Explaining Participation Differentials in Dutch Higher Education: The Impact of Subjective Success Probabilities on Level Choice and Field Choice.

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Abstract

In this paper we examine whether subjective estimates of success probabilities explain the effect of social origin, sex and ethnicity on students' choices between different school tracks in Dutch higher education. The educational options analysed differ in level (i.e. university versus professional college) and fields of study (i.e. science versus non-science). First we analyse students' self-assessed success probabilities for specific tracks in higher education. We hypothesize that differences in demonstrated academic ability explain these perceived success probabilities. Next, we test whether these success probabilities contribute to explaining educational decisions and differentials herein with respect to social background, sex and ethnicity. We use the Dutch *Participation in Higher Education* data set wave 1995 and 1997 to answer our questions. Success probabilities differ across social origins, between men and women and across ethnic groups, even after controlling for ability differences. Success probabilities contribute to the explanatory model for school transition decisions which differ by field of study and level of schooling. They also help to explain social origin and sex-based differentials in field choice, but not in level choice. Ability is not a sufficient indicator for self-perceived success probabilities: success probabilities explain educational differentials better than ability.

Introduction

In industrial societies, the association between social origin and educational attainment has been extensively studied. This association is substantial, but has declined in the Netherlands, as for example in France and in Sweden (Breen and Jonsson 2005). Social origin influences not only the choices students make on the level of schooling they will attend, it also affects their field of study choice. In the Netherlands, pupils' chosen field of study tends to resemble that of their father and be guided by the parents' occupational domain (Van de Werfhorst *et al*. 2001). Next to effects of social origin, research shows that two other 'ascribed' characteristics, sex and ethnicity, also affect inequality of educational opportunities.

In most western countries, and the Netherlands is no exception, sex has become less decisive in determining the level of education that individuals attain (Van der Lippe and Van Doorne-Huiskes 1995). Sex differentials have even reversed in Dutch society today: women are now more likely than men to enrol in higher education (Statistics Netherlands 2007). However, sex differences are still pronounced in field of study choices, with women less likely than men to choose science subjects (De Jong *et al*. 1998; Portegijs *et al*. 2006).

Ethnic origin, net of the effect of social origin, influences educational outcomes in most western countries (Alba *et al*. 1994; Ayalon and Shavit 2004; Glick and White 2003; Tolsma *et al*. 2007). There are signs that ethnic inequality is diminishing in Dutch *vocational* education. However, ethnic inequality at higher levels of *general* education has remained stable or increased (Tolsma *et al*. 2007). When studying educational differentials based on social origin, sex and ethnicity, it is thus important to take into account not only differentials in levels of schooling attained (e.g. professional college versus university), but also differences in fields of study (e.g. science versus non-science).

To explain educational decisions, a rational action model has been maturing over the years (Boudon 1974; Breen and Goldthorpe 1997; Davies *et al*. 2002; Goldthorpe 1996; Goldthorpe 2000; Need and De Jong 2000; Raftery and Hout 1993; Stocké 2007; Van de Werfhorst and Andersen 2005). Breen and Goldthorpe (1997) argue that students make instrumentally rational decisions influenced by several factors: (1) their subjective beliefs about the likelihood of success in different educational tracks (success probabilities), (2) the expected costs of remaining in school (study costs) and (3) their subjective beliefs about the utility of educational outcomes (educational returns).

In Breen and Goldthorpe's explanation, both primary and secondary effects are assumed to be at work. Primary effects operate through the association between children's social origin and their average level of demonstrated ability. Secondary effects are the factors

that influence the actual educational choices that pupils make, controlled for ability. In this study we test several hypotheses derived from Breen and Goldthorpe's model, in order to explain *how* social position, sex *and ethnicity* affect educational transitions.

Recently, Stocké (2007) assessed the validity of the Breen-Goldthorpe model in a similar manner. He showed for Germany that higher class parents are more likely to believe that their offspring will be able to successfully complete a certain degree than lower class parents. To a large extent, this difference in expected success probabilities between higher and lower class parents can be explained by differences in their children's ability. Surprisingly, differences between lower class children and higher class children in schooling level decisions could not be explained by the different expected success probabilities.

Within the rational action framework ability is often used as a sufficient indicator for differences in success probabilities; that is, differences in ability should explain how ascribed characteristics affect school choices just as well as the students' probabilities of success. Subjective probabilities are however likely to be also influenced by factors other than ability. Social strata may differ in their subjective probabilities because they are more or less familiar with the educational system or because they vary in the importance they attach to effort relative to ability in determining school success (Breen 1999). In this study we investigate the extent to which success probabilities, estimated subjectively by the students themselves, differ according to the ascribed characteristics of social origin, sex and ethnic background, and the extent to which ability is responsible for these differences. Furthermore, we test the extent to which students' beliefs about their own chances of success in school explain the effect of social origin, sex and ethnic background on school decisions after higher secondary education.

This research is innovative in three respects. First, the Breen and Goldthorpe model has been applied almost solely to the explanation of class differentials. Few scholars have attempted to test its predictions for sex-based inequality in educational opportunities (cf Jonssen, 1999; Need and De Jong 2000). We examine the extent to which the Breen and Goldthorpe model also applies to ethnic differentials in educational decisions. Second, Stocké (2007) examined the effect of parental expectations of their children's future school success. We study entry into higher education and argue that at this transition point it is preferable to look at the expectations of the students themselves. Therefore, we assess the influence of students' beliefs about their own probabilities of success. Third, the literature on field choice is growing fast (see Gerber and Cheung 2008 for an overview). However, we are not aware of any study in which success probabilities are incorporated in the explanatory model to predict

field choice. We analyse the school transition after higher secondary education, when students decide on the level at which they want to continue their educational career *and* their preferred field of study.

This leads to the following research questions:

1. To what extent are social origin, sex and ethnicity related to students' expected probabilities of success for tracks in higher education that differ in level and field of study?
2. To what extent does ability explain the relation between social origin, sex and ethnicity and these success probabilities?
3. To what extent do students' expected success probabilities explain the effect of social origin, sex and ethnic background on choices of level and field of study in higher education, next to ability?

To answer our research questions, we use the Dutch data set *Participation in Higher Education* waves 1995 and 1997. The richness of this data set is unique. It includes measures of educational aspirations, information on students' economic resources, a wide array of ability measures and, most importantly, detailed information on students' beliefs about their chances of success – that is, their subjective success probabilities – for different tracks in higher education. We analyse the school transition after higher secondary education. At this point, various educational options are offered, differing in both level of schooling and field of study.

Expectations

In this study we focus on the role of success probabilities in school decisions. However, to assess its influence properly, we need to control for two other mechanisms relevant to the cost-benefit evaluation on which school decisions are based: the utility of educational outcomes and (in)direct costs of studying. We first discuss our expectations regarding the likely returns to schooling and the impact of differences in students' economic resources.

An important assumption of Breen and Goldthorpe (1997) is that of 'relative risk aversion': everyone's main aspiration is to avoid downwards mobility. Consequently, educational aspirations differ between social classes. Students whose parents have higher social positions are expected to remain in the educational system longer than students with the same ability level but from lower social strata, since students with lower social origins will

have satisfied their social aspiration (avoidance of downwards mobility) earlier in their educational career.

Most empirical tests of the relative risk aversion mechanism seem to support it: social aspirations (i.e. the avoidance of downwards mobility) have a pivotal role in explaining how social class affects school decisions. Unfortunately, our data set lacks the theoretical constructs to operationalize parental social class. However, several studies have shown that relative risk aversion also holds when social origin is operationalized as highest parental educational attainment (Davies *et al*. 2002; Need and De Jong 2000); students make decisions (together with their parents) so as to minimize the risk of ending up with an educational level lower than that of their parents. Need and De Jong (2000) and Need *et al*. (2001) show not only that students differ in their educational aspirations in relation to their social origins, but also that men and women students have different ambitions. Differences in educational aspirations between men and women explain (in part) sex differentials in educational decisions (Need and De Jong 2000). Given these considerations we formulate the following hypothesis:

H1: Educational aspirations explain (in part) the effect of social origin, sex and ethnicity on level choice in higher education.

We assume that in general, the social returns differ more between the two levels of higher education than across fields within these levels. Choices for study subjects may be driven by concerns for acquiring specific types of knowledge as well (Van de Werfhorst, Sullivan and Cheung 2003). Based on the relative risk aversion mechanism, we expect that differences across social origins in field choice are less pronounced than differences with respect to level choice.

Students' perceptions of the costs of education differ according to the level of schooling, field of study, and the availability of economic resources. Although parental income is closely related to the available economic resources of the parents, parental contributions to cover their child's study costs is probably an even better indicator of the availability of economic resources to the student and consequently of the direct costs students incur related to higher education. We also take into account students' ambition to finish school as soon as possible. We assume this aspiration is related to the importance of foregone income, the indirect cost of studying. This leads to our second hypothesis:

H2: Differences in parental contribution to study costs and students' ambition to finish school as soon as possible explain (in part) the effect of social origin, sex and ethnicity on track choice in higher education.

Next to the expected utility of educational outcomes and the (in)direct costs related to studying, the perceived likelihood of future success in the school career is assumed to influence school transition decisions. Breen and Goldthorpe (1997) argue that the average expectation of educational success is lower among students of the lower social strata, because average ability levels differ according to social origin. Hence, in similar circumstances, students from less favourable social backgrounds will choose less demanding educational tracks. In the Netherlands, these primary effects are responsible for approximately 58 per cent of social origin-based inequality in the transition to higher levels of Dutch secondary education after primary school (Kloosterman et al. 2009). Although ability is assumed to affect school choices through its influence on subjective success probabilities, the subjective success probabilities themselves seldom appear in explanatory models for school decisions (see Stocké 2007 for an exception).

In this study, we examine the extent to which ascribed characteristics are related to differences in success probabilities and the degree to which previously demonstrated ability accounts for these differentials. Furthermore, we test whether success probabilities explain the effect of ascribed characteristics on educational choices. We hypothesize that:

H3: Better able students estimate their chances of success in higher education higher than students with lower abilities.

Breen (1999) argues that following a Bayesian model of learning it is likely that beliefs of expected future school success of children from higher social origins are more heavily influenced by effort relative to ability than beliefs of lower social origins. This implies that the impact of ability on success probabilities is weaker for higher social origins. On the other hand, we assume that ethnic minorities have in general less knowledge of the Dutch schooling system compared to native Dutch. As a consequence they may be less aware that there is more than ability that makes for a successful schooling career and hence base their beliefs of future success more on ability than native Dutch. We see no theoretical argument why men and women would differ in the relationship between ability and success probabilities. Thus we expect that:

H4a: The impact of ability on success probabilities is weaker for higher social origins than for lower social origins.

H4b: The impact of ability on success probabilities is weaker for native Dutch than for ethnic minorities.

The probability of success will influence school track decisions and since we expect differences in success probabilities across ascribed characteristics, partly because of differences in ability, we formulate the following hypotheses:

H5: Success probabilities explain (in part) the effect of social origin, sex and ethnicity on students' choices between different levels of schooling and fields of study in higher education.

H6: Ability explains (in part) the effect of success probabilities on students' choices between different levels of schooling and fields of study in higher education.

Finally, according to the relative risk aversion mechanism it is to be expected that probability of success has a differential impact on school transition decisions across social origins. In order to avoid downwards mobility, students from higher social origins are more likely to opt for the more demanding levels even if their expected success probabilities are relatively low (Breen & Yaish 2006). Thus:

H7: The impact of success probabilities on track choice within higher education is weaker for higher social origins than for lower social origins.

We do not have *a priori* expectations regarding differences in the impact of success probabilities on track choice across ethnic groups or among men and women but will investigate this possibility in an exploratory fashion.

Sample, operationalization and methods

To answer our research questions we use the data set *Participation in Higher Education* wave 1995 and 1997. This data set was collected by the SCO-Kohnstamm Institute and the

Foundation for Economic Research (SEO). In 1995 and 1997, first-year students in Dutch higher education received a questionnaire concerning their motivations, schooling expectations and labour-market prospects. Students were selected to obtain a representative sample of pupils in institutes of higher learning (professional college or university), fields of study and the university or professional college attended.

In the Netherlands, after completing university-preparatory secondary school ('VWO'), students can choose between two levels of higher education: professionally oriented college ('HBO') and university. Both these levels offer a wide array of academic disciplines. We expect that individual differences in success probabilities will be most pronounced between science and non-science fields. We therefore grouped the educational tracks in higher education into four categories: professional college–science, professional college–non-science, university–science, university–non-science. The choice between these four educational options is our main dependent variable. An advantage of this categorization is that students with different ascribed characteristics are sufficiently present in each track to test our hypotheses and that both categories contain fields with high and low economic payoffs. If students expect more social returns from specific fields, the application of rational choice theory to these choices is more or less similar as in other studies predicting level of education. It is beyond the scope of this paper to explicitly incorporate the hierarchy between fields within the same educational level (but see for example Ayalon and Yogev 2005 and Van de Werfhorst *et al*. 2001).

Our data set includes no information on students who did not continue their educational career after completion of university-preparatory secondary school. However, these students form a small minority, approximately 10 per cent in 1996 (Statistics Netherlands 2007).

The students' success probabilities are treated as a dependent variable prior to the analysis regarding decisions on the further educational career. The students were asked to rate their likelihood of success, in percentages, for different courses of study in higher education irrespective of their current track choice and if applicable, after a year in vocational college to meet the enrolment requirements for university tracks. *Success probability professional college–science* is the student's mean success probability for majors in electrical engineering, computer science and laboratory technician (chemistry) at the professional college level. Similarly, *success probability university–science* is the mean score for majors in electrical engineering, computer science and chemistry at the university level. *Success probability professional college–non-science* is the mean score for majors in communication studies and

elementary school teaching. *Success probability university–non-science* is the mean success probability score for majors in law, communication studies and history. Since students had only minimal experience with higher education at the time of the interview, we assume that their beliefs have not changed substantially compared to before the track choice.

Highest parental education is measured in five categories: (1) primary school, lower vocational education ('LBO') and lower general education ('MAVO'); (2) intermediate vocational education ('MBO'); (3) higher general education and pre-university education ('HAVO' and 'VWO'); (4) professional college ('HBO'); and (5) university. *Sex* was coded as (0) man and (1) woman. Turks, Moroccans, Surinamese and Antilleans are the main ethnic minority groups in the Netherlands and formed 6 per cent of the Dutch population in 1997 (Statistics Netherlands). *Ethnic background* is therefore measured in four categories: (1) Dutch; (2) Turks and Moroccans; (3) Surinamese and Antilleans; (4) other ethnic background. The last category contains predominantly western ethnic minorities. The country of birth of the mother was decisive for the categorization. If the mother was born in the Netherlands and the father in a foreign country, then the father's country of birth was decisive.

After primary school, pupils in the Netherlands receive a teacher's recommendation for an appropriate track of secondary school. This recommendation is generally strongly influenced by the pupil's score on a nationally standardized scholastic achievement examination developed by CITO (www.cito.nl). Most pupils take this exam in their last year of primary school. We use this *recommendation after primary school*, which is retrospectively asked to students, as an indicator for early demonstrated ability. It consists of six categories: (1) below lower general education; (2) lower general education; (3) between lower and higher general education; (4) higher general education; (5) between higher general education and pre-university education; and (6) pre-university education. We also computed a *mean grade score* of students' grades in secondary school as an indicator for later demonstrated ability. Students' grades for Dutch are excluded since we expect this grade to be correlated with ethnic background – net of ability. Students in secondary school have some freedom to choose the subjects they want to take exams in. Science subjects are generally considered to be more difficult than non-science subjects. We therefore counted the *number of science subjects* in which students took exams in secondary school.[1] Our explanatory model for success probabilities also takes into account students' *exam results* in higher education as an indicator of recent demonstrated ability. Answer categories are (1) no examinations yet administered; (2) did not participate in examinations; (3) passed examinations; and (4) failed examinations.

Parental income is the log of the sum of father's income plus the mother's income per month after taxes according to the child, subtracted by the log of mean parental income. The questionnaire provided income categories to facilitate students' estimations. We used the middle value of each category. The net family income was set at a minimum of 400 euros. *Parents' contribution to study costs* is measured in euros. Study costs are lower for students who live with their parents, so we include a dummy variable *living at home* (1) and not living at home (0). To capture to some extent the importance of foregone income, understood as the indirect cost of studying, we asked students to what extent they agreed with the following statement: 'I am devoting all of my time to finish school as soon as possible.' Answer categories range from (0) completely disagree to (10) completely agree. We label this variable *finish school ASAP*, where higher scores indicate a stronger motivation to finish school as soon as possible.

We measure *higher education aspirations* as students' agreement with the following statement: 'I have had a lot of doubts about whether to continue my educational career.' Answer categories range from (10) completely disagree to (0) completely agree. Higher scores on this variable indicate stronger aspirations for higher education. *University aspirations* is measured as agreement with the statement, '*I have long had doubts about whether to go to a professional college or a university.'* Answer categories range from (10) completely disagree to (0) completely agree. We reversed the scoring for students currently enrolled in a professional college so that higher scores indicate stronger aspirations for a university degree.

For categorical variables we included a category for respondents with missing values. For interval variables, we replaced missing values with mean values and constructed dummy variables to indicate if missing values were imputed. Interval variables are centred around the mean value to facilitate interpretation. Respondents with missing values on all four success probabilities were excluded from the analyses.

Methods

The success probabilities for the four educational options were nested in individual students. We applied hierarchical linear random intercept models to control for a possible correlation between the success probabilities of individual students. Dummy variables were used to relate the success probability score to the relevant educational option.

To test whether success probabilities and the other theoretical constructs of the Breen-Goldthorpe model explain social origin, sex and ethnicity differentials in the choice between

the four mutually exclusive options in higher education, we used a multinomial conditional logit model. Success probabilities differ across the educational options and across students; the other explanatory variables vary across individuals only.

For the analyses regarding success probabilities, we selected students who had completed higher general secondary education ('HAVO') or university-preparatory secondary education ('VWO') and enrolled in further education for the first time (*N*=6,790). To explain the track decision in higher education, we selected students who had completed university-preparatory secondary school ('VWO') and enrolled in higher education for the first time (*N*=4,615). The choice for professional college is a less standard choice for this group of students, although with 17 per cent of VWO graduates opting for a professional college in our sample not a rare one. Students who finished higher general secondary education ('HAVO') have only the two professional college options available to them, and are therefore excluded from the analyses regarding the transition to higher education. Table 1 summarizes the descriptive statistics.

Results

Descriptives

According to the Breen-Goldthrope model, three mechanisms explain the effect of social origin on school decisions: (1) primary effects, which is to say, ability is related to social background and ability influences school decisions since it determines the subjective likelihood of success in the various educational tracks; (2) relative risk aversion, which states that children from more advantaged backgrounds have higher educational aspirations since the main aim of all social classes is to avoid downwards mobility; and (3) availability of economic resources, by which children from more advantaged backgrounds have more resources to cushion the costs of studying. Table 1 confirms that among students currently enrolled in higher education, those from more advantaged backgrounds earned higher grade point averages in secondary school, they had stronger aspirations to study at the university level and had parents who contributed more to cover their study costs.

The mechanisms of the Breen-Golthorpe model for explaining school decisions are assumed to be universal; they should explain not only the effect of social background on educational decisions but also the effects of sex and ethnicity on these decisions. That said, ability, educational aspirations and study costs can explain the effect of sex and ethnicity on school decisions only if they vary between men and women and across ethnic groups. Table 1 shows that women currently in higher education have a lower grade point average in

secondary education than men and their ambition to study at the university level is lower than that of their male counterparts. On the other hand, women in higher education receive higher parental contributions to pay for their study costs than men, although this difference is not very substantial. Compared to the other ethnic groups, Surinamese and Antilleans have the lowest grade point average, followed by Turks and Moroccans. The native Dutch, together with the 'other ethnic groups' category (mostly western ethnic minorities), have the highest grade point average. The Surinamese and Antillean students have the lowest university aspirations. On the other hand, Turks and Moroccans have slightly higher aspirations than the native Dutch. The western immigrants have by far the highest aspirations, possibly because this group includes students whose motive for coming to the Netherlands was education-related. Differences in parental contribution to study costs across ethnic groups are substantial. We thus conclude that the three mechanisms of the Breen and Goldthorpe model should – in principle – be able to explain the effect of sex and ethnic background on school decisions.

Success probabilities

Table 2 shows the results of a hierarchical random intercept model with the four subjective success probabilities (one per educational option, level 1) nested in the individual students (level 2). With Table 2 we test whether differences in ability cause analogous differentiation in students' subjective probability of educational success (hypothesis 1). The subjective probability of success differs across educational levels and fields of study. On average, men perceive their chances of success at the professional college level in non-science fields as approximately 84 per cent, as shown by the constant in model 1 (Table 2). Science fields within professional colleges are considered to be more difficult than non-science fields at the university level; success probabilities are 57.27 per cent (84.36 + -27.09) versus 71.27 per cent (84.36 + -13.08), respectively.

On average women estimate their chances 8.60 per cent lower than men (Table 2, model 1). This stems from the fact that women estimate their chances within science fields approximately 21 per cent lower than men (6.39 + -27.23; Table 2, model 2). On the other hand, women estimate their chances within non-science fields somewhat (but significantly) higher than men: 6 per cent higher for the professional college–non-science track (as shown by the main effect of 'women') and 2 per cent higher for the university–non-science track (i.e. 6.39 + -4.09; Table 2, model 2).

Native Dutch students estimate their chances 1.52 per cent lower than western ethnic minorities. Students from more advantaged backgrounds estimate their success probabilities higher on average; students whose parents have maximally attained a degree from a professional college estimate their chances 5.23 per cent lower than students with at least one parent with a university degree. Students with richer parents estimate their likelihood of success higher than poorer students (Table 2, model 1 and 2).

Model 3 adds ability to model 2. Ability is an important determinant of the subjective likelihood of success in higher education; the explained variance of model 3 increased by 7.6 per cent compared to model 2.[2] Students whose teacher's recommendation after primary school was below higher general secondary education estimate their chances lower than students whose primary school teacher recommended a higher secondary school level. Both the main effects and the squared effects of mean grade point average and number of science subjects are significant (at α=0.10, two-tailed). The effect of the mean grade point average in secondary school on the success probabilities increases the higher the grade point average is. The same holds for the number of science subjects taken in secondary school. Students who failed their first exams estimate their success probabilities approximately 3 per cent lower than students who passed their first exams (Table 2, model 3).

After controlling for these ability measures, the main effect of being a women increases from 6.39 to 11.12, implying that women's underestimation of their success probability in science subjects diminished by some 5 per cent in comparison with men and their overestimation of their success probability in non-science fields increased by 5 per cent (model 3). On average, the differences between men and women almost halved; from -8.60 (model 1) to -3.39 (not shown). These results support hypothesis 1. Whereas differences in success probabilities across the parental education and parental income categories diminished significantly and substantially (25 to 40 per cent) after taking into account ability differences, differences between native Dutch and Turks/Moroccans became (significantly) more pronounced after controlling for ability but effects of ethnicity on success probabilities remain small compared to sex and social origin effects.

Contrary to our expectation (hypotheses 4), the effect of ability on the success probabilities is not lower for students from higher social origins or for native Dutch. The expectations of success of students whose parents have higher income levels are even more closely related to the mean grade points in secondary school (b=0.93; p=0.03; Table 2, model 4). We obtain similar conclusions if we interact 'recommendation after primary school' or 'number of exact subjects in secondary school' with social origin and ethnic group (results not

shown). We conclude that ability – at least as operationalized in this study – is an important, albeit not a perfect, indicator for the success probabilities of the students.

Educational transition decisions

Next, we discuss the results of the conditional multinomial logit model which refers to the track choice in higher education (Table 3a and 3b). Table 3a summarizes the results for the contrast university–non-science versus professional college–non-science. Table 3b summarizes the results for the contrast university–non-science versus university–science. The odds to continue the educational career at the university–non-science track versus at the professional college–non-science track is lower for women than for men: the logit is -0.28 (p=0.00) (Table 3a, model 1). If ethnic minorities continue on to higher education, they are more likely than the native Dutch to do so at the university level (only the odds with respect to non-science fields are shown, Table 3a). These findings are in agreement with Tolsma *et al*. (2007), in which the same time period is studied using different data.

Compared to students whose parents are university graduates, students from less advantaged social origins are less likely to opt for a university–non-science study than for a professional college–non-science study. Note that parental education has a non-linear effect on these odds, as the Breen and Goldthorpe model predicts (e.g. Davies *et al*. 2002); the relative chance to continue at the university versus the professional college level is the same for students whose parents completed the professional college level and for students whose parents attained an intermediate or higher general education.

In model 2a, 2b and 2c we control in a stepwise procedure for the three mechanisms specified in the Breen and Goldthorpe model, successively, for factors related to study costs, for educational aspirations and for ability. Students who receive more money from their parents, students who live at home and students who are less eager to finish school as soon as possible are more likely to study at the university level. For example, the odds of studying a non-science field at a university versus at a professional college increases by 8 per cent for every 100 euros extra a student receives from his or her parents (b=0.08 (EXP(0.08)=1.08); p=0.00, model 2a, Table 3a). These proxies for the cost of studying explain part of the effect of social origin (approximately 25 per cent), but do not explain why sex and ethnic group affect the decision between university–non-science and professional college–non-science.

As expected, students with higher university aspirations are more likely to study at the university (b=0.32; p=0.00, model 2b, Table 3a). More importantly, differences in university aspirations fully explain why women are less likely than men to opt for a university–non-

science study. Compared to model 1, controlling for study costs and educational aspirations reduces the effect of parental education by approximately 50 per cent.

Model 2c includes the ability variables. The number of exact subjects in secondary school and the teacher's recommendation after primary school do not affect the choice between university and professional college. Although students with a higher grade point average in secondary education are more likely to continue on to the university, surprisingly, ability differences do not explain the effects of parental education and ethnicity on the choice between a non-science field of study at the university level versus at the professional college level.

Model 3 includes the success probabilities, which vary across educational options and students. If the difference in the subjective likelihood of success between the two options increases by 1 per cent, the odds of choosing the option with the highest subjective likelihood of success increases by 5 per cent (b=0.05; p=0.00, model 3, Table 3a). After including our measures of demonstrated ability as well, the effect of success probabilities falls to 0.03 (model 4, Table 3a). This confirms hypothesis 6. But although success probabilities influence school decisions – even after controlling for previously demonstrated ability – success probabilities do not explain the effect of social origin and ethnicity on level choice in higher education. This is contrary to our expectation as formulated in hypothesis 5.

Factors related to study costs, educational aspirations and success probabilities all contribute to the explanation of the decision of what level of higher education to attend. The items related to study costs and educational aspirations explain *how* parental education affects the choice between a non-science study at the university level and at the professional college level. Moreover, educational aspirations are the most important explanation for the effect of sex on the decision between levels in higher education. So far our findings are in line with the predictions of the Breen and Goldthorpe model. On the other hand, aspiration differences suppress differences across ethnic groups. Surprisingly, neither demonstrated ability nor (gradients in) success probabilities explain the effect of ascribed characteristics on the decision between a non-science field at the university or professional college level.

Next, we investigate the odds of choosing a non-science field of study versus a science field at the university level (Table 3b). Compared to men, women are more likely to opt for a non-science field than for a science field (b=1.63, p=0.00; model 1, Table 3b). The popularity of science and non-science fields does not significantly differ across ethnic groups or parental education categories. On the other hand, students whose parents earn more are more likely to choose a non-science field. This is possibly because next to social returns, economic returns

to education influence school decisions as well (Becker 1964), and students possibly estimate their life-long earnings after a non-science study to be higher than those after a science study. Unfortunately, our data set lacks information on economic aspirations and expected economic returns after different options in higher education.

Model 2a controls for factors related to study costs. Here we see that students who continue to live at home are typically science students (b=–0.43, p=0.00; model 2a, Table 3b). Students with stronger higher education and university aspirations have a greater tendency to choose science fields (model 2b) as well, but this effect is explained by demonstrated ability (model 2c). The higher the students' grade point average, the more likely they are to opt for a science field compared to a non-science field (b=–0.56, p=0.00; model 2c, Table 3b). Unsurprisingly, the more exact disciplines students' took in secondary school, the more likely they are to opt for an exact field of study at the university.

Ability explains the effect of sex and parental income on the odds of choosing a non-science versus a science field at the university level; the effect of sex diminished from 1.60 (model 2b) to 1.18 (model 2c), the effect of parental income fell from 0.45 (model 2b) to 0.36 (model 2c). Turkish and Moroccan students are significantly more likely to opt for a non-science field than a science field compared to western immigrants (and the native Dutch) once we take into account ability differences. Students whose parents studied at the professional college level are less likely to opt for a non-science field than students whose parents studied at the university level, after controlling for ability (b=-0.26, p=0.03; model 2c, Table 3b). Possibly, because students with university-educated parents aim to avoid downwards mobility, they are less eager to risk enrolling in a difficult – science – field. Students whose parents were educated at the professional college level could avoid downwards mobility even after failing at the university by enrolling in a professional college.

We already saw that gradients in success probabilities across educational options influence students' educational decisions (Table 3a). Naturally, within our conditional logit model specification, this choice-specific coefficient is similar in Table 3b and Table 3a. Differences between men and women in gradients across options which differ by level were much smaller than differences in gradients across options which differ by field (see above). This is probably why success probabilities do not explain the effect of sex on the choice of level of schooling (Table 3a) but do explain the effect of sex on field choice; the effect of sex fell from 1.60 (Table 3b, model 2b) to 0.85 (model 3). The effect of parental income on field choice almost halved after taking into account success probabilities. We thus find strong

evidence in support of hypothesis 5: success probabilities explain the effect of social origin and sex on educational choices which differ by field.

Model 4 includes both the ability measures and the success probabilities in the explanatory model. Compared to model 3, the effects of sex and parental income are not substantially different, indicating that ability explains the effect of sex and parental income on field of study choice due to the fact that ability differences cause to a large extent analogous differences in success probabilities. Ability explains the effect of success probabilities (only) in part. This is in agreement with hypothesis 6. Success probabilities explain the effect of sex and parental income on field choice better than our ability measures.

So far we assumed that the impact of expectations of success on the decision to choose or not choose a specific track within higher education is invariant across tracks. We next investigate to what extent the impact of success probabilities on the odds to choose a specific track varies across the distinguished tracks (Table 4). Success probabilities are more important for the decision whether or not to study science fields than for the decision whether or not to study non-science fields. In other words: expectations of success for science fields have more influence on track choice decisions than expectations of success for non-science fields. The difference is most pronounced within the professional college level: the impact of expectations of success on the log-odd for professional college–science is 0.05 and for professional college–non-science 0.02 (Table 4, model 1). The individual-specific coefficients as reported in Table 3a and Table 3b do not change substantially if we allow the impact of expectations of success to vary across tracks (not shown).

Contrary to our expectations (hypothesis 7), the impact of success probabilities does not vary (significantly) across social origins (Table 4, model 2 and 3)**.** On the other hand, women are in general less influenced by their expectation of success than men; if we assume an invariant effect of success probabilities across tracks, the interaction with 'women' is significant (b=-0.10, p=0.00; not shown). Since in model 4 (Table 4) only the interaction for expectations of success for university–non-science reached significance (b=-0.11, p=0.01), we tentatively conclude that, especially for women, expectations of success are more important for decisions regarding science fields than non-science fields.[3]

Conclusion

Men and women students, students from different social origins and students with different ethnic backgrounds estimate their probabilities of success for various tracks in higher education differently. Women estimate their chances of success lower for science fields but

higher for non-science fields compared to men. Turks and Moroccans rate their success probabilities higher than the native Dutch, Surinamese, Antilleans and western ethnic minorities. Students with more privileged social origins rate their success probabilities higher as well.

Although previously demonstrated ability is an important determinant of subjective success probabilities and ability explains to a large extent (approximately 50 per cent) differences across students of different sex and parental education categories, surprisingly, and contrary to our expectations, ability does not *fully* explain differences across ascribed characteristics. Ability even suppresses differences across ethnic groups. Naturally, our operationalization of the theoretical construct 'previously demonstrated academic ability' is not ideal since they are based on self-reports. Our imperfect measurement of ability may have led us to underestimate ability's explanatory power for differences in success probabilities across ascribed characteristics. On the other hand, we used three different indicators of ability to explain success probabilities instead of just one. Our results indicate that ability is not a perfect indicator for success probabilities and other factors may influence students' estimations of future success as well. In relation to this, we hypothesized that especially students from higher social origins and native Dutch ground their success probabilities on effort next to ability and hence that the relationship between ability and expectations of success would be weaker among these groups. We did however not find corroborative evidence for this hypothesis, possibly because ability as operationalized in our contribution is already a reflection of both ability and effort.

We examined the school decision taken after university-preparatory secondary education for a specific track of higher education. We distinguished four tracks, which differ in level (university versus professional college) and field of study (science versus non-science). We found supportive evidence for the relative risk aversion mechanism: students with higher educated parents have stronger university aspirations than students with lesser educated parents, and these differences in aspirations explain some 50 per cent of the effect of parental education on the choice between the two levels of higher education. Moreover, differences in educational aspirations fully explain why women are less likely than men to opt for schooling at a university rather than at a professional college, at least in 1995 and 1997. Nowadays, women are more likely than men to opt for university schooling (Statistics Netherlands 2007). Future research should examine whether this is due to a change in educational aspirations.

Parents' contributions to cover study costs, whether the student lives at home, and students' eagerness to finish school as soon as possible – both factors which we assume are related to the perceived direct and indirect costs of studying for the student – explain about 25 per cent of the effect of parental education and income on schooling level choice. However, these factors do not explain the effect of sex and ethnic origin on the decision between university–non-science and professional college–non-science. This is possibly because differences in perceived study costs between men and women students and across ethnic groups are small (after controlling for parental income). With respect to the chosen field of study, only living at home contributes to the explanatory model; however, it does not explain the effect of ascribed characteristics on field choice. Science fields are considered to be more difficult than non-science fields. Students who choose a difficult field may have more need to budget their time and therefore decide to remain living at home. Alternatively, science and non-science students may simply have different residence preferences.

The further students come in their educational career, the weaker the association is between social origin and ability, due to the selection processes encountered previously in the educational career. But even among students who successfully completed a higher track of secondary education, those from more advantaged backgrounds have significantly better demonstrated ability. Since we find a significant relationship – although admittedly not a very strong relationship, ability and hence success probabilities should explain the effect of social origin on track choice in higher education according to the Breen-Goldthorpy model. Although, students with a higher grade point average at the secondary school level are more likely to opt for the more prestigious university level, we did not observe the primary effects mechanism when we examined the choice for a specific level in higher education. Neither ability nor success probabilities explain the effect of social origin on the level choice, after controlling for educational aspirations. On the other hand, ability and perceived success probabilities explain the effect of sex and social origin on field choice. This is probably because perceived success probabilities vary more across fields than across levels in higher education and because our results indicate that educational aspirations do not play a key role when academic level is held constant. We therefore posit that most students judge the social returns similarly for educational tracks that differ in field but not in level, at least more similarly than the social returns for tracks which differ in level but not in field. This implies that enrolling in a difficult field of study at the university level constitutes an unnecessary risk of downwards mobility, especially for students whose parents have a university degree.

Related to the latter point, we argued that the selection on success probabilities is likely to be stronger among lower origin students than among higher social origins students since students of higher social origins are more concerned with status demotion and hence accept greater risks in order to avoid downwards mobility. Our results did however not support this claim; we did not find a significant differential impact of success probabilities across social origins. However, we tentatively conclude that women are less influenced by their expectations of success than men. Perhaps the track choices of women are more than men driven by concerns for acquiring specific types of knowledge.

Success probabilities contribute to the explanation of school decisions, as predicted. But as said before, similar to differences in ability, differences in success probabilities do not explain the effect of ascribed characteristics on level choice. This contradicts the Breen and Goldthorpe model, but is in agreement with the earlier findings of Stocké (2007) who analyzed school decisions at the start of secondary education when the relationship between social origin and ability is still relatively strong. This strengthens our interpretation that our (null) findings are not due to the relatively weak relationship between social origin and ability at the entry point of higher education. On the other hand, Stocké's findings cannot be dismissed, because he relates to the effects of success probabilities as estimated by parents rather than by the students themselves.

This said, success probabilities as estimated by students explain the effect of sex and social origin on field choice and it does so even better than ability. After controlling for differences in success probabilities, ability does not further explain the effects of sex and social origin on field choice. We thus conclude that ability explains the effect of sex and social origin on field choice due to its influence on students' perceptions of their own chances of success. This supports the underlying 'primary effects' mechanism of the Breen and Goldthorpe model. At the same time, ability is not a sufficient indicator for the success probabilities of the students; success probabilities are better able to explain the influence of ascribed characteristics on field choices than ability measures. The appropriateness of ability as an indicator for success probabilities may depend on the transition decision and whether one considers the success probabilities as estimated by the parents or the students. Future research should establish empirically whose perception of the likelihood of future educational success is more important for different transition decisions during the educational career.

This study showed that cost-benefit evaluations influence not only schooling level choices, but field of study choices as well. The results are mixed with respect to the applicability of the Breen and Goldthorpe model for explaining the effect of sex and ethnic

origin on school decisions. The relative risk aversion mechanism offers the strongest explanation for the effect of social origin on level choice. Differences between men and women in their level choice in higher education are completely explained by differences in aspirations. This highlights the importance of the relative risk aversion mechanism. Subjective success probabilities explain differentials in field choice across social origins and between the sexes. Ethnicity's effect on school decisions cannot be explained by differences in the perceived costs of studying, aspirations or success probabilities. On the contrary, these theoretical constructs suppress ethnic differences. This last puzzling finding warrants further scientific attention.

Notes

1. These exact subjects are mathematics, computer science, economics, biology, physics and chemistry.
2. (1 – ((390.63 + 135.36) / (447.21 + 121.79))) * 100 = 7.6
3. Expectations of success do not influence transition decisions differently across ethnic groups (results available on request).

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Table 1. Descriptives and bivariate relations between ascribed characteristics and ability, aspirations and study costs[a]

	Descriptives				Bivariate relationships					
N=4699					Mean grade score secondary school		University aspirations		Parental contribution to study costs	
	N	%	Mean	SD	mean	F	mean	F	mean	F
Men	2492	53			6.9	8.1**	5.8	4.7*	279	8.5**
Women	2207	47			6.7		4.8		283	
Native Dutch	4147	88			6.8	7.6**	5.3	7.7**	283	4.5**
Surinamese/Antilleans	82	2			6.5		5		216	
Turks/Moroccans	47	1			6.6		5.4		179	
Other	423	9			6.8		6.2		288	
Social background										
Parental education						24.7**		111.6**		34.8**
Primary, lower vocational and Lower general	1041	22			6.69		4.2		214	
Intermediate vocational	497	11			6.76		4.4		256	
Higher general and pre-university	602	13			6.83		5.2		267	
Professional college	1231	26			6.84		5.4		297	
University	1281	27			6.97		7.4		370	
Parental income			2377	1033						
Ability										
Mean grade score secondary school			6.9	0.9						
Number of science subjects secondary school			3.1	1.4						
Recommendation after primary school										
Below lower general	74	2								
Lower general	136	3								
Lower general to higher general	295	6								
Higher general	330	7								
Higher general to pre-university	1542	33								
Pre-university	2303	49								
Missing	19	0								
Educational aspirations										
Higher education aspiration			9.3	2						
University aspiration			7.4	3.3						
Proxies for study costs										
Parental contribution to study costs			240	297						
Living at home		40								
Study tempo			5.4	2.7						
Exam results higher education										
No examinations	375	8								
Did not participate in examinations	70	2								
Passed examinations	3695	79								
Failed examinations	536	11								

Table 1. Continued

Success probabilities				
Professional college–science			49.2	29.7
Professional college–non-science			76.4	20.3
University–science			40.5	28.4
University–non-science			66.7	22.1
Educational choice				
Professional college–science	189	4		
Professional college–non-science	586	13		
University–science	1348	29		
University–non-science	2492	53		

*p< 0.05, p<** 0.01 (two-tailed).

[a]: Descriptive statistics are shown for the sample to explain the track choice in higher education after university-preparatory secondary education.

Table 2. Hierarchical random intercept models explaining subjective success probabilities[a]

	model 0		model 1		model 2		model 3		model 4	
	b	p	b	p	b	p	b	p	b	p
Intercept										
(=Professional college–non-science)	53.33	0.00	84.36	0.00	76.81	0.00	72.58	0.00	72.67	0.00
Professional college–science			-27.09	0.00	-12.78	0.00	-12.78	0.00	-12.78	0.00
University–science			-35.96	0.00	-22.38	0.00	-22.36	0.00	-22.36	0.00
University–non-science			-13.08	0.00	-11.05	0.00	-11.03	0.00	-11.03	0.00
Women (men=reference)			-8.60	0.00	6.39	0.00	11.12	0.00	11.10	0.00
Professional college–science*women					-28.66	0.00	-28.70	0.00	-28.70	0.00
University–science*women					-27.23	0.00	-27.33	0.00	-27.33	0.00
University–non-science*women					-4.09	0.00	-4.14	0.00	-4.14	0.00
Ethnic group (other=reference)										
Dutch			-1.52	0.05	-1.51	0.06	-1.33	0.05	-1.40	0.04
Surinamese/Antilleans			-2.11	0.21	-2.13	0.20	0.42	0.77	0.76	0.63
Turks/Moroccans			1.16	0.55	1.13	0.56	3.81	0.02	3.24	0.07
Parental education (university=reference)										
Primary, lower vocational and lower general			-10.18	0.00	-10.18	0.00	-4.55	0.00	-4.43	0.00
Intermediate vocational			-8.94	0.00	-8.93	0.00	-3.80	0.00	-3.88	0.00
Higher general and pre-university			-6.18	0.00	-6.19	0.00	-1.90	0.00	-1.93	0.00
Professional college			-5.23	0.00	-5.23	0.00	-2.11	0.00	-2.12	0.00
LN (parental income) (centred)			1.97	0.00	1.97	0.00	1.48	0.00	1.57	0.00
Ability										
Recommendation after primary school (pre-university=reference)										
Below lower general							-2.51	0.02	-2.59	0.02
Lower general							-3.19	0.00	-3.16	0.00
Lower general to higher general							-4.40	0.00	-4.40	0.00
Higher general							-3.41	0.00	-3.43	0.00
Higher general to pre-university							-2.66	0.00	-2.69	0.00
Mean grade score secondary education (centred)							4.46	0.00	4.43	0.00
Mean grade score secondary education squared							0.59	0.02	0.65	0.01
Number of exact subjects secondary education (centred)							3.32	0.00	3.31	0.00
Number of exact subjects secondary education squared							0.15	0.10	0.15	0.11
Exam results higher education (failed exams=reference)										
No exams							-0.15	0.87	-0.16	0.86
Did not participate in exams							2.71	0.11	2.67	0.11
Passed exams							2.82	0.00	2.82	0.00
Mean grade score secondary education*Parental eduation (university=reference)										
Mean grade score secondary education*Primary, lower vocational and lower general									1.56	0,01
Mean grade score secondary education*Intermediate vocational									0.32	0.69
Mean grade score secondary education*Higher general and pre-university									0.70	0,40
Mean grade score secondary education*Professional college									0.90	0.14
Mean grade score secondary education*LN(parental income)									0.93	0.03
Mean grade score secondary education*Ethnic group (other=reference)										
Mean grade score secondary education*Dutch									-0.71	0.33
Mean grade score secondary education* Surinamese/Antilleans									0.49	0.77
Mean grade score secondary education*Turks/Moroccans									-2.08	0.30
Variance components										
Observations (level 1) *N*=27160	696.85	0.00	446.94	0.00	447.21	0.00	390.63	0.00	390.63	0.00
Individuals (level 2) *N*=6790	172.15	0.00	197.96	0.00	121.79	0.00	135.36	0.00	135.24	0.00

[a]: Control variables also in the model: dummies for missing success probability, parental education, parental income and ability; previous track in secondary education.

Table 3a. Multinomial conditional logistic regression explaining track choice in higher education. Contrast shown: university–non-science versus professional college–non-science[a]

	Model 1		Model 2a		Model 2b		Model 2c		Model 3		Model 4	
	b	p	b	p	b	p	b	p	b	p	b	p
Constant	2.99	0.00	3.03	0.00	3.53	0.00	3.65	0.00	3.89	0.00	9.24	0.01
Women (men=reference)	-0.28	0.00	-0.27	0.01	-0.08	0.46	-0.02	0.85	0.01	0.94	0.08	0.51
Ethnic group (other=reference)												
Native Dutch	-0.39	0.03	-0.42	0.02	-0.40	0.05	-0.43	0.04	-0.33	0.12	-0.38	0.07
Surinamese/Antilleans	-0.28	0.48	-0.19	0.64	-0.26	0.56	-0.29	0.53	-0.25	0.58	-0.35	0.44
Turks/Moroccans	0.07	0.88	0.17	0.71	-0.92	0.06	-0.85	0.09	-0.99	0.05	-0.96	0.06
Parental education (university=reference)												
Primary, lower vocational and lower general	-1.12	0.00	-0.84	0.00	-0.45	0.01	-0.43	0.02	-0.42	0.02	-0.39	0.03
Intermediate vocational	-1.00	0.00	-0.77	0.00	-0.56	0.01	-0.54	0.01	-0.60	0.00	-0.54	0.01
Higher general and pre-university	-0.91	0.00	-0.75	0.00	-0.50	0.01	-0.51	0.01	-0.48	0.02	-0.49	0.02
Professional college	-0.96	0.00	-0.78	0.00	-0.51	0.00	-0.49	0.00	-0.50	0.00	-0.49	0.01
LN (parental income)	0.51	0.00	0.41	0.00	0.39	0.00	0.37	0.00	0.37	0.00	0.36	0.00
Study costs												
Parental contribution to study costs			0.08	0.00	0.06	0.01	0.06	0.01	0.07	0.00	0.06	0.01
Living at home (not living at home=reference)			0.59	0.00	0.48	0.00	0.46	0.00	-0.48	0.00	-0.46	0.00
Study tempo			-0.07	0.00	-0.11	0.00	-0.12	0.00	-0.12	0.00	-0.13	0.00
Educational aspirations												
Higher education aspirations					0.00	0.98	0.01	0.81	0.01	0.79	0.01	0.72
University aspirations					0.32	0.00	0.32	0.00	0.32	0.00	0.31	0.00
Ability												
Mean grade score secondary education							0.39	0.00			0.28	0.00
Mean grade score secondary education squared							-0.12	0.19			-0.13	0.18
Number of science subjects secondary education							0.04	0.34			0.11	0.02
Number of science subjects secondary education squared							0.02	0.47			0.04	0.23
Success probabilities									0.05	0.00	0.03	0.00

a: Control variables also in the model: dummies for missing parental education, parental income, study costs, aspirations and ability; recommendation after primary school.

Table 3b. Multinomial conditional logistic regression explaining track choice in higher education. Contrast shown: university–non-science versus university–science[a]

	Model 1		Model 2a		Model 2b		Model 2c		Model 3		Model 4	
	b	p	b	p	b	p	b	p	b	p	b	p
Constant	-0.09	0.53	0.29	0.37	0.34	0.30	0.90	0.02	-0.11	0.63	-9.28	0.00
Women (men=reference)	1.63	0.00	1.62	0.00	1.60	0.00	1.18	0.00	0.85	0.00	0.79	0.00
Ethnic group (other=reference)												
Native Dutch	-0.07	0.61	-0.08	0.54	-0.07	0.56	0.10	0.53	0.02	0.91	0.11	0.49
Surinamese/Antilleans	-0.08	0.80	-0.06	0.83	-0.04	0.89	0.36	0.28	0.41	0.23	0.48	0.18
Turks/Moroccans	0.53	0.18	0.57	0.16	0.64	0.11	0.83	0.07	0.81	0.08	0.81	0.10
Parental education (university=reference)												
Primary, lower vocational and lower general	0.26	0.02	0.33	0.00	0.29	0.01	-0.06	0.67	0.15	0.29	-0.05	0.72
Intermediate vocational	0.16	0.24	0.23	0.11	0.17	0.22	-0.15	0.38	0.04	0.82	-0.14	0.44
Higher general and pre-university	0.18	0.14	0.21	0.09	0.16	0.21	-0.17	0.24	0.08	0.60	-0.10	0.51
Professional college	-0.12	0.22	-0.08	0.41	-0.12	0.23	-0.26	0.03	-0.21	0.07	-0.27	0.03
LN (parental income)	0.42	0.00	0.43	0.00	0.45	0.00	0.36	0.00	0.28	0.00	0.25	0.02
Study costs												
Parental contribution to study costs			-0.02	0.13	-0.02	0.16	0.02	0.19	0.00	0.88	0.02	0.23
Living at home (not living at home=reference)			0.43	0.00	0.44	0.00	0.50	0.00	-0.29	0.00	-0.35	0.00
Study tempo			-0.02	0.20	-0.01	0.39	0.02	0.32	-0.01	0.60	0.01	0.57
Educational aspirations												
Higher education aspirations					-0.05	0.03	-0.03	0.16	-0.05	0.05	-0.03	0.22
University aspirations					-0.07	0.00	0.00	0.80	-0.05	0.00	-0.01	0.74
Ability												
Mean grade score secondary education							-0.56	0.00			-0.41	0.00
Mean grade score secondary education squared							-0.06	0.31			-0.01	0.85
Number of science subjects secondary education							-1.77	0.00			-1.24	0.00
Number of science subjects secondary education squared							0.47	0.00			0.39	0.00
Success probabilities									0.05	0.00	0.03	0.00

[a]: Control variables also in the model: dummies for missing parental education, parental income, study costs, aspirations and ability; recommendation after primary school

Table 4. The impact of success probabilities on the log-odds for specific tracks in higher education[a]

	Model 1		Model 2		Model 3		Model 4	
	b	p	b	p	b	p	b	p
Impact of success probability on specific track choices[b]								
University–science	0.37	0.00	0.38	0.00	0.39	0.00	0.39	0.00
University–non-science	0.33	0.00	0.33	0.00	0.34	0.00	0.37	0.00
Professional college-science	0.48	0.00	0.50	0.00	0.51	0.00	0.49	0.00
Professional college–non-science	0.18	0.00	0.18	0.00	0.18	0.00	0.21	0.00
Track choice*parental education (not-university=reference)								
University–science*university			-0.04	0.33	-0.06	0.21		
University–non-science*university			-0.02	0.58	-0.04	0.38		
Professional college-science*university			-0.09	0.44	-0.11	0.36		
Professional college–non-science*university			-0.02	0.80	-0.03	0.73		
Track choice*LN(parental income)								
University–science*LN (parental income)					0.04	0.31		
University–non-science*LN (parental income)					0.05	0.27		
Professional college-science*LN (parental income)					0.05	0.54		
Professional college–non-science*LN (parental income)					0.02	0.68		
Track choice*sex (men=reference)								
University–science*women							-0.07	0.10
University–non-science*women							-0.11	0.01
Professional college-science*women							0.02	0.82
Professional college–non-science*women							-0.09	0.15

[a]: All individual characteristics as shown in Table 3, model 4 are included but not shown for reasons of parsimony, since the parameter estimates of individual characteristics are track choice dependent. All estimates have been multiplied by 10, to facilitate interpretation.

[b]: The impact of the expectation of success for a specific track on the odds to enrol in this specific track deviates significantly (at the $\alpha<0.10$ two-sided significance level) between all tracks.