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From Heterogeneities to Inequalities

**Measuring cultural capital:
Sense of entitlement, concerted
cultivation, leisure activities,
gatekeeper bias and skills**

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1. Introduction

An exploratory study was conducted for two purposes. First, we wanted to test new instruments to measure cultural capital. Here we tried to fill the gap found in most studies that define cultural capital as the knowledge of or facility with “highbrow” aesthetic culture. This line of research emphasizes cultural capital as a form of knowledge entirely distinct from, and causally independent of, general ability or skill (Lareau & Weininger 2003), as it is theorized in economics by the concept of human capital and in psychology by the notion of cognitive and noncognitive skills. Though this is one of sociologists’ favorite concepts, studies based on this tradition have had only limited success in explaining social inequalities. Another strand of cultural capital conceptualizations makes reference to the capacity of a social class to impose advantageous standards of evaluation in societal institutions relevant for life course outcomes. This approach, elaborated most prominently in the qualitative study “Unequal Childhoods” by Annette Lareau (2003), has received wide attention and recognition. However, the possible impact of her conceptualization of cultural capital remains limited, because there are no widely accepted quantitative measures of the construct.

In Lareau’s interpretation of Bourdieu’s central claims, cultural capital of children consists less of a social distinction based on a “highbrow” taste but rather of a greater “sense of entitlement” in educational institutions and a greater ability to bargain with institutional gatekeepers (e.g. teachers) over their claims and contributions in educational organizations. To develop this sort of cultural capital, middle-class children profit from parental class-specific child-rearing strategies. Whereas low-class parents follow the ideal of “accomplishment of natural growth” as a guiding principle of their parenting style, high-class parents prefer “concerted cultivation.” “Concerted cultivation” means that they provide a structured life for their child through participating in intra-school and extra-school activities that may foster skill development. Moreover, the parent-child interaction is characterized by critical thinking, encouragement, and asking challenging questions. In contrast, “accomplishment of natural growth” means that children are given more freedom to just play around with other kids. Compared to the highbrow concept of cultural capital, Lareau’s interpretation of Bourdieu’s thoughts is not at all detached from general skills or ability. However, the question of how concerted cultivation and sense of entitlement are precisely related to skills and ability remains unclear.

Against this background, the purpose of our data collection was threefold. First, we tried to develop new quantitative measures for sense of entitlement and the parental styles distinguished by Lareau. Second, we included a more consistent operationalization of cultural activities relating to both concepts by

distinguishing between a possible impact of taste as social distinction (via passively consuming culture) and skill formation (via actively performing arts and culture). And third, we tested a construct of what we term ‘gatekeeper bias,’ which captures teachers’ bias related to social class as perceived by students and complements the analysis of cultural capital as a signaling mechanism. Combining these measures, we tried to get first insights into the possible overlap between general skills and cultural capital.

This technical report is organized as follows. In section two we describe our sample. We compare the distribution of key variables with a representative study for the German population, the Socio-economic Panel (SOEP). Section 3 describes the new measures developed and tested for this study: concerted cultivation, sense of entitlement, and gatekeeper bias. Sections 4 and 5 summarize reliability and sensitivity analysis of the three scales, respectively. A multivariate, explorative analysis using the new instruments to explain school grades is conducted in section 6. This is followed by a conclusion.

2. Data description

The data used for the analysis result from a cross-sectional survey conducted in 2012 on 116 households with children in the German city of Bielefeld and its suburbs. Three age-specific questionnaires for parents, teenagers (ages 11-18), and children (ages 6-10) were developed and deployed in the field as a CAPI questionnaire. As mentioned above, the objective was the quantitative assessment of cultural capital and comparable psychological constructs such as self-efficacy and the Big-Five. Additional measures such as sibling relationships were also included. The content of the survey is summed up in **table 1**. The special feature of the study is that, within each household, both parents and children ages 6 to 18 are surveyed (or those still attending school even if they are older than 18). A total of 66 children, 101 adolescents, and 175 adults took part in the study. The classification of children and adolescents was done based on school type: those who attend primary school are labeled ‘children,’ those who attend secondary school are treated as ‘adolescents.’

Table 1: Modules and measures in our study

Children
<ul style="list-style-type: none"> ▪ <i>Sociodemography</i> (age, name and general data about siblings) ▪ <i>Cultural Capital</i> (frequencies of activities like watching TV, listening to music and doing sports; age of first contact with activities and place of practice; participation in contests related to these activities; owning objects like TVs, computers, a desk and an own room). ▪ <i>Sense of entitlement in school</i>

- *Gatekeeper Bias*
- *Parental support for school*
- *Having private lessons for school*
- *Relationship quality to siblings*
(being better than their siblings, entering competitions with them, being proud of them and supporting them)
- *Relationship quality to parents with comparison to siblings*
(getting attention of their parents and the way of being treated by them)

Youths

- *Sociodemography and general data*
(age, name, general data about siblings and health)
- *Cultural Capital*
(frequencies of activities like watching TV, listening to music and doing sports; age of first contact with activities and place of practice; participation in contests related to these activities; owning objects like TVs, computers, a desk and an own room).
- *School*
(educational aspiration, recommendations, visited type of school, grades, repeated classes, having private lessons and parental support).
- *Sense of entitlement in school*
- *Gatekeeper Bias*
- *Relationship quality to siblings*
(being better than their siblings, entering competitions with them, being proud of them and supporting them).
- *Relationship quality to parents with comparison to siblings*
(getting attention of their parents and the way of being treated by them)
- *Personality*
(self-discipline, self-efficacy in general and in school and big 5)

Parents

- *Sociodemography and general data*
(age, migration status, location of birth, family status, relationship and health)
- *Children*
(number, names, age, gender and parenthood)
- *Parents*
(education and employment status)
- *Education and employment*
(degrees, kind of employment, employment status, income)
- *Cultural capital*
(frequencies of activities like watching TV, listening to music and doing sports; age of first contact with activities and place of practice; participation in contests related to these activities; owning objects like TVs, computers and music instruments; number of books at home).
- *Children's activities*
(children's handicaps, reasons to support children's activities (pro and contra); financial costs of the activities)
- *Children's education*
(educational goals, parenting style, and relationship quality to youngest child)
- *Children's personality*
(big 5)
- *Children in school*
(aspired and expected educational success, taking private lessons, and grades)

- *Sense of entitlement regarding their children in school and government agencies*
 - *Commitment to their children's school*
 - *Personality*
(self-discipline, self-efficacy and big 5)
-

We assumed that the attention span of children is low compared to adolescents and adults and therefore gave them a shorter questionnaire. Children's questionnaires took approximately 10 minutes to complete, whereas the youths' questionnaire took about 15 minutes and the parents' questionnaire about 30 minutes. Households were randomly contacted but then further screened to assure variability in parental socioeconomic status, children's age, and place of residence. Because of the low willingness of households with low socioeconomic status to participate, a snow-balling process was used to recruit further households based on referrals from households that had already agreed to answer the survey.

To assess the representativity of our sampled households, we used the Socio-economic Panel (SOEP) as a benchmark and compared key demographic variables.¹ As summarized in **figures 1** and **2**, the data collected closely resemble the SOEP-sample in terms of number of children per household and parental educational attainment. In both datasets, more than a half of the households have one child and only a small minority is composed of more than three children (see **figure 1**). Similarly, in both datasets, roughly 50% of households include at least one parent having completed upper secondary school ('Abitur'), followed by about one third with at least one parent having successfully passed intermediate secondary school ('Realschule'). In both datasets, there are only few households in which both parents failed to gain any school certificate (see **figure 2**). By contrast, as shown in **figure 3** using the EGP class scheme (Erikson & Goldthorpe, 1992), our sample contains relatively more parents employed in the service class. In both datasets, households belonging to the agricultural labor class as well as to the class of self-employed farmers are underrepresented. In short, assuming that the SOEP contains representative data of the German population, our sample matches fairly well family size and parental education, although it overrepresents parents with higher occupational status.

¹ The SOEP is a representative German panel-study administered by the German Institute for Economic Research (DIW). The panel includes more than 10,000 households and 20,000 individuals nationwide which are surveyed each year on several topics, including family, education, employment, finances, and attitudes, among others (Wagner et al., 2007).

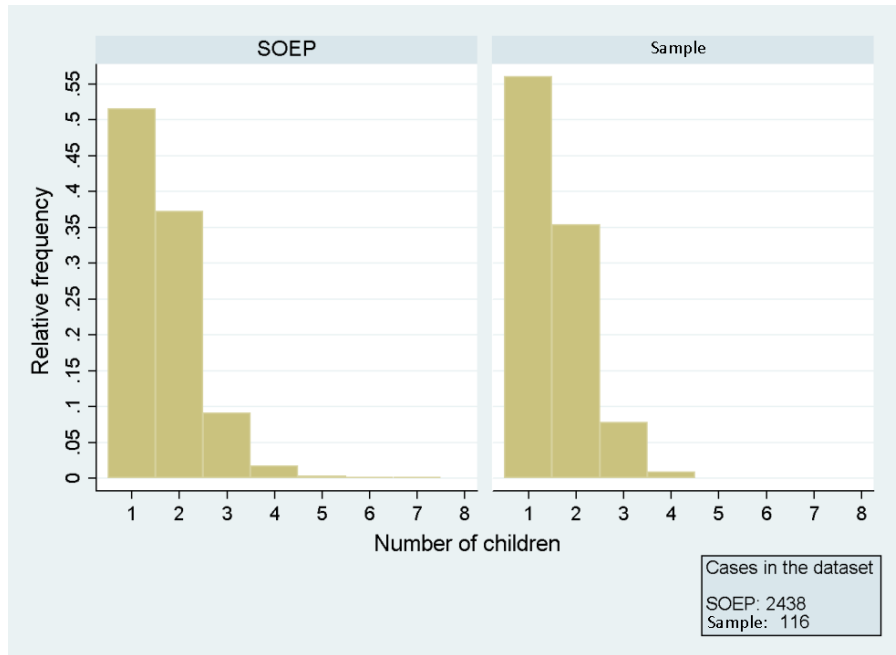


Figure 1: Number of children per household in the SOEP and in our sample

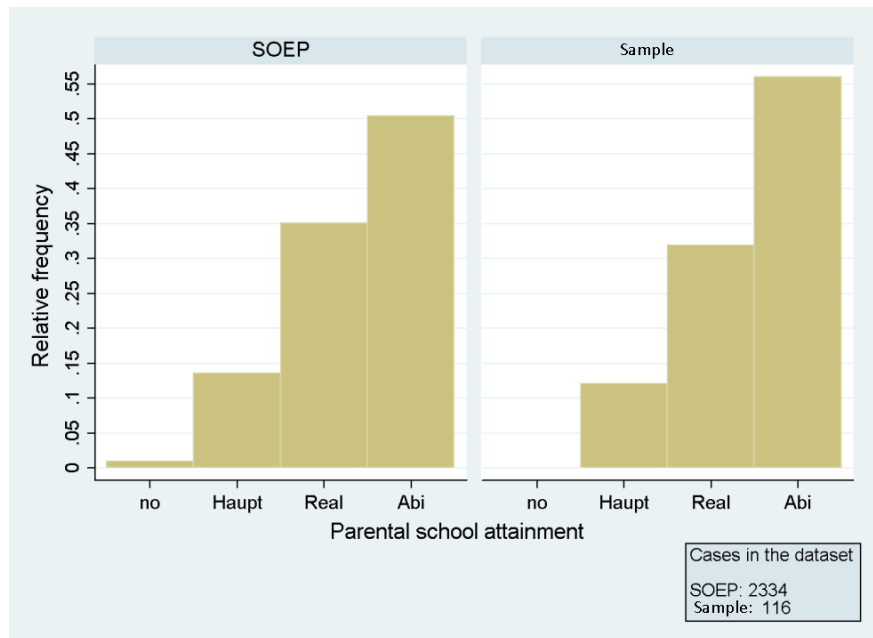


Figure 2: Distribution of the households' parental educational attainment in the SOEP and in our sample.²

² Notes: 'No' stands for no degree, 'Haupt' for a 'Hauptschule' degree, 'Real' for a 'Realschule' degree and 'Abi' for the 'Abitur' degree.

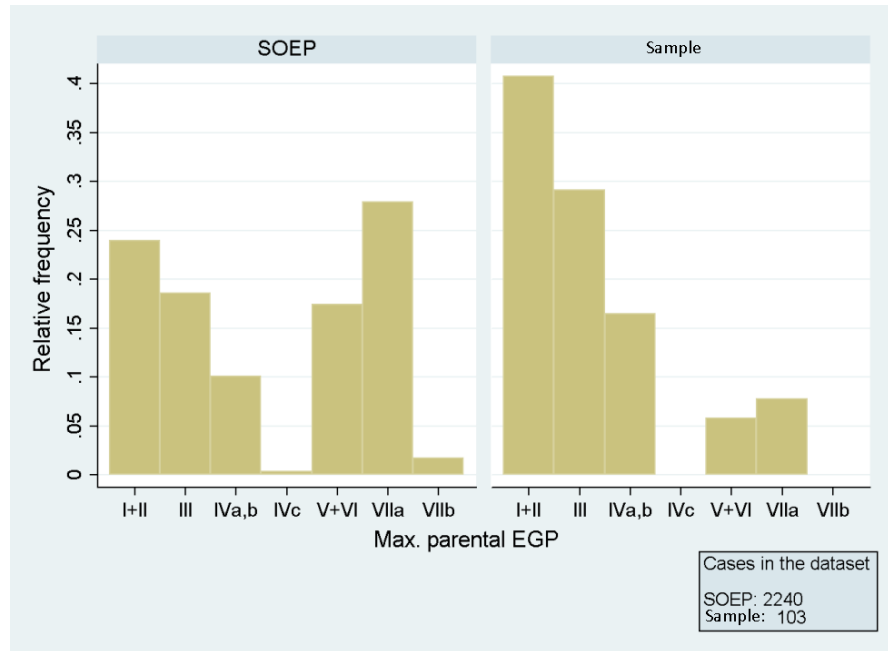


Figure 3: Distribution of the household’s social class in the SOEP and in our sample according to the EGP scheme³

3. New instruments: Concerted cultivation, sense of entitlement, and gatekeeper bias

In the following, for each of our three measures we present background information of the construct, a list of items, and descriptive statistics of the collected data. In the next two sections, reliability and external validity of the measures are discussed.

3.1. Concerted cultivation

As already mentioned in the introduction, Lareau differentiates two parenting styles used by the middle class and the working class, respectively: “concerted cultivation” and “accomplishment of natural growth.” She argues that while both parenting styles meet the basic needs of children, only parents following concerted-cultivation practices aim explicitly at a good development of children’s skills and talents through three key-aspects of parenting. First, the organization of the daily life of children, meaning a structured leisure time schedule; second, the language use within families, emphasizing reasoning and negotiations in the communication between child and parent; and third, parental criticism on and, if necessary, intervention in institutions such as schools on behalf of their child. Contrary to these three characteristics of concerted cultivation, the “accomplishment of natural growth” consists in letting

³ Class ‘I+II’ stands for service class, ‘III’ for routine non-manual workers, ‘IVa, b’ for petty bourgeoisie, ‘IVc’ for farmers, ‘V+VI’ for skilled workers, ‘VIIa’ for non-skilled workers and ‘VIIb’ for agricultural laborers (for more details, see Erikson & Goldthorpe, 1992).

children organize their leisure time themselves, using directives when talking to children instead of arguing with them, and being rather dependent of institutions, with a sense of powerlessness and frustration instead of actively engaging them.

Most studies that have tried to measure concerted cultivation quantitatively operationalize the construct based on children's participation in extracurricular activities, for example, lessons in music, arts, and dance (e.g. MyCoy, Byrne, Banks, 2012) or going to a museum or library (Redford, Johnson, Honnold, 2009), often in combination with parental engagement at school, for example, their participation in parent-teacher conferences or attending school events (Redford, Johnson, Honnold, 2009; Cheadle & Amato, 2011; Bodoski & Farkas, 2008). Although the language use of parents is explicitly mentioned by Lareau as an important dimension of concerted cultivation, measuring language patterns using quantitative methods is quite demanding (e.g. Hoff, 2003, 2005). The mentioned studies overcome this difficulty by taking cognitive stimulating material resources at home, such as the number of children's books, as a proxy for language use (Cheadle & Amato, 2011) or as an indicator exerting an influence on pre-reading skills (Bodovski & Farkas, 2008).

Contrary to these attempted measures of concerted cultivation, we developed a new scale which does not focus on the activities children *do* but on *why* parents decide to sign up their children for organized activities. We focused on activities because the other aspects of Lareau's explanation are rather difficult to measure quantitatively (language patterns) or because scales for it already exist (school engagement of parents). The scale we propose comprises the nine items⁴ which indicate reasons for and against the participation of the child in organized activities. In accordance with Lareau, we tried to find items which distinguish between parents who actively and consciously foster their child's talent and skills, irrespective of parental resources such as time and money, and those who do not really care about these issues.

Parents answered the items on a five-point scale (1 very unimportant, 2 rather unimportant, 3 neutral, 4 rather important, 5 very important). **Table 2** shows the items as well as their observed mean, standard deviation, kurtosis, and skewness.

⁴ See Appendix for the exact wording of items of the original German version.

Table 2. Concerted cultivation

Item	N	mean	median	variance	s.d.	skewness	kurtosis
Reasons in favor							
1. I expect a positive development of my child	112	4.455	4.5	0.376	0.613	-1.123	5.415
2. I want more time for myself	112	1.777	2	0.968	0.984	1.485	4.931
3. My child desires it	110	4.336	4	0.592	0.77	-1.503	6.329
4. My child should be around other kids	112	4.446	4.5	0.375	0.613	-0.857	3.908
5. It is family tradition	112	2.205	2	1.408	1.187	0.67	2.346
Reasons against							
1. membership fee	112	2.402	2	1.342	1.158	0.537	2.2
2. equipment costs	112	2.429	2	1.184	1.088	0.479	2.143
3. time needed for taking the child there and picking it up	112	2.25	2	1.234	1.111	0.802	2.761
4. my child could be exposed to mischievous other children	112	2.152	2	1.391	1.179	0.928	2.806

Data shows that items are highly skewed and do not follow the normal distribution. There is nearly no variation in items 1-4, for which the majority of parents answered “rather important” or “very important.” There is little variance in the remaining items; parents had quite similar response patterns and favored only one end of the scale. This could partly be explained by the homogeneity of the population, with its overrepresentation of service class families, most likely to comply with the concerted-cultivation type of parenting. In general, parents agree that the positive development, time, and the child’s wish are reasons for a registration of their child in organized activities. Money is a very prevalent reason against such activities.

3.2. Sense of entitlement

According to Lareau, children exposed to the parenting style “concerted cultivation,” which is prevalent among middle-class parents, develop a “sense of entitlement.” This sense of entitlement “plays an especially important role in institutional setting, where middle-class children learn to question adults and address them as relative equals” (Lareau 2003, p. 2). Lareau observed that these children “acted as though they had a right to pursue their own individual preferences and to actively manage interactions in institutional settings. They appeared comfortable in these settings; they were open to sharing information and asking for attention. [...] it was common practice among middle-class children to shift interactions to suit their preferences.” Lareau argues that insofar as these behavioral patterns towards institutions are rewarded by gatekeepers, such as school teachers, and later on in life by authorities in school and university, they contribute to the reproduction of social status across generations. By contrast, the working and poor class parenting style, the mere “accomplishment of natural growth,” produces quite the opposite results. Children exposed to it are not stimulated to develop a strong sense of entitlement. As a

consequence, they are not able to interact with institutions in a way that suits their own interests; they do not question actions of persons in authority but accept them instead. Lareau labels this trait a “sense of constraint,” the opposite of a sense of entitlement, which she described as a “sense of distance, distrust, and constraint in their institutional experiences” (Lareau 2003, p.3).

In this study, we tried to quantitatively operationalize the construct “sense of entitlement” by developing items based on Lareau’s assumptions. We decided to frame the items in institutional settings in which children, adolescents, and parents are regularly involved: school and public agencies. While school pertains all three age groups, only parents have a direct contact to government agencies. Additionally, to capture more accurately the type of interaction in each context, we differentiated between perception of the situation and context-specific behavior as reported by respondents. All items were answered using a five-point scale (1 strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree) (see **table 3**).

This new scale of sense of entitlement comprises 6 items for children, 10 items for adolescents, and 9 items for parents in the school context. 8 additional items were included for parents in the context of government agencies. Since the questionnaire was given to children from 6 years upwards, we shortened the scale and changed the wording to ensure that children understand the items and that the interview does not take too long.

Table 3. Sense of Entitlement (Children, Adolescents and Parents)

Item	N	mean	median	variance	s.d.	skewness	kurtosis
Children							
School is there to teach me something	66	4.652	5	0.384	0.62	-1.957	7.177
Teachers are there to explain things to me	66	4.545	5	0.529	0.727	-1.49	4.439
If I do not understand something, I ask the teacher	66	4.197	4	0.899	0.948	-1.055	3.653
If the lesson/class is boring, I tell the teacher	62	1.484	1	1.041	1.02	2.379	7.963
If the teacher is unfair, I tell him	65	2.046	2	1.545	1.243	0.798	2.286
If the teacher is unfair, I tell my parents	63	3.016	3	1.951	1.397	-0.136	1.714
Adolescents							
School is there to teach me something	103	4.456	5	0.427	0.653	-0.791	2.553
Teachers are there to explain things to me	104	4.481	5	0.543	0.737	-1.322	4.158
If I do not understand something , I ask the teacher	104	4.192	4	0.701	0.837	-0.672	2.535
If the lesson/class is boring, I tell the teacher	104	2.144	2	0.96	0.98	0.643	2.99
If the teacher is unfair, I tell him	104	3.558	4	1.239	1.113	-0.549	2.839
If the teacher is unfair, I tell my parents	103	3.942	4	1.134	1.065	-0.912	3.17
Teachers have to give good classes	104	4.615	5	0.491	0.701	-2.2	9.064
If I am not satisfied with a mark, I complain to the teacher	102	3.588	4	1.314	1.146	-0.416	2.388
If the equipment of the school is bad, I complain	104	2.702	3	1.337	1.156	0.258	2.179

Item	N	mean	median	variance	s.d.	skewness	kurtosis
If I have problems with the teacher, I complain	103	3.291	3	1.385	1.177	-0.109	2.056
Parents (school)							
School is there to impart knowledge	177	4.757	5	0.23	0.48	-1.798	5.392
Teachers should give good classes	177	4.763	5	0.205	0.452	-1.598	4.444
Teachers should foster child's talents	177	3.904	4	0.883	0.94	-0.426	2.409
If child has bad grades, I ask the teacher	176	3.318	3	1.075	1.037	-0.14	2.588
I participate actively in parent-teacher meetings	177	3.989	4	1.114	1.055	-1.025	3.624
I complain about incompetent teachers	175	3.32	3	1.196	1.094	-0.183	2.156
I contact school if sth. is going wrong	177	4.373	4	0.519	0.721	-1.057	3.981
I never question teachers' opinions	177	1.96	2	0.788	0.888	0.517	2.573
If child has problem with teacher, I go to the school director	177	3.977	4	1.102	1.05	-0.96	3.313
Parents (government agencies)							
Agencies are there to help me	181	4.409	5	0.587	0.766	-1.288	4.712
They should take time for me	181	4.199	4	0.505	0.71	-0.491	2.749
They should address my needs	180	3.861	4	0.735	0.857	-0.371	2.752
I would insist on getting help	181	3.823	4	0.78	0.883	-0.328	2.599
If something is not clear, I ask	181	4.724	5	0.223	0.473	-1.314	3.48
If treated badly, I complain	181	4.017	4	0.939	0.969	-0.695	2.639
If counseling is wanting, I do nothing	181	1.884	2	0.925	0.962	1.022	3.466
If counseling is wanting, I complain	180	3.072	3	1.431	1.196	0.018	2.063

3.3. Gatekeeper bias

Following Bourdieu, previous studies on cultural capital and school performance assume that school, as an institution, discriminates against pupils from lower social classes. However, not many studies rely on statistical analysis to back up their claims using actual measures of the extent to which discrimination associated with cultural capital occurs. To mention one exception, Wildhagen (2009) uses US data to test what she calls the “teacher-selection” effect, or the positive impact of cultural capital on the teacher-pupil relationship, which may affect school grades favorably, net of school grades. Although her results provide no evidence for this form of bias caused by cultural capital and channeled through teachers, the mechanism she describes is much in line with what we call gatekeeper bias (see also Dumais, 2006).

Quantifying discrimination using standardized questionnaires is not an easy task. If one were to ask teachers directly about discrimination, the social desirability effects would be too strong and results would be biased. It is part of the ethos of school teachers to treat pupils equally. Moreover, even if they did treat children differently on questionable grounds, discrimination has been shown to occur at an unconscious level and thus it is likely to remain undetected for individuals practicing it (Fiske, 1998). Compared to

asking teachers, turning to children and their discrimination experiences appears to be more likely to work using a questionnaire.

To measure gatekeeper bias we used a modified version of the scale on perceived gender and racial discrimination developed by the MADICS longitudinal study.⁵ The scale was originally administered to adolescents in school context. It asks on a five-item scale about the frequency of perceived differential treatment by peers and teachers due to race or gender. Since we are interested in gatekeepers and not in peers, we only used the items that refer to teachers. Further, to adapt the scale to the purposes of our study we made three modifications to the items.⁶ First, we substituted the five-item scale with a yes/no answer. This makes the question easier to answer for younger children. Second, we excluded the fifth item on counseling, which does not apply to primary school children. Third, we asked about perceived discrimination without explicitly mentioning any particular factor causing it. In the original wording of the scale, race and gender are suggested as causing differential treatment. Following the same strategy to measure class-related discrimination would be problematic. For one thing, it would be questionable to assume that adolescents, not to mention primary school children, have a class identity that is as clear as their gender or ethnic identity might be. In addition, by wording the question without narrowing the possible causes of discrimination allows us to assess the most likely cause of differential treatment by means of a multivariate analysis that includes gender, ethnicity, and class simultaneously. **Table 4** summarizes the items included in the scale and the observed frequencies of gatekeeper bias by age group. Items were answered with yes or no.

Table 4. Sense of Entitlement (Children and Adolescents)

Item	N	mean	median	variance	s.d.	skewness	kurtosis
Children							
teachers call on you less often than they call on other kids	58	1.707	2	0.211	0.459	-0.909	1.826
teachers grade you harder than they grade other kids	55	1.927	2	0.069	0.262	-3.291	11.828
you get disciplined more harshly by teachers than other kids do	58	1.931	2	0.065	0.256	-3.402	12.574
teachers think you are less smart than other kids	56	1.911	2	0.083	0.288	-2.881	9.298
Adolescents							
teachers call on you less often than they call on other kids	98	1.827	2	0.145	0.381	-1.725	3.975
teachers grade you harder than they grade other kids	101	1.911	2	0.082	0.286	-2.884	9.32
you get disciplined more harshly by teachers than other kids do	103	1.942	2	0.055	0.235	-3.772	15.229
teachers think you are less smart than other kids	103	1.942	2	0.055	0.235	-3.772	15.229

⁵ <http://www.rcgd.isr.umich.edu/pgc/home.htm>

⁶ See Appendix for the wording and items of the original scale

Data shows that with the exception of the first item, the prevalence of perceived discrimination is low. A total of 10 individuals report feeling discriminated according to items 2 to 4, which corresponds to around 5% of all children and adolescents interviewed. An additional 10% did not answer the question at all.

In the following two sections, we test both internal and external consistency for sense of entitlement, concerted cultivation, and gatekeeper bias. External validity was tested based on expected differences in scale values according to parental income, education, and class position, which are widely accepted measures of parental socio-economic background. Households were classified according to their quintile position in the observed net income distribution. To assign a value to household education and class, the highest value of parental schooling and EGP class observed was used.

4. Reliability analysis

4.1. Concerted cultivation

To test the reliability of our scale we used factor analysis and found a one factor solution. Items 2 (time for myself), 6 (membership fee), 7 (equipment costs) and 8 (time expenditure) load high on the scale. No additional factors could be estimated out of the remaining items with an eigenvalue over one. The resulting scale consists of items which indicate time or financial reasons for parents to let their child participate in organized activities, and thus are mostly a measure of parental material resources, not of parenting styles. For this reason, we expect to get the best information concerning parents' concerted cultivation from the first item (positive development). Unfortunately, as mentioned above, there is almost no variation in the responses to this item. All parents see a positive development of their children as a reason to sign them up for organized activities. This strong agreement could be explained by the homogeneity of our sample and should be explored further in future studies using larger and more heterogeneous samples.

4.2. Sense of entitlement

To test the reliability of our scale we estimated Cronbach's alpha. The distribution of most of the items in all age groups are skewed. For children, the consistency of the scale ($\alpha = .40$) is unacceptable, since $\alpha < 0.5$ (Kline 2013). By dropping the third and sixth item, consistency increases slightly ($\alpha = .42$), but alpha values are still low. The consistency of the scale for adolescents, by contrast, is higher ($\alpha = .67$) and above the 0.5 threshold. Similar results are obtained for parents. Combining all items in one scale, including both schools and agencies, the internal consistency is acceptable ($\alpha = .72$). In short, the internal consistency increases with age, from a low consistency in children to an acceptable consistency in adolescents, and a high consistency in parents.

4.3. Gatekeeper bias

The Cronbach's alpha coefficient for the scale composed of items 1 to 4 is 0.55, a rather poor fit. Despite the low correlation among items, they still build a cumulative scale. To assess scale reliability with a cumulative model, Mokken scale analysis was used (Mokken, 1971; Molenaar, 1997).⁷ To assess scalability using Mokken scaling, a Loevinger H coefficient is computed (Loevinger, 1948). For our perceived discrimination scale, the Loevinger H coefficient equals 0.54.⁸ This suggests that the scale is strong and conforms satisfactorily to a hierarchical scale structure. With these results in mind, we built a gatekeeper-bias index, an additive index with the information of items 1 to 4. The resulting index is highly skewed, with most children reporting not having any experience of discrimination (roughly 70%) and only a minority reaching values of 3 or 4 (below 5%).

5. Validity analysis

5.1. Concerted cultivation

Based on the extracted scale from the factor analysis, we built a new variable in which high values means that parents tend to give less importance to time for themselves, membership fees, equipment costs as well as time expenditures as reasons to let their children participate in organized activities. **Table 5** shows the mean values for the new variable for each schooling group (*Hauptschule, Realschule, and Abitur*), income quintile group as well as parental classes measured by EGP (I+II, III+Iva,b, V+VI, VIIa).

⁷ Mokken scaling is probabilistic and non-parametric. It can be understood as a non-deterministic extension of Guttman scaling. The model poses the existence of a unidimensional latent trait related to observed items in a hierarchical way. Popular item scores or "easy" items are associated with lower scale values, while uncommon or "difficult" item scores are related to higher scale values. Thus, for example, if a sizable proportion of all children tend to be called less by teachers but only a few feel teachers think they are less smart, being called less would be an indicator of low perceived discrimination while being called less and considered less smart *at the same time* would denote high perceived discrimination.

⁸ Reliability is defined as a consistent progression from easy to difficult items associated with non-decreasing probabilities on a latent dimension, rather than a linear correlation among equally distributed items. The maximum value $H=1$ denotes perfect scale consistency. Values above 0.3 are acceptable. Above 0.5, the scale is considered strong (Mokken, 1971). The analysis was conducted using Stata (Hardouin & Bonnaud-Antignac, 2011)

Table 5. Mean values of concerted cultivation by parental education, income, and class.

	Parental schooling		Income		Class - EGP 7
Hauptsch.	0.31	Quintile 1 (low)	0.79	I+II	-0.32
Realsch.	0.03	Quintile 2	-0.18	III	0.07
Abitur	-0.11	Quintile 3	0.08	IVa,b	0.33
		Quintile 4	0.38	V+VI	-0.34
		Quintile 5 (high)	-0.57	VIIa	0.04

Applying an Anova for each dimension of social stratification, results suggest that although there is a pattern that less educated parents and also lower class parents measured by EGP have higher values on the new variable (when excluding classes V+VI and VIIa because of the low numbers of cases), these differences are not statistically significant. Indeed, only groups defined by parental income are statistically distinguishable from each other, which makes sense since the scale correlates mostly with material resources. This is not what we expected from our measure of concerted cultivation. The scale simple measures resource constraints and not parenting styles.

Table 6. Stratification of concerted cultivation by parental education, income, and class based on ANOVA.

	Income 5 Quintiles	Parental schooling (Hauptsch., Realsch., Abitur)	Class - EGP 7 I+II, III, IVa,b, V+VI, VIIa
F	7.55	1.28	1.77
df	4	2	4
Pvalue	0.0000	0.2834	0.1422

5.2. Sense of entitlement

We built a new variable containing mean values for all items for each person. Items with a negative formulation were recoded to give the scale an unambiguous positive interpretation. **Table 7** shows the mean values for the new variable for groups defined based on parental schooling (Hauptschule, Realschule and Abitur), income quintile as well as parental classes measured by EGP (I+II, III+IVa,b, V+VI, VIIa – note that the last two classes have a very low frequency). Average values of sense of entitlement suggest the opposite relationship we expected: the lower the education, income, and class, the higher the sense of entitlement, at least descriptively.

Table 7. Mean values of sense of entitlement by parental education, income, and class.

	Parental schooling				Income				Class - EGP 7		
	Children	Adolesc.	Parents		Children	Adolesc.	Parents		Children	Adolesc.	Parents
Hauptsch.	3.69	3.61	4.10	Quintile 1 (low)	3.44	3.74	4.06	I+II	3.32	3.69	4.04
Realsch.	3.34	3.7	4.09	Quintile 2	3.32	3.78	4.01	III	3.28	3.66	4.07
Abitur	3.32	3.7	4.03	Quintile 3	3.46	3.55	4.05	IVa,b	3.17	-	4.04
				Quintile 4	3.31	3.77	4.11	V+VI	3.17	3.68	4.17
				Quintile 5 (high)	3.2	3.61	4.01	VIIa	4	4.13	3.92

Using an ANOVA to test the differences described in **table 7**, results suggest that the dimension is not socially stratified. Neither for children and adolescents nor for parents is sense of entitlement different across income groups, parental schooling, or class (**table 8**).

Table 8. Stratification of sense of entitlement by parental education, income, and class based on ANOVA.

	Income			Parental schooling			Class - EGP 7		
	5 Quintiles			(Hauptsch., Realsch., Abitur)			I+II, III, IVa,b, V+VI, VIIa		
	Children	Adolesc.	Parents	Children	Adolesc.	Parents	Children	Adolesc.	Parents
F	1.734	4.506	2.350	3.235	0.394	1.299	3.374	2.065	1.970
df	4	4	4	2	2	2	4	3	4
Pvalue	0.7806	0.3418	0.6707	0.1945	0.8212	0.5223	0.4898	0.5591	0.7414

5.3. Gatekeeper bias

As argued above, children and adolescents growing up in families at the bottom strata of income, education, and occupation, should experience teacher discrimination at higher rates than those at the top. Inspection of the data suggests that gatekeeper bias tends to be lower for children and adolescents in households where parents have higher levels of education. Higher income and class position do not display a clear gradient (See **table 9**). In the case of class, it is important to recall that most households are classified under classes I, II and III, and thus the remaining categories are sparsely populated.

Table 9. Mean values of gatekeeper bias by parental education, income, and class.

	Parental schooling			Income			Class - EGP 7	
	Children	Adolesc.		Children	Adolesc.		Children	Adolesc.
Hauptsch.	0.50	0.27	Quintile 1 (low)	0.43	0.30	I+II	0.19	0.25
Realsch.	0.24	0.40	Quintile 2	0.08	0.47	III	0.22	0.31
Abitur	0.31	0.16	Quintile 3	0.27	0.20	IVa,b	0.25	0.21
			Quintile 4	0.36	0.16	V+VI	1	0.14
			Quintile 5 (high)	0.40	0.17	VIIa	0.50	0.29

Given the skewness of the gatekeeper bias index, we used the Kruskal-Wallis test of mean rank differences, a standard non-parametric equivalent of a one-way ANOVA, to test whether these differences in the frequencies of perceived discrimination are statistically significant. The Null hypothesis of the Kruskal-Wallis test is that the gatekeeper bias for individuals of households grouped by income, education, or class, belongs to the same population. Tests are conducted separately for children and adolescents (**table 10**). Considering the prevalence of school tracking in the German educational system, it is plausible to assume that children are more exposed to teacher discrimination before tracking, when all pupils attend the same school and classes tend to be more heterogeneous, than after tracking has taken place and children with similar characteristics have been put into different schools.

Table 10. Stratification of gatekeeper bias by parental education, income, and class based on Kruskal-Wallis test.

	Income 5 Quintiles		Parental schooling (Hauptsch., Realsch., Abitur)		Class - EGP 7 I+II, III, IVa,b, V+VI, VIIa	
	Children	Adolesc.	Children	Adolesc.	Children	Adolesc.
Chi-squared*	5.428	8.249	1.315	6.745	9.397	0.683
df	4	4	2	2	4	4
Pvalue	0.2462	0.0829	0.5182	0.0343	0.0519	0.9534

* Chi-squared values corrected for ties.

Results are mixed. For children, while there is no evidence that gatekeeper bias differs depending on household income and parental schooling, parental class seems to matter. By contrast, income and parental schooling do reflect differences in perceived teacher discrimination among adolescents, but not class position as measured by the EGP scheme. This inconsistency across age groups suggests that the construct measured varies for each age bracket. In theory, if gatekeeper bias exists, it should be activated by the same class markers irrespective of the age of the child. In our data, this is not the case.

In short, our measures seem to lack a clear external validity, despite acceptable internal consistency. Concerted cultivation does not appear to measure parenting styles but captures parental resource constraints instead. Contrary to our expectations, sense of entitlement is negatively related to socioeconomic status. Only gatekeeper bias appears to be consistent with our expectations, especially if class and parental education are considered. However, the validity of the measure is not robust with respect to age.

6. Multivariate analysis

To further explore the empirical validity of our constructs, we tested the effect of cultural capital on school performance in a multivariate analysis. The main premise of our analysis is that the two definitions of cultural capital (tastes and skills) should be measured separately and treated as independent causal mechanisms responsible for different effects on school performance. Cultural tastes are causally efficient through signaling of class membership and teacher class-bias in school. Assuming that the teacher knows the parents of the child, gatekeeper bias can be activated by parental cultural tastes, too. By contrast, skills directly affect performance either in the form of general skills (e.g., self-efficacy) or as context-specific skills (e.g., sense of entitlement). Here, highbrow activities may play a role, too, but only insofar as they promote the development of skills and not simply because of their signaling potential to gatekeepers. Accordingly, the traditional measures of cultural capital as highbrow activities should distinguish between tastes, which activate bias by gatekeepers (parental activities), and active participation in activities, which contribute to the development of abilities (children's and adolescents' activities). Based on this reasoning, we formulated three general hypotheses connecting cultural capital both in the form of skills and tastes that affect school grades for children and adolescents.

6.1. Hypotheses

Controlling for parental resources (education, income and social class), we expect the following to be true:

- (i) Gatekeeper bias affect grades negatively.
- (ii) Participation in leisure activities that promote skill development have a positive impact on grades.
- (iii) Both general (self-efficacy) and context-specific skills (sense of entitlement) are positively related to grades.

6.2. Measures

- Grades

The dependent variable in our analysis is school grades. For children, grades for math and language (German class) were collected. For adolescents, the grade for foreign language was also included. In the German educational system, 1 is the highest grade and 5 the lowest. To make the interpretation of coefficients more intuitive the scale was reversed (5 = max; 1 = min).

- Parental resources

Education was measured using a dummy variable with a value of 1 if the maximum educational attainment of parents is equal to higher secondary school (*Abitur*). Similarly, class position was operationalized using the maximum value in the household in the 7-Class version of the EGP Scheme (Eriksson and Goldthorpe 1992). A dummy variable was constructed with the value 1 if the maximum class in the household is the service class I and II. Income corresponds to yearly net income in EUR (thousands). We also include a categorical variable for the number of books in the household: none, 10 to 50, 50 to 100, 100 to 200, 200 to 500, 500 to 1,000, 1,000 and more. We took the maximum value for the household as reported by any of the two parents.

- Parental highbrow activities

We constructed an index with the sum of frequencies of the following activities by taking the highest value of each of them among parents (4 = every day, 3 = more than once a week, 2 = at least once a week, 1 = rarely, 0 = never): attending the opera, theater, ballet or classical music, going to a museum or an art exhibition, engaging in musical or artistic activities, and reading. The index is defined in the interval [0-16].

- Leisure activities

An index was built with the sum of frequencies of activities (4 = every day, 3 = more than once a week, 2 = at least once a week, 1 = rarely, 0 = never) of doing sports, playing an instrument, singing or dancing, and making theater. These are activities that may have a positive impact on skill development (e.g., Jaschke et al., 2013, Schellenberg 2011). The index is defined in the interval [0-12].

- Gatekeeper bias

An index with values between 0 and 4 was defined as explained in **section 3.3**.

- Sense of entitlement

An additive index was constructed with items with a high correlation that were collected for both age groups, children and adolescents. This corresponds to items 3, 4, and 5 in **table 3, section 3.2**. The resulting index is defined in the interval [0-12].

- Self-efficacy

The self-efficacy scale in school context was used (Schwarzer & Jerusalem, 1999). An additive index was built based on the 7 items that compose the scale. The resulting values were standardized around the mean. This instrument was only collected for adolescents (see **table 1, section 2**).

6.3. Analytical strategy

Two models were fitted using OLS with robust standard errors at the household level to take advantage of the clustering of children and adolescents in the same family. Model 1 includes household variables only (education, income, class, number of books, and parental highbrow activities). Model 2 adds individual variables (activities, gatekeeper bias, sense of entitlement, and self-efficacy). Since self-efficacy and grades in foreign language were collected for adolescents only, the two models are fitted separately for children and adolescents at the same time using variables common to both age groups (Model 1a, 2a), and then for adolescents only (Model 1b, 2b).

6.4. Results

Estimated coefficients are summarized on **tables 10 and 11**.

Table 10. OLS estimates children and adolescents

<i>(Dependent variable = grades)</i>	Model 1a		Model 2a	
	<i>(German)</i>	<i>(Math)</i>	<i>(German)</i>	<i>(Math)</i>
Household				
Max schooling (upper secondary = 1)	0.34*	0.31	0.26	0.15
	(0.20)	(0.28)	(0.20)	(0.27)
Income (net, 000)	-0.04	0.01	-0.05	0.00
	(0.06)	(0.07)	(0.06)	(0.07)
Max EGP - Class (service class)	0.09	0.15	0.12	0.22
	(0.17)	(0.22)	(0.18)	(0.22)
Max – highbrow activities	-0.01	-0.07	-0.02	-0.07
	(0.04)	(0.05)	(0.04)	(0.05)
Number of books	0.05	0.09	0.06	0.10
	(0.08)	(0.10)	(0.07)	(0.09)
Children/adolescents				
Sex (1 = male)	-0.40***	0.05	-0.29*	0.23
	(0.17)	(0.20)	(0.17)	(0.19)
Gatekeeper bias			-0.19	-0.23

<i>(Dependent variable = grades)</i>	Model 1a		Model 2a	
	<i>(German)</i>	<i>(Math)</i>	<i>(German)</i>	<i>(Math)</i>
Sense of entitlement			(0.16)	(0.15)
			-0.04	-0.09***
			(0.03)	(0.03)
Performative activities			0.03	0.09**
			(0.04)	(0.04)
_cons	3.48	3.03	3.59	3.12
	(0.40)	(0.50)	(0.48)	(0.54)
N	118	119	118	119
N_clust	90	91	90	91
R2_adjusted	0.048	0.004	0.061	0.084

Standard errors in parenthesis (* p<.1; ** p<.05; *** p<.01)

Table 11. OLS estimates adolescent only

<i>(Dependent variable = grades)</i>	Model 1b			Model 2b		
	<i>(German)</i>	<i>(Math)</i>	<i>(Foreign Lang.)</i>	<i>(German)</i>	<i>(Math)</i>	<i>(Foreign, Lang.)</i>
Household						
Max schooling (upper secondary = 1)	0.27	0.09	0.47**	0.25	-0.03	0.46**
	(0.19)	(0.29)	(0.22)	(0.19)	(0.29)	(0.21)
Income (net, 000)	-0.01	0.06	-0.04	-0.02	0.06	-0.05
	(0.05)	(0.07)	(0.05)	(0.05)	(0.08)	(0.05)
Max EGP - Class (service class)	0.20	0.18	0.49**	0.19	0.29	0.49**
	(0.19)	(0.24)	(0.21)	(0.18)	(0.24)	(0.19)
Max – highbrow activities	0.00	-0.06	0.03	0.03	-0.05	0.07
	(0.04)	(0.06)	(0.05)	(0.05)	(0.06)	(0.05)
Number of books	0.03	0.09	0.00	-0.03	0.05	-0.08
	(0.08)	(0.11)	(0.07)	(0.08)	(0.11)	(0.08)
Adolescents						
Sex (1 = male)	-0.27	0.12	-0.18	-0.38**	0.17	-0.39**
	(0.17)	(0.22)	(0.19)	(0.18)	(0.22)	(0.18)
Gatekeeper bias				-0.11	-0.15	-0.03
				(0.12)	(0.13)	(0.14)
Sense of entitlement				0.01	-0.07	0.02
				(0.04)	(0.05)	(0.04)
Performative activities				0.00	0.10**	0.00
				(0.05)	(0.05)	(0.04)
Self-efficacy				0.30**	0.14	0.43***
				(0.11)	(0.14)	(0.11)
_cons	3.18	2.76	2.92	3.38	2.88	3.05
	(0.38)	(0.52)	(0.36)	(0.58)	(0.69)	(0.55)
N	93	94	92	91	92	90
N_clust	73	74	72	73	74	72
r2_a	0.016	-0.024	0.076	0.073	0.011	0.215

Standard errors in parenthesis (* p<.1; ** p<.05; *** p<.01)

Hypothesis (i): Gatekeeper bias. In the models with data for children and adolescents (**table 10**), the effect of parental highbrow activities was negative, small, and statistically not significant. This was also true after controlling for perceived gatekeeper bias in model 2. This result contradicts previous research on the positive correlation between parental cultural capital as measured through their leisure activities and children's school grades. By contrast, and consistent with our hypothesis, gatekeeper bias had a negative effect on school performance, both on language and math grades. The effect, however, was estimated with broad confidence intervals, especially for language grades. The same conclusion can be drawn from the analysis conducted with data on adolescents only (**table 11**). The effect of gatekeeper bias was the highest for math grades and the lowest for foreign language, even if all coefficients had rather broad confidence intervals.

Hypothesis (ii): Leisure activities that promote skill development. Children and adolescents who engage in activities such as playing an instrument, acting, or sports, tended to have higher grades. The effect was small but positive, particularly for math grades, for which the coefficient was statistically significant and in size as large as the effect of moving one value up on the scale of how many books are available in the household. The effect of leisure activities found in both samples (children and adolescents, and adolescents only) remained even after controlling for context-specific skills (sense of entitlement) and for general skills (self-efficacy).

Hypothesis (iii): General and context-specific skills. In the combined sample of children and adolescents, and contrary to our expectations, the effect of sense of entitlement was negative. Although the size of the coefficient was small, estimates were statistically significant for math grades and comparable in size (though with the opposite sign) to the effect of leisure activities that promote skill development. If only adolescents are considered, the effect tended to be zero for all subjects and none of the coefficients was statistically different from null. By contrast, the effect of self-efficacy (only measured for adolescents) was sizable and positive. The positive impact of self-efficacy was small for math grades, larger for German classes and largest for second language. Among individual covariates, self-efficacy had by far the biggest impact on grades, far larger than leisure activities and only comparable to parental educational level.

7. Discussion

The results of our analysis using newly developed measures for concerted cultivation, sense of entitlement, and gatekeeper bias, suggested that focusing on the mechanisms that connect cultural capital to school performance is promising. Although in our data parental highbrow activities did not predict school grades, other constructs such as gatekeeper bias, active participation in leisure activities that promote skill development, and general skills, as measured by self-efficacy, seemed to mediate the relationship between social origin and school performance. The effect of sense of entitlement, as a measure of context-specific skills, did not have an impact on grades. In short, cultural capital may affect school performance through the combined effect of skills, some of which may be indirectly fostered by leisure activities, and through teacher discrimination. These are mechanisms that should be put on top of the empirical agenda for the study of cultural capital in the future.

It is important to conclude by recalling the explorative character of our study and by pointing to the difficulties we faced with our measures. Our sample was selective in two ways. First, it was geographically confined to one city in Germany. Second, the composition of the population in the city we chose to conduct our study in was rather biased toward the service class. The data was also cross-sectional, so the usual caveats apply. Even though our measure of sense of entitlement and concerted cultivation did not appear to meet the standards of external validity that we expected, the scales we proposed should not be ignored and may be used as a starting point for the development of better measures of these constructs in future studies.

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Appendix

MADICS scale of perceived differential treatment by race and gender

Source: <http://www.rcgd.isr.umich.edu/pgc/home.htm>

- Perceived Differential Treatment by Race/Racial Division

At school, how often do you feel...

- a) that teachers call on you less often than they call on other kids because of your race?
- b) that teachers grade you harder than they grade other kids because of your race?
- c) that you get disciplined more harshly by teachers than other kids do because of your race?
- d) that teachers think you are less smart than you really are because of your race?

Scale (a-d) 1: never ; 2: a couple times each year; 3: a couple times each month; 4: once or twice each week; 5: every day

- e) How often have you felt that teachers/counselors discourage you from taking certain classes because of your race?

Scale (e) 1: never ; 2: once or twice; 3: three or four times; 4 five or six times; 5: more than six times

- Perceived Differential Treatment by Gender

At school, how often do you feel...

- a) that teachers call on you less often than they call on kids of the opposite sex?
- b) that you get disciplined more harshly by teachers than kids of the opposite sex?
- c) that teachers think you are less smart than kids of the opposite sex?

Scale (a-c) 1: never ; 2: a couple times each year; 3: a couple times each month; 4: once or twice each week; 5: every day

- d) How often have you felt that teachers/counselors discourage you from taking certain classes because of your sex?

Scale (d) 1: never ; 2: once or twice; 3: three or four times; 4 five or six times; 5: more than six times

- e) How often have you heard teachers, or other students, put down kids in class by using bad words or expressions about their sex?

Scale (e) 1: very little; 2: a little; 3: some; 4: a fair amount; 5: a lot

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Previously published SFB 882 Technical Reports:

Meinert, Julia & Sünkel, Zara (2013): *Die Entstehung und Entwicklung devianten und delinquenten Verhaltens im Lebensverlauf und ihre Bedeutung für soziale Ungleichheitsprozesse: Methodendokumentation der Schülerbefragungen in Dortmund und Nürnberg. Erste Erhebung 2012*, SFB 882 Technical Report Series, No. 01, DFG Research Center (SFB) 882 From Heterogeneities to Inequalities, Bielefeld.

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