



Working Paper

**Social Selectivity of Track Mobility in
Secondary Schools. A Comparison of
Intra-secondary Transitions in Germany
and the Netherlands**

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Editorial Note:

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Abstract

Previous research on track mobility based on rational choice theory on educational decisions has found that in particular children from higher social classes use the opportunities to upgrade in educational tracks for reasons of status maintenance, whereas children from lower classes are more likely to downgrade (e.g. for Germany: Hillmert/Jacob 2005).

However, these studies were limited to one country. But certain institutional variations in the costs or risks of different alternatives and of track mobility may have an influence on family background effects. Therefore we extend existing research by comparing two countries, Germany and the Netherlands, which both offer a tracked educational system, but differ in the shape and structure of the different tracks. For example, the systems offer a different array of educational tracks and alternatives to choose and to change, and they differ with regard to the extent of spatial and institutional cooperation of different schools. Both countries also established educational reforms in the late sixties, with the aim to increase track mobility between tracks. These reforms were more far-reaching in the Netherlands than in Germany, therefore we expect changes in social selectivity over time and differences between the two countries.

In our empirical analyses using data from the Family Survey Dutch Population and the German Life History Study we find that changing to a higher track, either before or after obtaining a first graduation, is more likely for students who face the threat of status demotion in both countries, whereas changing to a lower track is independent of status maintenance motives. In general, intra secondary transitions occur less often in the Netherlands than in Germany and are less motivated by status maintenance. Educational legislation reduces the effects of relative education of the parents only on upward mobility in Germany and only on downward mobility in the Netherlands.

Contents

1.	Introduction.....	1
2.	Theoretical background.....	2
2.1	Educational decisions and intra-secondary transitions.....	2
2.1.1	The rational choice approach for educational decisions.....	2
2.1.2	Intra-secondary transitions and social selectivity.....	3
2.2	Social selectivity in intra-secondary transitions in Germany and the Netherlands.....	4
2.2.1	The institutional setting of the German and Dutch education system.....	4
2.2.2	Social selectivity in a comparative perspective.....	6
3.	Data, Operationalizations and Methods.....	6
4.	Results.....	8
4.1	Descriptive results.....	8
4.1.1	Initial track allocation.....	8
4.1.2	Track mobility and educational supplements.....	10
4.1.3	Education of the parents.....	11
4.2	Multivariate Analyses.....	11
5.	Summary and conclusions.....	16
	References.....	17

1. Introduction

In most European educational systems students have to decide between different tracks within secondary education. A division into vocational and general higher secondary tracks after lower secondary school is common in, e.g., Sweden, Italy and Germany. In the German-speaking countries and in the Netherlands, general secondary education is tracked as well and the division into several hierarchically ordered tracks takes place after primary school. Proponents of this tracked structure claim that students are allocated according to their performance. Another advantage of tracked systems is that a homogenous performance level can be reached within schools (cf. Gamoran/Mare 1989, Hallinan 1996). Several empirical studies on social inequality at the entry into (lower) secondary education, however, unequivocally come to the conclusion that tracked educational systems tend to be highly selective at a very early age and that the track entered after primary school largely determines the subsequent educational career (e.g. Baumert et al 2001, Breen/Jonsson 2000 for Sweden, Lucas 1999 for U.S.A.). However, a requirement to correct track placement can arise from an erratic initial allocation or from an unexpected development of the learning progress after entry to secondary education. Thus, initial track allocation is not necessarily the final destination, as mobility between tracks is possible.

From the perspective of social stratification the issue of track mobility becomes particularly relevant when corrections of initial track placement occur in a socially selective way and thus either serve to secure advantages of privileged groups or to compensate for disadvantages. Previous research has shown that, for example, in Germany the likelihood of children from privileged families to make upward transitions is above average, either before or after their first diploma (Henz 1997a/b; Hillmert/Jacob 2004). In our paper we extend this research by using the parents' *relative* educational level. We compare parental education with the initial track placement, and argue that corrections of the initial track are carried out in particular when the track placement of the student is lower than the educational attainment of the parents. Hence, we test if the assumption of a relative risk aversion (Breen/Goldthorpe 1997) holds for intra-secondary mobility in the same way as for the scheduled transition between primary and secondary education.

To examine the influence of the institutional setting on that particular educational decision, we compare two countries, Germany and the Netherlands. By comparing two hierarchically tracked educational systems we will answer the question whether and in what respect *social selectivity of track mobility differs in the two countries* due to different institutional structures.¹ Germany and the Netherlands qualify for such a comparison because the two educational systems bear comparable features in lower secondary general education. Both systems offer hierarchically ordered tracks, with possibilities to upgrade one's educational career by changing to a more demanding and prestigious

¹ Previous research has shown that the effects of family background on *final educational attainment* appear to be considerably lower in the Netherlands than in Germany (Blossfeld/Shavit 1993; Prenzel et al. 2003: 24; Breen et al. 2005).

track or to downgrade to a lower track. Even after having completed a particular track successfully, the final (secondary) educational level may be attained later by completing a higher track. However, the two systems differ in detail, for example, regarding track-allocation criteria, curricula or spatial separation of the different schools. Furthermore, we investigate in how far educational reforms with the aim to increase permeability between tracks and reduce educational inequality in both countries had different effects on the social selectivity of track mobility.

In the following we will give a short introduction of the micro-theoretical background, outline the two educational systems and their changes during the past decades, and derive hypotheses concerning selectivity of track mobility in both countries and their changes over time. In chapter four we will test our hypotheses using data from the German Life History Study and the Family Survey of the Dutch Population.

2. Theoretical background

2.1 Educational decisions and intra-secondary transitions

2.1.1 The rational choice approach for educational decisions

Acknowledging that there are social differences in schooling performance due to the different distribution of cultural and educational resources in the family of origin – so-called “primary” effects (e.g. Boudon 1974, De Graaf 1984, De Graaf et al. 2000) - rational choice theory concentrates on the parameters influencing educational decisions beyond measured performance (“secondary” effects). The rational choice approach assumes that individuals make their educational decisions based on the perceived ratio of utility, costs and risk perception (cf. Erikson/Jonsson 1996, Breen/Goldthorpe 1997). Regarding costs of education, children with a high socioeconomic background profit from material resources which enable their parents to bear the direct and indirect costs of education. Further, highly educated parents consider the risk of failure in higher education more realistic and lower than parents who have not attended higher education. Extending this theoretical approach, the core argument of more recent approaches to explain social differences in decisions is the relative risk aversion (Breen/Goldthorpe 1997, Need/Jong 2001, Davies et al. 2002; van de Werfhorst/Andersen 2005, Breen/Yaish 2006; Stocké, 2007): individuals avoid downward social mobility respectively strive to maintain the family’s social position across generations. Since educational attainment is determining social status to a large extent, we assume that parents will encourage their children to strive for at least the same educational level as their own to avoid intergenerational status demotion. In the same way, this mechanism of relative risk aversion prevents children from lower educated parents to strive for higher education than necessary to maintain their family’s status, because the utility of a higher educational attainment would not outweigh the additional cost.

This approach has largely been used for the “standard” transitions within educational systems, namely those from primary to secondary education and from secondary to tertiary education (e.g. Jackson et

al. 2007). However, the central parameters of the rational choice approach can also be applied to the decision process for transitions within secondary education in a hierarchically tracked system: In educational systems where track allocation is mainly performance driven, students may be allocated to a track below their own, respectively their parents' aspirations. Obtaining a graduation from this track would be a serious threat to status maintenance and parents/students would strive to obtain a higher graduation. Even if the choice of a lower secondary track has been appropriate at the transition from primary to secondary education, further information on the students learning potentials and actual development of cognitive abilities and school performance may lead to a mismatch during secondary school. On the other hand, a student may also be placed initially in a track which is appropriate for status maintenance but emerges to be too demanding. In this case, changing to a lower track can restore the match between performance and track level but also bears a high risk of status demotion. In the following, we describe the different types of intra-secondary transitions and their consequences in more detail. Against this background we finally discuss social selectivity in track mobility.

2.1.2 Intra-secondary transitions and social selectivity

We define three types of intra-secondary transitions. Students can either change tracks before they obtain a first graduation or afterwards. *Upgrades* and *downgrades* occur before graduation while a *supplement diploma* can be attained after graduation from a lower track. In the following we outline these different options.

Downgrading is mainly an option when the current educational track is too demanding and the student is at risk to fail the term. Changing to a lower and less demanding track disburdens the student and increases his/her chance to complete the term and to continue education successfully. A quite common alternative to downgrades is grade retention, i.e. staying in the current track, repeating the term and continuing afterwards. Grade retention bears the additional direct and indirect costs of one more year in education, while downgrading in most cases even reduces schooling years. In order to come to a decision, the student has to balance the risk of status demotion against the direct and indirect costs of one additional year of education. As discussed above, we assume that parents strive to ensure at least the same educational level for their children as their own. Hence a student who would end up in a lower track than the secondary educational level of the parents is more likely to repeat the term instead of downgrading, while students who already are in a higher track than their parents are probably less eager to stay and rather avoid the additional costs²

Upgrading is an option for students whose performance is above expectations. A higher secondary diploma is particularly attractive if the parents' educational level cannot be reached in the current track. But upgrading also bears several costs. First, as the curriculum is more demanding than in the track previously attended, the risk of failure increases and the student has to make efforts to catch up

² One might also assume that parental support to improve a child's school performance also differs between different parental background. These 'primary' effects of social origin would not alter our expectations but strengthen the relative advantages of children with relative higher educated parents for upgrading.

with the higher level. Second, transaction costs usually involve changing the familiar environment and getting acquainted with a new situation, teachers, friends, etc. Third, higher tracks are longer and thus involve more direct and indirect costs. In sum, upgrading has a lot of drawbacks which might prevent children from taking this step.

Supplement diplomas are an alternative to upgrading. A student can graduate in the current track and attain a “*supplement diploma*” afterwards. Compared with an upgrade, supplement diplomas after first graduation are a ‘safe’ option as the lower track has already been completed. If the student fails s/he has no risk of finishing without a diploma. However, as the learning progress is faster in the higher track the gap between students in different tracks grows over time (Gamoran/Mare 1989, Hallinan 1996). Therefore, the effort of catching up might be higher the longer the student waits. So in their decision between upgrade and supplement, students have to balance the lower risk of failure of an early transition against the higher transaction costs, and they have to trade in the “safe” option of easily obtaining a lower graduation.

To summarize, under- and overperformance each offer two alternatives how to proceed in secondary school. We argue that the decision for either alternative is at least partly driven by motives of status maintenance, which are working independently of performance. A core point in these decisions is risk aversion: If intergenerational status maintenance is threatened either by underperformance or by lower initial track placement of the child, parents will prefer the alternative which enables them to maintain or reach the desired educational level.

These arguments lead us to the following general *hypotheses on social selectivity of track mobility*: children who would experience status demotion by downgrading are less likely to downgrade than children who will not descend by downgrading from the current track. Vice versa, children who cannot reach the secondary educational level of their parents in the current track are more likely to upgrade or to take a supplement.

2.2 Social selectivity in intra-secondary transitions in Germany and the Netherlands

2.2.1 The institutional setting of the German and Dutch education system

Germany

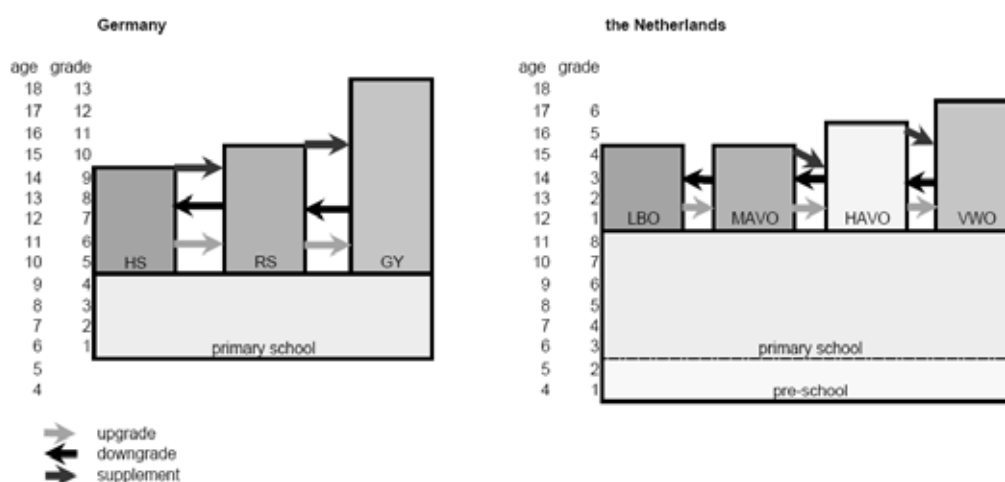
Despite being different in detail, the structure of the educational system of Germany is standardized in general lines throughout all 16 federal states (schematic illustration of the education system see figure 1). Compulsory education starts at the age of six years, when children enter primary school, which usually lasts four years. At the age of ten most students have to choose between three different tracks: *Volks-/ Hauptschule*, *Realschule*, and *Gymnasium*. *Volks-/Hauptschule* is the least demanding and least prestigious track. It lasts for five years. *Realschule* takes six years and is more demanding than *Hauptschule*; it leads to an intermediate secondary qualification. *Gymnasium* offers a nine year

pre-academic course.³ This track is the most demanding and most prestigious track in Germany. Graduation from the *Gymnasium*, the *Abitur*, qualifies for all post-secondary and tertiary institutions.

The Netherlands

Most Dutch students enter the educational system at the age of four since pre-school and primary school were centralized to form the *basisonderwijs* in 1984. Full compulsory schooling begins at the age of six, pupils will then remain for six years in primary education and choose between four different tracks (*LBO*, *MAVO*, *HAVO*, *VWO*) afterwards (see figure 1). The structure and contents of these tracks resemble those of the German educational system, with *LBO* (four years) and *MAVO* (four years) being equivalent to *Hauptschule* and *Realschule*, and *VWO* (six years) being equivalent to *Gymnasium*. The only exception is *HAVO* (five years), which offers intermediate general education but qualifies for direct entry into lower tier tertiary education (vocational colleges). Universities give admission only to *VWO* graduates.

Figure 1: Schematic illustration of the Dutch and the German educational systems and the possibilities to upgrade, downgrade and supplement



Reforms

In both countries, educational reforms at the end of the 1960s had the aim to make the educational systems more flexible and to facilitate intra-secondary transitions (for an overview see Cortina et al. 2003: 138f, v.d. Heijden, 2004). For example, early tracking was postponed by the introduction of intermediate years, and track allocation was improved by teacher recommendations after primary education. Also, the strict separation of tracks was loosened by converging curricula. This reduced the effort of catching up on the more advanced level in case of an upgrade or supplement and made these less risky. However, in both countries, these reforms were not established consistently and are still partly restricted to regions or federal states.

³ Besides the classical *Gymnasium*, there are also vocationally oriented *Gymnasien*, which offer a more specific education. The premises for obtaining the *Abitur* are almost the same, therefore we do not distinguish between general and vocational *Gymnasium*.

2.2.2 Social selectivity in a comparative perspective

The educational reforms probably had ambiguous effects on track mobility. The improved opportunity to supplement after first graduation is an alternative to early upgrading and may cause students to postpone an upgrade. Besides, both countries improved initial track allocation and thereby probably reduced erratic placement and the need for corrections. As a result of increased participation in higher tracks the (statistical) risk to upgrade decreases even further while the risk to downgrade increases over time. On the other hand, track mobility was facilitated through the harmonization of curricula in both countries. It is therefore hardly possible to predict in how far the quantity of intra-secondary transition has changed over time.

However, the harmonization of the curricula in both countries removed academic barriers for upward corrections by reducing the efforts for catching up. Upgrading and supplements became less risky and therefore more attractive for students who were not driven by status maintenance. This leads us to the *hypothesis on social selectivity over time*: social selectivity of upgrades and supplements decreases over time (after reforms) in both countries.

Nevertheless, Germany and the Netherlands differ with respect to the pathways to a supplement. In Germany, students can continue in the subsequent term right away, while Dutch students have to repeat one year in the higher track.⁴ The advantage of the latter might be that the risk of failure in the Netherlands is smaller because students get prepared for the challenges of the higher track in the repetition year. This advantage might be offset by the increased opportunity costs of the additional year, though. Replacing one obstacle by another probably results in a stable selectivity of supplements in the Netherlands.

From these considerations we derive the following *hypotheses on country differences in social selectivity of supplements*: social selectivity of supplements decreases in Germany after the introduction of the reforms, but does not decrease in the Netherlands, because the reduced transaction costs are counterbalanced by increased opportunity costs.

3. Data, Operationalizations and Methods

Analysing track mobility and the attainment of a second schooling certificate cannot be done by using cross-sectional data, as they usually contain only the highest educational attainment of respondents. We therefore need data on complete educational careers, including longitudinal information about transitions within and after secondary education. For Germany, the retrospective longitudinal study of the (West-)German Life History Study from the Max-Planck-Institute in Berlin provides such datasets for several German birth cohorts. For our analyses we use the information of cohorts born in 1939-41,

⁴ To be eligible for a supplement, certain conditions have to be fulfilled. The premises vary between federal states, but in general a successful completion of lower or medium secondary school is necessary. This usually is the case when an average grade-level has been achieved in the main subjects. For example, to be eligible to attend classes for a supplement after Hauptschule, besides having achieved certain grades of previous graduation, students have to fulfil additional requirements like additional classes in maths and in a foreign language. The prerequisites to obtain a supplement after Realschule are similar.

1949-51, 1954-55, 1959-61, 1964, and 1971. We can use 6319 respondents for the empirical analyses. For the Netherlands, we use the Family Survey of the Dutch Population, a four-wave (1993, 1998, 2000, 2003) cross-section study on a representative sample of the Dutch population containing detailed information about educational careers of the respondents and their family of origin. Unlike the Life History Study, this dataset is not a cohort study but comprises respondents from all birth years between 1914 and 1985. Because of the differences in the data structure, we cannot pool both datasets and analyse the countries simultaneously. All analyses are therefore run separately for Germany and the Netherlands. In order to ensure comparability between the two datasets as far as possible, we excluded all those respondents from the Dutch data who were born before 1935 and after 1970. This leaves us with 5609 respondents for the Netherlands.

We analyse transitions within the general tracks of secondary education as specified in the above description of the two educational systems, thus *Hauptschule*, *Realschule* and *Gymnasium*⁵ in Germany, and *LBO*, *MAVO*, *HAVO*, and *VWO* in the Netherlands. In the German case, we also include certificates of general education that are obtained within vocational education by passing an extra exam. In the Dutch case, upgrades, downgrades and supplements are defined analogously, but post-secondary vocational institutions like MBO do not offer independent general secondary qualifications.⁶ In the multivariate analyses we use multinomial logistic regressions. The dependent variable consists of four categories: “no change”, “upgrade”, “downgrade”, and “supplement”. Respondents who made a transition to the same school type, e.g. for reasons of relocation, were assigned to the “no change” category. In the German case, transitions which could not doubtlessly be categorized as up- or downgrades, e.g. from or into a *Gesamtschule*, are called ‘ambiguous transitions’ and form a fifth category. The reference category is students who obtained a secondary diploma without changing tracks before or after first graduation.

The *family background* considered here is the formal education of the highest educated parent. In the Netherlands, parent’s education is operationalised by lower secondary school or less (low-educated parents), higher secondary or vocational training (medium), and tertiary education (high), whereas in Germany we use the schooling certificates of the highest educated parent: no graduation/*Hauptschule* (low), graduation from *Realschule* (medium) and *Abitur* (high). The motive of status maintenance (via education) is operationalised directly by using the *relative educational level* of the parents compared to the child’s in a dichotomous variable⁷: if the student enters a lower track than the final secondary

⁵ Other German schools that cannot be clearly assigned to one of the tracks by attendance, such as *Gesamtschule*, *schools for special needs*, and *Reformpädagogische Schule*, are summarised as ‘other schools’ in the analyses.

⁶ Post-secondary non-tertiary educational tracks like *MBO* in the Netherlands and *Berufsschulen/Berufsfachschulen* in Germany are not defined as supplements if a general diploma has not been attained.

⁷ Breen & Yaish (2006) refer to the difficulty of accurately proxying the beliefs of students about which level of schooling might be sufficient to reproduce the social status of the parents. We acknowledge the fact that the parental educational level is only a gross proxy, especially as upward mobility during the individual occupational career must be expected and considered as well as intergenerational upward mobility across cohorts. Taking this into account we believe that students have only a limited (myopic) view on the returns to their educational attainment and their future class position. Regarding the fact that especially the dynamics of the returns to education across cohorts are difficult to assess, we adhere to the common use of parental education as benchmark for children’s educational aims.

graduation of the highest educated parent, the variable is coded 1, otherwise 0. Changes across time are tested with *cohort* dummies. For comparability, the respondents of the Dutch Family Survey are clustered into cohorts that grossly correspond with the cohorts of the German Life History Study. As we do not analyse separate tracks for reasons of economy, we use dummies for the *initial secondary track* chosen at the first transition from primary to secondary education. These dummies are introduced as control variables to ensure that no bias from shifting allocation distribution distorts our results. We also introduce an interaction between relative parental education and the cohorts which profited from the *educational reforms* in the late sixties/early seventies.

In order to represent students who changed tracks more than once, we constructed “person-transition” files. The records in these files represent transitions instead of respondents so that sequential transitions can be analysed simultaneously. The relative education of the parents and the initial track can thus vary within the same respondent due to upgrades and downgrades and are adapted where necessary.

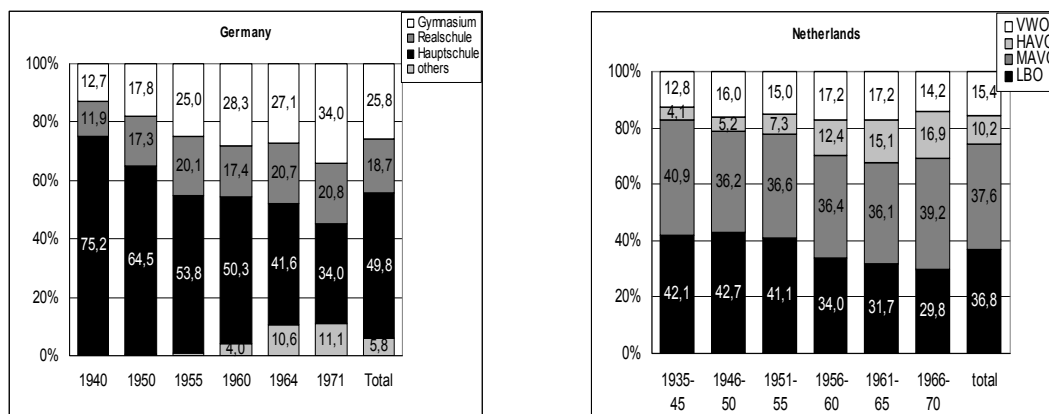
4. Results

4.1 Descriptive results

4.1.1 Initial track allocation

Probabilities for intra-secondary transitions are structured by the distribution of students into the different tracks after they leave primary school. Figure 2 shows initial track allocation in both countries by cohort. Educational expansion seems to be more dramatic in Germany than in the Netherlands. We observe a strong decrease in participation in the *Hauptschule*, and participation in the *Gymnasium* almost tripled in Germany, while the growth in *VWO* in the Netherlands is modest and seems to be offset by an increased participation in *HAVO*. With regard to the two youngest cohorts born in 1964 and 1971, the introduction of new school types like *Gesamtschule* is reflected in the German data, as more than ten percent of the respondents chose one of those.

Figure 2: Secondary tracks after primary school by birth cohort



Source: West-German Life History Study; Family Survey of the Dutch Population, own calculations

Track allocation to intermediate and higher tracks is not only increasing over time but also depends on the educational background of the parents. In both countries initial track allocation is strongly related to parental education, but to a lesser extent in the Netherlands than in Germany (see tables 1 and 2). Regarding the more relevant variable 'relative parent's education' for status maintenance, 524 of all students (9%) in Germany are placed initially in a lower track than their parents' educational level. In the Netherlands the share of children attending a school below their parents' level is higher. In total, 728 students (13%) entered secondary school at a level below their parents. This indicates that initial track allocation is less driven by parental education in the Netherlands than in Germany.

Table 1: Initial track choice after primary education by parents' education, Germany

Germany	Parents' education (column percent)				Relative parents' education (row percent)			N
	Track	Low	Medium	High	Total	Same or lower level	Higher level	
Haupt-/Volksschule	62.6	27.0	13.7	49,2	88.9	16.4	100	2956
Realschule	18.4	24.2	12.3	18,8	93.1	6.9	100	1125
Gymnasium	15.0	40.4	64.1	26,4	100.0	0	100	1628
Other schools	4.1	8.4	10.0	5,7				
Total	100	100	100	100				
N	4041	1187	782	6010				

Source: West-German Life History Study, own calculations

Table 2: Initial track choice after primary education by parents' education, the Netherlands

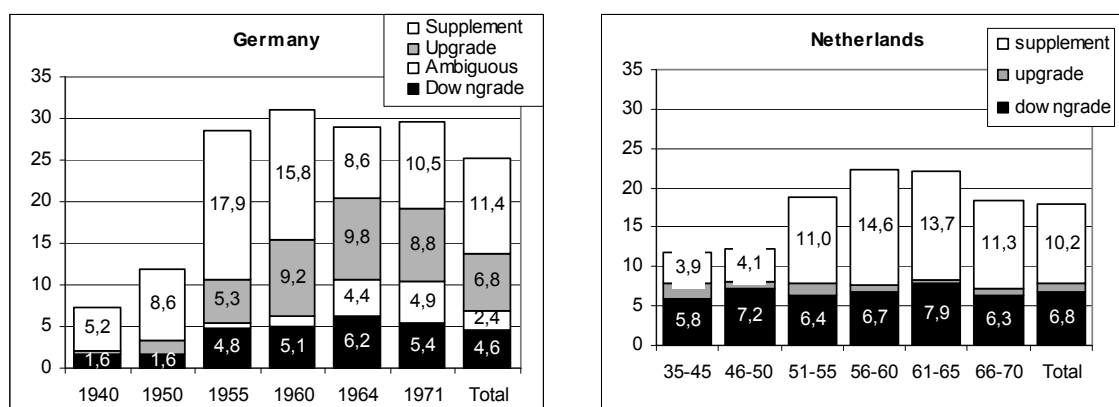
the Netherlands	Parents' education (column percent)				Relative parents' education (row percent)			N
	Track	Low	Medium	High	Total	Same or lower level	Higher level	
LBO	55.8	32.5	7.8	36,2	85.5	14.9	100	1959
MAVO	33.4	42.4	29.5	37,9	83.9	16.1	100	2047
HAVO	5.5	10.8	18.8	10,3	65.9	17.3	100	557
VWO	5.3	14.2	44.0	15,6	100.0	0	100	844
Total	100	100	100	100				
N	1652	3009	746	5407				

Source: Family Survey of the Dutch Population, own calculations

4.1.2 Track mobility and educational supplements

In the German data, we observe 1646 intra-secondary transitions of the 6319 respondents. Of these respondents, 120 made more than one transition during secondary education. Pooling all transitions results in 423 upgrades, 297 downgrades, and 748 supplements.⁸ In the Netherlands, we observed 908 transitions of 5553 respondents, but only 58 of these made more than one transition. In total we observe 67 upgrades, 346 downgrades and 495 supplements. In the following, we use the pooled data of all transitions for our analyses. Hence, the population of our analyses is not respondents, but records (episodes) in a 'person-transition' file.

Figure 3: Distribution of intra-secondary transitions by cohort



Note: The basis for percentages are 6537 episodes of 6319 respondents in Germany and 4637 episodes of 4579 respondents in the Netherlands

Source: *West-German Life History Study; Family Survey of the Dutch Population, own calculations*

Figure 3 shows the distribution of the different forms of track mobility across cohorts in Germany and the Netherlands. In Germany (left figure), the share of upgrades among all transitions increases until the 1964 cohort and declines afterwards. A similar curvilinear development can be observed for the supplements and downgrades, while the share of ambiguous transitions is increasing constantly. In the Netherlands (right figure), a curvilinear trend with a peak in the 1956-60 cohorts can only be observed for supplements. We find minor fluctuations without a clear trend for downgrades and upgrades. In the Netherlands, the supplement is clearly preferred to the upgrade, while in Germany upgrades are a fairly well-established strategy to reach a higher educational level. The dynamics may be partly explained by the educational expansion in the two countries, which causes shifts in the risk populations for upgrades/supplements and downgrades. In Germany, a large proportion of the respondents was allocated to the lowest track in the oldest cohorts. Due to the increasing participation in the medium and higher tracks, the risk group for downgrading is growing over time. In the Netherlands, the participation in intermediate tracks was at a comparatively high level in the earliest

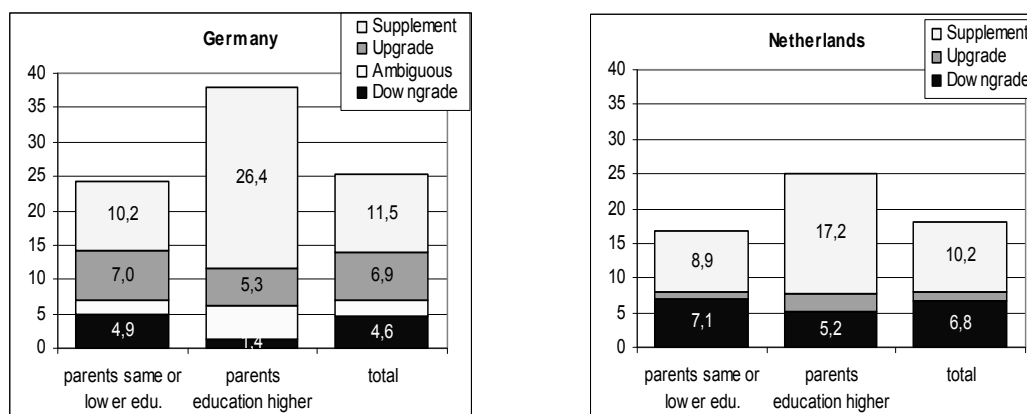
⁸ As we observe students with more than one intra-secondary transition, the total number of transitions exceeds the number of respondents. We also observe 178 transitions that cannot be classified as upgrade, downgrade or supplement

cohorts already. However, despite the decrease in risk groups for upgrades and supplements in both countries, we observe an increase in upward corrections. The demand for upward corrections has thus increased over time and was possibly even enhanced by the improved permeability after the reforms. It has to be pointed out, however, that the increase can be observed clearly before the reforms were established in both countries, namely for students born in the early to mid-fifties, which indicates that the reforms did not necessarily trigger off this boom of intra-secondary transitions. There is hardly any additional increase after the introduction of the reforms, and in the successive cohorts the number of corrections declines again.

4.1.3 Education of the parents

Considering the relative education of the parents to the child's, in Germany 45 percent of the students who are placed in a track lower than their parents change that track (figure 4). In the Netherlands, the proportion is slightly lower, as a quarter of students who are below their parents' education change tracks. Upward corrections clearly dominate. In both countries the rate of track mobility is considerably lower when the parental education is equal or lower than that of the student, while downgrades in particular are more likely here than in the former group.

Figure 4: Intra-secondary transitions by relative education of the parents



Source: West-German Life History Study; Family Survey of the Dutch Population, own calculations

4.2 Multivariate Analyses

In the following we estimate a set of multinomial logit regressions. We ran three nested models: in the first model only sex and relative parental education are included. In the second model we add the educational level of the parents, cohort dummies and the current track. Introducing the absolute and relative education of the parents simultaneously allows us to identify the net effect of parents' relative education. By isolating the net effect, we derive the strength of status maintenance as motivator for intra-secondary transitions but exclude confounded effects of parental education as such, taking into

consideration that only higher educated parents can have a higher relative education than their children. To test for a varying influence of parents' relative education over time, an interaction term consisting of a dummy for post-reform cohorts and relative education of parents is included in the third model. In Germany, the post-reforms cohorts are those born 1964 and 1971, in the Netherlands the cohorts 1956-60 and all later cohorts.

In Germany (table 3), gender does not influence the relative risk to upgrade, while boys are more likely to downgrade and take a supplement than girls. As predicted, the relative education of the parents has positive effects on upward corrections (upgrade and supplement) and negative effects on downgrades.

The effects of relative education collapse considerably under control of the absolute parental education, cohort and initial track. However, for upgrades and supplements the main conclusion remains valid: being placed in a track which is not sufficient for status maintenance increases the relative risk to make an upward correction. Surprisingly, the effect for downgrade is reverse in model II. While the absolute education of the parents has a negative effect, the relative education has a positive though insignificant effect. We thus may conclude that the downgrade risk is rather determined by the initial track placement and parental education than by motives of status maintenance. Effects of absolute parents education on upgrades are weak, indicating that status maintenance is a strong motivator for the upward correction before first graduation. Absolute parental education plays a more important role for supplements. We find a strong increase of all types of intra-secondary transitions across cohorts, but this cannot be attributed to the introduction of reforms at the end of the sixties. This might be a consequence of the increasing level of initial tracks and the improved track placement, which should reduce the need for upward corrections, although these are facilitated after the reform. Upward corrections are most likely for students of the *Realschule*, while downgrades occur most from the *Gymnasium*. Thus, the middle category *Realschule* seems to be more permeable with regard to the higher track than the lower track whereas the allocation to the *Gymnasium* is followed more often by wishful thinking than by actual performance, which leads to a downward correction afterwards. Introducing the cohort interaction with relative education of the parents reveals that the status maintenance motive plays a decreasing role for upward corrections, while effects on downgrades remain stable over time

Table 3: Intra-secondary transitions (upgrades UP, downgrades DN and supplements SP), multinomial regression, (Odds ratios), robust standard errors, Germany

Germany	Model I			Model II			Model III		
	UP	DN	SP	UP	DN	SP	UP	DN	SP
Sex (♂)	1.000	1.460 **	1.622 ***	.968	1.546 **	1.648 ***	.970	1.544 **	1.648 ***
Education parents higher	4.146 ***	0.169 **	3.043 ***	2.084 **	1.337	1.551 *	2.952 **	1.580	2.137 **
Parents' education									
Hauptschule or lower				ref.	ref.	ref.	ref.	ref.	ref.
Realschule				1.393	0.721 *	1.600 **	1.382	0.719 *	1.576 **
Gymnasium				1.848 +	0.505 **	2.147 **	1.804 *	0.507 **	2.104 **
Cohort									
1939-41; 1949-51				ref.	ref.	ref.	ref.	ref.	ref.
1954-55				7.900 ***	2.131 **	4.229 ***	8.301 ***	2.169 **	4.404 ***
1959-61				16.70 ***	2.146 **	4.215 ***	17.39 ***	2.152 **	4.366 ***
1964				15.12 ***	2.763 ***	2.033 ***	17.25 ***	2.807 ***	2.330 ***
1971				14.35 ***	1.868 *	2.622 ***	16.52 ***	1.902 *	3.050 ***
Initial track resp. first graduation									
Hauptschule				.766 *	.000	.468 ***	.775 +	.000	.475 ***
Realschule				ref.	ref.	ref.	ref.	ref.	ref.
Gymnasium				.000	1.518 **	.000 ***	.000	1.511 **	.000 ***
Other schools				.000	.000	.000	.000	.000	.000 ***
post-reform cohorts*rel. education parents							0.571 *	.679	.509 **
pseudo R ²		.0254			.2220			.2231	
Log pseudolikelihood		-5359.3072			-4278.3239			-4271.9735	
N (Events)	410	278	718	410	278	718	410	278	718
N (Episodes)		6223			6223			6223	
N (Persons)		6010			6010			6010	

Notes:

1. Reference category: no intra-secondary transition or lateral transition (n=4647).
2. The results for unclear transitions (fourth category in analyses, n=170) are not presented in the table.
3. Because of the small number of transitions the cohorts 1939-41 and 1949-51 were collapsed to be used as reference category.
4. Level of significance: p: +<0.10; *<0.05; **<0.01; ***<0.001.
5. The odds ratios (relative risks, $\exp(\beta)$) show by which factor a characteristic raises or lowers the conditional probability of a person to undertake the respective intra-secondary transition compared with the reference category. Values greater than 1 mean a risk increase, values smaller than 1 mean a risk reduction.

Source: West-German Life History Study, own calculations

In the Netherlands (table 4), boys have a significantly lower relative risk to upgrade, while the gender effects are not significant for downgrades and supplements. Students who entered secondary education in a lower track than the highest secondary education of their parents have a higher relative risk to upgrade or supplement compared to students who entered the same secondary track as or a higher secondary track than their parents. This is in line with our hypotheses that students who are threatened by status demotion are more likely to correct upwardly. The effects of relative parental

education on downgrade probability are below one but do not reach significance. Controlling for absolute parental education, cohort and initial track deflates the effect of relative parental education on upgrading and supplements, but the remaining coefficient indicates that there are autonomous effects of parents' relative education. The relative risk of taking a supplement is increases in all cohorts except in the 1946-50 cohort. No significant changes over time could be found for upgrades and downgrades. Upgrade and supplement probability is highest if *MAVO* is the initial track and is significantly lower for *LBO*. This is probably due to the fact that *LBO* leavers can easily obtain qualifications equivalent to a *MAVO* diploma in vocational education; the incentive to upgrade from *LBO* is thus limited, while an upgrade from *MAVO* results in useful extra qualifications. Downgrade chances do not seem to be affected by the initial track. The interaction between the post-reform cohorts and the relative education of the parents in model III is neither significant for upgrades nor supplements, but the effects for downgrades increase over time indicating that downgrading becomes less determined by parental relative education over time.

Table 4: Intra-secondary transitions (UP=upgrades, DN=downgrades, SP=supplements) multinomial regression. (Odds Ratios). robust standard errors. The Netherlands

the Netherlands	Model I			Model II			Model III		
	UP	DN	SP	UP	DN	SP	UP	DN	SP
Sex (♂)	.499 [*]	.847	.962	.451 ^{**}	.813	.870	.451 ^{**}	.813	.870
Education parents higher	3.77 ^{***}	.689	2.347 ^{***}	1.738	.858	1.398 ^{**}	1.636	.576 ⁺	1.511 ^{**}
Parent's education									
Low				ref.	ref.	ref.	ref.	ref.	ref.
Middle				1.274	.901	1.701 ^{***}	1.287	.915	1.685 ^{***}
High				2.947 ⁺	.791	2.120 ^{***}	2.988 ⁺	.807	2.092 ^{***}
Cohort									
1935-45				ref.	ref.	ref.	ref.	ref.	ref.
1946-50				.456	1.300	1.122	.455	1.310	1.118
1951-55				.709	1.221	3.257 ^{***}	.712	1.227	3.249 ^{***}
1956-60				.647	1.058	4.665 ^{***}	.651	1.056	4.668 ^{***}
1961-65				.455	1.242	4.141 ^{***}	.429 ⁺	1.142	4.337 ^{***}
1966-70				.416	.891	2.636 ^{***}	.388	.818	2.763 ^{***}
Initial track resp. first graduation									
LBO				.409 ^{***}	.000	.306 ^{***}	.409 ^{**}	.000	.306 ^{***}
MAVO				ref.	ref.	ref.	ref.	ref.	ref.
HAVO				.335	1.311	.335 ^{***}	.336 ^{**}	1.309	.335 ^{***}
VWO				.000	1.133	.000	.000	1.125	.000
post-reform cohorts*rel. education parents							1.212	2.357 ⁺	.850
pseudo R ²			.0136			.1367			.1376
Log pseudolikelihood			-3039.501			-2660.194			-2657.355
N (Events)	60	353	495	60	353	495	60	353	495
N (Episodes)			4637			4637			4637
N (Persons)			4579			4579			4579

Notes:

1. Reference category: No intra-secondary transition or lateral transition (n=4675).

2. Level of significance: p: +<0.10; *<0.05; **<0.01; ***<0.001.

3. The odds ratios (relative risks. $\exp(\beta)$) show by which factor a characteristic raises or lowers the conditional probability of a person to undertake the respective intra-secondary transition compared with the reference category. Values greater than 1 mean a risk increase. values smaller than 1 mean a risk reduction.

Source: Family Survey of the Dutch Population. own calculations

5. Summary and conclusions

In our theoretical considerations we suggested that the principle of relative risk aversion in educational decisions is applicable to intra-secondary transitions in the same way as to scheduled, institutionalised transitions. We thus proposed that students who are placed in a track below the educational level of their parents would strive to secure their parents' status by making an intra-secondary transition to a higher track. They have a higher chance to make upward corrections and a lower chance to downgrade than their classmates who are not threatened by status demotion. The relative risk to downgrade is independent of the relative education of the parents in both countries when absolute education of the parents and initial track placement is taken into account. We compared both countries to examine in how far different institutional settings affect social selectivity of intra-secondary transitions before and after educational reforms in the 1960s. German students are more prone to correct their track placement than Dutch students and these changes are particularly likely when status maintenance is threatened by a lower track placement than their parents. Whereas in Germany the relative education of the parents influences upgrades and supplements positively, in the Netherlands this variable has only an impact on supplements. In general, supplements seem to be a far more popular strategy to correct initial track placement in the Netherlands than upgrades. Despite our presumption that changing tracks should be easier in the Netherlands, we observe only a very small percentage of students who upgrade. Supplements are about equally popular as in Germany, despite the higher opportunity costs. We found support for our hypotheses of stable effects of relative education over time on supplements in the Netherlands, while these decrease in Germany. Thus, in Germany, the reforms seem to have the desired effects of removing barriers for supplements and facilitate these. Supplements became more attractive to students who were not threatened by status demotion while in the Netherlands, the positive effect of improved permeability has possibly been offset by increased opportunity costs for a supplement. We do find, however, decreasing effects of relative parental education on downgrades in the Netherlands. While the downgrade probability used to be driven to a large extent by the relative education of the parents before the reform, this seems to be no longer a decisive factor in the decision whether to downgrade or not. In Germany, to the contrary, the relative education never had a significant influence on the downgrade probability, neither before nor after the reform. Considering the general effect of the reforms, we found that permeability indeed increased, but that this cannot directly be attributed to the reforms. A considerable increase in upward transitions has taken place immediately before the reforms came into effect and there is hardly an additional effect after their actual introduction.

To sum it up, our results complement existing comparative studies on tracking as we point out differences between similarly tracked systems regarding track mobility that may partly explain different overall educational inequalities. In both countries intra-secondary transitions are a well-established strategy to correct initial track placement, in particular by children who are placed in lower tracks than their parents' education. Track mobility is legitimized by the deficient nature of initial track allocation and should ideally serve to secure homogeneous learning groups in all tracks. It is beyond the scope of this paper to scrutinize performance measures, but it would be worthwhile to separate different

types of motivations for track mobility, like those directly related to performance and those related to relative risk aversion. Focusing on the educational system, we applied a 'supply-side' perspective on educational outcomes; however, the question if factors of the demand side of the labour market also influence educational decisions, track mobility and gaining educational supplements remains open for further research. Thus, it should be an objective for further research to (re-)model the decision of track mobility and to gather empirical data on the information and parameters students, parents - and teachers - actually use in making that decision.

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