siblings using a series of five binary choices summarized in Figure A1. Each question asks respondents to choose between option A and B. In option A in the first question (Figure A2), the parents spend 3 hours on educational activities with child L and 1 hour with child H, resulting in equal test scores (50) for both siblings. In option B, the parents invest more time in child H, which results in a slightly lower test score for child L and a much higher test score for child H. The first choice thus imposes a tradeoff between test score equality and combined achievement (efficiency). The subsequent questions vary the number of hours the parents invest in both children and/or the test scores.

In designing the decision tree, we balanced statistical independence of attributes against the realism required for meaningful elicitation of preferences. In particular, we chose not to include scenarios in which additional investment in the initially lower-ability child widens the absolute outcome gap. Such scenarios are theoretically possible, for example if compensating investment raises that lower-ability child’s performance above the sibling’s. However, introducing these reversals could make the choices difficult to interpret and might risk undermining respondents’ understanding and engagement, and we therefore do not include them. As a consequence, some attributes are correlated across choices, most notably the difference in test scores and the degree of compensatory investment, as shown in Table A1.

Observing respondents’ choices across the five questions that vary in these attributes allows us to identify distributional attitudes using a random utility model, where utility for individual i of choice k in scenario (question) j is a function of four preferences: 1) the sum of test scores of both children (α), 2) the differences in test scores (β), 3) the difference in time spent on educational activities (γ), and 4) the compensatory investment, which refers to the additional hours spent with child L (δ). The model mirrors the utility function from our theoretical framework (Equation 4). We recode the inequality variables so that utility increases in each attribute. Fixing the total investment time across choices makes the task less complex by eliminating the opportunity cost of investment. We estimate the preference distribution using a mixed logit choice model. Based on these estimates, we then predict individual-level preferences conditional on respondents’ observed choices (Revelt and Train,

2000). We use these individual-level preference estimates in our follow-up analyses.

$$\begin{aligned}
u_{ijk} = & \alpha_i \textit{SumOfScores}_{ijk} \\
& + \beta_i \textit{ScoreEquality}_{ijk} \\
& + \gamma_i \textit{InvestmentEquality}_{ijk} \\
& + \delta_i \textit{CompensatingInvestment}_{ijk} \\
& + u_{ijk}
\end{aligned} \tag{5}$$

3.2 Questions about own children

Finally, we ask parents with children up to age 18 questions about their own time investment. For parents with more than one child, we ask these questions about the child that is closest to the age of 6. Since the questions in the hypothetical scenarios relate to time investment in children between age 6 and 12, we phrase the questions as forward-looking if the child is younger than 6, as backward-looking if s/he is older than 12, and as present-oriented if s/he is between 6 and 12. We also ask about the (expected) perceived ability of the child when it is/was in primary school and phrase this question as present-oriented if the child is between 4 and 12 years old. Parents of siblings are additionally asked about outcome and investment equality preferences related to their own children.

3.3 Sample characteristics

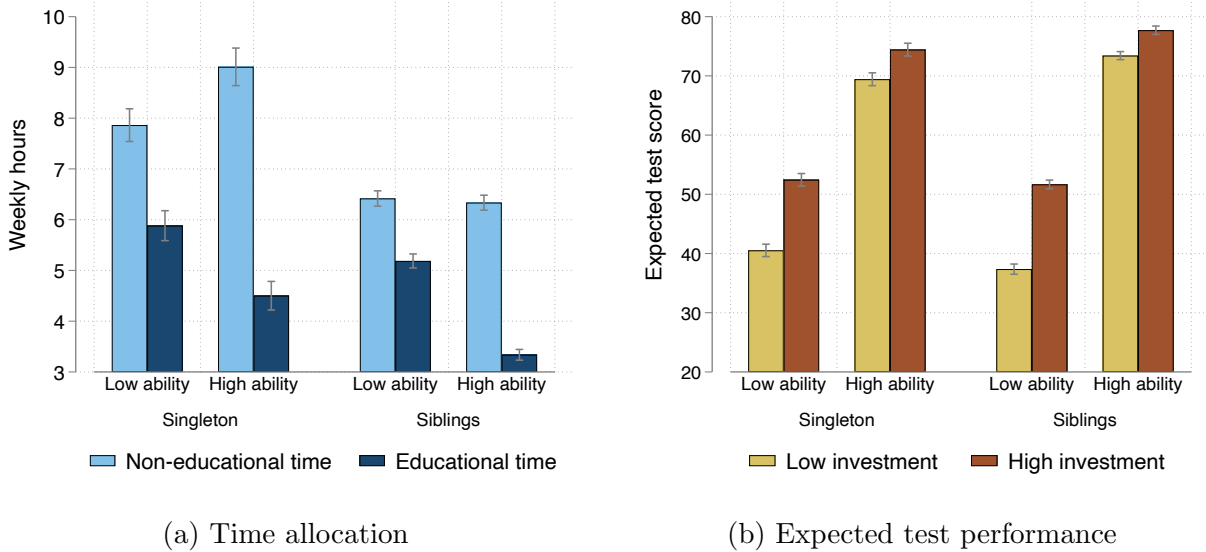
The data were collected as part of the Dutch Longitudinal Internet studies for the Social Sciences (LISS panel) in June 2025. The LISS panel is a representative household panel comprising about 7500 individuals aged 16 and older in 5000 households. It is based on a true probability sample drawn from the population registers of Statistics Netherlands. Self-registration is not possible, and households without internet access are given a computer and broadband connection, so the panel also covers groups that are typically missing from opt-in online panels Scherpenzeel and Das (2018). Our baseline population consisted of all active participants of the LISS panel who were at least 20 years old and registered as either the household head or the partner of the household head as defined in the LISS panel. If both the household head and the partner were active participants, one of them was randomly selected to be invited to the survey. 3149 panel members were invited to participate, of which 2071 participated in the survey (a response rate of 65.8%), and 1997 individuals completed the survey (completion rate of 96.4%). In all analyses, we exclude individuals who did not complete the survey. The median survey duration was 12.8 minutes. 56% of the sample is female and 50% have a tertiary degree. The sample includes respondents between 20 and 67

years old with a median age of 50. 67% of the respondents are parents and 40% have a child living at home.

4 Parental time allocation and its determinants

In this section, we show how respondents allocate time between educational and non-educational activities and between siblings with different abilities. Thereafter, we discuss the underlying mechanisms.

Figure 3: Average time allocation choices and expected test scores



Notes: This figure shows the mean number of weekly hours respondents allocate to educational and other family activities with each child (Panel a) and the mean expected test score percentile at the end of primary school under low and high parental investment (Panel b). In the Singleton scenario, the ability of the child (L or H) is randomized between respondents. In the Siblings scenario, each respondent answers for both child L and child H. In the Singleton (Siblings) scenario, low and high investment are 2 and 6 (1 and 3) hours per week, respectively. Error bars represent 95% confidence intervals for the mean.

4.1 Parental time allocation

Figure 3a shows the allocation of hours to educational and other family activities. In both the Singleton and Siblings scenarios, respondents allocate less time to educational activities than to other family activities. On average, respondents allocate 5.2 (8.5) hours per week to educational activities and 8.4 (12.8) hours to family activities in the Singleton (Siblings) scenario (Table A2), but there is substantial heterogeneity across respondents (see Figure A3a).

Figure 3a also uncovers interesting ability differences in the time allocation. In both the Singleton and Siblings scenarios, respondents allocate more time to educational activities with the lower ability child. Interestingly, respondents allocate more time to other family activities with the higher-ability child in the Singleton scenario, but not in the Siblings scenario. Figure A3b shows the distribution of time division between siblings. While 82% of respondents choose an equal allocation of other family time, only 33% choose an equal allocation of educational activities.

We can derive some preliminary insights about the determinants of parental educational time investment from these observed choices. First, the ability gradient in investment in the Singleton scenario implies that distributional preferences can only explain part of the compensating preference. In the context of our model, this compensating investment is consistent with a higher perceived productivity of investment for lower-ability children. Second, the excess mass around the equal division of hours between child L and child H shown in Figure A3b is evidence for a preference for equal time investment (Berry *et al.*, 2025). Third, Table A3 shows that, compared to the higher-ability child, respondents allocate around 0.5 (1.2) more hours on educational (other family) activities to the lower-ability child in the Siblings scenario than in the Singleton scenario. This difference in the ability gradient in the number of hours suggests that distributional preferences are relevant. However, the difference is not enough to identify distributional preferences, since for example the perceived production function and opportunity cost function may also differ between scenarios. For this reason, we use a separate preference-elicitation module to identify distributional preferences (Section 4.3).

To summarize, Figure 3a confirms that respondents on average prefer to compensate inequalities between siblings. The comparison of the Singleton and Siblings scenarios suggests that both a perceived substitutability of ability and investment, and distributional preferences play a role. Below, we provide more direct evidence on these potential mechanisms.

4.2 Perceived production function

Figure 3b shows that respondents perceive both ability and parental time investment to have a positive influence on test scores at the end of primary school. Conditional on equal investment, belonging to the top compared to the bottom quintile of the class at the start of primary school is associated with a 22 – 36 percentile points higher perceived test score performance at the end of primary school. 6 hours compared to 2 hours spent on educational activities per week (Singleton scenario) and 3 hours compared to 1 hour (Siblings scenario) are associated with a 12- and 14-percentile points higher test result, respectively, for lower-

ability children, and a 4 – 5 point higher test score for higher-ability children (Table A4).⁶ Thus, we find that both inputs are perceived as substitutes: respondents believe that time investment has a more positive effect on the lower ability child. This is in line with Berry *et al.* (2025), who find that in high-income countries the returns to tutoring are perceived to be higher for lower-ability children compared to higher-ability children.⁷

Table 1: Parental investment regimes (Siblings scenario)

	Reinforcing	Equal	Compensating	Total
Complements	1.4%	9.4%	11.6%	22.3%
Equal returns	0.3%	3.6%	3.0%	6.9%
Substitutes	1.6%	20.4%	48.9%	70.8%
Total	3.2%	33.4%	63.4%	100%

Notes: This table cross-tabulates the perceived complementarity of ability and investment with the allocation of educational time between child L and child H in the Siblings scenario. Rows classify respondents by whether they perceive ability and investment as complements, as having equal returns, or as substitutes. Columns classify respondents by whether they allocate more educational time to child H (*reinforcing*), equal time to both children (*equal*), or more time to child L (*compensating*). A Pearson chi-square test rejects the null hypothesis that perceived complementarity and the allocation of educational time are independent ($\chi^2(4) = 75.26$, $p < 0.001$).

The combination of the perceived complementarity/substitutability and the investment allocation allows us to distinguish types of families in Table 1. For example, the top row shows that 22% of respondents perceive ability and investments as complements; 7% believe in equal returns (middle row), whereas 71% perceive ability and investments to be substitutes (bottom row). The columns indicate how respondents allocate educational time across the siblings. The diagonal represents individuals who act consistently with returns maximization: e.g., the bottom-right cell represents respondents who think of ability and investment as substitutes and allocate more time to the low ability child. A χ^2 test on the percentage of individuals in the cells of Table 1 rejects the independence of perceived complementarity and time allocation between siblings ($p < 0.001$), indicating that the perceived production function affects time allocations. However, a sizable share of respondents in the off-diagonal elements deviate from returns-maximization. For example, around 1 out of 5 families prefer equal time investments across two siblings even though they believe the investments to be more productive among the lower ability child (bottom row, second column). This is another

⁶The similar magnitude of the perceived returns to 4 more hours (Singleton scenario) and 2 more hours (Siblings scenario) of investment is consistent with decreasing marginal returns to investment.

⁷Interestingly, ability and investment have sometimes been shown to be perceived as complements in the context of developing countries (Berry *et al.*, 2025).

sign that distributional preferences play a role, which we will turn to next.

4.3 Distributional preferences

To estimate the parameters of the random utility model (Equation 5), we use a mixed logit model. We construct a data set of 2 choice options (A or B) and their attributes for each of the 5 questions respondents face. The dataset thus contains $2 \times 5 \times 1997 = 19,970$ observations. The dependent variable is a dummy that takes the value 1 if an option has been chosen, and 0 if not. Each option is characterized by a combination of four attributes: the sum of scores of both siblings, the equality of scores, the equality of investment, and the degree of compensatory investment. We account for correlations between the random coefficients (Hole, 2007).

Table 2: Results of the mixed logit model explaining choices of investment options

	Dependent variable: 1=Option is chosen	
	Mean	SD
Sum of test scores (α)	0.24*** (0.04)	0.16*** (0.02)
Test score equality (β)	0.09*** (0.03)	0.09*** (0.01)
Investment equality (γ)	1.71*** (0.30)	1.22*** (0.36)
Compensating investment (δ)	0.87*** (0.22)	0.97*** (0.30)
Respondents	1997	
Observations	19970	

Notes: This table reports estimates of the mixed logit model of the five binary choices between investment options in the Siblings scenario (Equation 5, Figure A1). *Sum of test scores* is the combined achievement of the siblings in percentiles of the test score distribution. *Test score equality (investment equality)* is minus the absolute difference in test scores (hours of educational activities) between child L and child H. *Compensating investment* is the additional number of hours allocated to child L. The columns report means and SDs of the random coefficients. Estimated using maximum simulated likelihood with 500 Halton draws. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 2 shows the means of the distributions of random coefficients estimated using the mixed logit model. All estimates are statistically significant, meaning that respondents are more likely to choose options with a higher sum, more equal test scores, a more equal investment allocation and higher investment in child L. To interpret the magnitude of the

coefficients, we can evaluate trade-offs at the estimated mean coefficients. $\frac{\beta}{\alpha} = 0.38$ tells us that subjects on average are willing to give up about 0.4 total test score points to reduce the test score gap by 1 unit. Likewise, $\frac{\gamma}{\alpha} = 7.1$ means that subjects are willing to sacrifice a sum of test scores of around 7 to reduce investment inequality by 1 hour. Lastly, respondents give up about 3.6 points for one hour additional investment in child L ($\frac{\delta}{\alpha} = 3.6$).

4.4 Validation of hypothetical survey measures

Internal validity: In Table 3 we test whether our measures for the determinants of parental investment predict the allocations of time. For this purpose, we construct three individual-level variables based on the perceived human capital production function. Perceived return to investment is defined as the expected test score with high time investment minus the expected test score with low time investment. In the Singleton scenario, this is defined for only one child with randomized ability. In the Siblings scenario, it is averaged over child L and H. For comparability of both scenarios, we divide this variable by 2 in the Singleton scenario, where the difference between high and low investment is twice as large as in the Siblings scenario. Analogously, we calculate the perceived return to ability for the Siblings scenario as the difference in expected test scores between the high and low ability child averaged over both investment scenarios. Perceived complementarity is defined for the Siblings scenario as the difference in the perceived returns to investment between child H and L. If it is negative, ability and investment are perceived as substitutes.

We standardize the explanatory variables to compare their sizes. As expected, perceived returns to investment are positively associated with attitudes toward the share of time parents should spend on educational compared to other family activities (Columns 1, 2 & 4). Perceived returns to ability are negatively associated with the share of time devoted to educational activities, indicating that parents who view children’s outcomes as largely determined by ability invest less in education (Columns 3 & 4). Perceived complementarity is negatively associated with compensating investment (Column 5). Moreover, controlling for a set of dummies for each possible path in the decision tree does not affect the standard error and coefficient much, indicating that the influence of perceived complementarity and preferences on time allocation are largely orthogonal (Column 6). Individually, preferences for the sum of scores, a stronger preference for equal test scores and a preference for investing more time in child L from the mixed logit model all positively predict the share of time spent with child L (Columns 7–9). Individuals with a stronger preference for investment equality allocate hours more equally (Column 10). The joint predictive power of the distributional preferences as captured by the path dummies corresponds to an adjusted R^2 of 0.05, equal to

the predictive power of the perceived complementarity ($R^2 = 0.05$). Together, the perceived complementarity and distributional preferences account for 11% of the variation in the share of time allocated to child L (adj. $R^2 = 0.09$).

Table 3: Associations between time allocation and its determinants

	Share educational time				Share educational time with child L					Deviation from equal investment
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Perc. returns to inv.	5.01*** (0.37)	1.21*** (0.31)		2.07*** (0.32)						
Perc. returns to ability			-2.01*** (0.32)	-2.68*** (0.33)						
Perc. complementarity					-2.97*** (0.31)	-2.76*** (0.31)				
Sum of test scores (α)							2.30*** (0.30)			
Test score equality (β)								2.47*** (0.30)		
Comp. investment (δ)									0.60* (0.31)	
Investment equality (γ)										-0.61** (0.27)
Constant	37.13*** (0.37)	40.30*** (0.31)	40.32*** (0.30)	40.32*** (0.30)	62.04*** (0.30)	62.05*** (0.30)	62.05*** (0.31)	62.05*** (0.31)	62.07*** (0.31)	13.21*** (0.29)
Path dummies	No	No	No	No	No	Yes	No	No	No	No
Scenario	Singl.	Sibs	Sibs	Sibs	Sibs	Sibs	Sibs	Sibs	Sibs	Sibs
R^2	0.09	0.01	0.02	0.04	0.05	0.11	0.03	0.03	0.00	0.00
Adjusted R^2	0.09	0.01	0.02	0.04	0.05	0.09	0.03	0.03	0.00	0.00
Observations	1982	1980	1980	1980	1960	1960	1960	1960	1960	1960

Notes: This table reports OLS regressions of time allocation on the perceived production function and the distributional preference parameters. The dependent variable is the share of time spent on educational activities in Columns 1–4, the share of educational time allocated to child L in the Siblings scenario in Columns 5–9, and the absolute deviation from equal allocation in Column 10. *Perceived returns to investment* is the expected test score with high minus low investment (Singleton scenario: 6 vs. 2 hours; Siblings scenario: 3 vs. 1 hour, averaged over child L and child H). The difference between high and low investment is divided by 2 in the Singleton scenario. *Perceived complementarity* is the perceived return to investment for child H minus that for child L. α , β , γ and δ are individual-level posterior means of the random coefficients of the mixed logit model in Table 2. All explanatory variables are standardized to mean zero and unit standard deviation. *Path dummies* are indicator variables for each unique response path in the decision tree (Figure A1). Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Overall, Table 3 provides evidence that both perceived returns to investment, as well as distributional preferences, influence resource allocations within the household, and that these influences are largely independent. Given the measurement error in the individual-level posterior means, the exact marginal contribution of each preference is harder to quantify. Still, these correlations in the expected directions represent a diagnostic check confirming the suitable use of the perceived returns variables and the individual-level posterior means

as dependent variables in the next section (Sarrias, 2020).

Table 4: Associations with questions about own children

	Questions about own children			
	Hours educational activities	Hours all activities	Test score equality important	Investment equality important
<i>Panel A: All parents of children aged 0–18</i>				
Hours educational activities	0.49***			
Hours all activities		0.37***		
Test score equality (β)			0.10*	
Investment equality (γ)				0.06
Observations	643	643	362	362
<i>Panel B: Reference child aged 6–12</i>				
Hours educational activities	0.47***			
Hours all activities		0.40***		
Test score equality (β)			0.11	
Investment equality (γ)				0.14**
Observations	278	278	208	208

Notes: This table reports pairwise Pearson correlations between measures from the hypothetical scenarios (rows) and the corresponding answers to the questions about respondents' own children (columns). *Hours educational activities* and *hours all activities* pool the Singleton and Siblings scenarios for the hypothetical measures. β and γ are individual-level posterior means of the random coefficients of the mixed logit model in Table 2. *Test score equality important* and *Investment equality important* refer to the stated importance of equality between the own children. Columns 1–2 include respondents with at least one child aged 0–18, Columns 3–4 respondents with more than one child aged 0–18. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

External validity: Table 4 assesses the external validity of our survey measures on hypothetical families using the answers about respondents' own children. 643 respondents in our sample indicate that they have at least one child younger than 18 years. We ask parents with multiple children about the time they spend with the child that is closest to the age of 6. The number of hours they reportedly spend with this child on educational activities and both activities combined correlate 0.49 and 0.37 with the values they state in the hypothetical scenarios. In addition, we find that respondents with lower ability perceptions of their own child allocate more time to educational activities: OLS estimates imply that a 10-percentile higher perceived ability of their own child is associated with a 3 percentage-point lower share of time spent on educational activities ($p < 0.01$). 362 respondents in our sample indicate that they have more than one child younger than 18 years. We ask these people questions about

how important equality in test scores and time investment between their children is to them. The correlations between the responses to these questions and the corresponding estimated mixed logit parameters are lower and only the correlation for outcome equality is statistically significant at the 10% level (Panel A). One possible reason for this is that, compared to the hypothetical scenarios, actual children differ in age, gender and other characteristics different from ability that might make unequal time allocation acceptable for parents. It is also possible that respondents' own children do not differ as strongly in their abilities, making inequality considerations less salient. Moreover, the correlations are likely attenuated due to measurement error in the individual posterior coefficients. When constraining the sample to 208 parents whose reference child is in the same age range (Panel B) as the children in the hypothetical scenarios, the correlations for outcome equality increases to 0.11, but loses statistical significance, and the correlation for investment inequality preferences increases to 0.14 ($p < 0.05$). Together, the results suggest that the choices in the hypothetical scenarios reflect investment patterns and preferences in real life. However, measurement error in the individual-level posterior means as well as potential differences between the hypothetical and respondents' own children attenuate the correlations in inequality preference measures.

4.5 Heterogeneity

Table A5 reports differences in time allocation, beliefs and preferences between five pre-registered subgroups H , estimated using Equation 6: the gender of the children in the hypothetical scenarios, whether respondents have a tertiary degree, respondent's gender, whether they have children, and whether they have more than one child.

$$Y_{i,s} = \theta_0 + \theta_1 H_i + \epsilon_{i,s} \quad (6)$$

We find no differences in the allocation of time, the perceived production function, or distributional preferences between scenarios in which the hypothetical children are boys or girls. Interestingly, respondents with a tertiary degree on average allocate an almost 5 percentage points lower share of their time to educational activities. This counterintuitive pattern might be partly explained by the heterogeneity in the perceived production function. While the perceptions of the returns to educational activities are around 0.1 standard deviations higher among educated respondents, the gradient in perceived returns to ability, which is negatively associated with the time allocated to educational activities (Table 3), is even larger (approximately 0.5 standard deviations). Other potential explanations could be worthwhile to study in future work. For example, educated respondents might perceive a higher opportunity cost to educational time investment. Alternatively, they might interpret educational and

non-educational activities differently, or perceive negative returns to educational time with respect to other child outcomes than school performance. Highly educated individuals also allocate more time to the lower-ability child, in line with the finding by Hsin and Felfe (2014) that educated mothers compensate more than less educated mothers. Consistent with this, they seem to have a stronger preference for maximizing the sum of test scores, and for equalizing educational outcomes, and a weaker preference for equalizing investment. In contrast, they have a weaker direct preference for investing in child L. Female respondents allocate less time to educational activities as a share of total activities. They also differ in their distributional preferences from male respondents, placing a lower weight on the sum and equality of test scores of children and a higher weight on investment equality and on investing more time in child L. Parents perceive lower returns to investment, and they allocate less time to educational activities as a share of total activities compared with non-parents.

4.6 Robustness

The patterns we observe in previous sections are largely robust to limiting the sample to the pure control group that was not exposed to information provision (see Section 5), and to splitting the sample by the randomized ability in the Singleton scenario, the three randomized groups in which the children are described either as twins or as siblings with a small age difference, and to varying the order of the perceived returns questions (Tables S.1, S.2, and S.3). The mixed logit estimates are more sensitive to the choice of subsample, reflecting limited statistical power in smaller samples: while all mean preference parameters remain positive, β is not statistically significant in the pure control group and δ is not statistically significant in the subgroup where child L is younger (Table S.3).

5 The role of heritability beliefs

Which factors determine the heterogeneity in perceptions about the human capital production function and parental time allocation? This section studies the potential role of beliefs about the relative importance of genetics for children’s educational achievements (“heritability beliefs”), which are an interesting candidate as they have been related both to perceptions about the malleability of traits and fairness considerations. We use an information provision experiment to study the effect of heritability beliefs on the parameters of the perceived human capital production function ($\frac{\partial \mathbb{E}[H]}{\partial A}$, $\frac{\partial \mathbb{E}[H]}{\partial I}$, $\frac{\partial^2 \mathbb{E}[H]}{\partial A \partial I}$), the preference parameters for efficiency (α), outcome equality (β) and investment equality (γ) in the parental utility function, and the level of parental investment ($\sum_i I_i$), and its allocation between siblings ($\frac{I_L}{I_L + I_H}$).

5.1 Relation to theory

Perceived human capital production function: Beliefs about the process of human capital formation influence parental investment decisions, and children’s genetic endowments play an important role in this process (Houmark *et al.*, 2024). However, there is substantial uncertainty about how they do so, leaving room for individual variations in beliefs with potential implications for parental investment decisions. Moreover, several popular science books, commentaries and related media articles have used insights from twin and adoption studies to argue that parents overestimate the influence of parenting on their children’s outcomes (e.g., Caplan, 2011; Harris, 2009; Plomin, 2019; Miller, 2023).⁸ Based on this, we hypothesize that individuals with higher heritability beliefs perceive the returns to investment to be lower than people who think genetics plays a limited role. Furthermore, heritability beliefs may not only affect the perceived returns to investment, but also the perceived interaction with ability in the production of human capital. For example, individuals with strong heritability beliefs might perceive initial ability differences as a stronger signal of learning capacities, and thus the returns to investment to be higher at higher ability levels.

Distributional preferences: Whether genetic differences should be evaluated as a fair or unfair source of inequality is subject to philosophical debate. One argument is that genes constitute circumstances beyond an individual’s control and should therefore be compensated (Roemer and Trannoy, 2016). Others argue that inequalities arising from genetic endowments can be morally acceptable and do not require compensation (Nozick, 1974). These views can have implications for how parents think about inequalities between siblings, and the hypothesized effect of heritability beliefs depends on whether genetic differences are perceived as fair or unfair. Recent empirical evidence finds that people prefer to compensate inequalities arising from genetic differences (Pogliano, 2024), suggesting that parents with strong heritability beliefs might be less willing to accept outcome differences between siblings. These beliefs might then also have implications for attitudes toward investment inequality: if parents are more averse to outcome inequality, they may be more likely to accept differences in investment as a means of achieving outcome equality.

5.2 Design of information provision experiment

Our information provision experiment design follows the structure in Figure 1.⁹

⁸In the behavioral genetics literature, the informativeness of heritability estimates for environmental interventions is strongly debated. For an overview, we refer to Visscher *et al.* (2008) and Rietveld (2026).

⁹The experiment was pre-registered on OSF (osf.io/p9zvww). We discuss deviations from the pre-analysis plan in Section 5.3.5 and Supplementary Section S.4.

Prior beliefs: To elicit prior beliefs without priming respondents about the role of genetics, we first ask respondents to indicate up to five factors that they think determine whether a child performs well or less well in primary school. As the main quantitative measure of prior beliefs, we then ask the question: “What percentage of the differences in primary school performance between children do you think is due to genes (which you inherit from your parents)?”

Posterior beliefs: We ask two different posterior belief questions to measure whether respondents update their beliefs in response to the information treatments (the first-stage effect). We take several steps to prevent respondents from simply repeating their answer to the prior belief question. First, both questions ask about slightly different outcomes. Second, one of the questions includes a Likert response scale and is asked directly after the treatment, while the other has the same response scale as the prior belief question but is asked toward the end of the survey. The first question (Immediate posterior) is: “How important do you think genes are in determining whether a child is doing well in the first year of primary school?”. The second question (Delayed posterior) is: “How much of the differences in test scores (such as CITO) at the end of primary school do you think can be attributed to genetic differences (differences in genes) between children?”.

Information treatments: We exploit variation in published heritability estimates of children’s performance at the end of primary school to randomly assign individuals to one of three treatment arms. 40 percent of the sample are each informed about either a relatively low or high heritability estimate. The low heritability estimate (27%) refers to the so-called “SNP heritability” calculated using molecular data, and the high heritability (70%) results from a twin study in the same sample.¹⁰ Both estimates are reported in Rimfeld *et al.* (2018) for Key Stage 2 test scores at age 11 in the UK. Respondents are shown a bar chart that contrasts their prior estimate with the low or high heritability estimate (Section S.5). 20 percent are assigned to a pure control group providing no information. At the end of the survey, respondents who have been provided information are carefully debriefed about the methods used to estimate heritability and its interpretation.

Our main interest is studying the effect of quantitative differences in perceptions about the importance of genetics. The empirical analysis therefore focuses on a comparison between the low heritability treatment group (T^{Low}) and the high heritability treatment group (T^{High}). This active control group design has several important advantages over a passive control

¹⁰The gap between heritability estimates from twin studies and those obtained from molecular data has been termed “missing heritability” and is observed for many phenotypes.

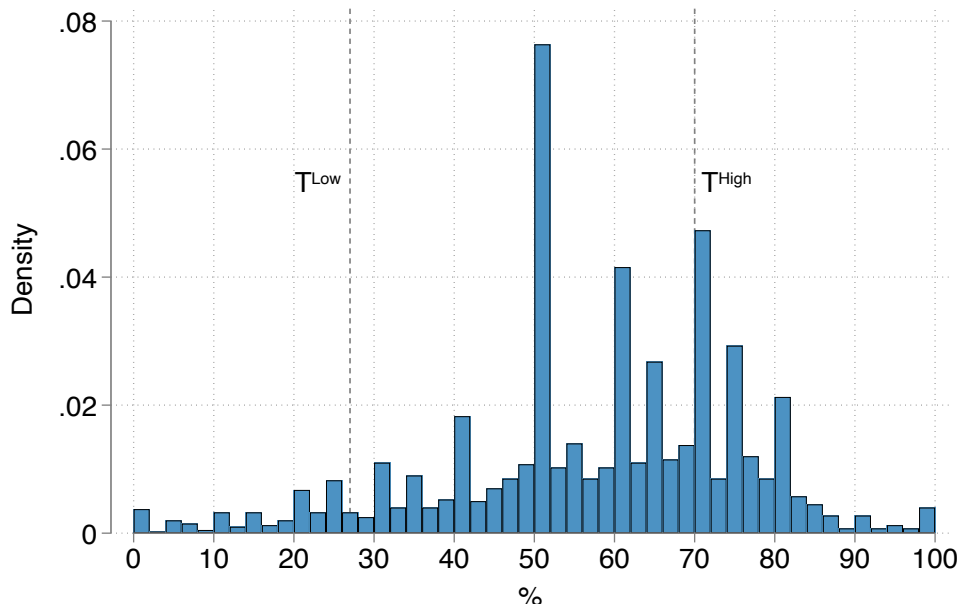
group design, in which only one piece of information is provided to the treatment group, and no information to the control group (Haaland *et al.*, 2023; Settele, 2022). Most importantly, the active control design can induce differences in posterior beliefs even for respondents whose priors coincide with one of the informed values. Identification of the treatment effect does therefore rely less on the distance between prior beliefs and the informed value. In contrast, in a passive control group design, the direction and magnitude of the treatment effect can depend mechanically on respondents’ prior beliefs. In addition, the use of an active control group allows us to abstract from attention effects or other side effects of information provision that are common to both treatment arms.¹¹ Including a pure control group as an alternative comparison group also has advantages. In particular, it allows us to study correlations between prior beliefs and outcomes that are not confounded by information provision. It also enables us to examine a broader treatment definition that captures not only informational effects about heritability, but also other effects such as priming or emotional responses. In some contexts, the more policy-relevant comparison may be between the provision of information and the absence of information altogether (Haaland *et al.*, 2023).

Randomization: We randomized individuals into treatment groups within strata based on the following indicator variables available in the existing panel data: gender, completion of tertiary education, age below 48, and having children at home. In addition, we stratified on a measure of how much respondents value equality in life. We split this variable at the median and defined a separate category for missing values. Respondents with missing values for one of the other variables were assigned to a separate stratum. In total, this procedure resulted in 49 strata ($2 \times 2 \times 2 \times 2 \times 3 + 1$).

5.3 Results of information provision experiment

This section reports the results of the information provision experiment designed to test the causal effects of heritability beliefs. We first provide evidence for the first-stage effect on posterior beliefs and subsequently discuss the treatment effects on parental time allocation and the potential underlying mechanisms.

Figure 4: Distribution of prior beliefs



Notes: This figure shows the distribution of prior beliefs about the percentage of differences in primary school performance between children that is due to genes. The vertical lines indicate the heritability estimates of 27% and 70% provided in the T^{Low} and T^{High} treatments, respectively.

5.3.1 Prior beliefs about child development

On average, respondents believe that genetics explain 57% of the differences in primary school performance, with substantial variation around the mean (Figure 4). The majority of respondents (70%) indicate a value between the 27% (T^{Low}) and 70% (T^{High}) provided in the information treatments.¹²

¹¹These features imply that the monotonicity assumption and exclusion restriction of two-stage least squares estimations, in which posterior beliefs are instrumented by treatment assignment, are more likely to hold (Vilfort and Zhang, 2025). While we primarily focus on the reduced-form treatment effects in Section 5, we also provide two-stage least squares results.

¹²Figure A4 categorizes the open text responses about the perceived determinants of children's primary school performance. Interestingly, only a small share of respondents mention genetics. Instead, the most frequently named categories are the home and school environment, and teachers in particular. Several potential explanations could help reconcile the relatively high perceived heritability with the low share of responses mentioning genetics in the open prior question. Some of the factors in the open text responses are intermediate outcomes that are themselves partly influenced by children's genes, such as their cognitive (e.g., intelligence) and non-cognitive (e.g., motivation) skills. Respondents might also feel uncomfortable stating genetic explanations, as they are sometimes perceived with a discriminatory connotation. Finally, how often a certain concept is mentioned may differ from the perceived importance.

5.3.2 First-stage treatment effects

Table 5 shows a strong effect of the information treatment on posterior beliefs. Respondents in T^{High} believe that genetic differences account for almost 24 percentage points more of the differences in test score performance at the end of primary school than respondents in T^{Low} . Moreover, the treatment intensity varies by prior beliefs. As expected, respondents update their beliefs more strongly if the difference between the treatment value and their prior belief is large (Table A7).

Table 5: Treatment effects on posterior beliefs

	Delayed posterior (%)			Immediate posterior (Likert)		
	(1)	(2)	(3)	(4)	(5)	(6)
Prior	6.42*** (0.44)			0.24*** (0.04)		
T^{High}		23.71*** (0.79)	7.61*** (1.01)		1.21*** (0.06)	0.79*** (0.08)
T^{Low}			-16.06*** (1.08)			-0.41*** (0.09)
Constant	18.61*** (3.16)	39.28*** (1.90)	54.87*** (1.74)	3.25*** (0.34)	4.03*** (0.15)	4.47*** (0.13)
Observations	407	1590	1997	407	1590	1997

Notes: This table reports associations of posterior beliefs with prior beliefs and the effects of the information treatments on posterior beliefs. The delayed posterior (Columns 1–3) is the percentage of differences in test scores at the end of primary school that respondents attribute to genetic differences, elicited after the hypothetical scenarios. The immediate posterior (Columns 4–6) is the perceived importance of genes for doing well in the first year of primary school on a Likert scale, elicited directly after the information provision. Columns 1 and 4 include the pure control group only. Columns 2 and 5 exclude the pure control group, so that T^{High} is relative to T^{Low} . Columns 3 and 6 include all respondents, with the pure control group as the reference category. Prior is in units of 10. All models control for strata dummies. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

5.3.3 Second-stage treatment effects

For each outcome measure, we report causal effects of having been assigned to T^{High} instead of T^{Low} , excluding the pure control group. Our main specification thus estimates the following OLS regression of outcome Y for respondent i in scenario s (Singleton or Siblings) on an indicator for the high heritability treatment T^{High} . $\mu_{j(i)}$ denotes strata fixed effects, ν_s is a

scenario fixed effect and $\epsilon_{i,s}$ is the error term.

$$Y_{i,s} = \theta_0 + \theta_1 T_i^{High} + \mu_{j(i)} + \nu_s + \epsilon_{i,s} \quad (7)$$

We also report correlations between the outcome and prior beliefs for the pure control group to benchmark the treatment effects. Table A8 confirms that pre-intervention characteristics are overall balanced between the three experimental groups, with a slightly higher income in T^{Low} than T^{High} . Table 6 displays the associations with prior beliefs for the control group (Panel A), the reduced-form effect of T^{High} (Panel B), and 2SLS estimates (Panel C) for our main outcomes of interest: time allocation, the perceived production function and distributional preferences.

Time allocation: Column 1 in Table 6 displays a strong positive correlation between prior beliefs and the share of total hours allocated to educational activities in the control group. An increase in prior beliefs by 10 percentage points is associated with a 1.5-percentage-point stronger focus on educational compared to other family activities, corresponding to approximately 14 more minutes allocated to educational activities per week (Table S.5). Apparently, respondents who believe that genes are more important in driving test scores on average allocate more time to educational investment compared with respondents who think of genes as being less important. The main coefficient of interest for T^{High} in Panel B is positive, but small and statistically indistinguishable from zero. This suggests that the correlation between prior beliefs and educational hours does not reflect a causal relationship. Furthermore, the 2SLS estimates in Panel C indicate that with 95% confidence we can rule out increases in the share of educational time of 0.8 percentage points and higher for each 10-percentage point increase in delayed posterior beliefs induced by T^{High} .¹³

Column 2 in Table 6 shows the results for the allocation of time between child L and H in the Siblings scenario. While prior beliefs are weakly negatively correlated with the degree of compensating investment, the causal effect points in the opposite direction. Respondents in T^{High} think that parents in the Siblings scenario should spend a 1.2-percentage-point higher share of their time on educational activities with the low-ability child compared to the high-ability child. This translates into a 0.5-percentage-point higher share of time allocated to child L for each 10 percentage points increase in posterior heritability beliefs induced by the information provision. However, the statistical significance does not survive adjustment for

¹³For two reasons, the two-stage least squares estimates should be interpreted primarily as a scaling exercise of the reduced-form treatment effects (Settele, 2022). First, posterior beliefs used in the two-stage least squares specification are elicited after the outcome variables, which could raise concerns about potential ex-post rationalization. Moreover, the information treatment may affect beliefs other than perceived heritability that are relevant for parental investment decisions, which would violate the exclusion restriction.

Table 6: Treatment effects on time allocation, perceived production function and distributional preferences

Scenario	Time allocation		Perceived production function			Distributional preferences			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Share educ. time	Share educ. time with child L	Perc. returns to ability	Perc. returns to investment	Perc. complementarity	Sum of test scores (α)	Test score equal. (β)	Investment equal. (γ)	Compensating invest. (δ)
	Both	Sibs	Sibs	Both	Sibs	Sibs	Sibs	Sibs	Sibs
Panel A: Association with prior beliefs (pure control)									
Prior	1.46*** (0.48)	-0.65* (0.39)	0.47 (0.65)	0.20 (0.18)	0.43 (0.52)	0.01 (0.03)	-0.01 (0.03)	-0.06** (0.03)	-0.06** (0.03)
Constant	36.56*** (3.33)	60.48*** (2.85)	10.87** (4.28)	3.00* (1.78)	-7.33* (3.88)	-0.22 (0.26)	0.14 (0.26)	0.55** (0.22)	0.74*** (0.24)
Observations	807	396	407	814	407	407	407	407	407
Panel B: Treatment effects (excl. pure control)									
T ^{High}	0.57 (0.68)	1.17* (0.70)	1.22 (1.10)	0.18 (0.38)	0.43 (0.91)	0.04 (0.05)	0.05 (0.05)	0.09* (0.05)	0.06 (0.05)
Constant	43.02*** (1.60)	59.91*** (1.64)	25.46*** (2.59)	3.11*** (0.83)	-8.05*** (2.00)	-0.01 (0.11)	-0.02 (0.12)	-0.08 (0.11)	-0.05 (0.11)
Observations	3155	1564	1590	3180	1590	1590	1590	1590	1590
BH-adjusted p -value	0.568	0.429	0.561	0.639	0.639	0.568	0.561	0.429	0.561
Panel C: 2SLS estimates (excl. pure control)									
Delayed posterior	0.24 (0.28)	0.49* (0.29)	0.51 (0.46)	0.07 (0.16)	0.18 (0.38)	0.02 (0.02)	0.02 (0.02)	0.04* (0.02)	0.02 (0.02)
Constant	42.06*** (2.16)	57.94*** (2.27)	23.44*** (3.46)	2.81** (1.13)	-8.76*** (2.66)	-0.08 (0.15)	-0.11 (0.16)	-0.23 (0.15)	-0.14 (0.15)
Observations	3155	1564	1590	3180	1590	1590	1590	1590	1590
First-stage F	925.60	890.90	903.07	917.15	903.07	903.07	903.07	903.07	903.07

Notes: This table reports associations of the main outcomes with prior beliefs in the pure control group (Panel A), the effects of T^{High} relative to T^{Low}, excluding the pure control group (Panel B), and 2SLS estimates in which the delayed posterior belief is instrumented with T^{High} (Panel C). *Share educ. time* is the share of hours on educational activities in total hours on educational and other family activities. *Share educ. time with child L* is the share of educational hours in the Siblings scenario allocated to child L. *Perceived returns to ability* is the expected test score of child H minus that of child L, averaged over both investment levels. *Perceived returns to investment* is the expected test score with high minus low investment (Singleton scenario: 6 vs. 2 hours; Siblings scenario: 3 vs. 1 hour, averaged over child L and child H). The difference between high and low investment is divided by 2 in the Singleton scenario. *Perceived complementarity* is the perceived return to investment for child H minus that for child L. α , β and γ are individual-level posterior means of the random coefficients of the mixed logit model in Table 2, standardized to mean zero and unit standard deviation. Columns 1 and 4 pool the Singleton and Siblings scenarios (two observations per respondent) and control for the scenario. Prior and posterior are in units of 10. All models control for strata dummies. Robust standard errors in parentheses. Standard errors are clustered at the respondent level for outcome measures pooling the Singleton and Siblings scenarios. BH-adjusted p -values are corrected for multiple hypothesis testing across the nine outcomes in Panel B following Benjamini and Hochberg (1995). * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

multiple hypothesis testing at conventional false discovery rates (Benjamini and Hochberg, 1995). We therefore cannot rule out that the positive treatment effect on compensating investment reflects sampling variation.

Perceived production function: Consistent with the absence of a treatment effect on educational hours, Columns 3–5 show no evidence for treatment effects on the perceived returns to investment. We also do not find effects on the perceived returns to ability and the perceived complementarity of ability and investment.

Distributional preferences: Overall, we also do not find evidence that heritability beliefs and information affect distributional preferences (Columns 6–9). While the effect of T^{High} on investment inequality aversion (γ) is positive and statistically significant at the 10% level, it does not survive multiple hypothesis adjustment. To account for measurement error in the individual-level parameters, we also estimate interactions of T^{High} and T^{Low} with the preference parameters directly in the mixed logit model (Table A9), generally confirming the absence of a treatment effect on distributional preferences.

5.3.4 Heterogeneity

Table A10 reports heterogeneous treatment effects estimated using Equation 8 for the same pre-registered variables as in Section 4.5.

$$Y_{i,s} = \theta_0 + \theta_1 H_i + \theta_2 T_i^{\text{High}} + \theta_3 T_i^{\text{High}} \times H_i + \mu_{j(i)} + \nu_s + \epsilon_{i,s} \quad (8)$$

Overall, we find no evidence of systematic subgroup differences in treatment effects. Column 3 shows a positive interaction of T^{High} and the respondent being female on perceived returns to ability, but the interaction coefficient is not statistically significant at the 5% level after adjusting for multiple testing across the nine outcome variables in the gender heterogeneity analysis.

Ex ante, it is not clear whether respondents see genetic differences as fair or unfair and depending on these views, they might either accept inequalities or have a preference for compensating them. To test whether respondents’ fairness views moderate the influence of heritability information, we asked them before the information provision whether they (dis)agree (on a scale from 1 to 7) that it is fair if genetic differences between siblings lead to different educational outcomes. In addition, the reaction to heritability information might differ depending on the extent to which respondents view genetic differences as deterministic. For example, a high perceived heritability presumably affects perceived returns to investment

more negatively if genetic differences are perceived as deterministic. To test this, our survey included a pre-treatment question whether respondents (dis)agree (again on a scale from 1 to 7) that two siblings with different genetic predispositions certainly end up with different educational outcomes. The bottom two panels in Table A10 show that neither of the variables moderates the effect of T^{High} on any of the outcomes.

5.3.5 Robustness

These results are robust to alternative specifications including the pure control group in which we regress the outcomes on both T^{Low} and T^{High} (Table S.4), to analyzing the allocated raw hours instead of shares and the Singleton and Siblings scenarios separately (Table S.5), and to including a set of control variables (Tables S.6, S.7 and S.8). Finally, our conclusions do not depend on deviations from the pre-analysis plan. Supplementary Section S.4 maps each pre-registered analysis to the paper and reports all analyses as pre-specified. The main deviation is that we measure distributional preferences using the individual-level mixed logit parameters $(\alpha, \beta, \gamma, \delta)$, since they are identified from all binary choices in the decision tree. In contrast, the pre-registered decision tree end points only exploit a subset of questions to identify outcome and investment inequality aversion. Using the pre-registered outcomes, no treatment effect is statistically significant after the Benjamini-Hochberg correction (Table S.15).

6 Discussion and conclusion

This study analyzes how parents allocate educational time investments in response to differences in children’s ability and which mechanisms underlie these allocation patterns. Using a representative survey in the Netherlands, we separately elicit parental time allocations, beliefs about the human capital production function, and within-family distributional preferences. We further examine whether these determinants are malleable by embedding an information provision experiment that exogenously shifts beliefs about the heritability of primary school achievement.

Based on the collected data, we document a clear preference for compensating educational time investments: on average, respondents favor allocating more educational time to lower-ability children. Our results show that this pattern reflects two distinct forces. First, respondents perceive educational investments to be more productive for lower-ability children. Second, respondents display distributional concerns within the family. Compensating investment is stronger in a scenario with two siblings than in a scenario with one child, partly because respondents aim to equalize school performance between siblings. At the same time,

respondents also exhibit an aversion to unequal parental investments, leading them to allocate a positive amount of time to higher-ability children. Taken together, the results point to an equality–efficiency tradeoff that operates at the level of parental investment rather than at the level of children’s educational outcomes: since investment is perceived to be more productive for children with lower expected school achievement, the efficient time allocation choice is to invest more in the lower-ability child, which also equalizes school outcomes but is not in line with investment equalization.

The information provision experiment shows that beliefs about the role of genetics in child development are malleable. Providing respondents with higher heritability estimates substantially shifts posterior beliefs about the importance of genetic endowments. However, we do not find evidence that the information treatment significantly affects time allocations, perceived returns to investment or distributional preferences. One possible explanation is that respondents do not interpret information about heritability (a population parameter) as deterministic at the individual level. If this is true, it is a reassuring finding: a common concern in behavioral genetic research, which partly motivated this study, is that heritability estimates are often misinterpreted as deterministic (Visscher *et al.*, 2008). Leaving investments unchanged may in fact be the appropriate response, since the value of heritability estimates for assessing the effectiveness of (policy) interventions is limited. Goldberger (1979) illustrates this using the example of eyesight, which is highly heritable yet fully correctable with eyeglasses. Moreover, heritability depends on how much environmental exposures vary in the population. If parents’ investments in their children’s education became much more unequal, the heritability of school performance would likely decrease. Applied to parenting, both arguments imply that rational and informed parents need not change their investment behavior in response to heritability information. More broadly, our result aligns with a body of evidence showing that information provision often affects factual beliefs while having limited downstream effects on economic preferences or behavior (Haaland *et al.*, 2023). Whether these results extend to other cultural and economic contexts remains an open question. For example, previous research has shown that language can influence economic behavior (Chen, 2013). Unlike English, Dutch has no common equivalent of the phrase “nature versus nurture”, which frames genetic and environmental influences as competing causes of child development.

Some limitations apply to our study and are worth noting. First, our analysis relies on hypothetical scenarios rather than observed behavior. While this approach allows us to exogenously vary child ability and to separately measure beliefs and preferences, it is not clear whether responses to hypothetical questions translate into real-life choices. Still, the correlations with questions about respondents’ own children provide suggestive evidence that

they do. Second, while we used a representative sample from the Dutch population for our survey, the hypothetical families do not reflect the full diversity of the Dutch population. We chose family descriptions that we expected to relate best to the average respondent, but some groups may find it harder to relate to these scenarios. For example, respondents not working in office jobs might be less able to put themselves in the shoes of these parents. Third, we focus on parental investment measured as time spent on educational activities during primary school, which may differ from other dimensions of parental investment and from investment at other stages of child development. Fourth, we study investment responses to relatively large differences in ability between siblings. Future studies may make these differences more granular, and for instance focus on specific parts of the ability distribution to study potentially strong aversion to children being at the bottom of the within-class distribution.

Nevertheless, our study takes further steps toward identifying the factors shaping parental investment decisions by jointly examining beliefs about child development and distributional attitudes. Future research could focus on additional mechanisms to further improve our understanding of how parental decision-making contributes to inequality of opportunity and human capital formation.

References

- ADHVARYU, A. and NYSHADHAM, A. (2016). Endowments at Birth and Parents' Investments in Children. *Economic Journal*, **126** (593), 781–820.
- ALMÅS, I., ATTANASIO, O. and JERVIS, P. (2024). Presidential Address: Economics and Measurement: New Measures to Model Decision Making. *Econometrica*, **92** (4), 947–978.
- ATAV, T., RIETVELD, C. A. and VAN KIPPERSLUIS, H. (2026). The persistent relationship between family background and educational attainment in the Netherlands. *The Journal of Economic Inequality*, pp. 1–23.
- ATTANASIO, O. (2026). *The first 1000 days and beyond: The process of child development*. NBER Working Paper 34651, National Bureau of Economic Research, Cambridge, MA.
- , BONEVA, T. and RAUH, C. (2022a). Parental beliefs about returns to different types of investments in school children. *Journal of Human Resources*, **57** (6), 1789–1825.
- , CATTAN, S. and MEGHIR, C. (2022b). Early Childhood Development, Human Capital, and Poverty. *Annual Review of Economics*, **14** (1), 853–892.
- BECKER, G. S. and TOMES, N. (1976). Child Endowments and the Quantity and Quality of Children. *Journal of Political Economy*, **84** (4, Part 2), S143–S162.
- BEHRMAN, J. R., POLLAK, R. A. and TAUBMAN, P. (1982). Parental Preferences and Provision for Progeny. *Journal of Political Economy*, **90** (1), 52–73.
- BENJAMINI, Y. and HOCHBERG, Y. (1995). Controlling the False Discovery Rate: A Practical and Powerful Approach to Multiple Testing. *Journal of the Royal Statistical Society: Series B (Methodological)*, **57** (1), 289–300, eprint: <https://rss.onlinelibrary.wiley.com/doi/pdf/10.1111/j.2517-6161.1995.tb02031.x>.
- BERRY, J., DIZON-ROSS, R. and JAGNANI, M. (2025). Not Playing Favorites: Parents and the Value of Equal Opportunity. *American Economic Journal: Applied Economics*, **17** (3), 117–60.
- BHARADWAJ, P., EBERHARD, J. P. and NEILSON, C. A. (2018). Health at Birth, Parental Investments, and Academic Outcomes. *Journal of Labor Economics*, **36** (2), 349–394.
- BIROLI, P., GALAMA, T., VON HINKE, S., VAN KIPPERSLUIS, H., RIETVELD, C. A. and THOM, K. (2026). The Economics and Econometrics of Gene–Environment Interplay. *The Review of Economic Studies*, **93** (1), 144–180.
- BJÖRKLUND, A. and SALVANES, K. G. (2011). Education and Family Background: Mechanisms and Policies. In *Handbook of the Economics of Education*, vol. 3, Elsevier, pp. 201–247.
- BONEVA, T. and RAUH, C. (2018). Parental Beliefs about Returns to Educational Investments—The Later the Better? *Journal of the European Economic Association*, **16** (6),

1669–1711.

- BORGHANS, B. L., DIRIS, R., SMITS, W. and DE VRIES, J. (2020). Should We Sort it Out Later? The Effect of Tracking Age on Long-run Outcomes. *Economics of Education Review*, **75** (1), 101973.
- BREINHOLT, A. and CONLEY, D. (2023). Child-Driven Parenting: Differential Early Childhood Investment by Offspring Genotype. *Social Forces*, **102** (1), 310–329.
- CAPLAN, B. (2011). *Selfish Reasons to Have More Kids: Why Being a Great Parent is Less Work and More Fun Than You Think*. Basic Books.
- CHEN, M. K. (2013). The Effect of Language on Economic Behavior: Evidence from Savings Rates, Health Behaviors, and Retirement Assets. *American Economic Review*, **103** (2), 690–731.
- CHETTY, R., HENDREN, N. and KATZ, L. F. (2016). The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment. *American Economic Review*, **106** (4), 855–902.
- CHEUNG, B. Y. and HEINE, S. J. (2015). The Double-Edged Sword of Genetic Accounts of Criminality: Causal Attributions From Genetic Ascriptions Affect Legal Decision Making. *Personality and Social Psychology Bulletin*, **41** (12), 1723–1738.
- CUNHA, F., ELO, I. and CULHANE, J. (2022). Maternal Subjective Expectations about the Technology of Skill Formation Predict Investments in Children One Year Later. *Journal of Econometrics*, **231** (1), 3–32.
- and HECKMAN, J. (2007). The Technology of Skill Formation. *American Economic Review*, **97** (2), 31–47.
- DAR-NIMROD, I., CHEUNG, B. Y., RUBY, M. B. and HEINE, S. J. (2014). Can Merely Learning about Obesity Genes Affect Eating Behavior? *Appetite*, **81**, 269–276.
- and HEINE, S. J. (2011). Genetic Essentialism: On the Deceptive Determinism of DNA. *Psychological Bulletin*, **137** (5), 800–818.
- DI TELLA, R., GALIANT, S. and SCHARGRODSKY, E. (2007). The formation of beliefs: Evidence from the allocation of land titles to squatters. *The Quarterly Journal of Economics*, **122** (1), 209–241.
- DIZON-ROSS, R. (2019). Parents’ Beliefs about Their Children’s Academic Ability: Implications for Educational Investments. *American Economic Review*, **109** (8), 2728–2765.
- DOEPKE, M., SORRENTI, G. and ZILIBOTTI, F. (2019). The Economics of Parenting. *Annual Review of Economics*, **11** (1), 55–84.
- FAN, W. and PORTER, C. (2020). Reinforcement or Compensation? Parental Responses to Children’s Revealed Human Capital Levels. *Journal of Population Economics*, **33** (1), 233–270.

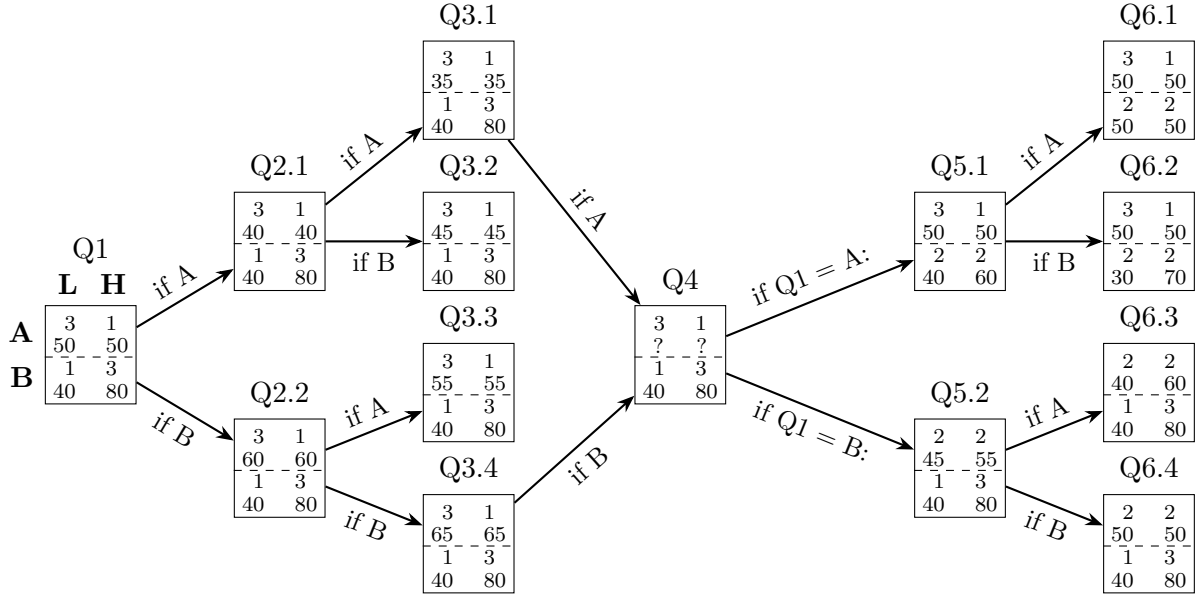
- FIORINI, M. and KEANE, M. P. (2014). How the Allocation of Children’s Time Affects Cognitive and Noncognitive Development. *Journal of Labor Economics*, **32** (4), 787–836.
- FRIJTERS, P., JOHNSTON, D. W., SHAH, M. and SHIELDS, M. A. (2013). Intrahousehold Resource Allocation: Do Parents Reduce or Reinforce Child Ability Gaps? *Demography*, **50** (6), 2187–2208.
- GIANNOLA, M. (2024). Parental Investments and Intra-household Inequality in Child Human Capital: Evidence from a Survey Experiment. *Economic Journal*, **134** (658), 671–727.
- GOLDBERGER, A. S. (1979). Heritability. *Economica*, **46** (184), 327–347.
- GURYAN, J., HURST, E. and KEARNEY, M. (2008). Parental Education and Parental Time with Children. *Journal of Economic Perspectives*, **22** (3), 23–46.
- HAALAND, I., ROTH, C., STANTCHEVA, S. and WOHLFART, J. (2025). Understanding Economic Behavior Using Open-Ended Survey Data. *Journal of Economic Literature*, **63** (4), 1244–1280.
- , — and WOHLFART, J. (2023). Designing Information Provision Experiments. *Journal of Economic Literature*, **61** (1), 3–40.
- HARDEN, K. P. (2022). *The Genetic Lottery: Why DNA Matters for Social Equality*. Princeton University Press.
- HARRIS, J. R. (2009). *The Nurture Assumption: Why Children Turn Out the Way They Do, Revised and Updated*. Simon and Schuster.
- HECKMAN, J. J., HUMPHRIES, J. E. and VERAMENDI, G. (2018). Returns to Education: The Causal Effects of Education on Earnings, Health, and Smoking. *Journal of Political Economy*, **126** (S1), S197–S246.
- HOLE, A. R. (2007). Fitting Mixed Logit Models by Using Maximum Simulated Likelihood. *The Stata Journal*, **7** (3), 388–401.
- HOUMARK, M. A., RONDA, V. and ROSHOLM, M. (2024). The Nurture of Nature and the Nature of Nurture: How Genes and Investments Interact in the Formation of Skills. *American Economic Review*, **114** (2), 385–425.
- HSIN, A. and FELFE, C. (2014). When Does Time Matter? Maternal Employment, Children’s Time With Parents, and Child Development. *Demography*, **51** (5), 1867–1894.
- LEBOWITZ, M. S. and APPELBAUM, P. S. (2017). Beneficial and Detrimental Effects of Genetic Explanations for Addiction. *International Journal of Social Psychiatry*, **63** (8), 717–723.
- MAZUMDER, B. (2008). Sibling similarities and economic inequality in the US. *Journal of Population Economics*, **21** (3), 685–701.
- MILLER, G. F. (2023). Benefits of Hereditarian Insights for Mate Choice and Parenting. *Behavioral and Brain Sciences*, **46** (1), e196.

- NICOLETTI, C. and TONEI, V. (2020). Do Parental Time Investments React to Changes in Child’s Skills and Health? *European Economic Review*, **127** (1), 103491.
- NOZICK, R. (1974). *Anarchy, State, and Utopia*. John Wiley & Sons.
- PINKER, S. (2003). *The Blank Slate*. Penguin Group US.
- PLOMIN, R. (2019). *Blueprint: How DNA Makes Us Who We Are*. MIT Press.
- POGLIANO, A. (2024). Born That Way: Beliefs about Genetics’ Importance and Redistribution Preferences. *Tinbergen Institute Discussion Paper*, **TI 2024-017/I**.
- REVELT, D. and TRAIN, K. (2000). Customer-specific Taste Parameters and Mixed Logit: Households’ Choice of Electricity Supplier.
- RIETVELD, C. A. (2026). Heritability and Public Policy—A Reappraisal. *Journal of Economic Inequality*, **24** (2), 349–369.
- RIMFELD, K., MALANCHINI, M., KRAPOHL, E., HANNIGAN, L. J., DALE, P. S. and PLOMIN, R. (2018). The Stability of Educational Achievement Across School Years is Largely Explained by Genetic Factors. *npj Science of Learning*, **3** (1), 1–10.
- RIVERA, G. N., VESS, M., BROOKER, R. J., STICHTER, M. and NEIDERHISER, J. M. (2021). Exploring Relations between Beliefs about the Genetic Etiology of Virtue and the Endorsement of Parenting Practices. *Parenting*, **21** (2), 79–107.
- ROEMER, J. E. and TRANNOY, A. (2016). Equality of Opportunity: Theory and Measurement. *Journal of Economic Literature*, **54** (4), 1288–1332.
- SANZ-DE GALDEANO, A. and TERSKAYA, A. (2023). Sibling Differences in Genetic Propensity for Education: How Do Parents React? *Review of Economics and Statistics*, pp. 1–44.
- SARRIAS, M. (2020). Individual-specific Posterior Distributions From Mixed Logit Models: Properties, Limitations and Diagnostic Checks. *Journal of Choice Modelling*, **36** (1), 100224.
- SCHERPENZEEL, A. C. and DAS, M. (2018). “True” Longitudinal and Probability-Based Internet Panels: Evidence From the Netherlands. In *Social and Behavioral Research and the Internet: Advances in Applied Methods and Research Strategies*, Boca Raton: Taylor & Francis, pp. 77–104.
- SETTELE, S. (2022). How Do Beliefs about the Gender Wage Gap Affect the Demand for Public Policy? *American Economic Journal: Economic Policy*, **14** (2), 475–508.
- TODD, P. E. and WOLPIN, K. I. (2003). On the Specification and Estimation of the Production Function for Cognitive Achievement. *Economic Journal*, **113** (485), F3–F33.
- TREJO, S. and MARTSCHENKO, D. O. (2026). *What We Inherit: How New Technologies and Old Myths Are Shaping Our Genomic Future*. Princeton University Press.
- VILFORT, V. and ZHANG, W. (2025). Interpreting TSLS Estimators in Information Provision Experiments. *American Economic Review: Insights*, **7** (3), 376–395.

- VISSCHER, P. M., HILL, W. G. and WRAY, N. R. (2008). Heritability in the Genomics Era — Concepts and Misconceptions. *Nature Reviews Genetics*, **9** (4), 255–266.
- YI, J., HECKMAN, J. J., ZHANG, J. and CONTI, G. (2015). Early Health Shocks, Intra-Household Resource Allocation and Child Outcomes. *Economic Journal*, **125** (588), F347–F371.

A Additional tables and figures

Figure A1: Decision tree



Notes: This figure shows the sequence of binary choices used to elicit distributional preferences in the Siblings scenario. Each box summarizes options A (top) and B (bottom). In each option, the numbers in the first row refer to the hours the parents spend on educational activities with child L and child H, respectively, and the numbers in the second row to the corresponding test scores. Respondents choosing option A (B) in Q1 see Q2.1 (Q2.2) next. Q1–Q3 induce a tradeoff between efficiency and test score equality by varying the level of equal test scores in option A. Respondents who always chose A or always chose B in Q1–Q3 indicate the option A test score that would make them indifferent between option A and B (Q4). Q5 and Q6 create variation in the allocation of hours. Depending on the choice in Q1, the choices in Q5 and Q6 trade off investment equality against either test score equality or efficiency. Each respondent makes five binary choices (Q1, Q2, Q3, Q5, Q6).

Figure A2: Screen for first binary choice

Option A	Lotte 	Sophie 	
Time spent 	3h	1h	Average:
Test score 	50	50	50

Option B	Lotte 	Sophie 	
Time spent 	1h	3h	Average:
Test score 	40	80	60

Notes: This figure shows the screen of the first binary choice in the Siblings scenario (Q1 in Figure A1), translated into English. Option A equalizes test scores by allocating more educational time to child L. Option B results in a higher average test score but unequal test scores. The names and pictures of the children vary with the randomized gender of the hypothetical children.

Table A1: Correlations of choice attributes in mixed logit model

	$H_L + H_H$	$ H_L - H_H $	$ I_L - I_H $	$I_L - I_H$
Sum of test scores	1.00			
Diff. in test scores	0.72	1.00		
Diff. in time investment	0.20	0.06	1.00	
Compensating investment	-0.73	-0.94	0.04	1.00

Notes: This table reports pairwise correlations between the attributes of the choice options in the decision tree (Figure A1): the sum of test scores of both children ($H_L + H_H$), the absolute difference in test scores ($|H_L - H_H|$), and the absolute difference in hours of educational activities ($|I_L - I_H|$). Correlations are computed across all options faced by respondents, so that each choice is weighted by the number of respondents facing it.

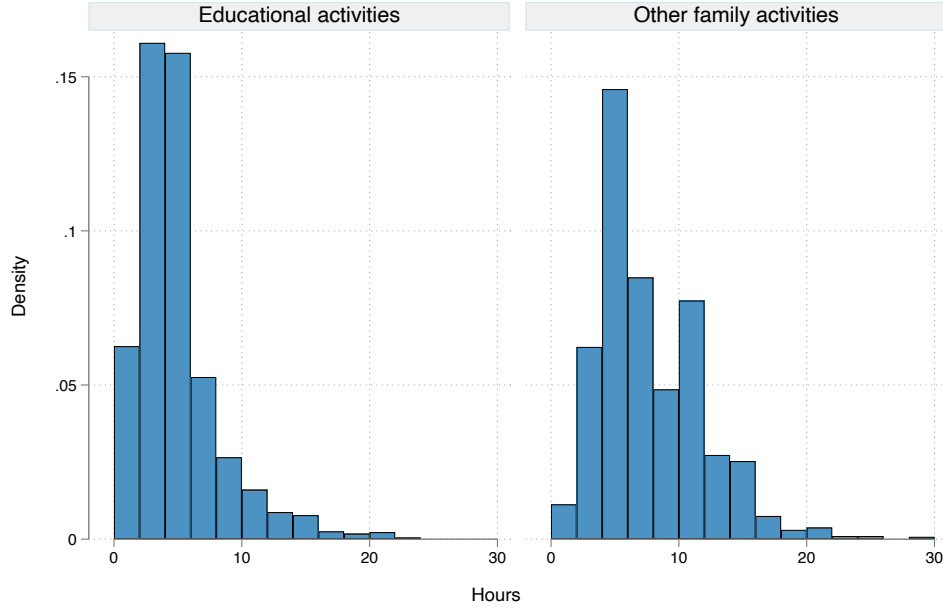
Table A2: Summary statistics of time allocation and expected test scores

	Mean	Median	SD	Min	Max	N
Time allocation						
<i>Singleton</i>						
Hours on both activities	13.63	11	8.56	0	40	1997
Hours on educ. activities	5.19	5	4.70	0	32	1997
Hours on educ. activities with L	5.88	5	4.75	0	32	996
Hours on educ. activities with H	4.50	3	4.55	0	32	1001
Hours on other activities	8.44	7	5.62	0	40	1997
Hours on other activities with L	7.86	6	5.18	0	40	996
Hours on other activities with H	9.01	8	5.97	0	40	1001
<i>Siblings</i>						
Hours on educ. activities	8.52	8	5.02	0	35	1997
Hours on educ. activities with L	5.19	5	3.15	0	30	1997
Hours on educ. activities with H	3.34	3	2.42	0	20	1997
Hours on other activities	12.75	10	6.54	0	40	1997
Hours on other activities with L	6.42	5	3.44	0	20	1997
Hours on other activities with H	6.34	5	3.35	0	20	1997
Expected test scores						
<i>Singleton</i>						
Expected test score of L w/ 2 hours	40.53	40	16.80	1	90	996
Expected test score of H w/ 2 hours	69.43	73	17.51	0	100	1001
Expected test score of L w/ 6 hours	52.45	53	17.05	1	100	996
Expected test score of H w/ 6 hours	74.43	80	17.52	0	100	1001
<i>Siblings</i>						
Expected test score of L w/ 1 hour	37.36	38	19.71	0	100	1997
Expected test score of H w/ 1 hour	73.42	76	15.51	0	100	1997
Expected test score of L w/ 3 hours	51.67	52	16.62	0	100	1997
Expected test score of H w/ 3 hours	77.70	81	16.22	0	100	1997

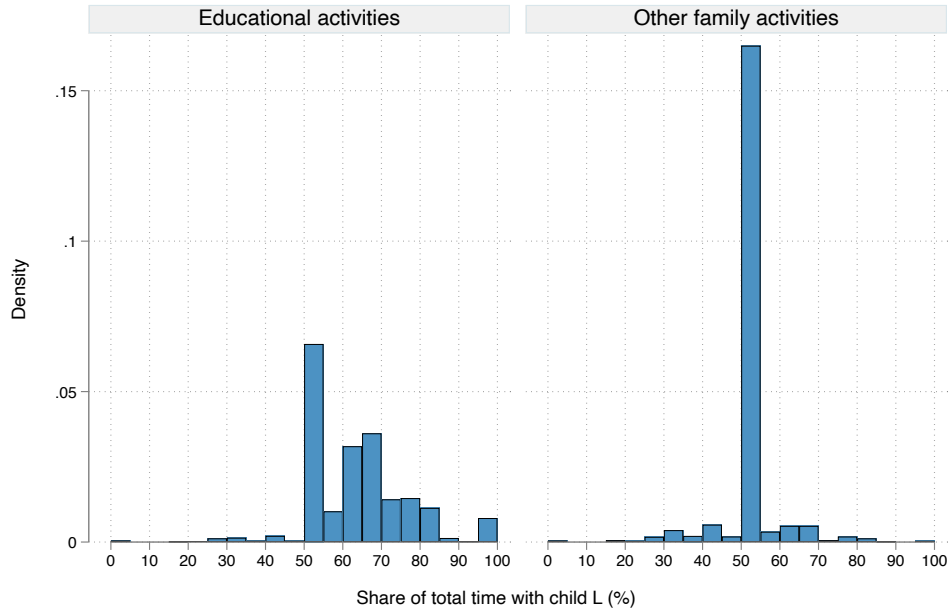
Notes: This table reports summary statistics of the weekly hours allocated to educational and other family activities and of the expected test score percentiles at the end of primary school in the hypothetical scenarios. In the Singleton scenario, L and H refer to respondents randomly assigned to a lower-ability or higher-ability child. In the Siblings scenario, L and H refer to the lower-ability and higher-ability sibling.

Figure A3: Distribution of time allocation choices

(a) Total hours



(b) Allocation between siblings



Notes: This figure shows the distribution of weekly hours allocated to educational and other family activities, averaged over the Singleton and Siblings scenarios (Panel a), and the distribution of the share of hours on each type of activity in the Siblings scenario allocated to child L (Panel b).

Table A3: Time allocation differences between scenarios

	Educ. hours			Other hours		
	(1)	(2)	(3)	(4)	(5)	(6)
Low ability	1.69*** (0.08)		1.38*** (0.21)	-0.33*** (0.09)		-1.15*** (0.25)
Siblings		-0.93*** (0.08)	-1.16*** (0.13)		-2.06*** (0.10)	-2.68*** (0.17)
Low ability $\times$ Siblings			0.47** (0.21)			1.23*** (0.25)
Constant	3.73*** (0.07)	5.19*** (0.11)	4.50*** (0.14)	7.23*** (0.10)	8.44*** (0.13)	9.01*** (0.19)
Observations	5991	5991	5991	5991	5991	5991

Notes: This table reports OLS regressions of weekly hours on educational activities (Columns 1-3) and other family activities (Columns 4-6) on indicators for the lower-ability child, the Siblings scenario, and their interaction. Each respondent contributes three observations: the singleton, whose ability is randomized between respondents, and both siblings. The interaction term measures how many more hours respondents allocate to the lower-ability relative to the higher-ability child in the Siblings than in the Singleton scenario. Robust standard errors in parentheses. Standard errors are clustered at the respondent level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A4: Perceived human capital production function

	Expected test score			
	(1)	(2)	(3)	(4)
High ability	28.90*** (0.77)	36.06*** (0.58)	36.06*** (0.58)	33.67*** (0.55)
High investment	11.92*** (0.49)	14.31*** (0.39)	14.31*** (0.39)	13.51*** (0.33)
High ability $\times$ High investment	-6.92*** (0.65)	-10.02*** (0.40)	-10.02*** (0.40)	-8.99*** (0.35)
Constant	40.53*** (0.53)	37.36*** (0.44)	37.36*** (0.36)	37.86*** (0.46)
Scenario	Singleton	Siblings	Siblings	Combined
Individual FE	No	No	Yes	No
Observations	3994	7988	7988	11982

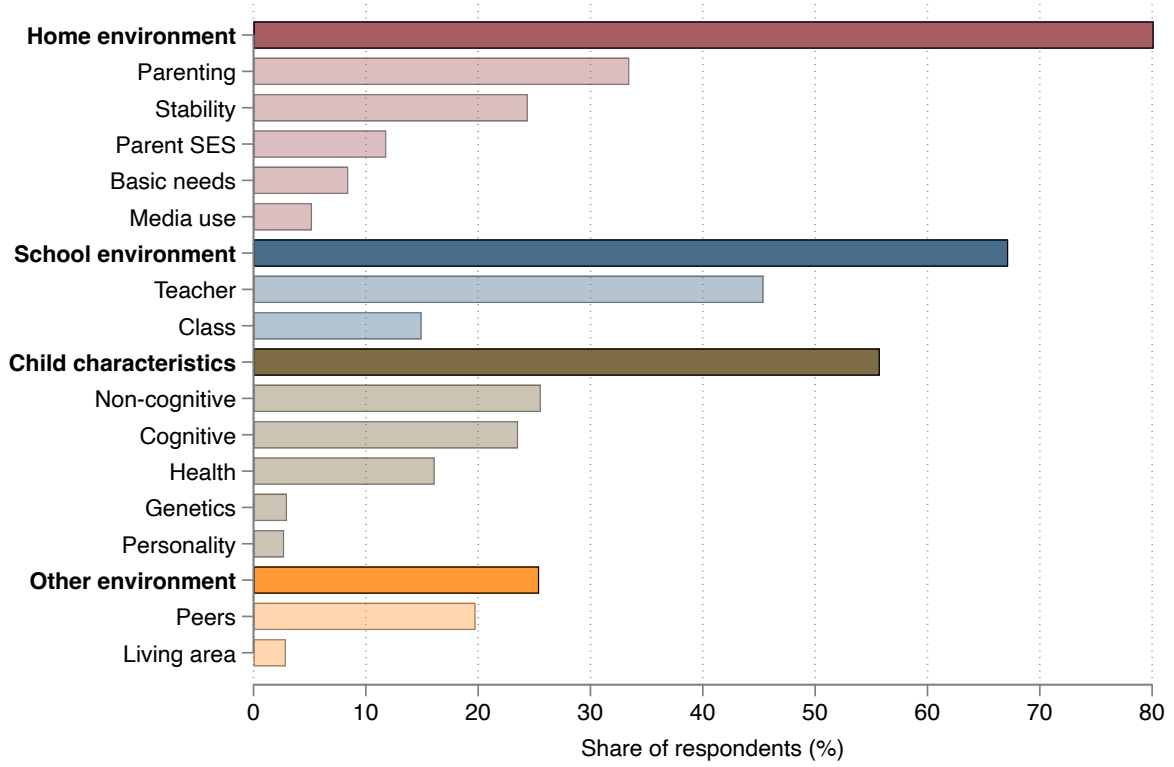
Notes: This table reports OLS regressions of expected test score percentiles at the end of primary school on indicators for *high ability*, *high investment* and their interaction. *High investment* refers to 6 (vs. 2) hours per week in the Singleton scenario and 3 (vs. 1) hours per week in the Siblings scenario. In the Singleton scenario (Column 1), ability is randomized between respondents, and each respondent reports expected test scores for both investment levels. In the Siblings scenario (Columns 2-3), each respondent reports expected test scores for both children and both investment levels. Column 3 includes respondent fixed effects. Column 4 pools both scenarios and controls for the scenario. Robust standard errors in parentheses. Standard errors are clustered at the respondent level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A5: Subgroup differences in time allocation, beliefs and preferences

	Time allocation		Perceived production function			Distributional preferences			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Share educ. time	Share educ. time with child L	Perc. returns to ability	Perc. returns to investment	Perc. complementarity	Sum of test scores (α)	Test score equal. (β)	Investment equal. (γ)	Compensating invest. (δ)
Scenario	Both	Sibs	Sibs	Both	Sibs	Sibs	Sibs	Sibs	Sibs
Girls	-0.40 (0.63)	0.22 (0.62)	0.07 (1.01)	-0.37 (0.33)	0.40 (0.80)	-0.01 (0.04)	0.02 (0.04)	0.05 (0.04)	0.06 (0.04)
Constant	37.35*** (0.50)	61.96*** (0.43)	31.01*** (0.72)	4.41*** (0.24)	-10.22*** (0.56)	0.00 (0.03)	-0.01 (0.03)	-0.03 (0.03)	-0.03 (0.03)
Tertiary degree	-4.74*** (0.62)	1.67*** (0.62)	11.44*** (0.98)	0.87*** (0.33)	-0.94 (0.80)	0.18*** (0.04)	0.07* (0.04)	-0.17*** (0.04)	-0.21*** (0.04)
Constant	39.54*** (0.47)	61.23*** (0.43)	25.29*** (0.67)	3.79*** (0.24)	-9.55*** (0.60)	-0.09*** (0.03)	-0.04 (0.03)	0.09*** (0.03)	0.11*** (0.03)
Female	-3.78*** (0.63)	-0.01 (0.63)	-1.16 (1.02)	-0.50 (0.34)	-0.09 (0.80)	-0.19*** (0.04)	-0.09** (0.05)	0.28*** (0.04)	0.22*** (0.04)
Constant	39.28*** (0.51)	62.07*** (0.47)	31.70*** (0.79)	4.51*** (0.25)	-9.97*** (0.59)	0.10*** (0.03)	0.05 (0.03)	-0.16*** (0.03)	-0.12*** (0.03)
Parent	-2.78*** (0.65)	1.22* (0.63)	-1.49 (1.08)	-1.20*** (0.36)	0.21 (0.83)	-0.04 (0.05)	-0.03 (0.05)	0.03 (0.05)	0.02 (0.05)
Constant	39.01*** (0.57)	61.25*** (0.49)	32.04*** (0.88)	5.03*** (0.29)	-10.16*** (0.66)	0.03 (0.04)	0.02 (0.04)	-0.02 (0.04)	-0.01 (0.04)
Parent of siblings	-3.42*** (0.62)	1.15* (0.62)	-1.54 (1.01)	-1.03*** (0.33)	-0.00 (0.80)	-0.04 (0.04)	-0.00 (0.04)	0.08* (0.04)	0.08* (0.04)
Constant	38.89*** (0.48)	61.49*** (0.41)	31.83*** (0.73)	4.75*** (0.24)	-10.02*** (0.55)	0.02 (0.03)	0.00 (0.03)	-0.04 (0.03)	-0.04 (0.03)
Observations	3962	1960	1997	3994	1997	1997	1997	1997	1997

Notes: This table reports differences in time allocation, the perceived production function and distributional preferences between subgroups. Outcomes are defined as in Table 6. The sample includes all respondents. Columns 1 and 4 pool the Singleton and Siblings scenarios (two observations per respondent) and control for the scenario. Robust standard errors in parentheses. Standard errors are clustered at the respondent level for outcome measures pooling the Singleton and Siblings scenarios. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Figure A4: Open-ended prior beliefs



Notes: This figure shows the share of respondents mentioning each category of factors in the open-ended question “What do you think determines whether a child performs well or less well in primary school?”, for which respondents could enter up to five keywords. Based on previous literature, we distinguish between the school and family environment (Todd and Wolpin, 2003), the wider social environment (Chetty *et al.*, 2016), as well as between children’s cognitive and non-cognitive skills (Attanasio *et al.*, 2022b). Based on manual inspection of a subset of responses, we define additional sub-categories for each of the four main categories. Dark bars show main categories and light bars subcategories. Respondents are counted once per (sub)category, so main-category bars do not equal the sum of their subcategory bars, and shares across categories can sum to more than 100%. Shares are relative to the number of 1978 respondents entering at least one answer. Non-substantive responses (e.g., “don’t know”) are excluded. Table A6 lists example keywords for each subcategory. We use a large language model (Claude Opus 5.5) to perform the categorization (Haaland *et al.*, 2025). Some responses were assigned to the main category, but not one of the subcategories (e.g., “school” or “home situation”). Examples for these are listed under the subcategory “General” in Table A6. Responses that cannot be assigned to a main category are coded “Uncodable”. The classification proceeds in three steps. First, the LLM classifies a random sample of 100 of the 3,760 unique (lower-cased and trimmed) keyword strings, based on the category definitions only. We correct this classification by hand: the manual coding agrees with the LLM’s main category for 94 and with its subcategory for 91 of the 100 strings. Based on the examples from the corrected sample, the LLM then classifies the remaining 3,660 strings.

Table A6: Classification of open-ended responses: example answers

Subcategory	Original (Dutch)	Translation
School environment		
Teacher	<i>leraar*</i> ; <i>kwaliteit leerkracht*</i> ; <i>enthousiasme docent*</i>	teacher; quality of the teacher; teacher's enthusiasm
Class	<i>niet teveel kinderen in klas*</i> ; <i>goede werksfeer in de klas*</i> ; <i>rust in de klas, kleine groepen*</i>	not too many children in the class; good working atmosphere in the class; calm in the class, small groups
General	<i>onderwijsmethoden*</i> ; <i>goed lesprogramma*</i> ; <i>veiligheid op school*</i>	teaching methods; good curriculum; safety at school
Home environment		
Parenting	<i>type opvoeding*</i> ; <i>betrokkenheid ouders</i> ; <i>liefde</i>	type of upbringing; parental involvement; love
Basic needs	<i>voeding</i> ; <i>slaap</i> ; <i>ontbijt</i>	nutrition; sleep; breakfast
Stability	<i>veilig thuis*</i> ; <i>scheiding*</i> ; <i>stabiliteit binnen het gezin*</i>	safe home; divorce; stability within the family
Parent SES	<i>opleidingsniveau ouders*</i> ; <i>financiële middelen van de ouders*</i> ; <i>ses gemiddeld of hoger*</i>	parents' level of education; parents' financial means; ses average or higher
Media use	<i>schermtijd*</i> ; <i>social media</i> ; <i>telefoon</i>	screen time; social media; phone
General	<i>gezinssituatie*</i> ; <i>het thuisfront*</i> ; <i>familiefactoren*</i>	family situation; the home front; family factors
Child characteristics		
Cognitive	<i>talent*</i> ; <i>rekenvaardigheid*</i> ; <i>individuele aanleg*</i>	talent; arithmetic skills; individual aptitude
Non-cognitive	<i>concentratievermogen*</i> ; <i>leesinteresse*</i> ; <i>sociaal emotionele vaardigheden*</i>	ability to concentrate; interest in reading; social-emotional skills
Personality	<i>karakter</i> ; <i>persoonlijkheid</i> ; <i>persoonlijke eigenschappen</i>	character; personality; personal traits
Health	<i>gezondheid</i> ; <i>ziekte*</i> ; <i>stress</i>	health; illness; stress
Genetics	<i>genen</i> ; <i>dna*</i> ; <i>erfelijkheid</i>	genes; dna; heredity
General	<i>kind zelf</i> ; <i>eigenschappen kind</i> ; <i>kindfactoren</i>	the child itself; characteristics of the child; child factors
Other environment		
Peers	<i>pesten*</i> ; <i>acceptatie door medeleerlingen*</i> ; <i>de kinderen om hem heen*</i>	bullying; acceptance by classmates; the children around him
Living area	<i>woonomgeving</i> ; <i>buurt</i> ; <i>woonplaats</i>	residential area; neighbourhood; place of residence
General	<i>maatschappij</i> ; <i>cultuur</i> ; <i>overheid</i>	society; culture; government

Notes: This table lists example keywords for each subcategory in Figure A4, in the original Dutch and translated into English. "General" lists keywords that were assigned to a main category but not to one of its subcategories. * indicate examples from the random sample of 100 manually reviewed responses used to inform the final full classification.

Table A7: Heterogeneity in treatment effects on posterior beliefs by prior

	<i>Prior</i> < 27 (1)	$27 \leq \textit{Prior} \leq 70$ (2)	$70 < \textit{Prior}$ (3)
T ^{Low}	-0.92 (5.05)	-15.89*** (1.10)	-23.01*** (2.15)
T ^{High}	15.49*** (5.55)	8.28*** (1.01)	0.18 (1.84)
Constant	29.80*** (6.87)	52.70*** (1.70)	71.26*** (3.40)
Observations	155	1394	448

Notes: This table reports the effects of T^{Low} and T^{High} relative to the pure control group on the delayed posterior belief (in %), separately for respondents with a prior belief below the low heritability estimate (27%), between the low and the high estimate, and above the high heritability estimate (70%). All models control for strata dummies. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A8: Balance table

	(1) T ^{Low}	(2) T ^{High}	(3) Control	(4) Pooled	(5) (1)-(2)	(6) (1)-(3)	(7) (2)-(3)	(8) (4)-(3)
Strata variables								
Female	0.57	0.56	0.54	0.57	0.01	0.03	0.02	0.03
Tertiary degree	0.51	0.50	0.50	0.50	0.00	0.00	-0.00	-0.00
Living-at-home children	0.40	0.38	0.44	0.39	0.02	-0.03	-0.06*	-0.04
Younger than 48	0.42	0.44	0.43	0.43	-0.01	-0.01	0.01	-0.00
Equality important	0.38	0.38	0.36	0.38	-0.00	0.02	0.02	0.02
Equality important (missing)	0.10	0.11	0.10	0.10	-0.01	-0.01	0.01	0.00
Prior beliefs & Demographics								
Prior	56.66	56.87	56.86	56.77	-0.21	-0.21	0.01	-0.10
Age	49.05	48.41	48.62	48.72	0.64	0.43	-0.21	0.11
Lives together with partner	0.62	0.57	0.60	0.59	0.05*	0.02	-0.03	-0.00
Urban residence	0.57	0.55	0.54	0.56	0.03	0.03	0.00	0.02
Employed	0.70	0.66	0.68	0.68	0.04*	0.02	-0.02	0.00
MBO	0.30	0.26	0.28	0.28	0.04*	0.02	-0.02	0.00
HBO	0.30	0.31	0.29	0.31	-0.01	0.01	0.02	0.01
WO	0.20	0.19	0.21	0.20	0.01	-0.01	-0.02	-0.01
Migration background	0.23	0.25	0.25	0.24	-0.03	-0.02	0.01	-0.01
Household head	0.69	0.70	0.71	0.70	-0.01	-0.02	-0.02	-0.02
Parent	0.67	0.65	0.70	0.66	0.03	-0.03	-0.05*	-0.04
Parent of singleton	0.16	0.16	0.16	0.16	0.00	0.00	-0.00	0.00
Parent of siblings	0.51	0.49	0.54	0.50	0.02	-0.03	-0.05*	-0.04
Conservative	5.27	5.11	5.27	5.19	0.16	0.00	-0.16	-0.08
Equality important (1-7)	5.99	6.04	5.91	6.02	-0.05	0.08	0.13*	0.11
Log household income	8.49	8.28	8.37	8.38	0.21***	0.12	-0.09	0.01
Log personal income	7.68	7.45	7.46	7.56	0.24**	0.22*	-0.02	0.10
Joint F -test (p -value)					0.36	0.94	0.98	1.00
Observations (F -test)					1590	1189	1215	1997

Notes: This table compares pre-treatment characteristics between the experimental groups. Columns 1–4 report means for T^{Low}, T^{High}, the pure control group, and both treatment groups pooled. Columns 5–8 report differences in means. Strata variables are the indicators used for the stratified randomization. *Prior* is the prior belief about the percentage of differences in primary school performance due to genes. *Employed* refers to respondents in paid employment, excluding self-employment or working in a family business. *Conservative* is the self-placement on a left-right scale from 0 to 10. Income is measured as the log of monthly gross household and personal income. The joint F -test reports the p -value of a test that the characteristics jointly predict group membership, from an OLS regression of the group indicator on strata variables, prior beliefs, age, parenthood, living together with a partner, urban residence, migration background, employment, and education (*MBO*, *HBO*, *WO*) as specified in the PAP. Significance stars refer to two-sided t -tests. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A9: Alternative specification: Treatment effects on mechanisms

	Dependent variable: 1=Option is chosen	
	(1)	(2)
Mean		
Sum of test scores (α)	0.22*** (0.04)	0.22*** (0.04)
Test score equality (β)	0.12*** (0.03)	0.08** (0.04)
Investment equality (γ)	1.44*** (0.34)	1.73*** (0.36)
Compensating investment (δ)	0.46** (0.22)	0.96*** (0.24)
$T^{\text{High}} \times \alpha$	0.01 (0.01)	0.02 (0.02)
$T^{\text{High}} \times \beta$	0.01 (0.01)	0.01 (0.01)
$T^{\text{High}} \times \gamma$	0.09 (0.14)	0.01 (0.16)
$T^{\text{High}} \times \delta$	-0.09 (0.15)	-0.13 (0.17)
$T^{\text{Low}} \times \alpha$		0.01 (0.02)
$T^{\text{Low}} \times \beta$		-0.00 (0.01)
$T^{\text{Low}} \times \gamma$		-0.09 (0.15)
$T^{\text{Low}} \times \delta$		-0.08 (0.16)
Adjusted for correlated coefficients	Yes	Yes
Pure control included	No	Yes
Observations	15900	19970

Notes: This table reports mixed logit mean estimates of the choices between investment options (Equation 5) in which the preference parameters are interacted with the treatment indicators. Column 1 excludes the pure control group, so that the main effects refer to T^{Low} and the interactions with T^{High} measure differences relative to T^{Low} . Column 2 includes all respondents, so that the main effects refer to the pure control group and the interactions measure differences between each treatment group and the pure control group. α , β , γ and δ are normally distributed, correlated random coefficients. Estimated using maximum simulated likelihood with 500 Halton draws. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A10: Heterogeneous treatment effects

Scenario	Time allocation		Perceived production function			Distributional preferences			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Share educ. time	Share educ. time with child L	Perc. returns to ability	Perc. returns to investment	Perc. complementarity	Sum of test scores (α)	Test score equal. (β)	Investment equal. (γ)	Compensating invest. (δ)
	Both	Sibs	Sibs	Both	Sibs	Sibs	Sibs	Sibs	Sibs
T^{High}	-0.74 (0.96)	1.56 (1.00)	1.65 (1.58)	0.41 (0.54)	-0.06 (1.30)	-0.06 (0.07)	-0.02 (0.07)	0.04 (0.07)	0.06 (0.07)
$T^{\text{High}} \times \text{Girls}$	2.56* (1.34)	-0.81 (1.42)	-0.85 (2.18)	-0.49 (0.75)	1.01 (1.83)	0.19* (0.10)	0.15 (0.10)	0.11 (0.10)	-0.00 (0.10)
BH-adjusted p -value	0.258	0.744	0.783	0.744	0.744	0.258	0.465	0.614	0.966
T^{High}	0.47 (0.91)	0.74 (0.96)	2.47 (1.50)	0.04 (0.55)	0.19 (1.35)	-0.01 (0.07)	0.02 (0.07)	0.03 (0.07)	0.06 (0.07)
$T^{\text{High}} \times \text{Tertiary degree}$	0.20 (1.36)	0.82 (1.40)	-2.51 (2.20)	0.26 (0.75)	0.48 (1.82)	0.10 (0.10)	0.06 (0.10)	0.12 (0.10)	-0.00 (0.10)
BH-adjusted p -value	0.985	0.985	0.980	0.985	0.985	0.980	0.985	0.980	0.985
T^{High}	0.99 (1.06)	1.28 (1.09)	-2.22 (1.75)	-0.34 (0.57)	0.16 (1.34)	0.02 (0.08)	0.03 (0.08)	0.11 (0.08)	0.06 (0.08)
$T^{\text{High}} \times \text{Female}$	-0.66 (1.38)	-0.15 (1.42)	5.97*** (2.25)	0.95 (0.76)	0.45 (1.82)	0.03 (0.10)	0.04 (0.10)	-0.04 (0.10)	0.01 (0.10)
BH-adjusted p -value	0.942	0.942	0.072	0.942	0.942	0.942	0.942	0.942	0.942
T^{High}	0.95 (1.11)	1.19 (1.13)	-0.72 (2.00)	-0.58 (0.65)	1.86 (1.51)	0.05 (0.08)	0.10 (0.09)	0.14 (0.09)	0.14 (0.09)
$T^{\text{High}} \times \text{Parent}$	-0.59 (1.40)	-0.02 (1.45)	2.92 (2.40)	1.13 (0.79)	-2.16 (1.90)	-0.02 (0.11)	-0.07 (0.11)	-0.08 (0.11)	-0.12 (0.11)
BH-adjusted p -value	0.867	0.987	0.598	0.598	0.598	0.987	0.780	0.780	0.598
T^{High}	0.92 (0.93)	1.25 (0.94)	-0.11 (1.64)	-0.28 (0.53)	1.95 (1.25)	0.04 (0.07)	0.07 (0.07)	0.12* (0.07)	0.09 (0.07)
$T^{\text{High}} \times \text{Parent of siblings}$	-0.72 (1.34)	-0.15 (1.42)	2.66 (2.19)	0.92 (0.75)	-3.06* (1.82)	-0.00 (0.10)	-0.03 (0.10)	-0.07 (0.10)	-0.07 (0.10)
BH-adjusted p -value	0.891	0.979	0.678	0.678	0.678	0.979	0.979	0.882	0.882
T^{High}	0.49 (0.68)	1.18* (0.70)	1.16 (1.10)	0.15 (0.38)	0.45 (0.91)	0.04 (0.05)	0.05 (0.05)	0.09* (0.05)	0.06 (0.05)
$T^{\text{High}} \times \text{Fair}$	0.65 (0.52)	-0.37 (0.53)	-0.19 (0.84)	0.00 (0.27)	0.17 (0.69)	0.04 (0.04)	0.04 (0.04)	-0.00 (0.04)	0.00 (0.04)
BH-adjusted p -value	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993
T^{High}	0.50 (0.68)	1.11 (0.70)	1.16 (1.10)	0.14 (0.37)	0.48 (0.91)	0.04 (0.05)	0.05 (0.05)	0.09* (0.05)	0.06 (0.05)
$T^{\text{High}} \times \text{Deterministic}$	0.61 (0.54)	-0.11 (0.52)	0.36 (0.83)	-0.18 (0.29)	-0.26 (0.75)	-0.04 (0.04)	-0.03 (0.04)	0.01 (0.04)	0.03 (0.04)
BH-adjusted p -value	0.832	0.832	0.832	0.832	0.832	0.832	0.832	0.832	0.832
Observations	3155	1564	1590	3180	1590	1590	1590	1590	1590

Notes: This table reports heterogeneity in the effects of T^{High} relative to T^{Low} , excluding the pure control group. Each panel reports coefficients from a separate OLS regression (Equation 8) of the outcome on T^{High} , the subgroup variable, and their interaction. The coefficient on T^{High} is the treatment effect for respondents without the subgroup characteristic (for *Fair* and *Deterministic*: at the sample mean); the interaction term is the difference in the treatment effect between respondents with and without the characteristic. BH-adjusted p -values for the interaction term are corrected for multiple hypothesis testing across all outcomes in the table, separately for each subgroup dimension, following Benjamini and Hochberg (1995). Subgroup indicators are defined as in Table A5. *Fair* and *Deterministic* are pre-treatment ratings on a scale from 1 to 7 of how much respondents (dis)agree with the statement that genetic differences between siblings are fair/deterministic. Outcomes are defined as in Table 6. Columns 1 and 4 pool the Singleton and Siblings scenarios (two observations per respondent) and control for the scenario. All models control for strata dummies. Robust standard errors in parentheses. Standard errors are clustered at the respondent level for outcome measures pooling the Singleton and Siblings scenarios. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Supplementary Material

Within-Family Dynamics of Human Capital Formation: Experimental Evidence on Parental Time Investment

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S.1 Robustness of main survey results

Table S.1: Associations with questions about own children in the pure control group

	Questions about own children			
	Hours educational activities	Hours all activities	Test score equality important	Investment equality important
Hours educational activities	0.61***			
Hours all activities		0.43***		
Test score equality (β)			0.08	
Investment equality (γ)				0.01
Observations	144	144	83	83

Notes: This table replicates Table 4 for respondents in the pure control group, who received no information about heritability.

Table S.2: Subsample comparisons

	Full sample	Control	Singleton ability		Sibling type			Order of perceived returns questions	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			L	H	Twins	L younger	H younger	First H low	First H high
Time allocation									
<i>Singleton</i>									
Hours on both activities	13.63	13.53	13.74	13.51	14.18	12.92	13.78		
Hours on educ activities	5.19	5.09	5.88	4.50	5.46	4.89	5.23		
Hours on educ. activities with L	5.88	5.75	5.88		6.08	5.49	6.12		
Hours on educ. activities with H	4.50	4.45		4.50	4.85	4.21	4.44		
Hours on other activities	8.44	8.43	7.86	9.01	8.73	8.03	8.56		
Hours on other activities with L	7.86	8.06	7.86		7.98	7.71	7.91		
Hours on other activities with H	9.01	8.80		9.01	9.45	8.40	9.13		
<i>Siblings</i>									
Hours on educ. activities	8.52	8.65	8.53	8.52	8.84	8.29	8.44		
Hours on educ. activities with L	5.19	5.20	5.24	5.13	5.40	5.01	5.15		
Hours on educ. activities with H	3.34	3.45	3.28	3.39	3.45	3.28	3.29		
Hours on other activities	12.75	13.25	12.28	13.22	12.98	12.54	12.74		
Hours on other activities with L	6.42	6.70	6.19	6.64	6.58	6.28	6.40		
Hours on other activities with H	6.34	6.55	6.09	6.58	6.41	6.26	6.34		
Expected test scores									
<i>Singleton</i>									
Expected test score of L w/ 2 hours	40.53	39.81	40.53		40.38	40.75	40.43	40.41	40.65
Expected test score of H w/ 2 hours	69.43	68.36		69.43	69.28	68.62	70.26	69.09	69.77
Expected test score of L w/ 6 hours	52.45	52.36	52.45		52.80	52.28	52.27	53.11	51.79
Expected test score of H w/ 6 hours	74.43	73.47		74.43	74.39	73.34	75.40	74.38	74.47
<i>Siblings</i>									
Expected test score of L w/ 1 hour	37.36	37.95	34.45	40.25	36.63	37.90	37.54	38.32	36.40
Expected test score of H w/ 1 hour	73.42	72.97	73.02	73.81	74.13	72.34	73.79	73.89	72.95
Expected test score of L w/ 3 hours	51.67	52.22	50.06	53.27	51.91	52.04	51.05	51.32	52.01
Expected test score of H w/ 3 hours	77.70	78.26	77.67	77.73	78.63	76.85	77.64	78.25	77.16
Perceived returns									
<i>Singleton</i>									
Returns to investment	4.23	4.40	5.96	2.50	4.37	4.18	4.13	4.49	3.96
<i>Siblings</i>									
Returns to investment	9.30	9.78	10.13	8.47	9.89	9.33	8.68	8.68	9.91
Returns to ability	31.05	30.53	33.09	29.01	32.11	29.62	31.42	31.25	30.85
Complementarity	-10.02	-8.98	-10.95	-9.09	-10.78	-9.64	-9.66	-8.64	-11.40
Respondents	1997	407	996	1001	659	667	671	996	1001

Notes: This table reports mean weekly hours and mean expected test score percentiles in the hypothetical scenarios for the full sample and for subsamples defined by the pure control group and the randomized features of the scenarios: the ability of the child in the Singleton scenario (L or H), the sibling type (twins, child L younger, child H younger), and the order in which the low and high investment levels for child H are shown when eliciting expected test scores. In the columns by Singleton ability, rows for the other ability level are empty by construction. Time allocation is not reported by the order of investment options.

Table S.3: Mixed logit model estimated separately by subsample

	Baseline		Pure control	Ability of singleton		Type of siblings		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Control	Low	High	Twins	L younger	H younger
<i>Means</i>								
Sum of test scores (α)	0.24*** (0.04)	0.19*** (0.02)	0.22** (0.10)	0.21*** (0.04)	0.22*** (0.04)	0.14*** (0.02)	0.18*** (0.05)	0.37*** (0.07)
Test score equality (β)	0.09*** (0.03)	0.05*** (0.01)	0.07 (0.07)	0.07*** (0.02)	0.06*** (0.02)	0.04*** (0.01)	0.09** (0.04)	0.11*** (0.03)
Investment equality (γ)	1.71*** (0.30)	1.48*** (0.17)	1.88** (0.87)	1.64*** (0.30)	1.69*** (0.30)	1.11*** (0.18)	1.33*** (0.35)	2.86*** (0.56)
Compensating investment (δ)	0.87*** (0.22)	0.75*** (0.09)	1.00*** (0.24)	0.77*** (0.16)	0.80*** (0.13)	0.65*** (0.12)	0.34 (0.29)	1.30*** (0.26)
<i>Standard deviations</i>								
Sum of test scores (α)	0.16*** (0.02)	0.11*** (0.01)	0.13** (0.05)	0.12*** (0.02)	0.12*** (0.02)	0.08*** (0.01)	0.09*** (0.02)	0.21*** (0.04)
Test score equality (β)	0.09*** (0.01)	0.09*** (0.01)	0.11*** (0.03)	0.10*** (0.01)	0.09*** (0.01)	0.08*** (0.01)	0.09*** (0.02)	0.13*** (0.02)
Investment equality (γ)	1.22*** (0.36)	0.09 (0.12)	0.25 (0.93)	0.36 (0.28)	0.13 (0.24)	0.01 (0.10)	0.80* (0.44)	0.09 (0.17)
Compensating investment (δ)	0.97*** (0.30)	0.63*** (0.11)	0.79 (0.61)	0.76*** (0.18)	0.77*** (0.20)	0.24** (0.11)	0.59** (0.25)	1.59*** (0.33)
Correlated coefficients	Yes	No	No	No	No	No	No	No
Respondents	1997	1997	407	996	1001	659	667	671
Observations	19970	19970	4070	9960	10010	6590	6670	6710

Notes: This table reports estimates of the main mixed logit specification (Table 2) separately for the baseline specification, the pure control group, by the randomized ability of the child in the Singleton scenario, and by sibling type (twins, child L younger, child H younger). α , β , γ and δ are normally distributed, correlated random coefficients. Columns 2–8 estimate uncorrelated random coefficients: the subgroups are too small to estimate the full covariance matrix of the random coefficients reliably. Column 1 reports the correlated specification of Table 2 for comparison. Estimated using maximum simulated likelihood with 500 Halton draws. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

S.2 Robustness of treatment effects

Table S.4: Treatment effects including the pure control group

	Time allocation		Perceived production function			Distributional preferences			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Share educ. time	Share educ. time with child L	Perc. returns to ability	Perc. returns to investment	Perc. complementarity	Sum of test scores (α)	Test score equal. (β)	Investment equal. (γ)	Compensating invest. (δ)
Scenario	Both	Sibs	Sibs	Both	Sibs	Sibs	Sibs	Sibs	Sibs
T ^{High}	0.59 (0.84)	1.74** (0.81)	1.33 (1.36)	-0.28 (0.45)	-0.92 (1.08)	0.10* (0.06)	0.05 (0.06)	-0.03 (0.06)	-0.08 (0.06)
T ^{Low}	0.08 (0.84)	0.56 (0.82)	0.10 (1.38)	-0.47 (0.44)	-1.37 (1.06)	0.06 (0.06)	-0.01 (0.06)	-0.12* (0.06)	-0.13** (0.06)
Constant	43.33*** (1.39)	58.75*** (1.33)	22.40*** (2.19)	3.70*** (0.78)	-6.27*** (1.73)	-0.09 (0.10)	0.00 (0.11)	0.08 (0.10)	0.17* (0.10)
BH-adj. p : T ^{High}	0.575	0.281	0.575	0.575	0.575	0.411	0.575	0.575	0.575
BH-adj. p : T ^{Low}	0.943	0.743	0.943	0.625	0.587	0.625	0.943	0.239	0.239
Observations	3962	1960	1997	3994	1997	1997	1997	1997	1997

Notes: This table reports the effects of T^{High} and T^{Low} on the main outcomes relative to the pure control group, including all respondents. Outcomes are defined as in Table 6. Columns 1 and 4 pool the Singleton and Siblings scenarios (two observations per respondent) and control for the scenario. All models control for strata dummies. Robust standard errors in parentheses. Standard errors are clustered at the respondent level for outcome measures pooling the Singleton and Siblings scenarios. BH-adjusted p -values are corrected for multiple hypothesis testing across the nine outcomes, separately for each treatment indicator, following Benjamini and Hochberg (1995).

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.5: Treatment effects separately by Singleton and Siblings scenario

	Time allocation												
	Educ. hours			Other hours			Share educ. time			Share educ. time with child L	Share other time with child L	Perc. returns to investment	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Both	Singl.	Sibs	Both	Singl.	Sibs	Both	Singl.	Sibs	Sibs	Sibs	Singl.	Sibs
Panel A: Association with prior beliefs (pure control)													
Prior	0.24*** (0.09)	0.29** (0.11)	0.19** (0.08)	-0.03 (0.17)	-0.05 (0.23)	-0.01 (0.14)	1.46*** (0.48)	1.70*** (0.53)	1.21** (0.51)	-0.65* (0.39)	-0.06 (0.23)	0.60*** (0.18)	-0.20 (0.29)
Constant	6.28*** (1.01)	6.66*** (1.35)	5.13*** (0.82)	9.95*** (1.23)	11.05*** (1.80)	7.04*** (0.98)	36.56*** (3.33)	35.06*** (3.77)	40.86*** (3.75)	60.48*** (2.85)	52.79*** (2.52)	1.70 (1.50)	9.67*** (2.77)
Observations	814	407	407	814	407	407	807	404	403	396	403	407	407
Panel B: Treatment effects (excl. pure control)													
T ^{High}	0.13 (0.17)	0.22 (0.24)	0.04 (0.12)	-0.21 (0.20)	-0.51* (0.29)	0.09 (0.16)	0.57 (0.68)	1.32 (0.84)	-0.18 (0.67)	1.17* (0.70)	0.10 (0.37)	0.15 (0.38)	0.20 (0.55)
Constant	6.51*** (0.46)	6.98*** (0.63)	5.07*** (0.35)	8.44*** (0.49)	9.01*** (0.74)	5.74*** (0.31)	43.02*** (1.60)	43.58*** (2.12)	45.71*** (1.50)	59.91*** (1.64)	50.80*** (1.03)	4.87*** (0.80)	6.34*** (1.14)
Observations	3180	1590	1590	3180	1590	1590	3155	1578	1577	1564	1577	1590	1590

Notes: This table reports associations with prior beliefs in the pure control group (Panel A) and the effects of T^{High} relative to T^{Low}, excluding the pure control group (Panel B), for time allocation and perceived returns to investment, separately for the Singleton and Siblings scenarios. *Educ. hours* (*Other hours*) are weekly hours on educational (other family) activities, averaged over both children in the Siblings scenario. *Share educ. time* is the share of hours on educational activities in total hours. *Share educ. (other) time with child L* is the share of educational (other family) hours in the Siblings scenario allocated to child L. *Perceived returns to investment* is defined as in Table 6. Columns 1, 4 and 7 pool the Singleton and Siblings scenarios (two observations per respondent) and control for the scenario. *Prior* is in units of 10. All models control for strata dummies. Robust standard errors in parentheses. Standard errors are clustered at the respondent level for outcome measures pooling the Singleton and Siblings scenarios. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.6: First-stage treatment effects including control variables

	Delayed posterior (%)			Immediate posterior (Likert)		
	(1)	(2)	(3)	(4)	(5)	(6)
Prior	6.46*** (0.45)	2.91*** (0.25)	3.55*** (0.22)	0.25*** (0.04)	0.10*** (0.02)	0.13*** (0.02)
T ^{High}		23.66*** (0.74)	7.55*** (0.85)		1.21*** (0.06)	0.79*** (0.08)
T ^{Low}			-16.11*** (0.93)			-0.41*** (0.08)
Constant	7.71 (8.58)	14.13*** (4.87)	26.43*** (4.22)	3.23*** (0.82)	2.19*** (0.40)	2.70*** (0.35)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	407	1590	1997	407	1590	1997

Notes: This table replicates Table 5, controlling for the respondent's age, parenthood, urban residence, migration background, employment, education (*MBO*, *HBO*, *WO*), and living together with a partner. Missing values of the control variables are coded as a separate category. Columns 2, 3, 5 and 6 additionally control for the prior belief. *Delayed posterior* (Columns 1–3) is the percentage of differences in test scores at the end of primary school that respondents attribute to genetic differences, elicited after the hypothetical scenarios. *Immediate posterior* (Columns 4–6) is the perceived importance of genes for doing well in the first year of primary school on a Likert scale, elicited directly after the information provision. Columns 1 and 4 include the pure control group only. Columns 2 and 5 exclude the pure control group, so that T^{High} is relative to T^{Low}. Columns 3 and 6 include all respondents, with the pure control group as the reference category. Prior is in units of 10. All models control for strata dummies. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.7: Second-stage treatment effects including control variables

	Time allocation		Perceived production function			Distributional preferences			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Share educ. time	Share educ. time with child L	Perc. returns to ability	Perc. returns to investment	Perc. complementarity	Sum of test scores (α)	Test score equal. (β)	Investment equal. (γ)	Compensating invest. (δ)
Scenario	Both	Sibs	Sibs	Both	Sibs	Sibs	Sibs	Sibs	Sibs
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel A: Association with prior beliefs (pure control)									
Prior	1.47*** (0.49)	-0.64 (0.41)	0.57 (0.68)	0.19 (0.18)	0.44 (0.53)	0.01 (0.03)	-0.01 (0.03)	-0.06* (0.03)	-0.05 (0.03)
Constant	42.88*** (7.59)	66.57*** (8.25)	14.35 (13.46)	9.04* (5.21)	-12.68 (10.72)	-0.42 (0.66)	-0.08 (0.68)	1.04 (0.66)	0.87 (0.69)
Observations	807	396	407	814	407	407	407	407	407
Panel B: Treatment effects (excl. pure control)									
T ^{High}	0.29 (0.67)	1.22* (0.70)	1.34 (1.10)	0.07 (0.38)	0.51 (0.92)	0.03 (0.05)	0.05 (0.05)	0.09* (0.05)	0.06 (0.05)
Constant	40.47*** (4.39)	57.16*** (4.49)	35.23*** (7.04)	6.59*** (2.51)	-9.50 (6.04)	0.24 (0.32)	0.03 (0.33)	-0.09 (0.33)	-0.33 (0.32)
Observations	3155	1564	1590	3180	1590	1590	1590	1590	1590
BH-adjusted p -value	0.741	0.373	0.507	0.850	0.741	0.741	0.605	0.373	0.507
Panel C: 2SLS estimates (excl. pure control)									
Delayed posterior	0.12 (0.28)	0.52* (0.29)	0.56 (0.46)	0.03 (0.16)	0.21 (0.38)	0.01 (0.02)	0.02 (0.02)	0.04* (0.02)	0.03 (0.02)
Constant	40.28*** (4.42)	56.34*** (4.51)	34.41*** (7.05)	6.55*** (2.51)	-9.81 (5.98)	0.22 (0.31)	0.00 (0.32)	-0.15 (0.33)	-0.37 (0.32)
Observations	3155	1564	1590	3180	1590	1590	1590	1590	1590
First-stage F	1042.00	1000.88	1010.84	1033.11	1010.84	1011.65	1011.65	1011.65	1011.65

Notes: This table replicates Table 6 including control variables. All models control for the respondent's age, parenthood, urban residence, migration background, employment, education (*MBO*, *HBO*, *WO*), and living together with a partner, as well as the gender of the hypothetical children and the sibling type (twins, child H younger). Missing values of the control variables are coded as a separate category. Panels B and C additionally control for prior beliefs. Columns 3–5 additionally control for the order in which the investment levels for child H are shown. Columns 1 and 4 pool the Singleton and Siblings scenarios (two observations per respondent) and control for the scenario. *Prior* and *posterior* are in units of 10. All models control for strata dummies. Robust standard errors in parentheses. Standard errors are clustered at the respondent level for outcome measures pooling the Singleton and Siblings scenarios. BH-adjusted p -values are corrected for multiple hypothesis testing across the nine outcomes in Panel B following Benjamini and Hochberg (1995). * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.8: Heterogeneous treatment effects including control variables

	Time allocation		Perceived production function			Distributional preferences			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Share educ. time	Share educ. time with child L	Perc. returns to ability	Perc. returns to investment	Perc. complementarity	Sum of test scores (α)	Test score equal. (β)	Investment equal. (γ)	Compensating invest. (δ)
Scenario Controls	Both Yes	Sibs Yes	Sibs Yes	Both Yes	Sibs Yes	Sibs Yes	Sibs Yes	Sibs Yes	Sibs Yes
T^{High}	-0.99 (0.96)	1.60 (1.01)	1.74 (1.57)	0.34 (0.54)	-0.05 (1.31)	-0.06 (0.07)	-0.02 (0.07)	0.04 (0.07)	0.07 (0.07)
$T^{\text{High}} \times \text{Girls}$	2.58* (1.32)	-0.75 (1.43)	-0.80 (2.18)	-0.53 (0.75)	1.13 (1.85)	0.18* (0.10)	0.13 (0.10)	0.11 (0.10)	-0.01 (0.10)
BH-adjusted p -value	0.340	0.769	0.803	0.769	0.769	0.340	0.616	0.621	0.905
T^{High}	0.18 (0.90)	0.76 (0.98)	2.44 (1.52)	-0.13 (0.54)	0.19 (1.37)	-0.02 (0.07)	0.02 (0.07)	0.04 (0.07)	0.07 (0.07)
$T^{\text{High}} \times \text{Tertiary degree}$	0.23 (1.33)	0.94 (1.42)	-2.21 (2.20)	0.40 (0.75)	0.64 (1.84)	0.10 (0.10)	0.06 (0.10)	0.10 (0.10)	-0.02 (0.10)
BH-adjusted p -value	0.862	0.862	0.862	0.862	0.862	0.862	0.862	0.862	0.862
T^{High}	0.67 (1.05)	1.31 (1.10)	-2.34 (1.76)	-0.48 (0.57)	0.21 (1.38)	0.02 (0.08)	0.04 (0.08)	0.12 (0.08)	0.07 (0.08)
$T^{\text{High}} \times \text{Female}$	-0.57 (1.37)	-0.10 (1.43)	6.40*** (2.25)	1.04 (0.76)	0.48 (1.87)	0.01 (0.10)	0.02 (0.11)	-0.05 (0.10)	-0.01 (0.10)
BH-adjusted p -value	0.953	0.953	0.041	0.761	0.953	0.953	0.953	0.953	0.953
T^{High}	0.84 (1.10)	1.39 (1.12)	-0.18 (2.01)	-0.69 (0.64)	1.84 (1.53)	0.06 (0.08)	0.11 (0.09)	0.14 (0.09)	0.14 (0.09)
$T^{\text{High}} \times \text{Parent}$	-0.82 (1.38)	-0.26 (1.45)	2.30 (2.41)	1.15 (0.79)	-2.03 (1.91)	-0.04 (0.11)	-0.09 (0.11)	-0.07 (0.11)	-0.11 (0.11)
BH-adjusted p -value	0.708	0.857	0.708	0.708	0.708	0.800	0.708	0.708	0.708
T^{High}	0.86 (0.92)	1.32 (0.95)	0.00 (1.63)	-0.41 (0.53)	1.91 (1.27)	0.04 (0.07)	0.07 (0.07)	0.12* (0.07)	0.09 (0.07)
$T^{\text{High}} \times \text{Parent of siblings}$	-1.12 (1.33)	-0.20 (1.43)	2.69 (2.20)	0.96 (0.74)	-2.82 (1.84)	-0.02 (0.10)	-0.04 (0.10)	-0.06 (0.10)	-0.06 (0.10)
BH-adjusted p -value	0.819	0.886	0.664	0.664	0.664	0.886	0.886	0.819	0.819
T^{High}	0.22 (0.67)	1.24* (0.71)	1.27 (1.10)	0.04 (0.38)	0.52 (0.93)	0.03 (0.05)	0.05 (0.05)	0.09* (0.05)	0.07 (0.05)
$T^{\text{High}} \times \text{Fair}$	0.89* (0.51)	-0.43 (0.53)	-0.49 (0.84)	0.01 (0.27)	0.08 (0.70)	0.04 (0.04)	0.04 (0.04)	-0.01 (0.04)	-0.00 (0.04)
BH-adjusted p -value	0.728	0.950	0.968	0.968	0.968	0.907	0.907	0.968	0.968
T^{High}	0.24 (0.67)	1.17* (0.70)	1.28 (1.10)	0.03 (0.37)	0.55 (0.92)	0.03 (0.05)	0.05 (0.05)	0.10* (0.05)	0.07 (0.05)
$T^{\text{High}} \times \text{Deterministic}$	0.75 (0.53)	-0.14 (0.53)	0.25 (0.81)	-0.17 (0.29)	-0.31 (0.74)	-0.05 (0.04)	-0.03 (0.04)	0.01 (0.04)	0.02 (0.04)
BH-adjusted p -value	0.890	0.890	0.890	0.890	0.890	0.890	0.890	0.892	0.890
Observations	3155	1564	1590	3180	1590	1590	1590	1590	1590

Notes: This table replicates Table A10 including control variables. It reports heterogeneity in the effects of T^{High} relative to T^{Low} , excluding the pure control group. Each row reports coefficients from a separate OLS regression (Equation 8) of the outcome on T^{High} , the subgroup variable, their interaction, and control variables. Only the interaction term and main treatment effect are reported. Subgroup variables are defined as in Tables A5 and A10, and outcomes as in Table 6. All models control for the respondent's age, parenthood, urban residence, migration background, employment, education (*MBO*, *HBO*, *WO*), and living together with a partner, as well as the gender of the hypothetical children and the sibling type (twins, child H younger). Missing values of the control variables are coded as a separate category. When the subgroup variable is itself one of these controls, it enters only through the subgroup main effect and the interaction. Columns 3–5 additionally control for the order in which the investment levels for child H are shown. Columns 1 and 4 pool the Singleton and Siblings scenarios (two observations per respondent) and control for the scenario. All models control for strata dummies. Robust standard errors in parentheses. Standard errors are clustered at the respondent level for outcome measures pooling the Singleton and Siblings scenarios. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

S.3 Randomization tests

Table S.9: Balance table: Child ability in Singleton scenario

	(1) Low ability	(2) High ability	(3) (1)-(2)
Strata variables			
Female	0.56	0.56	-0.00
Tertiary degree	0.50	0.51	-0.01
Living-at-home children	0.38	0.42	-0.03
Younger than 48	0.44	0.42	0.02
Equality important	0.37	0.38	-0.01
Equality important (missing)	0.11	0.10	0.01
Prior beliefs & Demographics			
Prior	56.49	57.08	-0.60
Age	48.25	49.15	-0.90
Lives together with partner	0.58	0.60	-0.02
Urban residence	0.55	0.56	-0.01
Employed	0.67	0.69	-0.01
MBO	0.29	0.28	0.01
HBO	0.30	0.31	-0.01
WO	0.20	0.20	-0.00
Migration background	0.23	0.25	-0.01
Household head	0.70	0.70	0.00
Parent	0.66	0.68	-0.02
Parent of singleton	0.14	0.18	-0.04**
Parent of siblings	0.51	0.50	0.01
Conservative	5.19	5.22	-0.03
Equality important (1-7)	5.95	6.04	-0.09*
Log household income	8.37	8.39	-0.02
Log personal income	7.55	7.53	0.02
Joint F -test (p -value)			0.74
Observations (F -test)			1997

Notes: This table compares pre-treatment characteristics between respondents randomly assigned to a low-ability and a high-ability child in the Singleton scenario. Columns 1–2 report means and Column 3 the difference in means. Variables are defined as in Table A8. The joint F -test reports the p -value of a test that the characteristics jointly predict group membership, from an OLS regression of the group indicator on strata variables, prior beliefs, age, parenthood, living together with a partner, urban residence, migration background, employment, and education (MBO , HBO , WO) as specified in the PAP. Significance stars refer to two-sided t -tests. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.10: Balance table: Child gender

	(1) Boys	(2) Girls	(3) (1)-(2)
Strata variables			
Female	0.58	0.55	0.03
Tertiary degree	0.51	0.50	0.00
Living-at-home children	0.41	0.39	0.02
Younger than 48	0.44	0.42	0.03
Equality important	0.36	0.39	-0.02
Equality important (missing)	0.11	0.10	0.01
Prior beliefs & Demographics			
Prior	56.84	56.73	0.11
Age	48.31	49.10	-0.79
Lives together with partner	0.59	0.60	-0.00
Urban residence	0.56	0.56	-0.00
Employed	0.68	0.68	-0.00
MBO	0.29	0.28	0.01
HBO	0.31	0.30	0.00
WO	0.20	0.20	0.00
Migration background	0.24	0.24	-0.00
Household head	0.69	0.71	-0.02
Parent	0.67	0.67	0.00
Parent of singleton	0.17	0.15	0.02
Parent of siblings	0.50	0.52	-0.02
Conservative	5.10	5.32	-0.22*
Equality important (1-7)	5.98	6.01	-0.02
Log household income	8.37	8.38	-0.01
Log personal income	7.56	7.53	0.04
Joint F -test (p -value)			0.94
Observations (F -test)			1997

Notes: This table compares pre-treatment characteristics between respondents randomly assigned to scenarios in which the hypothetical children are boys or girls. Columns 1-2 report means and Column 3 the difference in means. Variables are defined as in Table A8. The joint F -test reports the p -value of a test that the characteristics jointly predict group membership, from an OLS regression of the group indicator on strata variables, prior beliefs, age, parenthood, living together with a partner, urban residence, migration background, employment, and education (MBO , HBO , WO) as specified in the PAP. Significance stars refer to two-sided t -tests. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.11: Balance table: Sibling type

	(1)	(2)	(3)	(4)	(5)	(6)
	Twins	L younger	H younger	(1)-(2)	(1)-(3)	(2)-(3)
Strata variables						
Female	0.58	0.58	0.54	0.00	0.04	0.04
Tertiary degree	0.51	0.49	0.51	0.02	-0.00	-0.03
Living-at-home children	0.40	0.39	0.41	0.01	-0.01	-0.02
Younger than 48	0.42	0.43	0.45	-0.01	-0.03	-0.02
Equality important	0.37	0.38	0.38	-0.01	-0.01	-0.00
Equality important (missing)	0.11	0.10	0.11	0.01	-0.00	-0.01
Prior beliefs & Demographics						
Prior	56.16	57.11	57.08	-0.96	-0.92	0.04
Age	48.72	48.39	48.99	0.33	-0.27	-0.60
Lives together with partner	0.60	0.57	0.62	0.03	-0.02	-0.05**
Urban residence	0.56	0.55	0.56	0.01	-0.00	-0.01
Employed	0.71	0.66	0.68	0.05**	0.04	-0.02
MBO	0.29	0.28	0.28	0.01	0.00	-0.00
HBO	0.31	0.29	0.31	0.02	-0.00	-0.03
WO	0.20	0.20	0.20	-0.00	-0.00	0.00
Migration background	0.24	0.26	0.23	-0.01	0.02	0.03
Household head	0.70	0.71	0.69	-0.01	0.00	0.01
Parent	0.66	0.65	0.70	0.02	-0.03	-0.05*
Parent of singleton	0.17	0.14	0.17	0.02	-0.00	-0.02
Parent of siblings	0.50	0.50	0.53	-0.00	-0.03	-0.03
Conservative	5.18	5.24	5.20	-0.06	-0.03	0.03
Equality important (1-7)	6.00	6.00	5.98	-0.01	0.01	0.02
Log household income	8.44	8.29	8.40	0.16**	0.04	-0.11
Log personal income	7.65	7.42	7.56	0.22*	0.09	-0.13
Joint F -test (p -value)				0.70	0.24	0.17
Observations (F -test)				1326	1330	1338

Notes: This table compares pre-treatment characteristics between respondents randomly assigned to the three sibling types in the Siblings scenario: twins, siblings in which child L is younger, and siblings in which child H is younger. Columns 1–3 report means and Columns 4–6 pairwise differences in means. Variables are defined as in Table A8. The joint F -test reports the p -value of a test that the characteristics jointly predict membership in one of the two groups compared, from an OLS regression of the group indicator on strata variables, prior beliefs, age, parenthood, living together with a partner, urban residence, migration background, employment, and education (MBO , HBO , WO) as specified in the PAP. Significance stars refer to two-sided t -tests. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.12: Balance table: Order of perceived returns questions

	(1) (A ^H , I ^L) first	(2) (A ^H , I ^H) first	(3) (1)-(2)
Strata variables			
Female	0.55	0.57	-0.02
Tertiary degree	0.51	0.50	0.01
Living-at-home children	0.39	0.42	-0.03
Younger than 48	0.43	0.43	0.00
Equality important	0.39	0.37	0.02
Equality important (missing)	0.10	0.10	0.00
Prior beliefs & Demographics			
Prior	56.98	56.59	0.40
Age	48.70	48.70	0.01
Lives together with partner	0.58	0.61	-0.03
Urban residence	0.56	0.56	-0.00
Employed	0.69	0.67	0.01
MBO	0.29	0.28	0.01
HBO	0.30	0.30	-0.00
WO	0.20	0.20	0.01
Migration background	0.25	0.24	0.01
Household head	0.70	0.70	0.01
Parent	0.65	0.68	-0.03
Parent of singleton	0.14	0.17	-0.03**
Parent of siblings	0.51	0.50	0.01
Conservative	5.28	5.13	0.16
Equality important (1-7)	6.02	5.98	0.04
Log household income	8.37	8.39	-0.02
Log personal income	7.56	7.53	0.04
Joint <i>F</i> -test (<i>p</i> -value)			0.92
Observations (<i>F</i> -test)			1997

Notes: This table compares pre-treatment characteristics between respondents randomly assigned to see the expected test score question for child H with low investment first or with high investment first. Columns 1-2 report means and Column 3 the difference in means. Variables are defined as in Table A8. The joint *F*-test reports the *p*-value of a test that the characteristics jointly predict group membership, from an OLS regression of the group indicator on strata variables, prior beliefs, age, parenthood, living together with a partner, urban residence, migration background, employment, and education (*MBO*, *HBO*, *WO*) as specified in the PAP. Significance stars refer to two-sided *t*-tests. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

S.4 Mapping to pre-analysis plan

Table S.13 maps the analyses in the pre-analysis plan (PAP, osf.io/p9zvw) to the paper. Numbers in the first column refer to sections and research questions (RQ) in the PAP. The second column lists where the analysis is reported in the paper, including the appendix and this supplement. The third column describes deviations from the PAP and their reasons, and the fourth column lists the tables that report the analysis as specified in the PAP. Empty cells in the third and fourth column indicate no deviations from the PAP.

The paper deviates from the PAP in two main respects. First, test score and investment inequality aversion are measured by the individual-level posterior means of the random coefficients β and γ of the mixed logit model in Table 2 instead of the decision-tree measures. In addition, the use of the mixed logit model lets us distinguish these from two additional preferences: the combined achievement (α) and the degree of compensating investment (δ). Second, and partly as a result of the preference measurement, the family of outcomes to which the Benjamini-Hochberg (BH) correction is applied differs from the PAP. In the PAP, the family consists of the ten primary outcomes of RQ 2–5: educational time, the share of educational time, the shares of educational time and of other family time allocated to child H, the perceived returns to ability and to investment, the perceived complementarity, the two decision-tree measures of test score and investment inequality aversion, and perceived enjoyment (Table S.15). In the paper, the family consists of the nine main outcomes in Table 6, Panel B: the share of educational time, the share of educational time allocated to child L, the perceived returns to ability and to investment, the perceived complementarity, and the mixed logit parameters α , β , γ and δ . Educational time in hours, the share of other family time allocated to child H and perceived enjoyment are reported outside the main results (see RQ 2 and RQ 5), and the decision-tree measures are replaced by β and γ and complemented by α and δ , which are estimated jointly with β and γ in the same mixed logit model. Smaller additional deviations are explained in Table S.13.

Table S.13: Mapping of the pre-analysis plan to the paper

PAP	Paper	Note	Unchanged PAP analysis
<i>Design and balance</i>			
2–4: Sample, survey design, randomization	Sections 3, 5	Clarification: PAP Section 3.4 states that questions are forward-looking if the child is younger than 4, but the questionnaire in the PAP, as fielded, uses this cutoff only for the child’s ability (school entry at age 4); the questions on time investment are forward-looking if the child is younger than 6 (the age of the hypothetical children).	
6.1: t -tests and joint F -tests of balance between treatment groups	Table A8		
6.1: Balance of other randomized variables	Tables S.9–S.12		
<i>Estimation (Sections 6.2–6.3)</i>			
6.2: OLS of outcomes on T^{High} and strata dummies, excl. pure control	Table 6, Panel B	The set of main outcome variables in the main analysis differs from the PAP, as described at the start of the Section.	Table S.15, Panel A
6.2: Baseline and additional control variables	Table S.7		Table S.15, Panel B
6.2: Logit models for binary outcomes		Not applicable, as none of the main outcomes is binary.	Table S.16, Cols. 6, 10
6.2: BH correction across the ten primary outcomes of RQ 2–5	Table 6, Panel B	Applied to the nine main outcomes of the paper (see RQ 2–5 below).	Table S.15
6.3: Heterogeneous treatment effects	Tables A10, S.8	We report all heterogeneity dimensions for all outcomes for completeness.	Tables S.19–S.22
<i>RQ 1: Posterior beliefs</i>			
RQ 1: Immediate and delayed posterior	Table 5; Table S.6		
RQ 1: Heterogeneity by <i>Prior belief</i>	Table A7	We present effects of T^{Low} and T^{High} relative to the pure control group, separately for priors below, between and above the two values shown, instead of the interaction $T^{\text{High}} \times \text{Prior belief}$. In the pre-registered comparison of T^{High} with T^{Low} , the difference between prior and the provided estimate is always 43 percentage points.	Table S.14, Cols. 1–2, 5–6
RQ 1: Heterogeneity by <i>Confidence in prior belief</i>			Table S.14, Cols. 3–4, 7–8

Continued on next page

Table S.13 continued

PAP	Paper	Note	Unchanged PAP analysis
<i>RQ 2: Time allocation</i>			
RQ 2.1: <i>Share of educational time</i>	Table 6, Col. 1; Table S.5, Cols. 1,4,7	In the Siblings scenario, one observation pooling both children instead of one observation per child.	Table S.15, Col. 2; Table S.16, Cols. 3–4
RQ 2.1: <i>Educational time</i>	Table S.5, Cols. 1–3	Not among the main outcomes. One observation per scenario, pooling both children in the Siblings scenario.	Table S.15, Col. 1; Table S.16, Cols. 1–2
RQ 2.2: <i>Share of educational time allocated to child H</i>	Table 6, Col. 2	Share allocated to child L (100–share allocated to child H), so that positive effects indicate compensating investment.	Table S.15, Col. 3
RQ 2.2: <i>Share of other family time allocated to child H</i>	Table S.5, Col. 11	Not among the main outcomes.	Table S.15, Col. 4
<i>RQ 3: Perceived production function</i>			
RQ 3.1–3.3: <i>Perceived returns to ability, returns to investment, complementarity</i>	Table 6, Cols. 3–5		
RQ 3.1–3.3: Robustness test (expected test scores on T ^{High} , high ability, high investment and interactions)	Table S.18		
<i>RQ 4: Distributional preferences</i>			
RQ 4.1: <i>Aversion to test score inequality</i> , incl. robustness checks 1–3	Table 6, Col. 7; Table A9	Mixed logit parameter β instead of the decision-tree end points (also for the BH correction and heterogeneity).	Table S.15, Col. 8; Table S.16, Cols. 5–8
RQ 4.2: <i>Aversion to investment inequality</i> , incl. robustness checks 1–2	Table 6, Col. 8; Table A9	As in RQ 4.1, with γ	Table S.15, Col. 9; Table S.16, Cols. 9–11
RQ 5: <i>Perceived enjoyment of educational activities</i>		Not among the main outcomes.	Table S.15, Col. 10
<i>Validation (Section 6.5)</i>			
6.5: Correlations with questions about own children, full sample and pure control group	Tables 4, S.1	β and γ instead of the decision-tree end points (as in RQ 4).	Table S.17

Notes: This table maps the analyses in the pre-analysis plan (PAP, osf.io/p9zvz) to the paper. Numbers in the first column refer to sections and research questions (RQ) in the PAP. The second column lists where the analysis is reported in the paper, including the appendix and this supplement. The third column describes deviations from the PAP where applicable, and the fourth column lists the tables that report the analysis as specified in the PAP.

Table S.14: Heterogeneity in treatment effects on posterior beliefs by prior belief and confidence

	Delayed posterior (%)				Immediate posterior (Likert)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
T^{High}	22.52*** (2.89)	22.80*** (2.87)	25.36*** (3.22)	24.69*** (2.97)	1.36*** (0.22)	1.36*** (0.22)	1.24*** (0.26)	1.24*** (0.26)
H	2.85*** (0.37)	2.84*** (0.37)	0.96* (0.50)	0.04 (0.49)	0.12*** (0.03)	0.12*** (0.03)	0.07* (0.04)	0.05 (0.04)
$T^{\text{High}} \times H$	0.19 (0.49)	0.15 (0.48)	-0.35 (0.69)	-0.22 (0.62)	-0.03 (0.04)	-0.03 (0.04)	-0.01 (0.06)	-0.01 (0.05)
Constant	22.71*** (2.69)	14.60*** (5.08)	34.83*** (2.97)	13.87*** (5.33)	3.33*** (0.22)	2.10*** (0.42)	3.68*** (0.23)	1.97*** (0.43)
H	Prior	Prior	Confidence	Confidence	Prior	Prior	Confidence	Confidence
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	1590	1590	1590	1590	1590	1590	1590	1590

Notes: This table reports heterogeneity in the effects of T^{High} relative to T^{Low} , excluding the pure control group, on posterior beliefs by the prior belief and the confidence in the prior belief, as pre-specified in the PAP (RQ 1). Each column reports an OLS regression of the posterior belief on T^{High} , the heterogeneity variable H , and their interaction. H is the prior belief (in units of 10) or the confidence in the prior belief (scale from 1 to 7). *Delayed posterior* (Columns 1–4) and *immediate posterior* (Columns 5–8) are defined as in Table 5. Columns 2, 4, 6 and 8 additionally control for the respondent’s age, parenthood, urban residence, migration background, employment, education (*MBO*, *HBO*, *WO*), and living together with a partner, and Columns 4 and 8 for the prior belief; missing values of the controls are captured by indicators. All models control for strata dummies. Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.15: Treatment effects for pre-specified group of outcome variables

Scenario	Time allocation				Perceived production function			Distributional preferences	Enjoyment	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Educ. hours	Share educ. time	Share educ. time with child H	Share other time with child H	Perc. returns to ability	Perc. returns to investment	Perc. complementarity	Test score equal.	Investment equal.	Perc. enjoyment
	Both	Both	Sibs	Sibs	Sibs	Both	Sibs	Sibs	Sibs	Sibs
Panel A: Without controls										
T ^{High}	0.10 (0.15)	0.32 (0.65)	-1.17* (0.70)	-0.10 (0.37)	1.22 (1.10)	0.18 (0.38)	0.43 (0.91)	0.23 (0.67)	0.05 (0.05)	0.02 (0.05)
Constant	6.36*** (0.41)	42.48*** (1.45)	40.09*** (1.64)	49.20*** (1.03)	25.46*** (2.59)	3.11*** (0.83)	-8.05*** (2.00)	53.06*** (1.46)	2.17*** (0.12)	3.35*** (0.12)
Observations	4770	4730	1564	1577	1590	3180	1590	1590	1590	3180
BH-adjusted <i>p</i> -value	0.795	0.795	0.795	0.795	0.795	0.795	0.795	0.795	0.795	0.795
Panel B: With controls										
T ^{High}	0.03 (0.14)	0.06 (0.64)	-1.22* (0.70)	-0.05 (0.36)	1.34 (1.10)	0.07 (0.38)	0.51 (0.92)	0.29 (0.67)	0.06 (0.05)	0.01 (0.05)
Constant	6.46*** (1.05)	41.22*** (4.14)	42.84*** (4.49)	52.92*** (2.20)	35.23*** (7.04)	6.59*** (2.51)	-9.50 (6.04)	54.70*** (4.15)	2.46*** (0.34)	3.02*** (0.30)
Observations	4770	4730	1564	1577	1590	3180	1590	1590	1590	3180
BH-adjusted <i>p</i> -value	0.929	0.929	0.828	0.929	0.929	0.929	0.929	0.929	0.929	0.929

Notes: This table reports the effects of T^{High} relative to T^{Low}, excluding the pure control group, on the primary outcomes pre-registered in the pre-analysis plan (PAP, Section 6.2, RQ 2–5). *Educ. hours* are weekly hours on educational activities with a child; *share educ. time* is their share in total hours on educational and other family activities with that child. *Share educ. (other) time with child H* is the share of educational (other family) hours in the Siblings scenario allocated to child H. *Perceived returns to ability*, *returns to investment* and *complementarity* are defined as in Table 6. *Test score equal.* is 100 minus the indifference point between option A and B implied by Q1–Q3 (Figure A1), or stated in Q4 by respondents who always chose A (B); higher values indicate stronger test score inequality aversion. *Investment equal.* takes the values 1 (A in Q6.1 or B in Q6.4), 2 (B in Q6.1 or A in Q6.4), 3 (A in Q6.2 or B in Q6.3) and 4 (B in Q6.2 or A in Q6.3). *Perc. enjoyment* is the perceived enjoyment (1–7) of educational activities of child L and child H. Columns 1–2 stack the Singleton child, child L and child H and control for the Siblings scenario; column 6 pools the Singleton and Siblings scenarios and controls for the scenario; column 10 pools child L and child H and controls for the child. Panel B controls for the respondent’s age, parenthood, urban residence, migration background, employment, education (*MBO*, *HBO*, *WO*), living together with a partner, and prior beliefs, the gender of the hypothetical children and the sibling type (twins, child H younger), with indicators for missing values; columns 5–7 also control for the order in which the investment levels for child H are shown. BH-adjusted *p*-values correct for multiple hypothesis testing across the ten outcomes within each panel, following Benjamini and Hochberg (1995). All models control for strata dummies. Robust standard errors in parentheses, clustered at the respondent level for outcomes with more than one observation per respondent. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.16: Treatment effects for alternative specifications of pre-specified group of outcome variables

	Time allocation				Test score inequality aversion				Investment inequality aversion		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Educ. hours	Educ. hours	Share educ. time	Share educ. time	Binary	Binary	Scale excl. score8	Scale	Binary	Binary	Scale
Scenario	Singl.	Sibs	Singl.	Sibs	Sibs	Sibs	Sibs	Sibs	Sibs	Sibs	Sibs
Estimator	OLS	OLS	OLS	OLS	OLS	Logit	OLS	OLS	OLS	Logit	OLS
Excl. always A/B					No	No	No	Yes	No	No	Yes
Panel A: Without controls											
T ^{High}	0.22 (0.24)	0.04 (0.12)	1.32 (0.84)	-0.19 (0.66)	0.02 (0.02)	0.02 (0.02)	0.55 (0.53)	0.43 (0.44)	0.01 (0.02)	0.01 (0.02)	-0.03 (0.03)
Constant	6.98*** (0.63)	5.07*** (0.34)	43.58*** (2.12)	44.24*** (1.41)	0.70*** (0.05)		53.08*** (1.22)	52.36*** (1.04)	0.37*** (0.06)		2.45*** (0.08)
Observations	1590	3180	1578	3152	1590	1587	1590	1159	1590	1584	847
Panel B: With controls											
T ^{High}	0.14 (0.24)	-0.02 (0.12)	1.06 (0.83)	-0.43 (0.65)	0.02 (0.02)	0.02 (0.02)	0.60 (0.54)	0.43 (0.44)	0.01 (0.02)	0.01 (0.02)	-0.04 (0.03)
Constant	6.46*** (1.72)	5.71*** (0.87)	37.72*** (5.40)	45.45*** (4.21)	0.66*** (0.15)		50.25*** (3.41)	51.12*** (2.86)	0.51*** (0.16)		2.66*** (0.22)
Observations	1590	3180	1578	3152	1590	1586	1590	1159	1590	1583	847

Notes: This table reports the effects of T^{High} relative to T^{Low}, excluding the pure control group, for the robustness specifications pre-registered in the PAP (Sections 6.2 and 6.4). Columns 1–4 estimate the RQ 2.1 outcomes of Table S.15 by scenario; columns 2 and 4 stack child L and child H. Columns 5–6 use an indicator for choosing equal test scores (option A) in Q1 (Figure A1), and columns 9–10 an indicator for choosing equal investment (2 hours for each child) in Q5. Column 7 uses the measure of test score inequality aversion in Table S.15, but assigns respondents who always chose A (B) in Q1–Q3 an indifference point of 32.5 (67.5) instead of the one they state in Q4. Columns 8 and 11 use the measures in Table S.15, excluding respondents who chose the same option in all of Q1–Q3 and Q5–Q6, respectively. Columns 6 and 10 report average marginal effects from logit models. Panel B includes the controls of Table S.15 except the order of the investment levels and, in Columns 1 and 3, the sibling type. All models control for strata dummies. Robust standard errors in parentheses, clustered at the respondent level in columns 2 and 4. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.17: Associations between time allocation and questions about own children for alternative definition of distributional preferences

	Questions about own children		
	Test score equality important	Test score equality important	Investment equality important
<i>Panel A: Full sample</i>			
Test score inequality aversion	-0.08		
Test score inequality aversion, excl. Q4		0.01	
Investment inequality aversion			0.09
Observations	362	362	362
<i>Panel B: Pure control group</i>			
Test score inequality aversion	-0.22**		
Test score inequality aversion, excl. Q4		-0.14	
Investment inequality aversion			-0.02
Observations	83	83	83

Notes: This table reports pairwise Pearson correlation coefficients between the pre-registered decision-tree measures of distributional preferences from the hypothetical scenarios (rows) and the corresponding answers to the questions about respondents' own children (columns), as specified in the PAP (Section 6.5). *Test score inequality aversion* is 100 minus the indifference point between option A and B implied by Q1–Q3 (Figure A1), with respondents who always chose A (B) assigned the indifference point they state in Q4. *Test score inequality aversion, excl. Q4* instead assigns these respondents an indifference point of 32.5 (67.5). *Investment inequality aversion* is the ordinal measure taking the values 1 (A in Q6.1 or B in Q6.4), 2 (B in Q6.1 or A in Q6.4), 3 (A in Q6.2 or B in Q6.3), and 4 (B in Q6.2 or A in Q6.3). *Test score equality important* and *Investment equality important* refer to the stated importance of equality between the own children, for respondents with more than one child aged 0–18. Panel A includes all respondents, Panel B respondents in the pure control group, who received no information about heritability. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.18: Treatment effects on perceived production function

	Expected test score					
	(1)	(2)	(3)	(4)	(5)	(6)
High ability	28.41*** (1.23)	35.95*** (0.94)	33.41*** (0.89)	28.31*** (1.24)	35.95*** (0.94)	33.41*** (0.89)
High investment	11.43*** (0.77)	14.37*** (0.60)	13.37*** (0.52)	11.43*** (0.77)	14.37*** (0.60)	13.37*** (0.52)
High ability $\times$ High investment	-6.67*** (1.05)	-10.59*** (0.63)	-9.27*** (0.56)	-6.67*** (1.05)	-10.59*** (0.64)	-9.27*** (0.56)
T^{High}	-1.10 (1.19)	0.02 (0.97)	-0.38 (0.87)	-1.06 (1.19)	0.07 (0.97)	-0.34 (0.87)
$T^{\text{High}} \times$ High ability	1.26 (1.75)	0.74 (1.29)	0.87 (1.23)	1.23 (1.75)	0.74 (1.29)	0.86 (1.23)
$T^{\text{High}} \times$ High investment	0.67 (1.12)	-0.09 (0.88)	0.19 (0.75)	0.67 (1.12)	-0.09 (0.88)	0.19 (0.75)
$T^{\text{High}} \times$ High ability $\times$ High investment	-0.27 (1.48)	0.60 (0.90)	0.29 (0.79)	-0.27 (1.49)	0.60 (0.90)	0.29 (0.79)
Constant	38.69*** (1.92)	35.81*** (1.49)	36.48*** (1.50)	35.08*** (4.89)	30.58*** (3.28)	31.99*** (3.29)
Scenario	Singl.	Sibs	Both	Singl.	Sibs	Both
Controls	No	No	No	Yes	Yes	Yes
Observations	3180	6360	9540	3180	6360	9540

Notes: This table reports the robustness test for RQ 3.1–3.3 pre-registered in the PAP (Section 6.4): OLS regressions of expected test score percentiles on indicators for high ability, high investment, T^{High} , and all their interactions, excluding the pure control group. *High investment* refers to 6 (vs. 2) hours per week in the Singleton scenario and 3 (vs. 1) hours per week in the Siblings scenario. *High ability* refers to the randomized ability of the child in the Singleton scenario and to child H (vs. child L) in the Siblings scenario. Columns 3 and 6 pool both scenarios and control for the scenario. Columns 4–6 additionally control for the respondent’s age, parenthood, urban residence, migration background, employment, education (*MBO*, *HBO*, *WO*), living together with a partner, and prior beliefs, as well as the gender of the hypothetical children, the sibling type (twins, child H younger), and the order in which the investment levels for child H are shown; missing values of the controls are captured by indicators. All models control for strata dummies. Robust standard errors in parentheses. Standard errors are clustered at the respondent level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.19: Heterogeneous treatment effects for pre-specified group of outcome variables

	(1) Educ. hours	(2) Share educ. time	(3) Share educ. time with child H	(4) Share other time with child H	(5) Perc. returns to ability	(6) Perc. returns to investment	(7) Perc. comple- mentarity	(8) Test score equal.	(9) Invest- ment equal.	(10) Perc. enjoy- ment
Scenario	Both	Both	Sibs	Sibs	Sibs	Both	Sibs	Sibs	Sibs	Sibs
Controls	No	No	No	No	No	No	No	No	No	No
T ^{High}	-0.08 (0.21)	-0.90 (0.91)	-1.56 (1.00)	0.21 (0.50)	1.65 (1.58)	0.41 (0.54)	-0.06 (1.30)	0.42 (0.93)	0.00 (0.07)	0.08 (0.07)
T ^{High} × Girls	0.35 (0.29)	2.39* (1.29)	0.81 (1.42)	-0.58 (0.73)	-0.85 (2.18)	-0.49 (0.75)	1.01 (1.83)	-0.36 (1.35)	0.11 (0.11)	-0.12 (0.09)
BH-adjusted <i>p</i> -value	0.723	0.646	0.723	0.723	0.773	0.723	0.723	0.790	0.723	0.723
T ^{High}	0.26 (0.24)	0.83 (1.01)	-1.28 (1.09)	-0.01 (0.62)	-2.22 (1.75)	-0.34 (0.57)	0.16 (1.34)	0.41 (1.00)	0.13* (0.08)	0.05 (0.07)
T ^{High} × Female	-0.25 (0.30)	-0.85 (1.32)	0.15 (1.42)	-0.12 (0.76)	5.97*** (2.25)	0.95 (0.76)	0.45 (1.82)	-0.36 (1.34)	-0.14 (0.11)	-0.04 (0.09)
BH-adjusted <i>p</i> -value	0.914	0.914	0.914	0.914	0.080	0.701	0.914	0.914	0.701	0.914
T ^{High}	-0.20 (0.27)	0.67 (1.05)	-1.19 (1.13)	-0.49 (0.61)	-0.72 (2.00)	-0.58 (0.65)	1.86 (1.51)	1.57 (1.15)	0.03 (0.09)	-0.06 (0.08)
T ^{High} × Parent	0.45 (0.32)	-0.54 (1.33)	0.02 (1.45)	0.60 (0.77)	2.92 (2.40)	1.13 (0.79)	-2.16 (1.90)	-2.02 (1.42)	0.04 (0.11)	0.13 (0.10)
T ^{High}			-1.25 (0.94)	-0.54 (0.52)	-0.11 (1.64)	-0.28 (0.53)	1.95 (1.25)	0.93 (0.95)	0.07 (0.07)	-0.05 (0.06)
T ^{High} × Parent of siblings			0.15 (1.42)	0.89 (0.73)	2.66 (2.19)	0.92 (0.75)	-3.06* (1.82)	-1.38 (1.33)	-0.03 (0.11)	0.15 (0.09)
BH-adjusted <i>p</i> -value			0.917	0.362	0.362	0.362	0.362	0.397	0.917	0.362
T ^{High}	0.22 (0.21)	0.21 (0.88)	-0.74 (0.96)	-0.23 (0.58)	2.47 (1.50)	0.04 (0.55)	0.19 (1.35)	-0.82 (0.93)	-0.05 (0.08)	0.03 (0.07)
T ^{High} × Tertiary education	-0.22 (0.29)	0.23 (1.30)	-0.82 (1.40)	0.29 (0.73)	-2.51 (2.20)	0.26 (0.75)	0.48 (1.82)	2.10 (1.33)	0.21** (0.11)	-0.02 (0.09)
BH-adjusted <i>p</i> -value	0.864	0.864	0.864	0.864	0.851	0.864	0.864	0.575	0.438	0.864
T ^{High}								0.27 (0.67)	0.06 (0.05)	
T ^{High} × Deterministic								-0.03 (0.54)	-0.02 (0.04)	
T ^{High}								0.25 (0.67)	0.05 (0.05)	
T ^{High} × Fair								-0.10 (0.52)	-0.02 (0.04)	
T ^{High}									0.11 (0.11)	
T ^{High} × Option 1A									-0.09 (0.12)	
Observations	4770	4730	1564	1577	1590	3180	1590	1590	1590	3180

Notes: This table reports heterogeneity in the effects of T^{High} relative to T^{Low}, excluding the pure control group, on the outcomes in Table S.15, along the dimensions pre-registered in the PAP (Sections 6.3–6.4). Each block and column reports a separate OLS regression (Equation 8) of the outcome on T^{High}, the subgroup variable and their interaction. The coefficient on T^{High} is the treatment effect for respondents without the subgroup characteristic; the interaction term is the difference in the treatment effect between respondents with and without it (for *Deterministic* and *Fair*: at the sample mean and per one-point increase). Empty cells: dimension not pre-registered for the outcome. BH-adjusted *p*-values for the interaction term correct for multiple hypothesis testing across outcomes within each dimension, following Benjamini and Hochberg (1995), and are shown for dimensions with at least one interaction term significant at the 10% level. Subgroup indicators are defined as in Table A5, and *Fair* and *Deterministic* as in Table A10; *Tertiary education* indicates an *HBO* or *WO* degree; *Option 1A* indicates choosing the option with equal test scores (option A) in Q1 (Figure A1). Columns 1–2 stack the Singleton child, child L and child H and control for the Siblings scenario; Column 6 pools the Singleton and Siblings scenarios and controls for the scenario; Column 10 pools child L and child H and controls for the child. All models control for strata dummies. Robust standard errors in parentheses, clustered at the respondent level for outcomes with more than one observation per respondent. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.20: Heterogeneous treatment effects for pre-specified group of outcome variables including control variables

	(1) Educ. hours	(2) Share educ. time	(3) Share educ. time with child H	(4) Share other time with child H	(5) Perc. returns to ability	(6) Perc. returns to investment	(7) Perc. comple- mentarity	(8) Test score equal.	(9) Invest- ment equal.	(10) Perc. enjoy- ment
Scenario	Both	Both	Sibs	Sibs	Sibs	Both	Sibs	Sibs	Sibs	Sibs
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
T^{High}	-0.13 (0.21)	-1.15 (0.90)	-1.60 (1.01)	0.21 (0.51)	1.74 (1.57)	0.34 (0.54)	-0.05 (1.31)	0.44 (0.93)	-0.00 (0.08)	0.07 (0.07)
$T^{\text{High}} \times \text{Girls}$	0.33 (0.29)	2.41* (1.27)	0.75 (1.43)	-0.53 (0.74)	-0.80 (2.18)	-0.53 (0.75)	1.13 (1.85)	-0.29 (1.36)	0.12 (0.11)	-0.11 (0.09)
BH-adjusted p -value	0.625	0.583	0.748	0.748	0.793	0.748	0.748	0.829	0.625	0.625
T^{High}	0.18 (0.24)	0.53 (1.00)	-1.31 (1.10)	-0.05 (0.61)	-2.34 (1.76)	-0.48 (0.57)	0.21 (1.38)	0.43 (1.01)	0.13 (0.08)	0.03 (0.07)
$T^{\text{High}} \times \text{Female}$	-0.22 (0.30)	-0.75 (1.31)	0.10 (1.43)	0.04 (0.76)	6.40*** (2.25)	1.04 (0.76)	0.48 (1.87)	-0.29 (1.36)	-0.13 (0.11)	-0.01 (0.09)
BH-adjusted p -value	0.960	0.960	0.960	0.960	0.045	0.794	0.960	0.960	0.794	0.960
T^{High}	-0.24 (0.27)	0.53 (1.04)	-1.39 (1.12)	-0.59 (0.61)	-0.18 (2.01)	-0.69 (0.64)	1.84 (1.53)	1.58 (1.15)	0.01 (0.09)	-0.08 (0.08)
$T^{\text{High}} \times \text{Parent}$	0.42 (0.32)	-0.71 (1.31)	0.26 (1.45)	0.81 (0.78)	2.30 (2.41)	1.15 (0.79)	-2.03 (1.91)	-1.96 (1.41)	0.06 (0.11)	0.15 (0.09)
T^{High}			-1.32 (0.95)	-0.65 (0.52)	0.00 (1.63)	-0.41 (0.53)	1.91 (1.27)	0.94 (0.95)	0.06 (0.07)	-0.06 (0.06)
$T^{\text{High}} \times \text{Parent of siblings}$			0.20 (1.43)	1.20 (0.74)	2.69 (2.20)	0.96 (0.74)	-2.82 (1.84)	-1.31 (1.33)	-0.01 (0.11)	0.15 (0.09)
T^{High}	0.13 (0.21)	-0.08 (0.86)	-0.76 (0.98)	-0.24 (0.58)	2.44 (1.52)	-0.13 (0.54)	0.19 (1.37)	-0.67 (0.95)	-0.05 (0.08)	0.02 (0.07)
$T^{\text{High}} \times \text{Tertiary education}$	-0.19 (0.28)	0.27 (1.27)	-0.94 (1.42)	0.39 (0.75)	-2.21 (2.20)	0.40 (0.75)	0.64 (1.84)	1.94 (1.35)	0.21* (0.11)	-0.00 (0.09)
BH-adjusted p -value	0.866	0.922	0.866	0.866	0.866	0.866	0.910	0.758	0.520	0.964
T^{High}								0.32 (0.67)	0.06 (0.05)	
$T^{\text{High}} \times \text{Deterministic}$								-0.09 (0.54)	-0.03 (0.04)	
T^{High}								0.31 (0.67)	0.06 (0.05)	
$T^{\text{High}} \times \text{Fair}$								-0.16 (0.53)	-0.03 (0.04)	
T^{High}									0.11 (0.11)	
$T^{\text{High}} \times \text{Option 1A}$									-0.08 (0.12)	
Observations	4770	4730	1564	1577	1590	3180	1590	1590	1590	3180

Notes: This table replicates Table S.19, controlling for the respondent's age, parenthood, urban residence, migration background, employment, education (*MBO*, *HBO*, *WO*), living together with a partner, and prior beliefs, the gender of the hypothetical children and the sibling type (twins, child H younger); missing values of the controls are captured by indicators. Columns 5–7 additionally control for the order in which the investment levels for child H are shown. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.21: Heterogeneous treatment effects for alternative specifications of pre-specified group of outcome variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Educ. hours	Educ. hours	Share educ. time	Share educ. time	Binary	Binary	Scale excl. score8	Scale	Binary	Binary	Scale
Scenario	Singl.	Sibs	Singl.	Sibs	Sibs	Sibs	Sibs	Sibs	Sibs	Sibs	Sibs
Estimator	OLS	OLS	OLS	OLS	OLS	Logit	OLS	OLS	OLS	Logit	OLS
Excl. always A/B	No	No	No	No	No	No	No	Yes	No	No	Yes
Controls	No	No	No	No	No	No	No	No	No	No	No
T^{High}	0.05 (0.35)		1.68 (1.12)								
$T^{High} \times \text{High ability (Singl.)}$	0.43 (0.47)		0.01 (1.62)								
T^{High}	-0.05 (0.36)	-0.10 (0.17)	-0.19 (1.24)	-1.26 (0.91)	0.01 (0.03)	0.01 (0.03)	0.45 (0.75)	-0.08 (0.60)	-0.01 (0.03)	-0.01 (0.03)	-0.04 (0.05)
$T^{High} \times \text{Girls}$	0.51 (0.48)	0.27 (0.25)	2.91* (1.67)	2.14 (1.32)	0.02 (0.05)	0.02 (0.05)	0.23 (1.07)	1.04 (0.86)	0.04 (0.05)	0.04 (0.05)	0.02 (0.07)
T^{High}	0.42 (0.40)	0.18 (0.20)	1.57 (1.30)	0.46 (1.03)	0.04 (0.04)	0.02 (0.02)	0.64 (0.80)	0.53 (0.66)	0.04 (0.03)	0.04 (0.04)	-0.03 (0.05)
$T^{High} \times \text{Female}$	-0.29 (0.50)	-0.23 (0.25)	-0.32 (1.71)	-1.10 (1.35)	-0.05 (0.05)	-0.02 (0.02)	-0.10 (1.07)	-0.18 (0.88)	-0.05 (0.05)	-0.05 (0.05)	0.01 (0.07)
T^{High}	-0.22 (0.47)	-0.20 (0.22)	1.82 (1.40)	0.10 (1.06)	0.05 (0.04)	0.05 (0.04)	1.46 (0.93)	0.72 (0.78)	-0.02 (0.04)	-0.02 (0.04)	-0.06 (0.06)
$T^{High} \times \text{Parent}$	0.67 (0.54)	0.35 (0.26)	-0.75 (1.74)	-0.44 (1.35)	-0.05 (0.05)	-0.05 (0.05)	-1.38 (1.14)	-0.44 (0.94)	0.03 (0.05)	0.03 (0.05)	0.04 (0.07)
T^{High}					0.04 (0.03)	0.04 (0.03)	0.99 (0.77)	0.51 (0.63)	0.02 (0.03)	0.02 (0.03)	0.00 (0.05)
$T^{High} \times \text{Parent of siblings}$					-0.04 (0.05)	-0.04 (0.05)	-0.87 (1.07)	-0.15 (0.88)	-0.03 (0.05)	-0.03 (0.05)	-0.07 (0.07)
T^{High}	0.55 (0.35)	0.05 (0.18)	1.44 (1.16)	-0.41 (0.90)	0.00 (0.03)	0.00 (0.03)	0.77 (0.76)	0.27 (0.65)	-0.04 (0.03)	-0.02 (0.02)	-0.06 (0.05)
$T^{High} \times \text{Tertiary education}$	-0.62 (0.48)	-0.03 (0.25)	-0.22 (1.69)	0.46 (1.33)	0.03 (0.05)	0.03 (0.05)	-0.46 (1.07)	0.30 (0.88)	0.09* (0.05)	0.04* (0.02)	0.05 (0.07)
T^{High}					0.02 (0.02)	0.02 (0.02)	0.59 (0.53)	0.42 (0.44)	0.01 (0.02)	0.01 (0.02)	-0.03 (0.03)
$T^{High} \times \text{Deterministic}$					0.01 (0.02)	0.01 (0.02)	0.14 (0.40)	0.29 (0.33)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.03)
T^{High}					0.02 (0.02)	0.02 (0.02)	0.58 (0.53)	0.47 (0.44)	0.01 (0.02)	0.01 (0.02)	-0.03 (0.03)
$T^{High} \times \text{Fair}$					0.01 (0.02)	0.01 (0.02)	-0.02 (0.39)	-0.04 (0.31)	-0.00 (0.02)	-0.00 (0.02)	0.02 (0.03)
T^{High}									0.02 (0.04)	0.02 (0.04)	-0.12 (0.09)
$T^{High} \times \text{Option 1A}$									-0.02 (0.05)	-0.02 (0.05)	0.11 (0.10)
Observations	1590	3180	1578	3152	1590	1587	1590	1159	1590	1584	847

Notes: This table reports heterogeneity in the effects of T^{High} relative to T^{Low} , excluding the pure control group, for the robustness specifications in Table S.16, along the dimensions pre-registered in the PAP (Sections 6.3–6.4). Each block and column reports a separate regression (Equation 8) of the outcome on T^{High} , the subgroup variable and their interaction; coefficients are interpreted as in Table S.19. Columns 6 and 10 estimate logit models and report average marginal effects. Empty cells: dimension not pre-registered for the outcome. *High ability (Singl.)* indicates that the child in the Singleton scenario has high ability; other subgroup variables are defined as in Table S.19. All models control for strata dummies. Robust standard errors in parentheses, clustered at the respondent level in Columns 2 and 4, which stack child L and child H. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table S.22: Heterogeneous treatment effects for alternative specifications of pre-specified group of outcome variables including control variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Educ. hours	Educ. hours	Share educ. time	Share educ. time	Binary	Binary	Scale excl. score8	Scale	Binary	Binary	Scale
Scenario	Singl.	Sibs	Singl.	Sibs	Sibs	Sibs	Sibs	Sibs	Sibs	Sibs	Sibs
Estimator	OLS	OLS	OLS	OLS	OLS	Logit	OLS	OLS	OLS	Logit	OLS
Excl. always A/B					No	No	No	Yes	No	No	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
T ^{High}	0.03 (0.35)		1.56 (1.10)								
T ^{High} × High ability (Singl.)	0.33 (0.47)		-0.22 (1.60)								
T ^{High}	-0.10 (0.36)	-0.16 (0.17)	-0.39 (1.23)	-1.52* (0.90)	0.01 (0.03)	0.01 (0.03)	0.52 (0.76)	-0.12 (0.60)	-0.01 (0.03)	-0.01 (0.03)	-0.05 (0.05)
T ^{High} × Girls	0.50 (0.48)	0.27 (0.24)	2.89* (1.65)	2.18* (1.31)	0.02 (0.05)	0.02 (0.05)	0.15 (1.07)	1.11 (0.87)	0.04 (0.05)	0.04 (0.05)	0.03 (0.07)
T ^{High}	0.34 (0.40)	0.10 (0.20)	1.29 (1.30)	0.15 (1.02)	0.05 (0.04)	0.02 (0.02)	0.75 (0.80)	0.51 (0.66)	0.03 (0.04)	0.01 (0.01)	-0.03 (0.05)
T ^{High} × Female	-0.27 (0.49)	-0.19 (0.25)	-0.26 (1.70)	-0.99 (1.34)	-0.05 (0.05)	-0.02 (0.02)	-0.22 (1.08)	-0.16 (0.89)	-0.05 (0.05)	-0.02 (0.02)	-0.01 (0.07)
T ^{High}	-0.29 (0.46)	-0.24 (0.22)	1.76 (1.38)	-0.11 (1.05)	0.05 (0.04)	0.05 (0.04)	1.48 (0.94)	0.65 (0.78)	-0.02 (0.04)	-0.02 (0.04)	-0.07 (0.06)
T ^{High} × Parent	0.66 (0.54)	0.33 (0.26)	-1.06 (1.73)	-0.49 (1.33)	-0.05 (0.05)	-0.05 (0.05)	-1.33 (1.14)	-0.34 (0.95)	0.04 (0.05)	0.04 (0.05)	0.04 (0.07)
T ^{High}					0.04 (0.03)	0.04 (0.03)	0.98 (0.77)	0.48 (0.64)	0.02 (0.03)	0.02 (0.03)	-0.00 (0.05)
T ^{High} × Parent of siblings					-0.04 (0.05)	-0.04 (0.05)	-0.78 (1.08)	-0.09 (0.89)	-0.03 (0.05)	-0.03 (0.05)	-0.07 (0.07)
T ^{High}	0.43 (0.34)	-0.03 (0.18)	1.22 (1.15)	-0.71 (0.89)	0.01 (0.03)	0.01 (0.04)	0.92 (0.77)	0.35 (0.66)	-0.04 (0.04)	-0.02 (0.02)	-0.06 (0.05)
T ^{High} × Tertiary education	-0.57 (0.47)	0.01 (0.24)	-0.33 (1.66)	0.57 (1.30)	0.02 (0.05)	0.02 (0.05)	-0.66 (1.07)	0.16 (0.88)	0.09* (0.05)	0.04* (0.02)	0.05 (0.07)
T ^{High}					0.02 (0.02)	0.02 (0.02)	0.63 (0.54)	0.42 (0.44)	0.01 (0.02)	0.01 (0.02)	-0.04 (0.03)
T ^{High} × Deterministic					0.01 (0.02)	0.01 (0.02)	0.07 (0.40)	0.32 (0.33)	-0.01 (0.02)	-0.01 (0.02)	-0.02 (0.03)
T ^{High}					0.02 (0.02)	0.02 (0.02)	0.62 (0.54)	0.47 (0.44)	0.01 (0.02)	0.01 (0.02)	-0.04 (0.03)
T ^{High} × Fair					0.01 (0.02)	0.01 (0.02)	-0.06 (0.40)	-0.06 (0.32)	-0.01 (0.02)	-0.01 (0.02)	0.01 (0.03)
T ^{High}									0.02 (0.04)	0.02 (0.04)	-0.13 (0.09)
T ^{High} × Option 1A									-0.02 (0.05)	-0.02 (0.05)	0.11 (0.10)
Observations	1590	3180	1578	3152	1590	1586	1590	1159	1590	1583	847

Notes: This table replicates Table S.21, controlling for the respondent's age, parenthood, urban residence, migration background, employment, education (*MBO*, *HBO*, *WO*), living together with a partner, and prior beliefs, the gender of the hypothetical children and, in all columns except 1 and 3, the sibling type (twins, child H younger); missing values of the controls are captured by indicators. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

S.5 Questionnaire

The Dutch (original) and English versions of the questionnaire are available for download at the LISS panel data archive.