PARTICIPATION IN LEGITIMATE CULTURE: FAMILY AND SCHOOL EFFECTS FROM ADOLESCENCE TO ADULTHOOD

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Introduction

Participation in legitimate culture such as theatre, classical music, ballet and museums remains a highly stratified phenomenon in modern societies such as the Dutch one today. Its association with formal education is particularly striking and many authors (Wippler, 1968; Ganzeboom, 1984; Knulst, 1989) cite schooling and arts instruction at school as the main source of variation in later cultural participation. However, there is often an even stronger association with family background, in particular with parental involvement in arts (De Jager 1967). Indeed, later research in the Netherlands has confirmed that cultural participation is strongly produced and reproduced in families (Ganzeboom, 1982; Van Eijck, 1996).

According to the cultural reproduction thesis, as proposed by Pierre Bourdieu (1977[1970]) and Collins (1979), and made empirically testable by DiMaggio (1982), the strong effects of parental background produce the stratified nature of arts participation. This perspective holds that educational attainment is largely an epi-phenomenon of cultural reproduction, as it goes on in families. Parents inculcate their lifestyles in their children and these lifestyles become the main markers of access to status positions in later life, initially in education (DiMaggio 1982) and later in occupational attainment (Mohr & DiMaggio, 1996) and on the marriage market (DiMaggio & Mohr, 1985). For the Netherlands, there is extensive evidence (De Graaf, 1986, 1989; Niehof 1997) that access to cultural resources helps promote educational careers: children from cultured backgrounds do better at school, regardless of their parents' other resources, particularly financial ones.

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In one of his early writings, Bourdieu (Bourdieu & Darbel 1990[1969]) reflects on the relation between socialization in the parental home and arts instruction at school in shaping later cultural consumption. He notes that the preconditions necessary to appreciate art can only be acquired in the family during a long process of cultural socialization. Bourdieu does not rule out some effects of arts education. However, he claims that these effects are only marginal, because of the selective nature of access to higher educational levels and the secondary role of scholastic arts education. Thus far, the extent to which the school independently promotes cultural participation over and above parental effects has not been investigated satisfactorily. This is due to two related problems in previous research.

First, much of the research on the relative influence of family and school has methodological problems. Most studies model the effects of family and school by using measured indexes, such as the cultural practices of parents and the cultural climate at school or the highest attained educational level. There are drawbacks to this. The relative effects of these two factors in this design depend on the exact contents of the measures used. Measures of family background may not fully cover the total impact of the family of origin, so that family effects are underestimated. Over the last ten years, researchers have begun to estimate _total_ family effects applying sibling designs (Ganzeboom & De Graaf 1991; Van Eijck 1996). In studies using these contextual models, the effect of family has been found to be substantially larger than if only measured indexes of family background are used.

However, the same issue arises as to the influence of school. The use of contextual models, that assess educational effects using schoolmates' similarities, is extremely common in education research (e.g. Veenstra 1999). If these models are applied to cultural participation, measures of educational level seem to cover effects of schooling quite accurately (Van Eijck 1996). However, it may not be the level of schooling alone, but the arts instruction that goes on at school, that matters most to later cultural participation. Research has indeed found consistent evidence in favor of this hypothesis (Ganzeboom & Ranshuysen, 1993; Ganzeboom 1996; Nagel et al., 1997). Again, if choosing the empirical indicator of schooling makes a difference, we should be interested in _total_ school effects, as they can be estimated in contextual (multilevel) models.

Secondly, most of the studies are cross-sectional, whereas some of the research questions may be better formulated as dynamic. The question is not only whether family or education is more important, but also at which moment in the life cycle. During childhood and early adolescence, parents are largely responsible for their children's cultural behavior. However, the effects of family and schooling may change from early adolescence to adulthood. When adolescents gradually loosen the ties with their parents and start living their own

lives, the question is to what extent the family influence persists. As to education, it seems likely that the effect of education is not yet evident in childhood, since schooling starts later than family socialization, and does not fully emerge until the educational career reaches completion. The issue is whether school and family influences go on at the same rate, or whether that one finally overshadows the other.

This paper resolves both problems by using a *longitudinal double context model*. The model estimates the total family and school effects by comparing the cultural behavior of siblings and schoolmates at two moments in the life course. The first moment is early adolescence (age 14) when the respondents still live in the parental home, just as they start to follow different tracks at secondary school. The second moment is at early adulthood (around age 30) when respondents have left their parental home and have completed their full educational career. The following questions are answered:

1 To what extent do parental background and secondary school influence cultural participation and to what extent are the effects of family and school accounted for by measured indexes of parents' cultural participation and formal level of education, the empirical indicators traditionally used to assess family and school effects?
2 To what extent is there continuity in cultural participation throughout the life-cycle and are patterns of cultural participation indeed established in early adolescence? To what extent do family and school background shape adult cultural participation as compared to adolescent cultural participation?
3 To what extent does the effectiveness of school and arts education depend on the family of origin, in particular the cultural activities of the parents?

Bourdieu's theory of cultural participation and social reproduction

Bourdieu's central idea with respect to lifestyles, and in particular participation in high cultural activities, is that inequalities mainly originate in the parental family. Lasting differences in cultural participation result from the way high status groups inculcate their cultural life style into their children by familiarizing them with works of art and cultural experiences. The family socialization is characterized by a slow but continuous infusion of high culture taste from an early age onwards, even without the parents' explicit intent to impart high culture values to their children. According to Bourdieu "[...]the correct manner is only acquired in the course of the imperceptible and unconscious learning of a primary upbringing which is simultaneously diffuse and total" (Bourdieu & Darbel, 1990, p. 65).

Bourdieu & Darbel (1990) argue that the school can only play a marginal role. To begin with, they seriously question the role of formal arts education in

the explanation of school differences with respect to cultural participation. They argue that school differences are not likely to be the result of arts education, since at the time arts education was only a minor part of the curriculum in French schools. Instruction in the arts was not organized structurally at school, and especially going to actual cultural events was largely contingent upon incidental efforts on the part of individual art teachers. Bourdieu & Darbel admit that the school may still extensively affect cultural participation in as far as it teaches literature. As the principal art discipline at school, literature provides general principles of classification, which can be applied in other art disciplines. This way "school tends to inculcate [...] a learned or scholarly disposition defined by a recognition of the value of works of art and a generalized and lasting aptitude to appropriate the means of appropriating them" (Bourdieu & Darbel, 1990, p. 62). School also teaches "to admire academically established works of art" and develops the readiness to get acquainted with academically recognized works of art. The school develops the inclination to classify works of art by artist, period and genre, thereby offering the tools by which previously acquired unconscious knowledge can be put to use. The authors also hypothesize that at higher levels of education a certain familiarity with culture is encouraged, the feeling of belonging to social groups with a cultivated disposition (Bourdieu & Darbel, p. 62).

Bourdieu & Darbel add that arts education at secondary schools presupposes a certain familiarity with art: "[...] school education tends to encourage the conscious relearning of schemes of thought, perception or expression which already have been mastered subconsciously, by explicitly formulating the principles of the underlying grammar, such as the laws of harmony and of counterpoint, or the rules of pictorial composition, and by providing the verbal and conceptual material necessary to express differences which are initially only experienced intuitively. An artistic education which is limited to a discourse (historical, aesthetic or other) on works of art is necessarily the second stage of tuition: like the teaching of the mother tongue, literary or artistic education [...] necessarily presupposes [...] individuals endowed with a previously acquired competence and a large capital of experiences (visits to museums or monuments, reading, listening to concerts etc.) which are unevenly distributed between the different social environments" (Bourdieu & Darbel, 1990, p. 66).

Bourdieu's theory of determinants of cultural participation can thus be summarized in three testable hypotheses:

Family differences overshadow school differences (H1). Schools tend to advantage children from culturally active families. The school system presupposes a certain familiarity with academic manners, an attitude found in culturally-oriented families. By processes of selection and self-selection, the school channels students from different social backgrounds towards different educational levels.

This way the cultural capital of the family is converted into academic titles and later cultural participation. School differences in cultural participation are thus often confounded by family differences.

Family influence remains stable; the school gains importance (H2). If we follow Bourdieu's main point that cultural participation originates in the family, we can expect patterns of cultural behavior to be largely established in childhood. Effects of school can be expected to emerge after the educational career has been completed. Proceeding from adolescence to adulthood, it can be expected that whereas family remains equally important, school gains importance.

The effectiveness of school depends on family background (H3). Arts instruction at school mainly serves to reinforce and cultivate whatever has been learned in the parental family. The effectiveness of arts education at school can be expected to be stronger for children from families with legitimate cultural experiences.

The data

The data (Nagel et al. 1993) we have available to test these three hypotheses are rather unique one from a design perspective. We have (retrospective) information on the early (at age 14) and current cultural participation of 1033 adults, who were around age 30 at the time of the interview, but originally sampled from examination records at 31 secondary schools. Through the sampling design, we have access to contextual information on the total effects of secondary school. We can not only estimate the extent to which the formal level of secondary education matters to early and later cultural participation, but also the extent to which this explains total school effects, as estimated from the similarity in cultural participation among schoolmates.

For the primary respondents we have located the siblings nearest in age and collected information on their cultural participation (at age 14 and currently), using a postal survey. Sibling similarity provides information about the total effect of family background in much the same way as the similarity of schoolmates provides information about the total effect of education.

We have also data on the parents' cultural participation. Again, this information was independently collected in telephone interviews from the parents themselves, so that our data remain uncontaminated by response set in proxy reports that are often used in studies of similarities between parents and children, siblings, or schoolmates.

The data collection starting points are 31 secondary schools in 27 cities throughout the Netherlands. To enable us to evaluate the lifetime effects of art instruction, an issue reported in greater detail in Nagel et al. (1996), the secondary schools are selected on the fact that they participated in (pilot) art exam-

ination programs in 1975-1985. The names and addresses of the students, half of whom did indeed take these examinations, are sampled from the school records in 1994. The students (between 25 and 35 years of age in 1994) and their parents are traced in various ways. In most cases, it is easier to find the parents, who often still live at the same address, than the students, many of whom have moved. The parents and students are interviewed by telephone. The siblings are found by asking the parents and students to identify the sibling closest in age, and we record the name and current address. The sibling is then interviewed in a postal survey.

In this complicated design non-response occurs for numerous reasons. For our purposes here, it suffices to record the number of remaining persons in the active sample. We have been successful in contacting about 81% of the parents, but only 66% of the siblings. In the analysis, we use a dummy variable to control for an interview from the parents: it turns out that the cultural participation of respondents observed within a family context is somewhat higher.

Table 1: Number of siblings and schoolmates in family and school contexts

number of siblings in 1033 families:	
1 sibling	385
2 siblings	648
	1033
number of schoolmates at 336 schools:	
1 student	231
2-4 students	47
5-10 students	18
10-20 students	11
more than 20 students	29
	336

The data in the analyses here are effectively drawn from 1033 interviewed students and 648 siblings. After selection of the ones with valid scores on the cultural participation indexes, there are 1681 respondents left for analysis. In total, these respondents come from 1033 families. As our primary interest is in the level of secondary education, we differentiate separate educational levels within one school building as separate school contexts. Our respondents are effectively clustered within 336 school * educational level contexts (Table 1).

It is important to point out some of the peculiarities of our design with respect to asymmetries between siblings and schoolmates.

First, as only one of the respondents' siblings is interviewed, families can consist of not more than two people and there are many (385) families represented by one person, as some primary respondents have no sibling, or at any

rate none that we could interview. In contrast, the number of respondents who attended the same secondary school varies sharply between many schools represented by only one student and 29 represented by more than 20 students (Table 1). This partly reflects the situation in the population and is partly due to the sampling design. We have located the primary respondents using school records on the exams they have completed. The primary respondents come from 31 secondary schools. For the primary respondents we use this as our indicator of secondary education. Many of the siblings (45%) have attended these same 31 secondary schools. Others have graduated from other secondary schools, and some of these schools have been mentioned by more than one sibling. These schools provide an additional opportunity to estimate total school effects.

Secondly, our primary respondents graduated between 1975 and 1985 (or in a smaller time period depending on the year the arts education programs were introduced at the particular school). Naturally, the age range of the primary respondents is somewhat narrower than for their siblings. All the primary respondents were born between 1956 and 1969, but about 9% of the siblings were born outside this range. In as far as cultural participation and cultural reproduction are conditioned by age (and life cycle), we take these differences into account by controlling for birth year. However, our sample has a fairly restricted age range to begin with, and this is true for the siblings as well.

Third, the interviewing methods vary between the siblings and primary respondents, not only in the mode of communication (mail versus telephone), but also in the contents, detail and format of the questions posed. The siblings are asked fewer questions about their cultural and educational career than the primary respondents, although the phrasing of the questions is the same. We use a dummy variable to control for the interviewing method.

Measures and constructed variables

Cultural participation at age 14 and 30

An index of cultural participation has been constructed from indicators of last year's frequency of participation in five disciplines: art museum, cultural history museum, theatre, cinema, classical concert (Cronbach's alpha = .68) (Table 2). The index has been computed as the mean of percentile[1] scores. We refer to this measure as the cultural participation at age 30. However, it is the cultural participation in the period when the respondents are interviewed (1994), when most of them are between 25 and 38 years old, with a mean of 30. The measure of cultural participation at age 14 is based on retrospective questions on the same five art disciplines and is also the mean of the percentile scores (alpha = .62).

Secondary school level

The secondary school level is the examination level from which we have sampled the primary respondents. For siblings it is the level they reported. As is clear from Table 2, the respondents are not uniformly distributed over the four secondary school levels, as is more or less the case in the adolescent population. This largely reflects the design chosen in the original sample; it also is partly due to the somewhat selective response according to educational level.

Arts education at secondary school

For the primary respondents, information on whether they took an arts examination has been gathered independently from the records of the 31 secondary schools. As the schools are selected because of their arts education programs, we know that respondents who took arts education exams attended rather intense classes in visual arts or music; the positive effects of these exams on later cultural participation have been reported in Nagel et al. (1997). The siblings have reported themselves whether they took arts education and whether they passed an arts exam.

The stratified sample according to taking or not taking an arts education program and examination has resulted in a rather uniform distribution of the primary respondents over the arts education program (52% enrolled in arts education). A minority of the siblings (21%) passed the same exam in arts education; a total of 39% of the 1681 respondents took arts education.

Highest attained educational level

Our primary interest is in the contextual effects of secondary school. However, we also have a measured index of the highest educational level attained (Table 2). Primary respondents have reported on their entire educational career. We selected the highest educational level completed from a maximum of nine educational programs they could have mentioned. Siblings are simply asked for their highest completed educational level.

Parents' characteristics

One of the parents is independently interviewed on both the parents' cultural activities during the period when their child still lived in the parental family (Table 2). The index of parental cultural participation is computed as the means of the percentile scores of these items (alpha = .84). Missing values occur since not all the parents are interviewed (only 841) and are imputed using the mean. In the analyses, we control whether the parents' answers have been replaced by using a control indicator.

Table 2: Descriptive characteristics
           Percentages (N = 1681)

cultural participation age 14[1]:	
- films	89.2
- cultural history museum	52.5
- art museum	45.5
- theatre	38.9
- classical concert	17.7
cultural participation age 30[1]:	
- films	77.4
- cultural history museum	39.3
- art museum	41.0
- theatre	54.7
- classical concert	23.9
secondary school level:	
- lower vocational school [LBO]	10.1
- junior general secondary school (4 years) [MAVO]	26.4
- senior general secondary school (5 years) [HAVO]	46.7
- pre-university secondary school (6 years) [VWO]	16.8
arts education at secondary school	38.8
highest attained educational level:	
- lower vocational school [LBO]	4.8
- junior general secondary school (4 years) [MAVO]	6.1
- senior general secondary school (5 years) [HAVO]	12.1
- pre-university secondary school (6 years) [VWO]	5.0
- senior secondary vocational school [MBO]	28.7
- higher vocational college [HBO]	32.8
- university [WO]	10.4
parents' characteristics (N = 841):	
- tertiary education father	30.6
- tertiary education mother	13.0
at least one parent regularly went to:	
- theatre	66.9
- cultural history museum	61.2
- art museum	50.1
- classical concert	40.5
- listened to classical music	79.0
- owned classical music	69.4
- owned art books	59.7
birth year:	
- ... - 1955	1.3
- 1956 – 60	11.8
- 1961 – 65	52.3
- 1966 – 70	32.4
- 1970 -	2.1
female	60.7

[1] Last year's attendance

Birth year

As is noted above, we need to control the birth year of the respondents because the age range is somewhat narrower for the primary respondents than for their siblings. We also need to control for the year of birth, because the sample contains more students from recent than from earlier birth cohorts. This is partly because at the higher secondary school levels the arts instruction programs were introduced later, and probably partly because students of recent birth cohorts were easier to trace (both in examination records and through their parents).

Sex

We control for sex because the sample is stratified according to having taken or not taken arts education. It turns out that especially girls took arts education (Nagel et al. 1997); 61% of the respondents are female.

Methodology

In our analyses, we combine a study of the total family effects with a simultaneous assessment of the total school effects. Although conceptually related, these two problems are addressed in the literature by two different models. Sibling similarity is usually modeled by structural equation models for covariances (Hauser and Mossel 1985), which express the similarity within contexts. By contrast, here we use the approach usually applied to schoolmate similarity: multi-level variance components models (Snijders & Bosker, 1996). These models express the within-context similarity in anova-type variance components. The least complex and most often applied multi-level model is the *hierarchical* model, which pertains to hierarchically nested contexts like students at school or siblings in families. Rather than being hierarchical, our design is a *cross-classified* setting: siblings are not nested within schools, nor are schools nested within families. This requires a more complicated model, which can only be effectively estimated using MCMC [Markov Chain Monte Carlo] estimation procedures. They are implemented in MlWin Development (MlWin, 2002), which has been available since May 2002.

To answer our first research question on the relative impact of family and school, we first show empty or variable (random) intercept models. These models show how the variance is decomposed between the group levels defined in the model and the individual level. At this stage of the analysis, we are not concerned with measured indexes. We start with models with a single context and ignore the longitudinal structure of the data. First we show models with only the family context. Then we show models with only the school context, separately for age 14 and age 30 (cross-sectional single context models). In a second step we estimate double context models, i.e. separately for age 14 and age

30, showing the effects of both family and school context simultaneously in a cross-classification model.

To answer the second question on the continuity of cultural consumption, we estimate a longitudinal model where the measures of cultural participation at age 14 and age 30 are regarded as nested within individuals. The longitudinal versions of the models thus treat the panel character as a distinct hierarchical level. The longitudinal random intercept model first estimates the continuity in cultural participation from age 14 to age 30. We then expand the model by adding the family and school context components. The final longitudinal double context model shows the extent to which the continuity in the cultural career is the result of the family and school contexts.

Lastly, to explain the contextual effects of family and school we add measured indexes. In estimating the models, we use an incremental strategy. We start with the random coefficient model without any measured characteristics. In subsequent steps, we add measured family and school characteristics. These steps not only estimate the effects of measured characteristics, they also show how much of the variance at the individual and group level should be assigned to measured characteristics of family and school. The measured characteristics will also be used to assess interactions between home culture and school, as implied by the third hypothesis.

Results

Cross-sectional context models

According to Bourdieu's first hypothesis, school differences are largely confounded by family differences. The question is therefore: to what extent do schools make a difference net of family differences? To answer this question, we compare the cultural participation by siblings and schoolmates at two points in time. Table 3 presents random intercept models with the total variance in cultural participation partitioned over the group levels and the individual level.

Model A and B in Table 3 represent family context models at age 14 and 30. As the variances of the dependent variables are in standardized metric and equal 1.0, the numbers reflect the proportion of variance to be attributed to a level, as well as the respective within-class correlations (i.e. similarity within context). The correlation between the cultural consumption of two siblings is .381 at both points in time. The school context models C and D show that between age 14 and 30, the correlation between schoolmates increases from .121 to .185. As these figures can also be read as proportion explained variance, our first impression is that family is far more important than school at both points in the life cycle. However, as they are single context models, they both overestimate the contextual variance, for these contexts can be expected to be at least partly confounded.

Table 3: Cultural participation at age 14 and 30
Variance components of cross-sectional random intercept models (N = 1681)
MCMC-estimation

	A single context family age 14	B single context family age 30	C single context school age 14	D single context school age 30	E double context age 14	F double context age 30
family	.381 .040	.381 .041			.313 .039	.283 .037
school			.121 .033	.185 .041	.079 .024	.143 .033
individual	.620 .034	.621 .034	.900 .033	.850 .032	.607 .034	.582 .034

Models E and F estimate cross-classified double context models, again separately for age 14 and 30. These models simultaneously estimate the variance components in the cross-classified contexts. The correlation between siblings is .313 at age 14 and .283 at age 30. The correlation between schoolmates increases from .079 at age 14 to .143 at age 30. The figures are lower than in the single context models, because now the overlap between the contexts is controlled. The models confirm the first impression that family differences are far more important than school differences. At both points in time, the resemblance between siblings is larger than between schoolmates.

However, contrary to Bourdieu's first hypothesis, school appears to make a substantial difference. Although the strongest resemblance is between siblings, schoolmates resemble each other more than a random pair of individuals. Moreover, if we compare the figures between both points in time, we get the impression that school gains importance from adolescence to adulthood. The correlation between siblings goes slightly down, but the correlation between schoolmates doubles (but never reaches the level of sibling similarity).

Longitudinal context models

How stable is cultural participation over time? To answer this question, we estimate longitudinal random intercept models where the cultural participation at age 14 and 30 are analyzed simultaneously adding an extra level for time (Table 4). The additional level, time, is hierarchically nested within individuals, as each individual is represented by culture participation indicators at two points in time.

Table 4: Cultural participation at age 14 and 30.
Variance components of longitudinal random intercept models (N = 3362)
MCMC-estimation.

	A longitudinal context	B longitudinal family context	C longitudinal school context	D longitudinal double context
family		**.355** .030		**.276** .027
school			**.162** .035	**.119** .028
individual (stability)	**.469** .027	**.112** .025	**.340** .024	**.080** .027
time (residual error)	**.533** .018	**.533** .019	**.533** .018	**.535** .019

In model A, only the time level is assessed. The individual level now represents the over-time stability within the individual. The correlation between cultural participation at age 14 and 30 is .469.

This stability is partly a result of the fact that the respondents have the same family and school contexts at both moments in the life course. The next models are expanded to include the family and school levels. In models B and C, family and school context are first added separately, and they both overestimate the contextual effects. In model D, family and school contextual effects are assessed simultaneously. The over-time variance is now decomposed into three levels: family, school and the individual. A major part of the continuity in cultural participation is a result of the family and school contexts. Only 8% of the total variance should be attributed to remaining individual characteristics that are uncorrelated with school and family, but stable over time. If we know someone's family background and education, we know almost everything there is to know about their lifetime culture consumption. Other stable individual attributes, such as gender, cohort, intelligence or artistic abilities can only account for a minor part of someone's cultural participation.

Models including measured characteristics of family and school
In the next models, we explain family and school effects on cultural participation by introducing measured indicators. The longitudinal double context models in Table 5 combine the measures of cultural participation at age 14 and 30. Model A shows the random intercept model, which was also presented in Table 4.

Table 5: Cultural participation at age 14 and 30. Longitudinal double context model. Family and school context (N = 3354). Standardized coefficients (standard errors) MCMC-estimation [a]

	A	se	B	se	C	se	D	se	E	se	F	se	G	se	H	se
birth year			**.070**	.021	**.049**	.020	**.052**	.019	**.048**	.019	**.046**	.018	**.047**	.019	**.047**	.019
female			.006	.019	.010	.018	.017	.018	.007	.018	.010	.018	.011	.018	.010	.018
sibling (mode of interview)			-.030	.020	-.031	.019	-.017	.017	.004	.018	.017	.018	.020	.018	.016	.018
age 14 - 30 (0-1)			.000	.025	.000	.025	-.001	.025	.000	.025	.001	.025	.001	.025	.001	.025
interview parents					**.057**	.020	**.052**	.019	**.050**	.019	**.043**	.019	**.040**	.019	**.042**	.019
parents' education					**.086**	.029	**.063**	.028	**.063**	.028	**.061**	.028	**.058**	.028	**.058**	.034
parents' cultural participation					**.328**	.029	**.318**	.030	**.310**	.029	**.298**	.028	**.301**	.028	**.321**	.034
secondary school level							**.188**	.021	**.196**	.021	**.155**	.023	**.159**	.023	**.141**	.027
arts education									**.066**	.019	**.068**	.019	**.068**	.019	**.065**	.023
highest educational level											**.103**	.020	**.102**	.020	.027	.024
parents' cult. part. * secondary school level													.022	.023		
parents' cult. part. * arts education													.016	.020		
parents' cult. part. * high. educational level													-.021	.021		
second. school level * arts education													.022	.018		
age 30 * parents' cult. part.															-.046	.036
age 30 * parents' education															.003	.036
age 30 * second. school level															.027	.029
age 30 * highest ed. level															**.153**	.029
age 30 * arts education															.007	.025
constant	-.038	.037	-.015	.041	-.004	.033	.016	.028	.014		.016		.016	.029	.016	.028
school variance	**.119**	.028	**.122**	.028	**.056**	.018	**.016**	.008	.016	.009	**.019**	.009	**.019**	.008	**.020**	.009
family variance	**.276**	.027	**.269**	.026	**.174**	.023	**.152**	.022	**.152**	.021	**.146**	.022	**.144**	.022	**.147**	.020
individual variance	**.080**	.027	**.083**	.021	**.091**	.022	**.105**	.022	**.104**	.021	**.097**	.023	**.099**	.024	**.103**	.020
over time variance	**.535**	.019	**.534**	.018	**.534**	.018	**.534**	.018	**.532**	.018	**.534**	.018	**.534**	.019	**.522**	.018

After controlling mode of interview, birth year, sex and age of report (in model B), in model C measured family characteristics are introduced. As is expected, there is a substantial reduction in the family residual variance. However, the school variance also drops sharply. In fact, not many school differences are left if we take parents' education and parents' cultural participation into account. This supports the idea – corresponding to Bourdieu's theory – that school differences are largely composition (selection) effects, in other words that children of similar backgrounds are clustered together at the same secondary schools.

Adding the level of secondary school (in model D) reduces the residual school variance very sharply to an almost non-significant level. The role of secondary school is statistically significant, but the effect is smaller than that of the measured indicator of cultural socialization in the parental family. The residual family variance also decreases somewhat further. In other words, some of the sibling resemblance is a result of the fact that they have attained similar secondary school levels.

Model E shows the effects of arts education. Because of our sampling design, in which half of the primary respondents took arts education, arts education does not explain school variance. There is also no substantial reduction in the family variance, in other words, taking secondary arts education is not confounded within families. The fixed effect indicates that arts education students have more contact with culture than their schoolmates who did not take arts education.

Model F introduces the highest level of education, which might overlap with the completed highest level of secondary school, and therefore effectively measures the additional influence of tertiary education or other post-secondary education. Its effect is significant, and only somewhat smaller than that of secondary education. This means that a post-secondary education provides an effective cultural milieu in addition to that of secondary school.

Model G tests the cultivation hypothesis. Does the effectiveness of school depend on family background? As is immediately clear, none of the fixed effects interactions are significant. The effects of school do not depend on the parents' cultural participation.

Model H investigates the possible interactions between the age of report and the major independent variables that have significant effects on cultural participation in the previous models. The effects of parents' cultural participation, arts education and educational level are allowed to vary over time by including an interaction with a dummy variable indicating observation at age 30. Model H shows that the effects of parents' cultural participation, arts education and secondary school level do not vary with age. The effect of post-secondary educational level, by contrast, increases between age 14 and 30. In fact, the highest completed education does not make a difference at age 14, but it does at age 30 after the educational career has been completed. These findings support the

hypothesis on the increasing influence of school over the life cycle, combined with a rather stable influence of family background.

Otherwise there is no significant interaction here: the effects of parents' culture, parents' education, arts education and level of secondary school do not change much between age 14 and 30. This is somewhat unexpected for arts education, since it only materialized *after age 14*. This means this effect should be primarily interpreted as a selection on qualities that already existed at age 14, and not as causal.[2] Similarly, though the models described above suggest that secondary school has an independent effect on later cultural participation, this model suggests that most of these effects should be interpreted as caused by selection.

Conclusions

Like much previous research on participation in legitimate culture, we have found that family socialization and education both play an important role in producing someone's level of cultural participation. Using data in a longitudinal double context design with information from siblings and schoolmates at an early and a later point in their life cycle, we arrive at considerably more precise and detailed conclusions.

The variations in cultural participation generated by family background are much larger than the variations generated by education. Expressed as variance components, family influences are about three times as strong as effects of secondary school. A similar conclusion holds true for the fixed effects of measured characteristics of family and school. These results generally confirm Bourdieu's hypothesis of cultural reproduction as confounding the relation between education and cultural participation.

Although they are smaller than family background effects, there appear to be independent effects of school on cultural participation. Cultural participation increases with the level of post-secondary school education, over and above the effects of secondary school education. Somewhat unexpectedly, we also find a significant and substantial independent contribution of secondary school education.

We only note small effects of arts instruction programs at secondary school. However, the effects of arts education are already present at age 14, prior to enrolment in these programs, and should consequently be attributed to self-selection mechanisms.

We note a great deal of consistency between retrospectively reported cultural behavior as an adolescent (age 14) and as an adult (around age 30). Interestingly, we find that almost all this stability results from the effects of family and school – and leaves little space for any further effects of individual characteristics that are stable across the life cycle, and are not tapped by education and family contexts.

Family and school effects do not vary much over the life cycle. Family influences are more or less stable, i.e. are about the same at age 14 as at age 30. As for education, a higher level of post-secondary (mainly: tertiary) education creates additional variation in cultural participation after secondary school. For the rest, the educational influences are more or less constant between age 14 and age 30.

While our findings are overwhelmingly in line with Bourdieu's hypothesis about cultural reproduction, we find no confirmation of the assumed cultivation effects of school and family: family and school independently affect cultural participation and do not reinforce each other's effects.

A few qualifications need to added to some of our conclusions. Although our sample pertains to a nationwide selection of former secondary school students, this does not necessarily cover the entire Dutch school system. A small number of students only complete primary school, and we have not covered this poorly educated group. A larger group attends post-secondary education, and we have shown that the differences here add to those generated by secondary school. Indeed, an unavoidable problem in school context models is that they cannot follow students throughout their entire educational careers.

ABSTRACT

Participation in legitimate culture: family and school effects from adolescence to adulthood

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This paper tests Bourdieu's cultural reproduction theory of participation in legitimate culture by comparing family and school effects on cultural participation in adolescence (age 14) and adulthood (around age 30). The data pertain to 1033 former students of 31 secondary schools and their siblings, aged between 25 and 35, who have been interviewed retrospectively about their participation in five art disciplines. With schoolmates and siblings data at our disposal we use a double contextual model to analyze family and school effects at two moments in the life course. In general the results support Bourdieu's cultural reproduction hypothesis. We find family background to be the main source of variation in cultural participation in adolescence and adulthood alike. School influences increase between the two stages of the life cycle, but at age 30 they are still only a third as large as family influences. We find no support for Bourdieu's cultivation hypothesis: family and school affect cultural participation independently. Lastly, the results reveal a strong consistency between cultural participation in adolescence and adulthood. Almost all this stability is generated by family and school effects.

NOTES

1. For two reasons, we routinely use percentile conversions of culture consumption indicators to create a multiple indicator index. First, percentile conversions downplay the weight of extremely active participants and increase the differences between no and some participation. Second, taking percentiles is a convenient way of harmonizing the variance of the indicators before averaging them.
2. Nagel et al. (1997) note that the effects of arts education do emerge within art disciplines, an issue we have not investigated here.

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