

SOCIAL DETERMINATION OF SCHOOL TRANSITION UNDER AND AFTER SOCIALISM

(Hungary in comparative perspective)*

Péter Róbert

Abstract

The paper analyzes school transition from secondary level to tertiary education. Rational action theory is regarded the main driving force in this process. In addition, two other mechanisms, the use of cultural and social capital, are also taken into account. Since students who intend to study at tertiary level constitute a selected group – they have made a choice before when entering secondary education – secondary school tracking will also be used to predict entry into tertiary education. Men and women are investigated separately in order to detect gender differences.

Two data sets are analyzed in the paper. The first one comes from an international project of 1993 and puts Hungary into comparative perspective to Czech Republic, Poland and Slovakia. The second one is a single-year cohort database from 1998 and contains information on 18 years old students, interviewed before their final exam in secondary school and the entrance exam to tertiary education. Transition process for them is divided into two parts: the administrative action of application (self-selection) and success or failure of the entrance exam (selection).

Strong class effects provide evidence on the relevance of rational action theory and prove that inequality in the access to educational possibilities existed under socialism and is present after socialism as well. These effects become smaller but persist, when they are controlled for other measures on social background (father's education, cultural capital, family structure, information on siblings). In comparative perspective, Hungary does not deviate much from the other three countries but class effects seem to be somewhat stronger. The analysis of the single-year post-socialist cohort of Hungarian students reveals that the decision about school continuation is the real (rational) choice determined by social background. Success on entrance examination is less affected by the same predictor variables.

Key-words: education, school-system, social stratification, social mobility, post-socialist transformation, international comparison, rational choice theory, cultural reproduction theory, social capital

* Earlier version of this paper was presented the ECSR / EURESCO conference on "European Societies or European Society? Educational Differentiation in European Societies: Causes and Consequences", September 16-20, 2000. Giens (France).

Introduction

In modern societies, education is considered as the main channel of distributing social rewards. In accordance with the industrialization thesis (Treiman 1970), meritocratic principle is an essential driving force in status attainment process. The “Increased Merit Selection” (IMS) hypothesis (Jonsson 1992) claims that merit becomes the key determinant of individuals’ access to education and to social position. Inequalities of educational opportunities (IEO), educational transitions strongly influence life chances. Considering the structure of the educational system in the former socialist countries (but also in most of the modern societies), two main transitions can be distinguished in the course of educational progressions. The first one leads from the primary level of education to the secondary stage, the second one goes from secondary education to the tertiary level. In this paper, the focus of the analysis is put on the second transition to tertiary level. The reason behind this decision is the general finding of previous studies, namely that secondary education has become more general in most of the societies, including the former socialist countries (cf. Shavit and Blossfeld 1993), while transition to tertiary education is still more selective and depends on social characteristics. Another considerable claim sounds that tertiary education became a crucial requirement for the best (service) class positions in modern meritocratic societies. Consequently, we have to focus on access to tertiary education if we intend to analyze the persistence of class inequalities, the way, how members in the most advantageous class positions try to maintain their beneficial position for their offspring through educational investments. Similarly, in modern meritocratic societies, completion of tertiary education is the appropriate way of providing good access to high status jobs and realizing intergenerational upward mobility for the offspring of lower class families.

Nevertheless, when analyzing transition from secondary to tertiary education, we have to bear in mind that students in the secondary schools embody a selected group. This holds especially if considering tracking in the secondary education, the distinction between the social background of students in gymnasium and vocational secondary schools. Previous studies on educational transitions in former socialist countries provided evidence in this respect. In Hungary both Róbert (1991) and Bukodi (1999) found that the fundamental choice is made at age of 14 when children decide about continuing their studies in some secondary school. Similarly in Czechoslovakia “the choice between lower vocational education on the one hand, and gymnasium and technicum on the other, is a crucial life decision” (Mateju 1993:258).

Also in Poland “the choice of secondary schools after the completion of primary school is the crucial decision which determines the allocation of education to students of different social backgrounds” (Heyns and Bielecki 1993: 306). Moreover, secondary school tracking has strong influence on the odds of transition to tertiary education in socialist societies (Róbert 1991. Mateju 1993. Heyns and Bielecki 1993. Szelényi and Aschaffenburg 1993. Saar 1997. Bukodi 1999. Róbert and Bukodi 2000). In most of the societies, gymnasiums have a curriculum of a more academic kind and, consequently, students who complete gymnasiums are better able to meet the requirements, they have to face when intending to continue their studies at tertiary level. The motivation of students in vocational secondary schools usually differs from this; they go to these schools in order to get some training and knowledge what they can successfully use when they enter the labor force. These students usually have doubts whether they want to continue their studies at tertiary level. Students in gymnasium, on the other hand, go to secondary education with the definite plan that they intend to go further to higher level in education. All in all, tracking in the system of education at secondary level is connected to both social origin and to the process of rational choice. This research skips the transition to secondary education but we intend to include the information on type of secondary school when investigating transition to tertiary education, separately for men and women.

In the paper, first we present the theoretical considerations, which provide basis for the empirical analysis. Then, two empirical examples will illustrate the process of transition from secondary to tertiary education. The first one will be of an international comparative character and the second one will focus on the Hungarian case. At the end, the results are discussed and the possible conclusions are drawn.

Theories and previous research

The general context

The main explanatory principle applied in this paper is the rational action theory. The concept, introduced by Boudon (1974), makes a difference between primary and secondary effects that influence educational attainment and produce the inequality of educational opportunities (IEO). Primary effects comprise the influence of social origin, that of the cultural climate on abilities and school achievement. This is more or less in line with the approach of cultural reproduction theory. Secondary effects refer to the decisions about

continuation of education at a higher level. Educational system is a hierarchical one and students have to make decisions during their educational career at certain points whether they leave the system or stay and continue their studies. Furthermore, if educational system offers more than one option and includes tracking at the same level, the decision contains another choice about where they continue their studies. According to Boudon, these decisions are based on estimation of costs and benefits what parents and children do before making a choice and these secondary effects are stronger determinants of educational attainment than primary effects.

Boudon's concept of rationality in educational decisions was used by Goldthorpe (1996) and Breen and Goldthorpe (1997) for explaining persisting differences in educational attainment on a more abstract, generalized and formalized level. In line with the human capital investment theory of Becker (1975), Goldthorpe considers education as an investment serving several possible goals. By investing into education one can obtain the necessary qualification which is sufficient for the purpose of 1) maintaining advantageous class position; or 2) providing good access to high status jobs and realizing intergenerational upward mobility; or 3) avoiding downward mobility in the society. Families in privileged or less privileged class position differ in respect of their evaluation about which educational level serves any of the above goals at best, and what are the true costs they are ready or able to pay for the benefits, any of the above goals can provide them. Breen and Goldthorpe (1997) emphasize three kinds of cost parents and children can consider when making a choice among educational alternatives. As economists also tend to view, there are direct costs of education (fees, living costs during the time in school), and indirect costs (the loss of earnings during the time in school instead of being gainfully employed). The third type of costs is the subjective belief in the success of the choice, parents and their children make. The central research issue for the RAT approach is that evaluation of the costs differs in families with various social standing. Families in lower status found less ambitious and less costly educational alternatives for being appropriate to the goal of maintaining their social status, while parents in high status families will encourage and support their children to continue their studies at higher educational level in order to preserve their advantageous social standing.

In line with the arguments above, Raftery and Hout suggested a rational choice explanation for explaining IEO in the Irish case, namely that "students and their families base decisions about continuing their education on ... evaluations of the associated costs and benefits".

“When the benefits exceed the costs, the individual chooses to continue, if possible” (Raftery and Hout 1993:57). They assumed that the higher the father’s education the larger the perceived benefits of education at higher level and, consequently, offspring of better educated families will less likely to leave the educational system. Similarly, the better the financial situation of the family the smaller the perceived costs of school progression because any kind of costs is usually higher for families with lower income.

While RAT is frequently labeled as an economic theory, we intend to consider another, culturally based theory, the cultural reproduction thesis as well. This concept argues that parental cultural differences have strong impact on school success, offspring of high status families have those skills and abilities – in fact, transmitted to them by the family – which are rewarded by schools at most. Consequently, these students will less likely to leave the educational system at lower stages but will be more successful in school progression to higher educational levels as well (Bourdieu and Passeron 1977). In sum, cultural capital theory assumes that parental cultural capital has a positive impact on the probability of school continuation; this positive effect is larger for the academic track; and the magnitude of this effect is constant over the life-course.

Bourdieu’s (1985) cultural capital or cultural reproduction hypothesis has been tested by applying detailed measures for the cultural (and also for the material) conditions in the family, both for parents and for the offspring. These studies found that the effect of material circumstances on educational inequalities tends to decline over time but the results on the impact of cultural capital were less straightforward. In most of the studies cultural participation turned out to be a significant predictor of educational outcomes (DiMaggio 1982. DiMaggio and Mohr 1985. De Graaf 1988. Róbert 1992. Aschaffenburg and Maas 1997), but some analyses found less support for Bourdieu’s cultural reproduction thesis (De Graaf 1986. Mateju 1990).

While social background is represented by father’s characteristics in most of the analyses, Mare (1981) added mother’s education to the set of predictors when estimating school continuation decisions. The “division of labor” between these predictors is based on the assumption that father’s characteristics represent the economic circumstances, while mother’s characteristics stand for the cultural environment in the family. This distinction goes back to a traditional division of labor within families rooted in gender-specific role differences between

husband and wife (Parsons 1942). In modern societies, however, women's participation in labor force has increased and mother's occupational status can be expected to affect children's educational attainment stronger (Dronkers 1995). One-breadwinner families and two-breadwinner families embody different kind of social background from the viewpoint of economic conditions as well as of cultural and educational climate. The financial circumstances of the families where both father and mother are in labor force can better ensure for children to continue their studies at a higher level because a working mother increases the economic capital of the family. On the other hand, a homemaker mother has more time for the children and can produce a better educational climate for them, and this fact increases the cultural capital, the offspring hold. Work interruptions of mothers during their own occupational career while their children is under 14 years old can be interpreted as investment into the offspring's human capital (Coleman 1988).

Consequently, a next factor, previous research in educational attainment found relevant for successful school completion of children, is family structure (Blau and Duncan 1967. Mare 1980). In addition to the one-breadwinner or two-breadwinner structure of the family, intact or non-intact families, single- or dual-parent families are important to be distinguished. Family structure is especially relevant from the viewpoint of the social capital. Social capital is a complex concept, it can theoretically be distinguished from the other forms of capital but it is frequently difficult to separate these types of capital empirically. As Portes (1998: 7) puts, "whereas economic capital is in people's bank accounts and human capital is inside in their heads, social capital inheres in the structure of their relationships. To possess social capital, a person must be related to others, and it is those others, not himself, who are the actual source of his or her advantage." Parents' social capital has a direct influence on their offspring's wellbeing, but it also affects the ability of parents to inherit their economic or human capital to their children. In the everyday life of families, during the decisions on educational transitions, it is essential that the human capital possessed by parents should be complemented by social capital embodied in family relations. When families decide about school continuation they invest into the human capital of their children and this action is based on economic or social capital accumulated by parents. Furthermore, parents can use their income, wealth or education for generating social relationships, i.e. investing into social capital, which will be beneficial for their children (Sandefur, Meier and Hernandez 1999).

By Coleman's (1988) definition social capital is inhering in relations among various actors. These actors can be, on the one hand, parents and their children, or, on the other hand, parents and other actors in network-mediated relationships, beyond the immediate family. Thus, the role of a homemaker mother is ambiguous from the viewpoint of social capital. If social support is regarded as one of the functions of social capital, parental support and childbearing as a primary task for one of the parents contribute to the accumulation of social capital. In this sense, a working mother decreases the amount of social capital in the family. However, if social capital is interpreted as a relational asset, then a working mother can provide additional social capital for the family. Both father and mother, if gainfully employed, can build useful contacts during their work relationships and these "weak ties" (Granovetter 1973) can be helpful, can serve as a source of information or even of concrete support, when the family has to decide about the offspring's school continuation. It is not surprising if a compromise turns out to be the 'best solution' for the children, namely that school success is the highest for families where the mother is employed part-time (Muller 1995).

Another significant characteristic of family structure with an obvious influence on offspring's educational attainment is, whether the family is intact or not. Apparently, non-intact family is a disadvantage for the children. Financial circumstances are worse in single-parent families; the stress caused by the disruption of the family can have critical psychological consequences; and social capital is also lower in these families. As social capital arises from individuals' relationships with other people, two parents can accumulate more information and access to other individuals and institutions outside the family. In non-intact families, contacts are reduced with the absent parent, and benefits from the social network and relationships of the absent parent are also substantially decreased (Coleman 1990). Given that children lack the benefit of the absent parent in many respects, lower school achievement is one of the typical consequences of single parenthood in the family, as it was shown by several empirical studies (Astone and McLanahan 1991. McLanahan and Sandefur 1994. Sandafur and Wells 1999. Pong, Dronkers and Hampden-Thompson 2003).

The socialist / post-socialist context

Already in the 1970s and 1980s, when applying the classic Blau-Duncan status attainment model for socialist societies, results revealed that the direct path of inheritance of social inequalities between father's occupation and son's occupation plays smaller role in social reproduction under socialism as compared to Western societies. At the same time, Treiman's

industrial thesis seemed to be more applicable; education was a major transmitter of social inequalities (Simkus 1981. Kolosi, Peschar and Róbert 1985). These results called the attention to further investigations on educational inequalities under socialism.

Testing Bourdieu's cultural reproduction theory for socialist societies, the influence of the cultural resources on educational attainment was found stronger than that of the material ones (Mateju 1990. Róbert 1992), and cultural reproduction turned out to be the most important channel in status reproduction (Ganzeboom, Graaf and Róbert 1990). More precisely, Mateju (1990) found that the impact of economic resources on offspring's educational outcomes in the 1980s were stronger in the (capitalist) Netherlands than in the (socialist) Czechoslovakia, while the (socialist but more market oriented) Hungary took a position in the middle. Basically, all previous findings seemed to be in accord that father's education was a stronger predictor of educational attainment or educational transition than father's occupation was (Róbert 1991. Szelényi and Aschaffenburg 1993. Heyns and Bielecki 1993). This also supported the claim that educational inequalities were of more culturally and of less economically based under socialism.

Studies on Hungary, Poland and Czechoslovakia in the *Persistent Inequality* seem to agree that educational inequalities have not decreased over time during socialism. Unlike in China where drastic reduction appears in the advantage of those coming from privileged status and the association between social origin and education is remarkably weak (Deng and Treiman 1997), the European version of communist efforts seemed to fail in decreasing educational inequalities. For Hungary, the authors "found no evidence of a monotonic decline in background effects" or did not observe "a threshold effect of the kind predicted by socialist reform arguments" (Szelényi and Aschaffenburg: 1993:295). For Czechoslovakia, "there were no particular losers and no particular winners regarding educational inequality in terms of groups defined by social origin" (Mateju 1993:268). And "the class-linked determinants of educational access in Poland have remained substantially the same" (Heyns and Bielecki 1993: 331).

In their comparative study, Ganzeboom and Nieuwebeerta (1999) also accepted the general conclusion that the egalitarian socialist ideology with respect to the abolishment of educational inequalities has failed: neither positive nor negative discriminatory policies have had the required effects. Nevertheless these authors did find a consistent decline in the

determinants of educational attainment over time, in six Eastern European countries, though influence of parents' education, cultural participation and party membership remained significant predictors of educational attainment. In sum, most researchers probably agree with the statement that "substantial within-country disparities exist in the transition countries in both access to education and in the learning that is achieved" (Micklewright 1999: 371).

The Hungarian context

The analysis by Simkus and Andorka (1982) on Hungarian data was the first one investigating the changes over time in educational progression from a cohort perspective, for a state socialist country. According to their results based on data from the early 1970s, father's class turned out to be a basic source of educational inequalities, a strong predictor of educational attainment. The inequalities decreased within cohorts as the level of progression increased, but the inequalities decreased across cohorts only for the completion of the primary level of education and remained constant for the higher level of progressions. A similar analysis by Róbert (1991) 15 years later confirmed these findings. Szelényi and Aschaffenburg (1993), however, did not find any decline over time in the effect of social origin, even for the completion of the primary education.

In a more recent and comprehensive paper, Luijkx, Róbert, Graaf and Ganzeboom (2002) returned to the classic Blau-Duncan approach of status attainment model. Investigating the trend in the effect of father's occupation and father's education on offspring's highest educational level over time during a long period from 1910 onwards, they found a marked fall for the influence of father's occupation for men and a more moderate decrease for women. The impact of father's education on the highest educational level varied strongly by historical periods and did not indicate any linear trend over time.

In comparative perspective, transmission of educational inequalities seemed to be quite strong in Hungary as compared to other socialist countries. As mentioned above, Hungary took a place between the Netherlands and Czechoslovakia in the analysis by Mateju (1990). Although achieved status or educational level was influenced by the cultural components of social inequalities stronger than by financial differentiation (Ganzeboom, Graaf and Róbert 1990. Róbert 1992), the gap between the two mechanisms was probably smaller in Hungary. Moreover, in consequence of the general increase in social inequalities in Hungary after the

collapse socialism, economic conditions started to play more significant role in educational decisions than it was the case before 1990 (Bukodi 1999).

Transition from secondary to tertiary education in comparative perspective

Previous research into educational inequalities in former socialist countries did not focus directly on differences among them. *Persistent Inequality* included country studies about the societies we investigate here but these analyses told much more parallel stories about partly similar developments. The same holds for the six-country study by Ganzeboom and Nieuwebeerta (1999). In her extensive monograph, Rijken (1999) analyzed educational transitions comparatively, in cross-national and in over-time perspective, and investigated the effect of social origin on school continuation probabilities. Among others, she focused on differences between countries with different political system but the socialist countries have been handled as one block without considering any deviations among them.

This analysis uses the same data as Ganzeboom and Nieuwebeerta (1999) but has partly different research interest. First, the dependent variable of the analysis is not the highest level of educational attainment but the odds of the educational progression from secondary to tertiary school. Second, when predicting this transition, changes over time in the effect of determinants are not considered. Rather, we focus on across-country comparison and test statistically the differences among the countries. The time-component appears only as measuring educational expansion for the completion of secondary school, i.e. change in supply for becoming eligible for tertiary education. Third, the main focus is put on class effects, the class background is assumed as being the fundamental determinant of educational transitions. This is in line with the proposition that class begins to play an increasing role in socialist societies as market elements start to penetrate the socialist system of redistribution, even already before 1990 (Szelényi and Kostello 1996. Bukodi and Róbert 1999.)

Basically, we expect that the former socialist countries differ from each other in several relevant aspects. We intend to test the variation of social determination of inequality of educational opportunities among four countries, Czech Republic, Hungary, Poland and Slovakia. We assume that these countries can be divided into two groups, Hungary and Poland on the one hand, Czech Republic and Slovakia on the other hand. This grouping is based on the fact that market transition started earlier in the former two countries where

market has penetrated the socialist system of redistribution since the end of the 1960s. At the same time more elements of socialist orthodoxy persisted in the latter two countries until the end of the 1980s. Variation may exist between Hungary and Poland, too, because the Marshall law in Poland broke the reforms. Czech Republic and Slovakia also differs because the education level used to be higher in Czechland, while Slovakia experienced a more rapid educational expansion during the socialist era in order to eliminate educational inequalities within Czechoslovakia (Mateju 1993).

In accordance with the differences related to the pace and timing of market penetration in these societies, we expect different class effects. Class effects on inequalities of educational opportunities in Hungary and Poland are assumed to operate into the direction of class reproduction. Thus, service class background will be stronger predictor of educational transitions in these countries, while positive discrimination of worker class origin and negative discrimination of former bourgeoisie classes will be more visible in Czech Republic and Slovakia.

Information on data, measures and methods as well as descriptive statistics of the variables used in this analysis can be found in Appendix 1 and 3.

Social determination of transition from secondary to tertiary education

In line with the expectations, estimates in *Table 1* show that children of service class families had significantly better chances to continue their studies on tertiary level as compared to children of unskilled worker class families. This holds for students coming from such families where father had a clerical job, too. Furthermore, better class origin increases the odds for the completion of high tertiary education (university) instead of the completion of low tertiary education (college). Offspring of skilled manual worker families also had better chances to go further to the tertiary level of education as compared to those of unskilled manual worker families, but this holds for only the low tertiary level. Class effects for educational choices are stronger for men than women. E.g. the likelihood is larger by nearly 400% for men in high service class (EGP I) for completing university ($[exp1.571-1]*100=381.1$) as compared to the unskilled manual worker class position and to not completing tertiary education at all. The same calculation leads to more than 200% for women in high service class (EGP I) for completing university.

Table 1. *Coefficients from Multinomial Logistic Regression for Entry to Different Types of Tertiary Education⁺ on Parental Resources Variables. Males and Females aged 18-69 (pooled data)*

	Males				Females			
	Model 1		Model 2		Model 1		Model 2	
	Low tertiary	High tertiary	Low tertiary	High tertiary	Low tertiary	High tertiary	Low tertiary	High tertiary
Country effect (ref.: Slovakia)								
Hungary	-.887***	-.020	-.892***	-.062	-.103	-.925***	-.095	-.861***
Poland	-.135	-.356	-.122	-.373	.404**	-.596**	.458**	-.530**
Czech Republic	-.283*	-.302	-.327**	-.413	-.241	-.434**	-.313	-.497**
Educational expansion								
year of secondary school comp.	-.006	-.005	-.009	-.017	.009*	-.001	.002	-.006
year ² of secondary school comp.	-.000	.000	-.000	.000	.000	.000	.000	.000
Secondary school pathway								
academic track	1.557***	1.909***	1.497***	1.843***	1.562***	2.139***	1.516***	2.001***
Father's EGP class (ref.: EGP IIIb+VIIab)								
EGP I. High service	1.025***	1.571***	.648***	1.038***	.981***	1.199***	.316	.418
EGP II. Low service	.671***	.916***	.394*	.497*	.617***	.748***	.145	.116
EGP IIIa. Clerical	.462*	.621*	.350	.466	.455*	.620***	.072	.098
EGP IVab. Self-employed	.212	.275	.124	.384	.138	.157	.002	.061
EGP IVc. Farmer	.128	.072	.214	.006	.254	.052	.036	.039
EGP V-VI. Skilled manual	.285*	.269	.167	.164	.261*	.258	.069	.032
Father's education	-	-	.032	.049	-	-	.051*	.098**
Parents' cultural capital	-	-	.174**	.220**	-	-	.304***	.451***
Number of sibling	-	-	-.040	-.069	-	-	-.097**	-.164**
Family-type social capital (ref.: intact family with working mother)								
intact with non-working mother	-	-	-.002	-.263	-	-	-.171	-.044
non-intact family	-	-	-.069	-.300	-	-	-.247*	-.145
Institutional-type social capital								
Parents' CP-membership	-	-	.194*	.071	-	-	.023	-.032
Intercept	-.871***	-2.421***	-1.038***	-2.257***	-2.473***	-3.123***	2.398***	-3.474***
Log-Likelihood Ratio	564.352		594.785		688.239		807.439	
Df	24		36		24		36	

+: reference category: leaving the educational system

Significance: *** p < .001, ** p < .01, * p < .05

For tertiary education, the models practically do not indicate any significant educational expansion. The main effects for the countries show that women in Slovakia had better odds to the transition to high tertiary education than women in the other three countries had. In the case of low tertiary level, the Polish women had the best opportunities. Slovakian men had larger chances to continue their studies at low tertiary level as compared to Hungarian or Czech men. Tracking in secondary school has a significant impact on educational decisions at tertiary level. Those students who have completed an academic type of secondary school (gymnasium) have much better odds (by about 300-700%) for not leaving the educational system but continuing their studies at tertiary level. It is also more probable that they choose the higher level tertiary education (university). Tracking has stronger impact for women than for men, e.g. the probability for women is larger by 750% ($[exp2.139-1]*100=749.1$) for going to university in comparison of leaving the educational system after finishing a vocational secondary school.

In case of Model 2, the further independent variables nearly outweigh the influence of class. Estimates remain significant only for men of service class origin. Father's education, however, is not a significant predictor for men but only for women. Its impact on school continuation on tertiary level is small. Parents' cultural capital is a stronger predictor, especially for women. The estimate shows that each point on the cultural capital scale increases the probability of the entry into the university by 57% ($[exp0.451-1]*100=56.9$). Number of siblings with its negative impact on school progression to tertiary level is significant only for women as well. One more additional sibling decreases women's odds for studying at the universities by 18% ($[exp-0.164-1]*100=17.8$).

The family level of social capital does not matter for men. An effect of single parent family is present for women for low tertiary education; it decreases the odds of this transition. The organizational level of social capital (parents' communist party membership) has no significant influence for women for transition from secondary to tertiary education, but it increases the probability for men to enter colleges.

Country variation in the transition from secondary to tertiary education

Though all interaction term with countries and the predictor variables have been estimated, we present only two instances in *Table 2* where country differences are significant and meaningful for the transition from secondary to tertiary level of education.

Table 2A. *Selected Coefficients from Multinomial Logistic Regression for Choosing among Different Types of Tertiary Education⁺ on Parental Resources Variables. Interactions between secondary school pathway and country*

	Male			Female		
	Hungary	Poland	Czech	Hungary	Poland	Czech
<i>Low tertiary</i>	-.860*	.133	.197	-1.339***	.267	.106
<i>High tertiary</i>	-.880*	.099	.011	-1.266**	-.592	-.095

+: reference category: leaving the educational system

Significance: *** $p < .001$, ** $p < .01$, * $p < .05$

Table 2B. *Selected Coefficients from Multinomial Logistic Regression for Choosing among Different Types of Tertiary Education⁺ on Parental Resources Variables. Interactions between father's class and country*

	Male			Female		
	Hungary	Poland	Czech	Hungary	Poland	Czech
<i>Low tertiary</i> EGP I	.947*	.039	.051			
<i>High tertiary</i> EGP IV ab EGP IIIa	.506	1.390	1.390*	1.045***	.810***	.962

+: reference category: leaving the educational system

Significance: *** $p < .001$, ** $p < .01$, * $p < .05$

School path. Academic track (completing gymnasium) improved considerably the odds of school progression, especially to the universities. The appropriate interaction terms reveal that this effect is significantly smaller in Hungary than in the other three countries. This holds especially for women who are over-represented in this type of secondary education in these countries. Consequently, it seems that tracking of secondary education matters less in Hungary than in the other three countries.

Father's class. Male offspring from upper service class families have higher probability for continuing their studies in low tertiary school in Hungary as compared to the other three countries. Both in Hungary and Poland, female offspring of the petty bourgeoisie have higher odds for choosing high tertiary education as compared to Czech Republic and Slovakia. Thus, the strategy of providing the possibly best education to their daughters is more typical in the

two countries where self-employment was developed and probably more well-to-do under the socialist period. For Hungarian women, this means that the odds for completing university is larger by nearly 200% ($[exp1.048-1]*100=185.2$) as compared to women's probability in Czech Republic and Slovakia. Finally, Czech males coming from clerical worker families have higher odds to continue their studies in universities as compared to the other three countries. This indicates that educational choices in Czech clerical worker families seem to have a stronger character for ensuring upward mobility chances for their offspring than in the other three countries.

Transition from secondary to tertiary education in Hungary

This section provides a special focus on Hungary, based on recent data collected in 1998. The research approached the school progression from the secondary to the tertiary level as a two-step selection procedure. Based on the institutional characteristics of the Hungarian educational system, these two steps contain the following actions. By law, anybody in Hungary who wants to study at tertiary level, has to place a formal application by filling in a form and sending it to the administration of the appropriate university or college as well as enclosing various documents about his / her previous educational achievement. This can be done by a given deadline every year (usually by the end of February). It is possible to place an application to more than one institution.

After this first step, applicants are required to take a formal entrance exam to the university or college. This exam occurs at the end of June or in the beginning of July. The exam varies a lot by institutions, it can be a written or an oral one or a combination of the two types.¹ One can attend an entrance exam only in the case if he or she has placed an application earlier. Score measures indicate the performance of the applicants at the entrance exam. The Ministry of Education prescribes the number of students, institutions at tertiary level can take for certain field of studies. The state budget provides financial support to the university or college in the form of a per capita amount in accordance with the limit on number of students. Taking this institutional quota system into account, it is calculated for each university or college how many scores an applicant had to reach at the exam for the entry into the given institution. The

¹ The procedure described here was in effect at the time of the research in 1998. Since then, the selection procedure to higher education has been standardized. However, the two steps of application (self-selection) and examination (selection) are still present in the process.

applicants who reached this level passed the exam and they are eligible to begin their studies at tertiary level. This procedure divides transition to higher education into two stages: self-selection (applying) and selection (passing the exam).

In the overview of the literature provided above in the paper, we put a large emphasis on the rational action theory explanation of inequalities of educational opportunities (IEO). Data analyzed in this section allows us to test to some extent the claim that students and their families make calculations before they decide to continue their studies and the decision is affected by their class position as well as by cultural and social capital. In the course of transition from secondary to tertiary level there are two decisions. The first one is about the continuation of the studies, made by the families (students and parents); the second one is about the entrance to tertiary education, made by the institutions (universities and colleges). However, this second decision can happen only to those students who have made the first decision, who have selected themselves. Consequently, the first decision reflects the rational choice of families about school continuation. The analysis investigates the two stages of educational selection separating these two decisions and assuming that application is affected by social circumstances stronger than passing successfully the entrance examination is influenced for those students who have placed an application.

Information on data, measures and methods as well as on descriptive statistics of the variables used in this analysis can be found in Appendix 2 and 3.

Self-selection: Social determination of application to tertiary education

On the average, almost half of the pupils interviewed in the survey have applied to tertiary education, about 60% of them to the more vocational oriented colleges and 40% to the universities with more academic character. According to *Table 3*, the analysis reveals strong class effects; father's class is a significant predictor of the decision on attempting to enter into tertiary education and placing an application for this reason. Compared to those who did not apply for continuation of their studies, children of managers and professionals have the highest odds for placing a formal application. Importance of tracking in tertiary education is clearly visible; offspring from a managerial or professional class background intend to continue their studies rather at high tertiary than at low tertiary institutions. Model 1 shows that the probability of a university application for males is larger by more than 300% as compared to the semi- or unskilled worker background ($[exp1.454-1]*100=328.0$). The petty

bourgeoisie background, especially if the father is self-employed and runs a larger business with employees, results in higher probability for placing an application as well, in particular to a university. Compared to men, class effects are even stronger for females where the probability is larger by more than 700% ($[exp^{2.121}-1]*100=733.9$) for those who have a father in managerial position and plan to go to university. The same percentages are lower for application to college; they vary between 130% and 230%. The cleavage between the non-manual and manual background differs for men and women; the skilled worker background does not increase the likelihood of application to tertiary education for males but this is an advantage for females in comparison to the semi- and unskilled worker class.

In Model 2, the class effects are controlled for the further explanatory variables. Class effects practically disappear for males but they persist – although they are much smaller – for females. Supporting the cultural reproduction theory, father's education and cultural capital increase the probability of applying to school progression, especially to further studies at high tertiary level.

The 1998 Hungarian data-set makes possible to investigate the impact of siblings on school transition in a detailed approach. Number of siblings is not a significant predictor but siblings influence the decision about continuation of studies in several respects. The fact that someone has siblings who did *not* complete secondary education, decreases the chance of application to tertiary education significantly, by about 40-44% for males and even stronger for females, by 50% for college application and by 80% for university application. The interpretation of this result lies in the school climate of the family. If no other siblings completed secondary education, the family and the student consider this as the maximum of school success a child in the family was able to reach and do not aspire to going further to higher education. At the same time, the fact of having a sibling who attends university or college or who completed tertiary education increases the odds of application. This result speaks about another type of school climate in the family where norms and role models regarding studying at tertiary level play significant role. This effect is stronger for females than for males, as well, and this indicates that school climate may influence the educational choices for girls stronger than boys in Hungary.

Table 3. *Coefficients from Multinomial Logistic Regression for Application to Different Types of Tertiary Education⁺ on Parental Resources Variables. Hungarian Males and Females in 4th Grade of Secondary School, aged 18*

	Males				Females			
	Model 1		Model 2		Model 1		Model 2	
	Low tertiary	High tertiary	Low tertiary	High tertiary	Low tertiary	High tertiary	Low tertiary	High tertiary
Father's class								
(ref.: semi- & unskilled worker)								
Manager	.917***	1.454***	.187	.283*	1.205***	2.121***	.363***	.759***
Professional	.867***	1.480***	.104	.230	1.181***	1.969***	.372***	.568***
Clerical employee	.477***	.740***	.072	.133	.885***	1.171***	.342***	.306
Self-employed with employees	.778***	1.026***	.291**	.196	.804***	1.449***	.246**	.548***
Self-employed without empl.	.505***	.831***	.091	.127	.731***	1.175***	.284***	.398***
Skilled worker	.058	.188	-.021	.043	.341***	.507***	.160*	.223*
Father's education			.055***	.126***			.048***	.133***
Cultural capital			.180***	.233***			.215***	.317***
Siblings								
Number of siblings			-.027	-.010			-.017	-.030
Sibling without compl. sec. ed.			-.369***	-.329***			-.406***	-.582***
Sibling failed to enter to ter. ed.			.180	.136			.117	.010
Sibling dropout from tert. educ.			-.052	-.381*			-.273*	-.200
Sibling attends tertiary educ.			.173***	.175**			.333***	.223***
Sibling completed tertiary educ.			.107	.193*			.215**	.025
Family-type social capital								
(ref.: intact family)								
step-parent family			-.234***	-.371***			-.209***	-.359***
lone-parent family			-.147**	-.226***			-.255***	-.110
Mother not in labor force			-.156***	-.148**			-.250***	-.266***
Secondary school pathway								
academic track			1.280***	1.804***			1.171***	1.572***
Intercept	-1.258***	-1.999***	-1.915***	-3.676***	-1.157***	-2.159***	-1.748***	-3.784***
Log-Likelihood Ratio	107.777		36288.696		111.054		46115.370	
Df	12		36		12		36	

+: reference category: leaving the educational system

Significance: *** p < .001, ** p < .01, * p < .05

Family structure also influences the decision on school continuation. In line with the theoretical hypotheses, living in non-intact family decreases the probability of deciding about going to university or college. If the mother is not in labor force (e.g. unemployed or homemaker), the chance of placing an application to tertiary education decreases by about

15% for males and about 30% for females. It seems that a non-working mother in Hungary where dual-earner couples are typical, is an indicator of the lower level of social capital and is not a sign of investment into the child.

Finally, secondary school pathway, the previous decision on school continuation, has strong effect on transition to tertiary education. Gymnasium leads to high tertiary institutions by higher probability than to low tertiary institutions. This holds especially for males. The probability of applying to university is larger by about 500% ($[exp1.804-1]*100=507.4$) for them if they study in gymnasium as compared to non-applicants. For females, the likelihood of applying to university is larger by 380% ($[exp1.572-1]*100=381.2$).

Selection: Social determination of entry to tertiary education

In the next step, we turn to the analysis of successful entrants to tertiary education. While almost every second 4th grade secondary school students tried to enter to tertiary education, only about one-fourth of them managed to realize this plan. Successful entries to university and to college are divided by half-and-half.

Looking at *Table 4*, model 1 displays again the main effects of class. These effects are significant and the pattern we can observe is the same. Coming from managerial, professional or petty bourgeoisie family is an advantage as compared to a manual worker background; i.e. the higher the class position, the larger the chance that the student managed to continue his or her studies at a university. The estimates are smaller for colleges. Moreover, the magnitude of all estimates is smaller for the model on entering to tertiary education than for the previous model on applying to tertiary education.

As Model 2 reveals, father's education was a significant predictor for application but it matters only for the entry to university, effect on college entry does not differ significantly from the failure of entering to tertiary education. One unit increase in the cultural capital scale resulted in about 26% increase for males and about 37% for females in the probability of an application to university. The same increase in the percentages for the probability of successful entry to university is 16% for males and 17% for females. These percentages are smaller again than those in the previous analysis on placing an application.

The pattern of the sibling effects is the same for the successful entry as it was for the application. A less educated brother or sister decreases the odds, a more educated brother or sister increases the odds of school progression. In this case, the magnitude of the estimates is not much smaller.

Table 4. *Coefficients from Multinomial Logistic Regression for Entry to Different Types of Tertiary Education⁺ on Parental Resources Variables. Hungarian Males and Females in 4th Grade of Secondary School, aged 18*

	Males				Females			
	Model 1		Model 2		Model 1		Model 2	
	Low tertiary	High tertiary	Low tertiary	High tertiary	Low tertiary	High tertiary	Low tertiary	High tertiary
Father's class								
(ref.: semi- & unskilled worker)								
Manager	.481***	1.365***	.101	.357*	.840***	1.932***	.288*	.725***
Professional	.488***	1.346***	.122	.290*	.740***	1.774***	.187	.553***
Clerical employee	.353*	.757***	.091	.379*	.651***	1.170***	.277	.470**
Self-employed with employees	.286*	.863***	.054	.159	.398***	1.104***	.011	.255
Self-employed without empl.	.184	.630***	-.022	.017	.348***	.961***	.010	.237
Skilled worker	-.003	.232*	-.021	.177	.207**	.478***	.098	.246*
Father's education			.002	.092***			.010	.108***
Cultural capital			.078***	.152***			.095***	.155***
Siblings								
Number of siblings			-.012	-.017			.005	-.033
Sibling without compl. sec. ed.			-.312***	-.377***			-.302***	-.712***
Sibling failed to enter to ter. ed.			.119	-.080			.050	-.379**
Sibling dropout from tert. educ.			-.002	-.355*			-.083	-.266
Sibling attends tertiary educ.			.178**	.186***			.333***	.159**
Sibling completed tertiary educ.			.213*	.162			.205*	.091
Family-type social capital								
(ref.: intact family)								
step-parent family			-.322***	-.429***			-.293***	-.518***
lone-parent family			-.065	-.236**			-.310***	-.141*
Mother not in labor force			-.174**	-.215***			-.320***	-.166**
Secondary school pathway								
academic track			.839***	1.641***			1.030***	1.703***
Intercept	-2.115***	-2.408***	-2.189***	-3.826***	-2.012***	-2.719***	-2.304***	-4.335***
Log-Likelihood Ratio	102.663		28411.820		106.372		35759.760	
Df	12		36		12		36	

+: reference category: leaving the educational system

Significance: *** p < .001, ** p < .01, * p < .05

The influence of family structure is obviously present for the entry to tertiary education as well. Non-intact family background or non-working mother in the family decreases the likelihood. Nevertheless, the impact of family structure is somewhat stronger in this model as compared to the effect for decision about applying to tertiary education in the previous analysis.

The type of secondary school affects the success of the entry into the tertiary education significantly but these effects are again smaller than those effects, we found when predicting application to tertiary education.

If comparing the two groups of students, the group of applicants and the group of those who passed the entrance examination, the latter group is a selected one. This selection is based on the self-selection of application. This selection effect is taken into account when the model of successful entry into tertiary education is estimated only on the sub-sample of applicants and non-applicants are left out from the analysis. *Table 5* displays these results.

The class effects in Model 1 are even weaker in accordance with the selection hypothesis. However, the pattern of these effects is more surprising because the signs are positive for the successful entries to the university and they are negative for the successful entries to the college. It means that if considering only the self-selected “sub-sample” of the applicants, the ones who managed to pass the entrance examination to the university are coming from families with the highest social standing. Unsuccessful applicants are the next group in this respect and successful college applicants are coming from the families with relatively lower social standing, namely from worker families. Especially pupils from petty bourgeoisie family background have lower odds for successful entry to college among the applicants. This holds for the offspring of managerial and professional families to less degree.

The same pattern can be seen for father’s education and cultural capital in Model 2. These variables influence negatively the college entries and positively the university entries. The estimates are smaller than in the previous models. An interpretation of these negative class effects and cultural capital effects can be that the real chances for school progression has been overestimated for students in some managerial, professional or self-employed families. Perhaps they were aware that they will not be able to enter high tertiary institutions but still

placed an application and tried to enter to college at least. While these students failed, offspring of manual worker families were more realistic with their college application.

Table 5. *Coefficients from Multinomial Logistic Regression for Entry to Different Types of Tertiary Education⁺ on Parental Resources Variables. Hungarian Male and Female Applicants in 4th Grade of Secondary School, aged 18*

	Males				Females			
	Model 1		Model 2		Model 1		Model 2	
	Low tertiary	High tertiary	Low tertiary	High tertiary	Low tertiary	High tertiary	Low tertiary	High tertiary
Father's class								
(ref.: semi- & unskilled worker)								
Manager	-.310*	.574***	-.047	.212.	-.105	.987***	-.045	.404*
Professional	-.292*	.566***	.022	.193	-.206*	.829***	-.153	.230
Clerical employee	-.036	.369	.090	.366	-.010	.509**	-.043	.250
Self-employed with employees	-.464**	.113	-.218	-.106	-.415**	.292*	-.365**	-.107
Self-employed without empl.	-.395**	.052	-.198	-.152	-.365***	.249*	-.351**	-.102
Skilled worker	-.109	.151	.001	.199	-.115	.156	-.085	.081
Father's education			-.053**	.039**			-.029*	.068***
Cultural capital			-.057*	.053*			-.048*	.040
Siblings								
Number of siblings			.019	.048*			.025	-.015
Sibling without compl. sec. ed.			-.067	-.142			-.016	-.444***
Sibling failed to enter to ter. ed.			-.094	-.260			-.078	-.469**
Sibling dropout from tert. educ.			.043	-.266			.067	-.103
Sibling attends tertiary educ.			.089	.137			.199**	.047
Sibling completed tertiary educ.			.170	.146			.145	.079
Family-type social capital								
(ref.: intact family)								
step-parent family			-.239*	-.339**			-.224*	-.462***
lone-parent family			.044	-.153			-.228**	-.061
Mother not in labor force			-.118	-.155*			-.181**	-.031
Secondary school pathway								
academic track			-.057	.752***			.376***	1.061***
Intercept	-.199	-.492***	.367	-1.322***	-.186*	-.893***	-.070	-2.126***
Log-Likelihood Ratio	257.340		18891.402		455.312		25514.045	
Df	12		36		12		36	

+: reference category: leaving the educational system

Significance: *** p < .001, ** p < .01, * p < .05

Sibling effects are present mostly for females and they display the usual pattern. But the negative influence of the less educated or previously unsuccessful siblings as well as the positive influence of the previously successful siblings is weaker for the self-selected applicants in comparison to the estimates in the previous analyses for all students. The family structure has the same impact on entries to tertiary education as we have seen before. For these predictors, the opposing tendency for university and college entries (positive vs. negative estimates) does not hold.

For secondary school pathway, the academic track has a positive impact on successful entries in every case with the exception of males who started their studies in college.

Discussion and conclusion

This research focused on the inequality of access to tertiary education, based on data from two empirical surveys. The main goal of the analysis was to search for empirical evidences about the claim that educational decisions have rational basis, families either try to maintain their cultural and economic advantages, or try to ensure better social position for their offspring by investing into their educational career. Family efforts toward this investment are based on the perception of costs, children have to pay and benefits, they can realize by continuing their studies at higher level in the school system. This concept is based on Boudon (1974) and on recent elaboration by Goldthorpe (1996) and Breen and Goldthorpe (1997).

As proposed by the literature, the empirical analysis focused on class effects, measured by father's class. Other characteristics of the social origin were also considered like the role of father's education, in line with Raftery and Hout (1993). Although Boudon claims that the perception of costs and benefits is based on the economic situation in the family, the cultural climate in the family can also influence the decision on educational progression. Thus, we introduced a cultural capital measure, also in line with the cultural reproduction theory. We also took into consideration the results from previous studies that emphasized the role of family structure referring to the social capital theory by Coleman (1988. 1990). In the models we included measures for intact and non-intact family, for working or homemaker mother, for the presence of older siblings with various kind of previous educational experiences, as well. The analysis focused on the transition from secondary to tertiary education because this

decision seemed to influence further life chances to higher degree. However, previous studies on educational attainment showed that the earlier decision about secondary school continuation has an impact on further educational career, so we included the secondary school pathway in the analysis as a measure for distinguishing between the academic and the vocational track.

The first data-file used in the paper was a comparative one focusing on four former socialist countries, Hungary, Czech Republic, Poland and Slovakia. Although educational inequalities in these countries have been investigated before, previous studies did not focus directly on differences among them. They were analyzed either completely separately like national “case studies” or were handled as one block without considering any deviations among them. The second data-set was only about Hungary and intended to provide a closer test on the selection process for the transition from secondary to tertiary education by separating two stages of the decision, the application process and the factual success of entry.

As far as the comparative part of the paper, we found common features for the four countries investigated. Offspring of privileged classes had larger probability for transition to tertiary education and especially for completing universities. When class effects were controlled for the other independent variables, they persisted (although they became smaller) for men but they disappeared for women. Cultural capital had a significant positive influence on educational decisions, too, improving the odds of educational transition especially to university, in addition to class position. This effect was larger for women. Moreover the larger number of siblings decreased the chances for school progression. Family level of social capital did not seem to have large impact, and the same held for former party membership. In sum, the mechanism behind the decision about the transition from secondary to tertiary level of education seems to be gender-specific; class effects are somewhat stronger for men, while cultural capital has larger impact for women.

With respect to country differences in the determining role of social origin, we did find more deviation among the four countries for the transition from primary to secondary level of education (cf. Róbert and Bukodi 2000). The second stage of educational choices when only the selected group of secondary school participants were investigated seemed to show less variation. We expected that class would have a stronger influence for favoring the educational choices of offspring of the privileged class in Hungary and Poland as compared to the Czech

Republic and Slovakia. This hypothesis became confirmed only for the daughters of the petty bourgeoisie and this partly supports the theory on stronger market penetration in these two countries (Szelényi and Kostello 1996.) The likelihood to complete tertiary education was significantly higher for sons from high service class in Hungary as compared to Slovakia, Czech Republic and Poland, but this pattern was more present for low tertiary and not for high tertiary education.

We also expected that class would have stronger influence for favoring the educational choices of offspring of manual classes in the Czech Republic and Slovakia as compared to Hungary and Poland. This hypothesis did not find much support. In fact, the low non-manual (clerical) worker class seemed to provide relatively better educational opportunities for their children in the Czech Republic.

The main idea of the second empirical analysis was to separate the two parts of the decision process about educational progression. The claim sounds that the real choice based on some (rational) calculation is the decision about continuation of the studies and this is embodied in Hungary in placing a formal application. Consequently, this first decision and the related calculation are influenced by social origin in a stronger and more direct way. The second choice is made by the educational institutions on the basis of the student's previous achievement in the secondary school as well as of his/her performance at the entrance examination. The second decision is also influenced by family background but in a weaker and more indirect way. Accordingly, the main hypothesis said that the application will be stronger determined by family characteristics than the successful entry to tertiary education.

Results confirmed fully this hypothesis. We found stronger class effects for application than for success in passing the entrance examination. In line with the selection hypothesis, effects became even weaker when the analysis focused only on the applicants. Our results show a strong tendency for class reproduction via educational investments at the end of the 1990s, in Hungary. Offspring of privileged classes have more probability to give a try to going to tertiary education and especially to going to high tertiary schools. A closer investigation of the mechanism reveals that father's education and cultural capital have an influence on the decision about application to tertiary education as well. These effects decrease the impact of class but class remains a significant predictor.

Previous educational experiences of older siblings strongly influence the transition to tertiary education. If the respondent has a brother or a sister who could not complete secondary education, the family will be more satisfied with the achievement in the secondary school and will consider a secondary school diploma (maturity) as a maximum of the possible educational investments. Consequently, these pupils have less probability to place an application to tertiary education. On the other hand, a successful brother or sister increases the odds of application. In fact, sibling effects are more persistent than the impact of class or of father's education or of cultural capital, if we compare the models for application and for the success of entrance examination.

Family structure has also significant impact on transition from secondary to tertiary education in Hungary. Interestingly enough, however, non-intact family or non-working mother indicated a strong disadvantage for the student for making a successful entrance examination and not only for deciding about placing an application. Estimates for the effect of family structure did seem to decrease so much as we moved from modeling the determination of application to modeling the determination of successful entry.

Finally, an interesting finding emerged from the analysis of the self-selected applicants. Results indicate that family background has no linear influence on the success of the applicants at the entrance examination. In fact, applicants who fail at the examination at colleges come from higher status families as compared to applicants who could enter to low tertiary education. It seems that some families and students tend to overestimate their chances and / or underestimate the requirements they have to meet at the examination. Especially offspring of petty bourgeoisie belong to this group. We do not know enough about this phenomenon at this point, so we can formulate only assumptions. E.g. we can suppose that decision about application in self-employed families was stronger based on the existing economic resources. However, the role of financial capital in school transition is probably underestimated in this study, partly due to the lack of appropriate measures. But we analyzed only the successful entries on the basis of the quota system prescribed by the Ministry of Education for the universities and colleges, i.e. we analyzed only those students who were taken by the institutions as financed from the state budget on the per capita basis. At the time of the survey, there was a smaller group of students who did not reach the necessary scores at the entrance examination to belonging to this group. Still they could begin their studies because they decided to pay for it but they were not included in this analysis.

Finally, it seems that tracking is also marked in the Hungarian educational system. Secondary school pathway displayed a significant advantage for those who completed their studies in gymnasium as compared to vocational secondary schools. But tracking seemed to be also present at the tertiary level of the educational system in the time of this research. Upper tertiary education of academic kind seemed to provide opportunity for maintaining social privileges and seemed to help reproduction of social inequalities, while lower tertiary education of vocational kind seemed to provide more chances for upward mobility for offspring of families with lower social standing. These circumstances provided good opportunities for calculations about educational investments in the Hungarian families. In families with higher social standing, rational decisions for maintaining high social status or increasing upward mobility chances should have probably referred to the choice of continuing studies in upper tertiary institutions, in universities. However, in worker class families it has been an established rational choice for upward mobility to apply to the lower type of tertiary education, to colleges. But institutional circumstances for the rational calculations are on the way to change in Hungary as the system of colleges and universities is replaced by studying at BA and MA level in the same educational institutions, in line with the Bologna process. The new system will create a new framework for the mechanisms of rational choice in the Hungarian families. Hopefully, fresh data collections will give an opportunity to analyze the new developments.

References

- Aschaffenburg, Karen and Ineke Maas. 1997. Cultural and Educational Careers: The Dynamics of Social Reproduction. *American Sociological Review*. 62: 573-587.
- Astone, Nan and Sara McLanahan. 1991. Family Structure, Parental Practices and High School Completion. *American Sociological Review*. 56: 309-320.
- Becker, Gary S. 1975. *Human Capital. A Theoretical and Empirical Analysis with Special Reference to Education*. Chicago: University of Chicago Press
- Blau, Peter M. and Otis D. Duncan. 1967. *The American Occupational Structure*. New York: John Wiley & Sons Inc.
- Boudon, Raymond. 1974. *Education, Opportunity and Social Inequality: Changing Prospects in Western Society*. New York: Wiley.
- Bourdieu, Pierre and Jean-Claude Passeron 1977. *Reproduction in Education, Society and Culture*. Sage: London
- Bourdieu, Pierre. 1985. The Forms of Capital. Pp. 241-258 in *Handbook of Theory and Research for the Sociology of Education*, ed. by Jerome G. Richardson. New York: Greenwood
- Breen, Richard and John H. Goldthorpe. 1997. Explaining Educational Differentials. Towards a Formal Rational Action Theory. *Rationality and Society* 9: 275-305
- Bukodi, Erzsébet. 1999. Educational Choices in Hungary. *Hungarian Statistical Review* (English edition) 77: 71-94.
- Bukodi, Erzsébet and Péter Róbert. 1999. Historical Changes, Human Capital, and Career Patterns as Class Determinants in Hungary. *Hungarian Review of Sociology*. Special Issue. pp. 42-65.
- Coleman, James S. 1988. Social capital in the creation of human capital. *American Journal of Sociology*. 94: S95-121
- Coleman, James S. 1990. Social Capital. Chapter 12. Pp. 300-321 in: Coleman, James S. *Foundations of Social Theory*. Cambridge: Harvard University Press.
- De Graaf, Paul M. 1986. The Impact of Financial and Cultural Resources on Educational Attainment in the Netherlands. *Sociology of Education* 59: 237-246
- De Graaf, Paul M. 1988. Parents' financial and cultural resources, grades, and transition to secondary school in Federal Republic of Germany. *European Sociological Review* 4: 209-221
- Deng, Zhong and Donald J. Treiman. 1997. The Impact of the Cultural Revolution on Trends in Educational Attainment in the People's Republic of China. *American Journal of Sociology*. 103 (2): 391-428
- DiMaggio, Paul. 1982. Cultural Capital and School Success: The Impact of Status Cultural Participation on the Grades of U.S. High School Students. *American Sociological Review*. 47: 189-201

- DiMaggio, Paul and John Mohr. 1985. Cultural Capital, Educational Attainment, and Marital Selection. *American Journal of Sociology*. 90: 1231-1261
- Dronkers, Jaap. 1995. The Effects of the Occupations of Working Mothers on the Educational Inequality. *Educational Research and Evaluation* 1: 226-246
- Ganzeboom, Harry B.G., Paul M. De Graaf and Péter Róbert. 1990. Cultural Reproduction Theory on Socialist Ground: Intergenerational Transmission of Inequalities in Hungary. *Research in Social Stratification and Mobility*. 9: 79-104
- Ganzeboom, Harry B.G., and Paul Nieuwebeerta. 1999. Access to education in six Eastern European countries between 1940 and 1985. Results of a cross-national survey. *Communist and Post-Communist Studies*. 32: 339-357.
- Goldthorpe, John H. 1996. Class Analysis and the Reorientation of Class Theory: The Case of Persisting Differentials in Educational Attainment. *British Journal of Sociology*, 47: 481-505
- Granovetter, Mark S. 1973. The Strength of Weak Ties. *American Journal of Sociology*. 78: 1360-1380
- Heyns, Barbara and Ireneusz Bielecki. 1993. Educational Inequalities in Postwar Poland. Pp. 303-335 in *Persistent Inequality. Changing Educational Attainment in Thirteen Countries* edited by Yossi Shavit and Hans-Peter Blossfeld, Boulder: Westview Press, Inc.
- Jonsson, Jan O. 1992. Towards the Merit-Selective Society? Swedish Institute for Social Research, University of Stockholm
- Kolosi, Tamás , Jules Peschar and Péter Róbert. 1985. On Reduction of Social Reproduction. A Hungarian - Netherlands comparison. Pp. 3-28 in: *Berufliche Verbleibsforschung in der Diskussion. Band 2.* edited by Manfred Kaiser, Reinhard Nuthmann, and Heinz Stegmann, Nürnberg: IAB.
- Luijkx, Ruud, Péter Róbert, Paul M. de Graaf and Harry B. G. Ganzeboom. 2002. Changes in Status Attainment in Hungary between 1910 and 1989; Trendless Fluctuation or Systematic Change? *European Societies* 4 (1): 107-14
- Mare, Robert D. 1980. Social Background and School Continuation Decisions. *Journal of the American Statistical Association*. 75: 295-305.
- Mare, Robert D. 1981. Change and Stability in Educational Stratification. *American Sociological Review* 46: 72-87
- Mateju, Petr. 1990. Family Effect on Educational Attainment in Czechoslovakia, the Netherlands and Hungary. Pp. 187-210 in *Social Reproduction in Eastern and Western Europe*, edited by Jules L. Peschar, Nijmegen: Institute for Applied Social Sciences
- Mateju, Petr. 1993. Who Won and Who Lost in a Socialist Redistribution in Czechoslovakia. Pp. 251-271 in: *Persistent Inequality. Changing Educational Attainment in Thirteen Countries* edited by Yossi Shavit and Hans-Peter Blossfeld, Boulder: Westview Press, Inc.
- McLanahan, Sara and Gary Sandefur. 1994. *Growing up with a single parent: What hurts, what helps*. Cambridge: Harvard University Press.
- Micklewright, John. 1999. Education, Inequality and Transition. *Economics of Transition*. 7(2): 343-376

- Muller, Chandra. 1995. Maternal Employment, Parental Involvement, and Mathematics Achievement Among Adolescents. *Journal of Marriage and the Family*, 57: 85-100
- Parsons, Talcott. 1942. Age and Sex in the Social Structure of the United States. *American Sociological Review* 7: 604-616
- Pong, Suet-ling, Jaap Dronkers and Gillian Hampden-Thompson. 2003. Family Policies and Academic Achievement by Young Children in Single Parent Families: an International Comparison. *Journal of Marriage and Family*, 65: (in preparation)
- Portes, Alejandro. 1998. Social Capital: Its Origins and Applications in Modern Sociology. *Annual Review of Sociology*. 24: 1-24.
- Raftery, Adrian E. and Michael Hout. 1993. Maximally Maintained Inequality: Expansion, Reform, and Opportunity in Irish Education, 1921-1975. *Sociology of Education* 66: 41-62
- Rijken, Susanne. 1999. Educational Expansion and Status Attainment. A cross-national and over-time comparison. Amsterdam: Thesis Publishers
- Róbert, Péter. 1991. Educational transition in Hungary from the post-war period to the end of the 1990s. *European Sociological Review* 7: 213-236.
- Róbert, Péter. 1992. Cultural and Material Background in Status Attainment in Hungary. Chapter 10. in *Lifestyle and Social Stratification in Comparative Perspective*, edited by Maria D. R. Evans, Harry B. G. Ganzeboom and Nan-Dirk De Graaf. University of Nijmegen: Department of Sociology [Manuscript]
- Róbert, Péter and Erzsébet Bukodi 2000. Similarities and Differences in School Transition in Post-Communist Countries. Paper presented at the 'Educational Achievement' session of the 50th Anniversary Conference of ISA RC28: Achievement and Outlooks, Libourne, France, May 11-14.
- Saar, Ellu. 1997. Transition to Tertiary Education in Belarus and the Baltic Countries. *European Sociological Review* 13: 139-158.
- Sandefur, Gary D., Ann Meier and Pedro Hernandez. 1999. Families, Social Capital and Educational Continuation. *CDE Working Paper* No. 99-19.
- Sandafur, Gary D. and Thomas Wells. 1999. Does Family Structure Really Influence Educational Attainment? *Social Science Research* 28: 331-357
- Shavit, Yossi and Hans-Peter Blossfeld (eds.) 1993. *Persistent Inequality. Changing Educational Attainment in Thirteen Countries*. Boulder: Westview Press
- Simkus, Albert. 1981. Comparative stratification and mobility. *International Journal of Comparative Sociology*. 22 (3): 213-236.
- Simkus, Albert and Rudolf Andorka. 1982. Inequalities in Education in Hungary 1923-1973. *American Sociological Review* 47: 740-751
- Szelényi, Szonja and Karen Aschaffenburg. 1993. Inequalities in Educational Opportunity in Hungary. Pp. 273-302 in *Persistent Inequality. Changing Educational Attainment in Thirteen Countries* edited by Yossi Shavit and Hans-Peter Blossfeld, Boulder: Westview Press, Inc.
- Szelényi, Ivan and Erik Kostello. 1996. The Market Transition Debate: Toward a Synthesis? *American Journal of Sociology*. 101(4): 1082-1096.

Treiman, Donald J. 1970. Industrialization and social stratification. Pp. 207-234 in *Social Stratification. Research and Theory for the 1970s*. edited by Edward O. Laumann, Indianapolis: Bobbs-Merrill.

Appendix 1

Data, measures, and methods for the comparative analysis

Data used in the first part of the analysis is taken from the "Social Stratification in Eastern Europe after 1989" project (principal investigators: Donald Treiman and Iván Szelényi). Four countries (Czech Republic, Hungary, Poland and Slovakia) have been selected for the analysis. Both men and women aged between 18 and 69 are investigated.

We have the following dependent variable in the analysis:

1. transition from secondary to tertiary education contains three choices:
 - leaving the educational system (reference category)
 - continuing the studies at lower tertiary level (college)
 - continuing the studies at higher tertiary level (university).

The following independent variables are applied in the study:

1. *Country*. Three dummy variables have been computed for Hungary, Poland and the Czech Republic. Slovakia served as reference in the pooled data analysis.
2. *Educational expansion*. For this measure a continuous time variable has been computed, based on age 18 when respondents have normally completed secondary education. The measure is practically a one-year cohort variable.
3. *Father's EGP class*. The seven category version is used, distinguishing the upper service (I), lower service (II), clerical (IIIa), petty bourgeoisie (IVab), farmer (IVc), skilled manual (V+VI), unskilled manual + agricultural worker (VIIab) classes (Erikson and Goldthorpe 1992). The last category served as a reference in the statistical models. (If information for the father was not available, it was substituted by the mother's class.)
4. *Father's education*. The number of classes for the highest educational level was calculated. (If information for the father was not available, it was substituted by the mother's education.)
5. *Parents' cultural capital*. This measure is based on parental cultural participation, like visiting museum and theatre, listening classical music, reading books and number of books of parents. The questions referred to the age about 14 of the respondent. Separate principal component analyses were performed, which resulted in one (not rotated) factor with an eigenvalue being larger than 1 for all four countries. Explained variances are 54%

(Czech R.), 62% (Hungary), 58% (Poland) and 56% (Slovakia). Communalities were always over .45 for all individual variables and countries.

6. *Siblings*. Number of siblings was used in the analysis.
7. *Family level social capital*. A three category measure was computed:
 - intact family where both parents worked (reference category)
 - intact family with a homemaker wife
 - non-intact / single-parent family.
8. *Organizational level social capital*. This is a dummy variable for parents' party membership. The measure is based on the proportion of families where either the father or the mother or both were members in the Communist Party in 1989.
9. *Secondary school path*. This is a dummy variable distinguishing between academic and vocational track.

The statistical models were run on the pooled file of the four countries. Since the dependent variable is a categorical one, multinomial logistic regression was applied as a statistical method. Models for analyzing transition from secondary to tertiary education have been built in three steps: 1. We included the class variable controlled for only the main effects for countries and the educational expansion (Model 1); 2. We added the further explanatory variables to the equation (Model 2); 3. We added the interaction terms between the independent variables and the country dummies (Model 3).

Appendix 2

Data, measures and methods for the Hungarian analysis

Data used in the second part of the analysis is taken from a self-administered survey among 4th grade secondary school students. The survey has been carried out in spring of 1998; the questionnaire has been prepared and the fieldwork has been made by the Institute of Sociology, Eötvös Lóránd University, Budapest. The research was financed by the Soros Foundation, Budapest. The idea of the research was to interview all Hungarian students who are going to get their secondary school diploma in 1998 and are eligible to continue their studies at tertiary level. This resulted in a large N of cases; number of interviewed students was about 60,000 – although part of the schools decided not to participate in the investigation. The questionnaire focused on the fact whether these students placed an application to tertiary education or not, and students were also asked about their family background. Some month later in the autumn, the register of the Ministry of Education was used to identify the successful applicants who managed to pass the entrance examination to tertiary education.²

There are two dependent variables in the analysis:

1. Application to tertiary education:
 - applicants to university
 - applicants to college
 - non-applicants (reference category).
2. Successful entry to tertiary education:
 - entry to university
 - entry to college
 - failure of application (reference category).

The independent variables are as follows:

1. *Father's class*. A seven category variable was prepared distinguishing the managers, the professionals, the clerical employees, the petty bourgeoisie with employees, the petty bourgeoisie without employees, the skilled workers and the unskilled manual +

² I am indebted to Mihály Csákó, leader of the project who made this data available for me.

agricultural workers. The last category served as a reference in the statistical models. The scheme is not fully identical with the EGP classification what we could not compute because the survey did not contain a detailed coding of father's occupation. These categories are based on the answers received from the students.

2. *Father's education.* The number of classes for the highest educational level was calculated.
3. *Cultural capital.* This measure is based on six pieces of information. A principal component analysis was performed and the first not-rotated factor was saved. This factor had an eigenvalue of 1.8 and explained 30% of the variance of the six variables. The variables (with the factor score coefficients in parentheses).
 - number of books of parents (.39),
 - number of books of the respondent (.35),
 - number of years, the respondent studied some foreign language (.28),
 - number of years, the respondent attended some other special educational courses (.25),
 - number of years, the respondent used a PC (.24),
 - weather the respondent used a PC first time at home, in the primary school, in the secondary school or somewhere else (.27).
4. *Siblings.* On the one hand the number of siblings was used in the analysis. On the other hand, five dummies were computed on the basis of information about siblings:
 - respondent had at least one sibling without completed secondary school,
 - respondent had at least one sibling who could not pass an entry examination to the tertiary education earlier,
 - respondent had at least one sibling who attended tertiary education earlier but became a dropout from the university or college,
 - respondent had at least one sibling who attended tertiary education at the time of the survey,
 - respondent had at least one sibling who completed successfully tertiary education earlier.
5. *Family level social capital.* A three category measure was computed for the structure of the family:
 - intact family with two parents (reference category)
 - non-intact family: one parent + a step-parent
 - non-intact family: single-parent family.

In addition a dummy measure is used for indicating if the mother is not in labor force.

6. *Secondary school path.* This is a dummy variable distinguishing between academic and vocational track.

The statistical models were run separately for men and women. Since the dependent variable is a categorical one, multinomial logistic regression was applied as a statistical method. Models for analyzing transition from secondary to tertiary education have been built in two steps: 1. Main effect of class (Model 1); 2. Further explanatory variables, added to the equation (Model 2).

Appendix 3.

Distribution of variables used in the paper
Column 1-4: individuals aged 18-69
Column 5: 4th grade students in secondary schools, aged 18

	Hungary, 1993	Poland, 1993	Czech R., 1993	Slovakia, 1993	Hungary, 1998
Educational choices at					
Tertiary level					
<i>Application to tertiary education</i>					
did not place an application	-	-	-	-	56.5
low tertiary	-	-	-	-	26.9
high tertiary	-	-	-	-	16.6
total	-	-	-	-	100.0
<i>Entry to tertiary education</i>					
did not enter to tertiary education	64.0	57.7	65.2	59.7	74.9
low tertiary	23.6	33.8	24.4	28.3	12.3
high tertiary	12.4	8.4	10.4	12.0	12.8
total	100.0	100.0	100.0	100.0	100.0
Secondary school path-way (academic = 1)					
	.47	.43	.29	.32	.41
Father's class					
EGP I / 1998: Manager	6.6	6.5	7.8	7.0	6.9
EGP II / 1998: Professional	5.6	5.8	10.2	8.0	19.5
EGP IIIa / 1998: Clerical	4.8	4.0	5.3	5.3	2.2
EGP IVab / 1998: SE w. empl.	5.4	5.7	1.1	1.3	4.9
EGP IVc / 1998: SE w.out empl.	11.9	30.4	6.7	10.6	16.5
EGP V-VI / Skilled worker	22.4	20.5	25.0	24.7	44.0
EGP VIIab / Semi- & unskilled w.	43.2	27.2	44.0	43.1	6.0
total	100.0	100.0	100.0	100.0	100.0
Father's education	7.73	8.40	10.34	9.51	12.6
Parents' cultural capital	.02	.01	-.08	-.13	.02
Mean number of siblings	3	3	2	3	1
<i>Proportion of siblings</i>					
without completed sec. education	-	-	-	-	.13
failed to enter to tertiary education	-	-	-	-	.03
dropout from tertiary education	-	-	-	-	.02
attends tertiary education in 1998	-	-	-	-	.15
completed tertiary education	-	-	-	-	.05
Family-type social capital					
Intact-both parents working	35.5	55.4	56.8	45.5	75.8
Intact with non-working mother	45.7	28.5	28.4	41.5	-
non-intact: with step-parent	-	-	-	-	6.8
non-intact: lone-parent family	18.8	16.0	14.7	12.9	17.4
total	100.0	100.0	100.0	100.0	100.0
Mother not in labor force	-	-	-	-	.21
Parents' CP-membership	.22	.23	.37	.26	-
N of cases	3859	3194	4899	4262	61188

Source: Column 1-4: "Social Stratification in Eastern Europe after 1989" survey, 1993, random sample of population aged between 18-69
Column 5: "Determinants of school progression to tertiary level" ELTE/SOROS Survey, Hungary 1998, 4th grade students in secondary school