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Expected Returns to Parenting Styles: Perceived Impacts on Educational Outcomes, Mental Health, and Self-Worth

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Expected Returns to Parenting Styles: Perceived Impacts on Educational Outcomes, Mental Health, and Self-Worth

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Abstract

This study investigates expectations about the effects of different parenting styles on children's human capital outcomes, focusing on educational achievements, mental health, and self-worth. Additionally, it explores how these expectations relate to parenting behaviour.

The study utilises an online survey of the German population with hypothetical parenting style vignettes to elicit expectations. Findings reveal significant variations in individual expectations across parenting style scenarios. On average, participants associate warm parenting styles, such as authoritative and permissive approaches, with the highest human capital outcomes. Heterogeneity in expectations is partially explained by gender, age, and educational background. Furthermore, the results suggests that participants' parenting style choices are associated with expectations about human capital outcomes and participants' childhood parenting experiences.

This findings contribute to existing literature on parental investment beyond considerations on educational achievement, as it explores expected effects of parenting on mental health and self-worth. The results have implications for targeted policy interventions aimed at understanding parenting's developmental consequences.

Keywords: parenting styles, authoritarian parenting, authoritative parenting, permissive parenting, uninvolved parenting, parental investment, mental health, human capital inequality

JEL Codes: I240, I310, J120, J130, J240

1 Introduction

Human capital, comprising an individual's skills, abilities, and overall health, is a key factor in economic success (Barth et al., 2020; Cunha & Heckman, 2009; Shaffer & Kipp, 2014). It is largely developed during childhood and adolescence through a complex interplay of genetic predispositions and environmental factors (Francesconi & Heckman, 2016). A crucial environmental influence is the family, particularly parents, who shape human capital development through their parenting decisions. Consequently, variations in parenting styles can lead to disparities in adult human capital (Cunha & Heckman, 2009; Cunha et al., 2006; Heckman & Mosso, 2014).
This study elicits subjective beliefs about how different parenting styles affect human capital outcomes, including educational success, mental health, and self-worth. The findings provide insights on social attitudes as well as on the public's awareness of the connection between parenting and factors influencing individual economic success and overall economic growth.

Insights from neuroscience and psychology explain how parenting can positively and negatively impact brain development in childhood and adolescence (Shaffer & Kipp, 2014, pp.542-543). Developmental psychologists refer to sensitive periods in childhood and adolescence to describe instances where environmental factors, such as parents, can have long-lasting impacts. During these periods, the human brain exhibits increased plasticity compared to later life stages. This means that in childhood, certain brain regions are extremely active and able to form pathways in response to environmental factors more rapidly and efficiently than in adulthood. This heightened plasticity allows children and teenagers to acquire abilities like walking, speaking, solving complex cognitive tasks, and developing emotional responses. An important takeaway is that as the brain's plasticity decreases with adulthood, some skills not yet acquired become difficult, if not impossible, to develop later in life (Fandakova & Hartley, 2020).
Consequently, children and adolescents have an opportunity to grow (human capital) during these sensitive periods, but they are also more vulnerable to outside risk factors. Parents can become such a risk factor and potentially harm human capital development, for example, by neglecting the child's needs or through abuse.
Research classified different parenting styles along several dimensions. Key factors include warmth and responsiveness of interactions between parent and child, and the level of control demonstrated by parents. These parenting styles have different developmental impacts. According to Shaffer and Kipp (2014, pp.425-431) for example, authoritative parenting (i.e. responsive and warm parenting, where rules are set in accordance with the child's needs) correlates with high self-esteem, achievement motivation, and better school performance. Conversely, less responsive styles, are associated with more negative developmental outcomes and lower human capital returns.

Expanding on the understanding of various parenting styles, this study examines public expec-

tations about different parenting approaches. I contribute to existing literature by investigating expectations about the effects of parenting styles on educational outcomes, mental health, and self-worth. This research breaks new ground by emphasising mental health outcomes and conceptualising parenting styles as potential developmental risk factors, thereby filling an important gap in the literature. By eliciting parenting perceptions, I aim to enhance models of parental decision-making and investment, while also uncovering potential misunderstandings about parenting. Moreover, the study contributes to the development of targeted policy interventions, including parenting education programs. Additionally, the study explores heterogeneity in perceptions and provides policymakers with crucial information for designing more effective, tailored interventions. Lastly, I investigate if there is a link between parenting style perceptions and parenting style choice. Knowing what human capital outcomes people take into account when making parenting decisions helps selecting the necessary policy interventions.
The data used to address the research questions stem from an online survey of the German population that includes hypothetical parenting scenarios to elicit beliefs. OLS regressions are employed to investigate perceptions about parenting styles and human capital outcomes, as well as aspects of heterogeneity. The predictive impact of beliefs on parenting style choices is studied through a multinomial choice model. I build on Attanasio et al. (2022) and Boneva and Rauh (2018), who also use hypothetical vignettes to elicit parental beliefs.

The study contributes to the existing literature on parental investment and human capital formation in childhood and adolescence. See Doepke et al. (2019) and Francesconi and Heckman (2016) for an overview of parental investment and human capital formation; Attanasio et al. (2022), Attanasio (2015), Cunha et al. (2013), and Cunha et al. (2022) for an overview of parental investment in early childhood; Del Boca et al. (2017), Henry et al. (2011), and Hill and Tyson (2009) for an overview of parental investment in early adolescence; and Altschul (2011), Attanasio et al. 2022, Boneva and Rauh (2018), and Wikle and Cullen (2023) for an overview of parental investments and beliefs about parental investment for different developmental stages. Furthermore, Kiessling (2021) investigated parental beliefs on parenting styles and neighbourhood quality with respect to future earnings and life satisfaction of children. The present paper, in contrast, focuses on eliciting parental beliefs on parenting styles with respect to specific mental health disorders as well as educational and self-worth outcomes, which in turn might affect future earnings and life satisfaction. When it comes to parenting decisions, Dohmen et al. (2019) found that parents choose to be authoritative if their child has a high ability level, and to be authoritarian if they expect their child to have the same career as them. Thus, the authors argue that the optimal parenting style depends on the environment. Therefore, it might be interesting to explore if participants have overall positive or negative perceptions about a parenting style.
All in all, the present paper not only studies beliefs about the effects of parenting styles on educational outcomes or future earnings , but additionally elicits expectations about the effects of parenting styles on mental health and personality. To the best of my knowledge, this is a novel

approach to studying the effects of parenting styles on human capital development.

The results of the study provide compelling evidence that participants believe parenting styles matter for human capital outcomes. They also take these expectations into account for their own parenting behaviour. Additionally, heterogeneity in perceptions is present in the data. More precisely, highly responsive parenting styles, such as authoritative and permissive, are perceived as the most beneficial, expected to lead to better academic performance and improved mental health and self-worth outcomes. In contrast, uninvolved parenting is associated with the poorest expectations regarding academic achievement, whereas abusive authoritarian parenting is linked to heightened risks for mental health disorders and negative self-worth. Additionally, the study uncovers gender differences in perceptions, with male respondents generally expecting lower academic outcomes and associating less risk for mental health issues with authoritarian parenting compared to female respondents. Older participants also exhibit more negative expectations regarding authoritarian parenting styles, particularly concerning academic performance and self-worth. Further results suggest that participants rely on perceptions about the effect of parenting on educational, mental health, and self-worth outcomes when making parenting decisions. Own parenting experiences were identified as another predictor for individual parenting behaviour. The insights gained from this study can inform future research, parenting programs, and educational policies aimed at supporting families during their parenting journeys.

The paper proceeds as follows: first, the methodology and study design are presented, highlighting the content of the parenting style vignettes. Next, the data collected through the online survey are described. The results section follows. Here, the associations between parenting style scenarios and the outcomes of interest are outlined, and heterogeneity in beliefs and the predictive impact of parenting style perceptions on actual parenting behaviour are examined. Last, these results are discussed and compared to literature findings from causal and correlational studies on parenting styles. The conclusion follows. Supplementary material can be found in Appendices A and B.

2 Methodology

This study aims to elicit beliefs of the German adult population about the returns to parenting styles and their impact on educational, mental health, and self-worth outcomes by using hypothetical parenting scenarios. The primary goal is to determine whether people believe parenting styles influence the development of various human capital components, such as educational outcomes, mental health, and self-worth. Additionally, the study explores whether there is heterogeneity in perceived returns to parenting styles on these components, and to what extent individual characteristics can predict this return. To identify whether beliefs can predict behaviour, the study also investigates whether parenting styles are related to individuals' own parenting behaviour. In order to address these research objectives, I collect data through an

online survey that includes hypothetical scenarios on parenting styles. The following sections explain the survey design in more detail and provide an overview of how parenting styles are classified in this study. The last section provides the empirical specification for the data analysis.

2.1 Study Design

The survey, which is in German, is designed to be conducted online and to take approximately 20 minutes per participant. Initially, respondents receive introductory information regarding the purpose of the study, data storage, anonymity, and contact details. Participants are then screened based on age (18 and older) and place of residence (Germany). To proceed with the survey, participants must consent to the introductory part and meet the screening requirements. Subsequently, respondents are asked about their gender and state of residency in Germany to ensure the quotas for a representative sample of the German population are met. Participants can no longer fill out the survey once the quotas are full.

The next part of the survey consists of hypothetical parenting style vignettes, which are explained in more detail in Section 2.1.1. There are five vignettes in total, each including nine identical follow-up questions where participants need to state their expectations. In total, participants answer 45 questions in this section, which lasts about ten minutes. Before the vignette scenarios, the respondents receive introductory information about this section.

To control for inattentive respondents, two attention checks are included in the survey. The first one is a text-based test that is conducted before the vignette scenarios, and the second is an image-based check between the penultimate and final scenario. Responses from participants who do not pass both attention checks are excluded from the analysis.

Following the vignette scenarios, participants answer demographic questions in the final part of the survey. These include questions about the number of children the participant has, the age of the oldest and of the youngest child, highest educational attainment, the number of adults living in the respondent's household, average monthly net household income, average working hours per week, and migration background. Furthermore, respondents are asked to draw comparisons from the parenting styles in the scenarios to their own lives and experiences. They are asked which of the five scenarios most closely matches the parenting style they experienced themselves, and which of the five styles they would most likely use if they had children or which of the five styles most closely matches their own parenting style.

In the analysis, only complete answers are used, that is, those from respondents who answered all necessary questions and took at least 200 seconds to complete the survey.

The German Association for Experimental Economic Research e.V. certified the surfey as meeting their ethics standards.

2.1.1 Parenting Style Scenarios

This study employs hypothetical parenting scenarios, building on the work of Biroli et al. (2022), Boneva and Rauh (2018), Attanasio et al. (2022), and Cunha et al. (2013), to elicit participants' beliefs about the impact of parenting styles on educational, mental health, and

self-worth outcomes. The scenarios differ only in their parenting styles, which are described according to Baumrind (1967) and Maccoby and Martin (1983) for each scenario.

Baumrind (1967, pp. 80–83; 1968, p. 77) first introduced the parenting style concepts used in this study. The author originally investigated parent and child behaviour and identified three commonly used parenting patterns:

First, parents who are both demanding of and nurturing to their children are described as authoritative. According to Baumrind (1967), this parenting style shows the most positive effects on children, who are described as independent, well-socialised, and self-assertive (Shaffer & Kipp, 2014, p. 544).

Second, the authoritarian parenting style is characterised by a high level of demandingness, but parents who follow this style are less nurturing and communicative (Baumrind, 1967, p. 81). Children of these parents are more insecure and aggressive compared to those with authoritative parents.

Last, Baumrind (1967) identified a third parenting style called permissive, which is characterised by nurturing parents who show little to no demandingness. In this style, children are described as less independent and more self-centred compared to those raised in the authoritative style (Shaffer & Kipp, 2014, p.544).

Subsequent studies by Maccoby and Martin (1983) identified a fourth parenting style, described as showing little nurturing and communicative behaviour and low demandingness. This style is the uninvolved or indifferent style. Furthermore, the authors classified the four parenting styles into two dimensions, as depicted in Table 2.1.

Table 2.1: Parenting Style Scenarios Along Two Dimensions acc. to Maccoby and Martin (1983)

	Low Responsiveness	**High Responsiveness**
Low Demandingness	Uninvolved/Indifferent Parents	Permissive Parents
High Demandingness	Authoritarian Parents	Authoritative Parents

The first dimension, demandingness, refers to the extent to which parents control and supervise their children's behaviour and the degree to which they establish rules and demands (Shaffer & Kipp, 2014, p. 541-542). The second dimension, responsiveness, pertains to the degree of affection and support parents show towards their children, as well as their ability to acknowledge and respond to their children's wants and needs. Parents who are highly responsive are encouraging and warm towards their children, whereas those who are low in responsiveness tend to belittle, punish, and criticise their children.

Authoritative parents are characterised as warm, demanding, and democratic, establishing reasonable rules and guidelines that allow children to participate in decision-making according to their needs (Shaffer & Kipp, 2014, p. 542). In contrast, authoritarian parents impose strict, dictatorial rules that do not necessarily align with the child's needs, and they often demand obedience through force or punishment.

Permissive parents demonstrate a high degree of affection and warmth towards their children;

however, they fail to establish rules and guidelines, allowing children to express themselves and behave with extensive freedom. Uninvolved parents are characterised by both low demandingness and low responsiveness. These parents may either reject their children and remain uninvolved in their lives or be overwhelmed and unable to respond to their children's needs and to establish rules and demands.

The survey features five hypothetical scenarios based on the described parenting styles: authoritative, permissive, uninvolved, and two variations of authoritarian parenting (one including physical/abusive punishment and the other excluding it). Each scenario illustrates how parents within these styles respond to a school-related problem faced by their son.
The problem is introduced uniformly before presenting all scenarios. The exact wording can be found in Appendix B.1. It describes an 11-year-old German boy named 'Leon', who has recently transitioned from elementary to middle school and is struggling to adapt to the increased workload. Following the problem description, participants are presented with the five scenarios. Each scenario first outlines the relevant parenting style as per the literature discussed above and then provides an example of how parents might respond to Leon's concerns. The specific wording of these scenarios is detailed in Appendices B.2-B.6.[1]
In the authoritative scenario, for instance, the parents are portrayed as responsive to Leon's worries and fears, and they proactively work with him to address the issue. Conversely, in the permissive scenario, although the parents listen to and encourage Leon, they do not take his concerns very seriously and believe he can handle the situation independently.
The uninvolved scenario, which scores low on responsiveness compared to the other styles, depicts parents who barely listen to Leon, leaving him uncertain about whether he can approach them with his problems. Consequently, Leon must resolve the issue on his own without any parental encouragement.
In the mild authoritarian scenario, which excludes abusive punishment, the parents are described as controlling and reacting angrily to Leon's poor school performance. They impose punishment for declining grades and enforce a strict study plan that does not accommodate the boy's needs.
The authoritarian scenario with abusive punishment is similar to the mild authoritarian scenario but involves more severe parental reactions. In this version, parents are depicted as laughing at and insulting Leon, reacting with greater intensity and causing potential physical and psychological harm if he fails to meet their strict guidelines.

The authoritative scenario is presented first to the participants, serving as the baseline scenario. Participants answer nine identical questions for each scenario; the exact wording of these questions can be found in Appendix B.7. First, they are asked to rate their expectations regarding Leon's educational outcomes, including his anticipated grade point average (GPA) at the end

[1] Note that the child actions are endogenous to responses. It is assumed that the child wants to improve their grades and is thus cooperative.

of the current school year (fifth grade), and at the end of the eighth school year (before high school), and his expected GPA for high school graduation ("Abitur"). This value ranges from 1 to 5, where 1 is the best grade.
Second, the participants assess the risk of Leon developing mental health disorders during his school years (percentages from 0 to 100). Specifically, they evaluate the risk of conditions such as depression, anxiety disorders, eating disorders, addiction, or other mental health issues. Finally, participants estimate the risk of Leon developing negative self-worth during his time in school.
Participants are informed that the boy remains the same across all scenarios and that only the parenting style varies. They are instructed to assume that the parenting pattern remains constant until Leon reaches adulthood or completes school. Additionally, they are directed to disregard any effects of past parenting, focusing solely on middle and high school periods.
Responses are recorded using sliders, allowing participants to review and adjust their answers as needed. The main part of the survey, including the scenarios, takes approximately 10 minutes to complete.
The use of quantitative scales in the survey design facilitates more accurate comparisons and reduces subjectivity in responses compared to the use of qualitative scales, such as Likert scales (Attanasio, Boneva, & Rauh, 2022; Manski, 2004).
The vignettes depict a specific child with a particular problem. Participants' beliefs may vary depending on the individual child and their circumstances depicted in the vignettes, for example, a better school performance may lead to different beliefs.

2.2 Empirical Specification

The expected outcomes reported by participants are compared across scenarios to analyse the impact of beliefs regarding returns to parenting styles on educational, and mental health-, and self-worth outcomes. The effects of parenting styles on perceived outcomes per individual across scenarios were estimated using ordinary least squares (OLS), following the methodologies and model specifications employed by Attanasio et al. (2022), Biroli et al. (2022), Boneva and Rauh (2018) in their respective studies. Additionally, I analyse heterogeneity in responses and examine the predictive impact of participants' beliefs on their personal parenting patterns.

Perceived Average Outcomes per Scenario: First, I employ three OLS regressions for the outcome variables: expected GPA, risk for mental health disorders, and risk for negative self-worth. These regressions include dummy variables for the parenting style scenarios and individual fixed effects. Specifically, the β coefficients of this model specification are estimated as follows:

$$\hat{y}_{jik} = \alpha_k + \beta_{1k} I_{permissive} + \beta_{2k} I_{uninvolved} + \beta_{3k} I_{authoritarian1} + \beta_{4k} I_{authoritarian2} + \gamma_{ik} + \varepsilon_{ijk} \qquad \forall k, \tag{1}$$

where i indicates the individual study participant, j represents the parenting style scenario

(j={1,2,3,4}), and $\hat{y}_{jik}$ is the expected outcome k for individual i in scenario j. α_k is the model intercept, and the dummy variables $I_{permissive}$, $I_{uninvolved}$, $I_{authoritarian1}$, and $I_{authoritarian2}$ indicate the parenting style scenarios (permissive, uninvolved, authoritarian [authoritarian1], and abusive authoritarian [authoritarian2] respectively). γ_{ik} represents individual fixed effects. The authoritative parenting style scenario serves as the baseline.
Thus, coefficient β_{1k} represents how individuals, on average, perceive the outcome variables in the permissive scenario compared to the authoritative one; β_{2k} represents how individuals, on average, perceive the outcome variables in the uninvolved scenario compared to the authoritative one; and so on. A β_{jk} coefficient that is not significantly different from 0 indicates that the outcomes in the respective parenting style scenario do not, on average, differ significantly from the baseline scenario. A positive β_{jk} translates to an expected average decline in grades or increased risk for developing a mental health disorder or negative self-worth. This is an on-average worse result compared to the baseline.

Heterogeneity in Perceived Returns: To analyse heterogeneity, I first calculate perceived returns to parenting styles. This is similar to the approach of Biroli et al. (2022). I then regress these returns on individual characteristics such as age, gender, education, and household income. The returns are calculated by taking the difference between the perceived outcome of person i in scenario j and the perceived outcome of person i in the baseline scenario. The results for four variables per the initial outcome variable are as follows:

$$r_{jik} = \hat{y}_{jik} - \hat{y}_{0ik} \qquad \forall k, \tag{2}$$

where j indicates the scenarios: baseline scenario authoritative parenting ($j = 0$), permissive parenting ($j = 1$), uninvolved parenting ($j = 2$), authoritarian parenting ($j = 3$), and abusive authoritarian parenting ($j = 4$). Hence, $\hat{y}_{jik}$ is the expected outcome k of person i in the permissive, uninvolved, and authoritarian scenarios, whereas $\hat{y}_{0ik}$ is the perceived outcome k of person i in the authoritative (baseline) scenario.
Subsequently, I regress each perceived return on individual characteristics:

$$r_{jik} = \alpha_k + \beta_{1k} Age_i + \beta_{2k} I_{male} + \beta_{3k} I_{uni} + \beta_{4k} children_i + \beta_{mk} I_m + \varepsilon_{ijk} \qquad \forall k, \tag{3}$$

where α_k is the intercept; Age_i represents the age of individual i; I_{male} is a dummy variable equal to 1 if the participant is male; I_{uni} is a dummy variable equal to 1 if the participant has a university degree; $children_i$ is the number of children the participant has; and dummy variables I_m for $m = 4,5,6,7,8,9$ indicate the household income group (seven groups in total, see Table A.6). The β coefficients indicate how individual characteristics account for differences in perceived returns to parenting styles.

Prediction of Individual Parenting Behaviour: To investigate whether beliefs about

parenting styles and past experiences influence participants' choice of parenting style, I employ a conditional multinomial logit choice model by McFadden (1973) similar to Boneva et al. (2022). I examine the potential predictive relationship between participants' outcome expectations, their experienced parenting style, and the parenting approach they currently employ. I investigate whether (1) participants might be less likely to choose a certain parenting style if they associate higher negative returns with it; and if (2) there exists a correlation between the parenting style individuals adopt and the one they experienced in their childhood.

I estimate three different choice models based on the independent variables included in the regression. First, I regress the parenting style choice on the three outcome variables alone (perceptions regarding educational, mental health, and self-worth outcomes) (1), then I run the same regression including individual characteristics (2), and finally I include the experienced parenting style in the model estimation (3).

The dependent variable (parenting style choice) takes values 1–5, corresponding to the five parenting scenarios introduced to the respondents in the vignettes. At the end of the survey, each individual has to state which of the five parenting style scenarios most closely fits their own parenting style (or the one they would most likely use). Furthermore, they have to choose one of the five scenarios that best fits the parenting style they experienced as a child. Thus, individual i can choose between five scenarios (i.e. alternatives): authoritative parenting, permissive parenting, uninvolved parenting, authoritarian parenting, and abusive authoritarian parenting ($J = 5$). Individual i derives utility u_{ij} from choosing a certain parenting alternative j (Boneva et al., 2022, p. 31). This utility depends on both individual specific and alternative specific characteristics. The expected human capital outcomes vary with the alternatives (scenarios) and are thus alternative specific variables. Any individual characteristics like age and gender do not. The expected utility function can be written as follows:

$$u_{ij} = \mathbf{X'_{ij}}\beta + \delta p_{ij} + \mathbf{Z'_i}\gamma_\mathbf{j} + \varepsilon_{ij} \qquad \forall i, j \in \{1,2,3,4,5\}, \tag{4}$$

where $\mathbf{X'_{ij}}$ is the vector of expected outcomes that vary across individuals i and outcomes j, and p_{ij} is a dummy variable for the experienced parenting style that is equal to 1 if scenario j corresponds best with the parenting style the participants' parents used (p_{ij} is only present in model [3]). Furthermore, $\mathbf{Z'_i}$ is a vector of individual specific variables that do not vary with alternative parenting style scenarios (present in models [2] and [3]). Last, ε_{ij} is a stochastic error term, and the errors are assumed to be independently and identically distributed (i.i.d). Each individual i wants to maximise their utility by selecting a certain parenting style choice, so the probability of the chosen alternative can be written as $P(ichoosesj) = P(u_{ik} \leq u_{ij}) \quad \forall k \neq j$.

3 Data

The survey company Pureprofile collected data for this study online in May 2024. The survey participants were drawn from the company's panel and they received monetary compensation

for their participation. To be eligible for the survey, participants had to be at least 18 years old and reside in Germany. The sample was representative of the German population based on sex and regional quotas administered by the survey company.

At the beginning of the survey, participants had to agree to a consent form, which included information about how the data would be stored and how anonymity would be ensured by not saving IP addresses, and contact details of the lead researcher.

In total, 400 randomly selected individuals completed the survey. Because of the within-subject design of the study, each respondent provided their beliefs on the outcome variables for all five scenarios, resulting in a total of N = 2000. Summary statistics can be found in Appendix A.

The sample was representative of the German population in terms of sex and federal states, with data from the German Federal Statistical Office used as a reference.[2] The reference data present the German population aged 15 and older by sex, region, and level of education. Around 49% of the respondents are male (Table A.1). The 16 federal states were grouped into five regional categories to simplify quotas (Table A.2).

As shown in Table A.3, the average respondent is 48 years old , has 1.1 children aged between 18 and 20 years, and lives in a household with about one additional adult. Approximately 32.25% hold a university degree (Table A.4). Most participants (46.25%) work more than 30 hours per week, whereas about 43% work 10 hours per week at most (Table A.5). Additionally, 6.25% of the participants are first- or second-generation immigrants (Table A.7).

The average monthly net household income varies among participants. As indicated in Table A.6, about half of the respondents in the sample have a household net income below 2,500 EUR per month. For comparison, data from the German Federal Statistical Office indicateds that the average household net income in the overall German population in 2021 was 3,813 EUR per month.[3] The median in this sample aligns more closely with the 2021 median net equivalent household income, which considered household sizes and structures and amounts to 24,946.00 EUR per year (or 2,078.83 EUR per month).[4]

4 Results

4.1 Perceived Average Outcomes of Scenarios

First, I explore if participants perceptions about human capital outcomes (educational, mental health, self-worth outcomes) vary with parenting style scenario. For starters, I investigate average perceptions per scenario and outcome variable, depicted in 4.1 and 4.2. Next, I present the OLS regression results that provide a clearer picture of the subjective beliefs per scenario. Consequently, I can assess if my study participants believe that parenting styles matter for the different human capital outcomes.

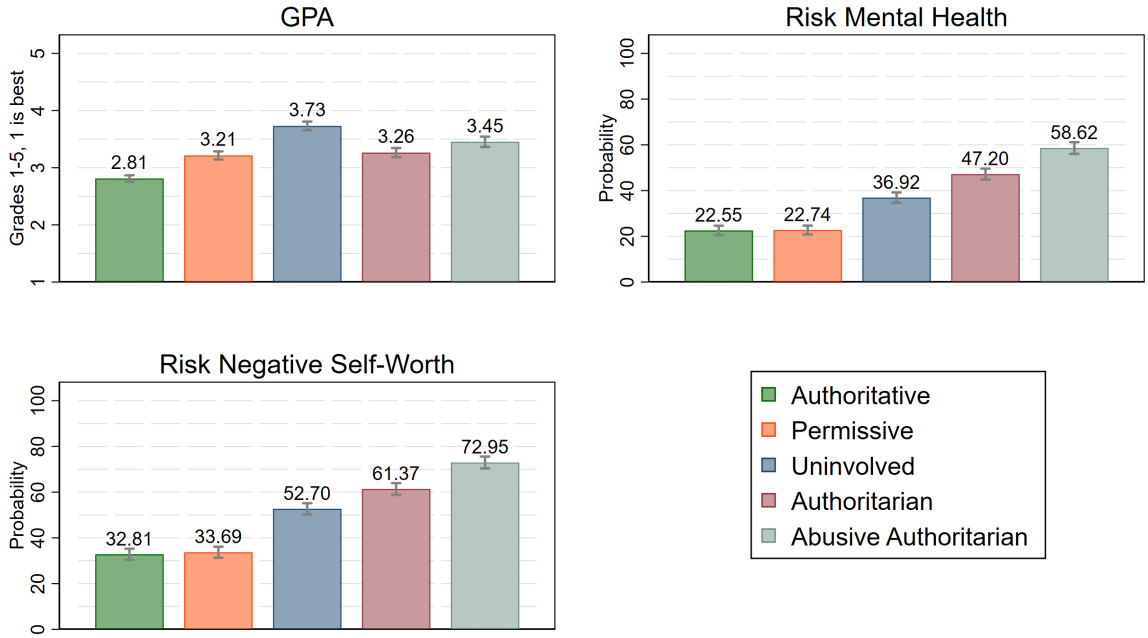
[2] See https://www-genesis.destatis.de/genesis/online?sequenz=tabelleErgebnis&selectionname=12211-9014&transponieren=true&language=en#abreadcrumb, accessed on 02.07.2024; search result: 12211-9014-DLAND

[3] Taken from https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Einkommen-Konsum-Lebensbedingungen/_Grafik/_Interaktiv/einnahmen-ausgaben-haushaltstypen.html?nn=210200, accessed on 02.07.2024

[4] Taken from https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Einkommen-Konsum-Lebensbedingungen/Lebensbedingungen-Armutsgefaehrdung/Tabellen/einkommensverteilung-mz-silc.html, accessed on 02-07.2024

Before presenting the results, I want to explain the variables I use in this section. To assess beliefs about educational outcomes, I collected answers for three different points in time: expected grades of Leon at the end of the current school year, at the end of middle school, and at the end of high school. For the results presented in the main text, I use a summary index of educational outcomes over all three time points to reduce measurement error. Additionally, I collected answers for several mental health disorders (depression, anxiety disorder, eating disorder, addiction, other mental health disorders). To reduce measurement error, I also use a summary index over all mental health outcomes to assess the main results. Results per mental health disorder and educational outcome can be found in appendices A.3 and A.4. In the regression analysis, grades were standardised to a mean of 0 and a standard deviation equal to 1. This facilitates a transnational interpretation of the results.

Figure 4.1: Average Results for Expectations Over Outcomes



Note: The expected average outcomes by parenting style scenario, including 95 % confidence intervals, are depicted. The first plot displays the mean per scenario of expected average grades for Leon during his school years (grades 1-5, with 1 being the best). The shown variable is a summary index over expected GPA at the end of the current school year, end of middle school, and end of high school. The second plot illustrates the mean per scenario of the expected average risk that Leon develops a mental health disorder during his school years (in percentages, 0-100 %). Again, the variable is a summary index over all collected mental health expectations. The third plot presents the mean by scenario of the expected average risk that Leon develops a negative self-worth (in percentages, 0-100 %).

Plots Figure 4.1 presents the arithmetic mean values of perceived outcomes per parenting style scenario.

The first graph illustrates the average results for the expected GPA across all three educational outcome variables, i.e. the summary index for educational outcomes. Grades in Germany are distributed from 1 to 5, with 1 being the best possible grade. Hence, a higher GPA indicates poorer school performance. On average, participants expect Leon to perform his best with authoritative parents and worst with uninvolved ones. Additionally, the expected GPA within the

permissive and moderate authoritarian scenarios is similar on average. Leon's expected GPA in the abusive authoritarian scenario is the second lowest on average. Figure A.1 in Appendix A displays the result for educational outcomes over time (expected GPA at the end of the current year, at the end of middle school, and at the end of high school). The overall results are similar to the summarised ones; however, the figure shows that the average grades are expected to improve over time in the authoritative and permissive scenarios. Expected average grades in the uninvolved and moderate authoritarian parenting style remain relatively constant, whereas results for the abusive authoritarian style worsen over time.

The second graph displays the average results for the expected risk that Leon develops a mental health disorder during his school years, represented as probabilities (displays summary index). The average risks increase from the authoritative style to the abusive authoritarian style, with low scores in the responsiveness dimension. Overall, participants associate parenting styles high in responsiveness, namely permissive and authoritative parenting, with a lower expected risk for mental health disorders compared to styles low in responsiveness (authoritarian and uninvolved). Furthermore, participants believe on average that the risk for mental health disorders is highest for the abusive authoritarian parenting scenario (nearly 60% expected risk).

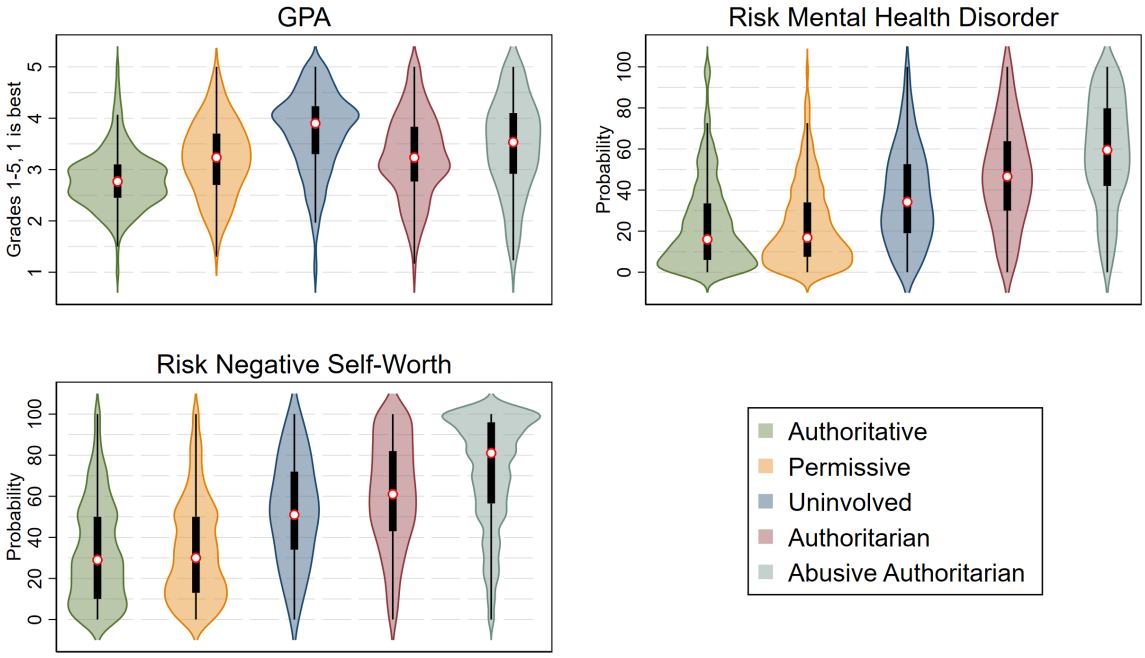
A similar trend is depicted in the third graph, which shows the average expected risk that Leon develops negative self-worth during his school years. The probabilities are approximately 10% higher than those for mental health risks, regardless of the parenting style. The risk is expected to be relatively high on average in the severe authoritarian scenario, reaching nearly 75%. All three scenarios that score low on the responsiveness dimension (uninvolved and both authoritarian parenting styles) are associated with average outcomes above 50% . However, even within the more responsive parenting style scenarios, the risk for developing a negative self-worth is expected to be around 35% on average.

Figure A.2 in Appendix A shows the average expected risks for each mental health variable. The trends are similar to those for the summarised values illustrated in 4.1. Participants on average believe that risks for depression and anxiety are higher compared to risks for other mental health disorders depicted in the figure, regardless of parenting style.
Summary statistics of the outcome variables are presented in Appendix A.1.

Figure 4.2 presents violin plots for impacts of perceived returns to parenting styles on summarised education, mental health, and self-worth results. The returns are calculated as described in Section 2.2. The width of the plots indicates the density. Results for GPA in the authoritative and uninvolved scenarios, as well as for mental health in the authoritative and permissive scenarios and abusive authoritarian scenario for the self-worth outcome, seem more homogeneous. The remaining plots suggest that heterogeneity is present in the respondents'

expectations, which vary with individual characteristics. Figures A.3 and A.4 in Appendix A display the violin plots for each educational and mental health outcome variable (end of current school year, end of middle school, high school diploma; depression, anxiety disorder, eating disorder, addiction, other mental health disorders). The responses for high school diploma appear more homogeneous than those for the other two educational outcomes. Additionally, the responses within the uninvolved and authoritarian scenarios for the mental health outcomes are more heterogeneous than those within the permissive or authoritative parenting scenarios. All in all, it can be observed from the graphs that participants believe parenting styles matter for different human capital outcomes and perceive returns to parenting styles differently.

Figure 4.2: Violin Plots Average Results for Expectations Across Outcomes



Note: Violin plots displaying the distribution of participants' perceived returns to parenting styles across outcomes (including box-plots with medians). The width of the violin plots represent the density. Probabilities in percentages.

Regression Results To investigate how participants perceive outcome variables across the scenarios more closely, I regress individual responses to the hypothetical parenting style scenarios (dummy variable for each scenario) and account for individual fixed effects, as specified in Section 2.2 (equation 1). The authoritative scenario is omitted in the analysis. All outcomes are compared to this baseline scenario because the outcomes are on average the best for this pattern. Thus, a positive β signifies an increase in perceived grades (i.e. grades being worse) or increased perception of risk. Furthermore, the outcomes for average grades are standardised to facilitate a transnational interpretation. The outcome variables for expected GPA and risk for mental health disorders are summarised in a summary index to reduce measurement error. Table 4.2 presents the regression results with robust standard errors; p-values below 5% indicate significant results.

Table 4.2: Expected Outcomes by Parenting Scenario

	(1) GPA (Std.)	(2) Risk for Mental Health Disorders (in %)	(3) Risk for Negative Self-Worth (in %)
Permissive Parenting	0.487***	0.002	0.009
	(0.045)	(0.009)	(0.012)
Uninvolved Parenting	1.111***	0.144***	0.199***
	(0.052)	(0.011)	(0.015)
Authoritarian Parenting	0.547***	0.246***	0.286***
	(0.052)	(0.013)	(0.017)
Abusive Authoritarian Parenting	0.776***	0.361***	0.401***
	(0.060)	(0.015)	(0.017)
Constant	-0.584***	0.235***	0.338***
	(0.034)	(0.008)	(0.010)
Sample mean[a]	0.000	0.386	0.517
Individual Fixed Effects	Yes	Yes	Yes
ρ (fraction of variance due to differences across individuals)	0.463	0.591	0.456
Observations	2000	2000	2000
R^2	0.242	0.509	0.437

Robus standard errors in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: The regression analysis employs robust standard errors for expected educational, mental health, and self-worth outcomes based on individual responses across all five scenarios. The dependent variable "Average Grades" is a summary index of all educational outcomes and is standardised, with a higher coefficient indicating a decline in GPA. "Risk for Mental Health" is also summarised across all mental health outcomes. All parenting style variables are represented as dummy variables. [a] denotes the arithmetic mean of the dependent variables.

Overall, the low-responsiveness parenting styles, uninvolved and authoritarian, account for significant differences from the baseline in all expected outcomes (at the 0.1% level). Participants only hold significantly different expectations of permissive and authoritative parenting when it comes to average grade expectations.

Column 1 presents the results for the dependent variable "Expected GPA", which has a sample mean of 0.000. The variable was standardised, with a mean of 0 and standard deviation of 1. An increase in average grades indicates poorer school performance. Consequently, the constant reflects the average outcome for the baseline scenario, authoritative parenting, which is approximately half a standard deviation below the standardised sample mean. Permissive and moderate authoritarian parenting are, on average, associated with a half standard deviation increase in expected average grades compared to the authoritative baseline scenario. The uninvolved parenting style corresponds to more than a full standard deviation increase in expected GPA compared to the baseline, representing the most significant drop in grades. Both low responsiveness and low demandingness characterise the uninvolved style. Abusive authoritarian parenting is, on average, associated with a 0.776 standard deviation increase compared to the baseline. The model accounts for 46.3% of the between-individual variance, indicating that individual characteristics explain approximately half of the variance in the dependent variable (expectations about human capital outcomes).

Column 2 presents the regression results for the summary index of expected risk for mental health disorders, expressed in percentage points. On average over all scenarios, participants estimate a 38.6% risk that Leon will develop a mental health disorder during his school years. For the authoritative parenting style, the average expected risk of developing a mental health

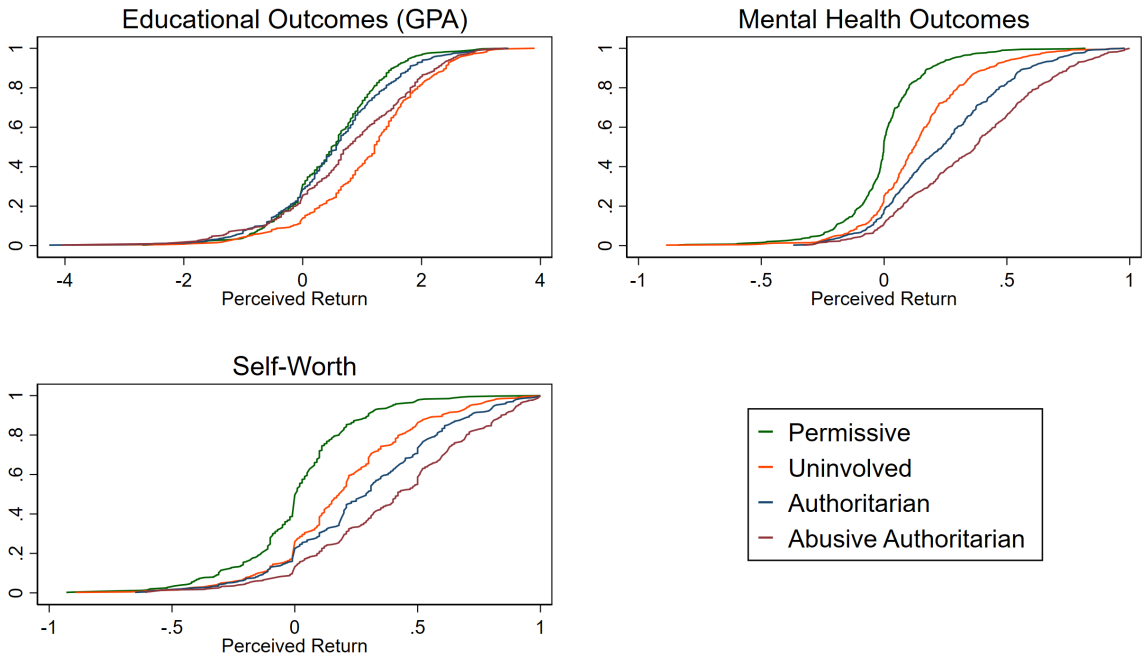
disorder is 23.5%. The abusive authoritarian scenario is associated with the highest increase in risk compared to the baseline scenario, namely 36.1%. The uninvolved scenario raises the expected risk by 14.4%, whereas the moderate authoritarian scenario is linked to a 24.6% increase compared to the baseline scenario. The between-individual variance in this model is slightly higher than in Column 1, with approximately 59.1% of the total variance in the summary index for expected mental health risk attributable to individual characteristics.

The last column displays the results for the expected risk of Leon developing negative self-worth during his school years across scenarios (expressed in percentage points). The sample mean is relatively high, with participants estimating an average risk of 51.7% for Leon developing negative self-worth across all parenting styles. Even in the authoritative scenario, which scores high in both responsiveness and demandingness, the expected risk averages around 33.8%. Consistent with the findings for mental health outcomes, parenting styles characterised by low responsiveness are associated with higher expected risks. Specifically, abusive authoritarian parenting results in a 40.1% increase in the expected risk of negative self-worth compared to authoritative parenting. The moderate authoritarian scenario is associated with a 28.6% average increase and the uninvolved parenting style scenario is associated with a 19.9% average increase compared to the baseline. The results are similar to those for expected risk for mental health disorders, though the baseline scenario shows a higher average risk for negative self-worth. Additionally, the coefficients for negative self-worth are approximately 0.4 percentage points higher than those for mental health disorders. The between-individual variance is 45.6%.

Tables A.10 and A.11 in Appendix A provide the regression results with robust standard errors and individual fixed effects for each educational and mental health variable. The patterns observed are consistent with those found in the summary index results. Notably, the permissive parenting scenario is significant for the expected risk for addiction (at the 0.1% level) and the expected risk for anxiety disorders (at the 5% level). Additionally, participants associate parenting styles with low responsiveness and low demandingness with a deterioration of expected GPA over time as the regression coefficients increase from the end of the current year to the final high school year. In contrast, only the authoritative parenting style is associated with improved school performance over time, as evidenced by the decreasing coefficients of the constant.
To conclude, the results suggest that participants believe parenting styles matter for educational, mental health, and self-worth outcomes.

4.2 Heterogeneity

Figure 4.3: Cumulative Distributions of Individual Perceived Returns



Note: Cumulative distributions of individual perceived returns to different parenting styles are presented for each outcome, including the expected average standardised grades Leon is anticipated to achieve during school, as well as the expected risk of developing mental health disorders or a negative self-worth during school. Kolmogorov-Smirnov tests, which compare the distributions of outcomes across all scenarios, reveal that nearly all distributions of returns are significantly different from one another (with a p-value of 0.00 rejecting the null hypothesis of equal distributions). For educational outcomes, the null hypothesis of equal distributions could not be rejected for the perceived returns associated with permissive parenting and authoritative parenting (as indicated by the blue and green lines in the first graph).

Second, I investigate heterogeneity in perceptions. As mentioned before, Figure 4.2 and the between-individual variance presented in Table 4.2 indicate heterogeneous expectations due to individual characteristics. For the analyses in this section, I use calculated perceived returns to parenting styles for each individual i and parenting scenario j in order to analyse heterogeneity in perceived returns, as described in Section 2.2 (equation 2). Figure 4.3 presents the cumulative distributions of these returns over all scenarios. I conduct the Kolmogorov-Smirnov test, and based on the results, I reject the null hypothesis for equal distributions for nearly all outcome-scenario pairs except for the summarised. Thus, a high degree of heterogeneity in perceived returns can be depicted from the graphs. Only the answers for expected GPA in the permissive and authoritarian scenario, depicted by the green and blue lines in the first graph, are more or less equally distributed. Furthermore, for educational outcomes, the perceived returns to uninvolved parenting are highest. They can be interpreted as the highest negative returns as higher grades signify poorer school performance. For risk of mental health and negative self-worth, the negative returns to abusive authoritarian are the highest, whereas the negative returns to permissive parenting are the lowest.

Next, I investigate the variation of perceived returns with individual characteristics according to

Section 2.2 (equation 3). Table 4.3 presents the results for regressing the perceived returns on individual characteristics (age, gender, education, and household income group of the respondent) with robust standard errors. The results indicate that only a few characteristics predict perceived returns to permissive parenting (1), uninvolved parenting (2), authoritarian parenting (3), and abusive authoritarian parenting (4). The authoritative scenario is used as a baseline to calculate the returns. Positive returns here can be interpreted as negative effects of a specific parenting style compared to the baseline (an increase in grades indicates poorer school performance, and an increase in risk for mental health disorders or negative self-worth also reduces the boy's human capital).

Table 4.3: Determinants of Perceived Returns

	GPA (Std.)				Risk Mental Health Disorder (in %)				Risk Negative Self-worth (in %)			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Age of Respondent	0.000	0.002	0.013**	0.015**	0.000	0.000	0.003	0.002	-0.002	-0.001	0.004*	0.004*
	(0.004)	(0.005)	(0.005)	(0.006)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Male Respondent[a]	-0.151	-0.200	-0.270**	-0.059	0.001	-0.021	-0.071**	-0.077*	-0.007	-0.047	-0.121***	-0.092*
	(0.088)	(0.102)	(0.101)	(0.120)	(0.013)	(0.020)	(0.027)	(0.031)	(0.022)	(0.030)	(0.034)	(0.036)
University Degree[b]	-0.157	-0.275*	-0.050	-0.146	-0.019	-0.025	-0.019	-0.018	-0.021	-0.032	-0.020	-0.059
	(0.095)	(0.110)	(0.109)	(0.130)	(0.014)	(0.022)	(0.029)	(0.034)	(0.023)	(0.032)	(0.037)	(0.039)
Monthly Household Income	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children[c]	-0.082*	-0.015	0.033	0.044	-0.008	0.010	-0.001	0.009	0.002	0.008	0.000	0.003
	(0.040)	(0.046)	(0.046)	(0.055)	(0.006)	(0.009)	(0.012)	(0.014)	(0.010)	(0.013)	(0.016)	(0.016)
Constant	0.723***	1.244***	0.135	0.053	0.027	0.154**	0.163*	0.292***	0.134*	0.268***	0.167	0.227*
	(0.230)	(0.267)	(0.263)	(0.315)	(0.034)	(0.053)	(0.071)	(0.082)	(0.056)	(0.077)	(0.089)	(0.094)
Sample Mean[d]	0.487	1.111	0.547	0.776	0.002	0.144	0.246	0.361	0.009	0.199	0.286	0.401
Observations	400	400	400	400	400	400	400	400	400	400	400	400
R^2	0.026	0.028	0.039	0.027	0.010	0.011	0.025	0.020	0.015	0.012	0.042	0.036

Robust standard errors in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Regression with robust standard errors of individual perceived returns to parenting styles by outcome on individual characteristics.
(1): Permissive Parenting Scenario vs Baseline
(2): Uninvolved Parenting Scenario vs Baseline
(3): Authoritarian Parenting Scenario vs Baseline
(4): Abusive Authoritarian Scenario vs Baseline
a: Dummy variable equal to 1 if the respondent is male.
b: Dummy variable equal to 1 if the respondent has a university degree.
c: Number of children, a number of children greater than 4 is coded to 4
d: Sample Mean of Perceived Returns (close to 0 signifies the expectation is similar to the baseline scenario (authoritative)

The outcome variable expected GPA was standardised before calculating the returns. The baseline corresponds to a female respondent without a university degree stating expectations for the authoritative scenario. The results for the expectations on educational outcomes indicate that beliefs about returns to the two authoritarian parenting styles vary with the respondents' age (at the 1% significance level). A higher age increases the perceived negative return to both authoritarian parenting patterns. Furthermore, male participants compared to female ones perceive negative returns to uninvolved and moderate authoritarian parenting to be lower (at the 1% level). Additionally, participants with a university degree compared to those without a university degree believe negative returns to uninvolved parenting to be significantly lower (at the 5% level). For educational outcomes, no significant relationship between income and perceived returns can be concluded from the results. The number of children is only significant in the per-

missive scenario, a higher number of children decreases the perceived return, i.e. less negative expectations in the permissive scenario compared to the baseline.
Additionally, there are few individual characteristics that predict perceived returns to parenting for mental health outcomes. Only gender has a significant effect; male respondents perceive the negative returns to both authoritarian parenting styles to be about 7% lower than female respondents. No effect can be concluded for income, age, education, or number of children.
Last, the third column presents perceived returns to parenting for self-worth outcomes. Older participants perceive negative returns to both authoritarian parenting styles to be higher (a one year increase in age results in a 0.4% increase to the perceived returns to authoritarian parenting styles, significant at the 5% level). Additionally, male respondents compared to female participants believe the negative return to authoritarian parenting styles to be significantly lower. Male participants' perceived returns to moderate authoritarian parenting are, on average, 12% lower than those of female participants (at the 0.1% level). Furthermore, male participants perceive negative returns to abusive authoritarian parenting to be 9.1% lower than female respondents (at the 5% level). Overall, no clear relationship between household income, educational attainment, or number of children and perceived returns can be found.
All in all, it could be shown that heterogeneity in perceived returns is present, but cannot be fully explained by the individual characteristics at hand. Because the number of children could not explain heterogeneity in this sample, further analyses do not differentiate between participants that are parents and those who are not.
Additionally, Table A.12 depicts a robust probit model with perceived returns as a binary variable. A value of 1 translates into a negative perceived return, i.e. the expectation in the authoritative (baseline) scenario is higher compared to the other expectation in the other scenario. Given the interpretation of the outcome variables, this means that a binary value of 1 translates to having worse expectations in the baseline scenario compared to the other scenario, e.g. permissive. A negative coefficient means that the probability of the dependent variable being 1 decreases. This is the case for older respondents when it comes to educational and self-worth expectations. A higher age reduces the probability of having a negative return for uninvolved and authoritarian educational and self-worth expectations. Furthermore, being male increases the probability for a negative return for authoritarian mental health and self-worth expectations.

4.3 Predictive Impact of Beliefs on Personal Parenting Practices

Lastly, I estimate the relationship between beliefs about parenting styles and parenting behaviour while also accounting for individual upbringing. Therefore, I collect responses on the parenting style the participants experienced themselves, and the style they are using (or would most likely use) towards their own children. The results are detailed in appendix A in tables A.8 and A.9. According to the tables, most participants grew up with parents best described as authoritative (approximately 55%). Similarly, three-fourths of the respondents state that they are or would use the authoritative style towards their own children. Only 7.50% of participants report growing up with parents who used an authoritarian style involving physical or other abu-

sive punishment, and only 0.5% of respondents indicate they would employ this style towards their children. The results for the uninvolved and moderate authoritarian style are comparable, with about 11% for the experienced parenting style and 3% for the style participants use themselves. Approximately one-third of the participants report having permissive parents or indicate they would use this style with their children.

To illustrate the relationship between expectations on parenting and parenting behaviour, I employ a conditional multinomial logit choice model as specified in Section 2.2 (equation 4). The categorical dependent variable is own, or individual parenting behaviour, and the variable values correspond to the parenting style scenario categories (1–5). In the survey, participants rate which of the five parenting scenarios in the survey best fits their own parenting style (the style they would most likely use). The rows represent the model regressors: perceived returns to parenting styles for each outcome variable (standardised GPA, risk for mental health disorder, risk for negative self-worth), and the parenting style of participants' own parents. The parenting experience variable is also categorical and has the same five levels as the dependent variable. For the estimation, the parenting choice variable is recoded to a dummy variable. It is equal to 1 if the scenario the outcomes are given for match the chosen parenting style, and 0 otherwise. The variables expected GPA and risk for mental health disorder are summary indices. The expectations for risk for mental health disorder and negative self-worth are summarised to one variable for this analysis. This is due to the variables being highly correlated (0.768) and factor analysis suggesting that both measure similar constructs (variance explained by factor is 88.40%, high identical factor loadings of 0.9402).

Table 4.4: Choice Model of Participants' Parenting Behaviour

	(1)	(2)	(3)
Expected GPA (Std.)	-0.460***	-0.386**	-0.401**
	(0.153)	(0.150)	(0.157)
Risk Expectations Mental Health Disorder, Negative Self-Worth (in %)	-1.546**	-1.658**	-1.870***
	(0.636)	(0.660)	(0.705)
Parenting Style of Participant's Parents			1.807***
			(0.169)
Observations	400	400	400
Controls	No	Yes	Yes

Standard errors in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: The table presents the estimates of the conditional multinomial logit choice model, the dependent variable is own parenting choice, which takes values 1-5 (corresponding to the parenting style scenarios). Independent variables are the expectations over parenting style scenarios (GPA, risk for mental health disorder, risk for negative self-worth). GPA and risk for mental health are summary indices. Risk for mental health and self-worth expectations were summarised to one variable due to multicollinearity. Furthermore, the parenting style of the participants' parents is included in the mode, taking values 1-5 corresponding to the parenting style scenarios. Controls include net monthly household income, age, dummy variable for being male, and the number of children. (1) includes only expectations as regressors, (2) includes expectations and controls, and (3) includes expectations, controls, and parenting style of participants' parents.

The results can be found in Table 4.4. Model (1) includes only the expected outcomes from the parenting style scenarios. Model (2) also controls for individual characteristics (age, gender, number of children). Model (3) includes a dummy variable for the experienced parenting style. It is equal to 1 if the experienced matches the chosen parenting style.

Overall, expectations about human capital outcomes and experienced parenting style as a child

seem to play a role in predicting parenting behaviour. The expectations are a significant predictor in all three models, and are associated with significant changes in the likelihood of choosing a specific parenting style.

In the first column, the results for the model including only the expected outcome variables are presented. All expectations are significant. The calculated average marginal effects reveal that a perceived increase in GPA in the authoritative scenario (permissive – uninvolved – authoritarian – abusive authoritarian) is associated with a 8.04 (6.45 – 1.32 – 1.42 – 0.23) percentage point decrease in the probability that the respondent will choose the authoritative (permissive – uninvolved – authoritarian – abusive authoritarian) option. A perceived increase in the risk of developing mental health disorders or negative self-worth in the authoritative scenario (permissive – uninvolved – authoritarian – abusive authoritarian) is associated with a 27.01 (21.68 - 4.42 - 4.76 - 0.77) percentage point decrease in the probability tat the respondent will choose that parenting style option. The average marginal effects for the abusive authoritarian style are not significant. The abusive authoritarian parenting style is only chosen by 2 out of 400 participants, which might explain the insignificance of the marginal effects of abusive authoritarian parenting. Overall, the strongest relationship can be found for the authoritative scenario: participants who believe that the GPA of the student in the authoritative scenario is high (higher grades signify a poorer school performance) are less likely to employ an authoritative parenting style themselves according to their statements. This effect decreases for the less responsive parenting styles, uninvolved and authoritarian. The expected risks in the permissive style are also strongly related to choosing that parenting style.

The second model includes individual controls. Again, all expectations are significantly related to making parenting choices in the model. Overall, the average marginal effects for GPA are a bit lower than in model 1: a perceived increase in GPA in the authoritative (permissive – uninvolved – authoritarian – abusive authoritarian) scenario is translates to a 6.62 (5.34 – 1.09 – 1.17 – 0.19) percentage point decrease for the probability of choosing the authoritative (permissive – uninvolved – authoritarian – abusive authoritarian) parenting style option. A perceived increase in the risk of developing mental health disorders or negative self-worth in the authoritative scenario (permissive – uninvolved – authoritarian – abusive authoritarian) is associated with a 28.42 (22.92 - 4.69 - 5.03 - 0.81) percentage point decrease in the probability tat the respondent will choose that parenting style option. Again, the average marginal effects for abusive authoritarian are not significant.

The third column presents the estimates for the choice model including expected outcomes, individual controls, and the parenting style of the participants' parents. Again, all expectations are significant, with lower average marginal effects than in the other two models: participants who perceive the GPA to be high in the authoritative (permissive – uninvolved – authoritarian – abusive authoritarian) scenario are less likely to choose the corresponding parenting style behaviour. That is, there is a 5.10 (4.02 – 1.03 – 1.07 – 0.19) percentage point decrease in the likelihood that the participant chooses the authoritative (permissive - uninvolved - authoritarian - abusive authoritarian) parenting style. Higher risk expectations in the authoritative

(permissive – uninvolved – authoritarian – abusive authoritarian) are associated with a 23.77 (18.73 - 4.81 - 5.00 - 0.87) decrease of choosing that parenting style. The parenting style of respondents' parents is significantly related to parenting style choices. The parenting style of the participants' parents significantly affects the parenting behaviour choice in the model. That is, if the experienced parenting style is authoritative (permissive - uninvolved - authoritarian - abusive authoritarian), the probability to choose the authoritative (permissive - uninvolved - authoritarian - abusive authoritarian) parenting style increases by 25.63 (25.67 - 6.72 - 7.38 - 1.15) percentage points. Again, the risk expectations are not significant.

To sum up, expectations about educational, mental health and self-worth, outcomes as well as experienced parenting style play a role in predicting parenting style choices according to the models in the study. The average marginal effects are strongest for the authoritative and permissive parenting style, whereas the uninvolved and authoritarian parenting styles have marginal effects of similar size. However, 93% of participants choose the authoritative or permissive parenting style when asked to state the parenting style they (would) most likely use by themselves, which might explain the large average marginal effects.

5 Discussion

The findings of this study provide compelling evidence that people have different perceptions about the potential effects of parenting styles on educational, and mental health and self-worth outcomes. The results indicate that participants perceive the highly responsive parenting styles, authoritarian and permissive, to be the most beneficial styles, leading to better academic performance and mental health and self-worth outcomes compared to the authoritarian or uninvolved parenting styles, which are low responsive. Overall, uninvolved parenting is associated with the poorest expectations about GPA, whereas abusive authoritarian parenting is related to the highest expected risk for mental health disorders and negative self-worth.

Furthermore, gender effects are present in the sample. Male respondents have overall lower grade expectations (i.e. they expect grades to be better than female respondents when it comes to expected returns to uninvolved and moderate authoritarian parenting). Similarly, male participants compared to female ones associate a lower risk for mental health disorders and negative self-worth with the two authoritarian parenting styles (i.e. they have lower negative expected returns).

Additionally, older participants have more negative expected returns to authoritarian parenting styles when it comes to GPA and risk for negative self-worth.

Last, respondents who hold a university degree have lower perceived negative returns to uninvolved parenting when it comes to grade expectations.

These findings align with Kiessling (2021), who found large returns to warm (i.e. responsive) parenting styles (like authoritative and permissive parents) as well as gender differences in a sample of US parents. According to the findings, mothers expect larger (positive) returns than fathers to warm parenting. Furthermore, socioeconomic variables could not explain heterogene-

ity in responses, as is the case in my findings.

In this section I elaborate if the expectations in my sample align with findings on the association of parenting styles and the outcome variables. However, there is no suitable benchmark that allows to draw comparisons on whether the beliefs are accurate or not. All in all, the average expectations in my study align with research that indicates that parenting styles significantly correlate with children's academic performance as well as their mental health and self-esteem. First, when it comes to educational outcomes, Majumder (2016) found that authoritative parenting is the most effective, particularly in comparison to uninvolved parenting, based on data from a longitudinal study of youth in the United States. Spera (2005) conducted a meta-analysis that identified parental involvement and monitoring as robust predictors of adolescent achievement, although the positive correlation between authoritative parenting and school performance was not consistent across different cultures, ethnicities, and socioeconomic statuses. Chan and Koo (2011) reported that in a UK sample, permissive parenting resulted in the worst academic outcomes, whereas authoritative parenting led to the best outcomes. With a 49% lower chance of negative outcomes compared to permissive parenting, authoritarian parenting was in the middle whilst uninvolved parenting was not considered in the study. Furthermore, Sørensen et al. (2024) found better outcomes associated with authoritative and permissive parenting in a cross-national longitudinal study. In Malaysia, Kiadarbandsari et al. (2016) noted significant positive correlations for authoritative parenting and school performance and negative correlations for uninvolved parenting, whereas no correlation was found for permissive and authoritarian parenting. Raws (2018) highlighted the relationship between parenting styles and behavioural issues at school in a meta-analysis (Aunola et al., 2000; Vazsonyi et al., 2003; Williams & Kelly, 2005). The author mentioned that authoritative parents apply the most adaptive achievement strategies that lead to better school performance compared to authoritarian and uninvolved parenting (Aunola et al., 2000). Additionally, uninvolved parenting is associated with higher school dropout (Thornberry et al., 2001).
Overall, literature found positive relationships for authoritative parenting and school performance as well as negative relationships for authoritarian and uninvolved parenting and school performance. When it comes to permissive parenting, the results vary. According to the research findings, female respondents and elderly respondents hold more accurate beliefs about returns to authoritarian and uninvolved parenting than male and younger respondents, because they expect grades to be poorer in these scenarios. Additionally, expectations of respondents with a university degree do not align with the research findings; they hold better grade expectations for uninvolved parenting scenarios.

Second, the influence of parenting styles extends to mental health outcomes as well. Chan and Koo (2011) found that adolescents with authoritarian parents were 60% more likely to feel sad compared to those with authoritative parents; for permissive parenting, the odds were at around 50%. Raws (2018) outlined that uninvolved parenting is associated with internalising problems

like depression, suicidality, and anxiety (Arata et al., 2007; Gomez et al., 2015; Hadland et al., 2015; Thornberry et al., 2001; Wechsler-Zimring & Kearney, 2011) as well as substance misuse (Aarons et al., 2008; Alvarez-Alonso et al., 2016; Claes et al., 2005; Cleveland et al., 2005; Raws, 2016; Thornberry et al., 2001; Vazsonyi et al., 2003). Additionally, Hamilton et al. (2013) linked depression and anxiety to abusive parenting.
When it comes to eating disorders, Longobardi et al. (2022) found a correlation between body dysmorphia and abusive and uninvolved parenting. A meta analysis by Robertson (2020) found that authoritarian and uninvolved parenting are associated with eating disorders in teenagers. Authoritative parenting, however, could prevent adolescents from developing eating disorders through supportive family networks and high levels of warmth and control.
Table A.11 details my results for several mental health outcomes, authoritarian parenting is associated with the highest risk for depression, anxiety, eating disorders, and addiction. Uninvolved parenting has slightly lower expected risks. The association of uninvolved parenting and mental health risk might have been slightly underestimated by respondents in this survey when taking into account the research findings.
Again, female respondents hold more accurate expectations than male ones according to the research findings.

Third, the relationship between parenting styles and self-worth is also significant. Martínez and García (2007) found that in a Spanish sample, permissive parenting yielded similar or better outcomes than authoritative parenting, whereas authoritarian parenting resulted in the worst self-worth outcomes. Chan and Koo (2011) similarly reported lower self-esteem in adolescents raised by authoritarian and permissive parents compared to those raised by authoritative parents. Aunola et al. (2000) confirmed that adolescents with authoritative parents had higher self-esteem than those with other parenting styles, particularly uninvolved ones. A meta-analysis by Pinquart and Gerke (2019) found positive correlations between authoritative parenting and self-worth outcomes as well as negative correlations between authoritarian and uninvolved parenting and self-esteem outcomes. This correlation was at around 0 for permissive parenting. According to Shattnawi et al. (2024), self-esteem scores were significantly lower for secondary school children in Jordan with uninvolved and abusive authoritarian parents. These findings slightly diverged from my study results. Respondents in my survey did not link the risk for negative self-worth to permissive parenting and might have slightly underestimated the link between uninvolved parenting and self-esteem.

6 Conclusion

This study provides valuable insights into the beliefs people hold about parenting styles and their impact on children's academic performance, mental health, and self-esteem. I use data from an online survey of the German population that includes parenting style vignettes to conduct a detailed analysis of expected returns to parenting styles. The results show that parenting

styles that score high in responsiveness are expected to have fewer negative effects on average grades, mental health, and self-worth. Furthermore, heterogeneity effects with respect to gender, age, and education are found. The results also suggest, that expectations about human capital outcomes and experienced parenting style play a role in choosing individual parenting behaviour. The findings underscore the importance of understanding and adapting parenting approaches to support children's development, particularly during critical transitions such as moving from elementary to middle school.

Because this study has a low scope, there is plenty of potential to extend the design to find more interesting results. For example, the child in the vignette scenarios could be randomised along some dimensions between participants. For example, the age, gender, prior school performance, number and quality of friends, or school type could be varied. Additionally, further aspects of the vignettes can be expanded on, like the age, education background, and household income of the parents, or the issue presented in the vignette (which right now is only school related). More vignettes can be added where both parents employ different parenting styles or the child is faced with an external traumatic event. Further personality traits can be included as outcome variables.
Regarding the sample, it might be interesting to explore expectations about parenting styles across cultures and conduct the survey within multiple countries.
Longitudinal studies that track actual outcomes over time can be used to find relationships between parenting styles and the outcome variables and identify the effectiveness of interventions. Such interventions can include education about the effectiveness of parenting styles for parents as well as mentoring or resilience programs for children and teenagers.

Furthermore, the study has several limitations that can be accounted for in future research. First, the sample size can be expanded and diversified across countries. Next, parenting styles in the real world are not always clearly distinguishable along two dimensions. Thus, the results I infer from my study might not be fully applicable to real-life scenarios. Furthermore, social-desirability bias might lead the participants to give answers that do not align with their actual beliefs even though the answers are anonymised. I could reformulate the questions and ask participants how they think other people would answer them. I could add additional questions on their actual parenting behaviour.
Next, I did not ask participants about how certain they were of about answers. For example, they might not be familiar with certain mental health disorders and might have guessed their answers. Last, experimenter demand might be present. Participants could guess the study hypothesis from the design, which could again lead to social desirability bias.

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Appendices

A Analysis

A.1 Summary Statistics of Outcome Variables

Table A.1: Educational Outcomes

Variable	Mean	SD	Min	Max	N
Expected GPA Year 5	3.32	0.84	1	5	2,000
Expected GPA Year 8	3.31	0.86	1	5	2,000
Expected GPA High School Diploma	3.25	0.95	1	5	2,000

Note: Expectation about Leon's average grades at the end of the current school year (year 5), at the end of middle school (year 8), at the end of high school (high school diploma).

Table A.2: Mental Health Outcomes

Variable	Mean	SD	Min	Max	N
Expected Risk Depression	0.45	0.30	0	1	2,000
Expected Risk Anxiety	0.44	0.31	0	1	2,000
Expected Risk Eating Disorder	0.33	0.29	0	1	2,000
Expected Risk Addiction	0.39	0.31	0	1	2,000
Expected Risk Other Mental Health Disorders	0.32	0.28	0	1	2,000

Note: Expectation about the risk that Leon develops depression/anxiety disorder/eating disorder/addiction/any other mental health disorder during his school years.

Table A.3: Personality Trait Outcome

Variable	Mean	SD	Min	Max	N
Expected Risk Negative Self-Worth	0.52	0.30	0	1	2,000

Note: Expectation about the risk that Leon develops a negative self-worth during his school years.

A.2 Summary Statistics of Individual Characteristics

Table A.1: Sample Distribution of Sex and National Distribution

Sex	N	Percent	National Distribution in %
(0) "Female and Others"	203	50.75	50.84
(1) "Male"	197	49.25	49.16
Total	400	100.00	100.00

Note: Others amount to N=2, used within quota female. National Distribution: https://www-genesis.destatis.de/genesis/online?sequenz=tabelleErgebnis&selectionname=12211-9014&transponieren=true&language=en#abreadcrumb

Table A.2: Sample Distribution of State and National Distribution

State	N	Percent	National Distribution in %
(0) "Mecklenburg-West Pomerania, Berlin, Brandenburg, Saxony, Saxony-Anhalt, Thuringia"	78	19.50	19.55
(1) "Schleswig-Holstein, Hamburg, Lower Saxony, Bremen"	65	16.25	16.12
(2) " Baden-Wuerttemberg, Rhineland-Palatinate, Saarland, Hesse"	108	27.00	27.02
(3) "Bavaria"	63	15.75	15.77
(4) "North Rhine-Westphalia (NRW)"	86	21.50	21.54
Total	400	100.00	100.00

Note: Classification of German States - group 0: Eastern Germany, group 1: Northern Germany, group 2: South-Western Germany, group 3: Bavaria, group 4: NRW. National Distribution: https://www-genesis.destatis.de/genesis/online?sequenz=tabelleErgebnis&selectionname=12211-9014&transponieren=true&language=en#abreadcrumb

Table A.3: Numeric Control Variables

Variable	Mean	SD	Min	Max	N
Age in Years	48.02	10.44	19	56	400
Number of Children	1.10	1.13	0	4	400
Age of Youngest Child in Years	18.46	8.45	0	25	237
Age of Oldest Child in Years	19.98	7.17	0	25	237
Number of Adults in Household	1.84	0.79	1	5	400
Net Monthly Household Income	2564.38	1114.98	500	5,000	400

Note: Participants had to be at least 18 years old, and age values above 55 are coded to 56. Similarly, a number of children greater or equal to 4, is coded to 4; age of a child greater or equal to 25 is coded to 25, and a value in number of adults in household equal 5 corresponds to 5 or more adults. Original household income groups coded to mode of group (see Table A.6)

Table A.4: Sample Distribution of Highest Educational Attainment

Education	N	Percent
(0) "No University Degree"	271	67.75
(1) "University Degree"	129	32.25
Total	400	100.00

Table A.5: Sample Distribution of Average Working Hours per Week

Working Hours per Week	N	Percent
(0) "0 - 10 hours"	172	43.00
(1) "10 - 29 hours"	43	10.75
(2) "30 - 49 hours"	177	44.25
(3) "50+ hours"	8	02.00
Total	400	100.00

Table A.6: Sample Distribution of Average Monthly Net Household Income Groups

Household Income	N	Percent	Cum. Percent
(1) "0-<1,000 EUR"	29	7.25	7.25
(2) "1,000-<1,500 EUR"	44	11.00	18.25
(3) "1,500-<2,000 EUR"	45	11.25	29.50
(4) "2,000-<2,500 EUR"	79	19.75	49.25
(5) "2,500-<3,000 EUR"	69	17.25	66.50
(6) "3,000-<3,500 EUR"	55	13.75	80.25
(7) "3,500-<4,000 EUR"	41	10.25	90.50
(8) "4,000-<4,500 EUR"	14	3.50	94.00
(9) "4,500-<5,000 EUR"	8	2.00	96.00
(10) "5000+ EUR"	16	4.00	100.00
Total	400	100.00	

Table A.7: Sample Distribution of First and Second Generation Immigrants

Migration Background	N	Percent
(0) "No"	375	93.75
(1) "Yes" (Is Immigrant of First or Second Generation	25	06.25
Total	400	100.00

Table A.8: Parenting Style of Own Parents

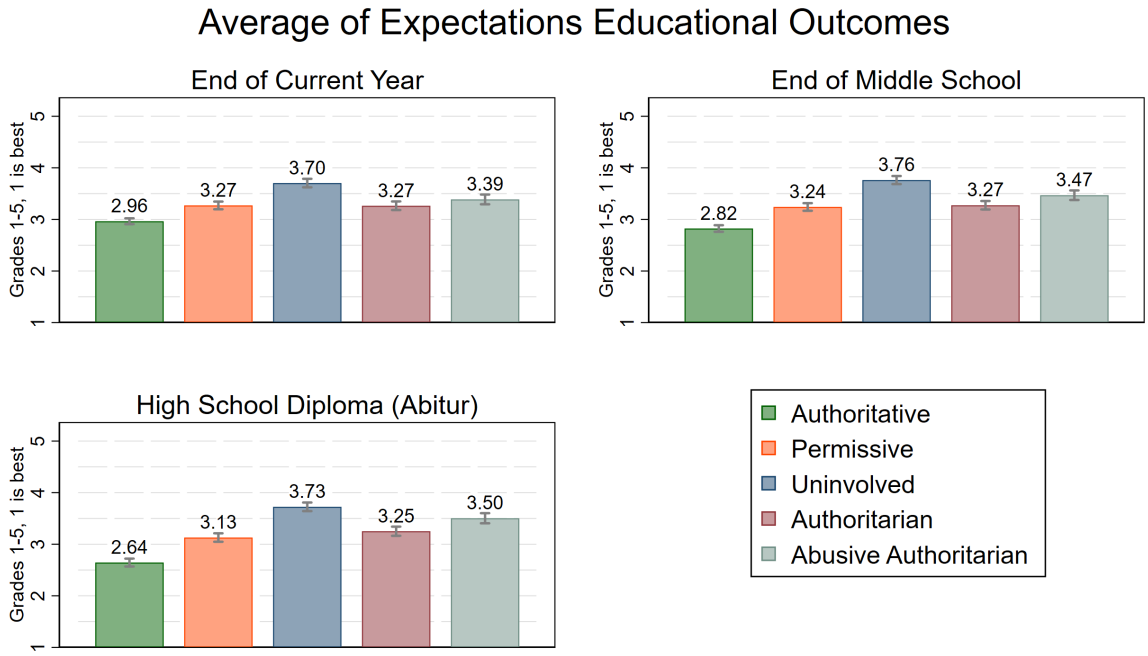
Own Parents	N	Percent
(1) "Authoritative Scenario"	218	54.50
(2) "Permissive Scenario"	67	16.75
(3) "Uninvolved Scenario"	41	10.25
(4) "Authoritarian Scenario"	43	10.75
(5) "Authoritarian Scenario Punishment"	31	07.75
Total	400	100.00

Table A.9: Own Parenting Style

Own Parenting	N	Percent
(1) "Authoritative Scenario"	301	75.25
(2) "Permissive Scenario"	72	18.00
(3) "Uninvolved Scenario"	12	03.00
(4) "Authoritarian Scenario"	13	03.25
(5) "Traumatic Authoritarian Scenario"	2	00.50
Total	400	100.00

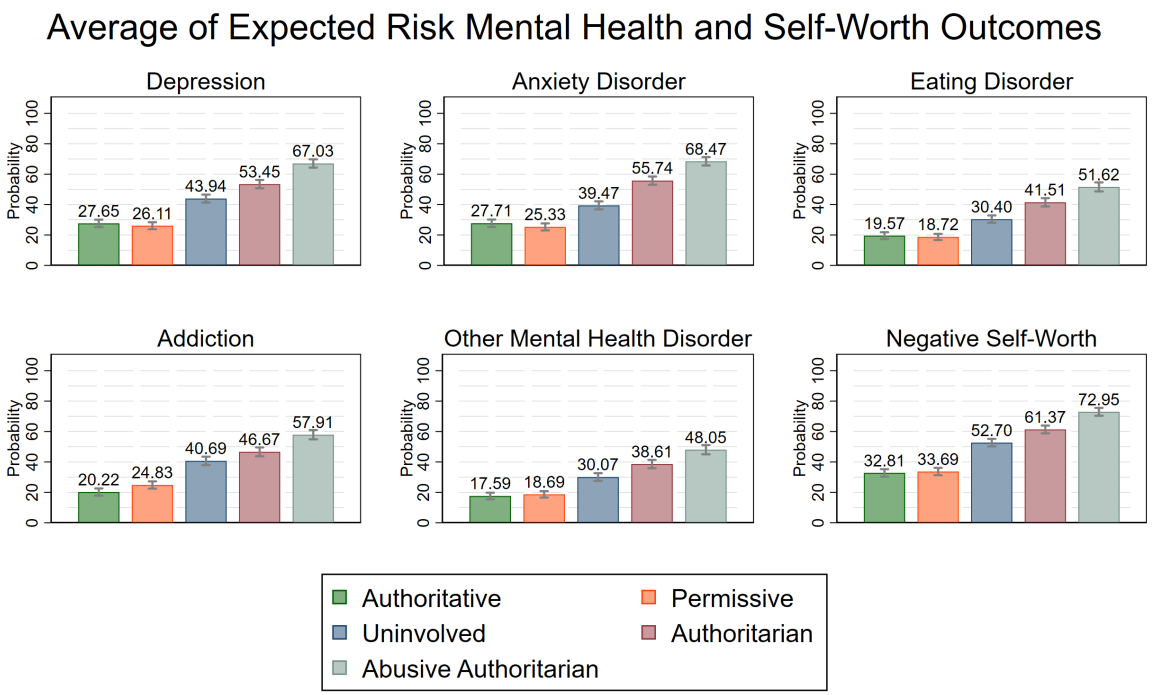
Note: Which parenting style scenario fits best to a) the parenting style of the respondent's parents b) the parenting style the respondent uses/would use

A.3 Figures



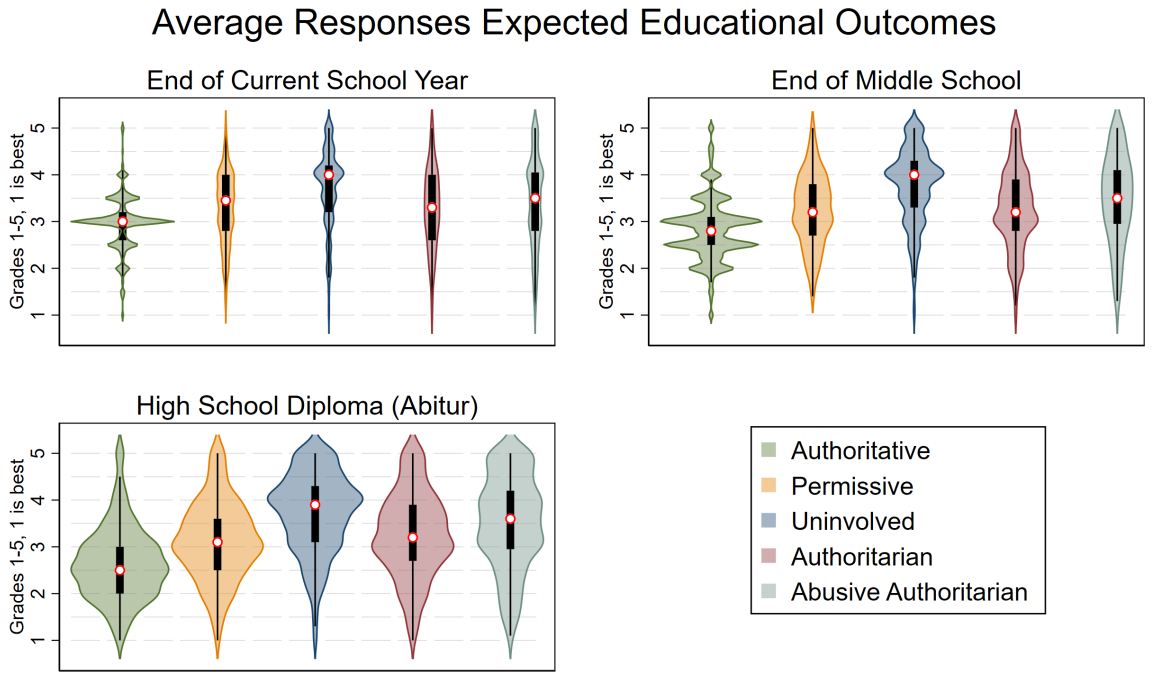
Note: Expected average educational outcomes by parenting style scenario, including 95 % confidence intervals. The plots depict the mean expected grades for Leon at the end of the current school year, at the end of middle school, and at the end of high school (Abitur). Grades are reported on a scale from 1 to 5, where 1 is the highest possible grade.

Figure A.1: Mean Values of Perceived GPA



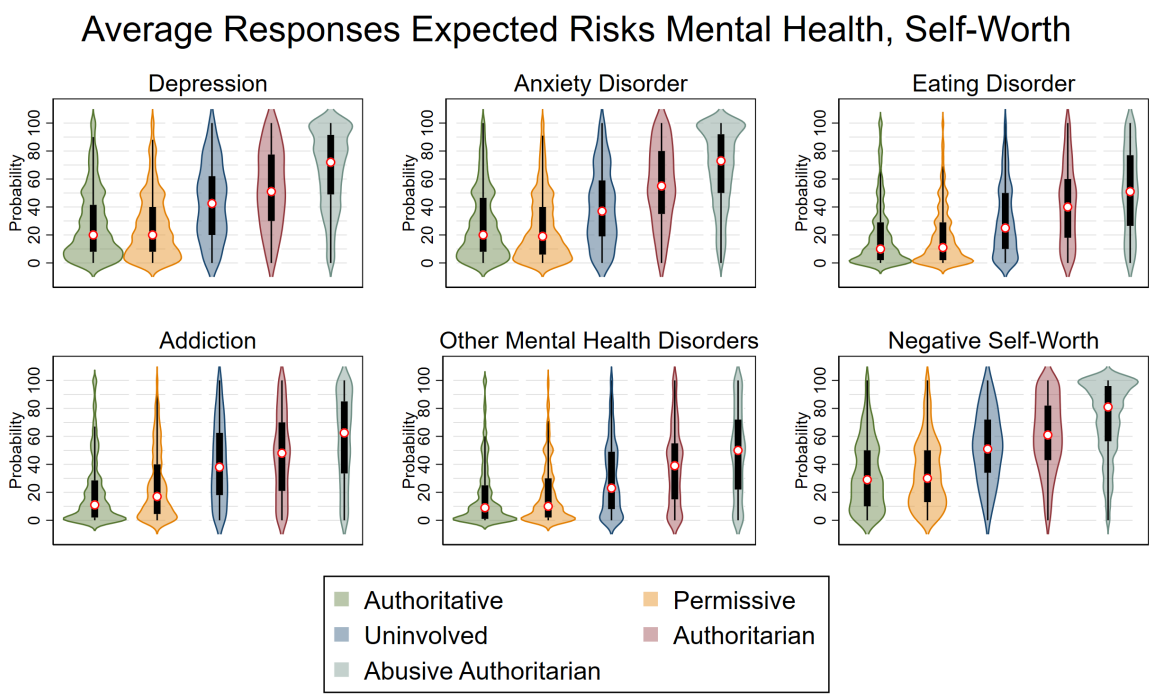
Note: Expected average mental health and self-worth outcomes by parenting style scenario, including 95 % confidence intervals. The first five histograms illustrate the mean expected risk that Leon will develop one of the specified mental health disorders during his school years (expressed as percentages from 0 % to 100 %). The final histogram displays the mean expected risk of developing negative self-worth (also expressed as percentages from 0 % to 100 %).

Figure A.2: Mean Values of Perceived Risk Mental Health Disorders



Note: Violin plots illustrating the distribution of participants' expected returns to parenting styles for educational outcomes. Each plot includes a box plot with the median. The width of the violin plots represents the density of the responses. Probabilities are expressed as percentages.

Figure A.3: Violin Plots for Average Perceived Educational Outcomes by Scenario



Note: Violin plots depicting the distribution of participants' expected returns to parenting styles for mental health and self-worth outcomes. Each plot includes a box plot with the median. The width of the violin plots represents the density of the responses. Probabilities are expressed as percentages.

Figure A.4: Violin Plots for Average Perceived Mental Health Outcomes by Scenario

A.4 Regression Results

Table A.10: Expectations Educational Outcomes by Parenting Scenario (Std.)

	End of Current Year	End of Middle School	High School Diploma (Abitur)
Permissive	0.365***	0.485***	0.511***
	(0.041)	(0.048)	(0.046)
Uninvolved	0.880***	1.091***	1.137***
	(0.048)	(0.055)	(0.055)
Authoritarian	0.357***	0.523***	0.639***
	(0.049)	(0.055)	(0.054)
Abusive Authoritarian	0.503***	0.749***	0.905***
	(0.057)	(0.063)	(0.059)
Constant	-0.421***	-0.570***	-0.638***
	(0.030)	(0.037)	(0.036)
Sample Mean	0.000	0.000	0.000
ρ	0.510	0.433	0.457
Observations	2000	2000	2000
R^2	0.167	0.222	0.264

Robust standard errors in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: The regression analysis with robust standard errors examines standardised educational outcomes (expected GPA for Leon at the end of the current year, middle school, and high school) based on individual responses across all five scenarios. All parenting style variables are represented as dummy variables. The sample mean reflects the arithmetic mean of the dependent variables. Since the standardised values have a mean of 0, the sample mean presented uses unstandardised values (grades ranging from 1 to 5, where 1 represents the highest grade). The parameter ρ indicates the proportion of variance attributable to differences between individuals.

Table A.11: Expected Mental Health Outcomes by Parenting Scenario (in %)

	Depression	Anxiety Disorder	Eating Disorder	Addiction	Other Mental Health Disorders
Permissive	-0.015	-0.024*	-0.009	0.046***	0.011
	(0.011)	(0.012)	(0.009)	(0.011)	(0.010)
Uninvolved	0.163***	0.118***	0.108***	0.205***	0.125***
	(0.014)	(0.014)	(0.012)	(0.014)	(0.012)
Authoritarian	0.258***	0.280***	0.219***	0.265***	0.210***
	(0.016)	(0.016)	(0.014)	(0.015)	(0.014)
Abusive Authoritarian	0.394***	0.408***	0.320***	0.377***	0.305***
	(0.017)	(0.017)	(0.016)	(0.017)	(0.016)
Constant	0.286***	0.287***	0.206***	0.212***	0.186***
	(0.010)	(0.010)	(0.009)	(0.010)	(0.009)
Sample Mean	0.446	0.443	0.334	0.391	0.316
ρ	0.540	0.529	0.583	0.576	0.583
Observations	2000	2000	2000	2000	2000
R^2	0.464	0.487	0.404	0.408	0.356

Standard errors in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: The regression analysis with robust standard errors examines the expected risk that Leon will develop mental health disorders, using individual responses across all five scenarios. All parenting style variables are represented as dummy variables. The sample mean reflects the arithmetic mean of the dependent variables. The parameter ρ represents the proportion of variance attributed to differences between individuals.

Table A.12: Determinants of Negative Perceived Returns (Higher/Worse Expectations in the Baseline)

	GPA (Std.)				Risk Mental Health Disorder (in %)				Risk Negative Self-worth (in %)			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Age of Respondent	-0.001	-0.021**	-0.023***	-0.022***	0.008	0.000	-0.012	-0.008	0.008	0.002	-0.018*	-0.027***
	(0.006)	(0.007)	(0.006)	(0.007)	(0.006)	(0.007)	(0.007)	(0.008)	(0.006)	(0.007)	(0.007)	(0.008)
Male Respondent[a]	0.173	0.248	0.225	-0.050	-0.033	-0.090	0.364*	0.142	0.108	0.047	0.600***	0.589**
	(0.137)	(0.167)	(0.140)	(0.143)	(0.127)	(0.142)	(0.155)	(0.173)	(0.129)	(0.147)	(0.159)	(0.192)
University Degree[b]	0.235	0.162	0.008	0.127	0.183	0.181	0.097	0.244	0.125	0.091	-0.003	0.338
	(0.143)	(0.168)	(0.147)	(0.150)	(0.135)	(0.149)	(0.161)	(0.176)	(0.136)	(0.155)	(0.163)	(0.182)
Constant	-0.758*	-0.362	0.334	0.269	-0.490	-0.786*	-0.644	-1.028**	-0.740*	-1.042**	-0.428	-0.488
	(0.321)	(0.347)	(0.313)	(0.318)	(0.305)	(0.337)	(0.352)	(0.387)	(0.312)	(0.357)	(0.345)	(0.375)
Frequency of Returns<0	102	49	103	89	193	88	65	42	158	74	69	41
Total observations	400	400	400	400	400	400	400	400	400	400	400	400
Pseudo R^2	0.010	0.036	0.032	0.032	0.006	0.004	0.023	0.014	0.006	0.001	0.050	0.086

Robust standard errors in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Probit model with robust standard errors of perceived returns by outcome on individual characteristics.

Dependent variable: Perceived returns here are coded to dummy variables. It is equal to 1 if the respondent has negative perceived returns, i.e. they perceive the outcome variable to be higher (i.e. worse) in the baseline (authoritative scenario) compared to e.g. the permissive scenario.

(1): Permissive Parenting Scenario vs Baseline

(2): Uninvolved Parenting Scenario vs Baseline

(3): Authoritarian Parenting Scenario vs Baseline

(4): Abusive Authoritarian Scenario vs Baseline

a: Dummy variable equal to 1 if the respondent is male.

b: Dummy variable equal to 1 if the respondent has a university degree.

B Survey

B.1 Problem Introduction

Sie bekommen gleich verschiedene Erziehungsstil-Szenarien vorgestellt und sollen dazu Fragen beantworten.
Stellen Sie sich alle Szenarien bitte unabhängig voneinander vor, jedoch für denselben Schüler Leon, so wie er hier vorgestellt wird:
Leon ist 11 Jahre alt und wohnt in NRW.
Nehmen Sie an, es ist gerade Oktober und Leon hat vor einem Monat das 5. Schuljahr (Gymnasium) begonnen.
Nehmen Sie auch an, dass Leon keine Schwierigkeiten in der Grundschule hatte und die Gymnasialempfehlung bekommen hat.
Leon hat keine Geschwister und ein gutes soziales Umfeld an Familie und Freund:innen.
Seine Eltern arbeiten beide Vollzeit und haben ein durchschnittliches Einkommen.

Leon steht vor folgendem Problem, welches ebenfalls für alle Szenarien gleich bleibt:
Leon hatte zwar in der Grundschule keine Probleme mit seinen Klassenkamerad:innen mitzuhalten, jedoch fällt es ihm jetzt auf dem Gymnasium schwer. Die Menge an Hausaufgaben hat sich drastisch erhöht und den ersten Mathetest hat Leon mit einer 4 gerade so bestanden. Leon hat also Probleme, dem erhöhten Lernaufwand auf dem Gymnasium gerecht zu werden.
Er hat nun Angst, von seinen Mitschüler:innen abgehängt zu werden und das Schuljahr nicht zu schaffen.
Nehmen Sie für alle Szenarien an, Leon möchte bei zukünftigen Tests besser abschneiden, um mit seinen Klassenkamerad:innen mithalten zu können.

Ihnen werden nun fünf Szenarien vorgestellt, sie unterscheiden sich in den Annahmen über den Erziehungsstil von Leons Eltern. Unter diesen Annahmen wird eine Beispielreaktion auf Leons Problem auf dem Gymnasium vorgestellt.
Sie sollen sich für jedes der Szenarien vorstellen, dass die Eltern den vorgestellten Erziehungsstil bis zur Volljährigkeit von Leon, beziehungsweise bis zu seinem Abitur, beibehalten. Der Erziehungsstil wurde in der Vergangenheit ebenfalls praktiziert, jedoch sind die Auswirkungen vernachlässigbar, da sich Leon in der Grundschule gut geschlagen hat. Beschränken Sie Ihre Überlegungen also auf die Gymnasialzeit.
Unter dieser Annahme sollen Sie unterschiedliche Auswirkung des jeweiligen Erziehungsstils von Leon einschätzen.
Bitte behalten sie die Information über Leon, welche sie bisher gelesen haben, für alle folgenden Szenarien im Kopf. Nehmen Sie sich bitte Zeit, die Fragen möglichst genau zu beantworten.

Translation - Problem Introduction

You will be presented with various parenting style scenarios and asked to answer questions after every one of them. Please consider all scenarios independently of each other, but for the same student Leon, like he is described here:
Leon is 11 years old and lives in North Rhine-Westphalia (NRW).
Assume it is currently October, and Leon started the 5th grade (Gymnasium, middle school) a month ago, i.e. he transitioned from elementary to middle school.
Also assume that Leon had no difficulties in elementary school and received a recommendation needed to transition to the new school.
Leon has no siblings and has a good social environment with family and friends. His parents both work full-time and have an average income.

Leon is facing the following problem, which remains the same for all scenarios:
Although Leon had no problems keeping up with his classmates in elementary school, he now finds it difficult to do so. The amount of homework has drastically increased, and Leon barely passed the first maths test with a grade of 4. Therefore, Leon is struggling to cope with the increased academic demands of middle school.
He is now afraid of falling behind his classmates and not passing the school year.
For all scenarios, assume that Leon wants to perform better in future tests to keep up with his classmates.

You will now be presented with five scenarios that differ in the assumptions about the parenting style of Leon's parents. Under these assumptions, a possible reaction to Leon's problem in middle school is presented.
For each of the scenarios, imagine that the parents maintain the presented parenting style until Leon reaches adulthood, or until he graduates from high school. The parenting style was also practiced in the past, but the effects are negligible since Leon did well in elementary school. Please limit your considerations to the middle and high school period.
Under these assumptions, you should assess different impacts of each respective parenting style on Leon's school performance, mental health, and self-worth.
Please keep the information you just received about Leon in mind during the following scenarios. Take your time to answer the questions as accurately as possible.

B.2 Authoritative Parenting Scenario

Die Eltern haben eine fürsorgliche, enge und vertrauensvolle Beziehung zu Leon. Sie stellen klare Grenzen und Regeln auf und erklären ihre Erwartungen und Beweggründe. Es findet eine Kommunikation auf Augenhöhe statt und Leon kann eigene Wünsche und Erwartungen einbringen. Die Eltern können einerseits auf die Bedürfnisse von Leon eingehen und andererseits klare Regeln vorgeben.

Hier ein Beispiel, wie Leons Eltern in diesem Szenario auf seine Probleme auf dem Gymnasium reagieren könnten:

Leons Eltern haben seit Beginn des neuen Schuljahres einen Blick auf seine Schulleistungen. Sie merken, dass er Schwierigkeiten mit den neuen Anforderungen hat und sind besorgt, nachdem der erste Mathetest nicht gut gelaufen ist. Auch Leon selbst spricht mit seinen Eltern offen über seine Sorge, das Schuljahr womöglich nicht zu schaffen.
Gemeinsam machen sie nun einen Plan, wie Leon in Zukunft bessere Leistungen erzielen kann. Die Eltern schlagen vor, den Lernplan nach dem nächsten Test gemeinsam zu überprüfen. Außerdem werden zusammen Regeln aufgestellt, die es Leon erleichtern sollen, bessere Ergebnisse zu erzielen, wie z.B. eingeschränkte Zeiten für Computerspiele. Die Eltern sind stolz, dass Leon sich gleich zu Schulanfang Ziele setzt.

Translation

The parents have a caring, close, and trusting relationship with Leon. They set up clear boundaries and rules and explain their expectations and reasons to their son. Communication is at eye level, and Leon can express his own wishes and expectations. The parents can address Leon's needs while also setting up clear and understandable rules.

Here is an example of how Leon's parents might react to his school problems in this scenario:

Leon's parents have been keeping an eye on his school performance since the beginning of the new school year. They notice that he is struggling with the new demands and are concerned after the first maths test result. Leon himself also openly talks to his parents about his worries, that he might not be able to pass the school year.
Together, they make a study plan, so Leon can achieve better results in the future.
The parents suggest reviewing the study plan together after the next test. Additionally, they establish rules together that are meant to help Leon achieve better results, such as restricted times for computer games. The parents are proud that Leon is setting up goals by himself right at the beginning of the school year.

B.3 Permissive Parenting Scenario

Die Eltern haben ebenfalls eine fürsorgliche, vertrauensvolle, und enge Beziehung zu Leon. Sie stellen allerdings keine/kaum Erwartungen oder Regeln auf. Die Eltern gehen selten disziplinarisch vor und erlauben Leon viel Freiraum. Die Kommunikation mit Leon ist offen und auf Augenhöhe. Der Umgang ist also liebevoll, aber mit wenig Kontrolle.

Hier ein Beispiel, wie Leons Eltern in diesem Szenario auf seine Probleme auf dem Gymnasium reagieren könnten:

Leons Eltern vertrauen darauf, dass er den Umstieg auf das Gymnasium gut schafft, da er in der Grundschule keine Probleme hatte. Sie glauben, dass Leon sich unnötig Sorgen macht und sind sehr überrascht, als er ihnen plötzlich den schlechten Mathetest zeigt. Sie vermitteln ihm, dass das nicht schlimm ist und der nächste Test sicher besser läuft.
Leons Eltern sind der Meinung, dass er als Jugendlicher nicht mehr so viele Regeln braucht und er seine Lernzeit frei einteilen soll. Sie sagen Leon, dass er bestimmt einen guten Lernplan für den nächsten Test erstellt und dass sie stolz auf ihn sind, egal welche Noten er schreibt. Die Eltern bitten Leon, sie mit den Schulproblemen auf dem Laufenden zu halten.

Translation
The parents have a caring, trusting, and close relationship with Leon. However, they set few or no expectations and rules. The parents rarely discipline Leon and allow him a lot of personal freedom. Communication with Leon is open and at eye level. The interaction is thus loving but with little control.

Here is an example of how Leon's parents might react to his school problems in this scenario:

Leon's parents believe that he will handle the transition to the new school well since he had no problems in elementary school. They believe that Leon is unnecessarily worried and are very surprised when he suddenly shows them the maths test. They reassure him that it is not a big deal and that the next results will surely be better.
Leon's parents think that as a teenager, he no longer needs many rules and should be able to organise his study time freely. They tell Leon that he will surely create a good study plan for the next test and that they are proud of him no matter what grades he gets. The parents ask Leon to keep them updated on any school problems.

B.4 Uninvolved Parenting Scenario

Die Eltern haben eine wenig fürsorgliche Beziehung zu Leon. Es wird vor allem auf die Grundbedürfnisse von Leon eingegangen, ansonsten ist die Kommunikation zu seinen Eltern kaum vorhanden. Die Eltern stellen kaum/keine Erwartungen und Regeln auf und halten sich vorwiegend aus dem Leben von Leon raus. Die Beziehung zwischen den Eltern und Leon ist also kaum vorhanden und ihm wird viel Freiraum eingeräumt.

Hier ein Beispiel, wie Leons Eltern in diesem Szenario auf seine Probleme auf dem Gymnasium reagieren könnten:

Leons Eltern haben keinen Überblick über seine Schulleistungen und glauben, dass er alles gut alleine hinbekommt. Leon behält seine Schwierigkeiten auf dem Gymnasium für sich, da seine Eltern wenig Interesse zeigen. Das Mathetestergebnis zeigt er ihnen jedoch, da seine Sorgen nun sehr groß sind. Die Eltern reagieren sehr gleichgültig und meinen, das sei kein Problem. Die Eltern sprechen Leon nicht wieder darauf an.

Translation

The parents have a noncaring relationship with Leon. They mainly attend to Leon's basic needs; otherwise, communication with his parents is barely existent. The parents set few or no expectations and rules and mostly stay out of Leon's life. The relationship between the parents and Leon is thus hardly present, and he is given a lot of freedom.

Here is an example of how Leon's parents might react to his school problems in this scenario:

Leon's parents have no overview of his school performance and believe that he manages everything well on his own. Initially, Leon keeps his difficulties in school to himself because his parents show little interest. However, he shows them the maths test result as his worries have grown. The parents react indifferently and tell him that it is not a big deal. The parents do not bring up the topic again.

B.5 Authoritarian Parenting Scenario

Die Eltern haben eine wenig fürsorgliche und hierarchische Beziehung zu Leon. Die Kommunikation findet einseitig statt und die Eltern stellen strenge Regeln und Erwartungen auf, ohne eine Verhandlungsbasis oder Erklärungen für Leon. Er soll den Erwartungen der Eltern entsprechen, Fehler seinerseits führen zu gewaltfreier Bestrafung, zum Beispiel Hausarrest. Die Entscheidungsgewalt liegt bei den Eltern und auf die Bedürfnisse von Leon wird wenig eingegangen.

Hier ein Beispiel, wie Leons Eltern in diesem Szenario auf seine Probleme auf dem Gymnasium reagieren könnten:

Leons Eltern wollen immer einen klaren Überblick über seine Schulleistungen haben und kontrollieren seine Leistungen eng. Sie sind nicht zufrieden, dass er auf dem Gymnasium plötzlich Schwierigkeiten hat, mit seinen Mitschüler:innen mitzuhalten.
Als sie das Ergebnis des Mathetests sehen, sind sie wütend auf Leon. Als Strafe verbieten sie ihm für eine Woche das Computerspielen und stellen strengere Regeln auf, damit Leon mehr und konzentrierter lernen kann. Außerdem erstellen die Eltern einen umfangreichen Lernplan für Leon.
Sie kontrollieren Leons Schulleistungen weiterhin eng und bestrafen ihn, falls seine Leistungen nicht besser werden.

Translation
The parents have a noncaring and hierarchical relationship with Leon. Communication is one-sided, and the parents set strict rules and expectations without any basis for negotiation or explanations for Leon. He is expected to meet the parents' expectations, and mistakes on his part lead to non-violent punishments, such as house arrest. The decision-making power lies with the parents, and Leon's needs are given little consideration.

Here is an example of how Leon's parents might react to his school problems in this scenario:

Leon's parents always want to have a clear overview of his school performance and closely monitor his grades. They are not satisfied that he suddenly has difficulties keeping up with his classmates in school.
When they see the result of the maths test, they are angry with Leon. As a punishment, they take away his computer games for a week and set stricter rules so that Leon can study longer and more concentrated . Additionally, the parents create a comprehensive study plan for Leon.
They continue to closely monitor Leon's school performance and punish him if his grades do not improve.

B.6 Traumatic Authoritarian Parenting Scenario

Die Eltern haben keine fürsorgliche Beziehung zu Leon, welche außerdem stark hierarchisch ist. Die Kommunikation findet einseitig statt und die Eltern stellen strenge Regeln und Erwartungen auf, denen Leon ohne Widerrede ensprechen muss. Fehler seinerseits führen zu Bestrafungen, welche häufig physische und psychische Gewalt beinhalten (zum Beispiel Beschimpfungen oder Ohrfeigen). Die Entscheidungsgewalt liegt bei den Eltern und auf die Bedürfnisse von Leon wird kaum eingegangen.

Hier ein Beispiel, wie Leons Eltern in diesem Szenario auf seine Probleme auf dem Gymnasium reagieren könnten:

Leons Eltern kontrollieren ihn und seine Schulleistungen streng, sie gehen davon aus, dass Schüler:innen in seinem Alter nichts Gutes im Sinn haben. Ihre Erwartungen sind sehr hoch und Leon kann diesen auf dem Gymnasium nicht mehr entsprechen.
Als sie das Ergebnis des Mathetests sehen, sind die Eltern sehr wütend auf Leon und beschimpfen ihn. Damit Leon in Zukunft bessere Leistungen erzielt, muss er nun jeden Nachmittag unter Aufsicht der Eltern lernen. Falls Leon Fehler macht, lachen ihn seine Eltern aus oder beschimpfen ihn.
Die Eltern kontrollieren Leons Schulleistungen weiterhin eng und bestrafen ihn, falls seine Leistungen nicht besser werden.

Translation

The parents have an uncaring and hierarchical relationship with Leon. Communication is one-sided, and the parents set strict rules and expectations that Leon must comply with without protest. Mistakes on his part lead to abusive punishments, including physical and psychological violence (such as insults or slaps). The decision-making power lies with the parents, and Leon's needs are hardly addressed.

Here is an example of how Leon's parents might react to his school problems in this scenario:

Leon's parents strictly control him and his school performance, assuming that students his age have nothing good in mind. Their expectations are very high, and Leon can no longer meet them.
When they see the result of the maths test, the parents are very angry with Leon and insult him. To ensure that Leon performs better in the future, he must now study every afternoon under the supervision of his parents. If Leon makes mistakes, his parents mock or insult him.
The parents continue to closely monitor Leon's school performance and punish him if his performance does not improve.

B.7 Questions for the Scenarios

1) Was ist für Sie der wahrscheinlichste Notenschnitt (1 bis 5), den Leon in den folgenden Ereignissen erzielt?

(*A*) *Endjahreszeugnis 5. Klasse*
(*B*) *Endjahreszeugnis 8. Klasse*
(*C*) *Abitur*

Translation
What do you think is the most likely grade point average (grades 1 to 5, where 1 is the best) that Leon will achieve in the following events?

(*A*) *End of year report 5th grade*
(*B*) *End of year report 8th grade*
(*C*) *High school diploma*

2) Wie hoch schätzen Sie die Wahrscheinlichkeit (0 bis 100 %) ein, dass Leon während seiner Schulzeit an einer der folgenden psychologischen Störungen erkrankt?

(*A*) *Depression*
(*B*) *Angststörun*
(*C*) *Essstörung*
(*D*) *Suchterkrankung*
(*E*) *Andere*

Translation
How likely do you think it is (probability 0 to 100 %) that Leon will develop one of the following psychological disorders during his school years?

(*A*) *Depression*
(*B*) *Anxiety disorder*
(*C*) *Eating disorder*
(*D*) *Addiction*
(*E*) *Other Mental Health Disorders*

3) Wie hoch schätzen Sie die Wahrscheinlichkeit (0 bis 100 %) ein, dass Leon während seiner Gymnasialzeit ein NIEDRIGES Selbstbewusstsein entwickelt?

Translation
How likely do you think it is (probability 0 to 100 %) that Leon will develop LOW self-esteem during his high school years?