Differences in Educational Attainment and Religious Socialization of Ex-Pupils from Grammar Schools with Public, Catholic, Protestant, and Private Backgrounds in the German State of Nordrhein-Westfalen during the 1970s and 1980s

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Abstract: Public, religious and private schools have been co-existing in continental Europe since the 19th century. Scientific interest in differences between the educational outcomes of public and religious schools has grown recently, as a result of international debates on parental choice and school autonomy especially in the USA. Clear differences have been found between the educational outcomes of public and religious schools in the Netherlands. In this paper we analyze whether comparable

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differences exist in the German state of Nordrhein-Westfalen, which borders on the Netherlands and has much in common with Dutch history and culture. Pupils from Protestant and Catholic secondary schools in Nordrhein-Westfalen attain higher educational outcomes than those from public schools, after controlling for other characteristics. However, pupils from Protestant and Catholic schools in Nordrhein-Westfalen attain success at university and occupational levels equal to those of pupils from public schools, after controlling for unequal educational outcomes and other characteristics. These comparable differences between the effects of religious and public schools in Nordrhein-Westfalen and the Netherlands show that the Dutch educational system is not an exception, but an example of a broader European development, in which the old religious differences in education are being transformed into competition for pupils on the basis of educational quality.

1. Public and Religious Schools in Continental Europe and Differences in Educational Outcomes

Parental choice in education, or the free choice by parents of the school of their children, is one of the major topics in educational policy, not only in Europe but also in the USA and Australia. Increased parental choice in educational systems is often advocated as a means of introducing competition for pupils between schools, thereby improving the quality of teaching, decreasing the level of bureaucracy in and around schools and reducing its costs. The major problem that arises when parental choice is increased is that of finding a balance between freedom of school choice by parents and the aims of a national educational policy (promotion of equal opportunities, fair payment of education costs, equal provision of socially relevant education). The Dutch case is often seen an interesting example of such a balance: since the 1920s, parental choice has been combined with equal subsidizing and treatment of public and religious schools by the state. Despite the strong decline of religion within Dutch society, religious schools have maintained their large share of pupils. In other societies with low rates of religious activity (for instance France: Langouët & Léger, 1994) the number of religious schools is also increasing. Eight mechanisms can explain the existence of religious schools in irreligious Dutch society: 1. Financial differences; 2. Student intake; 3. Political protection; 4. Educational administration; 5. Religious values; 6. Educational conservatism; 7. The community and values of the church; 8. Deliberate educational choice (Dronkers, 1995, 1996). The most

important mechanisms for producing higher educational outcomes in Dutch Catholic and Protestant schools compared with public schools during the 1990's have been superior educational administration, stronger community, and more deliberate educational choices (Dijkstra, Dronkers, & Hofman, 1997).

The co-existence of public and private schools within one national educational system is not a unique feature of the Netherlands. It occurs in other European nations, as the unintended result of three processes: the struggle between the state and the established churches in Continental Europe; the conflict between 18th century anciens regimes (mostly with one state-church and suppressed religious minorities) and 19th century liberal governments (which claimed to be neutral to all churches); and the emergence of new social classes in the 19th century (skilled workers, craftsmen, laborers) which rejected the dominant classes, whether liberal or conservative.[1] Nor was the outcome of these three interacting processes unique to the Netherlands: in several continental European societies (Austria, Belgium, France, some German *Länder*) these processes had more or less comparable results, with public and religious-subsidized school sectors offering parents a choice between schools using the same curriculum and usually involving comparable financial costs for the parents. For good reasons, these processes had a quite different effect in the United Kingdom (Archer, 1984). The United States has never experienced these long conflicts over schools between the state and the established church or the *ancien regime* and the liberal state, due to its revolutionary beginnings. Only since the '80 a political debate has started in the USA on religious schools, vouchers and parental choice, which resembles on 19th and early 20th century debates in various European states. This is not the place to review the vast USA literature on this topic (see for good examples Bryk, Lee & Holland, 1993; Coleman & Hoffer, 1987; Coleman, Hoffer & Kilgore; 1982; Godwin & Kemerer, 2002; Sørensen & Morgan, 2000). Despite this debate in the USA recent research on the effects of parental choice and the higher religious school-effectiveness in Europe is still rare, because of the political sensitivity of the topic and the avoidance of European social scientists of 'conservative' research questions (for a recent overview of the European research of the effectiveness of religious schools in Europe, see Dronkers, 2004). However, these European effects of parental choice and the higher religious school-effectiveness are informative for the USA debates, because the parental choice and voucher-system advocated resemble in practice the current European systems with public and state funded religious schools.

The main aim of this paper is to add another analysis by finding out whether religious schools in one of these European societies produce

higher educational outcomes than public schools, as is the case in the Netherlands. In this paper we study the outcomes of schools in Nordrhein-Westfalen, a state/land of the Federal Republic of Germany, which borders on the Netherlands and has many socio-economic and religious aspects in common with the Netherlands. Of cause this analysis is only one case and it should be supplemented by a cross-national study of effectiveness of public schools, (state-funded) religious schools) and private schools. Dronkers & Robert (2003) is a first, although not fully satisfying, example of such a cross-national analysis.

2. Public, Religious and Private Schools in Nordrhein-Westfalen in the 1970s

A majority of public and a minority of religious and private schools co-exist in all *Länder* of Germany. In the German Federal Republic, the State has primary responsibility for establishing and maintaining all public schools, but the basic law also contains a guaranty (article 7, section IV GrundGesetz) concerning private schools. Non-public schools are allowed if their goals, organization and teachers are not of a lower standard than those of the public schools and special treatment of pupils based upon income and wealth is not promoted.[2] Private schools are allowed only if they are founded on special pedagogical, religious or philosophical grounds[3] (section V GrundGesetz). The schools must also accept the state's right to supervise them. This guaranty has been upheld by the high court of the German Federal Republic (Bundesverfassungsgericht): "private schools have an independently organized teaching, specially in relation to their goals, their religious and philosophical basis, their teaching methods and content".[4] As a consequence, the German Education Ministers of the *Länder* decided to allow private schools in Germany, provided that their internal and external order is of a standard comparable to that of public schools, but that the order of private schools need not be uniform to that of public schools. The same holds for the teachers, whose didactic, pedagogical and subject training should have the same value as those of teachers in comparable schools (Friedeburg in: Goldschmidt & Roeder, 1979: 41).

Most private schools receive financial assistance from the state, especially in Nordrhein-Westfalen. Private schools in that state do not need to be classed as public organizations in order to qualify for this financial help, contrary to most other German states. However it is a condition of financial assistance in Nordrhein-Westfalen that private schools support the public educational system, which means that at least 50 pupils must live in the state and that the school is obliged to accept all

pupils from the surrounding area. As a result of financial assistance provided by the state of Nordrhein-Westfalen, the costs remaining to be covered by private schools can decrease to 15 % or even 2% of the recognized exploitation costs and the retirement incomes of teachers (Vogel in: Goldschmidt & Roeder, 1979: 131-145). In 1975, Nordrhein-Westfalen did not have the highest percentages of pupils in private schools. Bayern, Berlin, Hamburg, and Rheinland-Pfalz had the highest percentages (4.6%, 4.2%, 4.1%, 3.9%), while Nordrhein-Westfalen had only 3.4%. However in 1970, Nordrhein-Westfalen had the highest percentages of pupils in private grammar schools (gymnasiums); 13.3% more than any other German *Land* at that time. The percentage of pupils in private grammar schools was fairly constant for the period 1956-1975; it varied between 16.0% and 13.3%. The private sector is also large in the Gesamtschulen (comprehensive secondary schools) of Nordrhein-Westfalen (18.4%) (Köhler in: Goldschmidt & Roeder, 1979:175-196). In Nordrhein-Westfalen, there are 86 private grammar schools, members of the 'Working group of Catholic free schools' (Arbeitskreis Katholischer Freier Schulen), 17 private grammar schools, members of the 'Working community of Protestant school organizations' (Arbeitsgemeinschaft Evangelischer Schulbünde) and 4 private grammar schools, members of the 'Association of German private schools' (Verband Deutscher Privatschulen) (Mattern in: Goldschmidt & Roeder, 1979: 197-211).

Since the constitutional balance between religious, private, and public schools in the 1970s, the position of religious and private in the 'old' German states like Nordrhein-Westfalen has not changed (Reuter, 2004).[5] Thus although our data on the pupils are now more or less 'historical,' they are still relevant for the current German situation due to a lack of change in the German educational system.

3. Hypotheses about Differences in Educational, Occupational, and Religious Outcomes between Public, Religious, and Private Schools in Nordrhein-Westfalen

Our first hypothesis is that, after controlling for other characteristics, pupils from Protestant and Catholic secondary schools in Nordrhein-Westfalen have higher educational outcomes than those from public schools. This first hypothesis is derived from the higher outcomes of Protestant and Catholic secondary schools in the Netherlands. These are explained in terms of better on average educational administrations, stronger communities and more deliberate parental choice of non-public schools.

Our second hypothesis is that pupils from Protestant and Catholic

schools in Nordrhein-Westfalen attain equal success at university and equal occupational levels as pupils from public schools, after controlling for unequal educational outcomes and other characteristics. This second hypothesis is derived from the equal success at university and equal occupational levels of pupils from public, Protestant and Catholic schools in the Netherlands (Cuyck-Remijssen & Dronkers, 1990). The explanation of this second hypothesis is that, compared with public schools, non-public schools have no additional direct influence on universities and on the labor market at the completion of education.

Our third hypothesis is that pupils from Protestant and Catholic schools in Nordrhein-Westfalen are equally religiously socialized as pupils from public schools. This third hypothesis is derived from the situation in Protestant and Catholic schools in the Netherlands because, in that irreligious society, such schools attract pupils mainly on the basis of their educational standards and no longer because of the religious socialization they offer.

4. Data

4. 1. Sample

In Nordrhein-Westfalen in 1970, 3,240 grammar school pupils from 68 grammar schools (Gymnasiums)[6] were interviewed by the University of Cologne.[7] The students were all aged approximately sixteen years, and were taken from 121 10th class groups. This primary sample was socially selective, because the German grammar school (Gymnasium) recruits its students from disproportionately higher social strata, as can be seen in Table 1.

All pupils were asked about their social background, their attitudes to school, and their educational plans. Their intelligence was also measured using Amthauer´s (1953) intelligence-structure-test (IST).

The parents and teachers of these students were also interviewed in 1970. Additional information concerning the schools attended (structure) was obtained by interviewing the principals of the schools and by analyzing statistical information.

In 1985, 61% (1,989) of these pupils, then aged approximately 30 years, were re-interviewed by the University of Cologne. The school they had attended, as well as their social background, achievements, and future life plans were known from the first interview. In the follow up, their private, educational and occupational careers were surveyed. The following analysis applies only to these 1,989 students. Of these 1,989 pupils, 1,410 (71%) obtained the general 'Hochschulreife' (a diploma which enables university entrance), 200 (10%) obtained the

Table 1
Characteristics of Secondary School Pupils in West Germany 1972[10]

Occupational Status	Part of the Male Labor Force (in %)	Grund- and Hauptschule (lower general)				Realschule (middle general)				Gymnasium (grammar)			
		M		F		M		F		M		F	
		a	b	a	b	a	b	a	b	a	b	a	b
Independent farmer	4	6	1,5	6	1,5	3	0,8	7	1,7	4	1,0	4	1,0
Other	8	9	1,1	9	1,1	15	1,9	15	1,9	19	**2,4**	21	**2,6**
Civil servant	10	8	0,8	7	0,7	10	1,0	10	1,0	17	**1,7**	18	**1,8**
Employee	24	20	0,8	20	0,8	24	1,0	26	1,1	37	1,5	36	1,5
Laborer	52	53	1,0	53	1,0	44	0,8	39	0,9	19	**0,4**	16	**0,3**
Other	1	5		6		5		4		4		5	
	100	100		100		100		100		100		100	
N (in Thousand)	20,800	3,596		3,341		511		567		855		648	

a Part (in percent) of pupils; - b Recruitment index (Quotient of the part of pupils and the part of the labor force).

'Fachhochschulreife' (a diploma which enables entrance to the Fachhochschule[8]) and 360 (20%) completed Class 10 only. 19 pupils (1%) left the grammar schools without a diploma.

Between 1970 and 1985, 1,475 of these students commenced tertiary education. At the end of the observation period, 12.7 % were still students, 15.9% had left university without a degree, and 71.3% had obtained a degree. In principle, therefore, 87.2% (or 1,287 in absolute figures) were in a position to enter the labor force. Of these 1,287 respondents, only 86.4% actually entered the labor force during the observation period. Accordingly, entry into the labor force can be studied in 87.2% of the students leaving university, and occupational status can be studied in 86.4%.

4.2. Variables

Social status of the family of origin is measured by Treimans (1977) prestige scores (*FPREST).*

The *educational levels* of fathers and mothers were measured separately. They range from elementary school only (1) to university degree (13).

The *religions* of fathers and mothers were separately measured:

Protestant, Catholic, other, no-religion. For the analyses in section 6, we combined these measurements into three dichotomous variables: both parents Protestant, both parents Catholic and both parents no-religion.

Scholastic capability of the pupils was measured by a class-administered standard intelligence test (the Amthauer´s intelligence-structure-test = IST).

Importance for parents of obtaining a grammar school diploma was measured by questioning the pupils. A high score indicates 'not obtaining is a disaster', a low score indicates 'no plans for obtaining this diploma.'

School background is represented by 3 dichotomies, with public school as base category. The numbers of public, Catholic, Protestant and private grammar schools and their pupils in the sample are shown in Table 2.

From the interviews with the principals of the schools, we know the (religious) tradition, educational philosophy, religious composition and catchment area of the schools.

Six characteristics of the *economic and social-cultural composition of the 94 areas* (Kreise) in Nordrhein-Westfalen were selected to control for geographical differences. We have used indicators from the 1960's to allow for time lags.

1. Percentages of the labor force working in the primary, secondary and tertiary sectors. (Census of 6.6.1961)

2. Gross internal production per resident per 'Kreis' (Index of 1966; Average of Nordrhein-Westfalen = 100)

3. Population density of 'Kreis'; Residents in 1000 per square kilometer in 6.6.1961.

4. Percentage of grammar school pupils per 'Kreis' of school out of all young people aged between 10 and 19 years.

Table 2
The Number of Schools and Pupils in Public, Catholic, Protestant, and Private Schools in the Sample

School type:	Schools	Pupils
Public	49	1,538
Catholic	13	308
Protestant	2	69
Private	4	74
Totals	68	1,989

5. Percentage of grammar school pupils per 'Kreis' of parental town out of all young people aged between 10 and 19 years.

6. Percentage of Protestant or Catholic residents of 'Kreis.'

Grades. *GRADE10* is the average grade of the most important subjects in the different forms of the Gymnasium, which were z-transformed within subject and each school class.

The achieved grade at the time of graduation from high school is *GRADE13*.

Grade at the time of graduation from the university is *GRADEUNI*.[9]

Highest level in secondary education ranges from ´no degree ´ (1) to *Abitur* (4).

The standard of the first *study career* after leaving grammar school was measured by the success achieved. Study success *STSUCC* is represented by a dichotomy between graduation and dropping out, the latter being the base category.

The status of the *first occupation* (*WEG1)* after entry into the labor force is a quantitative variable. It will be measured by Wegener´s (1985, 1988) MPS-Scores, a magnitude prestige scale specification constructed for the German population.

Attendance at church services in 1985 can be seen as an indicator of the degree of religious socialization. A low number means 'never,' the highest number means 'more than once per week.'

5. Differences in Characteristics of Parents, Pupils, Schools, and Outcomes

Tables 3 and 4 focus on the differences in our data between the characteristics of parents, pupils, areas, schools and outcomes for public, Catholic, Protestant and private schools separately. As shown in these tables, parents, pupils, areas, schools and outcomes differ significantly between public, Catholic, Protestant and private schools. Catholic and Protestant schools tend to draw more pupils from the lower, independent middle classes, while private schools draw more pupils from employers and free academic professions. As a result, the parental occupational and educational levels of pupils from Protestant and Catholic schools are lower than those of pupils from public schools, while those of pupils from private schools are higher. Catholic and private schools are more often boys' schools. However public schools describe themselves more often as traditional schools, or as schools with a specific educational philosophy.

The catchment areas of Protestant schools are smaller than those of public schools, while those of Catholic schools are larger. The catchment

areas of private schools are even international. Protestant and to a lesser degree Catholic schools tend to recruit from areas in the countryside, where the primary sector is still dominant and which have a low population density.

6. Differences in Outcomes of Public, Catholic, Protestant, and Private Grammar Schools, Controlling for Characteristics of Parents, Pupils, Areas, and Schools

Differences in the outcomes of public, Catholic, Protestant and private schools, as discussed in section 4, are not controlled for other characteristics of parents, pupils, areas and schools. The aim of this section is to analyze whether these controlled differences in outcome are significant. We apply multivariate regression analyses in those cases in which the dependent variable is an interval variable and logistic regression in the cases in which the dependent variable is a dichotomous variable. The procedure of addition of independent variables to these equations is in all analyses equal. We begin in Model I with only the independent variables Catholic school, Protestant school and private school. Because 'public schools' is the reference variable, the parameters of these three independent variables indicate whether the outcomes of these schools differ significantly from those of public schools. The results of Model I are thus more or less comparable with those of Tables 3 and 4. In the higher models we add the other independent variables. These independent variables are added in a certain order, based on the causal model shown in Figure 1. In Model II we add those independent variables that are directly left of the dependent variable of the analysis of Model I. In the next model, we add the independent variables a step further to the left, until we add in the final model the characteristics of parents, pupils, areas and schools (beside Catholic, Protestant and private). In each step after Model I, we add only those independent variables which have significant coefficients. We follow these procedures because we are only interested in those significant independent variables that can change the coefficients of the variables Catholic school, Protestant school and private school. Each table has only one dependent variable. The final model of each table shows the different effects of Catholic, Protestant and private schools compared with public schools on the various dependent outcomes, controlled for all significant independent variables.

Table 5 gives the results for the differences in intelligence of pupils in their 10th class of Catholic, Protestant and private schools compared with comparable pupils from public schools. Pupils from Catholic and Protestant schools have significantly lower intelligence scores, both

Table 3
Characteristics of the Surveyed Parents, Pupils, Areas, Schools, and Outcomes of Public, Catholic, Protestant, and Private Grammar Schools in Nordrhein-Westfalen in Percentages per School Type

	SCHOOL TYPE				
Data collected in 1970	Public	Cath.	Protes.	Private	X^2 (df=3)
PARENTAL CLASS					
Unskilled laborer	4.0%	6.9%	5.9%	0%	
Skilled laborer	13.7%	11.9%	22.1%	5.6%	
Elite laborer	4.4%	2.6%	0%	1.4%	
Small civil servant / employee	4.2%	4.0%	4.4%	0%	
Small independent	16.5%	25.7%	27.9%	26.4%	
Middle independent	15.1%	12.9%	10.3%	16.7%	
Middle civil servant / employee	14.1%	12.5%	4.4%	5.6%	
Larger independent	4.5%	3.0%	0%	9.7%	
Higher civil servant/ employee with professional training	14.7%	9.9%	17.6%	18.1%	
Higher civil servant / employee with management responsibilities	5.5%	4.6%	4.4%	4.2%	
Employer / free academic	3.2%	5.9%	2.9%	12.5%	87
RELIGION FATHER					
Protestant	43.2%	8.4%	81.5%	34.5%	
Catholic	51.2%	91.2%	14.8%	65.5%	
Other	1.2%	0%	3.7%	0%	
No religion	4.4%	.4%	0%	0%	190
RELIGION MOTHER					
Protestant	44.3%	7.9%	84.2%	33.3%	
Catholic	53.2%	91.7%	12.3%	66.7%	
Other	1.3%	.4%	3.5%	0%	
No religion	1.2%	0%	0%	0%	185
GENDER					
Boys	50.4%	62.7%	40.6%	87.8%	56
CO-EDUCATION					
Boys' school	20.6%	62.7%	0%	50.0%	
Girls' school	35.6%	37.3%	0%	0%	
Co-educational school	30.6%	0%	100.0%	24.3%	
Boys' school with girls	10.6%	0%	0%	25.7%	
Girls' school with boys	2.6%	0%	0%	0%	539

—continued on next page—

Table 3 (continued)

Data collected in 1970	SCHOOL TYPE Public	Cath.	Protes.	Private	X^2 (df=3)
PRESTIGE SCHOOL					
Old and tradition	2.1%	0%	0%	0%	
High level of aspiration school	7.5%	0%	0%	0%	
No special prestige	90.4%	100.0%	100.0%	100.0%	47
TRADITION SCHOOL					
Yes	71.7%	62.0%	33.3%	17.8%	96
EDUCATIONAL PHILOSOPHY					
Aspiration competition	5.4%	0%	0%	0%	
Cooperation extra-curric. & curric.	24.5%	19.2%	0%	0%	
Cooperation pupils & selection	4.2%	13.0%	0%	0%	
No characteristics	65.9%	67.9%	100.0%	100.0%	129
RELIGIOUS TRADITION OF SCHOOL					
Protestant tradition	6.8%	0%	66.7%	0%	
Catholic tradition	6.1%	71.4%	0%	39.2%	
Interconfessional tradition	0%	19.5%	0%	25.7%	
No religious tradition	87.1%	9.1%	33.3%	35.1%	1602
RELIGIOUS COMPOSITION SCHOOL					
More Protestant than Catholic	23.4%	0%	100.0%	0%	
More Catholic than Protestant	58.4%	100.0%	0%	100.0%	
Equally Catholic and Protestant	18.2%	0%	0%	0%	132
CATCHMENT AREA					
Small area around school	24.6%	0%	100.0%	0%	
Large area around school	67.7%	25.8%	0%	0%	
Regional boarding school	4.2%	14.8%	0%	0%	
Interregional boarding school	3.4%	59.4%	0%	100.0%	1142
RELIGIOUS MEMBERSHIP IN 1985					
Catholic	47.1%	87.3%	10.1%	60.8%	
Protestant	35.9%	4.9%	75.4%	21.6%	
Liberal Protestant	1.0%	0%	2.9%	0%	
Other religion	.7%	0%	1.4%	0%	
No religion	15.3%	7.8%	10.1%	17.6%	248

before (I) and after (II) controlling for characteristics of pupils, parents, areas and schools. The coefficients of the independent variables are as expected: a high importance placed on educational success, a high educational level of the mother, a high percentage of people working in the tertiary sector in the area, parental Protestant religion and no parental religion increase the intelligence scores of pupils. The negative effect of gender on intelligence means that girls from grammar schools

Table 4
Characteristics of Parents, Pupils, Schools, and Outcomes of Public, Catholic, Protestant, and Private Grammar Schools in Nordrhein-Westfalen in Means

	PUB.	CATH.	PRO.	PRI.	F-SCORE
Data Collected in 1970					
Father's occupation	48.6	47.7	46.1	53.0	3.87
Father's educational level	5.8	5.3	4.6	6.6	3.96
Mother's educational level	4.1	4.0	3.5	5.0	2.35
Parental income	4.4	4.3	3.7	5.7	8.61
Importance success for parents	3.28	3.25	2.80	3.46	2.70
Family size	2.6	3.3	2.5	2.8	20.13
Intelligence	111.5	109.9	109.8	108.3	3.62
Time homework	3.20	3.63	3.17	3.52	17.70
Social composition school	3.64	3.87	4.83	2.41	35.34
% Grammar pupils Area	21.79	25.95	14.33	16.14	84.22
% Grammar pupils Town	15.85	17.70	11.33	12.32	59.66
% Primary sector Area	62.18	185.53	205.67	127.55	251.58
% Secondary sector Area	550.11	414.12	551.67	563.03	249.73
% Tertiary sector Area	387.71	400.34	242.67	333.74	57.70
% Protestant population	423.63	226.31	801.00	295.86	179.26
% Catholic population	533.98	756.24	165.67	682.16	178.07
Gross-inland production.	102.79	79.20	85.00	76.60	76.79
Population density	19.01	7.33	3.67	2.58	105.05
Data Collected in 1985					
Grades year 10	498.58	498.24	500.23	507.56	.40
Grades year 13	27.88	28.98	27.62	26.89	3.42
% *Abitur*	.70	.71	.77	.82	2.22
Grades University	4.29	4.14	4.20	4.39	1.33
% Success further study	.56	.55	.59	.58	.22
Highest secondary education	3.29	3.38	3.42	3.59	2.01
Church attendance 1985	4.44	4.88	4.19	4.18	12.59

had lower intelligence scores compared with boys from grammar schools. The explained variance is quite low, but this can easily be attributed to the strong restriction of range arising from only analyzing pupils from German grammar schools, which is a highly selective group. One can conclude from Table 5 that pupils from non-public grammar schools in Nordrhein-Westfalen are not a highly selective group compared with pupils from public schools.

Table 6 gives the results for the differences in grades of pupils in their 10th class of Catholic, Protestant and private schools compared with comparable pupils from public schools. Pupils from Catholic and Protestant schools have significantly lower intelligence scores, both before (I)

Figure 1
Causal Model of the Variables in Our Multivariate Analyses

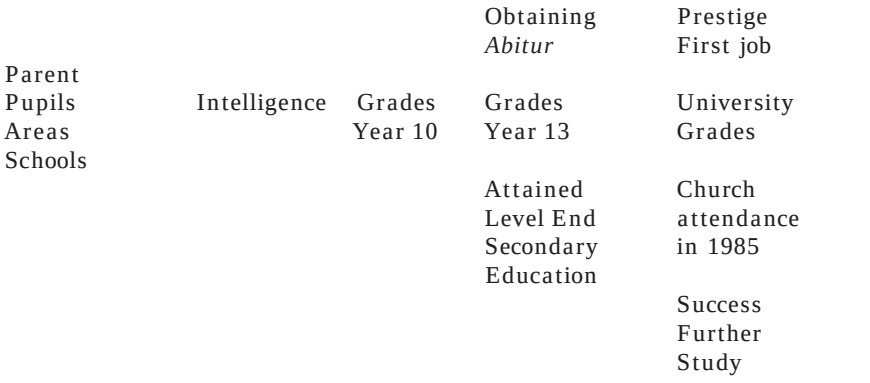

Table 5
The Standardized Coefficients of School Type and Characteristics of Parents, Schools, and Areas on the Intelligence Score of Pupils at the Start of Grammar School

	I	II
Public school (reference)	.00	.00
Catholic school	-.05*	-.06*
Protestant school	-.03	.01
Private school	-.05*	-.07**
Importance of educational success		.12**
Girl	-.17**	
Mother's educational level		.06*
% Tertiary sector in area		.09**
Parents no religion		.05*
Parents Protestant		.05*
Adjusted R^2	.00	.07

(* .01<p<.05; ** p<.01)

and after controlling for intelligence scores (II) and for intelligence scores and characteristics of pupils, parents, areas and schools (III). Despite the lower intelligence scores of pupils from non-public schools, they obtain grades in school year 10 equal to those of pupils from public schools (Model I). Adding intelligence scores to the equation does not change this result (Model II). After adding characteristics of pupils and parents, the effect of private schools becomes significant and positive: pupils at private schools get higher grades in their 10th school year than comparable pupils

from public schools. As would be expected, higher intelligence scores and a higher importance placed on educational success increase school grades in year 10. Girls achieve lower school grades in year 10 than boys.

Table 7 gives the results for differences in the grades of pupils in their last class of Catholic, Protestant and private grammar schools compared with comparable pupils from public schools. These results are only true for those pupils who completed grammar school rather than dropping out. Pupils from Catholic schools achieve significantly higher grades in their last class of grammar school than pupils from all other schools (Model I). Controlling for school grades in year 10 (Model II), intelligence scores (Model III) and characteristics of pupils, parents, areas and schools (Model

Table 6
The Standardized Coefficients of School Type, Characteristics of Parents, Schools, and Areas and Intelligence Score of Pupils at the Start of Grammar School on Their School Grades in Year 10

	I	II	III
Public school (reference)	.00	.00	.00
Catholic school	.00	.01	.02
Protestant school	.00	.01	.01
Private school	.02	.04	.06**
Intelligence		.25**	.27**
Importance of educational success			.18**
Girls		-.16**	
Adjusted R^2	.00	.06	.10

Table 7
The Standardized Coefficients of School Type and Characteristics of Parents, Schools, and Areas, Intelligence Scores of Pupils at the Start of Grammar School and Their School Grades in Year 10 on Their Grades at the End of Grammar School (School Year 13, Abitursnote)

	I	II	III	IV
Public school (reference)	.00	.00	.00	.00
Catholic school	.07*	.07**	.08**	.08**
Protestant school	-.01	-.01	-.01	-.01
Private school	-.04	-.05	-.05	-.04
School grades year 10		.39**	.39**	.39**
Intelligence			n.s.	.06*
Father's occupation				.07**
Girls			.06**	
Adjusted R^2	.00	.16	.16	.17

IV) does not change this result. Catholic schools seem to be more effective than other schools in promoting scholastic success. The effects of the other independent variables are self-evident. Pupils with higher grades in their 10th school year, with higher intelligence scores, with fathers from higher social classes and girls get higher grades at the end of grammar school.

Table 8 gives the results for differences in finally attained educational level in secondary education of pupils of Catholic, Protestant and private grammar schools compared with comparable pupils from public schools. These results are true for all pupils whether they drop out of grammar school or not (at those grammar schools or at other secondary schools). Controlled for grades in the 10th school year, intelligence scores and characteristics of parents, pupils, areas and schools, pupils from Protestant schools attained a higher educational level. The positive effect of Protestant schools cannot be explained by a Protestant religion effect, which could be derived from Weber's thesis on the relation between Protestantism and capitalism. The effects of parental religion are not significant after controlling for the other characteristics.

Table 9 gives the results for differences in success in the final examination of grammar school (*Abitur*) of pupils from Catholic, Protestant and private grammar schools and comparable pupils from public schools. These results are true for all pupils whether they drop out of grammar school or not. Controlled for school grades in the 10th year, intelligence scores and characteristics of parents, pupils, areas and

Table 8
The Standardized Coefficients of School Type and Characteristics of Parents, Schools, and Areas, Intelligence Score of Pupils at the Start of Grammar School and Their School Grades in Year 10 on the Level of Attained Educational Level in Secondary Education

	I	II	III	IV
Public school (reference)	.00	.00	.00	.00
Catholic school	.03	.03	.04	.03
Protestant school	.02	.02	.02	.05*
Private school	.05	.04	.05*	.02
School grades year 10		.27**	.23**	.19**
Intelligence			.16**	.08**
Importance of educational success				.36**
Fathers occupation				.09**
Girls		-.08**		
Mother's educational level				.07**
Adjusted R^2	.00	.08	.10	.27

schools, pupils from Protestant schools more often passed the final examination of grammar school than pupils from other schools. This is in line with the result of Table 8. The positive effect of Protestant schools cannot be explained by a Protestant religion effect, which could be derived from Weber's thesis on the relation between Protestantism and capitalism. The effects of parental religion are not significant after controlling for the other characteristics. The effects of the other independent variables are self-evident and need no further comment.

Table 10 gives the results for differences in the university grades of pupils from Catholic, Protestant and private grammar schools compared with those of comparable pupils from public schools. These results are only true for those pupils who entered university. We find no effects of school type. The effects of the other independent variables are self-evident and need no further comment.

Table 11 gives the results for differences in success in further study after leaving grammar school (with or without a diploma) of pupils from Catholic, Protestant and private grammar schools compared with comparable pupils from public schools. These results are true for all pupils, regardless of whether they drop out of grammar school. We find no effects of school type. The effects of the other independent variables are self-evident and need no further comment.

Table 12 focuses on another possible outcome of religious schools: their effects on religious behavior. The table clearly shows that only Catholic schools are effective in this respect: pupils from Catholic schools

Table 9
The Odds Ratios of School Type and Characteristics of Parents, Schools, and Areas, Intelligence Score of Pupils at the Start of Grammar School and Their School Grades in Year 10 on Obtaining Their *Abitur* (Logistic Regression)

	I	II	III	IV
Public school (reference)	1.00	1.00	1.00	1.00
Catholic school	1.08	1.08	1.17	1.17
Protestant school	1.41	1.41	1.56	2.75**
Private school	1.84	1.71	2.16*	1.88
School grades year 10		1.01**	1.01**	1.01**
Intelligence			1.05**	1.04**
Importance of educational success				1.52**
Father's occupation				1.01**
% Grammar school pupils in town				1.04*
-2 Log Likelihood	1862	1689	1629	1366

attend church services more often than pupils from other schools. The positive effect of these schools cannot be explained by a Catholic religion effect, by which we could assume that the superior organization of the Catholic Church compared with that of Protestant churches would be more successful in controlling the behavior of their believers. Another explanation is that some of the Catholic grammar schools act as seminaries for the training of priests, and their pupils would attend church services more often if they became priests.

Table 13 focuses on another possible outcome of religious schools:

Table 10
The Standardized Coefficients of School Type and Characteristics of Parents, Schools, and Areas, Intelligence Score of Pupils at the Start of Their Grammar School, Their School Grades in Year 10, and Their Grades at the End of Grammar School (Abitursnote) on Their Grades at University

	I	II	III	IV
Public school (reference)	.00	.00	.00	.00
Catholic school	.05	.04	.04	.04
Protestant school	.01	.01	.01	.01
Private school	-.02	-.01	-.01	-.01
Grades end grammar school		.23**	.22**	.22**
Grades school year 10			.08*	.08*
Adjusted R^2	.00	.05	.06	.06

Table 11
The Odds Ratios of School Type and Characteristics of Parents, Schools, and Areas, Intelligence Score of Pupils at the Start of Their Grammar School and Their School Grades in Year 10 on Success in Further Study (Logistic Regression)

	I	II	III	IV
Public school (reference)	1.00	1.00	1.00	1.00
Catholic school	1.06	1.06	1.09	1.12
Protestant school	1.17	1.16	1.19	1.50
Private school	1.15	1.10	1.17	.99
Grades school year 10		1.01**	1.01**	1.01**
Intelligence			1.01**	1.01
Importance of educational success				1.28**
Father's occupation				1.02**
-2 Log Likelihood	2157	2096	2087	1985

their effects on occupational success. The table clearly shows that pupils from Catholic schools only, obtain first jobs with lower status than those of pupils from other schools. A possible explanation of this result is that the Catholic grammar schools act as seminaries for the training of priests, who would place a lower value on the status of their first job.

Table 12
The Standardized Coefficients of School Type and Characteristics of Parents, Schools, and Areas, Intelligence Score of Pupils at the Start of Their Grammar School, Highest Attained Level in Secondary Education on Their Church Attendance Level in 1985

	I	II	III	IV	V
Public school (reference)	.00	.00	.00	.00	.00
Catholic school	.13**	.09**	.09**	.09**	.09**
Protestant school	-.04	-.02	-.01	-.02	-.03
Private school	-.04	-.04	-.04	-.04	-.05
Both parents Catholic		.19**	.19**	.19**	.18**
Highest educational level			-.06**	-.05*	-.05
Intelligence				-.05*	-.05
% tertiary sector in area					-.06*
R^2	.02	.05	.06	.06	.06

Table 13
The Standardized Coefficients of School Type and Characteristics of Parents, Schools, and Areas, Intelligence Score of Pupils at the Start of Their Grammar School and Their School Grades in Year 10 on Their Prestige (Wegener's Prestige Score) in Their First Job

	I	II	III	IV
Public school (reference)	.00	.00	.00	.00
Catholic school	-.05	-.05	-.06	-.07*
Protestant school	-.04	-.03	-.04	-.04
Private school	.07*	.06*	.06	.02
Highest sec. education		.12**	.06	.01
Grades in year 10			.24**	.24**
Father's occupation				.12**
Girls			-.07*	
Mother's education level				.10**
Population density				-.07*
R^2	.01	.02	.07	.11

Conclusions

Our first hypothesis, that pupils from Protestant and Catholic secondary schools in Nordrhein-Westfalen attain higher educational outcomes than those from public schools, after controlling for other characteristics, can be accepted. This confirmation cannot be explained by greater selection of intelligent pupils in Protestant or Catholic schools or by a high social class of their parents. Pupils from Catholic schools achieve higher grades at the end of grammar school, while pupils from Protestant schools attain higher educational levels and are more successful in their further studies. Interestingly, pupils from non-religious private schools do not have higher outcomes than pupils from public schools after controlling for characteristics of parents and pupils. This difference can be explained by the distinction between value-communities (religious schools) and functional communities (private schools). This confirmation of the first hypothesis is in line with comparable results in the Netherlands.

Our second hypothesis, that pupils from Protestant and Catholic schools in Nordrhein-Westfalen attain success at university and occupational levels equal to those of pupils from public schools, after controlling for unequal educational outcomes and other characteristics, can be accepted, with the occupational level of pupils from Catholic schools as an exception. The occupational level of these pupils' first job is lower. A possible explanation of this result is that Catholic grammar schools function as seminaries for the training of priests, who would place a lower value on the status of their first job. The confirmation of the second hypothesis in the other instances is in line with comparable results in the Netherlands.

Our third hypothesis, that pupils from Protestant and Catholic schools in Nordrhein-Westfalen are equally religiously socialized as pupils from public schools, must be rejected for Catholic schools but can be accepted for Protestant schools. Adult pupils from Catholic schools attended church services more often than pupils from Protestant, private or public schools. An explanation of this Catholic exception is that some of the Catholic grammar schools were still seminars for the training of priests, and their pupils would attend church services more often if they became priests. It is, however, questionable whether Catholic schools in the 1990's still function as seminaries for training priests, due to the lack of interest in becoming a Catholic priest among the younger generation. These comparable differences between the effects of religious and public schools in Nordrhein-Westfalen and the Netherlands show that the Dutch educational system is not an exception, but an example of a broader European development in which the old religious differences in education are being transformed into competition for pupils on the basis of

educational quality (Dronkers, 2004). These higher European religious school-effectiveness can be informative for the USA debates, because the parental choice and voucher-system advocated resemble in practice the current European systems with public and state funded religious schools.

Notes

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[1] Of course the importance of these processes was not equal in the various European nations.

[2] Die Lehrzielen, Einrichtungen und Lehrkräfte der private Schulen sollen nicht hinter den öffentlichen Schulen zurückstehen und eine Sonderung der Schüler nach Besitzverhältnissen nicht gefördert wird.

[3] Private Volksschulen sind allerdings nur bei besonderem pädagogischen Interesse zuzulassen oder wenn sie als Gemeinschaftsschule, Bekenntnis- oder Weltanschaungsschule errichtet werden sollen.

[4] in der Privatschule wird ein eigenverantwortlich geprägter und gestalteter Unterricht erteilt, insbesondere soweit er die Erziehungsziele, die weltanschauliche Basis, die Lehrmethode und Lehrinhalte betrifft

[5] Of cause the educational system in the 'new' states of Germany changed a lot after the German reunification, but that didn't effect the situation in the 'old' states.

[6] The schools were selected in a two-step cluster-sample. Firstly, all grammar schools in Nordrhein-Westfalen from the 'Philologenjahrbuches' were listed on 35 different criteria and compared with correlation and factor analyses. This resulted in a factor school size, which is the first criterion of the sampling procedure. The sample contains 61 classes from larger and 60 classes from smaller schools, in which two 10th classes from the same grammar school were allowed. In the second step, the grammar schools were divided along lines of sectors. The percentages in the sample reflect the real distribution of sectors in that period (see Eirmbter 1977).

[7] Hans-Joachim Hummell, Michael Klein, Maria Wieken-Mayser and Rolf Ziegler conducted the primary survey at the *Forschungsinstitut für Soziologie* at the University of Cologne, under the direction of René König. The follow-up survey was conducted at the Zentralarchiv für Empirische Sozialforschung at the University of Cologne by Hans-Joachim Hummell, Heiner Meulemann, Maria Wiecken-Mayser, Wilhelm Wiese and Rolf Ziegler; it was made possible by a grant from the Deutsche Forschungsgemeinschaft . A detailed description of the project is given in Meulemann et al, 1987, Volume I.

[8] Vocational college.

[9] Missing values are substituted by the averages of the total population. The raw data are standardized in z-Transformation, which makes comparison of the

different grade-scales possible. At the same time, the grade-scales were re-coded in such a way that the lowest grades were given a value of 1. With the help of a 'Flächentransformation', the distribution of the grades was transformed to a standard-normal distribution. Dropouts were given 0 as a grade and are coded as a missing value.

[10] Lundgreen (1981:122).

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