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Social origin and access to upper secondary education in Switzerland: a comparison of company-based apprenticeship and exclusively school-based programmes

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Abstract: When making the transition from compulsory school to upper secondary education and training, young people in Switzerland have two main options: company-based apprenticeships or exclusively school-based programmes. Based on Bourdieu, we assume that schools and training firms each have their own particular selection procedures. We expect these different procedures to change the patterns of the influence of social origin on transition – even when controlling school achievement. We test our assumptions by applying event history analyses to Switzerland's first nationwide longitudinal survey of young people (TREE). As expected, cultural capital of the family of origin is highly relevant for access to school-based programmes, whereas economic capital favours the entry into apprenticeships.

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Social Origin and Access to Upper Secondary Education in Switzerland: A Comparison of Company-based Apprenticeship and Exclusively School-based Programmes

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1   Introduction

Over recent decades, successful transition from compulsory school to upper secondary education has become ever more important (Blossfeld and Shavit 1993). Completion of post-compulsory education has probably become the most crucial single prerequisite for entering the labour market (OECD/CPRN 2005). In Switzerland, the transition from compulsory school to post-compulsory upper secondary education is tantamount to the entry into two different types of educational programme: On the one hand, school leavers may strive for company-based apprenticeships, where recruitment as well as the training itself is mainly in the hands of the training companies. On the other hand, they may seek to continue their education in a full-time school, where admission is regulated within and between the lower and upper secondary schools.

In our paper we analyse the transition to these two types of upper secondary education programme. We are especially interested in how the institutional setting shapes the chances of individuals gaining entry to upper secondary education, taking into account young people's school and family background (Diefenbach, 2007; Eriksson and Jonsson, 1996; Hillmert, 2004; Imdorf, 2008).

Distinguishing between the two types of educational programme is important for three reasons. First, we assume that selection of apprentices follows a different (i. e. more business oriented) logic than admission to upper secondary schools. Second, most of the fully school-based programmes in Switzerland are geared to students with superior academic records, and their completion offers better educational and employment prospects (Buchmann and Sacchi 1998). Distinguishing between the two types of educational programme may therefore also be relevant with regard to intra- and intergenerational mobility. Third, evidence indicates that some migrant groups (Diehl, Friedrich, and Hall, 2009; Granato, 2006; Uhly and Granato, 2006)

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and women have lower chances to enter apprenticeships than Swiss pupils / male students (see also Hupka, 2003; Leemann and Keck, 2005).

We start with a short description of the Swiss educational system. As we are interested in the role of different institutional settings during transition, we then refer to the Bourdieu'ian Capital Theory, addressing the role of the school-system in reproducing educational and social inequality. We then develop our arguments on how individual and family resources shape young people's chances to gain access to the two types of upper secondary education. We distinguish between the effects of Bourdieu's types of capital on the one hand and the effects of previous academic records and generalised literacy skills on the other hand. We argue that institutional factors such as selection procedures or admission regulations *themselves* influence the effects of specific types of Bourdieu'ian capital, ascribed characteristics, and academic achievement on the transition into apprenticeship or school-based programmes. To test our hypotheses, we use data from TREE (TRansition from Education to Employment), the first national longitudinal youth survey in Switzerland. We estimate a competing risk model in order to analyse both kinds of transition (Blossfeld and Rohwer, 1995).

2   The Swiss educational system

In Switzerland, compulsory school ends after nine years, but continuing education at upper secondary level is commonplace.[1] Usually, the upper secondary education system is categorised in terms of contents and goals, distinguishing between "general education programmes" and "vocational education and training (VET)". The latter includes both apprenticeships and exclusively school-based VET programmes. For our analysis we have applied a different categorisation. Using the *organisational form* as the decisive criterion we distinguish between a) apprenticeships, the company-based dual form of vocational education and training, and b) fully school-based programmes, which comprise general education schools, specialised middle schools (SMS) as well as full-time vocational schools. All described programmes are leading to an upper secondary certificate either allowing qualified labour market entry or access to the tertiary educational system, they are classified as ISCED 3-level

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[1]   By international standards, tracking in Switzerland's educational system starts at a very early stage (after 5th or 6th grade in most cantons), with a highly selective transition from primary to various lower secondary level programmes. Allocation to a given lower secondary track is largely irreversible. It is to be presumed that this tracking reinforces intergenerational transmission of educational inequality (Becker and Lauterbach 2004). About two thirds of the student population are assigned to lower secondary tracks with "extended requirements", the remaining third to tracks with "basic requirements". Non-selective, non-tracked upper secondary programmes, as provided in, for example, the canton of Ticino, are the exception. At the end of compulsory schooling, Swiss students "graduate" without special certification. They just receive their regular semi-annual school report.

As in Germany, the Swiss educational system is heavily focussed on apprenticeships (about 60% in 2000), while the percentage of students following full-time school programmes is comparatively low (about 40%; our calculations, see OPET, 2008; Federal Statistical Office, on-line).

Such educational systems are closely linked to the labour market, highly segregated and specialised. Access to employment requires the completion of the corresponding occupation-specific vocational programme, which in most cases means an apprenticeship. The transition into a programme on the upper secondary therefore is a crucial precondition of later employment opportunities, further education activities, and life chances in general (Albert 2007, Gangl 2003).

Figure 1:   Trajectories from lower to upper secondary education in Switzerland
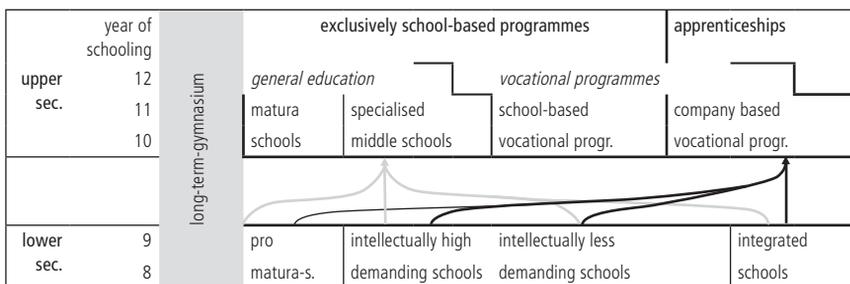
Some of the distinctive characteristics of apprenticeships are that apprentices are formally hired and trained by a company, spend 1–2 days a week at school, and earn a modest wage. The combination of school and practical training is an important advantage of the apprenticeship system (OPET 2008). Apprenticeships are offered in more than 250 occupations of widely varying academic demands. The programme can thus integrate both academically low and high-achieving young people.

Fully school-based programmes are mostly provided in general education Matura schools, which are regulated by cantonal law and provide access to the universities. Specialised middle schools (SMS) prepare for vocational training at tertiary level (Universities of Applied Science) in areas such as health or information technology. Finally, there are vocational programmes, which are exclusively school-based. These are limited to a small number of professions and more common in the French and Italian speaking regions of Switzerland (OPET 2008).

All of the exclusively school-based programmes mentioned above require better academic records than the average apprenticeship. By comparison with other countries, there are substantially fewer school-based VET-programmes for academically low achieving young people. Given that completion of a school-based programme generally offers better career prospects (regarding the fact that they lead to tertiary education more often) than an average apprenticeship, it is to be assumed that

the allocation of school leavers to a certain type of programme contributes to the intergenerational transfer of educational inequality and social status.

Of course, from the perspective of school leavers, the envisaged occupational field is perhaps far more important than the programme type. In addition, the choice of the occupational field and a preference for a particular programme type are often mutually determining. We assume that only a minority of young people with good to excellent academic records are free to choose between the various upper secondary programmes. This is particularly true when apprenticeship places are limited. The lowest performing students often have to be content with finding *any* training opportunity at all. Furthermore, failing to do so often means failing to enter any kind of upper secondary education. Therefore, the restrictions of the "educational market" and its entrance regulations have to be considered as crucial contextual factors for the majority of young people undertaking the transition to upper secondary level education. The impact of this structure has been evident in the increasing numbers of students enrolling in so-called "intermediate solutions" (non-certifying programmes such as a 10th grade school programme, internships, etc.) before starting upper secondary education (Ryser and Erlach 2007, 46).

The argument developed so far is broadly in line with Erikson and Jonsson (1996), Hillmert (2004), Diefenbach (2007) and Imdorf (2008), who underscore the role of the institutional context for the transition to upper secondary education. Unfortunately, empirical studies which take into account the different types of upper secondary educational are very rare (Beicht, Friedrich and Ulrich, 2008; Lehmann, Seeber and Hunger, 2006). The findings of Breen and Jonsson (2000), and Grelet (2005), however, encourage further research in this direction.

3   Theoretical background and hypotheses

There is widespread evidence for the strong and lasting impact of social origin on educational transitions (Bergman et al. 2002, Breen and Jonsson 2005) and educational success – even when controlling for previous learning outcomes (Ramseier and Brühwiler 2003). There are at least two important theoretical strands of literature dealing with origin effects in educational outcomes: one sets the focus on origin-specific educational choices (Breen and Goldthorpe, 1997) and the other on the interplay of origin and contextual factors including institutional settings (for an overview see Heinz 2000).

Another theoretical approach, focusing more on the interplay between social origin, institutional settings and selection procedures, is Bourdieu's Capital Theory (1977, 1982). Social origin in this context can be seen as the amount of family resources. Bourdieu and Passeron (1971) underline the significant role of the educational system in the process of reproduction of social inequalities. They point

out that children growing up in families with more capital have higher educational aspirations (Bourdieu and Passeron, 1971; Sauer and Gattringer, 1985) and better learning environments. Parents' cultural, economic, and social capital fosters educational success, because it helps to bring forward those specific skills that the school system considers as relevant for the access to subsequent educational programmes. In particular, school achievement consistently appears to be heavily influenced by children's incorporated cultural capital. Bourdieu and Passeron (ibid.) argue that by valuing certain skills at the expense of others, schools thus perpetuate and legitimate educational inequalities (ibid.).

From this perspective, young people from migrant backgrounds are of particular interest, because of their lack of "Bourdieu'ian" capital and their habitus, which can be expected to be different and because of their lack of knowledge about the Swiss educational system, which often contrasts with their high educational aspirations (Bauer and Grundmann 2007, Bolzman et al. 2003, Diefenbach 2007, 44/45, Esser 1996, Juhasz and Mey 2003).

Of course, Bourdieu develops his arguments with respect to the French elitist school system, where dual VET-Programms play only a minor role. Thus, Bourdieu's perception of school attainment within the French school system seems not well adapted to the Swiss institutional context and to the transition at issue. His very basic notion of a key role of incorporated cultural capital and social capital for the access to higher education may nevertheless be valid with respect to apprenticeships in Switzerland, too. The Bourdieu'en framework needs to be adapted to the Swiss context, however. We therefore examine the most relevant types of upper secondary programme in more detail, including a review of the current state of research. We do this from the perspective of the choices and selections of the school leavers and their families (self-selection), the selection procedures of training companies and the admission regulations of school-based programmes. Even though we are unable to make an unequivocal empirical distinction between self- and other selections, we have to keep in mind that these different procedures affect the chances of young people.

4   School leavers' educational goals

According to Bourdieu'ian capital theory a large amount of cultural capital within the family of origin should encourage young people to aspire to enter exclusively school-based programmes. Economic capital is important since apprentices may contribute (by means of their apprenticeship wage) to the family income, which will not be the case for young people in school-based programmes. Families opting for school-based programmes require sufficient income so that their children can remain without income (apprenticeship wage) for 3 or 4 years. Therefore, young

people from families with low economic capital are more likely to aspire to an apprenticeship. Furthermore, we assume that young people with high educational aspirations would strive for school-based programmes, because they offer better career perspectives (see also Zulauf and Gentinetta 2008). In addition, empirical findings suggest that young people tend to prefer the type of programme completed by their parents, thus reinforcing the intergenerational link in regard to educational achievement (Buchmann et al. 2007).

As the apprenticeship system is not well known in most migrants' countries of origin, young migrants might be less likely to apply for apprenticeships, which substantially narrows the spectrum of their post-compulsory educational options. But this view is – at least for Germany – contradictory as Diehl et al (2009) showed that young people with migration background show similar aspirations as their German counterparts and that their application strategies are comparable.

5   Access to apprenticeships

As regards companies' selection procedures, Bourdieus (1971, 1982) arguments suggest that specific facets of young peoples' *incorporated cultural capital* and their families' *social capital* are the most crucial prerequisites for the access to company-based apprenticeships. Training companies pay particular attention to a specific type of habitus (down-to-earth, not too intellectual) as well as to the "general impression" and the manners (civility, punctuality etc.) of the applicants (Schmid and Storni 2004, Stalder 1999; Imdorf, 2008). Given the economic necessity of profitability, most training companies are not able or willing to compensate for low-achieving, inaccurate or otherwise "problematic" apprentices (Imdorf, 2008). By contrast, we expect cultural capital in the usual elitist understanding of the concept to be irrelevant or even obstructive for the access to apprenticeships in Switzerland. In addition, an ample social network in conjunction with a good reputation of the family (Schmid and Storni, 2004) – its social capital – obviously may ease the access to dual VET. As family reputation within the local community will not least depend on its prosperity and economic achievement, we may expect a positive effect of economic capital on the access to apprenticeships.

Young people with *migrant background* typically are in disadvantage with respect to the relevant types of Bourdieu'an capitals (Imdorf, 2008). This holds for the social capital of the family as well as for the incorporated cultural capital (e. g. language skills), which is often neither recognised nor valued by the host society (Diefenbach 2007, 44/45, Esser 1996). Moreover, migrant youths may suffer from statistical discrimination (Helland and Støren 2006) due to inferences recruiters make from group stereotypes to individual job applicants belonging to that group. Stereotyped group perceptions thus may greatly affect the chances of young people

with a migrant background as Fibbi et al. (2003) have convincingly demonstrated with a field experiment with young labour market entrants (see also Heinimann and Margreiter 2008). Imdorf (2008) emphasises that small training firms often prefer Swiss applicants because they assume that these will fit more easily into their (Swiss) team. They also fear that cultural heterogeneity among their employees might cause problems.

As regards previous school achievement on the lower secondary, we have to differentiate between skills or competencies on the one hand and academic records (grades, type of school) on the other hand, because grades and school reports do not only reflect the students' skills and achievements, but also their families' resources and teachers' expectations (Geissler 2006, Kronig 2007). As a result, companies often prefer to carry out standardised tests of their own (Moser 2004).

Training firms often claim that the track attended at the lower secondary level is not an important selection criterion (Stalder 2000). There is strong evidence, however, that young people who attend tracks with lower academic requirements face more difficulties entering VET programmes (Hupka 2003). According to Haeberlin et al. (2005) grades in mathematics are an important selection criterion, but migrant youth (first generation) do not profit from good mathematic grades compared to their Swiss colleagues. Mathematical competencies are seen as crucial for a successful graduation in nearly all apprenticeships, because classes in mathematics are part of every curriculum. Finally, training firms test "labour market virtues" such as commitment, reliability and punctuality during trial periods. As school reports also keep track of attendance throughout the school year, this information turns out to be a potential "knock out" criterion (Schmid and Storni 2004).

5.1 Access to school-based programmes

Selection procedures of exclusively school-based programmes on upper secondary level have received very little scholarly attention (Zulauf and Gentinetta 2008). Nevertheless, some assumptions seem appropriate. Compared to apprenticeships, admission to school-based programmes is far more regulated by law or by school-specific rules. Due to these regulations, access is restricted to applicants meeting formal minimal requirements, usually based on previous school achievement and/ or specific admission tests. As Zulauf and Gentinetta (2008) point out, school-based vocational programmes are generally very attractive and schools are therefore able to select from among the best students. Imdorf et al. (in press) showed that Swiss male migrant youths have better chances to enter upper secondary in school systems with a higher proportion of school-based programmes on upper secondary level. We therefore anticipate that formalised selection procedures of school-based programmes are less likely to be influenced by ascribed individual characteristics and family background than the selection into dual VET. Consequently, families' cultural, economic and social capital as well as ascribed criteria should be less im-

portant. Furthermore, standardised written admission assessments may facilitate access of lower class, migrant and other groups whose skills are often inadequately assessed in their previous school reports. Finally, as far as oral admission tests are involved, the applicants' incorporated cultural capital and habitus are likely to become key factors.

In summary, our theoretical arguments and the findings of current research regarding educational choice and recruitment lead us to the assumption that the effect of individuals' social origin can be empirically substantiated by simultaneously looking at the effects on the access to apprenticeships or school-based programmes of Bourdieu'ian capitals on the one hand and academic achievement on the other hand. This leads us to the following hypotheses:

– Due to their different selection procedures and admission regulations, we expect different impacts of cultural and economic capital and of previous school achievement on access to school-based programmes and company-based apprenticeships.
– Entry into apprenticeship is fostered by the social capital of the family of origin, whereas cultural capital in a narrow Bourdieu'an sense is either unimportant or even obstructive. Migration background hampers the access to apprenticeships. Mathematics skills are expected to be more important than reading literacy/language skills.
– Access to exclusively school-based programmes is positively influenced by the cultural capital, by high educational aspirations and by superior academic records. Reading literacy and language skills are expected to be more important than mathematics skills.

6   Method and data

In order to test our hypotheses, we draw on data from the Swiss longitudinal youth survey TREE (Transition from Education to Employment), which is based on a random sample of 6343 young people who took part in the first PISA study in the year 2000 (see OECD 2000a).[2] The data are unique for Switzerland as they are representative at national level and allow us to analyse the transition for an entire cohort of school leavers.

To operationalise our Bourdieu'ian framework and to test our hypotheses, we use indicators measured by PISA at the end of compulsory school (Adams and Wu 2002). Preliminary analysis has led to the categorisation of the variables "education

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2   As of 2008, TREE is co-funded by the Swiss National Science Foundation (SNSF) and the University of Basel. From 2000 to 2007, the project has been financed and/or carried out by SNSF, the Departments of Education of the tree cantons Berne, Geneva and Ticino, the Federal Office for Professional Education and Technology, and the Swiss Federal Statistical Office.

Table 1: Conceptualisation of our theoretical assumptions and descriptives

Concepts	Indicators	Distribution % [1]	n [2]	Mean [1]	SD [1]
Bourdieu'ian concepts					
Cultural capital	Highest level of parents' education	100.0			
	− None / primary	7.0	257		
	− Compulsory, missing	28.1	1138		
	− Vocational education	24.2	1293		
	− Higher education	40.7	2126		
	Number of books at home (ordinal)			− 0.20	1.48
Economic capital	Family wealth (factor scale) [3]			0.00	1.03
Aspirations	Occupational status father (ISEI)			− 0.07	0.98
	Expected occ. status with age 30 [lowest quintil]	17.6	713		
Ascribed characteristics					
Migration status	Country of origin father				
	− Switzerland	69.3	3356		
	− EU+, excl. Southern-European countries	3.0	176		
	− Southern-European countries	11.4	647		
	− the Balkans, Turkey	10.7	358		
	− other countries	5.4	277		
	Migration generation				
	− No migration background	61.9	2961		
	− 2nd generation: one parent	12.6	660		
	− 2nd generation: both parents	10.7	547		
	− 1st generation: > 5 years in country	12.0	534		
	− 1st generation: ≤ 5 years in country	2.8	112		
Gender	Sex: woman	46.7	2624		
School achievement (lower secondary level)					
Learning outcomes	Reading literacy (PISA-Scale)			− 0.23	0.94
	Mathematics literacy (PISA-scale, cf. footnote 4)			− 0.01	0.64
	Science literacy (PISA-scale, cf. footnote 4)			− 0.05	0.67
School achievement	Type of school				
	− "Gymnasium"	23.5	1608		
	− "Sekundarschule"	39.3	1599		
	− "Realschule"	34.8	1365		
	− Integrated	2.5	242		
	Average grade (language, math, ev. science)			0.01	0.45
Control variables					
	Times absent, punctuality (scale)			− 0.01	0.61
	Preferred occupation (with age limit)	5.6	297		
	Linguistic region				
	− German-speaking	69.9	2236		
	− French-speaking CH	27.8	2114		
	− Italian-speaking CH	2.9	464		

1) Distribution characteristic based on weighted sample (n = 4814). 2) Unweighted number of cases. 3) Based upon the numbers of cars, bathrooms, computers and calculators in the household (Cronbach's α = .75).

of parents" and "expected occupational status", and to the exclusion of the variable "language spoken at home" because it had no influence. The PISA-Tests for math and science literacy are available for only a random subsample of approximately 50% for Switzerland. Therefore, we have estimated additional models including two dummy variables for the missing data in math and science literacy. The effect estimates differ only marginally from those presented in Table 2 based on mean substitution. However, the significance level of the (weak) ISEI-effect on access to exclusively school-based programmes drops from 1% level of significance to 10%. Variables and descriptive are listed in the following table:

All independent variables are measured at the end of compulsory schooling, and metric variables have been centered (within the dataset of person-year-records, n=6280). Given that cultural and economic capital are controlled in our model (see table 1), whereas we do not dispose of an indicator of social capital, some of its impact is likely to be absorbed by the measures of cultural and – even more – of economic capital (Bourdieu, 1983, 193). The fathers' social status seems to be an acceptable proxy measure for families' educational aspirations (cf. Sauer and Gattringer 1985, Neuenschwander and Malti 2009). A very low occupational status anticipated for age 30 (lowest quintile) serves as an indicator of an almost complete "cooling out" of individual career expectations at the end of compulsory schooling. These two measures of aspiration also mirror the expectations and social norms of the family as well as the anticipated scopes and limitations of the young people. Social capital is not measured by PISA and therefore not included in our analysis. As control variables we include gender, attendance and punctuality (as recorded in school reports), and age-dependent admission restrictions for specific programmes

Table 2: Timing of the transition into upper secondary education according to program type

	Event: Entry in …		Total
	Apprenticeship	Exclusively school-based programmes	
Entry in … [1]			
the 1st year	48.6%	18.9%	67.5%
the 2nd year	16.3%	2.7%	18.9%
the 3rd year	4.1%	0.7%	4.8%
the 4th year	0.7%	0.3%	1.0%
Entered	69.6%	22.7%	92.3%
Not entered	–	–	7.7% [2]
Sample size [3]	3351	1093	4814

1) Based on the four periods (= 4 years) starting at the end of compulsory school (May 2000).
2) Including 5,4% cases censored due to panel attrition.
3) Number of unweighted cases: apprenticeship 2880, exclusively school-based programmes 1722, total 4814.

(mainly in the field of health care, e. g. nurses), where access is restricted to age of 18 or older. Finally, institutional variation suggests controlling for linguistic regions. The TREE sample is restricted to the school leaver cohort of the year 2000. For the following analysis we excluded students enrolled in long-term gymnasiums in spring 2000 (i. e. students having de facto made the transition from lower to upper secondary level education at an earlier stage). Thus, our analysis includes 4814 young people. The cases have been weighted to account for the complex Swiss PISA sampling as well as for TREE panel attrition (see OECD 2000b, Sacchi 2008).

In order to model access to both types of upper secondary education in question, we estimate a competing risk model (see e. g. Blossfeld 1995, 93f.) and analyse the effects of social origin, ascriptive characteristics, as well as academic skills and records as described above. The two dependent transition processes at issue are therefore entry into apprenticeships versus entry into an exclusively school-based programme (Matura School, Specialised Middle Schools SMS, school-based VET). The observation span covers the first four years after completion of lower secondary level. Due to strong seasonal peaks (most post-compulsory educational programmes start in August) in the hazard functions, we choose a semi-parametric specification with discrete time, the "Discrete Time Proportional Hazards Model" (Jenkins 1997, Prentice and Gloeckler 1978). The observation span thus is subdivided into four discrete time intervals of twelve months each. As we are primarily interested in how selection at entry depends on the type of programme, we also test whether or not the covariate effects are equal for apprenticeships and school-based programmes. We report the results of these tests along with model estimates.

Our model rests on the assumption that, under control of all covariates, the two transition processes at issue are conditionally independent of each other and also of panel attrition (see also Gangl 2004, Hill 1997, Hill et al. 1993). In order to test these assumptions, a series of SURF-models (Shared Unmeasured Risk Factors) allowing for correlated competing risks have been estimated (ibid.).[3] The SURF-Models, however, only marginally differ from the conventional competing risk estimates reported below. Thus, the latter do not seem to be substantially biased neither by panel attrition nor by unobserved factors relevant for both of the entry processes at issue.

7   Results and discussion

About 70% of the observed sample having left compulsory school in the year 2000 start an apprenticeship (Table 2). Only 23% of the observed sample enrols in an

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3   Panel attrition is treated as an additional, possibly correlated risk by this type of model (ibid.). We wish to thank Markus Gangl, who estimated two SURF models, allowing a test of both critical assumptions.

Table 3:   Determinants of entry into apprenticeship and school based pro-
               grammes (competing risk discrete time proportional hazards model)

Independent variables	Dual VET programme			Exclusively school-based programme			Sig. of effect differences
	B_1	(SE)	Sig. [1]	B_2	(SE)	Sig. [1]	[B_1–B_2]
T1 (first year after compulsory school)	0.34	(0.08)	****	− 2.65	(0.12)	****	
T2 (second year after compulsory school)	0.30	(0.13)	*	− 2.83	(0.22)	****	****
T3 (third year after compulsory school)	− 0.17	(0.24)		− 3.93	(0.49)	****	
T4 (forth year after compulsory school)	− 1.21	(0.44)	**	− 3.77	(0.62)	****	
Bourdieu'ian capitals							
Highest level of parents' education							
– None / primary	− 0.49	(0.16)	***	0.12	(0.22)		*
– Compulsory, missing	− 0.03	(0.08)		− 0.32	(0.12)	**	+
– Vocational education [ref. cat.]	/			/			
– Higher education	− 0.19	(0.07)	**	0.33	(0.10)	***	****
Number of books at home (ordinal)	− 0.08	(0.02)	****	0.13	(0.03)	****	****
Family wealth (factor scale)	0.11	(0.03)	****	− 0.01	(0.04)		*
Occupational status father (ISEI)	− 0.03	(0.02)	+	0.10	(0.03)	****	****
Expected occ. status at age 30 (lowest quintil)	0.39	(0.08)	****	− 1.39	(0.16)	****	****
Ascribed characteristics							
Country of origin father							
– Switzerland [ref. cat.]	/			/			
– EU+, excl. Southern-European countries	0.07	(0.17)		0.22	(0.21)		
– Southern-European countries	0.10	(0.15)		0.35	(0.17)	*	
– the Balkans, Turkey	0.27	(0.16)	+	0.47	(0.22)	*	
– other countries	− 0.12	(0.17)		0.40	(0.20)	*	+
Migration generation							
– no migration background [ref. cat.]	/			/			
– 2nd generation: one parent	− 0.13	(0.11)		− 0.15	(0.14)		
– 2nd generation: both parents	− 0.36	(0.16)	*	0.21	(0.18)		*
– 1st generation: > 5 years in country	− 0.55	(0.16)	***	− 0.10	(0.19)		+
– 1st generation ≤ 5 years in country	− 0.62	(0.22)	**	0.15	(0.24)		*
Sex (woman)	− 0.71	(0.07)	****	0.55	(0.08)	****	****
T2 x sex (woman)	0.51	(0.14)	****	− 0.32	(0.24)		*
T3 | T4 x sex (woman)	0.93	(0.29)	***	0.75	(0.59)		
School achievement (lower sec.)							
Learning outcomes (lower sec.)							
Reading literacy (PISA- scale)	− 0.05	(0.05)		0.54	(0.06)	****	****
Mathematics literacy (PISA-scale)	0.17	(0.05)	***	− 0.30	(0.07)	****	****
Science literacy (PISA-scale)	0.08	(0.06)		− 0.25	(0.06)	****	****
Type of school							
– "Gymnasium"	0.50	(0.35)		0.97	(0.51)	+	
– "Sekundarschule" [ref. cat.]	/			/			
– "Realschule"	− 0.15	(0.07)	*	− 0.68	(0.14)	****	***
– Integrated	− 0.12	(0.13)		0.30	(0.19)		
Average grade (language, math, ev. science)	0.12	(0.08)		0.47	(0.16)	***	+
Interaction: av. grade x type of school (gymnasium)	− 0.37	(0.13)	**	0.02	(0.19)		

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Continuation of table 3

Independent variables	Dual VET programme			Exclusively school-based programme			Sig. of effect differences
	B_1	(SE)	Sig. [1]	B_2	(SE)	Sig. [1]	$[B_1 – B_2]$
Control variables							
Times absent, punctuality (scale)	− 0.22	(0.05)	****	0.00	(0.06)		*
Preferred occupation (with age limit)	− 1.39	(0.21)	****	0.53	(0.14)	****	****
T2 x preferred occupation (with age limit)	0.93	(0.31)	***	− 0.29	(0.36)		
T3 ǀ T4 x preferred occupation (with age limit)	1.29	(0.36)	****	0.27	(0.60)		*
Linguistic region (german-speaking)							
– French-speaking CH	− 0.29	(0.07)	****	0.87	(0.09)	****	****
– Italian-speaking CH	0.09	(0.11)		1.34	(0.13)	****	****
Model parameters							
Log pseudolikelihood		− 4002			− 2005		
Wald χ^2 (df), prob > χ^2		719.9 (36), 0.0000			1940.0 (36), 0.0000		

1) Levels of significance: **** $p < .001$; *** $p < .005$; ** $p < .01$; * $p < .05$; + $p < .10$.

exclusively school-based programme. During the first year after compulsory school, roughly half (48,6%) of the cohort enters an apprenticeship and one fifth (18,9%) a school-based programme.

One in six young people starts only in the second year after leaving compulsory school – some even later. Table 2 also highlights that apprenticeships are more often started with a delay than exclusively school-based programmes.

Table 3 shows the effect estimates on the time-dependent entry rates for the transitions into apprenticeships and school-based programmes respectively. In the right-most column the significance level of the effect differences between programme types (apprenticeship vs. school) is indicated. An *overall test of equal effect parameters* for both types confirms that the allocation processes to either dual VET or exclusively school-based programmes are in fact extremely different (χ^2=1639, df=36, P=.0000). The effects of social origin, ascribed factors and achievement therefore vary strongly depending on whether a youth enters apprenticeship or exclusively school-based programmes.

Regarding access to *apprenticeships*, coefficients of the discrete time variables indicate a significant decline[4] of entry rates of those young people who have not entered an apprenticeship before – from approximately 75% in the first two years to 43% in the third and 26% in the fourth year. The effects change from significantly positive (years 1 and 2) to significantly negative (year 4). As we know that almost all of these young people strive for an upper secondary education and that most of those entering intermediate solutions still hope to start an apprenticeship (BBT

4　Those coefficients may be converted into hazard rates (i. e. entry rates of those still at risk) with the inverse link function (g[x_iB] = 1-exp(-exp[x_iB])); e. g. the hazard rate for the entry into dual VET in the second year equals 1-exp(-exp(.30)) = .74 or approx. 74 %.

2000, 8, Meyer et al. 2003), self-selection processes do not seem to be very likely. As long as severe personal problems (like psychological or physical health problems) are excluded, these results suggest that failing to enter apprenticeship training over a prolonged period of time has a stigmatising effect (see also for Germany: Ulrich et al., 2007).

As for the cultural capital of the family, school leavers from families with very low (parents not having completed more than primary education) and very high cultural capital (higher education) are less likely to enter an apprenticeship. The same applies for young people growing up in "bibliophilic" families with numerous books. Thus, for families with abundant cultural capital (in the narrow, elitist sense of the concept), the findings match well with our arguments concerning family aspirations and educational choices. By contrast, the negative effect of a minimal parental education is unexpected, although it fits into our general picture of the applicant selection by training companies. Arguments focusing on individual choice would expect an even stronger positive effect of economic capital ("wealth") on the access to school based programmes. As the effect of economic capital is clearly limited to the access to apprenticeships (table 3), the findings all in all rather support the notion that training companies prefer applicants from "respectable" families with a good reputation mirroring its economic and social capital. This interpretation is in line with findings of Müller and Shavit (2000, 439) and Imdorf (2008), who underscore that the perceived person-organization fit rather than individual skills are decisive in applicant selection.

As anticipated, school leavers with low aspirations, i. e. those who expect to have a very low socio-economic status at the age of 30, almost exclusively enter apprenticeships. By contrast, high aspirations (high occupational status of the father) seem to slightly hamper access.

When interpreting the effect of a migrant background, we have to keep in mind that in a bivariate perspective, young people with such backgrounds have far lower overall entry rates into upper secondary education than Swiss students. The influence of a migration background on the entry into apprenticeships persists even in a multivariate perspective, when controlling for a large number of other factors. The entry rate of second generation young people is approximately 20 percent lower than for Swiss youth. Ceteris paribus young people who have recently immigrated to Switzerland (less than five years ago) face the most serious problems entering apprenticeships. Compared to youth without a migrant background and controlling all other factors, their entry rate is about 30% lower[5]. This supports our assumptions in regard to statistical discrimination on grounds of ethnic/national stereotypes (see also Imdorf 2008). Regarding the fact that Diehl et al (2009) have found no differences between young people with and without a migration background con-

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5   For the first year after compulsory schooling, the model implies a hazard rate of 53 % (1-exp[-exp(0.34–0.62)]) instead of 75 % (1-exp[-exp(0.42)]).

cerning their aspirations and application strategies, the alternative interpretation of a self-restriction process due to families' lack of familiarity with the Swiss VET system seems not very likely.

Young men enrol substantially more frequently in apprenticeships than young women. Time-interactions, however, indicate that entry rates for both men and women align from the second year on. Results thus suggest that many young women start with a substantial delay, which is also supported by the fact that they are strongly over-represented in intermediate solutions.

Mathematics and science literacy has a strong positive effect on the access to apprenticeships, while reading literacy has no effect. Students with above-average grades and having attended "gymnasium" tracks at lower secondary level have less chances to begin an apprenticeship (or are less interested). Most of them enter Matura schools, but seldom SMS (additional analysis; not shown). Interestingly, students having attended the academically least demanding "Realschule" at lower secondary level have reduced chances to enter an apprenticeship.

Furthermore, our results highlight the eminent importance of punctuality and high attendance for successful entry into apprenticeship programmes. As anticipated, school leavers who strive for an occupation with age restriction enter with substantial delay, whereas some of them switch to exclusively school-based programmes. Not surprisingly, the interaction between time and school leavers' preferences for an occupation with age restrictions implies that starting an apprenticeship is delayed for two years at least. Finally, entry rates differ significantly between linguistic regions: apprenticeships are much more widespread in the German speaking part of Switzerland.

In line with our expectations, transition rates for exclusively *school-based programmes* are lower, and they equally decline over time.

The strong effects of the family cultural capital (higher education; possession of books) confirm impressively its postulated relevance for the entry into school-based programmes. Contrary to apprenticeships, the family educational aspirations (as approximated by the father's occupational status) have strong positive effects on entry into school-based programmes, while lacking individual career aspirations (expected status at age 30) exert a powerful negative effect.

Unlike the effects observed in regard to apprenticeships, the generation of migration has no effect on entering school programmes. The father's country of birth has significant positive effects for some migrant groups (Southern-European countries, Balkans, Turkey). This might be due to the pronounced educational aspirations of young migrants and their families (Juhasz and Mey 2003). An alternative explanation might be that migrants anticipate or experience discrimination when applying for apprenticeship places and therefore favour school-based programmes resp. have to evade to school-based programmes, with which they also may be culturally more familiar.

Young women tend to enter school programmes substantially more often than young men. The effect pattern of the respective time-interactions is not so clear-cut, but as it is insignificant it appears that the initial gender difference persists.

Reading literacy exerts a strong positive effect, whereas the opposite holds for mathematics and science literacy. Thus, the findings are in a marked contrast to those for apprenticeships again.

As expected, the previous academic record strongly affects the access to school-based programmes: The mean of grades at the end of compulsory school is a powerful predictor, and students' chances of entering school-based programmes are far better when they have attended a "gymnasium" track at the lower secondary level

Finally, entry rates also reflect the fact that school-based programmes are much more common in the French and Italian speaking parts of Switzerland.

If we *compare* the effects on the entry *rates for apprenticeships and for exclusively school-based programmes* distinct patterns emerge. First, it seems obvious that high cultural capital fosters entry into school programmes, while it is negatively associated with the entry into *apprenticeships*. On the other hand, young people with very low cultural capital show a higher risk of not entering *any* upper secondary education at all (see also Hupka, Sacchi and Stalder 2006). Second, economic capital has a positive impact on entry into apprenticeships, but no influence on school programmes. Whereas arguments aimed at individual choice would expect an even stronger effect for the latter, this result is broadly in line with a Bourdieu'an view on the applicant selection of training companies. Moreover, it perfectly fits into our institutionalist view maintaining that the formalized admission procedures of school based programmes are likely to neutralize the impact of social and economic capital on applicant selection. Third, the opposed effects of social origin support the hypothesis that the allocation to apprenticeship vs. school-based programme substantially contributes to the transfer of educational inequality from one generation to the next. Fourth, the effects of migration background on entry chances vary between the types of programme. Migrant background hampers the entry into apprenticeships, but – ceteris paribus – some migration groups enter more frequently school-based programmes. Fifth, gender effects are strong and highly programme-specific. While young women tend to enter school programmes substantially more often than young men, the contrary is the case in regard to apprenticeships. Sixth, reading literacy enhances entry into school-based programmes, while mathematics literacy has a positive effect on entering apprenticeships.

Seventh, our results show contrasting patterns in regard to academic records and tracks attended at lower secondary level. Academic records (marks) are more important when it comes to entering school-based programmes. Having attended academically less demanding tracks at lower secondary level hampers access to both types of programme. Students from these tracks have substantially lower chances to enter any upper secondary education programme at all.

8 Conclusion

We draw three major conclusions from our analysis. First we find evidence for strong *direct* effects of social origin on the transition of young people to upper secondary level education and training in Switzerland. The effects persist despite an unusually comprehensive control of both academic records and literacy skills as measured by PISA at the end of compulsory school. Second, our results suggest that the impact of social origin varies considerably with the type of upper secondary programme envisaged. Abundant cultural capital and high educational aspirations foster access to school-based programmes, whereas economic capital facilitates entry into apprenticeships. On the whole, however, the strong direct impact of social origin implies a substantial intergenerational transfer of social status, as school-based programmes on average offer better prospects in higher education and the labour market. Moreover, our results indicate that regardless of social origin, academic achievements and records, it is harder for women and some groups of young migrants to gain access to apprenticeships. All in all, the findings suggest that the effect of social origin and migrant background cannot be fully attributed to the educational choices of young people and their families. Institutional arrangements and the access regulation of different programme types have to be accounted for in their own right: For a better understanding of these processes, an extension of the Bourdieu'en framework by institutionalist arguments seems to be promising. Future research should envisage the long-lasting consequences of both, the transition into specific post compulsory tracks, and drop-out, in terms of labour market entry, individual career prospects and life chances.

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