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## Dropout and Downward Mobility in the Educational Career: An Event-History Analysis of Ethnic Schooling Differences in The Netherlands

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### ABSTRACT

While many aspects of educational careers have been examined in the literature on ethnic minorities, such as truancy, turnover, and grades, downward mobility has rarely been studied. Using data on more than 10,000 students who entered secondary school in The Netherlands in 1989, we develop an event-history model for secondary school careers and we use this model to analyse the determinants of dropout and downward mobility simultaneously. Our findings show that students from Mediterranean and Caribbean immigrant families are about 3 times as likely to drop out from secondary school without a degree compared to Dutch children. They are also more likely to be downwardly mobile during their secondary school career, but this differential is weaker. Compositional differences with respect to individual ability and parental resources explain a large part of these differences. When holding constant parental resources and individual ability, ethnic students are less likely to experience downward mobility than Dutch students. In other words, when there is failure in the school career, Dutch children are more likely to follow the route of downward mobility whereas children from ethnic minorities are more likely to drop out altogether. The multitrack nature of the Dutch educational system thus may have a negative impact on ethnic inequality.

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### INTRODUCTION: BACKGROUND AND RESEARCH QUESTIONS

The children of immigrants in The Netherlands on average achieve lower levels of schooling than Dutch children (Driessen, 2000; Tesser, Merens, &

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Van Praag, 1999). These educational disadvantages are most pronounced in the two main groups of labor immigrants, with the Moroccans generally doing poorer than the Turks. Children of immigrants from the former Dutch colonies, the Surinamese and the Antillean, are performing somewhat better than the Moroccans and the Turks, although not as well as native Dutch children. Because ethnic educational differences have implications for several other domains of social inequality, they are of considerable concern to both researchers and policymakers (Driessen, 2000). In trying to explain ethnic inequality in schooling, researchers have pointed to a range of factors. Common explanations focus on the more unfavourable social and cultural resources in the parental homes of immigrant children (Desimone, 1999; Kalmijn & Kraaykamp, 1996; Lareau & McNamara Horvat, 1999; Roelandt, Martens, & Veenman, 1991; Van't Hof & Dronkers, 1994), and on the well-known problems associated with immigrant adjustment (Borjas, 1985; Chiswick & Miller, 1998; Wolbers & Driessen, 1996).

In analysing ethnic group differences, Dutch studies have used a range of educational outcome indicators. Some authors consider grades in primary school (Wolbers & Driessen, 1996), or the level of secondary school that is recommended by teachers at the end of elementary school and subsequently is attended by the student (Van't Hof & Dronkers, 1994). Authors who analyse secondary schooling mostly focus on premature dropout, because that is where ethnic inequality seems most apparent (Bosma & Cremers, 1996). Finally, there are authors who focus on the level of schooling that is completed after finishing the educational career. These studies are limited to out-of-school youth and use the level of completed schooling as a summary measure of educational inequality (Tesser et al., 1999). Of all the indicators that have been used, it is usually agreed upon that dropout differences are the dominant cause of ethnic inequality with respect to educational attainment.

An aspect of the educational career that has not been studied so far is downward mobility. A special feature of the Dutch secondary school system is that there are different levels at which students can enroll. The secondary school system contains a general track which has three hierarchical levels and a vocational track which has two levels. A general track is considered somewhat higher (both formally and informally) than a vocational track. As a consequence of the multitrack school system, failure during the career does not necessarily lead to dropout but may also result in making a step back by enrolling at a lower level or by switching from the general to the vocational track. This is what we call downward mobility. Through the option of down-

ward mobility, the Dutch educational system contains a safety net for school dropout, a feature which other modern educational systems, such as the American, do not have. We note that dropout rates are higher in the United States than in The Netherlands; 21.4 versus 8.3% at age 17 (Dekkers, Uerz, & Den Boer, 2000). Studying success or failure in an educational system that allows for downward mobility, therefore provides us with clues about how institutional differences modify ethnic inequality.

There are several reasons why the concept of downward mobility is important for ethnic schooling differences. One reason lies in the phenomenon known as “over-recommendation.” Immigrant students on average receive recommendations from school teachers which are higher than the recommendations that Dutch students receive with the same (tested) ability (Tesser et al., 1999). Some authors attribute this to positive discrimination, whereas other authors argue that the standard tests are not measuring the ability of ethnic students very well. If teacher recommendations are more fallible than tests (if teachers are “too optimistic”), one would expect more downward mobility during the career among students from immigrant families. If tests are too negative and teacher recommendations adjust this, one would not expect more downward mobility. Other authors have pointed to sociological reasons for the problems that immigrant students face at the higher levels of schooling. Because immigrant students are numerically underrepresented at higher schooling levels, they are in a position of “tokens” (Kanter, 1977). Tokens are often believed to underachieve, which may be another reason to expect more downward mobility among immigrant students.

While the arguments above suggest that downward mobility is a more frequently travelled route among ethnic minorities, there are also reasons to expect the opposite. Many immigrants are, at least partly, raised in societies where the general level of schooling is low. The illiteracy rate in Morocco, for example, is 51% (United Nations, 2002). The level of illiteracy is lower in the other immigrant societies, such as Turkey (15%) and Suriname (6%), but even there, higher education is preserved to a small elite. Due to the low average level of education in the sending countries, most parents of immigrant students have not been exposed to the idea that schooling is an important goal by itself and have not become accustomed to the notion that education is a critical requirement for success later in life. Because immigrant parents are less likely to emphasise the virtues of higher education, we would expect that commitment to school is weaker among immigrant students than among Dutch students. This not only implies that immigrant students are more likely to drop

out, it may also imply that immigrant students are *less* likely to experience downward mobility. When results in school are lower than expected, or when a students' motivation deteriorates, Dutch parents may encourage their child to switch to a lower level because they prefer a lower level degree to no degree at all. Immigrant families may use failure at school or declining motivation as a reason for quitting school entirely. Direct returns on the labour market are then preferred to the (uncertain) returns of formal education in the distant future. In other words, we expect that family norms of higher education will keep students in school at whatever level this may be. If this reasoning is valid, there will be more downward mobility among Dutch students than among immigrant students.

Several studies in the past have examined the determinants of school dropout (Astone & McLanahan, 1991; Rumberger, Ghatak, Poulos, Ritter, & Dornbusch, 1990; Rumberger & Thomas, 2000; Teachman, Paasch, & Carver, 1996), but the number of studies examining ethnic differences in school dropout is comparatively small. Important recent studies in the United States show that dropout is more common among blacks and Hispanics, but that differences disappear (and sometimes even reverse) when family background and prior academic results are taken into account. Students from Asian minorities, in contrast, appear to have similar dropout rates as white students (McNeal, 1999; Rumberger & Thomas, 2000). For The Netherlands, Bosma and Cremers (1996) have analysed dropout rates in the first 4 years of secondary school and show that students from Mediterranean and Caribbean descent are more likely to drop out than Dutch students. More than half of this difference could be attributed to disadvantages of ethnic students in terms of academic test scores and parental economic and cultural resources (Bosma & Cremers, 1996). While several other aspects of educational careers have been examined in the literature on ethnic minorities, such as truancy, turnover, and grades, downward mobility has not yet been studied. For countries with a singletrack system this is obviously irrelevant, but for countries with more complex systems, such as The Netherlands, it is important to investigate if and how this option modifies ethnic inequality.

We develop an event-history model for secondary school careers and we use this model to analyse the determinants of dropout and downward mobility simultaneously (Allison, 1982; Yamaguchi, 1991). Our analyses are guided by three research questions. First, we assess if downward mobility and dropout are more or less common among ethnic minority students than among Dutch students. Are conclusions from earlier studies on school dropout weakened or

strengthened when we add downward mobility as an indicator of failure? Second, we assess to what extent individual and parental resources of students affect the chances of “downward” and “outward” mobility. With individual resources, we refer to ability test scores, and with parental resources, we refer to parental education, family structure, and parental involvement in school. Are the factors affecting downward mobility the same as those affecting dropout? Third, we examine whether there are ethnic composition effects with respect to individual and parental resources, that is, differences in outcomes that arise from differences between ethnic groups in the relative number of students with unfavourable resources. From earlier studies, it is known that students from immigrant families are generally disadvantaged in terms of individual and parental resources. We replicate these findings and we determine to what extent ethnic differences in downward and outward mobility can be attributed to the underlying differences in resources. To answer our questions, we develop an event-history model for the entire secondary school career in which we analyse outward and downward mobility as competing risks. We focus on students who entered secondary school in 1989 and completed secondary education in the late 1990s.

## DATA, MODELS, AND MEASUREMENTS

### Data

The data we analyse were collected by Statistics Netherlands and contain information on 19,524 students in the 1st-year classes of 381 secondary schools in The Netherlands. The data consist of a self-administered questionnaire for the students' parents (taken home by the student), paper-and-pencil tests of students' ability and motivation (tests were taken in the classroom), teacher reports on demographic student characteristics, and administrative records on school progress (Centraal Bureau voor de Statistiek [CBS], 1991). All data were collected in 1989, with the exception of the data on school progress, which were collected annually. If a person switches schools, enrollment records are transferred so that there are in principle no problems in identifying dropouts. In scope and design, the data are comparable to the well-known Youth Cohort Studies in England and Wales or to the National Education Longitudinal Survey in the United States (for a comparison, see Dekkers et al., 2000).

We distinguish two categories of ethnic minorities: the Moroccans and the Turks on the one hand (Mediterraneans), and the Surinamese and the

Antilleans on the other hand (Caribbeans). The Moroccans and Turks were initially recruited as labour immigrants during the 1960s and 1970s, and both groups have since then grown in size, partly through family reunification (in the 1980s), partly through marriage formation (in the 1990s), and also through higher fertility rates. It is estimated that about 4% of the Dutch population is first- or second-generation Turkish or Moroccan (CBS, 1999). Both groups of immigrants did not speak Dutch when they immigrated and both were mostly Islamic. Although Turkey has a more elaborate educational system and a lower illiteracy rate than Morocco, our analyses do not reveal large differences between the groups with respect to the dependent variables. For that reason, and because of sample size restrictions, we decided to combine the groups. The Caribbeans consist of people from Suriname, the Antilles and Aruba. The Caribbeans began migrating to The Netherlands after World War II and the immigration reached a peak in 1974, just before Suriname gained independence from The Netherlands. Most of these immigrants were to some extent familiar with Dutch society and virtually all of them spoke Dutch as a second language before they immigrated. It is estimated that 2.5% of the Dutch population is first- or second-generation Caribbean (CBS, 1999).

To define the groups empirically, we use the standard definition of ethnicity in The Netherlands (CBS, 1999). A respondent is classified as belonging to a particular ethnic group if at least one of his or her parents is born in Turkey, Morocco, or the Caribbean. About half of the ethnic students in our sample was born abroad and of that group, the overwhelming majority attended (at least some) primary school in The Netherlands.

Before analysing the data, we removed respondents with missing parental questionnaires (14%), respondents belonging to “other” ethnic groups (mostly European immigrants and their children), respondents with missing data on all parental involvement items (see below), and respondents with incomplete administrative records. Note that there are virtually no missings on ethnic background after we removed students with missing parental questionnaires.

### **An Event-History Model of Downward Mobility and Dropout**

For a proper understanding of the models for secondary school careers, familiarity with certain properties of the Dutch educational system is necessary. Figure 1 shows a simplified version of the Dutch system (CBS, 1992). This system consists of a general and a vocational track, both of which have different levels. After primary education, at the age of 12, children and their parents face the decision of selecting the type and level of a child’s

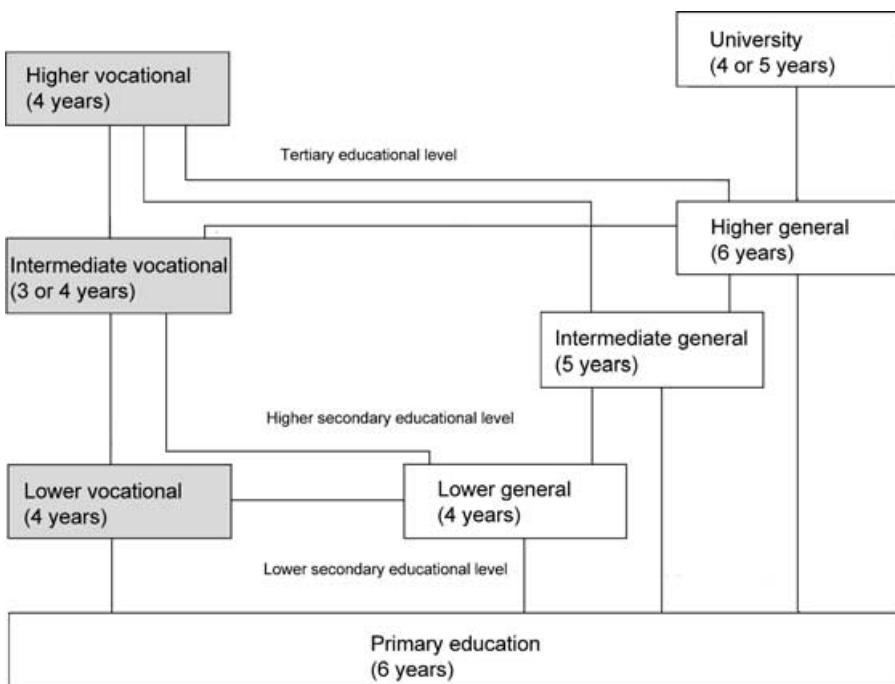


Fig. 1. Description of the Dutch educational system.

Source: Statistics Netherlands (CBS, 1992). Higher vocational refers to "hbo," intermediate vocational is "mbo and vmbo," lower vocational is "lbo and vbo," higher general is "vwo," intermediate general is "havo," lower general is "mavo."

secondary education. One option is to choose a lower vocational track ("lbo"), which prepares for several lower level technical, service, caring and administrative jobs. Another choice is to go into a general track, which is further distinguished by length and level: from lower general ("mavo"), intermediate general ("havo") to higher general ("vwo"). In the first years, there is also an option of entering two types of preparatory classes. One type of preparatory classes can be categorised as lower because it includes lower vocational training. Students in these classes usually end up in either lower general school or lower vocational school. A second type of preparatory classes is considered higher because it includes higher general education. Most of the students in these classes end up in either higher or intermediate general education. As the arrows in Figure 1 show, several alternative routes through the system are possible. Moreover, a major protection against dropping out is that schooling is compulsory until the age of 16. At every level

in all tracks, however, leaving the educational system without a certificate is possible. But if a student has poor academic results or loses his or her motivation, school continuation is often possible by changing to a lower level of schooling.

In the literature, school dropout has been modelled in various ways. One approach has been to estimate a multivariate logistic regression model in which the dependent variable is whether a person has dropped out from school without a degree between two specific points in time (Teachman et al., 1996). Another approach has been to use a measure indicating whether a person of a certain age (say 18 or 21) is out of school without a degree (Astone & McLanahan, 1991).

We argue that school dropout needs to be analysed in the context of the entire secondary school career and we think event-history techniques are the appropriate approach to such careers. First, dropout is an event which can occur at any point in the educational career, and this asks for a model of duration dependency. Second, students in the Dutch system may drop out from several different levels and these levels may have different dropout rates. In event-history models, it is relatively simple to control for such effects by using time-varying covariates. Third, event-history models make it possible to analyse both dropout and other, competing events in the school career, such as downward mobility. Fourth, secondary school careers have much in common conceptually with occupational careers, and it is therefore attractive to use similar types of models as have been used in research on jobs and occupations (e.g., Spilerman & Lunde, 1991).

We analyse school transitions for each year in which the student is still enrolled in secondary school. A school transition is obtained by comparing school reports about the level and type of schooling at the beginning of subsequent school years. We combine all transitions in one matrix, and we present outflow percentages for this matrix in Table 1. The rows in Table 1 represent the type and level of schooling at the beginning of a school year, while the columns represent the situation at the beginning of the next year. The table first shows that students can leave the school system, and that they can do this with or without a degree. This is illustrated by the last two columns of Table 1. If students continue, they can do this in three ways. They can continue at the level in which they are currently enrolled (normal progress). This is represented by the diagonal cells of Table 1. They can also continue at a lower level (downward mobility), which is represented by the cells below the diagonal. Finally, they can continue at a higher level, which is represented by the

Table 1. Level and Type of Schooling in Year  $t$  by Level and Type of Schooling in Year  $t + 1$ . Outflow Percentages for all School Transitions in the First 8 Years Since Entering Secondary School.

Position in year $t$	Position in year $t + 1$									Out with degree	Out no degree	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)			
(1) Lower vocational (lbo)	72.2	0.2	0.2	12.7						10.6	4.1	100
(2) Preparatory with lower vocational (lbo-mavo)	13.4	29.7	30.7	0.3	10.4	7.8	6.3				1.3	100
(3) Lower general (mavo)	3.4	0.6	69.2	18.1	3.8	0.1	0.1			3.0	1.7	100
(4) Middle vocational (mbo)				71.4	0.1			4.9		13.3	10.3	100
(5) Middle general (havo)	0.1		2.7	8.3	63.3	0.1	4.2	13.5		4.7	3.0	100
(6) Preparatory middle/higher general (havo-vwo)	0.2	0.7	7.3	0.2	23.6	43.3	24.1				0.5	100
(7) Higher general (vwo)			0.1	0.2	4.1	0.1	74.1	5.9	9.9	3.5	1.9	100

Note. (8) and (9) are tertiary schooling where (8) is higher vocational schooling and (9) is university.

Source: VOCL Dutch secondary school cohort 1989 (own calculations).

cells above the diagonal. Upward mobility usually occurs after successfully completing the subsequent level. In our model, dropout is defined as leaving secondary school without a degree in the current level (in the last column but one). We define students as remaining at risk for dropout if they already obtained a degree at some lower level. Downward mobility is defined as continuing schooling at a lower level (below the diagonal), where the order of the different types of schooling is given in Table 1. The risk group for these two transitions consists of students who are still in school. Students remain at risk for dropout and downward mobility if they experience a downward move. The reverse does not apply: students are no longer at risk for downward mobility if they drop out. We emphasise that our analysis is limited to episodes in which students are enrolled in general secondary schooling. As can be seen from Table 1, downward mobility only occurs in general education and not in vocational training. Because we want to compare the predictors of outward and downward mobility, we decided to exclude the episodes with vocational schooling from the dropout equation as well. Our conclusions about dropout thus apply to students with general schooling, which is an important difference from earlier studies. The total number of students for which we have valid data is 11,485.

To develop an event-history analysis of downward and outward mobility, we apply a multinomial logistic regression model to the transition matrix in Table 1 (Allison, 1982; Yamaguchi, 1991). In the first equation, we consider the conditional probability of dropping out. In the second equation, we consider the conditional probability of being downwardly mobile. In both equations, the event is compared to the “successful” transitions (staying in school at the same or at a higher level or leaving with a degree).

To model duration dependency, we include the number of years since entry into secondary school. We also include duration squared to allow for possible nonlinear patterns. We expect dropout rates to increase over time, largely because in the earlier years, the need to achieve is limited, poor abilities can be hidden, and decisions about school can be postponed without much consequence. Another reason is that as time goes on, students begin to pass the compulsory school age. For downward mobility, we expect the rate to be highest in the early stages of the career (a negative duration effect), largely because mismatches will become apparent early on. We further include a dynamic measure of the level of schooling in the risk year. We expect to find large differences here, particularly because there will be bottom and ceiling effects. Because there are large differences between Dutch and ethnic groups

in the level of secondary schooling, it is important to control for these time-varying characteristics in our regression models.

### **Measurement of Independent Variables**

As independent variables, we consider individual and parental resources. The main individual resources are scores for mathematics ability and scores for language ability. Both scores are obtained from tests which were taken in the 1st year of secondary school and which were assumed to measure the scholastic ability of students at entry.

Three types of parental resources are considered. First, we include socio-economic resources, which are measured by the educational level of the parents (measured on a scale from 1 for less than elementary school, to 6 for university, and averaged across parents).

Second, we include a measure of parental involvement which is based on father's and mother's reports in the self-administered questionnaire about communication with their children about school related matters (Furstenberg & Hughes, 1995; McNeal, 1999; Teachman et al., 1996). The following three items are used: talking about things/events occurring at school, talking about the child's accomplishments at school, and giving a compliment for school accomplishments. To construct a scale, we calculated standardised scores for all items and took the average across the six items (three for the father, three for the mother), or the average of three items when the student lives in a single-parent family. The reliability of the scale is good ( $\alpha = .82$ ). A criticism on this measure is that parental involvement may also be an outcome rather than a cause of school achievement. This bias has been referred to as the "reactive hypothesis:" poor achievement on the part of students calls for or triggers parental involvement (e.g., McNeal, 1999). If the reactive effect occurs, the effect of parental resources will be underestimated. It is not clear, however, what the bias will be, because parental involvement may also be greater if students are doing better in school. Giving compliments, for example, may be more fun if the child is doing well in school and there is less to compliment if the child is continuously performing poorly. In this case, the effects of parental involvement will be overestimated.

Third, we consider demographic characteristics which are sometimes associated with the social capital that parents provide to their children (Coleman, 1988; Teachman et al., 1996). We measure the following characteristics: whether the student comes from a single-parent family, whether the student comes from a large family (five or more children), and whether the mother was

young when the student was born (under 23). These are also aspects for which ethnic differences are expected to be relevant (McNeal, 1999).

## ANALYSES

Our results are organised in three sections. The first section offers a description of how dropout and downward mobility differ between ethnic groups in the first 8 years of secondary school. The second section describes our independent variables and how these differ across ethnic groups. In the third section, we present our event-history models.

### Ethnic Differences in Dropout and Downward Mobility

Table 2 shows the percentage of students who, at the end of the 8th year, have left secondary school without a degree (dropout). The cumulative dropout percentages are presented separately for the ethnic groups. After 8 years, ethnic differences in dropout have grown to sizable proportions: 21% for Turkish and Moroccan students and 20% for Caribbean students. For the Dutch student population, dropout is limited to a small (though not trivial) group of 8%. We note that dropout is less common when we exclude dropout with a degree from a prior level (Table 2). In this more narrow definition of dropout, ethnic differences are not changed, however.

Table 2. Cumulative Dropout Percentages and Cumulative Downward Mobility Experience by Ethnic Group.

	Ethnic group		
	Dutch	Mediterranean	Caribbean
Percentage experiencing dropout	7.5	20.8	20.0
Percentage experiencing dropout (narrow definition)	6.2	18.6	17.1
Percentage experiencing downward mobility	39.2	36.3	39.3
Percentage experiencing downward mobility (narrow definition)	21.1	21.3	24.0
N	10793	366	275

*Note.* Narrow definition of dropout excludes students who dropout with a prior degree. Narrow definition of downward mobility excludes enrollment in mixed levels.

Source: VOCL Dutch secondary school cohort 1989 (own calculations).

For downward mobility, hardly any ethnic differences are observed. About 39% of the native Dutch students ever experienced downward mobility, compared to 36% of the Mediterranean, and 39% of the Caribbean students. Hence, the three groups of students seem to use the option of staying in school at more or less the same degree. Important to observe is that differences may be understated because Dutch students enroll at higher levels which makes them more sensitive to ceiling effects. Our bivariate comparisons do not control for these effects. Perhaps more interesting at this point is the observation that downward mobility is quite common in the Dutch school system; more than one out of every three students ever experienced such a move. Because the definition of downward mobility is perhaps less applicable to preparatory classes, we also calculated downward mobility excluding these classes. This reduces the number of downward moves, but even in this definition, about 20 to 25% experiences a downward move. Ethnic differences do not seem to be affected by this change in definition.

### **Ethnic Differentiation in Individual and Parental Resources**

To explain ethnic differences in dropout and downward mobility, we must first assess if and to what extent immigrant students differ from Dutch students with respect to their individual and family resources. In Table 3, we compare the three groups. We first observe that students from immigrant families on average have a significantly lower level of academic ability when entering secondary school. This applies to both mathematics and verbal test scores and these differences are most profound for Mediterranean students. Second, we observe lower levels of parental education for Turkish and Moroccan students. When looking at the educational variable in detail, Mediterranean parents have an average education which is located in between no schooling at all and at least elementary school. This is no surprise, given the low average level of education in the sending countries and the nature of the labor recruitment underlying the migration flow. Given the homogeneity of the immigrant group in terms of parental education, parental involvement in school is perhaps a better measure of family resources. Here we observe differences as well, though not as strong as the differences observed for parental education. The  $\eta^2$ -value is 0.31 for parental education and 0.25 for parental involvement in school. Especially, Turkish and Moroccan parents seem to be less strongly involved in their childrens' education than native Dutch parents. For Caribbean parents, the difference with native parents is much smaller.

Table 3. Ethnic Differences in Individual and Parental Resources: Secondary School Students Who Entered General Schooling in the First Year of Secondary School.

	Ethnic group		Test
	Dutch	Mediterranean	
Single-parent family (percentage)	6.4	13.1	384*
Young mother (age # 22) (percentage)	11.2	22.8	122*
Large family ( $>5$ children) (percentage)	4.7	40.6	804*
Parental education ( $z$ -score)	0.25	-1.49	-0.22
Parental involvement ( $z$ -score)	10.12	-1.09	-0.24
Test score mathematics ( $z$ -score)	0.28	-0.37	-0.23
Test score language ( $z$ -score)	0.32	-0.45	-0.13
N	10793	360	270

*Note.* Pearson's chi-square tests for binary variables;  $\eta^2$ -values with ANOVA-test for continuous variables. Parental education is averaged across parents, or education of one parent in single-parent family. Parental involvement is a scale of six items: talking about things/events occurring at school (father, mother), talking about child's school accomplishments (father, mother), giving a compliment for school accomplishment (father, mother); Cronbach's alpha is .82. Scores standardised on full sample.

Source: VOCL Dutch secondary school cohort 1989 (own calculations).

Significance: \* $p < .01$ .

We also notice quite substantial ethnic differences in family structure. About 37% of the Caribbean students come from a single-parent family, compared to only 6% of the Dutch students. This difference has been observed before (Tesser et al., 1999) and echoes black-white differences in other countries, such as the United States (Astone & McLanahan, 1991). When considering family size, we observe large differences as well; 41% of the Turkish and Moroccan students stem from families of five or more children, compared to only 5% of the Dutch students. Finally, both Mediterranean and Caribbean students have younger mothers on average than Dutch students. In general, Table 3 shows that the resources which students have at their disposal when entering secondary school are less favourable for Turkish and Moroccan students, and slightly less favourable for Caribbean students. How this translates into higher dropout or higher downward mobility rates, is a question we will turn to in the following paragraph.

### A Dynamic Model of Dropout and Downward Mobility

The event-history models are presented in Table 4. The left columns contain the equations for downward mobility, the right columns contain the equations for dropout. We estimate a series of four nested multinomial logistic regres-

Table 4. Event-History Models for Dropping out of School and Downward Mobility (vs. Successfully Staying in School): Multinomial Logistic Regression Estimates of Odds Ratios for Dutch Secondary School Students With at Least Lower General Schooling.

	Model A		Model B		Model C		Model D	
	Out	Down	Out	Down	Out	Down	Out	Down
<i>Control characteristics</i>								
Girl (0–1)								
Duration (dynamic)	1.07	.92*	1.01	.86*	1.05	.89*	1.00	.83
Duration squared (dynamic)	1.30*	1.89*	1.34*	1.91*	1.30*	1.89*	1.34*	1.92*
	1.04*	.93*	1.04*	.92*	1.04*	.93*	1.04*	.92*
<i>Educational level in risk year</i>								
Mixed lower	2.75*	1.87*	2.13*	1.03	2.55*	1.61*	2.01*	.90
Lower general	1.46*	.35*	1.11	.20*	1.40*	.31*	1.08	.18*
Intermediate general (reference)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mixed higher	1.46	5.16*	1.64~	6.43*	1.52	5.55*	1.68~	6.80*
Higher general	.53*	.40*	.65*	.62*	.56*	.46*	.68*	.69*
<i>Ethnicity (vs. Dutch students)</i>								
Turkish/Moroccan student (0–1)	3.36*	1.22~	2.80*	.81~	2.13*	.61*	1.83*	.43*
Caribbean student (0–1)	3.13*	1.26~	2.73*	.96	2.02*	.93	1.79*	.74*
<i>Student characteristics</i>								
Test score mathematics ( <i>z</i> -score)			.77*	.67*			.79*	.68*
Test score language ( <i>z</i> -score)			.87*	.65*			.87*	.66*
<i>Parental resources</i>								
Single-parent family (0–1)					2.13*	1.27*	2.04*	1.16~
Young mother (0–1)					1.58*	1.35*	1.58*	1.35*
Large family (0–1)					1.46*	1.21*	1.48*	1.23*
Parental education ( <i>z</i> -score)					.97	.74*	.98	.76*
Parental involvement ( <i>z</i> -score)					.88*	.94*	.88*	.93*

Table 4. (Continued).

	Model A		Model B		Model C		Model D	
	Out	Down	Out	Down	Out	Down	Out	Down
Chi-square		1575		5500		34694		59614
Number of transitions		53269		53269		53269		53269
Number of students		11485		11485		11485		11485
Number of events	947	5136	947	5136	947	5136	947	5136

*Note.* Students are at risk again for downward or outward mobility after they experience a downward move.

Source: VOCL Dutch secondary school cohort 1989–1997.

Significance: ~ $p < .05$ , \* $p < .01$ .

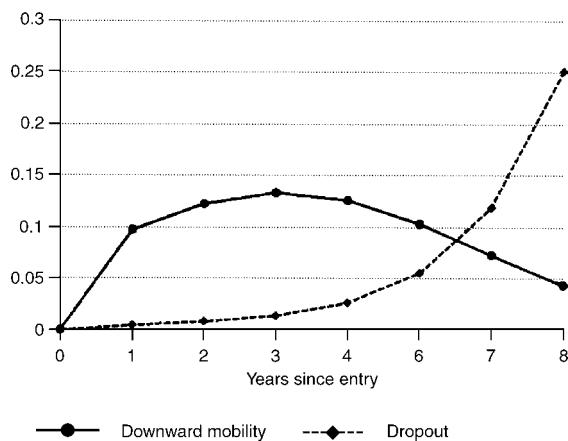


Fig. 2. Predicted annual odds of downward and outward mobility by years since entry in secondary school.

sion models. Model A includes the ethnic groups and parameters for duration dependency. Model B adds individual ability scores to Model A. Model C adds standard family background characteristics to Model A. Model D adds both sets of resource variables. By comparing these models, we can assess to what extent individual and parental resources are able to explain ethnic differences in school outcomes. Model A in Table 4 indicates that there is a significant positive main duration effect and a positive effect of duration squared. To interpret these effects, we present expected conditional dropout odds in Figure 2. The figure shows that dropout is more likely the longer a student has been enrolled in school and that this increase is stronger later on in the career than in the beginning. One reason why the increase is stronger later on, is that the relative share of students who have repeated a grade is higher among students who are still at risk. A different effect is found for downward mobility. Here the main effect is positive while the squared term is negative. This implies that the odds of downward mobility first increase and then decrease. The turning point is about 4 years. Apparently, mismatches are most likely to be corrected in the middle part of the career, when students are confronted with the necessity to graduate. We further note that there are large differences between the levels of schooling (Table 4). First, we observe that the preparatory tracks have a higher dropout rate and a higher downward mobility rate. This is not surprising, because enrolling in a preparatory class usually refers to a situation in which a students' intellectual ability and

motivation could not be established with enough certainty in primary school. Second, we find that the highest level of general schooling has the lowest rate of both downward and outward mobility. This finding is not consistent with the notion of ceiling effects. One interpretation is that students entering the highest level of secondary education score particularly high on ability and motivation. This may lead to a performance that is consistent with the expectation based on ability tests in primary school and teacher's recommendations.

The two ethnic effects on dropout in Model A are large and significant after the introduction of the time-varying covariates. This observation is important because ethnic minorities are more frequently enrolled in lower tracks where dropout is common. After controlling for the type of schooling, the conditional annual dropout odds is 3.4 times higher for Mediterranean students, and 3.1 times higher for Caribbean students. The effects are also significant for downward mobility. Mediterranean students have a 1.2 times higher odds of experiencing downward mobility, and Caribbean students have a 1.3 times higher odds of being downwardly mobile. In sum, immigrant students are more likely to drop out and more likely to experience a downward move.

In Model B, we find a strong negative effect of cognitive ability on dropout, as measured by ability tests in the 1st year. We also find strong negative effects of ability on downward mobility, in line with the model for dropout. The effects of ability are stronger in the downward mobility equation than in the dropout equation. School failure is often a mix of cognitive and behavioural problems, and the ability effects in the multinomial model suggest that the mix is more cognitive for downward mobility and more behavioural for dropout. The ethnic effects on dropout are still large and significant after controlling for initial differences in ability. More specifically, the conditional annual dropout odds are 2.8 times higher for Mediterranean students and 2.7 times higher for Caribbean students, when holding constant ability scores in the 1st year of secondary school. This also suggests that only a small part of the higher dropout rates among immigrant students can be explained by cognitive factors.

Rather a different conclusion can be drawn for downward mobility. In this equation, the effects of both ethnic dummy variables are no longer statistically significant, suggesting that immigrant students have the same chance of experiencing downward mobility as Dutch students when they have the same level of entry ability. This shows that the higher downward mobility rate of ethnic minorities can entirely be attributed to cognitive factors. This result can also be seen as evidence against the hypothesis about positive discrimination and overrecommendation. If ethnic minorities enter at higher levels than their

test scores would justify, we would also expect more downward mobility after holding constant test scores. This is not the case.

Model C adds measures of family background to the equations for dropout and downward mobility, while excluding the ability measures. Parental involvement has the expected negative effect on dropout. The odds ratio is .88, which means that students of parents with one standard deviation more involvement in schooling have a 12% lower odds of dropping out. Surprisingly, the negative effect of parental education is not significant. This implies that for dropout chances, it does not matter from what educational background a student is. The other aspects of family background have the expected effects. Growing up with a single parent increases dropout by a factor 2.1, growing up with a young mother increases dropout by 1.6, and growing up in a large family has a somewhat weaker effect, 1.5.

Are the family background effects similar in the downward mobility equation? The general pattern of effects is the same: Parental resources which prevent students from dropping out also prevent them from a downward step in the system. There are interesting differences in the magnitude of the effects, however. Parental education has a much stronger and significant effect on downward mobility than it has on dropout, suggesting that cognitive factors play a more important role in the downward route. Growing up in a single-parent family, with a young mother and in a large family, has a much weaker effect on downward mobility than on dropping out. A similar pattern is observed for parental involvement: A weaker protective effect on downward mobility than on dropout (.94 vs. .88). These findings further support our belief that downward mobility is more cognitive in nature, while dropout has a more behavioural and motivational element.

When we control for individual ability and all the parental background characteristics in Model D, the effects of ethnicity decrease. When comparing with Dutch students of the same family background, Mediterranean and Caribbean students have a 1.8 times higher dropout rate. We observe that this is a substantial reduction compared to the baseline model. Further comparisons show that the reduction in the effects of the ethnic dummy variables on dropout is larger when including family background variables (Model C), than when including individual ability measures (Model B). Hence, ethnic differences in family circumstances are a more important explanation for the higher dropout rates among immigrant students than ethnic differences in entry ability level. Together, the two sets of factors explain a considerable portion of the ethnic gap. For Mediterranean students, the gap is reduced from

3.3 (Model A) to 1.8 (Model D), which amounts to a reduction of more than 50%. For Caribbean students, the reduction is about the same (from 3.1 to 1.8).

The downward mobility model again leads to partly different conclusions. An important difference is that the ethnic effects become negative as we move from Model A to Model C, at least for the Mediterranean students. Hence, when comparing students of the same family background, Turkish and Moroccan students are less likely to move down in the educational system than Dutch students. This strengthens our conclusion that failure in the educational system takes a different form for Dutch and ethnic minority students. When there is failure, and when we compare students with similar family background characteristics, ethnic students are more likely to move “out” rather than “down,” in comparison to Dutch students. This conclusion is further supported in Model D, where both sets of independent variables are included. Here, the effect for Caribbean students becomes negative as well.

## CONCLUSION AND DISCUSSION

In this conclusion, we summarise the answers to the research questions we posed in the beginning. We have found that students from Mediterranean and Caribbean immigrant families are about three times as likely to drop out from secondary school without a degree compared to Dutch children. They are also more likely to be downwardly mobile during their secondary school career, but this differential is much weaker. We further observed that factors preventing students from dropping out also prevent students from being downwardly mobile. However, factors related to cognitive ability are more important for downward mobility (test scores, parental education) while factors related to motivational or behavioural problems are more important for dropout (single-parent home, parental involvement).

Compositional differences with respect to individual and parental resources explain more than 50% of the ethnic disadvantage in dropout. The most important compositional effect here lies in the deficit of parental resources in immigrant families, and not in ability scores. While part of the ethnic gap persists in the dropout equation, compositional differences explain the entire ethnic gap in downward mobility. Moreover, when holding constant parental and individual resources, ethnic students are less likely to experience downward mobility than Dutch students. This goes against the notion of positive discrimination and overrecommendation. If ethnic students would be position-

ed too highly in secondary school, we would expect them to experience more downward moves after holding constant cognitive ability. This is not the case. Note that our result cannot be attributed to bottom or ceiling effects, because we control for the level at which students are enrolled in a risk year.

In sum, Dutch children are more likely to follow the route of downward mobility, whereas children from ethnic minorities are more likely to drop out altogether. The safety net that a multitrack educational system provides, thus appears to be used more often by native Dutch students than by ethnic students. We suggest that this opportunity may unintentionally increase ethnic inequality in schooling outcomes, although a comparison with other educational systems is needed to confirm this conclusion more directly. Comparisons with the newly implemented secondary school system ("basisvorming") may be interesting in this light as well. Does the installation of a single-mixed class for all students in the first years of secondary school lead to less downward mobility later on, or is the selection process simply postponed? And how does this differ for students from various ethnic backgrounds?

Future research could examine the consequences of downward mobility. Many earlier studies have addressed questions about the consequences of dropout, but less is known about the consequences of downward mobility. Is downward mobility harmful for occupational attainment or personal well-being, for example? To address this question, comparisons can be made with students from either the "origin" level or the "destination" level. Students experiencing downward mobility can be somewhere in between these levels, but they can also achieve below the lowest level, for instance, because they have been labeled as failures or because their self-confidence has been damaged. Assessing such effects is important in light of the substantial ethnic differences with respect to downward mobility that we found in our analyses.

Another extension is to examine the dynamics of school careers in greater detail. One option here is to compare downward with upward mobility. Upward mobility may be a similar type of solution to a mismatch between ability and performance, but in the other direction. An interesting question here is whether the upward route is also used more often by students from ethnic minorities. This question is especially relevant because ethnic students generally have not been socialised into norms of higher education in the parental home. This can make it difficult for them to adapt to the Dutch school system, even when a student has a high level of scholastic ability. In such cases, it can take some time before those abilities are recognised and this may lead to a higher probability of upward mobility.

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