Under Parents' Watch: The Effect of Parental Observability on Educational Choices

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Abstract

This paper tests for parental pressure as a driver of students' post-secondary educational choices and mechanism behind socio-economic disparities in college attendance. To understand parental pressure, I conduct a field experiment with students and parents in Germany. Importantly, I experimentally make students' stated aspirations visible to parents. Visibility to parents strongly influences students' stated college aspirations and field rankings. Students at a *Gymnasium* – the most academic type of high school – increase their college aspirations under parental pressure, whereas students at comprehensive high schools show the opposite reaction. Given heterogeneous reactions by socio-economic background, visibility to parents doubles the socio-economic gap in college aspirations from 13 to 26 percentage points. Students' eventual college attendance and chosen fields more often equal their initial aspirations when these were visible to parents rather than not, implying that parental pressure likely also influences ultimate decisions. These findings suggest that parental pressure has the power to significantly influence individual choices and therefore societal outcomes such as social mobility and the allocation of talent. (JEL C93,D91,I21,I23,I24,J62,Z13)

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1 Introduction

In many countries, people's career paths are strongly associated with their parental background (Black and Devereux, 2011; Blanden, Doepke and Stuhler, 2023; Schnitzlein, 2016). For example, in Germany high school graduates whose parents did not attend college are 40 percentage points less likely to attend college than children with college-educated parents. This raises the question why students' educational choices are so strongly related to their parents' educational background and more broadly, what factors drive students' educational choices. Understanding the causal determinants of educational choices is essential for assessing the fairness and equality of opportunity within an educational system. It is also key for designing policies that aim to improve the quality of individual choices, improve the allocation of talent, or increase social mobility.

In this paper, I test for a novel determinant of students' educational choices: (perceived) parental pressure. I define (perceived) parental pressure as arising due to the observability of actions by parents that can cause students to take different actions than they would privately prefer (i.e., choices they would make if unobserved).[1] While there is correlational evidence that parental approval matters for career choices (Boneva and Rauh, 2017; Zafar, 2013; Delavande and Zafar, 2019), causal evidence for the impact of parental pressure is lacking.

Specifically, I study how high school students in Germany adjust career aspirations beyond their own preferences and beliefs to parental pressure and how this impacts the gap in college aspirations between students from different school types and socio-economic backgrounds. To study this question, I designed a field experiment in which I varied whether students' stated career aspirations for potential advising sessions were shared with their parents or not. This experimental variation identifies the causal effect of increasing perceived parental pressure on students' career aspirations.

Germany is a well-suited context in which to study the influence of perceived parental preferences on students' career choices. Primary, secondary, and tertiary education is free, and college attendance strongly depends on parental background. Among children with at least one college-educated parent 79% enroll in college, but only 27% of those without a college-educated parent do so. Among high school graduates, the gap stands at 87% vs. 47%.

[1] This "pressure" arises when children perceive that different observable choices entail varying social costs and benefits, e.g., differing levels of parental (dis-)approval, understanding, or other feelings. As such, parental pressure does not require active imposition by parents. Adjustments to perceived parental pressure may thus be driven by students' fear of disagreement, hope to signal certain qualities such as ambition, or desire to earn parental love as in conditional regard theory (Assor, Roth and Deci, 2004).

To study the causal impact of perceived parental pressure, I designed a field experiment about career planning in which 1,219 students and 846 parents participate. I developed an extensive career planning module of up to 150 minutes that embedded standardized career advising tests and career planning surveys into students' career planning curriculum. I then invited students and parents at 47 high schools to participate. To make the elicitation of career plans incentive-compatible, I coupled the elicitation with a lottery of expensive career advising sessions and informed students that their stated aspirations determine what type of advising session they get. I experimentally varied parental pressure by randomizing the instructions to students between a *private* and a *public* condition for 574 eligible students with a participating parent. While I informed all students that I would send them a copy of their answers for their further preparation, I randomized at the individual level within schools whether I would also send a copy to their parents.

I find that students adjust their stated college aspirations to parental pressure and that the reactions are contrary at the two types of schools in this context. Students at a *Gymnasium* increase their college aspirations by 9.9 percentage points as a reaction to the visibility to parents, whereas students at a *Gesamtschule* (comprehensive high schools) lower their aspirations by 9.9 percentage points. The *Gymnasium* is Germany's most academic type of school and 62% of *Gymnasium*-students in the sample have at least one college-educated parent. The *Gesamtschule*, on the other hand, typically features more diverse student bodies, where 26% of students in the sample have at least one college-educated parent.

Students' adjustment to parental pressure is not limited to college aspirations. When aspirations are shared with parents, students also adjust preferred fields towards those preferred by parents: they become more likely to aspire to high-earning fields such as business and economics and less likely to aspire to low-earning fields such as arts, music, and design.

Given heterogeneous reactions by students from different socio-economic backgrounds, I find that students' adjustment to parental pressure doubles the socio-economic gap in college aspirations to 26 percentage points. Following convention, I define students with at least one college-educated parent as "high socio-economic status" students (henceforth "high SES"). Students without any college-educated parent are defined as "low SES" students. In the *private* condition, there is a socio-economic gap of 13 percentage points in college aspirations; 69% of high SES and 56% of low SES students aspire to attend college. In the *public* condition, high SES students are 10 percentage points more likely, but low SES students 3 percentage points less likely to aspire to college.

Among high SES students, there is a larger effect for those with one rather than two college-educated parents. Students with one college-educated parent are 19 percentage points more likely to aspire to college in the *public* than the *private* condition, where 58% of them

aspire to college. Some of these students may therefore aspire to college primarily due to parental pressure, likely perceived to stem from their college-educated parent as their aspirations in the *public* condition more closely reflect the college aspirations of their college-educated parents. In contrast, 82% of students with two college-educated parents already aspire to college in the *private* condition, indicating that they have largely internalized college as the preferred option. This could explain why for them there is no significant difference in college aspirations between the *private* and *public* condition.

Students' reactions also vary conditional on socio-economic status across school types and across socio-economic backgrounds within schools and school types, suggesting that parents' educational background matters for parental pressure beyond the schools their children go to. For high SES students, the reaction to the *public* condition is stronger at a *Gymnasium* where controlling for school fixed effects the share aspiring to college increases by 12.9 compared to 4.5 percentage points at a *Gesamtschule*. Among low SES students, the share aspiring to college at a *Gymnasium* does not change as a reaction to the *public* condition, whereas at a *Gesamtschule* their share decreases by 17 percentage points.

The impact of parental pressure is also heterogeneous relative to students' own preferences and beliefs, with parental pressure rather counteracting than complementing internal motivations. To capture students' internal affinity towards college, I elicited students' expectations with respect to undergraduate studies, dual study programs, and vocational training (building on work by Zafar (2013), Giustinelli (2016), and Boneva and Rauh (2017)) and estimate a conditional logit model to predict students' likelihood to aspire to college based on their subjective beliefs. I find that among *Gymnasium*-students, those with relatively low affinity for college increase their college aspirations the most as a reaction to the visibility to parents. Among *Gesamtschule*-students, it is those with intermediate affinity who move away from college as a reaction to parental pressure.

Follow-up data on actual choices suggests that perceived pressure likely also affects students' actual choices after high school. Students' stated aspirations in the *public* condition are more predictive of their first choice after high school than those in the *private* condition, both for students' college attendance and their field choices. While 70% of students follow through with their *privately* stated aspiration to attend college or not, this share is 8.9 percentage points higher for stated aspirations in the *public* condition. Similarly, among students who pursue undergraduate or dual studies, the field they initially enroll in is 11.7 percentage points more likely to equal the field initially ranked top in the *public* condition than in the *private* condition. For some students, their first choice of what to do after high school was thus not what they privately always wanted to do, but likely influenced by perceived parental pressure.

I contribute to several literatures by testing and empirically quantifying the role of parental pressure as a determinant of students' educational choices and as a potential mechanism behind intergenerational mobility. First, my paper relates to the literature on the determinants of educational choices by providing causal evidence for the impact of parental pressure as a specific form of family influence.[2] As such, it particular adds to the literature on social and family influences on these choices, e.g., by parents (Carlana and Corno, 2022, 2024; Altmejd, 2023; Dahl, Rooth and Stenberg, 2020; Mogstad and Torsvik, 2023), siblings (Altmejd et al., 2021), peers (Bursztyn and Jensen, 2015; Bursztyn, Egorov and Jensen, 2019), teachers (Carlana, 2019), or mentors (Carlana, La Ferrara and Pinotti, 2022; Falk, Kosse and Pinger, 2020; Resnjanskij et al., 2024). I add to the general literature on social influences by showing that educational choices can serve as signals to parents, not just to peers, (potential) partners, or prospective employers,[3] and by showing that students' stated aspirations under increased pressure in the *public* condition better predict eventual choices than those stated in *private*.

Second, my paper contributes to the literature on reasons behind socio-economic gaps in career outcomes and ways to address these gaps. Many papers document intergenerational correlations in education, earnings, and occupations (Black and Devereux, 2011; Schnitzlein, 2016; Findeisen et al., 2021; Altmejd, 2023) and examine the reasons behind this strong relationship.[4] I find that students' adjustment to parental pressure widens socio-economic disparities in college aspirations and attendance. Importantly, the gap also widens within schools, on top of differences in students' preferences and beliefs, and while holding informational, financial, and eligibility constraints fixed. The mechanism is thus different from financial or informational constraints, differences in schools or neighborhoods, or students' internal preferences and beliefs with respect to career tracks.

Students' reactions to parental pressure also illustrate that intergenerational transmission

[2]Some determinants discussed in the literature include students' beliefs and preferences (Delavande and Zafar, 2019; Boneva, Golin and Rauh, 2021; Ehrmantraut, Pinger and Stans, 2020), credit constraints (Keane and Wolpin, 2001; Heckman, Lochner and Todd, 2006), informational constraints (Peter, Spiess and Zambre, 2021; Lergetporer, Werner and Woessmann, 2021; Bleemer and Zafar, 2018; Gurantz et al., 2021), and schools and neighborhoods (Chetty and Hendren, 2018; Rothstein, 2019).

[3]For signalling to peers, refer to e.g., Bursztyn and Jensen (2015), Bursztyn, Egorov and Jensen (2019); for signalling to (potential) partners to Bursztyn, Fujiwara and Pallais (2017), and to Spence (1973) for the seminal paper on signalling (to employers), with empirical evidence provided by Ehrmantraut, Pinger and Stans (2020). Bursztyn and Jensen (2017) provide a review of social image and social pressure concerns.

[4]In addition to research in Economics on the importance of (early) educational tracking (Dustmann, 2004), the transmission of beliefs and preferences (Boneva and Rauh, 2017) and differences in credit constraints, knowledge, or schools and neighborhoods (Lochner and Monge-Naranjo, 2012; Dynarski et al., 2021; Chetty, Hendren and Katz, 2016; Biasi, 2023), there is also a large sociology literature on intergenerational mobility and the mechanisms behind it. Torche (2015) reviews this literature and points out the need for more research on the causal determinants of socio-economic disparities in choices.

involves two active parties, parents and children. This complements a growing literature on intergenerational intra-household decision-making by showing how parents shape their children's choices when parents are not the sole decision-maker (Ashraf et al., 2020; Bergman, 2021; Bursztyn and Coffman, 2012; Dahl et al., 2021; Dizon-Ross, 2019; Giustinelli and Manski, 2018). The results demonstrate that perceived parental preferences continue to matter for choices beyond high school, suggesting that observability by parents can affect students' choices when they are the sole decision-maker as well as when they are involved in explicit or implicit bargaining with parents (e.g., by affecting what aspirations they openly share).[5] The transition from parents as sole decision-maker to students deciding independently of parents may thus be more gradual than often assumed by treating students as sole decision-makers of postsecondary choices. Finally, the paper touches on the transmission of educational choices within families and intergenerational transmission more broadly,[6] and offers a methodology to distinguish non-internalized from internalized parental influence.

The remainder of the paper is structured as follows: I start with an introduction to the setting of choosing tracks after high school in Germany. Next, I present my field experiment and its main findings. Third, I show heterogeneities in adjusting to parental pressure. Fourth, I present follow-up choice data to compare students' actual first choices after high school to their initial aspirations. Fifth, I discuss potential interpretations and concerns and then conclude.

2 Postsecondary Career Choices in Germany

Germany offers a well-suited context to examine the importance of students' and parents' preferences behind students' educational choices and the socio-economic gap in college attendance. This is for two main reasons. First, education is tuition-free from primary school to university and the entry to many (university) programs is neither restricted nor very competitive. Preferences should thus be important drivers of whether and especially of what to study. Second, college attendance strongly depends on socio-economic background. Among students who obtained an university entry qualification, 87% of high SES children choose to attend college, but only 47% of those without any college-educated parent do (Federal Ministry of Education and Research, 2016). This is a large gap considering that students with the university entry qualification present a selected sample. Following, I present more details on the relevant aspects of the German education system and the transition from high

[5]The effects may resemble those for spousal intra-household behavior, see for example Ashraf (2009).

[6]Papers in this literature include, among others: Dohmen et al. (2011) and Doepke and Zilibotti (2017), with reviews by Bisin and Verdier (2011) and Bau and Fernández (2023).

school to postsecondary careers.

Obtaining the college entry qualification (Abitur) and choosing a postsecondary educational career. Students have to attend 3 years of upper classes at high school to obtain a university qualification. In North Rhine-Westphalia, they can do so at two types of schools, the *Gymnasium* and the *Gesamtschule*. The *Gymnasium* is the most academic track and supposed to prepare for the *Abitur*. The *Gesamtschule* is a comprehensive school offering up to three tracks, with two of them ending after 10 years of schooling and intended to prepare for vocational training. The *Gesamtschule* is thus not exclusively dedicated to preparing for the *Abitur* and offers the possibility to switch between tracks without changing schools. As a consequence, the socio-economic background of students at the two types of schools is quite different. The *Gymnasium* typically attracts the most academically-minded families (often the children of college-educated parents), whereas the *Gesamtschule* attracts a more mixed student body with fewer children of college-educated parents and more students of migration background.

After graduating from high school, students can choose from many options. Their decision can be broken down into three major components: broad tracks, fields/occupations, and universities/employers. In this paper, I mostly focus on deciding between broack tracks, but provide additional results on preferences for fields. Students can choose between 4 broad tracks: attend university, a dual study program, vocational training or work without further education.[7] Around 63% of graduates attend college, 5% take up a dual study program, and 30% opt for vocational training.[8] At a more detailed level, graduates have to decide in which area to specialize: picking a major when planning to study or an occupation when planning to pursue vocational training.[9] Finally, students have to choose a university or an employer. While for dual study programs and vocational training students usually have to apply during their last year at school, for most college programs they can wait until after graduation (see Figure 1).

The exact application process depends on the preferred major and university. As long as demand does not outstrip supply of places for this major at the preferred university, students can enrol with their college entry qualification. Entry to about 60% of programs is unrestricted in this way. Otherwise, students have to apply in July, to a specific field at a specific university.[10] Next, students pick the program they prefer among those that

[7]Dual study programs combine practical training in a specific firm with college-level courses.

[8]The numbers are taken from Schneider and Franke (2014), Deutsches Zentrum für Hochschul- und Wissenschaftsforschung (DZHW), and Kracke, Buck and Middendorff (2018).

[9]I classify majors into: Agriculture and Forestry; Arts, Music, Design; Teaching; Linguistics/ Culture; Social Sciences; Business/ Economics; Engineering; Maths, Natural Sciences; Law; Medical Studies.

[10]Due to high demand, the access to medical studies and psychology is restricted and centralized.

admitted them. For majors with competitive entry at a specific university there are often less competitive alternatives,[11] which increases students' chance to pursue a major close to their interest. Once students are enrolled, switching majors requires to re-apply to an alternative program, drop out and then start from scratch. Choosing a postsecondary career path among the many available options is thus both complex and consequential.

Paying for education. Education from primary school to university is free and state-financed in Germany. The exception are university fees of $100 to $400 per semester.[12] This can be higher for private universities, but less than 10% of students attend private universities, and similarly, for elementary and high school, 92% of all students attend publicly-funded schools (Statistisches Bundesamt, 2020, 2021*a*,*b*). One of the motivations for the publicly-funded education system is that children from all backgrounds should have the same opportunities and not be held back by a lack of personal financial resources. This is also the rationale for financial support through the *German Federal Training Assistance Act* (or BAföG) which was designed to enable "young men and women to choose the training that suits their personal interests, irrespective of their families' financial means" (Federal Ministry of Education and Research, 2021). Most recipients use it for their living expenses during vocational training or college. Almost 20% of students receive some monthly payment through *BAföG*, with the amount depending on parents' financial means among others. The maximum monthly payment is €861, the average monthly payment €500. Half of the payments are given as a grant and half as an interest-free loan. The maximum amount that needs to be repaid is €10,010 or 20 months of the average monthly payment.

Socio-economic gaps in educational transitions. Despite low costs of most paths and government-provided financial support there remains a strong relationship between students' educational careers and parental background. While 79% of high SES students attend college, 27% of low SES students do so. Among high school graduates, the shares are 87% vs. 47%. This gap of 40 percentage points is the one relevant to this paper.

The sample of high school graduates is a selected sample, because selection starts with the transition from elementary to secondary school. One of the available tracks leads to the upper classes and the *Abitur* and is available at both the *Gymnasium* and the *Gesamtschule*. In North Rhine-Westphalia, and most of Germany, early tracking happens after 4 years of primary school. A proxy for the social selectivity of this transition is the share of students from different backgrounds that makes it to the upper classes: it is 83% among high and

[11] E.g., the same major at another university or a similar major at the same university.

[12] During vocational training, trainees receive average monthly gross incomes of 1,000 Euros (Schönfeld and Wenzelmann, 2023), thus adding to the financial opportunity costs of attending college instead.

46% among low SES families. Despite the importance of early tracking, understanding the reasons behind the socio-economic gap in the transition from high school to university is crucial for understanding the reasons behind the overall gap in university attendance. If low (high) SES high school graduates were to enrol at the same rate as high (low) SES peers, the overall gap would close by 19 (33) percentage points or 36.5% (64.7%) of the gap.[13]

3 Field Experiment

I conducted the experiment in collaboration with 47 high schools from North Rhine-Westphalia, 35 (12) of the type *Gymnasium* (*Gesamtschule*). School visits constituted the core part of these collaborations and were conducted between July 2019 and March 2021. These visits were in person until February 2020 and mostly virtual afterwards.[14]

Design. The field experiment's goal was to examine whether students adjust their stated career aspirations to parental pressure. For this purpose, I experimentally varied whether students have to state (educational) aspirations in private or when they can be observed by parents.

In order to work with students on their current aspirations in a realistic environment, I designed a 150 minute-session on planning for the time after high school. The main purpose of these sessions was for students to think more carefully about their plans for the time after high school and to learn more about their own interests and aptitudes. With these goals in mind, I was able to offer these sessions to schools and then to students at participating schools. The sessions have two main components (see Figure A1 for details). Each session first starts with 30 to 40 minutes of survey questions around students' career aspirations, subjective beliefs for career tracks, and parental background. Students then take 100 to 110 minutes of tests typically employed in expensive private career advising sessions.

The tests included standardized personality, interest, and cognitive tests. Similar tests are often used in assessment centers and in typical private career advising sessions that cost up to $1,400 in this region. The tests usually take up to 50% of the time of such an advising session. Buying these tests in bulk as a researcher from an external provider, I was able to lower the variable costs per student to less than $5 and to offer them to students for free.

[13] Following the Federal Ministry of Education and Research (2016), 72% (21%) of high (low) SES students enrol in university via high school and 17% (54%) of high (low) SES students attend professional schools, among whom 40% (10%) go on to university, bringing the gap to 79% vs. 27%.

[14] In total, 813 students participated in-person and 406 virtually. I conducted 13 in-person visits with 672 participating students until February 2020 and two more with 141 participating students during a period of in-person instruction afterwards. All 32 remaining visits after February 2020 were virtual.

For the purpose of incentivizing students' stated aspirations, I combined the career planning module (concretely, the "career survey") with the chance to win one of ten expensive private career advising sessions. This allowed me to truthfully instruct students that their stated career plans would determine what type of advising session they could get. In these sessions, students for example received help with how to prepare for their preferred career track. Advisors specialize in different areas, so after drawing the winning students, I found advising sessions that were a good fit to the students' stated career aspirations. By incentivizing students' stated aspirations in this way, I make their answers consequential, intermediate choices on their way of preparing for the time after high school.

Students therefore benefited from participating in several ways. First, from practicing the standardized tests, receiving their results and learning more about their interests and aptitudes. Second, by spending time thinking about their plans. And third, by potentially winning an advising session that would further help them prepare. These benefits ensured that the school visits would be mostly about the students and their plans rather than my research and helped making the participation attractive for students and for schools.

When eliciting students' aspirations that would form the basis of potential advising sessions, I varied in a between-subject design whether they would be shared with their parents. In randomizing instructions, I followed the design by Bursztyn and Jensen (2015), but varied the visibility of answers to parents rather than peers. To credibly do so, parents had to be involveds and registered with some contact details. I achieved this by inviting parents as well, following a similar design to Tungodden and Willén (2023). Surveying parents has additional advantages as parents' preferences do not need to remain a black box.

Visibility Experiment. In order to test whether students make different choices compared to their privately held preferences because their parents can observe their statements, I varied whether students were told that their answers would be shared with their parents or not. At each school, I randomized instructions for all students who had at least one parent who registered to participate with separate contact details before my school visit. Most students were minors and therefore required parental consent to participate. I used this to invite the parents to participate and share their views on career planning. Most parents were thus not directly recruited by me, but indirectly through their children. Students were then given one of the following two instructions as part of the *private* [*public*] condition:

For your further planning we will send a copy of your answers on this page ***to you*** *[to you and your parents]. Your statements won't be shared with anyone else,* ***also not with***

your parents *[except for your parents].*[15]

The only difference between these statements are the words in the brackets that are substituted for the words in bold. Both statements mention parents to make sure that the only difference is the visibility to parents. I conducted the randomization at the individual level once the registration deadline had passed at a particular school.[16] Controlling for school fixed-effects, most differences in characteristics between students in the two groups should thus be insignificant. Balance tests are reported in Panel B of Table 1, confirming that the randomization was successful. Students in the *private* and *public* condition do not significantly differ with respect to their gender, socio-economic status, or grade average for example. This is also true for randomization at the two types of schools, see Table A1.[17]

Timing of school visit. Participation was confined to students of upper classes. At the *Gymnasium* (*Gesamtschule)*, these are grades 10 (11) to 12 (13). In Figure 1, I present an overview of students' transition from upper classes to postsecondary tracks, including typical ages and timing of application deadlines. I also include the timing of school visits, with steps in preparation and in following up after these visits.

The majority of participating students, 69%, were in their penultimate year of high school.[18] This is the year I mostly targeted as grades 11 (*Gymnasium*) and 12 (*Gesamtschule*) present the right time to ask students about their plans. They should have started to think about what they want to do, but should not have committed to a track yet. Students usually take the first steps towards preparing applications during the last year of school. If they want to go to university, they typically do not have to take concrete steps until after graduation. For dual study programs or vocational training, the typical application deadline is between 9 to 12 months before the start of the program, and thus during the first half of their last year if they want to start their program in the same year as graduating.

Recruitment and protocol of school visits. I contacted schools by emailing the principal and the team responsible for students' career planning curriculum. In this email, I introduced my research project, the career planning module and its advantages to students and schools, and asked for a meeting. If the school expressed interest, I arranged a meeting

[15]The *private* (*public*) wording in German was: "Für Deine weitere Planung werden wir eine Kopie Deiner Antworten auf dieser Seite an Dich **schicken** [und Deine Eltern schicken]. Deine Angaben werden mit niemandem außer **Dir geteilt, auch nicht mit Deinen Eltern** [Deinen Eltern geteilt]."

[16]In case of an (odd) number of eligible students, I assigned half (plus one) to the *public* condition.

[17]The exception is a higher share of students with migration background in the *public* condition at the *Gymnasium*. The omnibus-test of overall significance of the treatment on covariates is insignificant, however, suggesting this is within the bounds of what differences to expect by chance.

[18]All other students were in the first half of the last year or the second half of the third-to-last year.

Table 1: Descriptive statistics and experimental balance

Panel A: Schools	**All**	**Gymnasium**	**Gesamtschule**
N	47	35	12
Participants	1,219	856	363
Experimental Sample	574	454	120
Grade Average	2.21	2.11	2.45
% Participants High SES	.51	.62	.26
% Migration Background	.31	.23	.5
% at least 1 Parent Registered	.57	.65	.39

Panel B: Students						
	All	**Exp. Sample**		**Exp. Condition**		**Balance**
		No	Yes	Private	Public	p-value
N	1,219	645	574	279	295	
Male	.38	.38	.39	.41	.38	.5
Penultimate Year	.69	.72	.66	.66	.66	.99
Grade Average	2.21	2.32	2.08	2.13	2.05	.12
# Registered Parents	.81	.28	1.4	1.41	1.4	.91
Registered Mom	.5	.17	.87	.87	.87	.82
Registered Dad	.31	.11	.53	.53	.53	.97
High SES	.51	.42	.61	.59	.63	.3
Migration Background	.31	.43	.18	.16	.2	.12

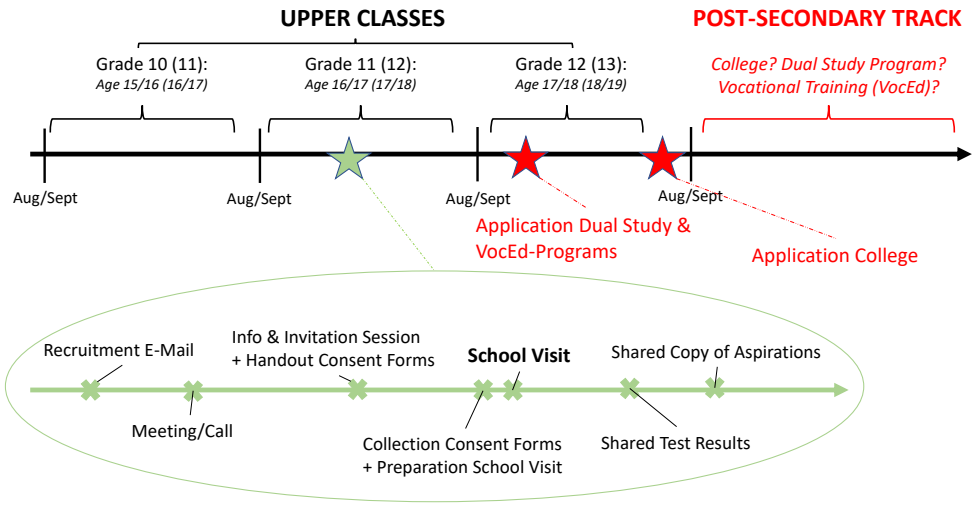
Panel C: Parents	**All**	**Gymnasium**	**Gesamtschule**
N	846	705	141
Female	.65	.64	.70
College-Educated (CE)	.52	.57	.26
0 CE-Parent HH	.34	.28	.62
Non-CE in 1 CE HH	.16	.16	.15
CE in 1 CE HH	.14	.15	.1
2 CE Parents	.37	.42	.13
Immigrated	.11	.09	.19

Notes: The column "Balance" in Panel B reports the p-value (under robust standard errors) for the difference between the *private* and the *public* condition while controlling for school fixed effects.

to discuss all further details so that the school could decide whether to participate. If they did, we next agreed on all organizational details. First, I invited all students in a given grade by giving them a short presentation and handing out consent and registration forms for students and parents in envelopes.[19] Interested students and parents had 10 to 14 days to

[19]During these presentations, I first introduced myself, saying I was conducting a study to learn how students prepare for the time after high school and how they could be better assisted in future. I next invited them to participate in this study, outlined that participation would entail questions about their interests, potential plans after graduation, and themselves, as well as the opportunity to take standardized tests used in assessment centers and career advising sessions, and the chance to win one of ten private

Figure 1: Upper classes, postsecondary choices, and school visits



Notes: This figure shows the timing of school visits against upper classes with years and ages of students for the *Gymnasium* (*Gesamtschule*) and the start of most postsecondary tracks. Students at a *Gymnasium* (*Gesamtschule*) graduate after 12 (13) years, upper classes are from grade 10 (11) through 12 (13). August/September marks the start of a school year, with most vocational programs also starting around this time and most university programs in September/October. Typical application deadlines for dual study and vocational training programs are between August the year before and January/February of the same year. Applications for most college programs are not due until mid-July, for some programs enrolling until sometime in October/November is sufficient. The figure also zooms into steps in preparation for the visits and when following up with results afterwards.

register. After the deadline I collected returned consent forms, registered participants, and prepared all materials for the school visit, including envelopes containing survey forms with personalized instructions and test forms. At the day of the school visit, students participated in the career planning module which took the following form, also displayed in Figure A1.

I began by reminding students of the purpose of my visit, explaining they could win a private career advising session that would be based on their answers in the first survey, and then handed out the first survey form. Students start with the "Career Survey" in Appendix B1. Once done with this survey, they exchanged it against a second survey with questions about their background, their parents' preferences and education, and their subjective expectations for different career tracks (termed "Background Survey", see Appendix B2). After completing these surveys, students continued with the personality test and, as long as proceeding at normal speed, also the interest test. After a break, I led students

career advising sessions. I mentioned I would also be interested to learn more about their parents' views on preparing for the time after high school and would be grateful if they invited their parents to participate. I closed by explaining how to consent to participation, stressing they could participate without their parents participating but that minors would need parental consent.

through a cognitive test that amounts to another 95 minutes.[20]

Once students had started the tests, I invited registered parents via email and/or SMS to complete a 15 to 20 minute survey. The questions to parents mirrored those to students: I asked parents about their preferred careers for their child (which would not be shared with their children), their own education, and subjective expectations for different tracks (see Appendix B3). I reminded parents up to six times within two weeks such that 85% of registered parents participated. Next, I evaluated students' tests and sent them their results within a few weeks of the visit. In a separate message, I shared a copy of their stated career aspirations with them and for those in the *public* condition, also with their parents.

Sample and selection into it. I collaborated with 47 high schools in Germany's most populous state of North Rhine-Westphalia. In total 1,219 students and 846 parents participated, leading to a tally of 2,065 conducted surveys. 574 participating students were eligible for the experimental variation of instructions. For these students, I randomized instructions at the individual level within a given school. In Table 1, I present descriptive statistics for participating schools, students, and parents.

The distribution of students across the two types of schools in my sample is representative of the overall population. While 70% of participating students are at a *Gymnasium*, this share is 76% across the state. Panel A of Table 1 shows key differences between the two school types, which illustrate that they present very different socio-economic environments and why it is more challenging to reach parents at a *Gesamtschule*. Overall, 51% of students in the sample have at least one college-educated parent: 62% at a *Gymnasium* and 26% at a *Gesamtschule*. For 31%, at least one parent was not born in Germany, 23% at a *Gymnasium* and 50% at a *Gesamtschule*.[21] Both factors contributed to reducing the share of students at a *Gesamtschule* with at least one parent registered to 39% compared to 65% at a Gymnasium.[22] Recruitment of parents at a *Gesamtschule* was further reduced by the higher share of students already of legal age due to the extra year of schooling and thus able to consent to participating without asking their parents.

There are two layers of representativeness to keep in mind when interpreting the results on parental pressure in this paper. First, parental pressure at this level in the German education system is not representative of all potentially perceived pressure in the overall population

[20]Schools could opt for a short, 35-minute version if their schedule did not allow for the long test.

[21]Table 1, Panel C shows descriptive statistics of participating parents. Among 846 parents, 52% are college-educated and 11% were born outside of Germany. This is lower than the 31% of students with at least one parent not born in Germany, illustrating the challenge of recruiting their parents.

[22]This also explains why a lower share of *Gesamtschule*-students (33%) are part of the experiment than at a *Gymnasium* (53%). Not every student with a participating parent is eligible for the visibility experiment. Some parents register too late and others have the same contact details as their child.

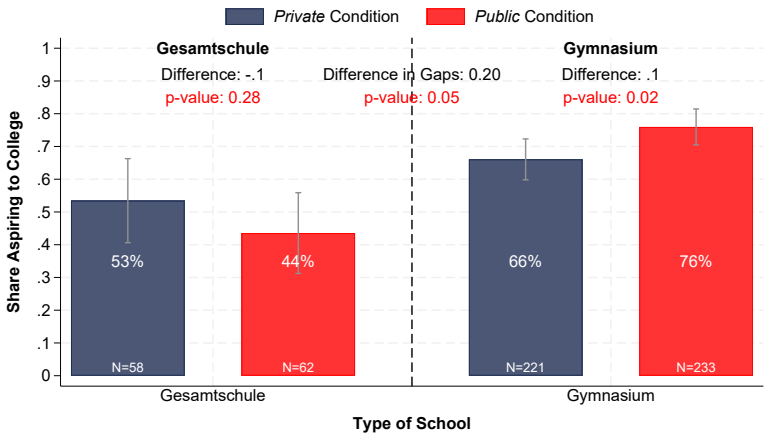
and at all ages. One reason is that those who make it to the upper classes are already quite selected: for example, 83% of high SES, but only 46% of low SES students make it to the upper classes. In particular, students who perceive parental pressure against too much education may not make it to the upper classes (or if they do, rather to the *Gesamtschule* than the *Gymnasium*). An absence of parental pressure against (more) education at this level in the education system therefore does not imply that it does not exist in other parts of the population. Moreover, at this age, some perceived pressure may have already been internalized by students, such that it is not captured by the experiment. Even a perfectly representative sample of students in upper classes would therefore not capture all forms of pressure originating from parents in the wider population and at different ages.

The second layer concerns to what extent participants are representative of students in upper classes in North Rhine-Westphalia. The sample reflects the majority of students at the two types of schools well (see Table A2), but is not perfectly representative. Some students were more likely to participate, in particular girls, students with college-educated parents or with slightly better grades.[23] For example, high SES students are over-represented with a share of 51% against an estimated share of 33% that should be present in upper classes.[24] The share is comparable to other surveys (e.g., 49% of high SES in cohort 4 of the German National Educational Panel Survey (NEPS), Blossfeld, Rossbach and von Maurice (Eds.)), but nevertheless means that low SES students are under-represented. There are also 6.5 percentage points more girls (61.5% vs. 55%) and average grades of 2.21 are slightly better than the overall average of 2.43. Together, the characteristics of the sample and the particularities of this stage in the German education system may lead to an under-representation of potential pressure in low SES households. While this sample should be well-positioned to capture representative pressure in high SES families (especially at the *Gymnasium*), it might not be suited to capture perceived pressure against more formal education from some parents. In section 7, I discuss concerns of what the experiment identifies, selection, and external validity in more detail.

[23]Regarding site-selection, Riener, Schneider and Wagner (2020) find no evidence of self-selection on observable characteristics by schools into participating in a field experiment in the same region.

[24]The approximate share of college-educated parents in the parent generation is 21.39%. Assuming transitions to upper classes of 83% (46%) for high (low) SES, around 33% should be high SES students.

Figure 2: Visibility experiment: college aspirations by type of school



Notes: This figure presents the share (and 95% confidence intervals) of students aspiring to university in the *private* and the *public* condition at the "Gesamtschule" and the "Gymnasium". The sample includes all students in the visibility experiment, 120 at a "Gesamtschule" and 454 at a "Gymnasium". The graph reports the p-value of the pairwise difference between the shares in the *private* and the *public* condition at both schools as well as the p-value of the difference in the gap across the both school types.

4 Results

4.1 College Aspirations

I first present the results regarding students' aspirations to attend college, focusing on the share of students stating college as an aspiration in the *private* and *public* condition at the *Gymnasium* and the *Gesamtschule*, as can be seen in Figure 2. While 66% of students at a *Gymnasium* aspire to college in the *private* condition, this share is 76% in the *public* condition (p-value=.02). For students at a *Gesamtschule*, I find a decrease of 9 percentage points (henceforth "pp") in college aspirations from 53% in the *private* to 44% in the *public* condition (p-value of .28). The gap in college aspirations between the two school types thus increases from 13pp in the *private* (66% vs. 53%) to 32pp in the *public* condition (76% vs. 44%), a difference of almost 20pp (p-value=.05).

In Table 2, I present the results of the visibility experiment in regression format using a linear probability model, with β_1 as the coefficient of interest:

$$\text{College Aspiration}_i = \alpha_0 + \beta_1 \times \text{Public Condition}_i + \epsilon_i \tag{1}$$

My preferred specification includes school fixed effects (columns 2, 5, 8) since instructions were randomized at the individual level within schools. Among *Gymnasium*-students, college aspirations increase by 11.4pp in the *public* condition when including school fixed-effects (p-

Table 2: Visibility experiment: college aspirations

	DV: Stated Aspiration to Attend College								
	Schooltype: All			Gymnasium			Gesamtschule		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Public Cond.	0.057	0.066*	0.055	0.099**	0.114***	0.107**	-0.099	-0.113	-0.104
	(0.039)	(0.038)	(0.038)	(0.042)	(0.042)	(0.042)	(0.092)	(0.091)	(0.089)
Inference robustness (p-values)									
Robust SEs	0.149	0.085	0.152	0.020	0.007	0.012	0.282	0.215	0.245
Rand.-based	0.136	0.096	0.152	0.025	0.004	0.007	0.351	0.266	0.267
Mean DV *Priv.*	0.634	0.634	0.634	0.661	0.661	0.661	0.534	0.534	0.534
School FE	-	✓	✓	-	✓	✓	-	✓	✓
Ind. controls	-	-	✓	-	-	✓	-	-	✓
Observations	574	574	574	454	454	454	120	120	120

Notes: This table presents the results of OLS regressions of a dummy for students' stated college aspirations on being in the *public* condition. Controls include indicators for male, migration background, high SES, and dummies for school years. Robust standard errors are reported in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$.

value=.007).[25] At the *Gesamtschule*, college aspirations fall by 11.3pp in the *public* condition (p-value=.215). This combines to an increase by 6.6pp at all schools (p-value=.085), which is smaller (and not significant) in other specifications. The core result – a strong effect on college aspirations at the *Gymnasium* – is robust to adding controls (i.e., indicators for male, migration background, high SES, and dummies for school years in column 6) and using alternative measures of college aspirations (see Tables A3, A4).[26]

Together, these results demonstrate a robust and strong effect on increased aspirations to attend college for students at a *Gymnasium*. The findings also consistently show decreased college aspirations among *Gesamtschule*-students, which are large but not statistically significant given limited statistical power. Nevertheless, the reactions to making aspirations visible to parents clearly differ across the two types of schools. The difference in reactions is consistent with differences in parents' answers what they would prefer for their children.

Parents' answers – displayed in Figure A2 – are in line with both more pressure regarding educational choices in general and more uniform pressure towards college for students at a *Gymnasium*. For parents of *Gymnasium*-students, college is the most preferred option. This is true for both mothers and fathers and despite an apparent desire among many parents to believe they leave the choice to their child. Among mothers (fathers) at a *Gymnasium*, 57% (55%) indicate they would most like college for their child, compared to 30% (29%)

[25] P-values across specifications are similar when using randomization inference (Young, 2019).

[26] In the *public* condition, more students state a) "exclusive" aspirations to attend college (see Table A3), b) plans to pursue college or dual studies (see Table A3), and c) a higher preference for studying when asked how much they prefer studying to vocational training on a scale of 0 to 100 (see Table A4).

stating dual studies, 14% (11%) selecting vocational training, and 31% (35%) stating they would leave it to their child.[27] For parents at a *Gesamtschule*, there is a) no clearly preferred option overall and b) a higher tendency to indicate they would leave it to their child. Among mothers (fathers), 34% (26%) state a preference for college, 29% (26%) for dual studies, 30% (17%) for vocational training, and 43% (55%) say they would leave it to their child.[28]

4.2 Field Preferences

The impact of parental pressure is not limited to the question of whether to go to college. Students also adjust their preferred fields to parental pressure. When students are told that aspirations will be shared with parents, students shy away from fields such as "Arts, Music, Design" and become more likely to state an aspiration for fields like "Business and Economics". Students' adjustments are once more in line with parents' preferences for fields and especially clear for students at a *Gymnasium*, where they lead students to switch from fields in the lower half of earnings to fields in the upper half of earnings.

After being asked what track they would like to pursue after graduation, students were asked which fields of study they aspired to. For this purpose, students were asked to rate 10 different fields in terms of their attractiveness to them, on a scale of 0 ("completely unattractive") to 100 ("extremely attractive").[29] Based on students' ratings, I code a binary variable for each field, indicating whether it received the student's highest rating and is thus top-ranked by a student.[30] I repeat the same procedure for parents who answered an equivalent question. Using students' and parents' top-ranked fields (in the *private* condition), I can compare the relative attractiveness of fields among students and parents by calculating the difference between the share of parents and students giving this field their highest rating.[31] The differences indicate which fields are relatively more favored by parents than children and are portrayed on the x-axis of Figure 3.

In comparison to students, parents like fields such as "Maths, Natural Sciences", "Business and Economics" and "Engineering" and dislike "Arts, Music, Design". When making aspirations observable to parents, students react in ways that align with parents' preferences:

[27]The ranking is even clearer when not allowing "leave to child" and "don't know" answers: among mothers (fathers), 70% (69%) state college, 39% (36%) dual studies, and 17% (13%) vocational training.

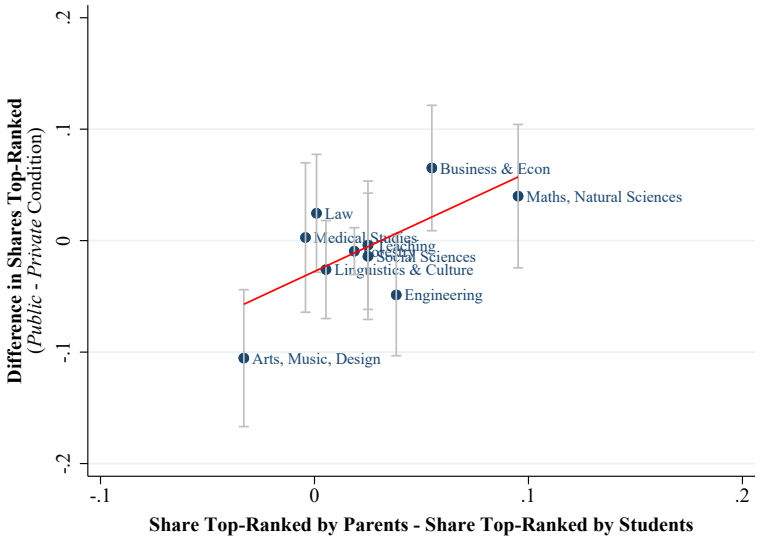
[28]Not allowing "leave to child" and "don't know" neither produces a pronounced ranking, 49% (52%) of mothers (fathers) now state college, 44% (48%) dual studies, and 35% (24%) vocational training.

[29]The translation of the question students were asked is the following: "Which fields of study do you find the most attractive? *Please state how attractive you find the following fields of study, on a scale of 0 points ("completely unattractive") to 100 points ("extremely attractive").*" The question then listed the following 10 fields: Agriculture and Forestry; Arts, Music, Design; Teaching; Linguistics and Culture; Social Sciences; Business and Economics; Engineering; Maths, Natural Sciences; Law; Medical Studies.

[30]This is possible for 548 students who rated fields, 26 students did not rate any fields.

[31]Parents are more likely to rank more than one field top such that most differences are non-negative.

Figure 3: Visibility experiment: top-ranked fields



Notes: This figure presents the difference between the share among parents and students in the *private* condition who rank a field top (x-axis) and the coefficient of regressing ranking a field top on a dummy for being in the *public* condition (and 95% confidence interval), based on robust standard errors and including school fixed-effects. The regression line reports the results from regressing this coefficient on the difference in shares among parents minus students ranking a certain field top. The sample includes all students in the visibility experiment who provided field ratings, the x-axis is based on the subset of students (and their parents) in the *private* condition.

they shy away from "Arts, Music, Design" and become more likely to aspire to "Business and Economics". As shown in Figure 3, the difference between the *public* and *private* condition is higher for fields that are relatively more preferred by parents.[32]

The results for students' top-ranked fields are presented in regression format for a linear probability model for students at all schools in Table A5. When controlling for school fixed-effects, students are 10.5pp less likely to top-rank "Arts, Music, Design" (p-value<.001), 4.9 percentage points less likely to put engineering top (p-value=.069) and 6.5pp more likely to rank "Business & Econ" the highest (p-value=.022). The move away from "Arts, Music, Design" and towards "Business & Economics" can also be seen for alternative measures of students' field preferences in Table A6.[33] These alternatives measures show additional adjustments that the focus on students' top-ranked field hides: students on average give "Law" a 5.7 point higher rating (p-value=.027) and rank it .56 ranks higher (p-value=.012), whereas they rate "Maths, Natural Sciences" 4.6 points higher (p-value=.115) and as such .47 ranks higher (p-value=.063).

[32]The exception to this pattern is "Engineering", which students are less likely to state when aspirations are observable even though parents find it relatively attractive in comparison to their children.

[33]They rank "Business & Econ" .537 ranks higher (p-value=.015) and give it a 4.8 point higher rating (p-value: .064), but "Arts, Music, Design" .674 ranks and 5.9 points lower (p-values of .008 and .031)

In Table 3, I present results separately for the two types of schools. While both students at a *Gymnasium* (-11pp, p-value<.01) and a *Gesamtschule* (-8.6pp, p-value=.28) show a drop in "Arts, Music, Design" in the *public* condition, they differently adjust their interest in "Business & Economics". The share of students ranking "Business & Economics" top increases by 10.4pp at a *Gymnasium* (p-value=.001), but decreases by 9.5pp at a *Gesamtschule* (p-value=.108). The key (average) reactions by *Gymnasium*-students away from "Arts, Music, Design" and towards "Business & Economics" are robust: They maintain p-values below .011 when using randomization-based standard errors or when adjusting for multiple hypothesis testing. They also show up in average field rankings and ratings and are complemented by significantly higher rankings and ratings of "Law".

The difference in reactions across school types also translates into a difference of whether students rank a field in the upper half of earnings potential the highest: whereas the share of students at a *Gymnasium* that does so is 12pp higher in the *public* than in the *private* condition (72% compared to 60%, p-value of .01), at the *Gesamtschule* these shares do not significantly differ between the *private* (57%) and *public* condition (60%).

5 Heterogeneities in reactions to parental pressure

Given that students adjust their educational aspirations regarding college and fields of study to parental pressure and that the influence of parental pressure differs across types of schools, I ask two additional questions. First, how do students from different family backgrounds (as measured by having college-educated parents or not) adjust to parental pressure and how does this impact the socio-economic gap in college aspirations? Second, how does students' adjustment to parental pressure depend on students' private beliefs regarding college and its alternatives? For example, do students who already tend to college in *private* or those skeptical about it react most?

5.1 Heterogeneity by Socio-Economic Status: College Aspirations

Comparing students' and parents' college aspirations in the *private* condition, in high SES families it is more common for parents than for the children themselves to consider college. While 69% of these students aspire to college, 80% of them have a participating parent who considers college for them. For low SES students, there is no such difference as 56% of students aspire to college and 57% of them have a parent doing so.[34] At 22pp versus 13pp,

[34] Although students' and parents' college aspirations in aggregate are more aligned for low SES households, they actually disagree more often, but the direction of disagreement is not as uniform as within high SES households. While 15% of low SES students do not aspire to college but have a parent who does,

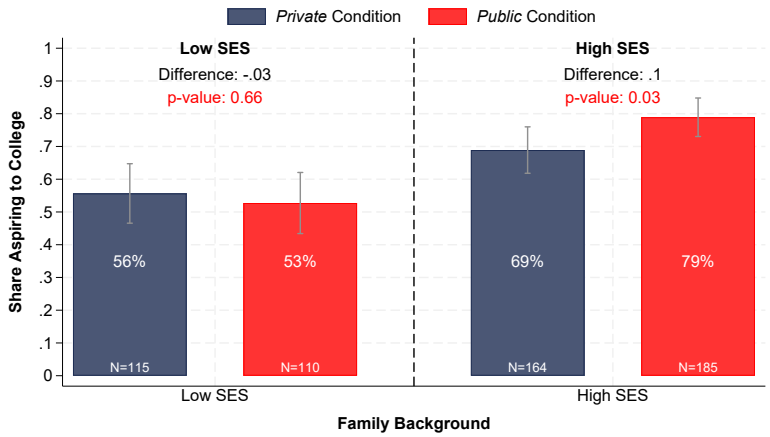
Table 3: Visibility experiment: effect of the *public* condition on top-ranked field of study by school type

Panel A. ***Gymnasium***	**DV: Top-Ranked Field**									
	Business & Econ	Engineering	Maths & Nature	Medical Studies	Law	Arts, Music, Design	Social Sc.	Ling. & Culture	Teaching	Ag & Forestry
Public Condition	0.104***	-0.041	0.026	-0.006	0.028	-0.110***	0.006	-0.029	-0.022	-0.004
	(0.032)	(0.031)	(0.037)	(0.038)	(0.031)	(0.034)	(0.032)	(0.025)	(0.032)	(0.011)
Inference robustness (p-values)										
Robust SEs	0.001	0.190	0.479	0.868	0.360	0.001	0.843	0.243	0.494	0.682
Randomization based	0.002	0.203	0.499	0.856	0.332	0.000	0.813	0.240	0.530	0.821
Westfall-Young Adj.	0.011	0.810	0.964	0.980	0.935	0.008	0.980	0.864	0.964	0.973
Joint "Omnibus" Test					0.009					
Mean DV (*Private*)	0.093	0.140	0.159	0.196	0.103	0.201	0.131	0.093	0.136	0.014
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	441	441	441	441	441	441	441	441	441	441

Panel B. ***Gesamtschule***										
	Business & Econ	Engineering	Maths & Nature	Medical Studies	Law	Arts, Music, Design	Social Sc.	Ling. & Culture	Teaching	Ag & Forestry
Public Condition	-0.095	-0.080	0.096	0.040	0.009	-0.086	-0.098	-0.011	0.070	-0.030
	(0.059)	(0.061)	(0.069)	(0.078)	(0.053)	(0.079)	(0.062)	(0.049)	(0.069)	(0.032)
Inference robustness (p-values)										
Robust SEs	0.108	0.191	0.166	0.603	0.865	0.281	0.116	0.816	0.317	0.344
Randomization based	0.112	0.198	0.185	0.634	0.980	0.318	0.128	0.980	0.406	0.530
Westfall-Young Adj.	0.680	0.760	0.759	0.922	0.968	0.845	0.680	0.968	0.845	0.845
Joint "Omnibus" Test					0.406					
Mean DV (*Private*)	0.148	0.130	0.093	0.185	0.093	0.259	0.148	0.074	0.130	0.037
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	107	107	107	107	107	107	107	107	107	107

Notes: Each column reports the results for OLS regressions of a dummy variable for students' ranking the respective field top on being in the *public* condition. The sample includes all students in the visibility experiment who rated fields. All regressions include school fixed-effects. Robust standard errors are reported in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$. Under "Inference robustness", the table reports p-values under 1) robust, 2) randomization-based, and 3) Westfall-Young adjusted standard errors accounting for multiple hypothesis testing. The row "Joint Omnibus Test" reports the p-value for overall significance of the experiment for students' top-ranked field.

Figure 4: Visibility experiment: college aspirations by socio-economic status



Notes: This figure presents the share (and 95% confidence intervals) of students aspiring to university in the *private* and *public* condition of the visibility experiment, by socio-economic background. The graph reports the p-value of the pairwise difference between the shares in the *private* and the *public* condition by background. Detailed results (including school fixed effects and controls) are reported in Table 4.

the socio-economic gap in college aspirations is thus more pronounced among parents than among their children.

Consistent with these patterns, I find that the share of high SES students aspiring to college strongly increases in the *public* condition, and that the socio-economic gap widens as a result, see Figure 4 and Table 4. The share of students aspiring to college is 10pp higher in the *public* than in the *private* condition for high SES students (p-value=.03), and 3 percentage points lower for low SES students (p-value=.66). As a result, the socio-economic gap doubles from 13pp to 26pp, with 79% of high SES students aspiring to university, but only 53% of low SES students doing so. Students' willingness to adjust their aspirations under parental pressure thus exacerbates socio-economic differences in college aspirations. Decomposing the gap of 26pp in college aspirations in the *public* condition implies that half of the gap may be due to students' adjustment to parents rather than due to students' own private preferences and beliefs.[35]

In Table 4, I present these results for a linear probability model in regression format. In most columns, I include school fixed effects since treatment was assigned at the individual

14% of them aspire to college but no parent does so. For high SES families, these shares are 17% and 7%. Not all parents are aware of these disagreements. For example, 19% of parents whose child does not aspire to college wrongly believe it does. At almost 29%, this misconception is particularly pronounced among college-educated parents, compared to 13% among parents without college education.

[35]These patterns are robust to using alternative measures of students' college aspirations. Socio-economic gaps widen by 14pp (p-value=.06) for aspirations to study (i.e., attending college or a dual study program) and by 14pp (p-value=.09) for students only selecting "college" (no other answer option), driven by a 9pp (p-value=.02) and 12pp (p-value=.02) increase in aspirations among high SES students.

Table 4: The visibility experiment: the effect of the *public* condition on college aspirations (by SES)

	Dependent Variable: Indicator for Aspiring to College									
	All						Low SES	High SES	1 CE	2 CE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Public Condition	−.03	−.03	−.03	−.03	−.03	−.03	−.07	.12**	.22***	0
	(.07)	(.07)	(.07)	(.07)	(.07)	(.07)	(.07)	(.05)	(.08)	(.06)
High SES	.13**	.01	.03							
	(.06)	(.07)	(.07)							
Public Condition x High SES	.13	.15*	.14*							
	(.08)	(.08)	(.08)							
1 College-Educated (CE) Parent				.02	−.07	−.05				
				(.07)	(.08)	(.08)				
2 CE Parents				.27***	.12	.15*				
				(.06)	(.08)	(.08)				
Public Condition x 1 CE Parent				.22**	.23**	.23**				
				(.1)	(.1)	(.1)				
Public Condition x 2 CE Parents				0	.06	.03				
				(.09)	(.09)	(.09)				
Share in *Private*							.56	.69	.58	.82
Mean Low SES (0 CE) in *Private*	.56	.56	.56	.56	.56	.56				
N	574	574	574	574	574	574	225	349	160	189
School-FE	NO	YES	YES	NO	YES	YES	YES	YES	YES	YES
Controls	NO	NO	YES	NO	NO	YES	NO	NO	NO	NO

Notes: This table presents the results of OLS regressions of students' college aspirations on being in the *public* condition, and on being from a high SES family and the interaction term of the two (for columns (1)-(3)). Columns (4) through (6) instead include indicators for having 1 or 2 college-educated parents and interaction terms of these with being in the *public* condition. Columns (7)-(10) report the effect of being in the *public* condition for the specified groups. Columns (3) and (6) include the following controls: indicators for being male, for having at least one parent who migrated to Germany, dummies for the third-to-last and ultimate school years. Robust standard errors are reported in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$.

level within schools. The coefficient on the difference in socio-economic gaps is slightly higher at 15pp (p-value=.06). This coefficient represents the effect of the *public* condition on the socio-economic gap in college aspirations within schools and is thus not driven by differences across schools. The socio-economic gap in *private* aspirations falls to 1pp when controlling for school fixed effects, compared to the unconditional gap of 13pp. This suggests that in my sample, the gap in *private* aspirations might be mostly driven by students from different backgrounds attending schools with differing levels of (*private*) college aspirations. Hence, students of different backgrounds at the same school appear to aspire to college at similar rates in *private*. In light of this, it is illuminating that within schools, the socio-economic gap in college aspirations only emerges when making aspirations visible to parents.

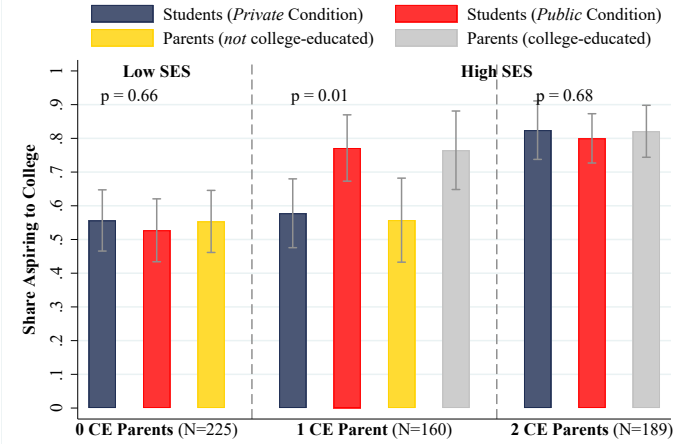
To further understand who adjusts to parental pressure, it is useful to distinguish students' background in more detail. High SES students fall into two groups: those with two and those with one college-educated parent(s). As Figure 5 shows, these two groups behave differently across the *private* and *public* condition. Among students with two college-educated parents, 80% aspire to college, regardless of the experimental condition. For students with one college-educated parent, however, the visibility makes a big difference: whereas 58% of them aspire to college in the *private* condition, this share increases to 77% in the *public* condition (p-value=.01).[36]

The socio-economic gap therefore mainly increases from the *private* to the *public* condition, because those with one college-educated parent more often state college aspirations. This behavior seems to be driven by these students adjusting to their college-educated parents who on average aspire to college more often than their children do in the *private* condition: compared to 58% among the students, 76% of the college-educated parents in these families state a preference for college (see Figure 5). As a consequence, students with one college-educated parent resemble parents without college education in the *private* condition and parents with college education in the *public* condition.[37]

[36]I use students' answers about their parents' education to construct measures of educational background. While this approach may introduce noise and bias when comparing students across backgrounds, the widening of the socio-economic gap in college aspirations under parental pressure is not driven by this. First, 88.6% (88.6%) [88.7%] of participating parents (mothers) [fathers] are classified correctly by their children as college-educated or not. For students with information from mother and father, the measure of high SES (number of college-educated parents) is accurate for 89% (80.5%). Second, the accuracy does not vary across the *private* and *public* condition, with accuracy of 89.7% in the *private* and 88.4% in the *public* condition. Third, the estimated magnitudes of adjusting to parents are robust to instead using parents' own answers when available: the effect for high SES (students with one college-educated parent) is now 11.2pp (20.2pp). Finally, the results are also not driven by imputing students' background for 15 students with missing data on this: the effect on the share of high SES students (students with one college-educated parent) aspiring to college is 12.2 vs. 12.2pp (21.7 vs. 21.8pp) when excluding vs. including those with imputed background.

[37]This interpretation of students adjusting to college-educated parents when it comes to making an observable choice is supported by suggestive evidence from variation in whether the college-educated parent

Figure 5: Visibility experiment by number of college-educated parents



Notes: This figure presents the share (95% confidence intervals) of a) students aspiring to university across conditions and b) parents aspiring to university in the *private* condition (when leaving it to one's child was not an option), by the number of college-educated parents (zero, one, or two). It distinguishes between parents without and with college education. The graph is based on 574 students and 320 parents with a child in the *private* condition in the visibility experiment. 225 (160) [189] students have zero (one) [two] college-educated parents.

The differences across students with either 1 or 2 college-educated parents point to different channels of parental influence on their children's college attendance, via possible internalization and adjustment to (non-internalized) parental pressure. Children with 2 college-educated parents might have already internalized their parents' preferences and beliefs, such that it is clear to most of them that they (should) want to attend college. As a result there could be a ceiling effect for them. If this internalization has partly happened because of perceived pressure, the difference between the *private* and *public* conditions presents a lower bound for the extent to which children adjust to parental pressure. Children with one college-educated parent, on the other hand, do not appear to have fully internalized yet that going to college is what they (should) want to do, potentially because they are exposed to both of their parents' preferences and beliefs that do not uniformly pull them towards college. When making decisions, however, these students seem to know that their college-educated parent likely values college more highly and adjust their stated aspirations accordingly.

registered or not (reported in Table A7). Among students with 1 college-educated parent, observability increases the share of students aspiring to college by 25 percentage points when the college-educated parent registered to participate (p-value .01) and by 2 percentage points if not. A caveat is that there are few students with only the parent without college education participating and that these groups also differ in college aspirations in the *private* condition.

School types and socio-economic background. The different reactions by students across school types and socio-economic background are related as the share of high SES students is 62% at the *Gymnasium* and 26% at the *Gesamtschule*. However, the responses to making aspirations visible to parents also vary conditional on background across school types and within school types across family backgrounds (see Table A8). For high SES students, the reaction to the *public* condition is stronger at a *Gymnasium* where the share aspiring to college increases by 12.9pp compared to 4.5pp at a *Gesamtschule* (a noisy estimate due to the few observed high SES students at a *Gesamtschule*). Among low SES students, the share aspiring to college at a *Gymnasium* does not change as a reaction to the *public* condition, whereas at a *Gesamtschule* their share decreases by 17pp (p-value=.12). This latter effect is driven by low SES girls at a *Gesamtschule* for whom the share aspiring to college falls by 26.6pp in the *public* condition (p-value=.08). The behavior of (female) low SES students at a *Gesamtschule* suggests that even within this paper's sample some students may face parental pressure against college. The different reactions by background within schools and school types suggest that parents' educational background matters for parental pressure beyond the schools children go to.

5.2 Heterogeneity by subjective beliefs: College Aspirations

Which students adjust to parental pressure beyond their own preferences and beliefs? In this subsection I focus on heterogeneity in experimental responses by students' private affinity towards college as estimated based on subjective beliefs regarding college, dual study programs, and vocational training. The results provide insights as to whose college aspirations are driven (and to what extent) by internal motivations versus parental pressure.

Subjective beliefs, estimation, and prediction. To measure students' expectations regarding what college and its alternatives would be like, I elicited detailed beliefs for the three most common career tracks undergraduate studies, dual study programs, and vocational training. For each of the three tracks, I elicited students' (and parents') subjective beliefs with respect to 15 relevant scenarios inspired by Zafar (2013) and Boneva and Rauh (2017). These comprise social, material, and individual performance concerns, as well as concerns around enjoyment, interest, and challenge involved in the various career tracks. All 15 scenarios are displayed in Figure A3; ten scenarios relate to the 3 to 4 years after high school and five to the more distant future at age 30 to 35. I elicited students' beliefs by asking them to rate the likelihood of a certain binary aspect, such as graduating or not,

materializing for each of the three career tracks on a scale from 0 to 100.[38] Each student thus compares all three tracks for 15 different scenarios, resulting in 45 track-scenario-specific expectations informative about students' different expectations for the three tracks across various aspects.[39]

I estimate the weights on different aspects in a conditional logit model via maximum likelihood for students in the *private* condition and present the results in Table A10.[40] Components that carry a statistically significant positive weight in association with aspirations are 1) finding the tasks exciting (p-value<.01), 2) finishing the program (p-value<.01), and 3) having an enjoyable job in the future (p-value<.1). A negative association is found for struggling financially (p-value <.1). For all students with complete belief data in the visibility experiment, also those in the *public* condition, I use the estimated coefficients and beliefs to calculate predictions for aspiring to college.[41]

Belief index and experimental response. I next regress students' college aspiration on the predicted belief index, an indicator for the *public* condition and an interaction term for being in the *public* condition and in certain ranges of the belief index. The results are reported in Table 5. In addition to the split at 50% (as written in equation 2), I report results for two more partitions: prediction cut-offs of one-third and two-thirds (columns 2, 5, 8) and four groups with cutoffs at 25%, 50%, and 75% (columns 3, 6, 9).

$$\begin{aligned}\text{College Asp.}_i = \alpha_0 + \beta_1 \text{ Public Condition}_i + \beta_2 \Pr(\text{College Asp.}|\text{Beliefs})_i \\ + \beta_3 \text{ Public Condition}_i \times 1_{(\Pr(\text{College Asp.}|\text{Beliefs})_i < 50\%)} + \epsilon_i \end{aligned} \quad (2)$$

Among students at a *Gymnasium*, the experimental reaction towards college is most pronounced for students with a low affinity for college (predictions below 50%, one-third,

[38] They are elicited in the following way: *"Try to imagine your life during the 3 to 4 years after high school (and a potential gap year) for the cases that you pursue vocational training, a dual study program or undergraduate studies. How would you imagine your life to be during those 3-4 years in these scenarios? Please estimate for all three scenarios, how certain you are on a scale of 0 ("extremely unlikely") to 100 ("absolutely certain") that you will..."* followed by each individual scenario such as "*...finish the respective program and graduate?*"

[39] Students' expectations clearly vary by family background (Figure A3). High SES students perceive higher returns to college because they have both more optimistic beliefs about college and more pessimistic beliefs about vocational training than low SES students.

[40] Students who did not fill out the complete subjective expectations module are dropped. Since this excludes 235 students, the results in this subsection are of more suggestive nature.

[41] The resulting belief index does not significantly differ across experimental conditions (see Table A11), neither do the individual beliefs in Table A12. Since beliefs were elicited after the experimental instruction and stated aspirations, they could have differed despite experimentally balanced groups.

or 25%), i.e., those with relatively pessimistic beliefs about college in comparison to its alternatives.[42] For students with a relatively high affinity for college (predictions above 50%, two-thirds, or 75%), however, there is no sizable average move towards college in the *public* condition. For students at a *Gesamtschule*, the strongest reaction away from college appears for those with an intermediate affinity for college and belief-based predictions between one-third and two-thirds (in column 8) or between 25% and 75% (in column 9).

Table 5: Heterogeneous experimental response by belief-based "college affinity"

	DV: Stated Aspiration to Attend College								
	Schooltype: All			Gymnasium			Gesamtschule		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Public Condition	0.012	0.004	0.022	0.022	0.008	0.020	-0.034	0.000	0.041
	(0.043)	(0.043)	(0.042)	(0.046)	(0.046)	(0.045)	(0.119)	(0.120)	(0.117)
Pr(coll.|beliefs)	1.005***	1.020***	0.996***	1.010***	1.037***	1.009***	0.966***	0.942***	0.926***
	(0.058)	(0.057)	(0.055)	(0.072)	(0.071)	(0.069)	(0.114)	(0.114)	(0.114)
Public Cond. x Pr(coll.|b)$< \frac{1}{2}$	0.136			0.225*			-0.010		
	(0.091)			(0.117)			(0.138)		
Public Cond. x Pr(coll.|b)$\in [0, \frac{1}{3}]$		0.166*			0.276**			-0.035	
		(0.092)			(0.121)			(0.138)	
Public Cond. x Pr(coll.|b)$\in (\frac{1}{3}, \frac{2}{3}]$		0.060			0.127			-0.415***	
		(0.126)			(0.134)			(0.128)	
Public Cond. x Pr(coll.|b)$\in [0, \frac{1}{4}]$			0.127			0.219*			-0.065
			(0.090)			(0.121)			(0.133)
Public Cond. x Pr(coll.|b)$\in (\frac{1}{4}, \frac{1}{2}]$			0.097			0.256			-0.319***
			(0.195)			(0.237)			(0.109)
Public Cond. x Pr(coll.|b)$\in (\frac{1}{2}, \frac{3}{4}]$			-0.044			0.008			-0.634***
			(0.105)			(0.108)			(0.095)
Mean DV (*Private*)	0.649	0.649	0.649	0.695	0.695	0.695	0.486	0.486	0.486
Observations	339	339	339	268	268	268	71	71	71
p-values for tests of: *Public* + *Public* x ...									
Pr(coll.|b) $\in [0, \frac{1}{2})$	0.066			0.023			0.578		
Pr(coll.|b) $\in [0, \frac{1}{3}]$		0.037			0.012			0.652	
Pr(coll.|b) $\in (\frac{1}{3}, \frac{2}{3}]$		0.602			0.305			0.000	
Pr(coll.|b) $\in [0, \frac{1}{4}]$			0.066			0.036			0.755
Pr(coll.|b) $\in (\frac{1}{4}, \frac{1}{2}]$			0.538			0.241			0.000
Pr(coll.|b) $\in (\frac{1}{2}, \frac{3}{4}]$			0.830			0.794			0.000

Notes: The sample includes students in the visibility experiment with complete belief data. The table presents OLS-regressions of college aspirations on the predicted probability to aspire to college based on students' beliefs (indicated by Pr(coll.|b)), an indicator for the *public* condition and its interaction term with having a predicted probability in the indicated range. The table reports p-values for the impact of the *public* condition in these ranges, i.e. for: *Public* + *Public* x Pr(coll.|b) $\in [x_{\text{lower bound}}, x_{\text{upper bound}}]$. Robust standard errors are reported in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$.

The results suggest potential heterogeneous effects of parental pressure depending on

[42]The reaction by those with predictions between 25% and 50% is sizable, but estimated imprecisely.

students' expectations. Those whose beliefs are not fully in line with going to college show the biggest reaction to the *public* condition: they become more likely to aspire to college than predicted at a *Gymnasium* and less likely than predicted at a *Gesamtschule*. Absent beliefs favoring college, parental pressure may act as a substitute for such beliefs, having the power to overcome beliefs that would privately pull students in a different direction. This raises the question which group privately holds unfavorable views of college.

To better understand heterogeneity in students' college affinity, in Table A13 I regress several belief measures on students' grade average, number of college-educated parents, and additional controls, including school fixed effects. Students' beliefs strongly correlate with grades, especially for expecting to graduate or to find the material in college interesting. The belief-based predictions consequently also strongly correlate with grades: a full grade lower average is associated with a .42 standard-deviation decrease in the predicted likelihood to aspire to college.

Tables A13 and A14 show that students with two college-educated parents have particularly optimistic beliefs about college, associated with a 19.3pp higher prediction of aspiring to college. This offers an additional interpretation of who among high SES students most increase their college aspirations under parental pressure: those whose beliefs are not (yet) fully predisposed towards college. These are mostly found among students with one college-educated parent as those with two already aspire to college in the *private* condition, potentially because they hold beliefs fully in line with college but not its alternatives.

6 Does parental pressure affect actual choices?

Are the adjustments of stated aspirations cheap talk or do students adjust actual choices to parental pressure? The question is not whether the visibility experiment affects actual choices, but whether students make different choices after high school because these are observed by parents (and students anticipate this). While adjusting stated aspirations to pressure may affect students' planning and eventual decision, finding that they adjust their aspirations does not by itself imply that their eventual choices are shaped by parental pressure. At the one extreme, students' adjustment of stated aspirations could be cheap talk: they adjust their stated aspirations under perceived pressure, but pursue what they actually prefer, i.e., what they (would have) said in the *private* condition. At the other extreme, how students adjust their aspirations could reflect how they adjust their eventual choices to parental pressure. In this case, they should be more likely to do what they (would have) said in the *public* condition as it introduced some of the social costs and benefits relevant to eventual, observable choices.

To test whether students' adjustments of stated aspirations rather reflect cheap talk or real influences on their eventual choices, I analyze whether students' first choices more often equal their statements in the *private* or the *public* condition. For students in both experimental conditions actual choices are observable by parents as the experiment did not vary the level of parental pressure regarding the final decision, but only at one instance of eliciting students' aspirations.[43] It should thus be unlikely that the experiment itself affected students' first choice and Table A15 shows that students' college attendance and field choices do not significantly vary across the *private* and *public* condition.[44]

Data from re-surveying students about their actual choices suggest that for most students, adjusting stated aspirations to heightened pressure is not just cheap talk, but rather reflects how they will adjust their choices. For some students, what they end up doing after high school is thus not what they privately always wanted to do, but influenced by perceived parental pressure. This provides further corroborating evidence for the importance of this channel as students' adjustment of their aspirations to perceived pressure appears to capture a form of parental influence that also affects students' eventual choices.

I provide two key pieces of evidence in this section that suggest that parental pressure likely affects students' first choice after high school. First, students' college aspirations in the *public* condition are more predictive of their choice to attend college than those in the *private* condition. Second, the probability that students' first chosen field is the same as they initially ranked top is higher for students in the *public* than in the *private* condition. These patterns are particularly strong for *Gymnasium*- and high SES students, i.e., those students that show the clearest adjustments of stated aspirations to parental pressure.

Follow-up survey and results. To follow up with students, I invited all initial participants with contact details to fill out a 5- to 10-minute survey between April 2022 and February 2023.[45] For most students, this was between 1.5 and 3 years after initial participation.[46] Importantly, the tracking rates in the experimental sample do not differ between students in the *private* (74.2%) and *public* condition (74.9%), see Table 6. This is also true for relevant sub-groups such as *Gymnasium*- and *Gesamtschule*-students or low and high

[43]Theoretically, the *public* condition still had two possible impacts on the comparison of eventual choices to initially stated aspirations: one, the effect on what initial aspirations students stated. Two, any effect on eventual choices caused by sharing these aspirations in the *public* condition with parents.

[44]Due to limited statistical power I cannot perfectly rule out some meaningful effects, however.

[45]The survey instrument is available in Appendix B4. Participating students were given an incentive of 10€-vouchers and could choose between several types of vouchers.

[46]Some students in the non-experimental sample participated without providing contact details. This is one reason why the tracking rate of 65.6% for the whole sample is lower than the tracking rate of 74.6% in the experimental sample. Overall, 69 students initially did not provide any contact details.

SES students.[47]

While 91% of the experimental sample had graduated by July 2022, 75% of those out of school by the time of their follow-up survey have taken a first career choice.[48] Among those who have taken a first choice, 68% have started college, 13% a dual study program, 17% vocational training, and 2% working without further education. There is a pronounced socio-economic gap of 23.2 pp in college attendance that is close to the initial gap in the *public* condition: 76% of high SES vs. 53% of low SES students have first started college. On the flip-side, only 10% of high SES but 29% of low SES students have started vocational training. I focus on students' first choice after high school as I elicited students' aspirations for their first choice after high school.

Table 6: Follow-Up: tracking rates across experimental conditions

	Whole Sample *(N=1,219)*	Experimental *(N=574)*	*Private* *(N=279)*	*Public* *(N=295)*	p-val (3)-(4)
All	65.6%	74.6%	74.2%	74.9%	.84
Type of school					
Gymnasium	69.6%	78%	77.8%	78.1%	.94
Gesamtschule	56.2%	61.7%	60.3%	62.9%	.77
SES					
High	70.7%	78.8%	78%	79.5%	.75
Low	60.4%	68%	68.7%	67.3%	.82
Gender					
Female	67.4%	79%	76.5%	81.3%	.27
Male	62.6%	67.7%	70.8%	64.6%	.32
Migration Background					
No	68.7%	75.2%	75.5%	74.8%	.85
Yes	59.7%	72.1%	62.5%	78.4%	.18
Better-than-Median Grades					
Yes	74.4%	81%	81.9%	80.2%	.71
No	58.8%	67%	65%	69%	.52
Contact details					
E-mail + Phone	74.6%	78.3%	78.6%	78.1%	.89
E-mail only	53.3%	59.3%	56.4%	62.1%	.54

Notes: This table shows the share of students answering at least part of the follow-up survey. Column 5 displays the p-value of a pairwise test of the tracking rates in the *private* and *public* condition. The first row shows tracking rates for all students in the respective sub-samples, the rest of the table shows them for relevant sub-samples.

[47] Tracking rates depend on whether students provided both email-address and phone number, socio-economic background, gender, and grades (Table A17), but results are robust to controlling for these.

[48] 2% of students have dropped out of high school. Students who are out of school, but have not taken a first choice yet are either pursuing other activities such as a gap year or have just graduated recently.

Comparing students' choices to attend college or not to their initial plans to do so shows that choices more often equal aspirations in the *public* than in the *private* condition. Among the 294 re-surveyed students who already started a program, 78.3% of students follow their initial aspiration with respect to college in the *public* condition, but only 69.7% do so in the *private* condition (see Table 7). Controlling for school fixed-effects, the difference is at 8.9pp (p-value=.09); 12.4pp among the 245 *Gymnasium*-students (p-value=.031) and -9.5pp for the 49 *Gesamtschule*-students (p-value=.486).[49] The results are thus inconsistent with most adjustments of stated aspirations to parental pressure being cheap talk only and in line with these adjustments reflecting an influence also affecting choices.

Comparing students' chosen fields to their initial field ratings further demonstrates that the data does not fit the cheap talk explanation: students' first choices after high school are more in line with their initially stated ratings in the *public* condition. Compared to 51.4% of students in the *private* condition, whose chosen field was their highest ranked field, the share is 57.4% for those in the *public* condition (see Table 7). The difference is 11.7 percentage points when including school fixed effects (p-value=.09). At 18.1 (18) percentage points (p-values of .012 and 0.03), this is even more pronounced among *Gymnasium*-students (high SES students).[50] This is not an artefact of focusing on students' top-ranked field: as shown in column 8 of Table 7, students' chosen field among *Gymnasium*-students (high SES students) was on average ranked .593 (.595) ranks higher in the *public* than the *private* condition (p-values of .06 and .09).[51]

Together, these patterns imply that students regularly enroll in tracks and fields they privately did not always prefer, at least partly due to adjustments to parental pressure, as adjusted aspirations in the *public* condition and their higher predictive power indicate.[52]

[49] The effects for high and low SES students are 8 and 9.1pp (both p-values above .1), see Table A16.

[50] Among 32 (72) *Gesamtschule*- (low SES-) students, the effect is -31.8pp (-22.2pp).

[51] *Gesamtschule*- and low SES students ranked their chosen fields higher in the *private* condition.

[52] For *Gymnasium*- and high SES students, parental pressure (in the experiment and on choices) appears to have taken a more uniform direction towards college and to have been meaningful regarding what field to enroll in. For *Gesamtschule*- and low SES students, the results are less clear. *Gesamtschule*- (low SES) students are 9.5pp (9.1pp) less (more) likely to follow their *public* college aspiration (both p-values above .1). The results for field choices point to both being more likely to follow their *private* aspirations. Besides the caveat of few observations for these groups, especially for *Gesamtschule*-students, there are several explanations as to why the results for these groups are more in line with the cheap talk interpretation. One, given that most (or all) of their parents did not go to college, parental preferences regarding which field to choose could be less pronounced or clear. Two, those among them who do end up going to college could be more likely to do what they themselves wanted to do.

Table 7: Follow-Up: predictive power of college aspirations and field rankings

Panel A. Whole sample

	DV: 1st Choice = Initial Aspiration/ Top Rank						**DV:** Initial Rank	
	College/ No College			**Chosen Field**			**Chosen Field**	
Public Cond.	0.086*	0.089*	0.093*	0.060	0.117*	0.128*	-0.313	-0.440
	(0.051)	(0.053)	(0.055)	(0.066)	(0.068)	(0.071)	(0.300)	(0.308)
Share *Private*	0.697	0.697	0.696	0.514	0.514	0.519	2.706	2.668
Observations	294	294	284	231	231	224	231	224
School FE	NO	YES	YES	NO	YES	YES	YES	YES
Controls	NO	NO	YES	NO	NO	YES	NO	YES

Panel B. Gymnasium

	DV: 1st Choice = Initial Aspiration/ Top Rank						**DV:** Initial Rank	
	College/ No College			**Chosen Field**			**Chosen Field**	
Public Cond.	0.117**	0.124**	0.124**	0.132*	0.181**	0.193**	-0.593*	-0.750**
	(0.056)	(0.057)	(0.060)	(0.071)	(0.071)	(0.075)	(0.313)	(0.317)
Share *Private*	0.683	0.683	0.684	0.474	0.474	0.478	2.853	2.817
Observations	245	245	238	199	199	193	199	193
School FE	NO	YES	YES	NO	YES	YES	YES	YES
Controls	NO	NO	YES	NO	NO	YES	NO	YES

Panel C. Gesamtschule

	DV: 1st Choice = Initial Aspiration/ Top Rank						**DV:** Initial Rank	
	College/ No College			**Chosen Field**			**Chosen Field**	
Public Cond.	-0.069	-0.095	-0.056	-0.397**	-0.318	-0.350	1.580*	1.970*
	(0.128)	(0.135)	(0.148)	(0.164)	(0.198)	(0.222)	(0.898)	(1.079)
Share *Private*	0.773	0.773	0.762	0.786	0.786	0.786	1.714	1.714
Observations	49	49	46	32	32	31	32	31
School FE	NO	YES	YES	NO	YES	YES	YES	YES
Controls	NO	NO	YES	NO	NO	YES	NO	YES

Notes: This table reports results of regressing whether participants stated aspirations in the initial round to pursue their first actual choice on being in the *public* condition: for attending college (columns 1-3), for top-ranking one's chosen field (columns 4-6), for the rank of one's chosen field (columns 7-8). Control variables include indicators for: male, migration background, having better-than-median grades, having provided both e-mail and phone number, high SES. The sample includes all 294 re-surveyed participants in the visibility experiment with a first choice (and data for relevant control variables). 3 individuals lack data on their chosen field and 3 did not rate fields. Rank 1 was the best rank. 10 individuals are missing data on their grade average; imputing these all as worse-than-median or better-than-median grades yields the following coefficients (and p-values) in columns 3, 6, and 8 for the whole sample: .086 (p-value=.111), .120 (p-value=.089), -.410 (p-value=.178); for *Gymnasium*-students: .119 (p-value=.044), .189 (p-value = .01), -.714 (p-value=.024); for *Gesamtschule*-students: -.062 (p-value=.661), , -.387 (p-value=.081), 1.86 (p-value=.080). Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

7 Discussion: interpretation and concerns

In this section, I discuss what the experiment is set to identify, to what extent students' *private* aspirations reflect their "true" aspirations, and the external validity of the results.

What does the experiment identify? I formulated the instructions in the two experimental conditions of a between-subject design such that the only difference would be the visibility of stated aspirations to parents. The experimental treatment thus identifies differences in *aggregate* answers due to the visibility to parents. Parallel to the literature on peer pressure, I call the adjustments caused by this as due to parental pressure.[53] The experimental design identifies forms of parental pressure that have not been internalized yet, but not any effects of parental pressure that have been internalized and incorporated in students' *private* answers.[54] Non-internalized forms of parental pressure can comprise different motivations such as fearing disagreement with a parent or disappointing a parent, signalling concerns to a parent (e.g., to appear smart) or the desire for parental love and approval.[55] For some students it may also introduce the possibility to provoke parents, a potentially countervailing force to the other motivations.[56]

The between-subject design allows me to identify aggregate movements due to the visibility to parents and to capture the dominant adjustments. Contrary adjustments can therefore reduce the extent of aggregate differences between the *private* and *public* condition.[57] This challenge is likely more pronounced for fields where adjustments may be less uniform. As such, the identified aggregate adjustments are likely a lower bound of overall adjustments due to parental pressure. While the experiment isolates a novel mechanism of parental influence – non-internalized parental pressure – it cannot distinguish the exact psychological motivations behind it nor identify adjustments at the individual level.

[53] One could also interpret the experiment as examining to what extent aspirations change when the *public* nature (the visibility to parents) is removed and some effects of parental pressure "undone".

[54] For example, a student who likes vocational training but receives backlash from her parents whenever she hints at this, may come to internalize that this is not an option and answer "college" even in *private*.

[55] The following examples illustrate that perceived disagreement is not the only motivation. Student X prefers vocational training and believes his father does so, too. However, X perceives him to regard college more highly as "it is what smart kids do" and thus opts for college when choices are observable to prove he is one of the smart kids. Student Y would like to move away to study fashion and believes her mother also thinks this would be best for her. However, Y knows moving away would hurt her mother and she would love Y to continue the family business. When choices are visible, she may instead opt for "business studies" in her hometown.

[56] On top of different concerns, the decision to adjust also depends on aspects such as whether concerns have been internalized, how strong parents' preferences are, or how willing students are to adjust.

[57] With e.g., 15% of students switching from vocational training to college and 5% doing the opposite, the experiment identifies a movement of 10% towards college, whereas 20% adjusted their aspirations.

Interpretation of private aspirations as "true" aspirations. An alternative interpretation of the findings provided in this paper would be that students predominantly may not have reported their "true" aspirations in the *private* condition, for example because they provided "joking" answers or exerted low effort.[58] Below, I report several reasons why these alternative interpretations are unlikely to explain the results in this paper.

First, as participation was voluntary, students could choose not to hand in their consent form rather than to participate and provide untruthful or low-effort answers. Second, students' track aspirations in the *private* condition can be explained by their subjective beliefs. Students who in the *private* condition do not aspire to college often do not hold optimistic expectations regarding college, e.g., with respect to graduating or enjoying the material. Similarly, students with one versus two college-educated parents show marked differences in their *private* college aspirations and their beliefs – where the latter have the most positive expectations regarding college and the most negative ones about vocational training (see Figure A4, Tables A11 and A13). As students' average level of *private* college aspirations across households are in line with their beliefs,[59] such differences in average *private* aspirations likely reflect differences in "true" aspirations rather than low effort or insincere answers.

Third, the results are robust when excluding individuals who gave inconsistent answers regarding their college aspirations (as a proxy for lower quality answers).[60] Fourth, the increase in college aspirations in the *public* condition overall and for *Gymnasium*-students are present and stronger for conscientious and agreeable individuals (see Table A20), personality traits that have been linked to higher quality of survey responses.[61] Finally, the key results hold when restricting the sample to those who have thought much or more about what to do after high school (see Table A21). As this group of students also reports to be more certain

[58]By reporting "true" aspirations, I mean that students report what they would (most) like to do. While unconstrained, reports may be subject to constraints in practice. They may for example reflect internalized or anticipated pressures. On the other hand, students may report "wild" dreams or more novel options due to the incentives provided by advising sessions. For these cases, the results would imply that students do not feel free to explore novel options or dreams and could be considered similar (or stronger) to the interpretation offered in this paper.

[59]Beliefs correlate with parents' beliefs (Table A18), particularly for aspects strongly correlated with students' *private* aspirations. Parents' beliefs depend on their and their partner's education (Fig. A4).

[60]The results in Table A19 exclude individuals that either stated a) an aspiration to attend college, but a continuous preference between vocational training and studying below 50 (i.e., closer to vocational training), or b) an aspiration to pursue vocational training, but a continuous preference above 50. This excludes 43 (34) [9] students at all schools (Gymnasium) [Gesamtschule], or 7.5% of each sample.

[61]Agreeableness is associated with a heightened desire for harmony and social approval whereas conscientiousness is related to being reliable, diligent, responsible, and hard-working. I classify students as "agreeable" and "conscientious" if they score above the population medians on the BFI. Improved answer quality can stem from improved self-knowledge or more care put into answers among conscientious individuals (Jagelka, 2024; Dohmen and Jagelka, 2023) or the desire to provide true answers due to high agreeableness (Dohmen and Jagelka, 2023). In the context of this paper, agreeableness may also directly affect the decision of whether to adjust to parents.

regarding what to do and states more detailed plans, the results are unlikely to be driven by students providing uninformed, joking, or careless answers.[62]

External Validity. One issue regarding generalizability of the findings (within the German context) would be if students in the visibility experiment are those who perceive the strongest pressure and pressure is much weaker or absent for all other students. The adjustment to parental pressure would then be relevant for a sub-sample of students, but not necessarily a larger share of students. This does not appear to be the case: when comparing students with and without at least one registered parent, students with at least one registered parent are more likely to say their parents leave the choice of what to do after high school to them. This is true for both low and high SES students and when being asked about their mother or father, see Table A22a.[63] Students with and without registered parents also report putting similar weights on their parents' opinion (see Table A22b).

The results in this paper are therefore unlikely to stem from students who perceive the strongest parental pressure. One likely reason is that students who perceive their choice to be a delicate topic within their family may have chosen not to have their parent(s) participate or not even to participate themselves. Parental pressure thus matters for students more generally, with some students likely experiencing even stronger pressure towards more education than in this sample and other students possibly perceiving pressure against too much formal education (such as (female) low SES students at a *Gesamtschule* in Table A8).

Some key patterns in my sample also equal those in the German national educational panel survey (NEPS), making it unlikely that the patterns stem from particularities of the field experiment. For example, the share of nearly 26% of students disagreeing with a participating parent regarding whether to go to college in the *private* condition equals the equivalent share of 26% (25%) in wave 7 (5) of the NEPS. The predictability of students' actual first choice based on initial aspirations is also similar: while 69.7% of students in the *private* condition follow through with their aspirations to attend college or not (see Table 7), it is 72.0% (68.5%) for students' wave 7 (5) aspirations in the NEPS (see Figure A5).[64]

[62]Table A23 shows that students who report having thought much or more about what to do report being more certain regarding their choice (by 26.5 points on a scale from 0 to 100) and less often state that they still don't know or are uncertain regarding their track, major/occupation, or location choice.

[63]In addition, high SES students with a participating parent are 13.6 (7) percentage points less likely to say their mother (father) prefers college for them (p-value$<$ .01, not significant for fathers). Low SES students with at least one participating parent are 7.9 percentage points less likely to say their mother prefers college (p-value$<$ .1) and 2.4pp more likely to say their father prefers college (not significant).

[64]The NEPS did not elicit preferences for fields such that this could not be tested for fields.

8 Conclusion

This paper provides evidence that students adjust their educational aspirations regarding college attendance and preferred fields to parental pressure. Students' adjustments depend on their socio-economic environment and parental background such that in this context, parental pressure leads to a widening of socio-economic disparities in college aspirations. Students' actual choices after high school more often equal their aspirations under parental pressure, suggesting that parental pressure likely also affects students' eventual choices.

These results have several implications. A crucial question for future research and the allocation of talent is, when or for whom is this type of parental influence good or bad? The answer depends on how informed (perceived) parental preferences are relative to students' own aspirations, which might differ widely across households. While some students may benefit from parental pressure by finding a career that better matches their talents and (future) preferences, others may find themselves on paths for which they lack talent and motivation.

The results also have implications for the design of policies intended to support students in making educational choices or to narrow socio-economic gaps. Many existing policies target students' knowledge and beliefs about careers. The results in this paper suggest that ignoring parental preferences and how perceptions of these affect students' choices could limit the potential effectiveness of such policies. Optimally assisting students or narrowing socio-economic gaps might require addressing intra-household communication and decision-making dynamics, parents' beliefs and preferences, or creating support networks such as mentoring programs (Falk, Kosse and Pinger, 2020; Resnjanskij et al., 2024; Carlana, La Ferrara and Pinotti, 2022). They also imply that providing students with the (financial) resources to freely choose careers may not make their choices completely independent of their parental background.

The mechanism of parental pressure studied in this paper is most likely neither limited to this setting nor to educational choices. The methodology in this paper could be used to study how the impact of parental pressure varies across families, ages, and cultures, with the potential to distinguish between internalized and non-internalized parental influence. Future work examining the importance of parental pressure for educational choices in other settings and for other decisions in life may thus reveal further evidence of the importance of perceived parental preferences for individual decisions. The results in this paper provide a first empirical demonstration that parental pressure can be a powerful determinant of individual choices and across many families also has the power to shape society-wide outcomes like intergenerational mobility and the allocation of talent.

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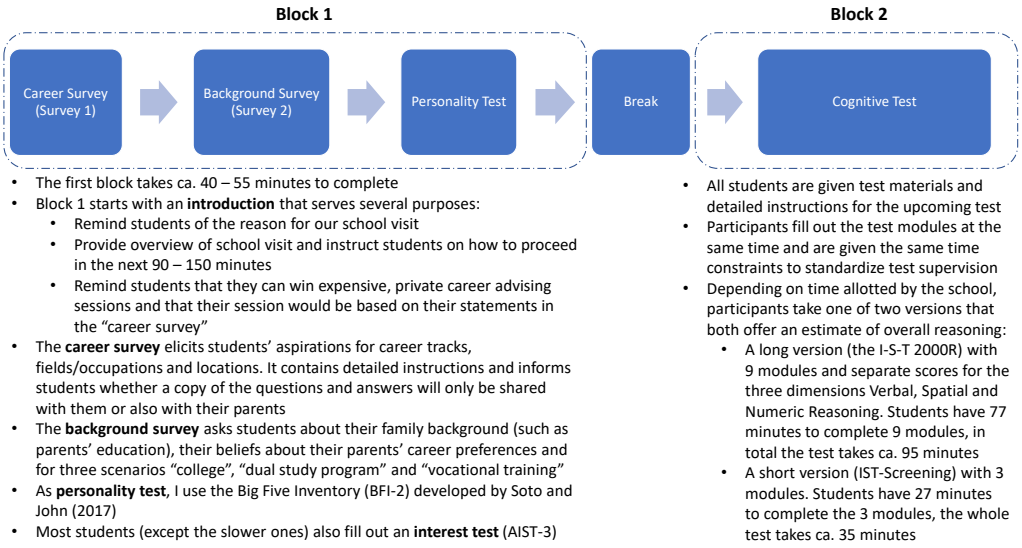
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Appendix

Figure A1: School visits: Format of the career planning module (components & procedure)



Notes: Licenses for both versions of the cognitive test (I-S-T 2000R and IST-Screening) and the interest test (AIST-3) were purchased from Hogrefe Testzentrale. Schools' choice of the cognitive test mostly depended on how much time they were willing to grant me (and whether they wanted students to get a detailed version as often encountered in assessment centers). For the shift to the online format, I made the following adjustments: after finishing block 1, students could choose between the short and long test. They could freely choose when to take the short test but had to book an appointment for the long test under remote instruction and supervision.

Table A1: Visibility experiment: Balance table for school types

	Schooltype: Gymnasium			Schooltype: Gesamtschule		
	Private condition	*Public* condition	p-value	*Private* condition	*Public* condition	p-value
Male	.39	.38	.72	.47	.4	.45
Grade Average	2.06	2	.28	2.4	2.23	.2
# Registered Parents	1.43	1.43	.84	1.33	1.27	.51
Registered Mom	.88	.88	.94	.86	.84	.73
Registered Dad	.55	.56	.8	.47	.44	.69
High SES	.67	.72	.24	.28	.29	.99
Migration Background	.1	.16	.03	.4	.35	.74
Omnibus Test			.46			.96
Observations	221	233		58	62	

Notes: This table compares characteristics across the *private* and *public* conditions at both types of schools and reports the p-value (under robust standard errors and school fixed effects) of the difference. The "Omnibus Test" reports the p-value of overall significance of the experimental assignment for all listed variables, the p-values when leaving out "Registered Mom" and "Registered Dad" are .33 (.92) for the *Gymnasium* (*Gesamtschule*).

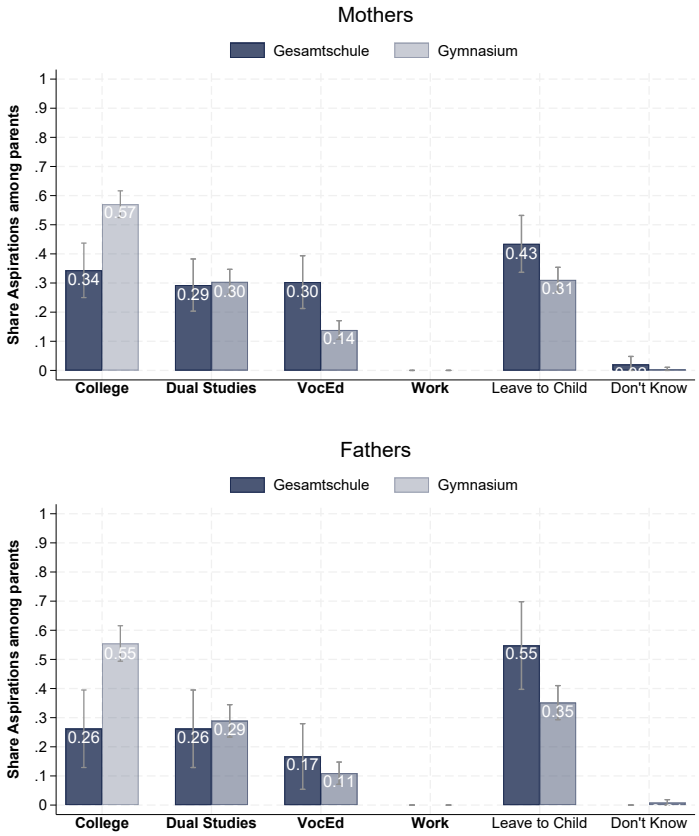
Table A2: Sample vs. population of students in North-Rhine Westphalia

	All		**Gymnasium**		**Gesamtschule**	
	Population	Sample	Pop.	Sample	Pop.	Sample
Share Gesamtschule	23.98%	29.13%	-	-	-	-
Male	45.35%	38.62%	45.67%	39.22%	44.10%	37.19%
Migration Background	31.01%	31.11%	28.70%	23.3%	38.50%	49.72%
Avg. Grade Average	2.35	2.21	2.29	2.11	2.55	2.45
High SES	N.A.*	50.94%	N.A.*	61.57%	N.A.*	25.9%

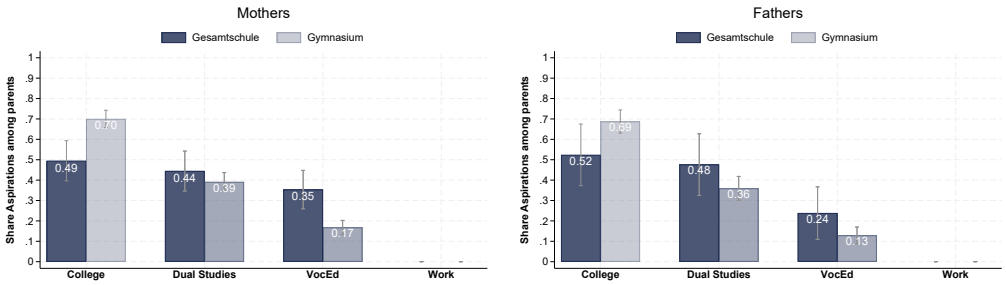
Note: This table compares statistics for the overall population of students in North-Rhine Westphalia and the students in this sample. Grades and gender for the population of those who take the final exams in upper classes are taken from Ministerium für Schule und Bildung des Landes Nordrhein-Westfalen (2021*b*) for the year 2021, information on the share of students at a *Gesamtschule* and with migration background comes from Ministerium für Schule und Bildung des Landes Nordrhein-Westfalen (2021*a*). *: the share of college-educated parents is ca. 21.39% in the parent generation. Assuming transitions of 83% (for high SES) and 46% (for low SES) to upper years, this would imply an overall share of ca. 33% of high SES students in upper years at all school forms, with likely higher (lower) shares at the *Gymnasium* (*Gesamtschule*).

Figure A2: Parents' Aspirations

(a) Primary Question [when allowed to say "leave to child" or "don't know"]



(b) Including Secondary Question [when NOT allowed to say "leave to child" or "don't know"]



Notes: This figure shows the share (and 95%-confidence interval) of mothers' and fathers' answers about their preferred option for their child after high school, for parents at both types of schools. Possible answers included the options "leave to child" and "don't know" in panel a) and excluded these in panel b). Parents who answered "leave to child" and "don't know" were instead prompted to choose among the remaining four options.

Table A3: Visibility experiment: effect of the *public* condition on alternative measures of college aspirations

Panel A.	**DV: Stated Aspiration to Attend College (exclusive statement)**								
	Schooltype: All			Schooltype: Gymnasium			Schooltype: Gesamtschule		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Public Condition	0.074*	0.081**	0.071*	0.108**	0.122***	0.111**	-0.053	-0.073	-0.065
	(0.042)	(0.040)	(0.039)	(0.047)	(0.045)	(0.045)	(0.084)	(0.081)	(0.081)
Inference robustness (p-values)									
Randomization-based	0.058	0.027	0.073	0.021	0.004	0.014	0.523	0.406	0.454
Mean DV (*Private*)	0.452	0.452	0.452	0.484	0.484	0.484	0.328	0.328	0.328
School fixed effects	-	✓	✓	-	✓	✓	-	✓	✓
Individual controls	-	-	✓	-	-	✓	-	-	✓
Observations	574	574	574	454	454	454	120	120	120

Panel B.	**DV: Stated Aspiration to Attend College or Pursue Dual Studies**								
	Schooltype: All			Schooltype: Gymnasium			Schooltype: Gesamtschule		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Public Condition	0.040	0.043	0.035	0.075**	0.080**	0.076**	-0.093	-0.100	-0.085
	(0.034)	(0.034)	(0.034)	(0.035)	(0.035)	(0.035)	(0.088)	(0.089)	(0.088)
Inference robustness (p-values)									
Randomization-based	0.214	0.179	0.299	0.026	0.016	0.027	0.328	0.328	0.334
Mean DV (*Private*)	0.771	0.771	0.771	0.792	0.792	0.792	0.690	0.690	0.690
School fixed effects	-	✓	✓	-	✓	✓	-	✓	✓
Individual controls	-	-	✓	-	-	✓	-	-	✓
Observations	574	574	574	454	454	454	120	120	120

Notes: This table presents the results of the *visibility* experiment for OLS regressions of a dummy variable for students' stated college aspirations on being in the *public* condition (for all columns): in *panel A*, the dependent variable indicates that an individual only selected "college" (and no other option) to the question of what they would like to after college; in *panel B*, the dependent variable indicates that an individual indicated "college", "dual studies", or both. Columns 3, 6, and 9 add individual controls (indicators for male, migration background, high SES, dummies for the ultimate year and the third-to-last-year school year). Robust standard errors are reported in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$.

Table A4: Visibility experiment: effect of the *public* condition on stated (continuous) preference to pursue studies (0 = "definitely vocational training", 100 = "definitely studies")

Panel A.	**DV: Stated Preference to Pursue Studies (raw rating)**								
	Schooltype: All			Schooltype: Gymnasium			Schooltype: Gesamtschule		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Public Condition	3.054	3.284	2.600	4.537**	5.031**	4.342**	-2.666	-3.315	-3.339
	(2.073)	(2.059)	(2.041)	(2.096)	(2.115)	(2.086)	(5.642)	(5.706)	(5.619)
Inference robustness (p-values)									
Randomization-based	0.140	0.113	0.196	0.022	0.014	0.036	0.643	0.570	0.578
Mean DV (*Private*)	72.484	72.484	72.484	74.287	74.287	74.287	65.649	65.649	65.649
School fixed effects	-	✓	✓	-	✓	✓	-	✓	✓
Individual controls	-	-	✓	-	-	✓	-	-	✓
Observations	567	567	567	449	449	449	118	118	118

Panel B.	**DV: Stated Preference to Pursue Studies (standardized rating)**								
	Schooltype: All			Schooltype: Gymnasium			Schooltype: Gesamtschule		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Public Condition	0.117	0.126	0.100	0.174**	0.193**	0.167**	-0.102	-0.127	-0.128
	(0.080)	(0.079)	(0.078)	(0.080)	(0.081)	(0.080)	(0.217)	(0.219)	(0.216)
Inference robustness (p-values)									
Randomization-based	0.140	0.113	0.196	0.022	0.014	0.036	0.643	0.570	0.578
Mean DV (*Private*)	- 0.020	- 0.020	- 0.020	0.049	0.049	0.049	-0.283	-0.283	-0.283
School fixed effects	-	✓	✓	-	✓	✓	-	✓	✓
Individual controls	-	-	✓	-	-	✓	-	-	✓
Observations	567	567	567	449	449	449	118	118	118

Notes: This table presents the results of the *visibility* experiment for OLS regressions of respondents' stated preference (on a 0 to 100 scale) between pursuing vocational training (0 = "definitely vocational training") and pursuing studies (100 = "definitely studies") on being in the *public* condition: *panel A* reports results for the raw scores, *panel B* reports the results for standardized ratings. There is missing data for seven participants (5 at Gymnasium, 2 at Gesamtschule) who did not answer this question. Columns 3, 6, and 9 further add individual controls (indicators for male, migration background, high SES, dummies for the ultimate and third-to-last school year). Robust standard errors are reported in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$.

Table A5: Visibility experiment: Effect of *public* condition on top-ranked field of study

	DV: Top-Ranked Field									
	Fields with higher earnings					Fields with lower earnings				
	Business & Econ	Engineering	Maths & Nature	Medical St.	Law	Arts, Music, Design	Social Sc.	Ling. & Culture	Teaching	Ag & Forestry
Public Condition	0.065**	-0.049*	0.040	0.003	0.025	-0.105***	-0.014	-0.026	-0.004	-0.009
	(0.029)	(0.028)	(0.033)	(0.034)	(0.027)	(0.031)	(0.029)	(0.022)	(0.029)	(0.011)
Inference robustness (p-values)										
Randomization-based	0.022	0.069	0.204	0.953	0.374	0.000	0.665	0.272	0.834	0.396
Westfall-Young Adj.	0.184	0.480	0.827	0.984	0.884	0.006	0.932	0.827	0.984	0.884
Joint "omnibus" test	0.005									
Mean DV (*Private*)	0.104	0.138	0.146	0.194	0.101	0.213	0.134	0.090	0.134	0.019
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Individual controls	-	-	-	-	-	-	-	-	-	-
Observations	548	548	548	548	548	548	548	548	548	548

Notes: This table presents the results of the visibility experiment for students' top-ranked fields for the set of all students in the visibility experiment who rated fields. Each column reports the results for OLS regressions of a dummy variable for students' ranking the respective field top on being in the *public* condition. All regressions include school fixed-effects. Robust standard errors are reported in parentheses below coefficients, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$. Under "Inference robustness", the table reports p-values under 1) randomization-based (following Young (2019)), and 2) Westfall-Young adjusted standard errors accounting for multiple hypothesis testing. The row "Joint Omnibus Test" reports the p-value for overall significance of the experiment for students' top-ranked field.

Table A6: Visibility experiment: effect of the *Public* Condition on Field Rankings and Ratings

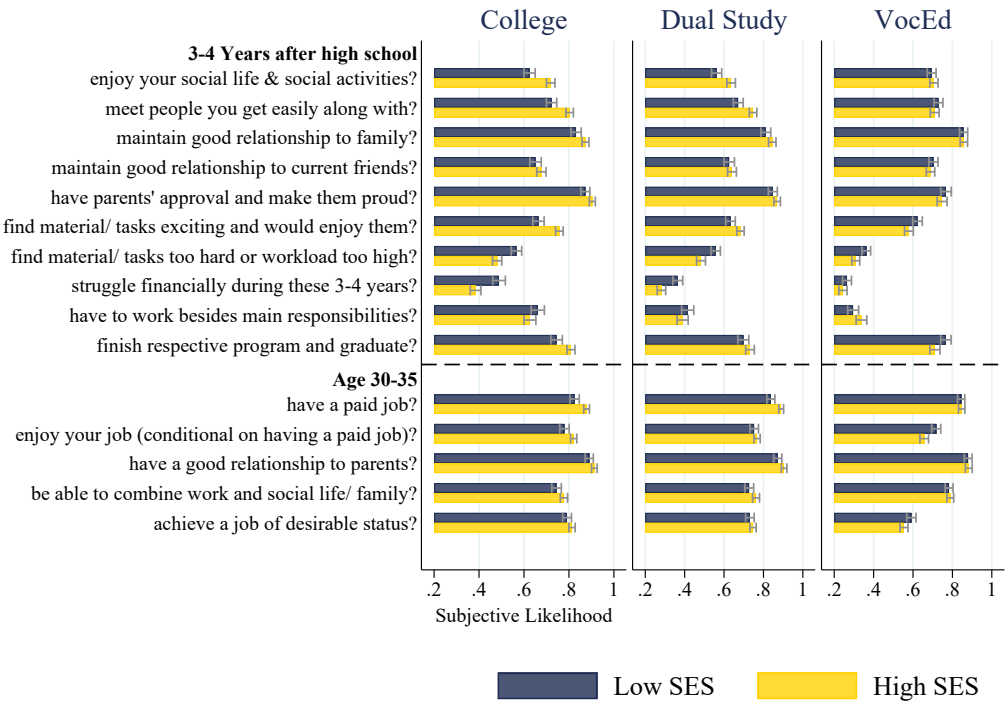
Panel A. ***Field Ranking***	**DV: Field Ranking (1=top-ranked, 10=lowest-ranked)**									
	Business & Econ	Engineering	Maths & Nature	Medical St.	Law	Arts, Music, Design	Social Sc.	Ling. & Culture	Teaching	Ag & Forestry
Public Condition	-0.537**	0.048	-0.466*	0.120	-0.560**	0.674***	0.105	0.226	0.231	0.159
	(0.220)	(0.232)	(0.250)	(0.224)	(0.221)	(0.251)	(0.210)	(0.227)	(0.235)	(0.171)
Inference robustness (p-values)										
Robust SEs	0.015	0.838	0.063	0.593	0.012	0.008	0.617	0.320	0.326	0.353
Randomization-based	0.013	0.819	0.059	0.560	0.012	0.004	0.623	0.338	0.294	0.365
Westfall-Young Adj.	0.087	0.933	0.340	0.933	0.080	0.062	0.933	0.880	0.880	0.880
Joint "Omnibus" Test	0.021									
Mean DV (*Private*)	5.481	5.632	5.267	4.720	5.328	5.237	4.612	5.806	5.304	7.612
Observations	548	548	548	548	548	548	548	548	548	548
R^2	0.118	0.096	0.047	0.114	0.070	0.093	0.062	0.075	0.093	0.075
Panel B. ***Rating***	**DV: Field Rating from 0 ("absolutely unattractive") to 100 ("extremely attractive")**									
	Business & Econ	Engineering	Maths & Nature	Medical St.	Law	Arts, Music, Design	Social Sc.	Ling. & Culture	Teaching	Ag & Forestry
Public Condition	4.778*	0.167	4.627	-1.123	5.726**	-5.924**	0.765	0.038	-0.620	-1.359
	(2.571)	(2.610)	(2.934)	(2.811)	(2.581)	(2.739)	(2.524)	(2.404)	(2.559)	(1.561)
Inference robustness (p-values)										
Robust SEs	0.064	0.949	0.115	0.690	0.027	0.031	0.762	0.987	0.809	0.384
Randomization-based	0.063	0.949	0.095	0.679	0.030	0.034	0.782	0.988	0.797	0.373
Westfall-Young Adj.	0.392	0.999	0.562	0.995	0.213	0.224	0.998	0.999	0.998	0.932
Joint "Omnibus" Test	0.083									
Mean DV (*Private*)	31.224	30.078	34.817	39.802	32.985	34.772	37.899	27.037	32.802	11.731
Observations	548	548	548	548	548	548	548	548	548	548
R^2	0.111	0.067	0.049	0.112	0.098	0.098	0.094	0.096	0.082	0.067

Notes: Regressions include school fixed effects. The sample includes all students in the visibility experiment who rated fields. Ranks account for ties. Robust standard errors in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$. The table reports p-values under 1) randomization-based and 2) Westfall-Young adjusted standard errors accounting for multiple hypothesis testing, and for the "Joint Omnibus Test" of overall significance of the experiment.

Figure A3: Subjective beliefs for immediate and future scenarios

Scenarios 3-4 Years after High School: Try to imagine your life during the 3 to 4 years after high school (and a potential gap year) for the cases that you pursue vocational training, a dual study program or undergraduate studies. How would you imagine your life to be during those 3-4 years in these scenarios? Please estimate for all three scenarios (undergraduate studies, dual study programs, vocational training), how certain you are on a scale of 0 ("extremely unlikely") to 100 ("absolutely certain") that you will...

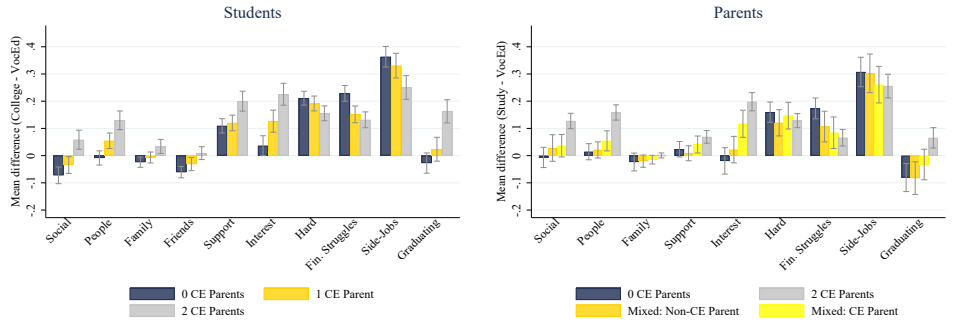
Scenarios Age 30-35: Now please imagine again for all three scenarios (...) that at the age of 30 to 35 you will...



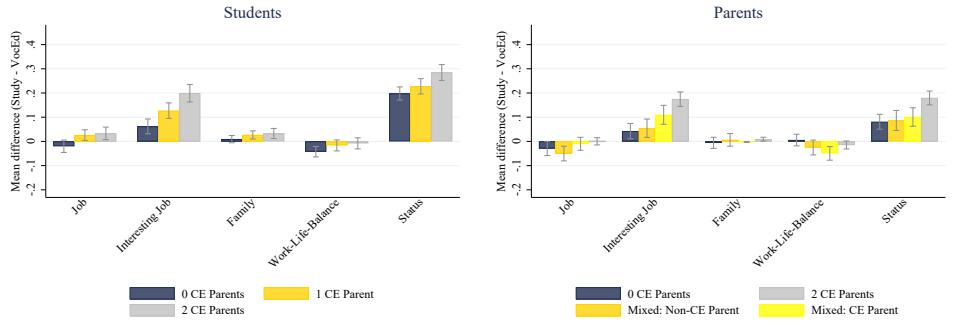
Notes: This figure presents the mean (and 95% confidence interval) of students' (likelihood) beliefs for the 15 scenarios presented to students. Beliefs are reported for both students from low and high SES families and presented for college, dual study programs, and vocational training separately.

Figure A4: Perceived returns of going to college (rather than pursuing vocational training)

(a) Immediate returns (3-4 years after high school)



(b) Future returns (age 30 to 35)



Notes: Displayed here are the perceived returns (and 95%-confidence intervals) to going to college rather than vocational training for both students and parents, obtained by subtracting the beliefs for vocational training from those for college for each scenario, i.e., $\pi_{s,\text{college},k} - \pi_{s,\text{VocEd},k}$. The returns are split by the number of college-educated parents (0, 1 or 2) and for parents also indicate whether the parent went to college

Table A7: Visibility experiment for students with 1 CE-Parent by parents' registration status

	DV: **College Aspiration**			
	Non-CE Parent only	CE-Parent only	Both Parents	CE Parent
Public	0.017	0.196	0.181	0.248***
	(0.206)	(0.170)	(0.145)	(0.094)
N	39	52	69	121
Mean DV	0.700	0.600	0.513	0.551
School-FE	✓	✓	✓	✓

Notes: Each column reports the result of regressing students' college aspiration on a dummy for being in the public condition for students with 1 college-educated parent, depending on which parent was registered. Robust standard errors are reported in parentheses, with $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$

Table A8: Visibility experiment and socio-economic background at different school types

	DV: Stated Aspiration to Attend College														
	Schooltype: Gymnasium								Schooltype: Gesamtschule						
	All		**Low SES**		**High SES**		**All**		**All**		**Low SES**		**High SES**		**All**
Public Cond.	0.099**	0.114***	0.046	-0.005	0.112**	0.129***	0.046	0.049	-0.099	-0.113	-0.137	-0.170	-0.007	0.045	-0.157
	(0.042)	(0.042)	(0.084)	(0.095)	(0.048)	(0.048)	(0.084)	(0.087)	(0.092)	(0.091)	(0.108)	(0.108)	(0.176)	(0.205)	(0.107)
High SES							0.127*	0.050							-0.035
							(0.069)	(0.079)							(0.159)
Public x High SES							0.066	0.087							0.152
							(0.096)	(0.101)							(0.217)
Mean DV (*Private*)	0.575	0.575	0.575	0.575	0.703	0.703	0.575	0.575	0.524	0.524	0.524	0.524	0.563	0.563	0.524
School FE	-	✓	-	✓	-	✓	-	✓	-	✓	-	✓	-	✓	✓
N	454	454	139	139	315	315	454	454	120	120	86	86	34	34	120

Notes: This table presents the results for two types of schools ("Gymnasium" in columns 1-8 and "Gesamtschule" in columns 9-16) of OLS regressions of a dummy variable for students' stated college aspirations on being part of the *public* condition (for all columns) and on being from a high SES family and the interaction term of the two (for columns 7, 8, 15, and 16). Columns 2, 4, 6, 8, 10, 12, 14, 16 include school fixed effects. Robust standard errors are reported in parentheses below coefficients, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$.

Table A9: Visibility experiment: Effect of *Public* Condition on Top-Ranked Field of Study by Socio-Economic Status

	DV: Top-Ranked Field									
Panel A. ***High SES*** *(at least one college-educated parent)*										
	Business & Econ	Engineering	Maths & Nature	Medical St.	Law	Arts, Music, Design	Social Sc.	Ling. & Culture	Teaching	Ag & Forestry
Public Condition	0.086**	-0.008	0.044	0.005	0.008	-0.116***	0.005	-0.027	0.004	-0.016
	(0.040)	(0.037)	(0.044)	(0.046)	(0.033)	(0.041)	(0.037)	(0.030)	(0.033)	(0.012)
Inference robustness (p-values)										
Robust SEs	0.031	0.827	0.313	0.920	0.799	0.004	0.885	0.372	0.899	0.187
Randomization based	0.046	0.776	0.269	0.941	0.753	0.002	0.921	0.317	0.917	0.263
Westfall-Young Adj.	0.276	1.000	0.921	1.000	1.000	0.070	1.000	0.941	1.000	0.801
Joint "Omnibus" Test					0.185					
Mean DV (*Private*)	0.112	0.137	0.155	0.193	0.081	0.230	0.112	0.093	0.106	0.025
Observations	342	342	342	342	342	342	342	342	342	342
Panel B. ***Low SES*** *(no college-educated parent)*										
	Business & Econ	Engineering	Maths & Nature	Medical St.	Law	Arts, Music, Design	Social Sc.	Ling. & Culture	Teaching	Ag & Forestry
Public Condition	0.006	-0.082*	-0.003	-0.011	0.050	-0.081	-0.073	-0.037	0.004	-0.000
	(0.046)	(0.047)	(0.057)	(0.060)	(0.055)	(0.052)	(0.052)	(0.037)	(0.057)	(0.014)
Inference robustness (p-values)										
Robust SEs	0.887	0.080	0.965	0.856	0.362	0.123	0.161	0.315	0.938	1.000
Randomization based	0.998	0.089	0.998	0.999	0.386	0.135	0.183	0.398	0.999	0.757
Westfall-Young Adj.	1.000	0.513	1.000	1.000	0.949	0.623	0.710	0.933	1.000	1.000
Joint "Omnibus" Test					0.113					
Mean DV (*Private*)	0.093	0.140	0.131	0.196	0.131	0.187	0.168	0.084	0.178	0.009
Observations	206	206	206	206	206	206	206	206	206	206

Notes: The sample includes students in the visibility experiment who rated fields. All regressions include school fixed-effects. Robust standard errors are in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$. The table reports p-values under 1) robust, 2) randomization-based, 3) Westfall-Young adjusted standard errors, and for the "Joint Omnibus Test" of overall significance of the experiment for students' top-ranked field.

Table A10: Maximum likelihood conditional logit estimates for dependent variable aspiring to college, dual study program or vocational training (experimental (*private*) sample)

DV: Aspiring to college, dual study program, or vocational training	
Exp. Monthly Earnings (in '000s €)	.13 (.15)
Enjoying Social Life	3.66 (2.35)
Meeting People Gets Along With	.4 (2.89)
Maintaining Good Relationship w/ Family	6.74 (5.51)
Having Parents' Approval & Pride	6.02 (4.82)
Maintaining Good Relationship w/ Friends	−3.01 (2.98)
Finding Material/Tasks Exciting & Enjoyable	8.96*** (2.8)
Finding "Too Hard/Workload Too High	.71 (1.83)
Struggling Financially	−3.05* (1.59)
Having to Work Besides Main Responsibilities	.83 (1.05)
Finishing Program and Graduating	5.47*** (2.03)
Having a (Paid) Job	−.6 (2.8)
Enjoying Job (Conditional On Having Paid Job)	5.48* (3.14)
Having Good Relationship to Parents in 30s	3.47 (12.08)
Combining Work and Social Life/Family	−2.46 (2.94)
Achieving Job of Desirable Status	2.83 (2.71)
Constant College	2.45*** (.7)
Constant Dual Studies	1.16* (.6)
Observations	174
Mc-Fadden's Pseudo R^2	.6
Corr $(y_{ij}, \hat{y}_{ij})$	.8
Share correct predictions	.9
Adjusted share correct predictions	.68

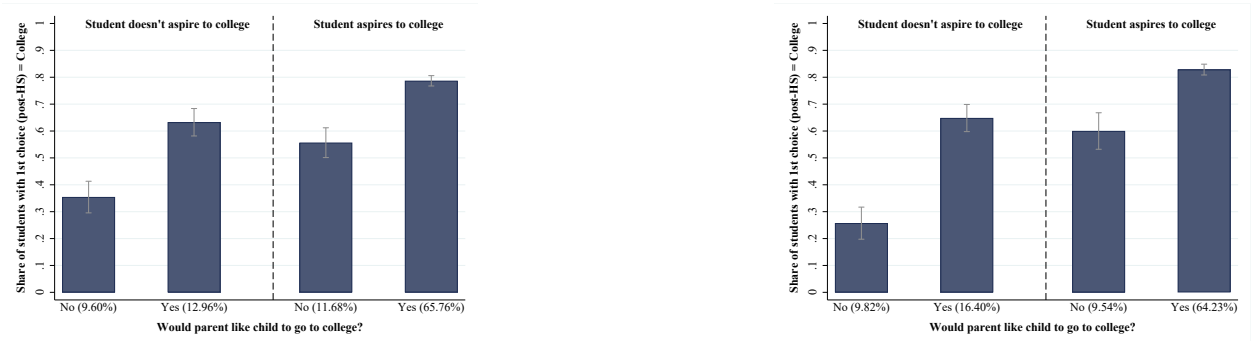
Notes: This table represents the estimated conditional logit results (via Maximum Likelihood) - coefficients plus standard errors in parentheses – for students in the experimental sample and the *private* condition. The share of correct predictions is given by $\frac{\text{Correctly Predicted Alternatives}}{\text{Overall Number of Alternatives}}$, where any alternative with a predicted probability of .5 or higher is treated as taking the value of 1. The adjusted share adjusts for the share of the most commonly chosen alternative (denoted by q): $\frac{\text{Share correctly Predicted Alternatives - q}}{\text{1 - q}}$. Significance is indicated by $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$.

Table A11: Balance: Predicted likelihoods based on beliefs across experimental conditions

	DV: Predicted Likelihood to aspire to college					
	Schooltype: All		Gymnasium		Gesamtschule	
	(1)	(2)	(3)	(4)	(5)	(6)
Public Condition	0.023	0.031	0.011	0.026	0.053	0.053
	(0.036)	(0.036)	(0.038)	(0.038)	(0.094)	(0.095)
Mean DV (*Private*)	0.694	0.694	0.738	0.738	0.537	0.537
School fixed effects	-	YES	-	YES	-	YES
Observations	339	339	268	268	71	71

Notes: This table presents regressions of the predicted likelihood to aspire to college (based on students' subjective belief data and the conditional logit estimates, i.e., Pr(college|beliefs)) on a dummy of being in the *public* condition, for all students (columns 1 and 2), *Gymnasium*-students (columns 3 and 4), and *Gesamtschule*-students (columns 5 and 6). Regressions in columns 2, 4, and 6 include school fixed effects. The sample includes all students with complete belief data. Robust standard errors are reported in parentheses below coefficients, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$.

Figure A5: **(NEPS data.)** Students' actual college attendance (first choice post high school) conditional on students' and parents' college aspirations in wave 5 (left) and wave 7 (right)



Notes: The graphs in panel a (b) are based on 2,646 (2,097) observations from the NEPS with student and parent participating in wave 5 (7) and data on the student's first choice after high school. The y-axis reports the share (and 95% confidence intervals) of students first enrolling in college after having finished high school (and a potential gap year), using data up to wave 12 of cohort 4 of the NEPS dataset. The percentages in the x-axis indicate the share of observations in each sub-group.

Table A12: Balance: Scenario beliefs across experimental conditions

Panel A. Beliefs for ***college***	**DV: Beliefs for individual aspects**											
	Interesting Material			Financial Struggles			Graduating			Interesting Job		
	All	Gym	Ges	All	Gym	Ges	All	Gym	Ges	All	Gym	Ges
Public Condition	0.027	0.017	0.065	-0.041	-0.025	-0.100	0.014	0.012	0.022	0.015	0.019	0.000
	(0.025)	(0.026)	(0.069)	(0.031)	(0.034)	(0.077)	(0.025)	(0.024)	(0.076)	(0.021)	(0.022)	(0.058)
Mean DV (*Private*)	0.697	0.727	0.592	0.449	0.418	0.557	0.770	0.798	0.671	0.793	0.803	0.757
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	339	268	71	339	268	71	339	268	71	339	268	71
Panel B. Beliefs for ***dual studies***												
	Interesting Material			Financial Struggles			Graduating			Interesting Job		
	All	Gym	Ges	All	Gym	Ges	All	Gym	Ges	All	Gym	Ges
Public Condition	0.008	0.015	-0.020	-0.019	-0.004	-0.077	0.002	0.022	-0.074	-0.004	0.011	-0.059
	(0.025)	(0.027)	(0.064)	(0.027)	(0.029)	(0.070)	(0.028)	(0.029)	(0.079)	(0.021)	(0.021)	(0.057)
Mean DV (*Private*)	0.661	0.670	0.627	0.322	0.293	0.427	0.716	0.724	0.689	0.760	0.761	0.756
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	339	268	71	339	268	71	339	268	71	339	268	71
Panel C. Beliefs for ***vocational training***												
	Interesting Material			Financial Struggles			Graduating			Interesting Job		
	All	Gym	Ges	All	Gym	Ges	All	Gym	Ges	All	Gym	Ges
Public Condition	-0.012	-0.019	0.014	-0.018	-0.006	-0.063	0.025	0.023	0.034	-0.033	-0.034	-0.033
	(0.027)	(0.030)	(0.064)	(0.027)	(0.030)	(0.060)	(0.032)	(0.034)	(0.080)	(0.027)	(0.031)	(0.055)
Mean DV (*Private*)	0.588	0.583	0.608	0.268	0.260	0.294	0.693	0.687	0.712	0.684	0.668	0.741
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	339	268	71	339	268	71	339	268	71	339	268	71

Notes: This table presents regressions of the respective beliefs for a given aspect on a dummy of being in the *public* condition, at all schools ("All"), the *Gymnasium* (Gym), and the *Gesamtschule* (Ges). All regressions include school fixed effects. The sample includes all students with belief data for the respective aspect and outcome. Robust standard errors are reported in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$.

Table A13: Beliefs, Grades, and Socio-Economic Background

	Dependent Variables: Belief measures regarding college									
Panel A. Raw outcomes										
	Pr(college|beliefs)		Interesting Material		Financial Struggles		Graduating		Interesting Job	
Grade Avg. (0 to 4=best)	0.187***	0.146***	0.182***	0.168***	-0.100***	-0.090***	0.122***	0.121***	0.082***	0.069***
	(0.028)	(0.033)	(0.020)	(0.023)	(0.024)	(0.029)	(0.020)	(0.023)	(0.017)	(0.020)
1 College-Ed. Parent		0.075		0.060*		-0.019		0.069**		0.004
		(0.047)		(0.033)		(0.044)		(0.033)		(0.030)
2 College-Ed. Parents		0.193***		0.092***		-0.107**		0.100***		0.041
		(0.049)		(0.034)		(0.046)		(0.033)		(0.030)
Mean DV	0.703	0.703	0.709	0.709	0.429	0.429	0.780	0.780	0.799	0.799
School FE	-	✓	-	✓	-	✓	-	✓	-	✓
Controls	-	✓	-	✓	-	✓	-	✓	-	✓
Observations	336	336	336	336	336	336	336	336	336	336
R^2	0.129	0.295	0.251	0.394	0.054	0.142	0.120	0.266	0.077	0.209
Panel B. Standardized outcomes										
	Pr(college|beliefs)		Interesting Material		Financial Struggles		Graduating		Interesting Job	
Grade Avg. (0 to 4=best)	0.540***	0.420***	0.779***	0.719***	-0.345***	-0.308***	0.535***	0.530***	0.426***	0.361***
	(0.081)	(0.095)	(0.086)	(0.099)	(0.081)	(0.101)	(0.090)	(0.101)	(0.090)	(0.105)
1 College-Ed. Parent		0.216		0.258*		-0.067		0.301**		0.023
		(0.137)		(0.141)		(0.152)		(0.146)		(0.154)
2 College-Ed. Parents		0.556***		0.393***		-0.368**		0.438***		0.214
		(0.141)		(0.147)		(0.159)		(0.145)		(0.157)
Mean DV	0.045	0.045	-0.063	-0.063	-0.031	-0.031	-0.049	-0.049	-0.046	-0.046

Notes: The sample includes all students with data for the dependent variable and all explanatory and control variables. The dependent variables in Panel A. are the raw measures and the standardized versions in Panel B. The grade-average ranges from .7 (best) to 4.0 (worst) and is re-coded such that higher values indicate better grades. The outcome is students predicted likelihood to aspire to college (based on students' beliefs and the estimated conditional logit model) in columns 1 and 2. The remaining columns have students' beliefs about college and the indicated scenarios as dependent variable (all ranging between 0 and 1). Individual controls include the following: indicators for male, migration background, the ultimate and the third-to-last school year. Robust standard errors are reported in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$.

Table A14: Predicted likelihoods across school-types and socio-economic background

	DV: Predicted Likelihood to aspire to college							
	Schooltype: All				Gymnasium		Gesamtschule	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Gymnasium	0.088	0.088						
	(0.074)	(0.074)						
High SES	0.060		0.170***		0.161***		0.060	
	(0.093)		(0.040)		(0.046)		(0.093)	
Gymnasium x High SES	0.101							
	(0.103)							
1 College-Ed. Parent		-0.004		0.078*		0.075		-0.004
		(0.096)		(0.047)		(0.054)		(0.097)
2 College-Ed. Parents		0.211		0.261***		0.237***		0.211
		(0.157)		(0.040)		(0.046)		(0.159)
Gymn. x 1 CE Parent		0.079						
		(0.110)						
Gymn. x 2 CE Parents		0.026						
		(0.164)						
Mean Omitted Group	0.540	0.540	0.596	0.596	0.628	0.628	0.540	0.540
School fixed effects	-	-	-	-	-	-	-	-
Observations	339	339	339	339	268	268	71	71

Notes: This table presents regressions of the predicted likelihood to aspire to college (based on students' subjective beliefs and the conditional logit estimates) on the listed variables. Results are presented for all students with complete belief data. The sample includes all students with complete belief data. Robust standard errors are reported in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$.

Table A15: Visibility experiment: Effect of *public* condition on first choice after high school

Panel A. ***Whole sample***				**DV:** 1st Choice = Enrolled in field...								
	DV: 1st Choice = College			BS/Econ	Eng.	Maths/NS	Med	Law	Arts	Social	Ling.	Teaching
Public Condition	0.022	0.035	0.021	0.021	0.029	0.042	-0.059	0.013	-0.020	-0.039	-0.013	0.034
	(0.055)	(0.053)	(0.052)	(0.045)	(0.045)	(0.051)	(0.037)	(0.044)	(0.024)	(0.046)	(0.028)	(0.037)
p-value Omnibus Test Field Choice: without [with] school FE								0.6980 [0.7956]				
Mean DV (*Private*)	0.669	0.669	0.681	0.125	0.125	0.170	0.116	0.125	0.045	0.161	0.054	0.071
School fixed effects	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO
Individual controls	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO
Observations	294	294	284	235	235	235	235	235	235	235	235	235
Panel B. ***Gymnasium***												
	DV: 1st Choice = College			BS/Econ	Eng.	Maths/NS	Med	Law	Arts	Social	Ling.	Teaching
Public Condition	0.052	0.053	0.037	0.031	0.002	0.037	-0.055	-0.007	-0.022	-0.039	-0.013	0.075**
	(0.058)	(0.056)	(0.055)	(0.049)	(0.048)	(0.057)	(0.041)	(0.046)	(0.024)	(0.051)	(0.032)	(0.035)
p-value Omnibus Test Field Choice: without [with] school FE								0.4704 [0.4347]				
Mean DV (*Private*)	0.692	0.692	0.702	0.122	0.133	0.184	0.122	0.122	0.041	0.173	0.061	0.031
Observations	245	245	238	202	202	202	202	202	202	202	202	202
Panel C. ***Gesamtschule***												
	DV: 1st Choice = College			BS/Econ	Eng.	Maths/NS	Med	Law	Arts	Social	Ling.	Teaching
Public Condition	-0.101	-0.058	-0.107	-0.038	0.192	0.086	-0.071	0.120	-0.019	-0.019	0.000	-0.252
	(0.146)	(0.155)	(0.173)	(0.121)	(0.126)	(0.112)	(0.071)	(0.142)	(0.089)	(0.089)	(0.000)	(0.151)
p-value Omnibus Test Field Choice: without [with] school FE								0.3793 [0.3333]				
Mean DV (*Private*)	0.545	0.545	0.571	0.143	0.071	0.071	0.071	0.143	0.071	0.071	0.000	0.357
Observations	49	49	46	33	33	33	33	33	33	33	33	33

Notes: This table presents the results of the visibility experiment for students' first choices after high school, regarding college attendance (columns 1-3) and chosen fields (columns 4-12). The sample includes all students who have made an actual choice by the time of the follow-up survey. The results for "Forestry and Agriculture" are not reported because no student chose to enroll in it. Controls include an indicator for male, migration background, having grades better than the median, having both contact details (e-mail address and phone number), and high SES families. Robust standard errors are reported in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$. The rows "Joint Omnibus Test" report the p-value for overall significance of the experiment for the field students enrolled in.

Table A16: Follow-Up: Predictive power of college aspirations and field rankings by socio-economic background

Panel A. High SES

	DV: 1st Choice = Initial Plan/ Top Rank						**DV:** Initial Rank	
	College vs. No College			**Chosen Field**			**Chosen Field**	
Condition: Public	0.086	0.080	0.081	0.155*	0.180**	0.193**	-0.595*	-0.707**
	(0.063)	(0.070)	(0.069)	(0.079)	(0.081)	(0.086)	(0.349)	(0.349)
Mean DV (*Private*)	0.718	0.718	0.720	0.486	0.486	0.478	2.779	2.813
Observations	187	187	182	159	159	155	159	155
School FE	NO	YES	YES	NO	YES	YES	YES	YES
Controls	NO	NO	YES	NO	NO	YES	NO	YES

Panel B. Low SES

	DV: 1st Choice = Initial Plan/ Top Rank						**DV:** Initial Rank	
	College vs. No College			**Chosen Field**			**Chosen Field**	
Condition: Public	0.073	0.091	0.129	-0.170	-0.222	-0.209	0.959	1.013
	(0.089)	(0.108)	(0.114)	(0.118)	(0.152)	(0.164)	(0.649)	(0.673)
Mean DV (*Private*)	0.667	0.667	0.660	0.564	0.564	0.595	2.577	2.405
Observations	107	107	102	72	72	69	72	69
School FE	NO	YES	YES	NO	YES	YES	YES	YES
Controls	NO	NO	YES	NO	NO	YES	NO	YES

Notes: This table reports results of regressing whether participants stated aspirations in the initial round to pursue their first actual choice on being in the *public* condition, by socio-economic status: for attending college (columns 1-3), for top-ranking one's chosen field (columns 4-6), for the rank of one's chosen field (columns 7-8). Control variables include indicators for: male, migration background, having better-than-median grades, having provided both e-mail and phone number, high SES. The sample includes all 294 re-surveyed participants in the visibility experiment with a first choice (and data for relevant control variables). 3 individuals lack data on their chosen field and 3 did not rate fields. Rank 1 was the best rank. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

Table A17: Sample Visibility Experiment: Correlates of participating in the follow-up

	DV: Participated in Follow-Up					
	All Schools		**Gymnasium**		**Gesamtschule**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Male	-0.090**	-0.058	-0.059	-0.050	-0.169*	-0.107
	(0.038)	(0.039)	(0.041)	(0.044)	(0.092)	(0.091)
Migration Background	-0.072	-0.033	-0.040	-0.017	-0.038	-0.061
	(0.051)	(0.052)	(0.061)	(0.063)	(0.101)	(0.103)
Better-than-median grades	0.097**	0.107***	0.064	0.085**	0.193**	0.190**
	(0.038)	(0.037)	(0.041)	(0.041)	(0.093)	(0.093)
Both contact details	0.213***	0.343***	0.241***	0.337***	0.333	0.361
	(0.051)	(0.082)	(0.052)	(0.087)	(0.208)	(0.255)
Public Condition	0.003	-0.000	0.001	-0.006	0.011	0.021
	(0.035)	(0.035)	(0.038)	(0.038)	(0.088)	(0.086)
High SES	0.090**	0.067	0.032	0.042	0.120	0.140
	(0.039)	(0.046)	(0.044)	(0.051)	(0.102)	(0.104)
N	574	574	454	454	120	120
School FE	NO	YES	NO	YES	NO	YES
Mean DV	0.746	0.746	0.780	0.780	0.617	0.617

Notes: This table presents regressions of whether participants participated in the follow-up on the listed controls. The row "School FE" indicates whether controls also include school fixed effects. The sample includes all students in the visibility experiment, the 25 students with missing data on grades are coded as having grades below median; the regressions include an additional indicator taking the value 1 for these 25 observations.

Table A18: Intergenerational correlation in perceived returns to college vs. vocational training

	Dep. Variable: Students' Beliefs ($\pi_{s,\textbf{college},k} - \pi_{s,\textbf{VocEd},k}$)						
	All	Mothers	Fathers	Both	College-Ed.	No CE	Both
Parent's Beliefs	0.446***	0.435***	0.466***		0.438***	0.450***	
	(0.024)	(0.029)	(0.037)		(0.031)	(0.039)	
Mother's Beliefs				0.313***			
				(0.048)			
Father's Beliefs				0.289***			
				(0.038)			
CE Parent's Beliefs							0.269***
							(0.063)
Non-CE Parent's Bel.							0.221***
							(0.076)
High SES	0.038***	0.036**	0.041**	0.053**			
	(0.013)	(0.015)	(0.019)	(0.026)			
N	7,639	4,700	2,939	1,561	4,100	3,465	533
R^2	0.158	0.158	0.157	0.221	0.141	0.153	0.143

Notes: Each column regresses students' perceived returns to college over vocational training on the perceived returns by the specified group. Beliefs scenarios are pooled and standard errors clustered at the individual level.

Table A19: Visibility experiment (excluding "inconsistent" answers regarding college aspirations)

	DV: Stated Aspiration to Attend College								
	Schooltype: All			Gymnasium			Gesamtschule		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Public Cond.	0.081*	0.093**	0.081**	0.112**	0.126***	0.119***	-0.021	-0.031	-0.023
	(0.041)	(0.040)	(0.040)	(0.045)	(0.044)	(0.045)	(0.096)	(0.094)	(0.093)
Inference robustness (p-values)									
Robust SEs	0.051	0.022	0.044	0.013	0.005	0.008	0.830	0.743	0.808
Rand.-based	0.046	0.024	0.049	0.018	0.006	0.008	0.843	0.749	0.817
Mean DV *Priv.*	0.607	0.607	0.607	0.642	0.642	0.642	0.471	0.471	0.471
School FE	-	✓	✓	-	✓	✓	-	✓	✓
Ind. controls	-	-	✓	-	-	✓	-	-	✓
Observations	531	531	531	420	420	420	111	111	111

Notes: This table presents the results of the *visibility* experiment among those with consistent answers about their college aspirations. Students are excluded if they either a) stated an aspiration to attend college, but a continuous preference between vocational training and studying below 50 (i.e., closer to vocational training), or b) if they stated an aspiration to pursue vocational training, but a continuous preference above 50. This excludes 43 (34) [9] students at all schools (Gymnasium) [Gesamtschule], or 7.5% (7.5%) [7.5%] of students. Individual controls include (indicators for male, migration background, high SES, the ultimate, and third-to-last school year). Robust standard errors are reported in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$.

Table A20: Visibility Experiment: Effect of *public* condition on stated college aspirations and personality characteristics conscientiousness & agreeableness

	DV: Stated Aspiration to Attend college								
	Schooltype: All			Type: Gymnasium			Type: Gesamtschule		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Public Condition	0.002	0.015	-0.067	0.040	0.024	-0.073	-0.091	-0.007	-0.071
	(0.058)	(0.074)	(0.096)	(0.065)	(0.084)	(0.114)	(0.121)	(0.153)	(0.184)
Conscientious (> 50%)	0.001		-0.033	-0.012		-0.084	0.073		0.145
	(0.060)		(0.111)	(0.066)		(0.124)	(0.147)		(0.319)
Public x Conscientious	0.113		0.231	0.123		0.248	0.046		0.135
("INT1")	(0.081)		(0.148)	(0.089)		(0.167)	(0.200)		(0.419)
Agreeable (> 50%)		0.018	0.000		-0.019	-0.067		0.151	0.194
		(0.065)	(0.089)		(0.072)	(0.104)		(0.142)	(0.175)
Public x Agreeable		0.068	0.126		0.119	0.191		-0.103	-0.062
("INT2")		(0.088)	(0.121)		(0.099)	(0.140)		(0.194)	(0.260)
Conscientious			0.044			0.103			-0.158
x Agreeable			(0.134)			(0.150)			(0.364)
Public x Conscientious			-0.189			-0.208			-0.102
x Agreeable			(0.180)			(0.201)			(0.498)
("INT3")									
Public + INT1 (p-value)	0.036		0.146	0.006		0.150	0.772		0.859
Public + INT2 (p-value)		0.076	0.418		0.005	0.135		0.352	0.444
Public + INT1-3 (p-val)			0.116			0.023			0.581
Mean DV (*Private*)	0.635	0.635	0.635	0.665	0.665	0.665	0.519	0.519	0.519
School fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓
Individual Covariates	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	535	535	535	424	424	424	111	111	111

Notes: This table presents the results of the visibility experiment for aspiring to college, controlling for an indicator of being above the median-population score of conscientiousness and interacting this measure with being in the *public* condition (in columns 1, 4, 7). Columns 2, 5, 8 instead control for being above the median-population score of agreeableness and its interaction with being in the *public* condition. In columns 3, 6, and 9, all measures regarding conscientiousness and agreeableness are included, as well as the interaction term of these two and being in the *public* condition. All regressions include school fixed-effects as well as the following controls: indicators for male, migration background, high SES, the ultimate and third-to-last school year. The sample includes all individuals with a fully completed big five personality test. Robust standard errors are reported in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$. The table also reports the coefficient and according p-values of being in the *public* condition for students being in the upper half of the conscientiousness score, of the agreeableness score, or of both.

Table A21: Visibility Experiment by Amount of Planning ("much planning" or more)

	DV: College Aspirations									
	Schooltype: All						Gymnasium		Gesamtschule	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Public	0.056	-0.183	-0.073	-0.088	-0.073	-0.090	0.117**	0.124**	-0.183	-0.160
	(0.057)	(0.125)	(0.093)	(0.097)	(0.094)	(0.097)	(0.059)	(0.062)	(0.126)	(0.129)
Gymnasium		0.033								
		(0.098)								
Public x Gymn.		0.300**								
		(0.138)								
High SES			0.086	-0.023						
			(0.084)	(0.097)						
Public x High SES			0.209*	0.238**						
			(0.113)	(0.118)						
1 CE Parent					0.018	-0.068				
					(0.098)	(0.110)				
2 CE Parents					0.177*	0.051				
					(0.095)	(0.110)				
Public x 1 CE					0.299**	0.312**				
					(0.130)	(0.139)				
Public x 2 CE					0.103	0.160				
					(0.126)	(0.128)				
Share DV *Priv.*	0.692	0.692	0.642	0.642	0.642	0.642	0.700	0.700	0.667	0.667
School FE	✓	-	-	✓	-	✓	-	✓	-	✓
Observations	276	276	276	276	276	276	215	215	61	61
Public (High SES)			0.136	0.150						
(p-value)			[0.031]	[0.029]						
Public (CE 1)					0.227	0.221				
(p-value)					[0.013]	[0.026]				
Public (CE 2)					0.031	0.070				
(p-value)					[0.714]	[0.418]				

Notes: This table presents the results of the *visibility* experiment for aspiring to college, for the sample of those students who report having thought much or very extensively about what to do after high school. Several regressions also include what type of school students attend as well as measures of students' socio-economic background and interaction terms of these two aspects. Robust standard errors are reported in parentheses, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$. The table also reports the coefficient and the according p-values of being in the *public* condition for high SES students, students with one and students with two college-educated parents.

Table A22: Students' perceptions of parental preferences and weight on parents by parents' registration status

(a) Student's perception of what parent would like them to do

	DV: Student's perception of what parent would like them to do											
	Student states "College"						**Student states "Leaves it completely to me"**					
	Mother			**Father**			**Mother**			**Father**		
	All	Low SES	High SES	All	Low SES	High SES	All	Low SES	High SES	All	Low SES	High SES
Parent Registered	-0.085***	-0.079*	-0.136***	0.008	0.024	-0.070	0.094***	0.122***	0.091**	0.058*	0.120***	0.016
	(0.032)	(0.045)	(0.047)	(0.032)	(0.044)	(0.047)	(0.032)	(0.045)	(0.046)	(0.032)	(0.046)	(0.047)
Mean DV	0.471	0.397	0.542	0.451	0.334	0.563	0.469	0.485	0.453	0.431	0.448	0.414
N	1,210	592	618	1,210	592	618	1,210	592	618	1,210	592	618
School FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: This table reports regressions of whether students' state that they think their mother (columns 1-3, 7-9) or their father (columns 4-6, 10-12) would like them to attend college (columns 1-6) or leaves the decision completely to them (columns 7-12) on an indicator of having at least one parent registered to participate in the study. All regressions include school fixed-effects and report robust standard errors, $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$. Results are shown separately for all students, low and high SES students. The sample includes all individuals with data for the outcome variable.

(b) Students' decision weight on parents

	DV: Student's weight on parents		
	All	Low SES	High SES
Parent Registered	0.012	0.029	-0.009
	(0.018)	(0.028)	(0.024)
Mean DV	0.388	0.396	0.381
N	1,125	524	601
School FE	✓	✓	✓

Notes: This table reports regressions of the weight students' would put on their parents' opinion when it comes to decide what to do after high school on an indicator of having at least one parent registered to participate in the study. All regressions include school fixed-effects and report robust standard errors, with $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$. The sample includes all individuals with data for the outcome variable.

Table A23: Amount of Planning ("much" or more) and survey answers

	DV:							
	Certainty about Choice (0-100)		Don't Know/ Undecided regarding... ...Tracks		...Major/Training		...Location	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Indicator Planning ("much" or more)	27.699	26.554	-0.159	-0.157	-0.218	-0.198	-0.257	-0.228
	(3.840)	(4.308)	(0.042)	(0.047)	(0.057)	(0.060)	(0.058)	(0.062)
Mean DV Omitted Group	36.686	36.686	0.229	0.229	0.464	0.464	0.557	0.557
School fixed effects	-	✓	-	✓	-	✓	-	✓
Observations	270	270	270	270	270	270	270	270

Notes: This table presents the results of regressing the dependent variable on an indicator for having thought much or very extensively about what to do after high school. The sample includes all students in the *private* condition of the visibility experiment with this data. The dependent variables are the following: in columns 1 and 2, it is students' answer to how certain they say they are regarding what to do, on a scale of 0 to 100 (representing "absolutely certain"). The dependent variable is an indicator for students reporting not knowing (or being undecided) what track to choose (columns 3, 4), what major or occupational training to prefer (columns 5, 6) and what location to prefer (columns 7, 8). Robust standard errors are reported in parentheses.