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**Are the Newly Established Religious ‘Gymnasiums’
in Hungary More Effective?**

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Are the newly established religious 'gymnasiums' in Hungary more effective?¹

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Abstract

The aim of this paper is to test whether pupils from religious 'gymnasiums' in Hungary have higher grades and a better opportunity to enter vocational college or university than comparable pupils from public 'gymnasiums'. For the first time, the effectiveness of public and religious schools in one of the former communist societies is compared. Data are from a self-administered survey among 4th grade secondary school students in the spring of 1998. Our results clearly show that pupils from religious 'gymnasiums' in Hungary obtain higher grades and that they have more success in entering tertiary education and university. This is especially true of pupils from Catholic 'gymnasiums', but there are clear indications that the Calvinist and Lutheran 'gymnasiums' could catch up with Catholic 'gymnasiums' in the near future, if they have time for self development. The superior academic results achieved by students from religious high schools cannot be explained by the more selective social composition of these schools, higher prior school achievements or higher academic ambition. We conclude from these results that religious schools in a post-communist country such as Hungary are on average more effective than public schools. This holds not only for Catholic schools but also for Protestant schools, as in other European societies.

Key-words: Catholic schools, Protestant schools, religious schools, parental choice, school-effectiveness, scholastic achievement

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Introduction

Parental choice in education, or the right of parents to choose their children's school, is one of the major topics in educational policy (CERI 1994). The introduction of more parental choice in educational systems is often advocated as a means of introducing competition for pupils between schools and thus improving the quality of teaching, decreasing the level of bureaucracy in and around schools and reducing its costs (Chubb & Moe 1990). One of the assumptions of this parental choice debate is that private schools are more effective than public ones.

The differential effectiveness of religious and especially Catholic schools in the USA was established for the first time by Greeley (1982) and Coleman, Hoffer and Kilgore (1982). Their cross-sectional analyses indicated that, at that time, there were fewer differences in Catholic than in public or other private schools between the achievement and educational expectations of students whose parents had high school diplomas and those whose parents were college graduates. Controlling for parent education, the achievement levels of Black and Hispanic students were closer to Whites in Catholic than in public schools. Coleman's conclusion of a Catholic "common school effect" was criticised for not controlling for more aspects of student background. Critics contended that, if the achievement score gains of students who had started high school at similar levels of achievement were compared, the Catholic advantages might disappear (Goldberger & Cain 1982). The reasoning here was that students who attend Catholic schools in the USA tend to be especially well prepared for high school and motivated to succeed academically. This higher level of preparedness and motivation is partly due to the extra economic cost of sending children to Catholic schools in the USA. These Catholic schools are not funded by the (local) state and the fees therefore have to be partly paid by parents. At the same time,

these parents still have to pay taxes for the public schools without waivers or deductions. Coleman & Hofer (1987) have suggested that Catholic schools benefit from the greater cohesiveness of the communities they serve. Parents of Catholic school students are more likely to know one another (“social capital”) and thus be able to exchange information about their children’s school performance and the school itself. This information is vital for parents’ evaluation of the higher economic costs involved in sending their children to Catholic schools, resulting from paying both fees to the Catholic school and taxes for the maintenance of the public school in their neighbourhood.

Unlike their counterparts in the USA and England, parents in different European societies can make a real choice between comparable schools, chiefly between public and private schools, without paying very high school fees or paying extra taxes. These private schools are most often Catholic or Protestant schools operating within a national educational system and receiving state grants for their operation (which is an indirect refund of the parental taxes). The existence of both public and private schools within one national educational system is the unintended result of three processes in these European societies:

1. The struggle between the state and the established churches in Europe;
2. The fight between the 18th century anciens regimes (mostly with one state-church and suppressed religious minorities) and the 19th century liberal governments (which claimed to be neutral to all churches); and
3. The emergence of new social classes in the 19th century, skilled workers, craftsmen, labourers, which rejected the ideologies of the dominant classes, which were either liberal or conservative¹.

In several European societies (Austro-Hungary, Belgium, France, German *Länder*, the Netherlands, Scotland) these processes had more or less comparable results, with public and church-subsidised school sectors offering a choice between schools using the same curriculum and usually involving comparable

financial costs for the parents². However, the size of these public and private school sectors varies strongly between these European societies for specific historic reasons. Furthermore, private schools disappeared in some of these societies as a consequence of the communist regime (OECD 1998: 139), but they tended to reappear after the collapse of communism. Accordingly, European educational systems with public and church-subsidised school sectors are often more suitable subjects for testing the assumption of the parental choice debate, namely that private schools are more effective than public ones, in contrast to the educational systems of the U.S.A. or England.

Despite the decreasing relevance of church and religion in the daily life of most European societies, the religious schools in these societies have not dwindled away. On the contrary, the religious school sector in societies with somewhat inactive religious populations is either growing or strongly over-represented (France: Langouët & Leger 1994; Germany: Dronkers, Baumert & Schwippert 1999, 2002; the Netherlands: Dronkers, 1996; Dijkstra, Dronkers & Hofman 1997). This holds not only for those societies where such religious schools were present traditionally (Austria, France, the old German *Länder*, the Netherlands) but also for those societies in which religious schools had been abolished during the communist regimes (Hungary, the new German *Länder*). A possible explanation is that religious schools are generally more effective in their teaching than public schools. While religious schools no longer aim for the religious socialisation of their pupils, they still try to reach more non-cognitive educational goals that are valued by non-religious parents as well. A better educational administration, stronger, value-oriented communication between parents and schools and more deliberate selection of religious schools might be the most important mechanisms in producing the higher average effectiveness of religious schools in Europe.

Research on the cognitive effectiveness of public, Catholic and Protestant schools in the Netherlands (Dronkers 1996; Dijkstra, Dronkers & Hofman 1997; Sturm, Groenendijk, Kruihof & Rens 1998) shows that Catholic and Protestant schools are on average more effective³, although there are three interesting deviations. The first deviation from the higher average effectiveness of Dutch religious schools is that public schools in regions with a majority of Catholic or Protestant schools have higher effectiveness than public schools in regions with a majority of public schools. Secondly, schools that are both non-religious and private are on average less effective than public schools, after controlling for the social composition of their pupils (Koopman & Dronkers 1994). The third deviation from the average higher effectiveness of Dutch religious schools is that Orthodox-Protestant schools are no more effective than public schools or less strict Protestant schools.

McPherson & Willms (1986: 279-281) found that, after controlling for the socio-economic composition of schools, pupils of Catholic schools in Scotland performed better in English and arithmetic in overall SCE attainment. These advantages were worth all of one or two examination passes, and add considerably to a young person's chances of finding a job after leaving school, or of gaining admission to favoured tertiary courses. The authors note that their findings controvert pessimistic and uninformed public assessments of the performance of Catholic schools. Such judgements are sometimes based on Catholic schools' unadjusted examination results, which are inaccurate because of the over-representation of Catholic pupils in the lower SES groups when compared with the non-Catholic schools.

Langouët & Leger (1994) found that the dropout rate between the first and third year classes of secondary schools in the French State sector was significantly higher than that of comparable students in the private sector⁴ (34% versus 24%). Pupils from employee or manual labourer strata benefit more from this positive effect of private schools. The same holds for the dropout rate between the first and the fifth

year classes in France: 61.5% in the state schools as against 51.3% in the private schools. The children from middle management and employee strata benefited most from the positive effect of private schools. In the final assessment, the graduation rate in the state sector schools is lower for comparable students (21.7%) than in the private schools (28%). The principal beneficiaries of the French private schools are the children of employees, as evidenced by the fact that their graduation rate in private schools is practically equal to the rate of children of middle management stratum in both the state and private schools.

Research on the cognitive and non-cognitive effectiveness of public, Catholic and Protestant schools in Germany (both in the old and new *Länder*) is less conclusive, but gives some indication that religious schools are more effective. Dronkers & Hemsing (1999) show 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. However, after controlling for unequal educational outcomes and other characteristics, pupils from Protestant and Catholic schools in *Nordrhein-Westfalen* attain levels of success at university and occupational levels equal to those of pupils from public schools. Using the TIMSS data, Dronkers, Baumert & Schwippert (2002) found that pupils from religious secondary schools in three old *Länder* of Germany⁵ did not achieve higher learning results in mathematics and natural sciences than pupils from public schools. However, pupils in these German public and religious schools clearly differ in their average intelligence level. The higher level of pupils from religious schools cannot easily be explained by such schools' selection of pupils on the basis of intelligence, because the parental backgrounds of pupils of public and religious schools do not differ significantly. Using the BIJU data, Dronkers, Baumert & Schwippert (1999) found that pupils from religious schools in the old and new *Länder* of Germany⁶ have higher cognitive and non-cognitive scores on some tests than pupils from public schools, after

controlling for other characteristics of schools and parents. For the cognitive test, this holds only for English in the 7th class and biology in the 10th class. However, pupils in the 10th class at religious schools do worse in mathematics. What is more, pupils in religious schools score lower on the conformist motive to help others and on the test for self-concept of academic ability. On the other cognitive and non-cognitive tests, pupils from public and religious schools score equally.

Research on the effectiveness of public and religious schools in previously communist European societies other than the new German *Länder* is not available, despite the reappearance of religious schools in these societies⁷. This paper analyses for the first time the effectiveness of public and religious schools in one of the former communist societies: Hungary. The case of Hungary has an important advantage: as in Germany and the Netherlands, but in contrast to the USA, there are also Protestant schools⁸. As an outcome of Hungarian history, there are even two types of Protestant schools: Calvinist and Lutheran. This affords us an opportunity to test a particular explanation of the positive effect of Catholic schools in the U.S.A. which lists as important factors more emphasis on academic ambitions, the educational tradition of the Catholic Church and the community around one church (see Hoffer 1998).

Hungary has a long tradition of religious education, dating from the middle ages. The Catholic Church dominated religious education until Protestant schools were introduced in the 16th century. Juridical documents on the “division of labour” between the state and the various Christian churches with respect to educational issues are available from the second half of the 18th century. As a consequence, religious secondary schools played an important role in the education system in the 19th century under the Austro-Hungarian Monarchy, and this continued until 1948. As statistics from these times on the level of schooling of the population by denomination indicate, Jews and Lutherans were more extensively educated than

representatives of other churches, and their educational grades were higher. In his analysis of these historical statistical sources, Karády (1987) explains these differences with reference to the marginal role of the small Lutheran church in Hungary as well as the assimilation efforts of the Jews. In fact, Karády's other studies also indicate that, from a historical viewpoint, ethnic, national and religious differentiation is a crucial aspect of the Hungarian educational system. Both the effectiveness of schools and the role of education in the reproduction of social inequalities (e.g. transition from secondary to tertiary education) had a strong religious dimension (Karády, 1989. 1995).

In Hungary, most religious secondary 'gymnasiums'⁹ reappeared after the fall of communism in 1989. Although their number in that country is still small, (12% of all pupils in secondary education attended Catholic, Calvinist, Lutheran or Jewish 'gymnasiums' in 1998), the rise of religious 'gymnasiums' is significant (see Figure 1). In fact, the expansion in the number of students attending religious 'gymnasiums' was larger than in the public 'gymnasiums'. Religious 'gymnasiums' have to teach the same basic curriculum as public 'gymnasiums' and all the pupils from religious and public 'gymnasiums' have to pass a comparable final examination in their final year of school, at the age of 18. Similarly, they have to pass the same entrance examination in order to continue their studies in a college or university. There are several explanations for the rise of religious schools in the former communist societies. These include distrust in the state as provider of collective goods such as education, the lower effectiveness of public schools as a consequence of a malfunctioning state bureaucracy, a lower level of community building around the public schools compared with the religious schools, and the historical tradition of a high standard of religious education in Hungary. If these explanations are correct, pupils of religious 'gymnasiums' in Hungary should have higher grades and better opportunities to enter college or university – as was previously the case.

The aim of this paper is to test whether pupils from religious ‘gymnasiums’ in Hungary have higher grades and a better opportunity to enter vocational college or university than comparable pupils from public ‘gymnasiums’. Previous analyses of unequal opportunities for academic progress in schools under communism clearly demonstrate that complete state control of the school system did not make educational opportunities more equal (Ganzeboom & Nieuwbeerta 1999). As in most advanced societies, gender inequalities in access to higher education have decreased in Hungary (Simkus & Andorka 1982), but the effect of social origin on educational opportunities did not decline over the communist decades (Simkus & Andorka 1982; Róbert 1991; Szelényi & Aschaffenburg 1993; Hanley & McKeever 1997). Previous research on inequalities in the allocation of education has also revealed that the choice of secondary school is the most important and influential decision made by pupils and their parents during the student’s educational career. In the past, tracking was a remarkable feature of the Hungarian school system, and the choice between different types of secondary schools had a significant impact on further educational progression to tertiary level (Róbert 1991; Bukodi 1999). The collapse of communism opened up an opportunity for religious schools to be re-established and, consequently, a new option emerged for pupils and their parents for continuation of school at secondary level. This had an impact on their probabilities of entering tertiary education. To date, there has been minimal investigation of this problem. In preparing this analysis, we benefited from a single prior research project in Hungary, which surveyed 1,463 pupils attending 3rd or 4th grade in religious secondary schools. The results from this research (Pusztai, 2000 and Pusztai & Vedres, 2001) provided a wide range of information on these students with respect to their family background, religiosity, school achievement and future plans for tertiary education. The main disadvantage of this source is that the research was focused on religious schools only, thereby excluding pupils from public schools. (The survey attempted but failed to include Jewish schools.)

Schools, churches and the state in Hungary¹⁰

Religious education was abolished in Hungary after 1948. Nevertheless, some possibilities remained open, due to an agreement between the communist government and the churches. The Catholic Church (the largest: 70% of the population is of Catholic denomination in Hungary) was in a relatively better position; they were permitted to keep eight secondary schools.¹¹ Despite the original agreement that allowed more Calvinist schools as well, they were permitted to keep only one institution. The Jews could also keep one school, but no Lutheran school was permitted. Thus ten schools were allowed to continue without interruption under communism, but not without restrictions. The agreement contained a *numerus clausus* limiting the annual intake of students to forty. The number of teachers and support personnel (cleaning staff, kitchen maids) was also prescribed. What is more, the curriculum and textbooks were controlled and the schools were required to celebrate state rather than religious holidays.

The collapse of communism has restored the legal basis for the re-emergence of religious education in Hungary, although the process has been more gradual. As early as 1985, a new law declared "free choice of education", thereby abolishing the *numerus clausus*, but the number of 10 religious secondary schools did not increase at that time. From 1989, free activity and the re-establishment of religious orders also became possible. In 1990, a more complex new law was passed with new regulations concerning the relationship between the state and church(es). This law declared "freedom of religious activities", meaning that the churches could provide, for example, educational, cultural and social "services" and could establish religious schools again. Another new law concerning the legal status and regulation of former church properties was passed in 1991. In line with this law, which dealt with political compensation, churches began to claim back their old schools, and with them the original buildings. In many cases,

these had been used as nationalised public schools for five decades. This was a slow process, and it had not yet come to an end even a decade after the law had been accepted. The deadline set by the law for the whole procedure was originally 2001, but it has been extended to 2011.

In the school year of 1998/1999, 8% of the secondary schools and 20% of the 'gymnasiums' were religious institutions¹². By denomination, the majority (nearly two-thirds) of the religious schools was Catholic, about one-fourth was Calvinist and the proportion of Lutheran schools was about 10%. Only a few institutions existed under other denominations (e.g. Jewish 'gymnasiums'). By number of students, Protestant schools are larger than Catholic schools and Jewish schools are the smallest institutions. Religious schools have to deal with the problem of absent teaching staff, because theology faculties and church-run teacher training colleges have also recently begun to operate. Thus, the proportion of teacher to students is lower in religious 'gymnasiums' than in public ones. The situation is worse in Catholic and Calvinist schools than in Lutheran and Jewish ones. In 1997, by region, 49% of all religious schools were located in smaller towns. A larger percentage of the remaining religious schools was situated in the county seats (28%). Only a few schools were in the villages (13%) and in Budapest (10%) (Halász & Lannert, 2000:164). There are now more religious schools in the Eastern part of Hungary, as was also the case in the period between the two world wars.¹³ The demographic composition of religious 'gymnasiums' tends to deviate from that of public 'gymnasiums'. Girls are usually over-represented in state 'gymnasiums', while the gender distribution of the pupils is more equal in religious 'gymnasiums'. The denominations of pupils in religious schools do not fully correspond with those of the churches to which the schools belong, but there is an 80% overlap. Catholic schools are the least heterogeneous; 90% of their students are of Catholic denomination. The proportions are about two-thirds and a half for the Calvinist and the Lutheran schools, respectively. Nevertheless, religious activities are obviously more

frequent in the families of pupils who attend religious schools, even if denomination or religiosity is not a formal requirement for admission. Protestant schools accept more pupils from non-religious backgrounds and, generally speaking, schools in the countryside demonstrate a lesser degree of denominational homogeneity.

The law requires that religious schools provide students with the same scholastic product as public schools. This means that they have to teach the national curriculum (which is nowadays generally more flexible in than in the past) but they are free to add their special religious courses. As a requirement for getting financial support from the state, each school must function as a “public provider” in addition to its specific religious curriculum. The local municipalities administer an annual payment of state support, which is drawn from the state budget. The support is based on a per capita principle, and depends on the number of students. Thus, a student from a state school and a student from a religious school have the same “value”. Local municipalities decide if the religious school in their settlement meets public requirements and also provides a regular type of education. In order to avoid problems with this evaluation, religious schools have to make a formal declaration that their activities meet state and local requirements, and this legally entitles them to financial support.

The state has also provided some special support directly to religious schools to assist with their reorganisation. In addition, churches support their schools financially from various other sources, with money obtained from the state budget, from abroad, or from taxpayers in Hungary. When submitting their tax declarations, taxpayers have a right to direct 1% of the tax they pay towards a specific beneficiary, such as a charity institution, or a (religious) school. Members of church congregations also pay taxes to their particular church.

The examination and school continuation procedures are equal for students from both public and religious ‘gymnasiums’. The entrance procedure can differ between colleges and universities but does not vary between secondary schools. There are no additional interviews for students from different ‘gymnasiums’. Public universities or colleges have no special relationship with specific ‘gymnasiums’, but students from religious ‘gymnasiums’ can have an advantage if they wish to attend a church-run college or university. Formal statistics are available concerning the effectiveness of Hungarian secondary schools with respect to continuation to tertiary education. In 2000, a Hungarian periodical *Köznevelés* [Public Education] published a list of 265 ‘gymnasiums’ studied during the period 1995-99. Using the number of the students who graduated in those schools during that period as a baseline, the study ranks the schools according to the percentage of students who qualified to enter tertiary education in a given year. Based on 5-year averages, 5 religious ‘gymnasiums’ can be found in the top 10% of the schools, and a quarter of the religious ‘gymnasiums’ is located in the upper third of the list.¹⁴

Data

Data are taken from a self-administered survey among 4th grade secondary school students. The survey was carried out in the spring of 1998. Using the prepared questionnaire, the Institute of Sociology at Eötvös Lóránd University in Budapest carried out the fieldwork. The research was financed by the Soros Foundation, Budapest. The research plan was to interview all Hungarian students who were due to get their secondary school diploma in 1998 and were eligible to continue their studies at tertiary level. No formal sample was drawn and interviewers attempted to visit all secondary schools in Hungary. However, some schools did not allow their students to fill in the questionnaire. Some students also chose not to participate, since participation was not, of course, compulsory. Students who

were absent on the days when the interviewers visited the school are also missing from the data. Thus our data set is not a random sample in a statistical sense, but it nevertheless represents Hungarian 4th grade secondary school students during the second half of the 1990s.

Two types of secondary schools in Hungary enable entrance to tertiary education: vocational secondary schools and ‘gymnasiums’. The former are often considered inferior to the latter. Since the large majority of religious institutions at secondary level are ‘gymnasiums’,¹⁵ we confine our analyses to all pupils in the final class of ‘gymnasiums’ in 1998. As mentioned above, almost all ‘gymnasiums’ in Hungary participated in the data-collection, and we do not believe that the small number, which did not (for example, the second Jewish gymnasium and the best Lutheran gymnasium, both from Budapest) affected our results to an important extent.

Because only one Jewish gymnasium remained in the data, we deleted the pupils of that school in order to avoid conclusions based on a single institution. We also deleted ‘gymnasiums’ with fewer than 10 pupils in their final class.¹⁶ These selections left us with 25,258 pupils in 349 ‘gymnasiums’: 316 public ‘gymnasiums’ with 23,593 pupils, 16 Catholic ‘gymnasiums’ with 738 pupils, 12 Calvinist ‘gymnasiums’ with 651 pupils and 5 Lutheran ‘gymnasiums’ with 276 pupils. This classification of four types of ‘gymnasiums’ will be our main explanatory variable – keeping the Catholic, Calvinist and Lutheran schools separate. Due to limitations of space, we could provide only a sketchy description of the historical development of these religious schools as well as of the historical differences in the religious cleavages in Hungary, but we believe that we have given adequate consideration to our decision of keeping the Catholic, Calvinist and Lutheran schools separate.

Effectiveness indicators

All Hungarian ‘gymnasiums’ have to teach the same basic curriculum. The centralised final examination measures the scholastic abilities of pupils with a national standardised test, as is sometimes the case in other European educational systems. This means that all students have to solve the same mathematical tasks, write the same essays and sit for the same tests. However the results of this final examination are graded locally by their own teachers, not centrally by an examination board.

The data on the grades of the pupils, which are available in our data, are based not on this final examination, but on teachers’ notes received before the final examination. The centralised nature of the examination guarantees more or less the same curriculum in the final classes, but not the same grading. These school-based grades decrease the reliability of comparing grades between ‘gymnasiums’, because of the well-known influence of school context on the grades: on average, teachers will grade individual pupils lower in better-performing schools compared with teachers in lower-performing schools. We compared the grades of pupils in public and religious ‘gymnasiums’ in Hungary despite this restriction, since we could indirectly test whether higher grades are mainly a consequence of higher grading in lower performing religious schools. If this were the case, pupils from higher-grading but lower-performing religious schools would have less chance to pass the tertiary education entrance examinations. In that case, religious schools would produce, not higher effectiveness, but simply higher grading.

We have scores¹⁷ on four grades:

- Mathematics
- Literature
- History
- Foreign language

In addition, we have information on the achievements (excellent, good, average, weak) of students at primary school level prior to entering the gymnasium. We consider this information a control for (self-)selection effects, based on scholastic ability.

Table 1 shows the different scores of pupils from public and religious ‘gymnasiums’. Pupils from Catholic ‘gymnasiums’ score significantly higher on all four grades and their scores for literature are more homogeneous compared with those of pupils from public ‘gymnasiums’. At the same time, we see that these students performed significantly better in primary school than those from public ‘gymnasiums’. Pupils from Calvinist ‘gymnasiums’ score higher on literature and history but lower on the foreign language studied, and their scores for mathematics are more homogeneous compared with those of pupils from public ‘gymnasiums’. Their level of achievement was also higher in primary school and was even more homogenous. Pupils from Lutheran ‘gymnasiums’ score lower on mathematics and their scores on history are less homogeneous, compared with those of pupils from public ‘gymnasiums’. Their primary school achievements do not differ significantly from those of pupils from public ‘gymnasiums’.

Final examinations in ‘gymnasiums’ enable participation in examinations for entrance to tertiary institutions. Public and religious ‘gymnasiums’ can differ in the degree to which they prepare their pupils for these entrance examinations. In order to analyse these possible differences, we analyse rates of success at tertiary entrance level. The dependent variables are:

- Placed an application for tertiary education. This variable distinguishes between the 18,976 pupils who applied for any type of tertiary education, the 6,030 pupils who did not, and the 252 pupils who failed to provide the application information.

- Application to college or university. This variable distinguishes only between the 18,976 pupils who applied; 11,593 for vocational college and 7,383 for university.
- Successful entry to tertiary education. This variable distinguishes only between the 18,976 pupils who applied; 10,133 were successful, 8,843 were not.
- Entry to college or university. This variable distinguishes only between the 10,058 pupils who entered tertiary education and had a valid answer to the type of tertiary education: 4,524 for vocational college and 5,534 for university.

Table 2 shows that pupils of religious ‘gymnasiums’ are on average more successful in entering tertiary education, including the higher level, university. This is especially clear with respect to pupils from Catholic ‘gymnasiums’.

Differences in pupil, parental and gymnasium characteristics between public and religious ‘gymnasiums’

Public and religious ‘gymnasiums’ will not only differ in their effectiveness. They can also differ in the characteristics of their pupils, the pupils’ parents and the school itself. The latter differences could offer a more complete explanation of differences in the effectiveness levels of public and religious ‘gymnasiums’.

We can control for the following parental and pupil characteristics:

- Self-reported achievement of students in primary school: ranging from weak to excellent.
- Father’s education: running from 1 (only primary education) to 7 (university).
- Mother’s education: running from 1 (only primary education) to 7 (university).

- Father's occupation: dummy variables indicating whether the father was a manager, a professional, a clerical worker, or a small proprietor (manual worker is the reference category).
- Mother's occupation: dummy variables indicating whether the mother was a manager, a professional, a clerical worker, or a small proprietor (manual worker is the reference category).
- Income per capita of parental family: ranging from 1 (lower) to 5 (upper).
- Gender: 0 for women and 1 for men.
- Residential area: dummy variables indicating that the family lives in Budapest, in a county seat, or in a town (village is the reference category).
- The missing values of all parental characteristics are replaced by their mean scores. We added a dummy variable for those variables, indicating whether a value was missing.

Table 3 shows differences in parental and pupil characteristics between public and religious 'gymnasiums'. Parents of pupils attending Catholic 'gymnasiums' have significantly higher educational and occupational levels and the pupils themselves are more often male, compared with pupils attending public 'gymnasiums'. Catholic 'gymnasiums' also tend to be more homogenous with respect to mother's characteristics, but less homogeneous with respect to the residential areas of their pupils. Parents of Calvinist 'gymnasiums' have higher educational levels and the fathers also have higher occupational levels, but their family income pro capita is significantly lower. Perhaps their residential areas, which are more often in smaller towns and villages compared with public 'gymnasiums', can explain their lower family income. Parents of pupils from Lutheran 'gymnasiums' have also lower incomes compared with those from public 'gymnasiums', but they more often live in Budapest or in major towns¹⁸.

Multilevel analysis of grades differences between public and religious gymnasium pupils

Table 4 shows the different hierarchical steps in our multilevel analysis¹⁹. As is usual in school-effectiveness analyses (Bosker & Scheerens, 1997), we start with an empty model (A). This model gives the distribution of the total variance at the pupil and the school levels: e.g. for mathematics .216 at the school level and .917 at the pupil level. This means that 19% of all individual variance is between-school variance²⁰.

In Model B we add to model A the three types of religious ‘gymnasiums’ (Catholic, Calvinist and Lutheran, with public as reference category) at the school level and with fixed slopes. The small improvement in the log-likelihood (Table 4) and the non-significant parameters of the type of gymnasium (Table 5, Model B) indicate that the mathematics scores of pupils of these different ‘gymnasiums’ do not differ significantly, before controlling for characteristics of pupils and parents.

In Model C we add the self-reported achievements of the pupils at primary school level to model B at the individual level in order to control for (self-)selection. The log-likelihood of the mathematics equation decreases significantly (2655, df=1), as does the degree of unexplained variance²¹. This shows there is a considerable (self-)selection effect, but the hardly-changed parameters of Model C in table 5 suggest that this (self-)selection is not primarily related to differences between public and religious schools.

In Model D we add the individual characteristics of pupils and parents to Model C at the individual level. The log-likelihood of the mathematics equation decreases (33, df=11), as does the degree of unexplained total variance²². Controlling for pupil and parental characteristics decreases also the degree of between-school variance of the mathematics equation to 16%²³, but hardly changes the insignificant parameters of type of gymnasium (Table 5, Model D).

In Model E we add the region (Budapest, county town, town; village as reference category) at the individual level to Model D. In Model F, we add two school characteristics to Model E at the school level: the percentage of boys and the number of pupils in the final class. The slopes of the types of gymnasium are made random in Model G, which means that the slopes of types of gymnasium are allowed to vary between schools. This Model G is our final model. Although it is possible to improve the fit of the model, we did not pursue this line because the improvement did not greatly change the parameters of type of gymnasium. The parameters of the variables of this final Model G are given for the types of gymnasium in Table 5 (Model G) and for the other variables in Table 6.

Pupils from religious and public ‘gymnasiums’ do not differ significantly, if we do not control for characteristics of pupils, parents, regions or schools (Table 5, Model B). However, controlling for all these characteristics (Model G), pupils from Catholic ‘gymnasiums’ have higher grades for literature and their scores for mathematics and history also tend to be higher, although not significantly. Interestingly, these effects become significant only after controlling for characteristics of pupils and parents and achievement at primary school. Therefore, their higher grades cannot be explained in terms of a different social composition of Catholic ‘gymnasiums’ or by (self-)selection.

Surprisingly, pupils from Calvinist and Lutheran ‘gymnasiums’ do not have higher grades. On the contrary, pupils from Calvinist schools have lower scores for the foreign language studied. This cannot be explained by the concentration of Calvinist schools in the Eastern, more rural regions of Hungary, because these lower scores do not disappear after controlling for region. The only explanation we can offer is that Calvinist and Lutheran schools have had to re-establish themselves after 1990, while Catholic schools were in existence prior to 1989.

We conclude from these results that pupils from Catholic ‘gymnasiums’ have higher grades for literature than comparable pupils from public ‘gymnasiums’.

This indicates that the academic effectiveness of Catholic ‘gymnasiums’ in post-communist Hungary is higher than that of public ‘gymnasiums’. As we will show in the next section, the higher grades attained by Catholic ‘gymnasiums’ cannot be explained merely in terms of higher grading by the teachers, because pupils of Catholic ‘gymnasiums’ are also more successful in entering tertiary education.

Table 6 gives the parameters of the other variables of the final model G. Most results are unsurprising. The higher the educational and occupational levels of fathers and mothers, the higher are the grades of their children. The higher the parental income, the higher are the grades of their children. Female pupils have higher grades than male pupils, except for mathematics, in which males have higher grades.

When father’s educational level is unknown, the children’s grades for mathematics and literature are lower. We interpret an unknown paternal educational level as an indication of single-parenthood. If our interpretation is correct, this result is in line with comparable results from other European societies, where single-parenthood has negative consequences for the educational achievement of children (*England*: Cherlin et al. 1991; Kiernan 1992; Ni Bhrolcháin, Chappell & Diamond 1994; Kiernan, Land & Lewis 1998; *Germany*: Heeckerens 1987; *France*: Meunier 1998; *Netherlands*: Bosman & Louwes 1988; Dronkers 1994a, Borgers, Dronkers & van Praag 1996; Spruijt & Goede 1996; Dronkers 1999; *Sweden*: McNab & Sandquist 1985; Murray & Sandquist 1990; Jonsson & Gähler 1997; *Swiss*: Oggenfuss 1984).

If mother’s occupational level is unknown, the children’s grades for literature are lower. We can interpret an unknown maternal occupational level in two ways. It can be an indication that the mother is unemployed, and thus in a weaker social position, but it can also be an indication that the mother is a housewife, which is often the result of a negative selection. If the latter interpretation is correct, this

result is in line with comparable results in other European societies (*Netherlands: Dronkers 1995*).

Pupils living in county towns and small towns achieve higher grades than pupils living in villages, towns or in Budapest. Given that we have restricted our attention to ‘gymnasiums’, we interpret this result as a consequence of the different opportunities of pupils in the various regions to enter ‘gymnasiums’. Pupils from county towns, small towns and villages are more heavily selected than pupils from Budapest because they have to overcome more obstacles, such as distance. However, the negative effect of the poor learning environments of pupils from villages cannot be neutralised by this heavy selection. If this interpretation is correct, the result is in line with comparable results from other European societies (*Netherlands: Dronkers, van Erp, Robijn & Roeleveld 1998*). Pupils living in Budapest have higher scores in the foreign language studied, but this can easily be explained by better opportunities to learn and apply foreign language skills in Budapest.

Pupils in ‘gymnasiums’ with more pupils have higher grades than pupils in ‘gymnasiums’ with fewer pupils in the final class. Despite popular folkways, it is well known among researchers of school effectiveness (Bosker & Scheerens 1997) that small schools are not more effective.

Multilevel analysis of success at the entrance of tertiary education between public and religious gymnasium pupils

The analyses in this section follow the same procedures as those of the previous section. Table 7 shows the different hierarchical steps in our multi-level analysis: the empty model (A), the next model with type of gymnasium added at the school level (B), the next model with achievement in primary education added at the individual level (C), the next model with the four grades added at the individual level (D), the next model with pupil’s and parental characteristics added at the individual level (E), the next model with region added at the individual level (F),

the next model with school characteristics added at the school level (G) and the last model with random slopes of type of gymnasium added (H). We included achievement in primary education and the four grades at the end of secondary education as control variables in models E to H, because success at entrance to tertiary education will be affected by success in primary and secondary education. Given the results of the previous section, not controlling for success in primary and secondary education (measured by achievement and grades) might lead to an overestimation of the effect of type of secondary education. The dependent variables in this section are dichotomous variables. The multilevel program MIWin 1.1 fixes artificially the amount of variance at the lowest, individual level to 1.00, if the dependent variable is dichotomous. Therefore, Table 7 gives only the unexplained variance at the school level. As might be expected, the unexplained variance at the school level decreases when we introduce more control variables, especially the four grades and the pupil and parental characteristics.

Table 8 gives the parameters by type of gymnasium for the four dependent variables and the different models. The results for Model B clearly show that pupils from Catholic ‘gymnasiums’ are more successful in entering tertiary education as a whole and at the highest level (especially university). The results for Model C show that this positive effect of a Catholic gymnasium cannot be explained by primary school achievements. Model D demonstrates that neither can the advantage of pupils from Catholic ‘gymnasiums’ be explained by their higher grades: the parameters by the type of gymnasium fall only slightly and remain firmly significant due to a similar drop in the standard error. Moreover, the parameters of Calvinist and Lutheran ‘gymnasiums’ become significant for the application to continuation of education to tertiary level. The results for Model E reveal that the advantage of pupils from religious ‘gymnasiums’ cannot be explained by the pupils’ social compositions. The parameters by type of

religious gymnasium fall only slightly and remain firmly significant, again due to a similar drop in the standard error. In Model F, region is added to the equation, but the pattern of the estimations does not change after taking into account the regional differences. The results of Model G show the characteristics of religious 'gymnasiums' that may lead to an underestimation of their effectiveness, namely the high percentages of boys in religious 'gymnasiums' (Table 3) and the small number of pupils in their final classes. This is especially true of Calvinist 'gymnasiums', from which pupils apply more often for university admission. Model H is our final model, with random slopes for type of 'gymnasiums' and all control variables included. The parameters of Catholic and Calvinist 'gymnasiums' are significant for all four indicators of success at entrance to secondary education and the parameters of Lutheran 'gymnasiums' are significant for three of the four indicators.

We conclude from these results that pupils from religious 'gymnasiums' have more success in entering tertiary education than comparable pupils from public 'gymnasiums'. This indicates that the effectiveness of religious schools in post-communist Hungary is higher than that of public schools.

Table 9 gives the parameters of the other variables of the final model H. Once again, most results are unsurprising. Primary school achievements and the four grades at the end of secondary education are the most important explanatory variables, but the different indicators of pupils' socio-cultural background independently influence their chances of entering tertiary education and university. Male pupils are more successful in gaining tertiary education entrance than female students, but only after controlling for their grades. Pupils from Budapest have less success in entering tertiary education in general, but enrol at university more often.

Missing information on father's/mother's characteristics decreases the chances of school progression. The interpretation of these estimates is the same as for the

grades. Previous research on educational transitions has already provided similar evidence, for example secondary school graduates who were daughters of non-intact families had less probability of entering tertiary education (Róbert & Bukodi 2000).

Discussion

We believe that our results clearly show that pupils from religious ‘gymnasiums’ in Hungary obtain higher grades and that they have more success in entering tertiary education. This is especially true of pupils from Catholic ‘gymnasiums’, but there are clear indications that the Calvinist and Lutheran ‘gymnasiums’ could catch up in the near future, if they have time for self-development. As an outcome of Hungary’s history, Catholic schools have had more and earlier opportunities than Calvinist or Lutheran schools to develop themselves during the last decennium of the 20th century.

The higher results of pupils from religious ‘gymnasiums’ cannot be explained by a more selective social composition of these schools. On the contrary, controlling for pupils’ and parents’ characteristics tends to increase the differences in results between pupils from public and religious ‘gymnasiums’. If selection in previous school achievement and in social composition were the main explanations of the higher results of pupils from religious ‘gymnasiums’, controlling for these would decrease the differences between results of pupils from public and religious ‘gymnasiums’. We cannot even explain the differences in results between pupils from public and religious ‘gymnasiums’ by assuming that pupils in religious schools are academically more ambitious. The difference in academic ambition could still explain the higher grades, because achievement in primary school (as an indicator of academic ambition) turned out to be a strong predictor of higher grades. However, our results concerning success in tertiary education entrance cannot be explained by a possible difference in the academic

ambition of pupils from public and religious ‘gymnasiums’, because we have controlled for their previous achievement and gymnasium grades as an indicator of their academic ambition.

The assumption that the effect of type of gymnasium is not equal for all pupils (this is the meaning of the random slope models), tends also to increase the differences in the results of pupils from public and religious ‘gymnasiums’ instead of decreasing them. We interpret this result as an indication of larger school-effectiveness differences between public ‘gymnasiums’ (the large majority of Hungarian ‘gymnasiums’) compared with the school-effectiveness differences between religious ‘gymnasiums’.

Furthermore, our results suggest that the differences in school-effectiveness between public and protestant schools might even increase in the near future. The Protestant ‘gymnasiums’ have been established more recently and are still small in size. If they develop themselves fully, they could become more effective than they are now. Consequently, in continuation of the historical tradition of high-quality religious schools in Hungary, and of their role in the reproduction of inequalities, the re-emergence of religious schooling in Hungary will increase the stratification of the schooling system and will contribute to an increase in educational inequalities.

The results of our analyses provide evidence that pupils from religious ‘gymnasiums’ in Hungary have higher grades and a better opportunity to enter vocational college or university than comparable pupils from public ‘gymnasiums’. We conclude from these results that religious schools in a post-communist society such as Hungary are on average more effective than public schools. This holds not only for Catholic schools but also for Protestant schools, as in other European societies such as France, Germany, the Netherlands and Scotland. Given the national-based curriculum and comparable funding of public and religious schools in European societies, the usual explanations of the higher

effectiveness of Catholic schools in the USA (more emphasis on academic ambitions; educational tradition of the Catholic Church; the community around one church; Hoffer 1998) do not hold. The superior educational administration of religious schools, a stronger value-oriented community of parents and religious schools and more deliberate parental selection of religious schools might be better explanations within the European context, taking into account its national educational systems and its more or less equal funding of religious and public schools.

Given the analogous development of higher effectiveness by religious schools in diverse European societies, one could argue that parents in these societies have found comparable solutions. Searching for the best school for their children, parents rediscover religious schools, not because of their religious socialisation they provide, but because they offer a more effective learning environment. From this perspective, parents in different European societies live more in a single society than many European educational policymakers would assume.

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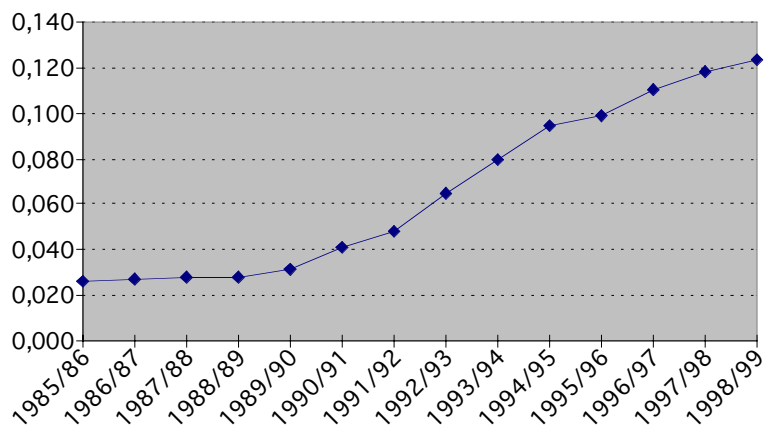
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Figure 1: Proportion of students in religious gymnasiums compared with all students in all gymnasiums (%) between 1985 and 1999



Calculation is based on Pusztai, 2001: 90 (Figure 5).

Original sources: Statistics of the Hungarian Ministry of Education

Table 1: The mean scores and standard deviations on achievement in primary school¹ and on four grades² in the final classes of Hungarian public and religious ‘gymnasiums’ in 1998

	Primary school achievement	Mathematics	Literature	History	Foreign language
Catholic	3,34* (0,62)	3,63* (1,04)	4,22* (0,81)\$	4,16* (0,92)	4,13* (0,92)
Calvinist	3,26* (0,59)\$	3,51 (1,02)\$	4,15* (0,87)	4,10* (0,95)	3,96* (0,99)
Lutheran	3,28 (0,60)	3,31* (1,10)	4,04 (0,89)	3,91 (1,02)\$	3,99 (1,01)
Public	3,20 (0,64)	3,46 (1,07)	4,07 (0,90)	3,97 (0,98)	4,06 (0,96)
Total	3,20 (0,64)	3,46 (1,07)	4,07 (0,90)	3,98 (0,98)	4,06 (0,96)

¹ Scale with four categories: weak, average, good, excellent ² 5-points scales

* Significant differences of mean compared to public ‘gymnasiums’ (t-test with unequal variances; $p < 0,05$); \$ significant difference of standard deviation compared with public ‘gymnasiums’ (Levene’s test; $p < 0,05$).

Table 2: The percentages of success in tertiary education entrance of pupils of the final classes of Hungarian public and religious ‘gymnasiums’ in 1998

	Application to tertiary education	Application to university	Successful entrance to tertiary education	Successful entrance to university
Catholic	94,3%	50,4%	58,0%	66,1%
Calvinist	87,3%	45,1%	56,6%	54,7%
Lutheran	85,4%	42,2%	50,0%	58,5%
Public	74,9%	38,2%	52,4%	54,5%
Total	75,9%	38,4%	52,7%	55,0%
Valid N	25006	18976	19228	10058
Pearson χ^2	208,4	52,6	12,8	21,4

All χ^2 are significant (df. =3).

Table 3: The mean scores and standard deviations of pupils’ and parents’ characteristics in the final classes of Hungarian public and religious ‘gymnasiums’ in 1998

	Father’s education	Mother’s education	Father’s occupation	Mother’s occupation	Family income	Gender	Area of residence
Catholic	5,1* (1,9)	5,2* (1,6)\$	4,2* (1,8)	5,0* (1,6)\$	3,0 (1,1)	0,69* (0,46)\$	2,6 (1,2)\$
Calvinist	4,7* (1,9)	4,8* (1,8)	4,0* (1,9)	4,7 (1,8)\$	2,8* (1,0)	0,30 (0,49)	3,0* (1,0)\$
Lutheran	4,5 (1,9)	4,5 (1,9)	3,9 (1,8)	4,7 (1,7)\$	2,8* (1,0)	0,42 (0,50)\$	2,6* (1,0)\$
Public	4,3 (1,9)	4,5 (1,8)	3,8 (1,9)	4,6 (1,9)	3,0 (1,0)	0,37 (0,48)	2,7 (1,1)
Total	4,3 (2,0)	4,5 (1,8)	3,8 (1,9)	4,6 (1,9)	3,0 (1,0)	0,38 (0,49)	2,7 (1,1)

* Significant differences of mean compared to public ‘gymnasiums’ (t-test with unequal variances; $p < 0,05$); \$ significant difference of standard deviation compared with public ‘gymnasiums’ (Levene’s test; $p < 0,05$).

Table 4: The unexplained variance at the school and individual level and the log-likelihood of the different hierarchical models for the four grades

Models	Mathematics	Literature	History	Foreign language
A. Empty model	.209 (.018) .924 (.009) 64618	.175 (.015) .644 (.006) 56322	.184 (.016) .770 (.007) 60423	.127 (.011) .789 (.007) 60876
B. A + type of gymnasium	.207 (.018) .924 (.009) 64616	.174 (.015) .644 (.006) 56319	.183 (.016) .770 (.007) 60420	.125 (.011) .789 (.007) 60873
C. B + achievement in primary school	.117 (.011) .829 (.008) 61961	.099 (.009) .568 (.005) 53277	.099 (.009) .685 (.006) 57556	.072 (.007) .725 (.007) 58773
D. C + pupils' & parents' characteristics ¹	.099 (.009) .814 (.008) 61497	.082 (.007) .532 (.005) 51760	.082 (.008) .671 (.006) 57049	.054 (.005) .701 (.007) 57946
E. D + region	.099 (.009) .812 (.008) 61452	.082 (.007) .531 (.005) 51687	.082 (.008) .670 (.006) 57009	.052 (.005) .698 (.007) 57846
F. E + other school characteristics ²	.096 (.009) .812 (.008) 61441	.080 (.007) .531 (.005) 51679	.080 (.007) .670 (.006) 57001	.051 (.005) .698 (.007) 57841
G. F + random slope of type of gymnasium	.095 (.009) .810 (.008) 61437	.078 (.007) .533 (.005) 51668	.082 (.008) .668 (.006) 56997	.052 (.005) .695 (.007) 57833

¹ Including the missing-variables; ² Percentage of boys & number of pupils in final class

Table 5: The unstandardised effects of Catholic, Calvinist and Lutheran gymnasium compared with the reference category public gymnasium of the hierarchical models for the four grades (standard error in parentheses)

Models	Mathematics	Literature	History	Foreign language
B. A + type of gymnasium	.195 (.128) .033 (.142) -.052 (.215)	.189 (.116) .041 (.129) .098 (.196)	.199 (.119) .054 (.133) .005 (.202)	.097 (.101) -.173 (.113) -.014 (.171)
C. B + achievement in primary school ¹	.124 (.099) .027 (.110) -.103 (.166)	.124 (.089) -.041 (.100) .052 (.151)	.135 (.091) .051 (.101) -.046 (.153)	.036 (.080) -.175 (.089) -.057 (.134)
D. C + pupils' & parents' characteristics ¹	.059 (.092) -.005 (.102) -.133 (.154)	.170 (.086) -.064 (.091) .049 (.138)	.124 (.084) .031 (.093) -.060 (.140)	.043 (.071) -.190 (.079) -.066 (.119)
E. D + region	.071 (.092) -.003 (.102) -.130 (.154)	.181 (.082) -.059 (.091) .047 (.138)	.132 (.084) .033 (.093) -.055 (.140)	.057 (.070) -.179 (.078) -.080 (.117)
F. E + other school characteristics ²	.118 (.096) .027 (.101) -.097 (.153)	.188 (.086) -.037 (.091) .066 (.137)	.171 (.088) .058 (.092) -.029 (.139)	.044 (.074) -.168 (.078) -.072 (.117)
G. F + random slope of type of gymnasium	.125 (.104) .031 (.071) -.094 (.206)	.184 (.080) -.046 (.108) .069 (.157)	.171 (.086) .068 (.069) -.029 (.139)	.046 (.070) -.157 (.065) -.068 (.152)

¹ Including the missing-variables; ² Percentage of boys & number of pupils in the final class. Parameters in the grey areas have absolute coefficients higher than twice of ***their standard error

Table 6: Parameters of pupils' and parents' characteristics, region and other school characteristics of Model G of Table 5 (standard error in parentheses)

Predictor variables	Mathematics	Literature	History	Foreign language
Primary school achievement	.559 (.011)	.468 (.009)	.515 (.010)	.441 (.010)
Missing primary school achievement	.019 (.042)	-.003 (.034)	.073 (.039)	.039 (.039)
Father's education	.027 (.005)	.026 (.004)	.023 (.004)	.030 (.004)
Mother's education	.029 (.005)	.030 (.004)	.032 (.004)	.035 (.005)
Father's occupation: manager	.097 (.027)	.110 (.022)	.100 (.025)	.073 (.025)
Father's occupation: professional	.058 (.021)	.053 (.017)	.047 (.019)	.041 (.019)
Father's occupation: clerical	.003 (.043)	.035 (.035)	.007 (.039)	-.002 (.040)
Father's occupation: self-employed	-.037 (.019)	-.004 (.015)	-.019 (.017)	.015 (.017)
Father's occupation: manual worker	.000	.000	.000	.000
Mother's occupation: manager	.051 (.030)	.010 (.024)	.019 (.027)	-.019 (.028)
Mother's occupation: professional	.048 (.020)	.019 (.016)	.021 (.018)	.025 (.018)
Mother's occupation: clerical	.032 (.027)	-.037 (.022)	.038 (.024)	.008 (.025)
Mother's occupation: self-employed	.007 (.025)	-.034 (.020)	-.024 (.022)	-.015 (.023)
Mother's occupation: manual worker	.000	.000	.000	.000
Parental income	.040 (.007)	.026 (.006)	.015 (.006)	-.011 (.006)
Male	.051 (.013)	-.360 (.011)	-.129 (.012)	-.236 (.012)
Missing Father's education	-.091 (.036)	-.083 (.029)	-.111 (.032)	-.058 (.033)
Missing Mother's education	.044 (.046)	.000 (.037)	-.012 (.042)	-.029 (.043)
Missing Father's occupation	-.037 (.023)	.006 (.019)	-.011 (.021)	.001 (.022)
Missing Mother's occupation	-.024 (.024)	-.056 (.020)	-.040 (.022)	-.028 (.023)
Missing Parental income	.083 (.021)	.026 (.017)	.060 (.019)	.042 (.019)
Budapest	.044 (.034)	.068 (.028)	.053 (.031)	.090 (.030)
County town	.062 (.019)	.085 (.016)	.044 (.017)	.153 (.018)
Town	.110 (.017)	.108 (.013)	.095 (.015)	.115 (.015)
Village (ref)	.000	.000	.000	.000
Percentage boys in school	-.023 (.115)	.091 (.103)	-.019 (.105)	-.118 (.089)
Number pupils in final class	.001 (.000)	.001 (.000)	.001 (.000)	.001 (.000)

Parameters in the grey areas have absolute coefficients higher than twice their standard error.

Table 7: The unexplained variance at the school level of the different hierarchical models for application and entrance to tertiary education and university

Models	Application to tertiary education	Application to university	Successful entrance to tertiary education	Successful entrance to university
A. Empty model	1.254 (.108)	.341 (.036)	.255 (.028)	.401 (.047)
B. A + type of gymnasium	1.166 (.102)	.327 (.035)	.250 (.027)	.389 (.046)
C. B + achievement in primary school	.856 (.078)	.283 (.031)	.197 (.023)	.319 (.040)
D. C + four grades	.673 (.065)	.254 (.029)	.196 (.024)	.288 (.038)
E. D + pupils' & parents' characteristics ¹	.538 (.056)	.214 (.026)	.191 (.023)	.232 (.034)
F. E + region	.533 (.055)	.210 (.025)	.179 (.022)	.226 (.033)
G. F + other school characteristics ²	.483 (.051)	.203 (.025)	.178 (.022)	.221 (.033)
H. G + random slope of type of gymnasium	.482 (.053)	.216 (.027)	.194 (.025)	.237 (.036)

¹ Including the missing-variables; ² percentage of boys & number of pupils in the final class

Table 8: The unstandardised effects of Catholic, Calvinist and Lutheran gymnasium compared with the reference category public gymnasium of the hierarchical models for application and entrance to tertiary education and university (standard error in parentheses)

Models	Application to tertiary education	Application to university	Successful entrance to tertiary education	Successful entrance to university
B. A + type of gymnasium	1.801 (.337) .503 (.342) .943 (.540)	.550 (.175) .312 (.202) .266 (.304)	.322 (.159) .201 (.183) -.027 (.266)	.614 (.205) .099 (.236) .277 (.347)
C. B + achievement in primary school	1.720 (.305) .585 (.302) .805 (.479)	.539 (.166) .313 (.192) .346 (.288)	.287 (.144) .195 (.168) -.043 (.245)	.616 (.192) .096 (.220) .221 (.326)
D. C + four grades	1.622 (.289) .802 (.283) 1.107 (.463)	.577 (.161) .343 (.186) .320 (.279)	.342 (.149) .253 (.171) .103 (.249)	.729 (.190) .198 (.217) .436 (.323)
E. D + pupils' & parents' characteristics ¹	1.358 (.279) .788 (.266) 1.090 (.435)	.417 (.153) .333 (.176) .271 (.265)	.308 (.149) .245 (.170) .104 (.247)	.477 (.181) .215 (.206) .343 (.310)
F. E + region	1.374 (.278) .808 (.265) 1.029 (.433)	.428 (.152) .345 (.175) .259 (.263)	.329 (.146) .236 (.166) .115 (.142)	.467 (.181) .228 (.205) .330 (.309)
G. F + other school characteristics ²	1.753 (.282) .875 (.259) 1.112 (.418)	.588 (.163) .379 (.174) .322 (.262)	.386 (.157) .262 (.166) .154 (.242)	.620 (.196) .265 (.205) .401 (.308)
H. G + random slope of type of gymnasium	1.798 (.251) .876 (.309) 1.020 (.304)	.596 (.163) .423 (.089) .336 (.194)	.392 (.124) .271 (.144) .206 (.095)	.618 (.185) .306 (.139) .455 (.227)

¹ Including the missing-variables; ² percentage of boys & number of pupils in the final class. Parameters in the grey areas have absolute coefficients higher than twice their standard error.

Table 9: Parameters of pupils' and parents' characteristics, region and other school characteristics of Model H of Tables 8 (standard error in parentheses)

Predictor variables	Application to tertiary education	Application to university	Successful entrance to tertiary education	Successful entrance to university
Primary school achievement	.430 (.038)	.144 (.033)	.128 (.032)	.203 (.046)
Missing primary school achievement	-.215 (.146)	.224 (.116)	-.139 (.111)	.139 (.163)
Mathematics	.472 (.025)	.185 (.020)	.447 (.020)	.430 (.028)
Literature	.405 (.031)	.209 (.030)	.212 (.028)	.279 (.043)
History	.479 (.028)	.200 (.027)	.109 (.026)	.266 (.039)
Foreign language	.295 (.024)	.056 (.024)	.179 (.023)	.170 (.035)
Fathers education	.135 (.016)	.075 (.013)	-.016 (.013)	.082 (.018)
Mothers education	.133 (.016)	.045 (.014)	.015 (.014)	.066 (.019)
Father's occupation: manager	.237 (.105)	.071 (.071)	.055 (.070)	.098 (.098)
Father's occupation: professional	.112 (.073)	.094 (.056)	.066 (.056)	.084 (.078)
Father's occupation: clerical	-.110 (.142)	.037 (.118)	.232 (.116)	-.142 (.157)
Father's occupation: self-employed	.147 (.059)	.084 (.053)	-.071 (.051)	.008 (.074)
Father's occupation: manual worker	.000	.000	.000	.000
Mother's occupation: manager	.567 (.112)	-.024 (.080)	.057 (.078)	-.124 (.110)
Mother's occupation: professional	.128 (.061)	.038 (.057)	.055 (.055)	.009 (.077)
Mother's occupation: clerical	.195 (.085)	-.029 (.077)	-.016 (.074)	-.118 (.106)
Mother's occupation: self-employed	.205 (.078)	.167 (.069)	-.089 (.068)	.056 (.099)
Mother's occupation: manual worker	.000	.000	.000	.000
Parental income	-.045 (.023)	-.022 (.019)	.054 (.018)	-.011 (.027)
Male	.494 (.047)	.399 (.037)	.108 (.037)	.773 (.053)
Missing Father's education	-.191 (.106)	.271 (.106)	-.038 (.105)	.158 (.153)
Missing Mother's education	-.458 (.138)	-.130 (.138)	-.329 (.135)	-.375 (.207)
Missing Father's occupation	-.039 (.071)	.086 (.069)	.026 (.067)	-.164 (.096)
Missing Mother's occupation	.001 (.072)	.034 (.075)	-.161 (.072)	.038 (.108)
Missing Parental income	.094 (.074)	.113 (.055)	-.155 (.054)	-.015 (.079)
Budapest	.221 (.110)	.157 (.079)	-.247 (.077)	.290 (.109)
County town	.289 (.063)	.123 (.051)	-.012 (.051)	.083 (.069)
Town	.176 (.052)	.094 (.047)	.050 (.046)	.021 (.064)
Village (ref)	.000	.000	.000	.000
Percentage boys in school	-1.388 (.285)	-.388 (.211)	-.054 (.199)	-.342 (.256)
Number pupils in final class	.002 (.001)	.002 (.001)	.001 (.001)	.002 (.001)

Parameters in the grey areas have absolute coefficients higher than twice their standard error.

Notes

¹ Of course the importance of these processes was not equal in the different European nations.

² 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.

³ The effects cannot be explained by the social composition or higher selectivity of pupils.

⁴ The private sector is also Catholic in France.

⁵ Bayern, Nordrhein-Westfalen and Rheinland-Pfalz.

⁶ Meckelenburg-Vorpommern, Nordrhein-Westfalen and Sachsen-Anhalt.

⁷ The comprehensive Regional Monitoring Report by UNICEF Innocenti Research Centre contains a chapter on education but does not discuss this phenomenon in detail (UNICEF, 2001).

⁸ There are also Protestant schools in the USA, but they are almost all very orthodox and are mostly excluded from the analyses.

⁹ Hungarian ‘gymnasiums’ are the most prestigious type of secondary education, just like in other European countries like Austria, Germany and the Netherlands. They are more or less comparable to the old British Grammar Schools.

¹⁰ If not indicated otherwise, the sources of the information in this section are either Pusztai (2001) or Imre (1998) – also quoted by Pusztai (2001). Statistics of the Hungarian Ministry of Education are also used by these sources but part of the information comes from the survey on religious schools mentioned previously.

¹¹ Their locations: Budapest (2), Pannonhalma, Győr, Kecskemét, Esztergom, Szentendre, Debrecen.

¹² Religious education is more widespread at the secondary level. Church-run schools represent only 5% of primary schools in Hungary (Halász & Lannert, 2000:164)

¹³ Religious gymnasiums take students who live in settlements other than the place where the school is located. This holds especially for those who live in villages. Many schools have dormitories; 12% of the all dormitories in Hungary are church-run; 10% of students living in dormitories stay in religious institutions; one-third of pupils studying in religious secondary schools live in dormitories (Halász & Lannert, 2000:165).

¹⁴ The picture based on this list is not fully reliable for religious gymnasiums because some of them (those that were established in the second half of the 1990s) could not be considered because they did not yet have 4th grade students.

¹⁵ In 1999, 79 out of 87 church-run secondary schools were gymnasiums (Halász & Lannert, 2000:164). At the same time, the proportion of students in religious institutions was only 1% of all students in vocational secondary school, while the same percentage was 12% in the case of gymnasiums.

¹⁶ The technical reason for this decision was to avoid unstable results. A more substantial explanation is that even if a Hungarian gymnasium had only 1 class in the 4th grade, it would be very unusual for this class to have less than 10 students. In our data, the average number of students is 56, 72, 65, 101 in the Catholic, Calvinist, Lutheran and public gymnasiums respectively. A school (class) with less than 10 students can be a consequence of a high – and perhaps not random – non-response (many students did not want to fill in the questionnaire, many students were not present). Thus, it is better to leave out these schools and students.

¹⁷ The school grades in Hungary run from 1 (worst) to 5 (best). Missing values of the grades are replaced by the mean scores.

¹⁸ Based on parents' characteristics and the pupils' scores we computed the average score per gymnasium. These aggregated school averages do not strongly deviate from the individual averages of Table 3, which show that the between-school-averages do not deviate strongly from the between-pupil-averages. The aggregated school-standard-deviations do not deviate between public and religious gymnasiums in Hungary.

¹⁹ We used MIWin 1.1.

²⁰ $.209 / (.924 + .209)$.

²¹ $.946 (117 + .829)$ in Model C versus $1.133 (.209 + .924)$ in Model A

²² $.913 (.099 + .814)$ in Model D versus $.946 (117 + .829)$ in Model C.

²³ $.177 / (.901 + .77)$.