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Highbrow cultural activities, social background, and openness in lower-secondary level students

Abstract

How can variance in students' participation in cultural activities be accounted for? Is socioeconomic status overrated as a predictor? What are the effects of school track? And can effects of openness be replicated using measures from adjective checklists? In a structural equation modeling (SEM) study, cross-sectional data from $N = 2,388$ adolescent students in different German school tracks were used to assess the variance in adolescent highbrow cultural activities that was explained by social background, controlling for parental and peer group cultural activities as well as openness. We tested hypotheses of group differences in mean levels and explored effects of the predictor variables on student cultural activities. Results show that mean levels of measures for social background, peer group cultural activities, and openness increased from low- to high-track students. There were effects of parental and peer group activities on cultural activities, but no direct positive effects of social background or openness. The significance of these findings for research on cultural activities is discussed.

Keywords

Openness; Arts; Social influences; Cultural participation

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Kulturelle Aktivitäten, sozialer Hintergrund und Offenheit bei Schülerinnen und Schülern der Sekundarstufe I

Zusammenfassung

Wie lassen sich kulturelle Aktivitäten von Schülerinnen und Schülern erklären? Wird der sozioökonomische Status als Prädiktor überschätzt? Welche Effekte hat die Schulform? Und lassen sich Effekte von Offenheit auch unter Verwendung von Adjektivchecklisten replizieren? Im Rahmen einer Studie mit querschnittlichen Daten von $N = 2388$ Schülerinnen und Schülern verschiedener Schulformen der Sekundarstufe I berechneten wir Mehrgruppen-Strukturgleichungsmodelle mit kulturellen Aktivitäten der Schülerinnen und Schüler als Kriterium, in denen der Erklärungswert des sozialen Hintergrundes bei Kontrolle von elterlichen kulturellen Aktivitäten und kulturellen Peergruppen-Aktivitäten untersucht wurde. Wir überprüften Hypothesen zu Mittelwertsunterschieden in den erhobenen Variablen und zu Effekten der Prädiktoren auf die kulturellen Aktivitäten der Schülerinnen und Schüler. Hinsichtlich der Mittelwertsunterschiede zeigte sich für die Variablen sozialer Hintergrund, kulturelle Aktivitäten der Peers und Offenheit über die Schulformen hinweg ein Trend mit niedrigen Werten bei Hauptschülern und hohen Werten bei Gymnasiasten. Hinsichtlich des Erklärungswerts der Prädiktoren zeigten sich Effekte der kulturellen Aktivitäten von Eltern und Peers auf die kulturellen Aktivitäten der Schülerinnen und Schüler, aber keine direkten positiven Effekte des sozialen Hintergrundes und der Offenheit. Die Relevanz dieser Befunde für die Erforschung kultureller Aktivitäten wird diskutiert.

Schlagworte

Offenheit; Künste; Soziale Einflüsse; Kulturelle Partizipation

1. Introduction

Going to the theater, the opera, or an art gallery – what do these activities have in common? They are of course all *cultural* activities and provide an opportunity to enjoy artistic performances and develop creative interests. More important, however, participating in such events continues to serve as a sign of social distinction (Bourdieu, 1979/1984). Familiarity with the full range of cultural activities and the associated rituals and discourses provides a substantial advantage in contexts of occupational selection and assessment, whereas restriction of cultural activities to events that are related to low socioeconomic status may hinder the advancement of children from such family backgrounds (Gerhards, 2008). Thus, patterns of cultural leisure activities may contribute to the reproduction of social inequalities (Rössel & Beckert-Zieglschmid, 2002). The present study examines the effects of social background and of openness as a potentially relevant personality variable above

and beyond cultural activities of socialization agents. It also investigates group differences in such activities among adolescent students in different school tracks.

1.1 Cultural activities

According to a frequently cited definition, culture is “that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society” (Tylor, 1873/1958, p. 1). The present paper deals with a narrower subset of cultural participation: with activities that are called “highbrow”, as opposed to “middlebrow” and “lowbrow” activities. These terms are common English descriptors for different types of cultural activities and in use since the mid-19th (highbrow, lowbrow) and 20th (midbrow) century (cf. Peterson, 1997). For a definition of highbrow activities we adhere to Lahire’s (2011) definition of legitimate culture as the “selection among the available alternatives that has the air of being the noblest and rarest, that has the potential to earn most distinction on the prevailing cultural markets, and that is preferred by consumers with the highest level of formal education” (p. 42f., translation by the authors).

Highbrow cultural activities represent only a segment in the broad range of cultural participation. However, this segment is an especially important one: In spite – or precisely because – of their low frequency in many families, highbrow cultural activities even today indicate where an individual is located on the continuum of social distinction (Bourdieu, 1979/1984; Bourdieu & Darbel, 1966/1990). Although snobbish highbrow patterns of cultural consumption are on the retreat (Peterson & Kern, 1996), appreciation of a wide cultural horizon still serves as a hallmark of the middle- and upper-class habitus (Bourdieu, 1979/1984). This habitus remains a predictor of success in the middle-class institution of school, and it opens doors to careers in areas such as economics, politics, and science (Hartmann & Kopp, 2001).

In the present paper, we focus on highbrow cultural participation and exclude other, perhaps more popular leisure activities, such as attending soccer games. By focusing on highbrow activities, we by no means wish to devalue other activities in the sense of a normative definition of culture (Reckwitz, 2002). Our approach merely reflects that these more widespread activities are less indicative of social distinction (Bourdieu, 1979/1984; Schulze, 1992). Beyond the role of highbrow cultural activities in establishing and maintaining social inequalities as outlined above, there are other reasons for research on cultural activities as a whole: These activities are relevant educational goals (related to “Bildung”; see Ringer, 1989), represent a way of living and participating in society (“Weltbegegnung”, Baumert, 2002; cf. Cassirer, 1944), and are advocated by some researchers as a route to personal development (Hallam, 2010).

With respect to the mode of cultural activity, we focus on receptive participation, such as listening to classical music, as opposed to active and creative participation, such as playing an instrument or composing music (Brickenkamp, 1990).

Whereas active participation occupies only a minority of adolescents, receptive participation is quite common; thus our focus enabled us to analyze an unselected sample of adolescents (cf. Kröner & Dickhäuser, 2009).

1.2 Predictors of cultural activities

1.2.1 Social background and cultural activities

As established by Bourdieu and Darbel (1966/1990) in their seminal work on *The Love of Art*, and replicated in many empirical studies (DiMaggio, 1996; Katz-Gerro, 2002; van Eijck & Bargeman, 2004), social background is a predictor of adult highbrow cultural activities. Moreover, there is also evidence that parental education and occupation predict the intensity of children's cultural activities (Aschaffenburg & Maas, 1997; de Vries & de Graaf, 2008; Kröner, Lüdtke, Trautwein, Maaz, & Köller, 2008).

We expected the established effects of social background on parental and student cultural activities to be replicated in the present study. However, we doubted that indicators of social background, i.e. parental occupational status, income, and level of formal education, influence students' highbrow cultural activities directly: It is less important for parents to have high occupational status and to be formally educated than to be effective role models, i.e., to participate in cultural activities themselves (cf. Kröner & Dickhäuser, 2009). In addition, when investigating parental occupational status (and income) as predictors of cultural activities, the generally low frequency of cultural participation needs to be taken into account: Students typically attend highbrow cultural activities fewer than four times a year, meaning that the annual costs are not very high (Kröner & Dickhäuser, 2009). This line of reasoning is supported by the fact that, contrary to popular belief, highbrow cultural activities are not prohibitively expensive. For example, theater tickets typically cost less than tickets for lowbrow activities such as major league soccer games (Baldau et al., 2004). Taken together, it is thus unlikely that variables such as parental occupational status and income themselves limit the frequency of student highbrow cultural participation. Rather, we expected a social background variable that comprises indicators for parental occupational status and income to operate via current level of parental cultural activities and to show only indirect effects on student cultural activities (see Baumert, Watermann, & Schümer, 2003).

1.2.2 Parents and students' cultural activities

Parental and student cultural activities should be correlated for several reasons. First, parents are important role models for their children. Second, common cultural activities within the family provide students with procedural knowledge regarding adequate behavior in highbrow cultural contexts that make them feel more

at ease with undertaking such activities on their own as well. Third, parents may provide supportive services like transportation to highbrow cultural activities their children attend in the company of peers, while being more reluctant to support other activities of equal expense. This should hold especially true for parents who are culturally active themselves.

As a consequence, in place of families' actual financial situation, which is assumed to have only indirect effects, parental cultural activities should directly explain children's highbrow cultural activities and correlate with peer group cultural activities (see van Wel, Couwenbergh-Soeterboek, Couwenbergh, ter Bogt, & Raaijmakers, 2006).

1.2.3 Peer group activities and students' cultural activities

Peers are important socialization agents for adolescents, contributing to personality development and serving as role models (Hartup, 1996). Not only do peers exert a substantial influence on leisure activities in adolescence and beyond (Litt, Kleppinger, & Judge, 2002) but leisure activities facilitate social relationships with like-minded peers (Verkuyten & Thijs, 2002). Both aspects may result in a correlation of peer group and adolescent cultural activities.

1.2.4 Openness and cultural activities

In addition to variables of social background, individual differences in personality variables are included in some studies as a predictor. As outlined in the *Five Factor Theory*, individual differences can be subdivided into tendencies and adaptations. Tendencies such as the Big Five factor openness can be viewed as "representing basic, abstract ways of living that are part of human nature and thus found in all cultures and at all times" (McCrae, 2010, p. 58). They are thought to shape individual differences in the acquisition of individually and socially important adaptations like "mastery of chess, fondness for Thai cuisine" (McCrae, 2010, p. 58) – or preferences for certain music styles. Thus, many studies within the framework of the Big Five personality factors have examined the role of personality in highbrow cultural activities (Kraaykamp & van Eijck, 2005; Kröner et al., 2008; McManus & Furnham, 2006). As Kraaykamp and van Eijck (2005) note, openness can theoretically be expected to be the best predictor of cultural activities among the Big Five traits, because open persons are characterized by a desire for intellectual stimulation and aesthetic experiences that is fulfilled by highbrow cultural activities. In line with these expectations, there is no convincing evidence for a substantial relation between cultural participation and neuroticism, extraversion, agreeableness, or conscientiousness, while findings consistently show cultural participation to be associated with openness, mostly by the NEO-FFI or similar questionnaires (Costa & McCrae, 1992) or, less frequently, by the corresponding factor

in adjective checklists (“culture” or “intellect”; cf. Asendorpf & van Aken, 2003; Ee, Seng & Kwang, 2007).

1.2.5 Correlations of parental and peer group cultural activities

By providing supportive services for some – but not other – activities, parents may exert a subtle influence on the peers with whom their children interact (Zeijl et al., 2000). If culturally active parents support cultural activities – with or without actual parental presence – during which their children get to know culturally active peers, the cultural activities of parents and peers are likely to correlate.

1.2.6 Correlations of openness with parental cultural activities and peer group cultural activities

Personality and social environment are not independent of each other. As Caspi and Roberts (2001) state, individuals may select and switch environments in accordance with their personalities; for example, open adolescents may select culturally more active friends or less often refuse to accompany their parents to cultural events than less open adolescents. These choices may in turn affect their further development. Alternatively, the interventions of socialization agents may influence personality attributes. In cross-sectional approaches such as in the present study, both processes can be expected to result in correlations between personality traits such as openness and measures of parents’ and peers’ cultural activities.

1.2.7 Differences in levels of cultural activities in subgroups: The role of school track

Little is known about the role of school type for participation in highbrow cultural leisure activities. Although various studies have examined extracurricular cultural activities, such as school plays or musicals (see Feldman & Matjasko, 2005, for a review), these studies warrant further research for two reasons: First, they focus on school-related activities; second, most examine the effects rather than the predictors of these activities. Another line of research that promises to provide insights into the role of school type is research on leisure activities (e.g., Fitzgerald, Joseph, Hayes, & O’Regan, 1995; Tinsley & Eldredge, 1995). For the most part, however, these studies consider cultural activities as just one among hundreds of possible activities, ignoring that they are highly indicative of social distinction. As a consequence, they generally do not differentiate between highbrow and lowbrow activities, or include indicators of social background as predictors. It goes without saying, then, that these studies do not compare relationships between predictors of cultural participation and highbrow cultural activities across educational levels or

school tracks. In the present study, we take a first step to closing this research gap by examining whether the latent means of cultural participation as well as the other constructs under investigation differ across school tracks.

In Germany, students approaching the end of primary education are allocated to one of several school tracks on the basis of their achievement to date. Length of primary education and number of tracks vary across the federal states (cf. Cortina, Baumert, Leschinsky, Mayer, & Trommer, 2003). The sample of the present study comes from Bremen, whose school system – in spite of substantial modifications during the last decades – in some basic respects still resembled the classical German three-tier system when data for the present paper were collected. In this system, the low-track *Hauptschule* ended after grade 9 or 10; it provided “a basic general education” (KMK, 2010, p. 8) for students who were likely to enter unskilled work or low-level blue-collar jobs. The intermediate-track *Realschule* ended after grade 10; it provided a “more extensive general education and the opportunity to continue at upper secondary level” (KMK, 2010, p. 11); students were likely to enter jobs such as office administration. The high-track *Gymnasium* ended after grade 12 or 13; it covered “both lower and upper secondary level [...] and provide[d] an in-depth general education aimed at the general higher education entrance qualification” (KMK, 2010, p. 7). Note that in Bremen – and other federal states – some of the tiers of the system (*Bildungsgänge*) may include several types of lower secondary level school: “Sekundarschule [...] provides the courses of education otherwise offered by the Hauptschule and the Realschule”, *kooperative Gesamtschule* is a type of comprehensive school, including low, intermediate, and high track. Some schools of the latter type may be combined with a *Gymnasiale Oberstufe*, the upper level of Gymnasium, typically for the better students from *Sekundarschule* and *Gesamtschule*, thus enabling them to become eligible for university entrance. Moreover, there are several types of schools for students with special needs (*Förderschule*).

Based on research regarding the educational levels of those attending highbrow cultural institutions (Bourdieu & Darbel, 1966/1990; Schulze, 1992), it seems reasonable to assume mean differences in students’ cultural activities as well as in parental and peer group cultural activities according to school track. In addition, it is well known that mean social background, as measured by indicators of parental income, occupational status, and education, differs across school tracks. Therefore, we expected to find higher mean levels of all constructs under scrutiny in the intermediate track than in the low track, and higher mean levels in the high track than in the intermediate track.

School track is relevant not only to mean levels, but also to variance in the variables under scrutiny. Many studies on highbrow cultural activities draw on selective samples, either of those attending cultural institutions (Bourdieu & Darbel, 1966/1990) or of high-track (*Gymnasium*) students (Fritzsche, Kröner, & Pfeiffer, 2011; Kröner et al., 2008). Both designs tend to result in samples of middle-class families. As a result, the range of social background is restricted and its effects may

be underestimated. To avoid these pitfalls, we investigated students from all three tracks of the German secondary system.

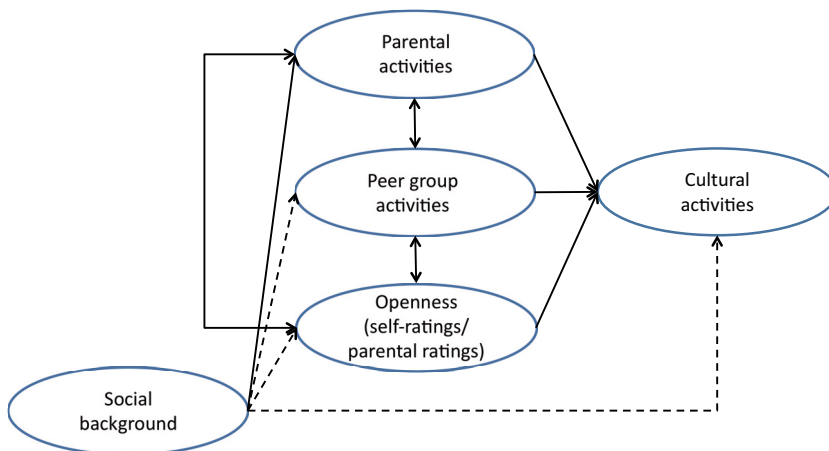
1.3 The present study

The present study extends on most previous research on the predictors of cultural activities in two ways. First, we assessed the explanatory power of three types of predictors: general social background as measured by parental education and occupation, measures of family and peer cultural activities, and parental and self-ratings of the personality trait of openness. Second, we included students from all educational tracks of the German three-tier system in our sample. Based on the considerations discussed above, we addressed the following research questions and hypotheses:

(1) What are the relations between highbrow cultural activities, social background, and openness in secondary school students? Our expectations concerning the structural pathways between the constructs under scrutiny are depicted in Figure 1 and can be summarized as follows:

- We expected only indirect effects of social background on cultural activities via parental cultural activities.
- We expected direct effects of both parental highbrow cultural activities and peer group cultural activities on adolescents' highbrow cultural activities.

Figure 1: Conceptual model of the relationship between social background, parental cultural activities, peer group cultural activities, and students' cultural activities.



Note. Relationships shown by dotted lines are hypothesized to be statistically insignificant. To test this hypothesis, they are included in the estimated structural equation model, resulting in the full model. Note that parental and student ratings of openness are collapsed in Figure 1, as there are no differential hypotheses for these measures. Unidirectional arrows are meant to indicate statistical, not causal prediction.

- We expected an effect of openness on adolescents' highbrow cultural activities.
- We expected parental cultural activities, peer group cultural activities, and openness to be intercorrelated.

(2) Which differences between the constructs under scrutiny can be found across school types? We expected to find lowest mean levels for low-track students, intermediate mean levels for intermediate-track students, and highest mean levels for high-track students.

Note that, throughout the paper, *predictors* and *effects* refer to statistical, not causal prediction.

2. Method

2.1 Participants

We analyzed cross-sectional data of grade 7 and 9 students from 121 classes in 11 school complexes that were collected within a school development project in the German city state of Bremen during the school year 2004/2005. Each of the school complexes participating in the study housed several tracks: a low track (*Hauptschule*), an intermediate track (*Realschule*), and, with one exception, a high track (*Gymnasium*). $N = 2,847$ students were tested. Only those $N = 2,388$ students ($n = 821$ from 54 low-track classes, $n = 1,012$ from 41 intermediate-track classes, and $n = 555$ from 26 high-track classes) were included in the analyses for whom either a student questionnaire or a parent questionnaire was returned. Missing data were handled as described below in the Data Analysis section.¹

Given that a substantial amount of data was missing, we undertook a bias analysis including all possible pairwise comparisons of scale scores conditional to the missing status of each of the variables in our model. Nine out of 30 effects were statistically significant, but these effects were generally of small size (absolute value of Cohen's d : $MD = 0.09$, $MIN = 0.01$, $MAX = 0.39$). The only difference that remained statistically significant after Bonferroni-Holm correction was a slightly higher cultural activity ($d = 0.19$) for students who did not self-rate their openness. Taken together, the bias analysis raises no substantial concerns regarding the conclusions of the study, although the missing data assumption of missing completely at random (MCAR) seems likely to be violated such that (at least) missing at random (MAR) holds (Enders, 2010). However, modern missing data methods can be applied that cope with the MAR assumption.

¹ Available data were $n = 2,136$ measures of social background; $n = 2,104$ student self-ratings of cultural activities, $n = 1,749$ student self-ratings of openness, $n = 1,406$ parental ratings of openness, $n = 1,630$ student ratings of peer group cultural activities, and $n = 1,629$ parental self-ratings of cultural activities.

2.2 Predictors

We used parental cultural activities, peer group cultural activities, social background, and openness to predict the students' cultural activities.

Social background: Social background was measured by three indicators, the first two being the highest educational level of the father and the mother. Following the German national operationalization in the Programme for International Student Assessment (PISA) (Baumert, Artelt, Klieme, & Stanat, 2001), we used a response format with seven categories, ranging from 1 = "primary or lower secondary education" to 7 = "masters degree program". The third indicator was the International Socio-Economic Index (ISEI) as a measure of the family's socioeconomic status (for coding from job titles, see Ganzeboom & Treiman, 1996). ISEI values range from 16 ("Farm-hands and laborers" and "Helpers and cleaners in offices, hotels and other establishments") to 90 ("Judges"). We determined the family ISEI as the highest ISEI-values of either father or mother. Internal consistency of the scale was $\alpha = .68$.²

Parental cultural activities: We used the three items on receptive high-brow cultural activities from the OECD's PISA study (OECD, 2002; for German versions, see Kunter et al., 2002) as indicators of parental cultural activities. Specifically, parents were asked how often they had "visit[ed] a museum or art gallery", "attend[ed] an opera, ballet, or classical symphony concert", and "watch[ed] live theatre" during the past year. Four response options were provided: "never or hardly ever" (coded as 1), "once or twice a year", "about three or four times a year", and "more than four times a year" (coded as 4). Internal consistency of the scale was $\alpha = .64$.

Peer group cultural activities: Three items tapped students' reports of an important facet of their peer group cultural activities, their literary orientation, as implemented in PISA 2000 (Kunter et al., 2002). This facet was chosen because it is a classic focus of conventional, nondeviant peer group activities and avoids item overlap with the criterion (Cook, Herman, Phillips, & Settersten, 2002). The prompt was as follows: "To what degree do the following statements about groups hold for the peers with whom you spend most of your time?" The items were worded from the perspective of the students participating in the study: (1) "Sometimes I go to a library with my friends", (2) "I often talk to my friends about books", and (3) "Sometimes I go to a bookstore with my friends". There were five response alternatives, from "does not apply at all" (coded as 1) to "applies perfectly" (coded as 5). Although this approach might increase the danger of falsely rejecting the hypothesis of an effect of peer group on student activities, it has the advantage that if an effect is nevertheless observed, it cannot be easily attributed to item overlap with the criterion measure. Internal consistency of the scale was $\alpha = .67$.

2 To compute the reliability of the social background scale and for the descriptive statistics, items were z-standardized to prevent the different scales used for ISEI and parental educational level from leading to distortions.

Openness: We used student self-ratings and parental ratings from the 40-item bipolar adjective scale developed by Asendorpf and van Aken (2003) to assess the Big Five as a measure of openness. Total sample scale reliability was $\alpha = .71$ for self-ratings and $\alpha = .80$ for parental ratings. We excluded all items with loadings below .50 from our models. For both self- and parental ratings this rationale consequently resulted in four items: “stupid – intelligent [dumm – intelligent]”, “unimaginative – imaginative [einfallslos – einfallsreich]”, “ignorant – knowledgeable [ungebildet – kennntnisreich]”, and “less interested – with diverse interests [weniger interessiert – vielseitig interessiert]”. The five response options provided an item range from 1 (strong agreement with the adjective indicating low openness) to 5 (strong agreement with the adjective indicating high openness).

2.3 Criterion: Students’ highbrow cultural activities

Like parental cultural activities (described in the section on predictor measures), students’ highbrow cultural activities were assessed by the three-item scale from the OECD’s PISA study. Item wording and coding were as described above. The only difference between parental and student items was that the polite form of address in German (*Sie*) was used for the parents, while for children the original, more familiar form of address from the PISA items (*Du*) was used. Internal consistency of the scale was $\alpha = .54$.

2.4 Data analysis

The hypotheses were tested using the structural equation modeling program Mplus (Version 4.1, Muthén & Muthén, 1998–2006). As in most large-scale studies, data on some variables were missing for some participants. Instead of excluding these participants from the analysis, we used the *Full Information Maximum Likelihood* (FIML) approach to estimating models with incomplete data (see Enders, 2010). If the assumptions of missing at random (MAR) hold for all indicators included in the structural equation models analyzed, FIML performs similar to multiple imputation, with an infinite number of imputations in terms of efficiency (Enders, 2010). Given the hierarchical nature of the data, we computed standard errors that were robust against violations of the assumption of normal distribution resulting from clustered samples and that took the nesting of the data into account, thus preventing underestimation of standard errors (MLR estimator with the “*complex*” option of analysis). The *Comparative Fit Index* (CFI), the *Tucker-Lewis Index* (TLI), and the *Root Mean Square Error of Approximation* (RMSEA) were used to gauge model fit. Models with a CFI and a TLI above .90 and an RMSEA below .06 are seen as reasonable approximations to the given data (Bentler, 1995; Hu & Bentler, 1999).

3. Results

3.1 Descriptive statistics

Social Background: With respect to ISEI, our sample ($MD = 38$, $p_{10} = 25$, $p_{90} = 56$) was reasonably representative for German conditions, according to the German Microcensus Data of 2000 ($MD = 39$, $p_{10} = 25$, $p_{90} = 68$, Schimpl-Neimanns, 2004). The educational levels of 51 % of fathers and 48 % of mothers were in the two lowest categories. The descriptive statistics for the other variables were as follows: *parental cultural activities:* $M = 1.43$, $SD = 0.52$; *peer group cultural activities:* $M = 1.86$, $SD = 0.84$; *openness (self-rating):* $M = 3.59$, $SD = 0.79$; *openness (parental rating):* $M = 3.84$, $SD = 0.74$; *student cultural activities:* $M = 1.46$, $SD = 0.48$. Bivariate correlations as well as means and standard deviations for the subgroups and the total sample are displayed in Table 1.

3.2 Structural equation models

3.2.1 Assessment of measurement invariance

Measurement invariance may be violated when students from different tracks are assessed with the same measures: In Germany, attending a school of a certain track is strongly tied to social background (Stanat, 2006). This is why the meaning attached to phrases like “attending a classical music concert” may vary over school tracks, thereby affecting factor loadings. Thus, we followed Cheung and Rensvold’s (1999) recommendation and, prior to testing the full and the conceptual model, checked for the equality of covariance matrices and mean vectors of the indicators in the model, both separately and jointly, using the chi-square test.

A model assuming equality of covariances and means yielded a χ^2 -value of 1674.20 and a Satorra-Bentler (S-B)-scaled χ^2 -value of 1,357.83 with 460 degrees of freedom ($p < .001$; RMSEA = .050; CFI = .855; TLI = .820; cf. Satorra & Bentler, 2001). However, most of the invariance indicated by the results was due not to differences in covariances but to differences in mean values that were in line with our hypothetical expectations. A model assuming equality of covariances, but not means, yielded no substantial invariance: RMSEA = .038; CFI = .92; TLI = .90, indicating that model fit was acceptable, despite a statistically significant χ^2 value that was not surprising given the large sample size ($\chi^2 = 197.86$; S-B χ^2 [420] = 890.40; $p < .001$). Because no substantial violations of invariance were observed for covariances of the indicators, we decided to skip the further tests of invariance described by Rensvold & Cheung (1998) for the models under scrutiny, and proceeded to test our structural hypotheses (cf. Steenkamp & Baumgartner, 1998).

Table 1: Bivariate correlations, means (and standard deviations) for the total sample and by school track

Track		Social back- ground	Open- ness (self- rating)	Open- ness (parental rating)	Peer group activities	Parental activi- ties	Cultural activities
All	Openness (self-rating)	.11***					
	Openness (parental rating)	.23***	.37***				
	Peer group activities	.03	.10***	.15***			
	Parental activities	.38***	.09**	.14***	.11***		
	Cultural activities	.07***	.02	.09**	.29***	.32***	
	<i>M</i>	-0.02	3.59	3.84	1.86	1.43	1.46
	(<i>SD</i>)	(0.81)	(0.79)	(0.74)	(0.84)	(0.52)	(0.48)
L	Openness (self-rating)	.02					
	Openness (parental rating)	.08	.29***				
	Peer group activities	.06	-.02	.13*			
	Parental activities	.30***	-.09	-.08	.13*		
	Cultural activities	.08*	-.12**	.02	.29***	.30***	
	<i>M</i>	-0.32	3.29	3.53	1.74	1.34	1.48
	(<i>SD</i>)	(0.66)	(0.81)	(0.78)	(0.88)	(0.47)	(0.56)
I	Openness (self-rating)	-.01					
	Openness (parental rating)	.11*	.27***				
	Peer group activities	-.08*	.07	.10*			
	Parental activities	.31***	.07	.13**	.12**		
	Cultural activities	.01	.03	.07	.31***	.29***	
	<i>M</i>	-0.04	3.62	3.82	1.87	1.41	1.43
	(<i>SD</i>)	(0.73)	(0.75)	(0.71)	(0.81)	(0.49)	(0.44)
H	Openness (self-rating)	.09					
	Openness (parental rating)	.19***	.39***				
	Peer group activities	.01	.20**	.11			
	Parental activities	.41***	.13*	.16**	-.01		
	Cultural activities	.17***	.18***	.18**	.22***	.40***	
	<i>M</i>	0.46	3.90	4.15	2.01	1.58	1.50
	(<i>SD</i>)	(0.89)	(0.68)	(0.61)	(0.81)	(0.58)	(0.43)

Note. Due to missing data (which have been estimated via a model-based approach during the SEM analyses; Arbuckle, 1996), the pairwise *N* ranges from *N* = 1,406 to *N* = 2,136 in the total sample. Theoretical maxima were 5 for openness ratings and peer group activities and 4 for parental and student cultural activities. Social background has been computed as the average of *z*-standardized indicators. L = low track, I = intermediate track, H = high track.

p* ≤ .05. *p* ≤ .01. ****p* ≤ .001.

3.2.2 The conceptual model

The hypothesized relations of the conceptual model depicted in Figure 1 were tested in multiple-group structural equation models for low-, intermediate-, and high-track students, respectively. We modeled students' latent cultural activities as the criterion and students' latent openness, peer group cultural activities, and parental cultural activities as the predictors, controlling for the effects of social background on parental activities. Because the wording of items regarding the cultural activities was similar for the adolescent participants and their parents, we allowed the uniquenesses of analogous items to be correlated.³ We restricted all parameters except indicator residuals and latent variable means to be equal across groups and fixed latent variable means in the low-track group to zero. All latent variables used were named according to the related scales described in the Method section. For all latent variables, all items from the respective scales were used as indicators. To identify the model analyzed, we additionally fixed the loadings of one indicator of each construct to 1. In line with our hypothesis of lower mean levels for low-track students and higher mean levels for high-track students, we restricted all latent variable means to vary across school tracks according to linear trends (low track < intermediate track < high track). All factor loadings of the conceptual model were substantial. The RMSEA indicated an acceptable fit (RMSEA = .029), and the CFI and TLI were well above the .90 level (CFI = .937, TLI = .937). The χ^2 and Satorra-Bentler χ^2 values were 1,074.82 and 961.38, respectively ($df = 571$).⁴

With respect to the structural paths (see Table 2), some were insignificant. These were the paths from both parental ratings and student self-ratings of openness to cultural student activities and the correlations of self-ratings of openness with both peer group cultural activities and parental cultural activities. With respect to latent variable means, trends for students' cultural activities and parents' cultural activities were estimated as zero.⁵

3 This applies to student and parental cultural activities, and to self- and parental ratings of openness. Moreover, for these constructs, we restricted uniqueness to be equal not only across groups but also within each set of variables.

4 We used the procedure suggested by Satorra and Bentler (2001, see Crawford & Henry, 2003, for an applied example) to compare the fit of the full model with the fit of the final model. Because both the Satorra-Bentler-scaled χ^2 (S-B χ^2) and the normal χ^2 are required for this purpose, we report both statistics.

5 Note that including school tracks as a set of dummy variables in a model without a multiple-group design would have produced similar results, but would not have afforded the opportunity to test for measurement equivalence of all parameters. Thus, it comes as no surprise that partial correlations of both parental ($r = .04$; $p = .15$) and student cultural activities ($r = .01$; $p = .64$) with school track, while controlling for social background, are also statistically insignificant.

Table 2: Structural paths for the conceptual, the full, and the trimmed model

		Openness (Self- ratings)	Openness (Parental ratings)	Peer group activities	Parental activities	Cultural activities
Conceptual model	Social background	–	–	–	.47***	–
	Openness (Self-ratings)		.35***	.04	.05	-.01
	Openness (Parental ratings)			.09*	.09*	-.02
	Peer group activities				.17***	.33***
	Parental activities					.37***
Full model	Social background	.01	.15***	-.02	.49***	-.15**
	Openness (Self-ratings)		.35***	.03	.05	-.02
	Openness (Parental ratings)			.09*	.05	.02
	Peer group activities				.16***	.31***
	Parental activities					.48***
Trimmed model	Social background	–	.16***	–	.49***	-.15**
	Openness (Self-ratings)		.35***	–	–	–
	Openness (Parental ratings)			.08 ⁺	–	–
	Peer group activities				.16***	.31***
	Parental activities					.48***

Note. All parameter estimates completely standardized. Covariances in italics, all other coefficients are directed paths. ⁺*p* < .10. **p* < .05. ***p* < .01. ****p* < .001, two-sided.

3.2.3 The full model

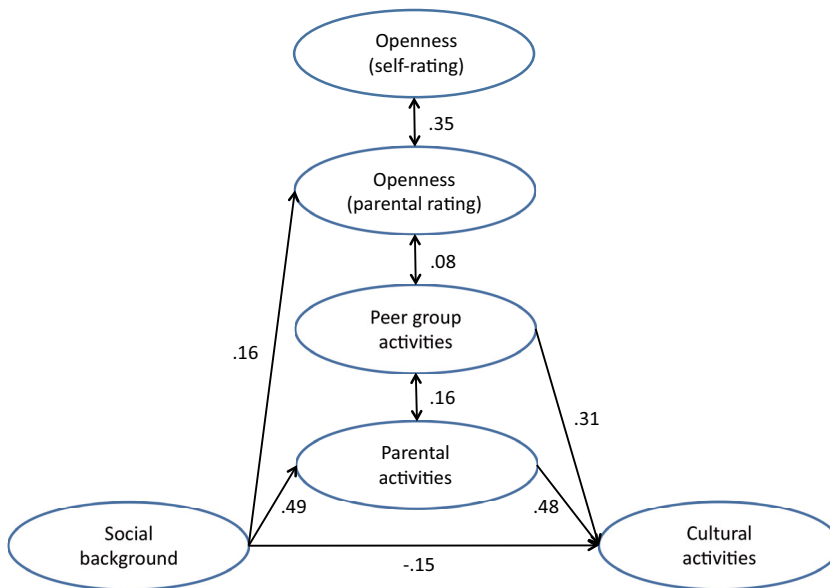
To test whether the paths expected to be insignificant were indeed so, we additionally evaluated the full model, including the paths from social background to parental and self-ratings of openness, to peer group cultural activities, and to student cultural activities (cf. dotted lines in Figure 1; RMSEA = .029, CFI = .940, TLI = .940, $\chi^2 = 1,046.21$, S-B $\chi^2 = 936.63$; *df* = 567). Path coefficients are displayed in Table 2. As expected, the paths from social background to peer activities and to self-rated openness were statistically insignificant. Contrary to our expectations, however, the path from social background to parental-rated openness was statistically significant and positive, and the path from social background to cultural activity was statistically significant and negative. The insignificant paths in the conceptual model were also statistically insignificant in the full model. Moreover, in the full model, the correlation between parental ratings of openness and parental cultural activities was statistically insignificant as well.

3.2.4 Post-hoc-modifications

Based on the results from the models reported above, we tested a third model, with post-hoc modifications. This model differed from the conceptual model in two regards: First, the unexpected substantial paths from social background to

parental-rated openness and cultural activities from the full model were retained. Second, we both eliminated parameters from the structural model that were statistically insignificant in the full model mentioned above and restricted means to be equal across groups for latent variables where hypothesized linear trends in latent means turned out to be statistically insignificant in the full model. The resulting final model is displayed in Figure 2 (RMSEA = .028; CFI = .941; TLI = .941; $\chi^2 = 1,050.21$; S-B $\chi^2 = 941.90$; $df = 576$).

Figure 2: Final empirical model of the relationship between social background, parental cultural activities, peer group cultural activities, and students' cultural activities.



Note. All parameters are standardized estimates. $p < .05$ for all parameters, except for the correlation between parental-rated openness and peer group activities, see Table 2.

Our modifications did not lead to any statistically significant decrease in model fit relative to the full model ($\Delta \chi^2[9] = 4.14$; $p = .91$). This third model explained 33 % of variance in the criterion. Apart from the correlation between parental ratings of openness and cultural peer group activities, which was only marginally significant after controlling for SES, all paths in the trimmed model were statistically significant at the .05 level. All trends for the latent means retained from the full model were estimated to be statistically significantly different from zero ($p < .001$ in each case). Standardized differences in latent means between adjacent tracks were $d = 0.61$ for social background, $d = 0.46$ for self-rated openness, $d = 0.40$ for parental-rated openness, and $d = 0.16$ for peer group activities.

4. Discussion

The present study investigated the pattern of effects of social background and parental and peer group cultural activities on the cultural participation of students from different school tracks. In addition, it investigated effects of openness. Results showed reasonable measurement invariance and no substantial group differences in the structural model apart from the hypothesized trends in mean levels for social background (as measured by parental education and SES), peer group cultural activities, and openness as a function of school track. However, no such trends were observed for the mean levels of student or parental cultural activities. Regarding the explanatory power of parental and peer group activities, the results of the conceptual structural model were in accordance with our hypotheses. In other respects, some modifications to the model were necessary, as discussed in detail below.

4.1 Between-group differences in the level of cultural activities

Mean levels of social background (as measured by parental education and SES) and peer group cultural activities varied with school track, but not with parental or student cultural activities. When interpreting this finding, it has to be taken into account that mean values for the parental and student cultural activities were generally quite low for all subgroups, which is consistent with results of other studies on the frequencies of highbrow cultural activities in representative samples (Reuband & Mishkis, 2005).

However, it would be premature to interpret nonexistent effects of school track on highbrow cultural participation as an expression of the low relevance of differences between schools for this variable. Rather, it might indicate that it is not school track itself, but the profile of the schools included in the sample that is related to the activities of students and their parents. As Fritzsche et al. (2011) were able to show in a study focusing on high-track students, school profile might display huge explanatory power for students' musical activities. In contemporary Germany, significant differences in cultural activities according to school track might be explained by the fact that a culturally favorable school profile is in most cases attached to high-track schools (cf. Hoerner, 2004). These effects may have been hidden in the present study, where no high-track schools with explicitly culturally favorable profiles were included. Thus, further research on this issue is warranted. Additionally, future studies should include more frequent highbrow cultural activities (e.g., listening to classical music on CDs or via Internet) to produce more variance in this variable. However, there is an inherent tradeoff between frequency of an activity and its significance as a highbrow activity.

4.2 Effects of parental and peer group activities

As expected, we observed substantial effects of both parental and peer group cultural activities on students' cultural activities. It can therefore be concluded that these variables, which have seldom been investigated in previous psychological studies on cultural participation, are important explanatory variables for adolescents' cultural activities. Moreover, parental activities and peer group activities were correlated, which is in line with the idea that parents' role as socialization agents may extend to the selection of friends and leisure activities for their children.

4.3 Effects of social background on parental cultural activities, peer group cultural activities, and openness

The effect of social background on parental cultural participation was as hypothesized, replicating well-known findings from sociological research (Bourdieu, 1979/1984). Although we did not formulate an explicit hypothesis concerning the path from social background to peer group cultural activities, the finding that this path was not statistically significant is theoretically plausible. Of course, this finding does not rule out the possibility that parental education and occupation affect children's selection of friends. Even if they do have an effect, however, parental cultural activities being controlled for, parents with high SES likely pay little attention to potential friends' background rather than their engagement in highbrow cultural activities. The path from social background to parental-rated (but not to student-rated) openness is notable. Given that the openness scales used in the present study also relate to intellectual capabilities, the path may reflect affluent parents' high expectations and opinions of their children's intellectual abilities and achievement.

4.4 Effects of social background on students' cultural activities

Our structural model shows a statistically significant negative relationship between social background and students' cultural activities. Given that there is a positive bivariate correlation between social background and students' cultural activities, this finding indicates suppression. As such, it cannot be interpreted in isolation, meaning that it would be wrong to "conclude that a direct effect contrary to that expected is operating" (Maassen & Bakker, 2001, p. 268). Instead, "one should combine the suppressor and [...] other variables and try to interpret the resulting linear composite in a meaningful way" (p. 268). It is therefore important to take the following linear combination into account when interpreting predictors of cultural activities: *cultural activities* = .48**parental activities* - .15**social background*. One interpretation could be as follows: Parents who participate culturally share

their enthusiasm with their children, encouraging them to take advantage of opportunities to participate in cultural activities. On the other hand, we know that adults' cultural activities are associated with social background. Therefore, parents with high social status may participate for reasons other than their interests, feeling compelled by their milieu. The same does not necessarily apply to their children. We hence have to correct for the effect of social background when estimating student cultural activities on the basis of parental activities. Although plausible, this interpretation is somewhat speculative and needs to be further investigated in future research.

Note that our findings are consistent with prior research considering social background as a predictor of cultural activities, as indicated by the total positive effect of $\beta = .09$ that results when the positive indirect effect of social background on students' cultural activities via parental cultural activities is combined with the negative direct effect. This is close to the bivariate correlation of social background and students' cultural activities in the total sample ($r = .07, p < .001$; see Table 1).

The results for social background and parental cultural activities underline the importance of considering predictors of parental cultural activities in addition to indicators of parental income, occupational status, or education. Design of most previous studies was not suitable for investigating the suppressor effect observed with our data, inasmuch as they did not include the combination of variables used in the present study. Had we omitted parental and peer group activities, we would also have found a small total effect of social background on cultural activities. By including these predictors in the present study, we have probably come closer to the true story. Nevertheless, replication studies are needed before firm conclusions about the significance of the observed suppressor effect can be drawn.

4.5 Effects of openness on students' cultural activities

Previous findings repeatedly showed a substantial bivariate correlation between openness and cultural activities (Kröner et al., 2008; McManus & Furnham, 2006). The corresponding total sample correlations in the present study were low for parental ratings of openness ($r = .09$) and statistically insignificant for self-ratings. Of course, this difference may have been due to a moderate internal consistency of the measure used in the present study. But it may have also been due, at least in part, to variation in the content of openness scales used in the different studies. McManus and Furnham (2006) and Kröner et al. (2008) used the NEO-FFI Openness to Experience scale (Costa & McCrae, 1992) to investigate the relationship between openness and cultural activities. This scale includes items such as "Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement" (McCrae, 2007, p. 6), which are semantically close to cultural activities, therefore probably yielding higher correlations with these activities – although such correlations might also be due to item overlap. In contrast, adjective checklists like those used in the present study are more distant from cultural activ-

ities, having more in common with a self-assessment of intellectual capacities. At first glance, one might argue that these items are less face valid. However, both intellectual capacities and openness are part of the intellectual–cultural trait complex that might well be a valid predictor of intellectually refined highbrow cultural activities (Ackerman & Heggestad, 1997). Therefore, although the lower correlations with cultural activities found relative to prior studies may to some extent be attributable to differences in the operationalization of openness, the last word has not been spoken on this issue. Further research that incorporates a variety of personality questionnaires and adjective checklists is warranted.

More interesting than the size of the correlation between openness and cultural activities is what happens to this correlation when controlling for parental and peer group cultural activities. Unlike most previous studies on cultural activities, the present study provides an answer to this question: Taking parental and peer group cultural activities into account, parental ratings of openness no longer displayed a unique direct effect on student cultural activities either. As discussed in the next paragraph – and with all caution, due to the measurement issues mentioned above – these results highlight the relevance of behavior of socialization agents as predictors of cultural participation.

4.6 Correlations of openness with parental and peer group cultural activities

Theories of person–environment transaction and the assumed developmental significance of friends would support the expectation that measures of openness and peer group activities were correlated. However, this correlation was only marginally significant in the final model of the present study and only for parental ratings of openness. Thus, even evidence for an indirect effect of openness on cultural activities that operates via peer group activities is not particularly strong. Finally, contrary to the expectations of the conceptual model, the correlation with parental cultural activities was insignificant for both student and parental ratings of openness. These results may be attributable to reasons similar to those discussed for the effect of openness on cultural participation, including measurement issues, and they too warrant replication studies.

4.7 Limitations

The present study is one of few psychological studies to have considered a combination of social background, parental cultural activities, and openness as predictors of cultural activities. Nevertheless, some limitations remain in this regard. First, only 33 % of the criterion variance was explained. Although not particularly low, the amount of variance explained might have been higher with longer, more reliable scales than with those that had to be used in the present large-scale study.

Effects might have been larger had more comprehensive, robust scales been used for the predictors. *Additional predictors* might also be included in future studies. For example, peer ratings of cultural activities on the same scale as the criterion might be useful. Another possibility might be to consider the intrinsic value of cultural activities, a predictor that has proven fruitful in pedagogic interest theory (Hidi & Renninger, 2006; Kröner & Dickhäuser, 2009). In terms of openness, a strength of the present study is that it simultaneously analyzes both self- and parental ratings. Nevertheless, additional scales might have been applied to reduce idiosyncratic effects of a particular scale. Another issue in that context is that bivariate correlations of self-rated openness with the other constructs included in the present study tend to be higher for high-track students than for low- or intermediate-track students. Because previous studies tended to include only high-track students, this might be an avenue for further research as well.

Second, although the *direction of causality* is likely to be from the predictors to the criterion rather than the other way round, given the cross-sectional nature of the data, no definitive conclusion can be drawn. For example, one may assume that students are influenced not only by their peers in general, but also select peers with matching traits and leisure activities (Hartup, 1996). Likewise, parents do not exert a one-way influence on their children; the influence is bidirectional (Belsky, 1984). Third, our *operationalization* of highbrow cultural activities was in line with the approach used in large-scale international studies such as PISA (Kunter et al., 2002). We focused on this relatively small segment of cultural participation due to its particular importance as a hallmark of distinction (Rössel & Beckert-Zieglschmid, 2002). Nevertheless, it would be rewarding to investigate other aspects of cultural participation in further studies (Kraaykamp & van Eijck, 2005; McManus & Furnham, 2006). Aspects of active cultural participation thought to covary with cognitive abilities may be of particular interest (Kröner, Schwanzer, & Dickhäuser 2009). Finally, an integration of the quantitative analysis reported in this paper with a *qualitative approach* that includes interviews with students and their parents would be a valuable supplement for further studies (cf. Hanson, Plano Clark, Petska, Creswell, & Creswell, 2005). Despite its limitations, the present study shows that the activities of key socialization agents are important predictors of student activities that serve as signs of distinction (Bourdieu, 1979/1984).

4.8 Conclusion

Our results confirm that findings on determinants of highbrow cultural activities in the highly selective sample of adolescent high-track students (Kröner et al., 2008) can largely be generalized to samples of students from lower school tracks with less favorable social backgrounds. Moreover, our results emphasize the importance of including the activities of socialization agents as predictors in studies on highbrow cultural activities. Taking these variables into account, the simple picture of cul-

tural participation as being somehow directly determined by social background becomes more complex (cf. Bourdieu & Darbel, 1966/1990). Future research would benefit from a more comprehensive coverage of predictors from the personality area, as well as from designs that allow the causal direction of effects to be tested. When these issues are resolved, it will be possible to explore ways in which students from families with low socioeconomic status, and their parents, can be involved in highbrow cultural activities. This is an issue to be discussed not only in view of the decreasing numbers and increasing age of theatre-goers: As stated in the introduction, being unfamiliar with highbrow cultural activities and the associated rituals and discourses may hinder the advancement of children from families with low socioeconomic status. However, if interventions fostering cultural participation in such families are to be developed, they should also include information on and reflection of the role of cultural capital in the mechanisms of social domination and the reproduction of social inequalities.

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