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Perceiver Effects and Socioeconomic Background: Contrasting Parent-Reports against Teacher-Reports of Elementary School Students' Personality

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ABSTRACT

Familial socioeconomic background can impact not only academic success, but also the personality of offspring. Yet, there is little evidence on whether it might influence how parents describe their children's personality. To fill this gap, we used latent multitrait-multimethod (CTCM-1) models to examine familial socioeconomic background as possible predictor of parental perceiver effects regarding their offspring's personality by contrasting parental assessments against teacher-reports. Study 1 (N=5,798) investigated reports on elementary school students' Big Five and Study 2 (N=3,771) focused on school-related personality facets. Socioeconomic status predicted the parental report in both studies. Participation in high-culture arts incrementally predicted parental report over and above socioeconomic status. Specifically, parents with higher participation in high-culture arts rated their children in a more positive light than class teachers. These background specific perceiver effects might reflect both varying personality judgments or actual differences in behavior.

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Introduction

In large-scale assessments, the assessment of students' personality has become increasingly important in addition to the measurement of cognitive outcomes. While temperament is used to describe interindividual differences of preschool children (Shiner, 2006), the Big Five (Goldberg, 1990) personality structure is assumed to start to emerge once children enter school (Hill & Edmonds, 2017). Personality traits of adults are often measured with self-reports, but adult raters such as parents and teachers are commonly employed for the assessment of children's and adolescents' personality. Since parents and teachers know the target from different social contexts that vary in familiarity and setting, contrasting parent- and teacher reports against each other offers the opportunity to investigate parental *perceiver effects* (Kenny, 1994). This can add to the understanding of the formation of personality assessments when using parent-reports.

The parental socioeconomic status (SES) has, thus far, been considered as a possible influence on parental reports of children's psychopathology and behavioral problems (Duhig et al., 2000), but recently similar effects have also been reported regarding temperament measures (Strickhouser & Sutin, 2020). Economic hardship in low SES households is assumed to impact parenting styles and thereby children's socioemotional outcomes (The Family Stress Model, Conger and Conger, 2002). It might also affect the behaviors children exhibit and which characteristics are salient to parents, possibly having an impact on availability of trait information as well as utilization of it in parental personality judgments (Funder, 1995). Additionally, familial socioeconomic background might be better represented by high-culture arts participation than SES alone (DiMaggio, 1982). High-culture arts participation refers to the attendance of fine arts such as the opera or art museums (DiMaggio & Mukhtar, 2004) and can be considered a narrower, behavior-oriented background measure referring to activities and lifestyle of the family. This measure, thus far, has not been considered as a predictor of parental reports regarding offspring's personality. Our study investigated effects of SES and high-culture arts participation on parental report when contrasted against teacher-reports on (a) the Big Five as well as (b) school-relevant personality facets of elementary school students.

Adult assessments of children's personality

Interindividual differences of toddlers and preschool children are conceptualized as temperament (Shiner, 2006) with the Big Five (Goldberg, 1990) assumed to develop alongside. Current literature (De Pauw, 2017) highlights temperament's status as distinct characteristics while former conceptions (Digman, 1994) described it rather as a precursor of personality. Herzhoff et al. (2017) assume temperament and the Big Five to share some content such as the propensity to experience negative and positive emotions, but also to entail

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particular distinct characteristics that can explain unique variance in outcomes. The Big Five structure is assumed to emerge more clearly once children enter school and solidify in self-assessments during adolescence (Hill & Edmonds, 2017). Measelle et al. (2005) showed that children as young as 5 could reliably describe themselves on the Big Five when the Berkeley Puppet Interview method was administered. At ages 6 and 7 children's self-reports exhibited the same consistency as self-assessments of college students. As summarized by Caspi and Shiner (2006), the Big Five structure has been found in parental assessments of children as young as 3 years (Halverson et al., 2003) as well as teacher assessments of elementary school students (Goldberg, 2001).

As such, parents and teachers are two types of adult raters often used in research on children's personality. The Trait-Reputation-Identity (TRI) Model (McAbee & Connelly, 2016) recently highlighted the relevance of the *reputation* factor of personality assuming that other-raters can contribute information incremental to self-ratings (Vazire, 2010). McAbee and Connelly (2016) also address possible differences between several other-raters in terms of acquaintanceship context. Specifically, they point out that comparing assessment by raters who know the target from different contexts offers the opportunity to disentangle situation-specific *reputations*. Although the TRI Model has not specifically been applied to children's personality that is still developing, it can help understand differences between various raters. Parents and teachers provide assessments of children's personality from two different contexts that vary in familiarity and setting.

Neither of the assessments is superior to the other, but rather represents unique perspectives. For one, parents can be assumed to be highly familiar with their child (Tackett et al., 2016) since they could be seen as the most important adult interaction partners of offspring (Luan et al., 2017), while teachers are substantially less familiar with their students. Teachers, moreover, get to know students for the most part in achievement-oriented situations and from their classroom behavior. Parents, on the other hand, experience their offspring in a range of different situations that are predominantly not focused on achievement. Teacher- and parent-reports on children's personality, therefore, could be seen as structurally different ratings (Eid et al., 2016) that exhibit unique variance which can be analyzed when different perspectives are contrasted against each other.

The investigation of such rater-specific *perceiver effects* (Kenny, 1994) can help in understanding the formation of personality judgments. Within the Realistic Accuracy Model (RAM, Funder, 1995), raters' judgments are influenced by (a) the relevance of the trait for the rater, (b) the availability of trait information, (c) the detection of trait information, and (d) the utilization of it in the judgment. Two dimensions of traits are assumed to influence trait information. Trait *observability* (John & Robins, 1993) can lead to discrepancies in ratings as some traits, such as Conscientiousness, are based on clear behavioral cues while others, such as Emotional Stability, are associated with internal processes that are not easily observable. Moreover, trait *evaluativeness* (John & Robins, 1993) can result in distorted ratings when the self or positively inclined raters interpret traits as Openness and Agreeableness in a distinctly favorable manner. Additionally, raters themselves can differ regarding their perceptiveness, judgmental ability and (non) defensiveness according to the RAM (Funder, 1995). Since parents observe their offspring in a range of different situations over a long period of time, they should have abundant information on behavior-centered traits and also some impressions of traits low in observability. Tackett (2011) pointed out that parental judgments might be somewhat guided by the parental role, meaning that behaviors that ease and reward parenting – for example conscientious and agreeable conduct – might be particularly salient to parents. As for teachers, their personality judgments might be primarily based on cues that are relevant for academic achievement and good classroom behavior. Due to the teachers' lower familiarity with the target compared to parents, they might have notably less information on students' traits low in observability. With regard to trait evaluativeness, Tackett (2011) has argued that parents might be inclined to describe their offspring in a particularly positive manner which could be accounted for by parents' emotional investment in the target (Vazire, 2010). Teachers, on the other hand, are not emotionally invested in their students and therefore might be less motivated to describe them particularly positively.

Meta-analytically, agreement between self- and parent-reports was found to be highest for Conscientiousness, followed by Openness and Extraversion and lower for Emotional Stability and Agreeableness (Connelly & Ones, 2010) for individuals older than 14. A similar pattern was found for the agreement of parental reports with teacher-reports on adolescents aged 14–17 (Laidra et al., 2006). Parental perceiver effects have, until now, mainly been studied with regard to problematic or pathological characteristics of children. These findings might provide some indications for processes underlying the formation of parental judgments of their offspring. For example, agreement between parent and child regarding problematic child behavior has been shown to be influenced by saliency to the parent, saliency to the child as well as observability/willingness to report in a study on 7–17-year-olds (Karver, 2006). One meta-analysis (Duhig et al., 2000) on parental correspondence regarding adolescents' psychopathology found higher correspondence in ratings of internalizing and externalizing problems for middle socioeconomic status compared to low SES. The familial socioeconmic background has, thus far, not been considered with regard to perceiver effects of children's personality.

Familial socioeconomic background and perceiver effects

The impact of familial socioeconomic background on children's outcomes has been described in the Family Stress Model (FSM) (Conger & Conger, 2002) proposing that SES exerts an influence on children through parental characteristics. In the FSM, economic pressure resulting from economic hardship in low SES families is assumed to engender parental maladjustment and result in interparental conflict as well as harsh and inconsistent parenting. This disruptive parenting is, furthermore, presumed to be associated with decreases in competent functioning as well as increases in behavioral

problems of offspring. On the other hand, the Investment Model (Bradley & Corwyn, 2002) assumes that children's outcomes are mainly influenced by parental investments that are based on increased resources in families with higher SES. These resources can be invested in children's development promoting their academic and social competencies.

Theoretical or empirical considerations of a possible influence of familial socioeconomic background on parental reports regarding offspring's personality are missing in current research. However, identifying possible parental characteristics that could lead to interindividual differences in parental assessments could be relevant for increasing the quality of parental personality reports (Clark et al., 2017). The existing literature focuses on ratings of children's psychopathology, De Los Reyes and Kazdin (2005) summarizing that SES might have an influence on informant discrepancies but results being, as of yet, inconsistent across studies. With regard to personality, the formation of parental judgments might be affected by familial SES in two regards.

According to the FSM, low familial SES is assumed to possibly bring about problematic characteristics of children. They might, therefore, exhibit more cues related to a dysfunctional personality in such a family atmosphere which might, in turn, influence the parental perspective on them. Moreover, parental maladjustment and conflict could also have an influence on how parents form their judgment. Dysfunctional personality cues might be more salient to parents who are burdened. However it is also possible that low SES might bring about less accurate parental ratings since economic hardship in families can have an influence on parenting styles (Conger & Conger, 2002; Conger et al., 2002) and be possibly associated with lower parental attentiveness resulting in less trait information available for parental judgments.

Following the Investment Model, a high SES might have an impact on parental personality judgments since children could have more possibilities to exhibit cues related to a favorable personality. Parents might, additionally, be more tuned to perceiving these cues as their investments could be accompanied by expectations of advantageous child behavior. Previous studies on the two discussed theoretical models indicate that family stress processes were more predictive of children's socioemotional development while parental investments were more strongly related to cognitive development (Conger et al., 2010). With respect to influences on the Big Five, it is not conclusively resolved which pathways might be most relevant. Examining the possible influence of SES on parental report regarding offspring's personality might be conducive to a better understanding of SES and its consequences for children's outcomes as well as perceiver effects within families.

With respect to measurement of socioeconomic background, SES is the most commonly used metric and usually represented by parental education, income, as well as occupation (House, 2002). In social inequality research, however, participation in the culture of a certain social class is thought to be a more relevant indicator of the family background than mere SES (DiMaggio, 1982). This notion is based upon Bourdieu and Passeron's (1977) theory of *cultural capital* which includes engagement with high-culture arts as a means of distinction from lower social classes.

High-culture arts participation within the family is thought to reflect familial processes that shape familial lifestyle and parental engagement with offspring with regard to cultural activity (Baumert et al., 2003). It is, insofar, a more behavior-oriented representation of familial socioeconomic background. If the latter should be of relevance to the parental report regarding offspring's personality, high-culture arts participation might show incremental effects over and above SES. Drawing on Brunswik's (1956) lens model, Wittmann and Klumb (2006) point out that predictors can fail to correlate with a criterion when their levels of generality are incongruent (see also Wittmann, 1988). High-culture arts participation could be considered a narrower predictor while SES could be seen as broader. The former might accordingly show stronger associations with narrower personality measures on the facet level as opposed to the broader Big Five than the latter. Moreover, the frequency of high-culture arts participation is specific to the family context and known to parents, but not to teachers. When contrasting teacher- and parent ratings of children's personality, if therefore might be particularly associated with parental perceiver effects, but be less relevant to how teachers perceive their students.

A recent meta-analysis (Ayoub et al., 2018) found small associations between parental SES and offspring's Big Five, particularly with regard to Openness, as well as temperament measures. Strickhouser and Sutin (2020) focused specifically on parental reports and showed that lower parental SES was associated with lower parental reports of sociability, higher reactivity, and lower persistence of 4–15-year-olds with effects remaining stable over time. In this study, however, parental reports were not controlled for other- or self-ratings. Generally, specific examinations of possible influences on parental perceiver effects regarding their offspring's personality are scarce in current research. To the authors' knowledge, no empirical investigation thus far has focused on parental perceiver effects regarding children's Big Five and its possible associations with the familial socioeconomic background. The possible relation of participation in high-culture arts with parental reports has also not been explored as of yet. Since parental reports are commonly included in large-scale assessments of youth, the detection of possible parental perceiver effects can be informative as different measures of socioeconomic background might be relevant control variables when examining effects of the parental assessments on outcome variables. They, furthermore, can help in the understanding of the formation of parental judgments of their offspring within the family context.

The present investigation

We present results from two studies on elementary school students personality in order to provide a more comprehensive overview of effects of socioeconomic background on parental report when contrasted against teacher-report and enhance the robustness of our results. Study 1 investigated parent- and teacher-reports on elementary students' Big Five. Study 2

examined parental and teacher-reports on school-related personality facets. We used personality measures with a different breadth in order to gauge whether effects of socioeconomic background might only be relevant on the broad Big Five factor level or also detectable when narrower school-specific personality facets are used. Participation in high-culture arts, furthermore, is a narrower, behavior-oriented measure of socioeconomic background which might mean that it is more strongly associated with narrower personality measures. We amplified existing research by contrasting parental reports against teacher-reports and incorporating nuanced measures of socioeconomic background as well as two operationalizations of children's personality. Neither our research questions, nor the studies, nor our analyses were preregistered making our investigation exploratory. The two studies addressed the following research questions:

1. Is socioeconomic status related to parental ratings of children's personality when contrasted against teacher-ratings?
2. Does participation in high-culture arts predict parental ratings of children's personality when contrasted against teacher-ratings over and above socioeconomic status?

Study 1: Materials and methods

Participants

Data from Starting Cohort 2 (Kindergarten) of the German-wide National Educational Panel Study (NEPS) were used. The NEPS has a longitudinal multi-cohort sequence design and is focused on research on educational processes and developmental trajectories of competences (for details see Blossfeld et al., 2011). Data from the NEPS are only available after completion of a NEPS-data usage agreement and are not publicly accessible. Data collection for Cohort 2 started in 2011 when children were 4 years old and attended preschool. These children were then surveyed in annual follow-ups. We used data from measurement waves 3 (2013, grade 1), 4 (2014, grade 2) and 5 (2014/2015, grade 3) of this cohort. $N = 6{,}201$ parents and $N = 693$ class teachers participated in the relevant waves. Our sample ($N = 5{,}798$) consists of elementary school students for whom at least one of the personality reports as well as at least one of socioeconomic background measures were available. Students in our sample were on average $M = 8.32$ ($SD = 0.50$) years old and 50.7% girls.

Measures

Teacher- and parent-ratings of personality

Parents and teachers rated the personality of the children six to nine months apart: parent-reports were collected from February to May 2014 (wave 4) when children attended grade 2 and teacher-reports from November 2014 to January 2015 (wave 5) when children attended grade 3. The time teachers had spent with the children therefore varied between two and seven months. Both teachers and parents filled out the short version of the Fünf-Faktoren-Fragebogen für Kinder [*Five Factor Questionnaire for Children*] (FFFK-K, Weinert et al., 2007) regarding the child's personality. The FFFK-K consists of 10 items (Table A1 in the Supplementary Material, translated into English by the authors of the current study), two per Big Five factor, and uses a 10-point scale (0–10). The items are constructed as semantic differentials (i.e. for Extraversion the child is to be rated: from 0 "is silent" to 10 "is talkative"). Reports were given by mothers in 89.2% of cases, by fathers in 0.10% of cases, by legal guardians in 0.05% of cases; the relationship was not reported in 10.65% of cases. For teacher-reports, the reliability of the Emotional Stability scale ($\omega = 0.71$) was lowest, followed by Conscientiousness ($\omega = 0.72$), Extraversion ($\omega = 0.76$), Agreeableness ($\omega = 0.77$), and Openness ($\omega = 0.79$). For parent-reports, the reliability of the Emotional Stability scale was lowest ($\omega = 0.58$), followed by Openness ($\omega = 0.63$), Conscientiousness ($\omega = 0.64$), Agreeableness ($\omega = 0.67$), and Extraversion ($\omega = 0.72$). We employed latent variable modeling to account for measurement error in the scales. Teacher-ratings were centered at the class mean, in order to account for possible differences between classes.

Socioeconomic status

Parental socioeconomic status (SES) was measured using the Highest International Socio-Economic Index of Occupational Status (HISEI) representing parental occupational prestige based on parents' self-reported occupation. The HISEI was used as a standardized single indicator for a latent variable representing SES. We assumed a reliability of $\rho = .90$ since parental occupation should be rather stable and the coding of parents' information reliable (Maaz et al., 2009, see). The error variance was fixed to $(1 - \rho)$ times the variance in the sample: $(1 - 0.90)^*1$.

Participation in high-culture arts

Participation in high-culture arts was assessed with three items on the frequency of visits in the last 12 months (1 = "never", 2 = "once", 3 = "2–3 times", 4 = "4–5 times", 5 = "more than 5 times") of (a) museum and exhibition, (b) opera, ballet, classical concert, and (c) theater in 2013 (wave 3). Parents were instructed to answer the items regardless of whether they did these activities with their child, accompanied by others, or alone. The reliability of these three items was $\omega = 0.63$. A latent variable was modeled to represent cultural participation.

Statistical analysis

Model estimation in Mplus

We estimated all models with Mplus 8.4 (Muthén & Muthén, 1998–2017); we provide our Mplus syntax in the Supplementary Material.

Missing data was accounted for by Full Information Maximum Likelihood (FIML). As reported by Enders and Bandalos (2001), FIML is superior to response pattern

imputation and yields unbiased results. Students' class ID was used as a cluster variable to obtain unbiased standard errors. Model fit was assessed using the following criteria: comparative fit index (CFI) and Tucker-Lewis index (TLI) of at least 0.90, root mean square error of approximation (RMSEA) of no more than 0.06, and standardized root mean square residual (SRMR) of 0.08 or lower (Hu & Bentler, 1999; Marsh et al., 2004). We considered the model fit acceptable, when at least two of the fit indices were within these criteria. The full fit statistics are provided in Table A3 of the Supplementary Material. The models fit the data very well with CFIs of at least 0.93, TLIs of 0.91, as well as RMSEAs of 0.05 and lower, and SRMRs of 0.04. To account for multiple tests with 5 tests per predictor, we adjusted the significance level using the Bonferroni correction to $\alpha = 0.05/5 = 0.01$.

Basic models

Since we aimed at analyzing parental perceiver effects contrasting parent-reports against teacher-reports, we applied a specific multitrait-multimethod (MTMM) confirmatory factor analysis (CFA) model namely the correlated trait-correlated method minus 1, CTCM-1, model (Eid, 2000; Eid et al., 2003). In the CTCM-1, one method serves as the *reference method* that is not analyzed separately and the other methods are contrasted against it resulting in rater-specific method factors. In the current investigation, personality was measured with two structurally different methods—a teacher-report as well as a parental report. We used the teacher-report as the *reference method* and contrasted the parental reports against it resulting in method factors for the parental report. Figure 1 illustrates the CTCM-1 model for the Big Five. In Figure 1, the trait factors T_{11} to T_{51} represent the common variance of teacher- and parental reports; in our model, the expression *trait* signifies the common variance of teacher- and the parent-reports on the respective personality dimension. P_{11} to P_{51} are the parental method factors for each of the Big Five containing the systematic variance in the parental report that is not explained by the trait. Congruence of the two personality reports is expressed by the latent correlation between teacher- and parent-report. We calculated the latent correlation between teacher-report and parent-report for each personality dimension using the square root of the *consistency* from the CTCM-1 model. The consistency is a true score variance component that we computed – using the equations from Eid et al. (2003) – for each of the items and aggregated over the personality dimensions: it equals the proportion of variance in the parental report that is explained by the teacher-report.

Extended models with explanatory variables

In order to analyze interindividual differences in the parental report, we tested effects of explanatory variables on the method factors of the parent-report in extended models. Latent explanatory variables predicting the method factors in the CTCM-1 model need to be transformed so that they do not correlate with the trait factors any longer in order to prevent model misspecifications and parameter bias (Koch et al., 2018). We achieved this using the *residual approach* proposed by Koch et al. (2018) as illustrated for one personality dimension in Figure A1 of the Supplementary Material. Specifically, an untransformed latent explanatory variable η_1 is regressed on the trait factor T_{jk}. The residual from this regression is then defined as latent variable ξ_1 and can load on the method factors for the parent-report (P_{jk}) since it is trait-free. The regression coefficient δ_1 of a transformed explanatory variable on P_{jk} represents the association between the explanatory variable ξ_1 and parental report corrected for the confounding influence of the trait (Koch et al., 2018). In the current study, this effect represents an association with parental report under control for teacher-reports. Positive regression coefficients of predictors, therefore, represent parental *overestimation* of the respective personality aspect in comparison to teacher-reports, and negative effects parental *underestimation*. We included high-culture arts participation (ξ_1) and SES (ξ_2) as predictors of method factors of the parental report and estimated the model for all personality dimensions simultaneously.

Results in study 1

Referring to the latent bivariate correlations in Table 1, SES was positively associated with teacher-reports on all Big Five dimensions with the relation to Openness being the strongest. Parent-reports on Openness and Conscientiousness were positively associated with SES as well. The 95%-confidence intervals for the correlations with Openness did not overlap suggesting a significantly stronger relation with the teacher-report than with the parent-report. The 95%-confidence intervals for the associations with Conscientiousness, on the other hand, overlapped. SES, additionally, was negatively associated with parent-reports on Extraversion, but positively with the teacher-report on Extraversion. Taken together, teacher-reports on Openness were more strongly associated with SES than parent-reports. Teachers described students as more open when familial SES was higher. High-culture arts participation of parents was also positively associated with teacher-reports on all Big Five dimensions. It, moreover, correlated positively with parent-reports on Openness, Conscientiousness, and Emotional Stability. The 95%-confidence intervals of these correlations overlapped for teacher- and parent-reports.

Effects of the independent variables on parental report regarding children's Big Five from the CTCM-1 model are presented in Table 2. Here, positive regression coefficients of predictors represent an overestimation of a personality dimension by parents in comparison to teacher-reports, and negative effects an underestimation. Compared to the teacher-reports, a higher SES – with high-culture arts participation controlled for – was associated with lower parental reports on Openness ($\beta = -.14$, $p = .002$), Conscientiousness ($\beta = -.15$, $p = .003$), Agreeableness ($\beta = -.11$, $p = .001$), and Emotional Stability ($\beta = -.11$, $p = .002$), and higher parental reports regarding Extraversion ($\beta = .18$, $p < .001$) in comparison to

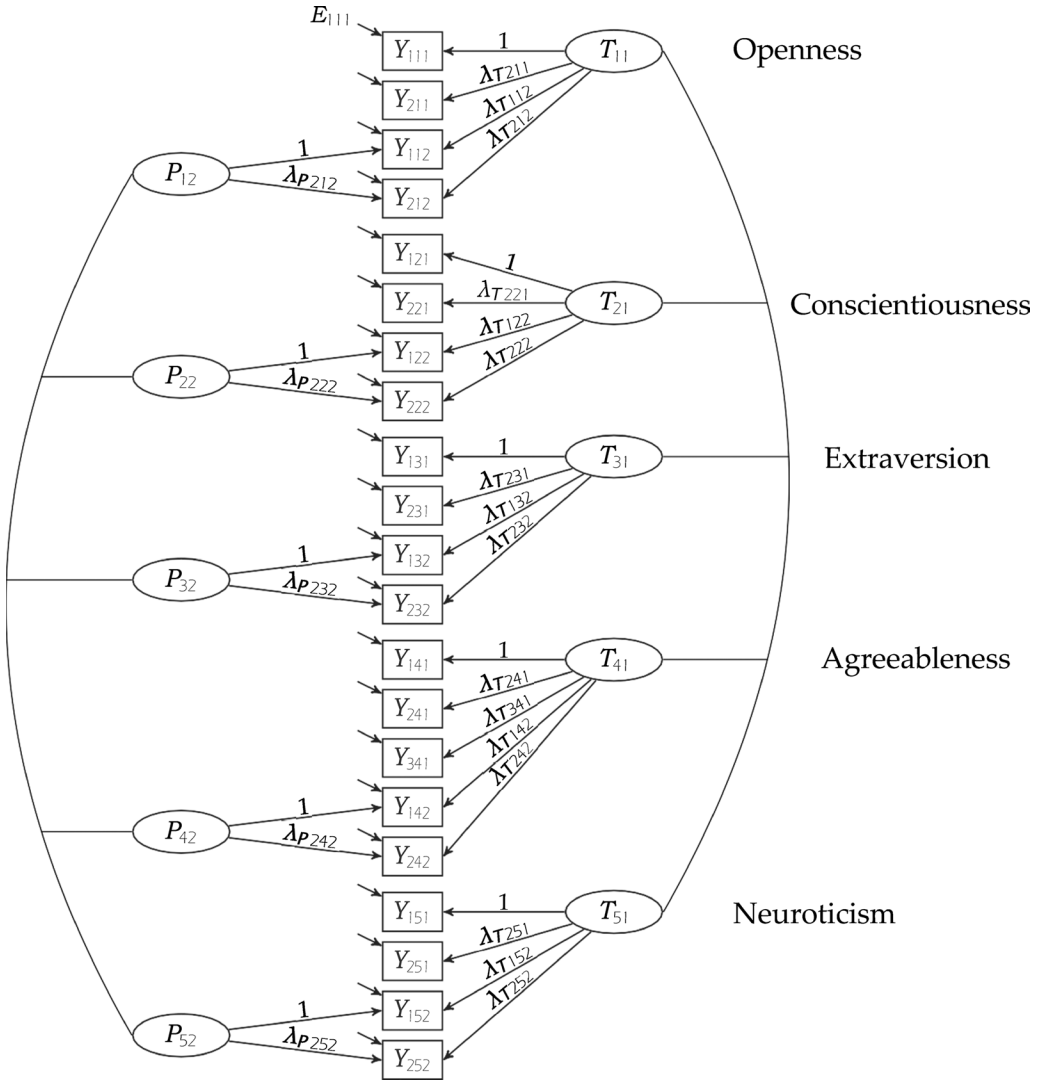

Figure 1. Multiple-indicator correlated trait-correlated method minus one model [CTCM-1] for the Big Five in Study 1 ($N = 5{,}798$). Y_{ijk}: observed variable; i: indicator; j: trait; k: perspective (1 = reference method, 2 = parent report); T_{jk}: latent trait variable; P_{jk}: parental report method factor; E_{ijk}: error variable; λ_{Pijk}, λ_{Tijk}: factor loadings.

teacher-reports. Parents with a higher SES, thus, described their offspring less favorably than the class teachers. A more frequent participation in high-culture arts positively predicted – over and above SES – parental reports regarding Openness ($\beta = .12$, $p = .003$), Conscientiousness ($\beta = .19$, $p < .001$), and Emotional Stability ($\beta = .10$, $p = .001$) and negatively with regard to Extraversion ($\beta = -.11$, $p = .001$) when compared to teacher-reports. Parents with higher high-culture arts participation rated their offspring significantly lower on Extraversion and higher on three of the other Big Five dimensions, and therefore more favorably than class teachers.

Discussion study 1

The study at hand investigated associations between parental socioeconomic background and parental report regarding their offspring's Big Five, contrasting parental reports against teacher-reports. SES positively predicted parental reports regarding Extraversion and was negatively associated with parental reports regarding all other Big Five dimensions. High-culture arts participation showed reversed effects, negatively predicting parental reports regarding Extraversion and being positively associated with parental reports regarding Openness, Conscientiousness, and Emotional Stability.

With respect to our first research question, familial SES was significantly associated with parental reports regarding children's Big Five. Bivariate correlations between SES and parental reports on Openness and Conscientiousness were positive meaning that parents with a higher SES rated their offspring higher on these two dimensions than parents with a lower SES. This is in line with previous empirical evidence on more positive reports on offspring's Big Five and temperament when parental SES was higher (Ayoub et al., 2018; Strickhouser & Sutin, 2020). When contrasting parental assessments against teacher-reports, we found negative association between SES and parental reports regarding all Big Five dimensions except Extraversion that showed a positive association. In other words, teachers described children from higher SES families as more open, conscientious,

Table 1. Study 1: Latent bivariate correlations between study variables in a sample of German elementary school students, $N = 5{,}789$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Openness (TR) (1)	1.00	.76**	.48**	.34**	.61**	.57**	.41**	−.03	.09*	.11**	.37**	.24**
Conscientiousness (TR) (2)		1.00	.12**	.60**	.32**	.40**	.52**	−.15**	.16**	.02	.21**	.16**
Extraversion (TR) (3)			1.00	.02	.84**	.27**	.06*	.42**	−.01	.34**	.11**	.11**
Agreeableness (TR) (4)				1.00	.08*	.09**	.23**	−.12**	.23**	−.08*	.08*	.08*
Emotional Stability (TR) (5)					1.00	.38**	.17**	.29**	−.02	.37**	.13*	.11*
Openness (PR) (6)						1.00	.58**	.28**	.21**	.43**	.16**	.13**
Conscientiousness (PR) (7)							1.00	−.02	.29**	.21**	.10*	.16**
Extraversion (PR) (8)								1.00	.04*	.68**	−.14**	.02
Agreeableness (PR) (9)									1.00	.07**	−.05	.01
Emotional Stability (PR) (10)										1.00	−.03	.07*
SES (11)											1.00	.51**
high-culture arts part. (12)												1.00

Note. *$p < .01$ (Bonferroni adjusted), **$p < .001$. TR = teacher-report, PR = parent-report. SES = parental socioeconomic status, high-culture arts part. = participation in high-culture arts.

Table 2. Study 1: Regression of parental report regarding elementary school students' Big Five on familial socioeconomic background within a CTCM-1 model, $N = 5{,}798$.

		Predictors of parental report		
	r	R^2	SES	High-culture arts part.
Openness	.56	.02	−.14*, [−.23, −.05]	.12*, [.04, .19]
Conscientiousness	.52	.03*	−.15*, [−.25, −.05]	.19**, [.12, .26]
Extraversion	.43	.03*	.18**, [.11, .26]	−.11*, [−.17, −.04]
Agreeableness	.23	.01	−.11*, [−.17, −.04]	.04, [−.01, .10]
Emotional Stability	.38	.01	−.11*, [−.18, −.04]	.10*, [.04, .16]

Note. *$p < .01$ (Bonferroni adjusted), **$p < .001$. Standardized regression coefficients presented. 95%-confidence intervals in squared brackets. r = Latent correlation between teacher- and parent-report calculated as √consistency from the CTCM-1 model results. R^2 = total explained variance in parental report. SES = socioeconomic status of the parents, high-culture arts part. = high-culture arts participation.

agreeable, and emotionally stable as well as less extraverted compared to the parental report. Referring to the bivariate correlations, the positive association between SES and Openness and teacher-report was significantly stronger than its positive association with the parental report. SES was also more strongly related to teacher-report than high-culture arts participation which might imply that teachers take the familial SES more strongly into consideration when forming personality judgments of their student.

Regarding our second research questions, participation in high-culture arts incrementally predicted parental reports regarding children's personality over and above SES. It was positively associated with the parental report regarding Openness, Conscientiousness, and Emotional Stability and negatively with Extraversion of elementary school students. In other words, parents with higher high-culture arts participation described their offspring more positively than teachers when SES was held constant. It could be argued that high-culture arts participation was associated with a socially desirable personality description, i.e. parents whose participation in high-culture arts was higher described their offspring as more open, conscientious, emotionally stable, and less extraverted than children's class teachers.

Limitations of study 1

Teacher- and parent-reports differed with regard to the reliability of the scales, parent-reports exhibiting lower reliability coefficients for all Big Five dimensions. This might mean that the measured constructs were better represented by the teacher-report then by the parental report. This, in turn, could imply that different associations of teacher- and parent-reports with predictor variables are partly due to how well the personality dimension are captured in the different personality assessments. However, the FFFK-K is a short version questionnaire consisting of only 10 items with two items per Big Five dimension. Future studies might employ long version of personality questionnaires to avoid reliability issues.

The main limitation of the study at hand lies in the measurement gap of six to nine months between parental and teacher-assessments of children's personality. As a consequence, differences between both assessments could also be due to children's personality development in this time frame as teachers rated their students at a later time than parents. Rank-order stability has been found to increase from the toddler years to the preschool-age and remain at a moderate level until the age of 18 (Roberts & DelVecchio, 2000). With regard to mean-level changes, De Fruyt et al. (2006) found parental personality reports on 6- to 13-year olds to remain stable but the empirical evidence is inconclusive and results might differ depending on the type of assessment (Göllner et al., 2017). Due to the moderate stability during childhood, the short time frame of nine months at most is not expected to bring about substantial changes in children's personality. But this cannot be ruled out. Therefore, we additionally conducted Study 2 in which both parents and teachers rated children in grade 4.

Study 2

Participants

We used data from the study *Transition* (Maaz et al., 2010) on German elementary school (*Grundschule*) students attending fourth grade in the school year 2006/2007. This study is a national extension of the Trends in International Mathematics and Science Study (TIMSS) 2007 (Mullis et al., 2005). The *Transition* study (Maaz et al., 2010) included 253 elementary schools with one random class per school and 13 of the 16 German federal states participating [1]. Data from the *Transition* study are not publicly available. A total of $N=4{,}162$ parents and $N=233$ class teachers were surveyed in February and March 2007. Our sample ($N=3{,}771$) consists of cases for whom at least one of the personality reports as well as one of the independent variable measures were available. Students were on average $M=10.42$ ($SD=0.50$) years old and 48.4% girls at the time of the personality assessment. The parent-report was filled out by the father in 6% of cases ($N=226$), by mothers in 45.6% of cases ($N=1{,}719$), by both parents together in 32.9% of cases ($N=1{,}240$), by legal guardians in 1.1% of cases ($N=41$) and the relationship was not reported in 15.3% of cases ($N=545$). $N=233$ class teachers participated and were asked to rate each child in their class. In the final data set, teachers had on average rated $M=17.32$ ($SD=5.07$) students, ranging from 2 to 28 students of their class. Teachers were on average $M=45.80$ ($SD=10.80$) years old and 86.7% women.

Measures

Parent- and teacher-ratings of students' personality

Parents and teachers rated largely the same items on students' school-related personality. The items (Table A2 in the Supplementary Material, translated into English by the authors of the current study) were generated by the authors of the *Transition* study (Maaz et al., 2010) with reference to Carroll's (1963, 1973) model of school learning and were designed to specifically measure personality aspects that are relevant in the school context. Items were rated from *1 = does not apply at all* to *6 = fully applies*. Teachers were given five extra items which were not included in our analyses since they were not available for parents.

For the current study, we assigned 12 items to six personality facets with two items each: *interest in learning*, *diligence*, *striving for achievement*, *sociability*, *emotion control*, and *resilience*. Confirmatory factor analyses (CFAs) showed a good fit of the six facets in teacher-reports (CFI = 0.97, TLI = 0.95, RMSEA = [0.08, 0.09], SRMR = 0.04 for $N=3{,}326$) as well as parental reports (CFI = 0.98, TLI = 0.97, RMSEA = [0.05, 0.06], SRMR = 0.03 for $N=3{,}491$). The reliability of the facets was as follows: parent-ratings of *interest in learning* showed an $\omega=0.91$ and teacher-ratings $\omega=0.97$; for *diligence* $\omega=0.79$ for parent-ratings and $\omega=0.89$ for teacher-ratings; for *striving for achievement* parental ratings at $\omega=0.76$ and for teacher-ratings $\omega=0.88$; for *sociability* $\omega=0.87$ for parent-ratings and $\omega=0.91$ for teacher-ratings; for *emotion control* $\omega=0.79$ for parent-ratings and teacher-ratings $\omega=0.94$; for *resilience* $\omega=0.74$ for parent-ratings and teacher-ratings $\omega=0.84$. Teacher-ratings were centered at the class mean so as to account for possible differences between classes.

Socioeconomic status

Parental socioeconomic status (SES) was modeled using the Highest International Socio-Economic Index of Occupational Status (HISEI) representing parental occupational prestige as in Study 1 with a fixed error variance of $(1-\rho)$ times the variance in the sample: $(1-0.90)*1$.

Participation in high-culture arts

Familial participation in high-culture arts was assessed with four items on the general frequency (1 = "never", 2 = "rarely", 3 = "frequently", 4 = "very frequently") of parental visits of (a) theater, (b) museum, (c) concerts and, (d) classical concerts in 2007. The reliability of these four items was $\omega=0.80$. A latent variable was modeled to represent high-culture arts participation.

Statistical analysis

Study 2 applied the same modeling approach as Study 1. Figure 2 shows the CTCM-1 model for the six personality facets investigated in Study 2. Figure A1 illustrates the residualization approach employed on explanatory variables. To account for multiple tests with 6 tests per predictor, we adjusted the significance level using the Bonferroni correction to $\alpha=0.05/6=0.008$.

Results in study 2

Referring to the latent bivariate correlations in Table 3, SES was positively associated with all personality facets rated by teachers as well as parents. The

95%-confidence intervals did not overlap for the correlations with Interest in Learning, Diligence, Striving, and Resilience suggesting significantly stronger associations with the teacher-report compared to the parental report. Teachers described students more positively on those four facets when the familial SES was higher. Parental high-culture arts participation also correlated positively with all personality facets in both reports, but the strength of the correlations did not differ markedly between the two reports as for SES.

Effects of the independent variables on parental reports from the CTCM-1 model are presented in Table 4. Parents with a higher SES – with high-culture arts participation controlled for – rated offspring lower than teachers on the facets Interest in Learning ($\beta=-.15$, $p<.001$), Diligence ($\beta=-.25$, $p<.001$), Striving ($\beta=-.17$, $p<.001$), and Resilience ($\beta=-.16$, $p=.002$). Parents with a higher SES described their offspring less favorably than the class teachers, as in Study 1. High-culture arts participation was significantly and positively associated – over and above SES – with parental reports regarding all personality facets. The strongest effect occurred for Resilience ($\beta=.22$, $p<.001$) and the weakest association was found for Emotion Control ($\beta=.10$, $p=$

[1]The federal states Berlin, Brandenburg, and Mecklenburg-Vorpommern did not participate due to differences in the school system

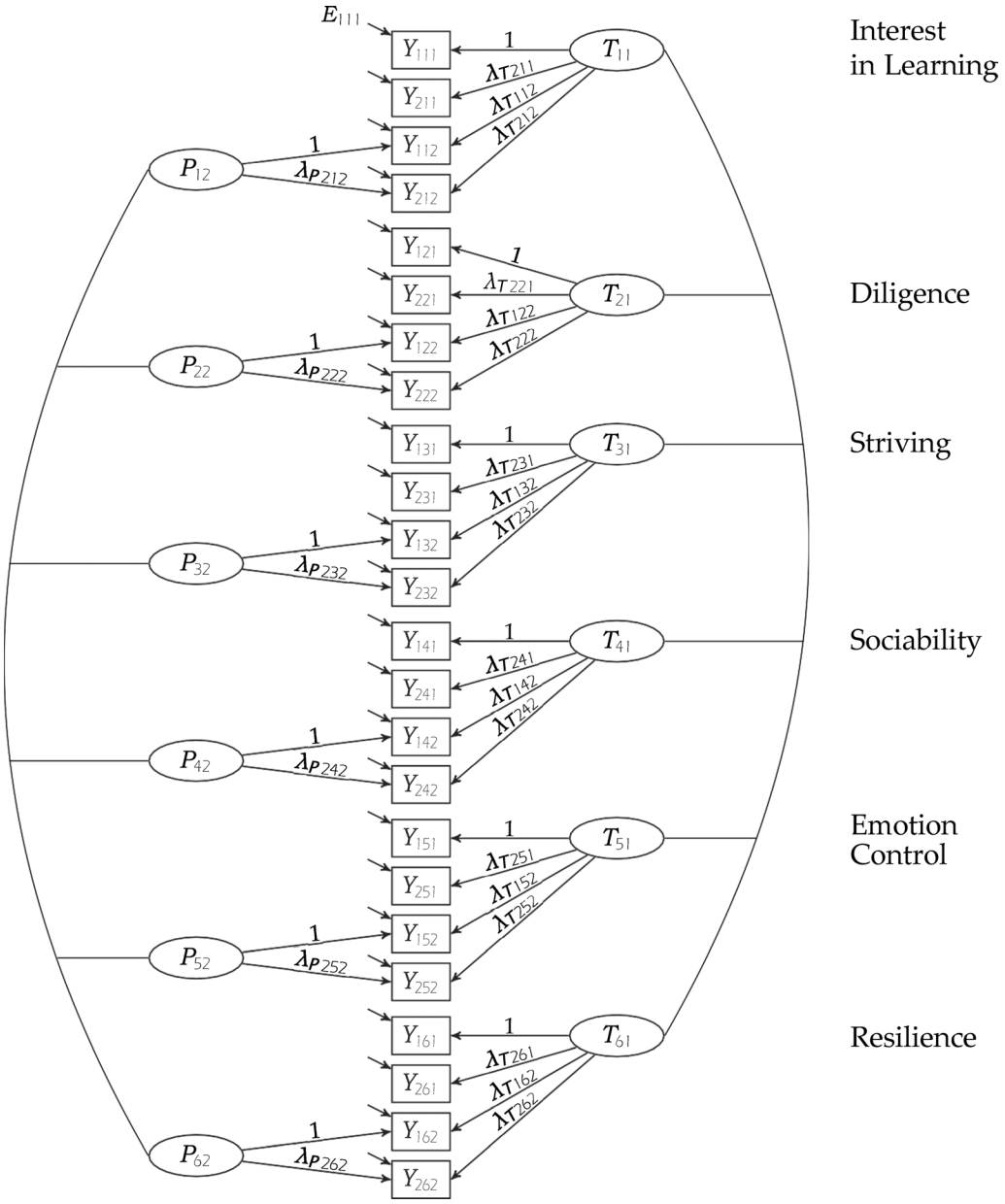

Figure 2. Multiple-indicator correlated trait-correlated method minus one model [CTCM-1] for six personality facets in Study 2 ($N = 3771$). Y_{ijk}: observed variable; i: indicator; j: trait; k: perspective (1 = reference method, 2 = parent report); T_{jk}: latent trait variable; P_{jk}: parental report method factor; E_{ijk}: error variable; λ_{Pijk}, λ_{Tijk}: factor loadings.

.005). High-culture arts participation consequently exhibited incremental validity regarding parental reports over and above SES. Parents rated their offspring significantly higher on all six personality facets, and thus more favorably, than was predicted by the teacher-report. In sum, compared to teacher-reports, parental SES was associated with parental underestimation of Interest in Learning and facets of Conscientiousness. Participation in high-culture arts, by contrast, predicted parental overestimation – in comparison to teacher-reports – of all personality facets, in particular of Resilience, Interest in Learning, and Striving.

Discussion study 2

Study 2 found significant associations between the parental socioeconomic background and parental reports regarding their offspring's school-relevant personality when contrasting parent-reports against teacher-reports. SES negatively predicted parental reports regarding Interest in Learning, Diligence, Striving, and Resilience. High-culture arts participation was positively associated with parental reports regarding all six facets with effects being most pronounced for Resilience.

As in Study 1, SES was negatively associated with parental reports on facets of Conscientiousness as well as Resilience which could be considered a facet of Emotional Stability showing that effects occurred on the broad dimension level as well as for narrower facets. Since SES could be considered a broader background measure, its associations with personality measures of different generality levels (Wittmann & Klumb, 2006) speak for the pervasiveness of its impact. Study 2 can be seen as a replication of Study 1 since the pattern of results was the same: When contrasting parental personality reports against teacher-reports, the parental report was negatively associated with SES signifying a

Table 3. Study 2: Latent bivariate correlations between study variables in a sample of German elementary school students, $N = 3{,}771$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Interest in Learning (TR) (1)	1.00	.82**	.95**	.62**	.54**	.77**	.46**	.43**	.46**	.29**	.20**	.41**	.38**	.17**
Diligence (TR) (2)		1.00	.92**	.73**	.72**	.64**	.41**	.55**	.47**	.35**	.26**	.33**	.29**	.16**
Striving (TR) (3)			1.00	.67**	.59**	.77**	.53**	.51**	.53**	.32**	.23**	.44**	.35**	.18**
Sociability (TR) (4)				1.00	.85**	.54**	.29**	.37**	.33**	.47**	.27**	.25**	.24**	.12**
Emotional Control (TR) (5)					1.00	.52**	.26**	.37**	.30**	.40**	.29**	.22**	.20**	.11**
Resilience (TR) (6)						1.00	.44**	.33**	.41**	.24**	.17**	.50**	.34**	.13**
Interest in Learning (PR) (7)							1.00	.75**	.88**	.50**	.40**	.74**	.16**	.20**
Diligence (PR) (8)								1.00	.90**	.61**	.47**	.63**	.04	.16**
Striving (PR) (9)									1.00	.56**	.46**	.78**	.13**	.18**
Sociability (PR) (10)										1.00	.52**	.46**	.16**	.15**
Emotional Control (PR) (11)											1.00	.43**	.12**	.15**
Resilience (PR) (12)												1.00	.15**	.17**
SES (13)													1.00	.43**
high-culture arts part. (14)														1.00

Note. *$p < .008$ (Bonferroni adjusted), **$p < .001$. TR: teacher-report; PR: parent-report; SES = parental socioeconomic status, high-culture arts part. = participation in high-culture arts.

Table 4. Study 2: Regression of parental report regarding elementary school students' school-relevant personality facets on familial socioeconomic background within a CTCM-1 model, $N = 3771$.

		Predictors of parental report		
	r	R^2	SES	High-culture arts part.
Interest in Learning	.41	.03*	−.15**, [−.23 −.08]	.21**, [.14, .27]
Diligence	.54	.04*	−.25**, [−.34, −.16]	.19**, [.12, .27]
Striving	.51	.02*	−.17**, [−.25, −.08]	.18**, [.11, .25]
Sociability	.47	.01*	−.01, [−.09, .08]	.11*, [.04, .19]
Emotion Control	.29	.01*	−.00, [−.09., .09]	.10*, [.03, .17]
Resilience	.54	.03*	−.16*, [−.26, −.06]	.22**, [.13, .30]

Note. *$p < .008$ (Bonferroni adjusted), **$p < .001$. Standardized regression coefficients presented. 95%-confidence intervals in squared brackets. *r*: Latent correlation between teacher- and parent-report calculated as √consistency from the CTCM-1 model results. R^2 = total explained variance in parental report. SES: socioeconomic status of the parents; high-culture arts part.: high-culture arts participation.

parental underestimation compared to teacher-reports. High-culture arts participation, on the other hand, was positively associated with the parental report in both studies. In Study 2, it predicted parental overestimation of personality facets that could be interpreted as a socially desirable personality description – parents with higher high-culture arts participation described their offspring as more resilient, interest in learning, striving, diligent, sociable and controlled than the children's teachers. Since Study 2 revealed similar results to Study 1, it alleviates the main limitation of Study 1 lying in the measurement gap between parent- and teacher-reports. The results in Study 1 do not seem to be due to personality changes between the reports.

Study 2 was also conducted to investigate whether high-culture arts participation as a behavior-centered and narrower operationalization of socioeconomic background might be more strongly related to a narrower personality measure compared to the broad Big Five measure. Regression coefficients were of similar strength across the two studies. The associations between socioeconomic background and parental report, consequently, seem to be detectable and comparable both for personality dimensions as well as facets.

Limitations of study 2

The personality items used in Study 2 were generated by the authors of the *Transition* (Maaz et al., 2010) study and were not validated with measures of the Big Five (Goldberg, 1990). The items are also limited to school-relevant personality and effects would need to be replicated using facets of the Big Five. With regard to the item wording, only the items for Striving specifically mention the school context. For all the remaining items, teachers will likely use the school context as a reference when answering the questions. Parents, on the other hand, have a broader variety of situations with their child on which they can base their assessment, for example for offspring's Interest in Learning. Differences between teacher- and parental reports on children's personality, therefore, might also partly be due to differences in frame of reference. Regarding high-culture arts participation, cultural participation was only available from two years before the personality rating in Study 2. It cannot be ruled out that participation changed within that time. Effects might also be stronger when variables are measured at the same time.

General discussion

The current investigation examined predictors of parental reports regarding elementary school students' personality in two studies. Parental reports were contrasted against teacher-reports. Socioeconomic status of the family was negatively associated with parental reports when contrasted against the teacher-report. High-culture arts participation incrementally predicted parental reports over and above

socioeconomic status regarding Big Five dimensions as well as on the facet level. Parents with a higher high-culture arts participation rated their children more positively when compared to teacher-reports. Since this investigation was exploratory, the discussed conclusions and implications are to be understood with this constraint in mind.

Choice of reference method

In the current investigation, teacher-report was used as the reference method contrasting parental reports against it in order to isolate the parental method factors. Results of the CTCM-1 depend on the chosen reference method and our obtained results can only be interpreted for this specific comparison of assessments. The personality assessment by class teachers might also be subject to certain biases. Bourdieu and Passeron (1977) assumed that teachers interpret status-relevant behavior and use those impressions for educational decisions. In our studies, familial SES correlated with the teacher-report, however we did not investigate teacher-report method factors. Parental over- and underestimation of offspring's personality in our study refers to the comparison of parental reports with the teacher-report and not a deviation from the "true" personality score. Future studies could compare effects of socioeconomic background on parental report across different reference methods such as self-reports or peer-ratings in order to investigate whether the associations reported in the current studies prevail and how they might differ depending on the reference method.

Parental assessments of offspring

Effects of SES on parental method factors were not trait specific in our studies which could indicate that they represent general *perceiver effects* (Kenny, 1994). Empirical evidence suggests that perceivers exhibit a general positivity tendency when rating others irrespective of the particular trait content (Srivastava et al., 2010; Wood et al., 2010). Rau et al. (2020) have suggested that this generalized positivity in other-perception might be associated with individual differences in perceivers with demographic variables being one set of possible correlates. Our results demonstrate the use of different measures of socioeconomic background as predictors of parental assessments.

However, our investigation represent a more complex situation, as parents rated their offspring so that the perceptual processes are embedded within the familial context. Kenny (1994) proposed that personality judgments are the result of *perceiver effects*, *target effects*, as well as *relationship effects*. Judgments, accordingly, might not only depend on rater and target characteristics, but to some extent also on the relationship between rater and target. Therefore, future research should investigate the possible influence of family life indicators such as familial cohesion on parental assessments of their offspring. Changes in the relationship between parents and offspring during puberty might be particularly relevant. Longitudinal examinations are needed to trace the development of the parental reports in accordance to possible disruptions in family life.

Mechanisms of high-culture arts participation

At least three interpretations of positive associations between parental reports and high-culture arts participation are conceivable. For one, they might result from differences in exhibited behavior, i.e. children might have more opportunities to show socially desirable behavior when parents take them along to cultural activities more frequently. Since there is evidence on longitudinal transactions between cultural activity and self-reported Openness (Schwaba et al., 2018), cultural activities with the parents might also be an opportunity for children to develop certain personality characteristics or precursors thereof, for example with regard to appreciation of art as well as intellect.

Parents with different socioeconomic backgrounds, secondly, might differ regarding their own personality as particular personality aspects are associated with academic achievement (Poropat, 2009). As a result, parental knowledge about personality traits might differ as well. Within the RAM (Funder, 1995), differential knowledge about traits can affect detection and utilization of trait information during judgment formation. Consequently, parents with certain personality profiles might excel at rating certain traits that they are more familiar with and detect these traits in their offspring more easily or more willingly.

Third, parental overestimation could be due to parents with higher high-culture arts participation holding their offspring in higher regard than teachers without differences in behavior being at the base of their ratings. Parents might generally describe offspring more positively because they are emotionally invested (Vazire, 2010), but a more privileged parental background could engender even higher expectations of offspring's personality. Parental expectations of socially desirable behavior of offspring might originate in parents' investments in their offspring's social status. As such, engagement with high-culture arts can be seen as one familial resource pertaining to its cultural capital (Bourdieu & Passeron, 1977) and parents can be assumed to invest this resource into offspring's development. Parental investments into the cultural capital of offspring can be understood as a form of *concerted cultivation* of children by parents (Lareau, 2011). This notion is in line with the Investment Model proposing that effects of socioeconomic background on children's development ca be explained based on a better access to resources and subsequent higher parental investment in offspring (Bradley & Corwyn, 2002). Assuming parents "cultivate" their offspring into attaining a high socioeconomic status, they might associate societal notions of a "desirable personality" with this endeavor which could possibly affect children's *reputation* (McAbee & Connelly, 2016) with parents and result in a background specific positivity bias.

Implications

When parental ratings are used in large-scale assessments, it would be ideal to add additional perspectives in order to disentangle parents' unique perspective. Moreover, socioeconomic indicators are important control variables when parental ratings are employed as we have demonstrated that parents' reports

might not be independent of their socioeconomic background. Since personality ratings are frequently used as predictors of academic achievement, researchers should take possible parental perceiver effects into consideration when interpreting their results. For example, associations with academic achievement might be enlarged if parents' overestimated ratings are used without controlling for their socioeconomic background. However, parents' report would only affect associations with outcome variables if children's relative ordering is altered. This could be examined comparing parental reports with children's self-reports and evaluating mean-level differences.

Going further, unique perspectives of other raters should be considered. Teachers' assessments of their students' personality could potentially have important consequences for children's academic career. Our results in elementary school suggest that teachers rate students' personality more positively than parents when the familial SES is higher. Effects were reversed for high-culture arts participation. Teachers might be aware of parental education and income but do not have direct information about familial cultural activities. By contrast, Farkas (2003) argues that particularly parental high-culture arts skills and habits enable children to signal a high status to teachers. These effects, however might be dependent on children's age and developmental status. Teachers might not yet expect behavior related to high-culture arts from young elementary school students. The investigation of variables associated with teachers' unique perspective might provide insight into the formation of impressions in the class context. Parental involvement into class and school activities might be one possible influence on teachers' perspective on students as it might be a highly salient behavior for teachers (Jaeger & Breen, 2016). One implication of our results could be that parents might adapt their parenting behavior in accordance with their perspective on offspring. Not only is it possible that parenting experiences help parents in forming personality judgments, but their unique perspective on offspring might in turn affect their parenting decisions. As we could show divergences between the parental view of their offspring and teachers' view, it might be important to encourage parents to reflect on their perspective and possibly discuss it, for example within teacher-parent-conferences.

Another possible implication might concern schools and the extracurricular activities that they offer for children. Art-related events such as theater and concerts or art-related extracurricular courses would enable all children to engage with these types of situations that they otherwise might not encounter if their parents could not offer them these opportunities. These enriching situations might have an impact on children's socio-emotional development, offer them possibilities to express certain aspects of their personality, and might also affect how children are perceived by teachers.

Limitations and future directions

Several limitations of the investigation at hand have to be taken into consideration. Firstly, high-culture arts might be redefined toward multiculturalism and inclusivity in modern society (DiMaggio & Mukhtar, 2004) and participation in less classical forms of art as jazz should be incorporated in future research. Secondly, parental reports were given predominantly by mothers in Study 1. As suggested by Tackett (2011) mothers and fathers should ideally both be used as informants since the author showed that agreement was lower for Neuroticism and Agreeableness than for behavior-centered traits and both parental ratings incrementally predicted behavioral problems. The reported effects of socioeconomic background, furthermore, might be caused or mediated by third variables that have not been included. For example, it could be examined whether effects of socioeconomic background remain significant when time that parents spend with their offspring is included in the model. Moreover, we did not test for the mechanisms of the emergence of parental perceiver effects. Further research is needed on the relation between process variables and the formation of parents' judgment. Additionally, the understanding of the items might not be independent of educational level as there is some evidence on higher acquiescence in self-assessments of the Big Five of respondents with lower education (Rammstedt et al., 2010). Parental assessments of offspring's personality could, accordingly, be tested for measurement invariance across different educational levels. Future studies might also combine three perspectives into one model to contrast two perspectives at once against the self-report. Longitudinal investigations are needed to examine the development of parents' perspective as well as bidirectional associations with trajectories of self- and other-reports. Tackett et al. (2016) propose the use of thin-slice ratings that contain short sequences of children's behavior as an alternative to personality questionnaires to prevent possibly skewed ratings by parents. An examination of socioeconomic background effects on this type of personality measure could help approximate the mechanisms behind parental overestimation and whether they are due to a varying perception of offspring. If so, socioeconomic background effects should extent to thin-slice ratings.

Conclusion

This investigation was the first to address socioeconomic background effects on parental reports regarding elementary school students' personality. SES and participation in high-culture arts both predicted parental reports. The examination of method effects within MTMM models can, therefore, contribute to a better understanding of personality judgments. Our nuanced analysis of socioeconomic background effects proved informative as SES and high-culture arts participation had differential associations with parental reports. Future research could address the mechanisms, consequences, and trajectories of parental perceiver effects.

Disclosure statement

The authors declare no competing interest regarding the authorship, research, or publication.

Data availability statement

Data from the NEPS are not publicly accessible, but available after completion of a NEPS-data usage agreement.

Documentation of the procedures and measures used in Cohort 2 is openly available on the NEPS website: https://www.neps-data.de/Data-Center/Data-and-Documentation/Start-Cohort-Kindergarten/Documentation. The Mplus codes are provided in the Supplementary Material.

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