Family Background and Educational Attainment in the Netherlands for the 1891–1960 Birth Cohorts

Paul M. De Graaf and Harry B.G. Ganzboom

Introduction

In the last decade, stratification research in the Netherlands has followed the lines of international research (for an overview see Uitve 1984, 1989). It has concentrated on the intergenerational inheritance of occupation and social class, and to some extent neglected the important intermediate role played by education in the intergenerational creation and reproduction of status. This also applies to our own analyses of trends in social stratification in the Netherlands, which started with comparisons of intergenerational occupational mobility at different points in time: the first analysis dealt with a historical comparison of intergenerational prestige mobility tables for men in 1954 and 1977 (Ganzboom and De Graaf 1984); the second analysis compared ten intergenerational class mobility tables for men for surveys ranging from 1970 to 1985 (Luijkx and Ganzboom 1989). In both studies we used log-linear scaled association models to remove the effects of marginal distributions, and metric constraints to perform powerful comparisons and to summarize possible trends within one or two degrees of freedom. The conclusions drawn from these two independent historical comparisons of intergenerational occupational mobility were identical: over the last decades, the intergenerational occupational association (that is, the degree to which occupational status is inherited from one generation to the next) has loosened significantly. At the time this conclusion seemed to be at odds with the existing literature on constant fluidity, but more recent and powerful analyses for other countries have also shown a trend towards more relative mobility (Ganzboom, Luijkx and Treiman 1989). In more recent work we have supple-
mented these analyses of intergenerational occupational mobility with bivariate analyses of intergenerational educational mobility between fathers and respondents (De Graaf and Ganzeboom 1990). Using log-linear scaled association models the results of this analysis strongly parallel those of the earlier ones on occupational mobility: we can observe a substantial downward trend of the association in the intergenerational educational mobility tables for both men and women across birth cohorts. The present study elaborates on our 1990 educational mobility analysis.

Research Problems and Hypotheses

In order to analyze educational stratification in the Netherlands, we will first estimate OLS regression models to assess trends in the effects of father's occupational and educational status on final educational attainment for both men and women. We will then extend the analysis with an assessment of the effects of family background on transitions in the educational career. Thus educational attainment is understood in two ways: as a single measure; and as a series of separate transitions between different grades of education. In this respect we follow Mare (1980, 1981b), who argued that it is useful to complement the cross-sectional type analysis of educational attainment on family background and an analysis of educational transitions, because the two different types of analysis give different answers to questions about change in the impact of family background on educational attainment. Our first two research questions then are: is what degree does final educational attainment depend upon family background and does this change over time? and to what degree do educational transitions depend upon family background and does this change over time? In both cases we have used two family background indicators, father's educational attainment and father's occupational status, as predictor variables. This raises the relative explanatory power of these two dimensions and leads to our third research question: which family background factor is most important in educational careers, father's occupational status or father's educational status, and does this change over time?

With respect to the first question, historical changes in the determination of the final level of educational attainment, we will show that the impact of family background has increased considerably and constantly over time. The observed trends conform to observations made on intergenerational occupational mobility (Ganzeboom and De Graaf 1984; Luijkh and Ganzeboom 1989), and educational homogeneity (Sixma and Uitve 1984), and thus seem to reveal a persuasive trend towards more openness in Dutch society.

With respect to the second issue, historical changes in family background effects on educational success at given transition points in the educational career, we expect that the pattern of transition rates will display the same pattern as observed elsewhere that the effects of social background are greatest at the beginning of the educational career, and smaller in the more advanced stages (see Mare 1981b). The decreasing effect of parental status on educational attainment at the higher transitions of the educational career, together with the historically increasing proportion of individuals making higher-level transitions, means that trends in the metric effects of parental status need not parallel historical developments at each transition point. Examples of this are given by Mare (1980, 1981b), who found a historically increasing effect of family background at transitions, and a stable metric effect on final educational attainment in the United States, and by Smith and Cheung (1986), who, in their study of the Philippines, found a historically stable effect at each transition and an overall declining metric impact.

The development of the impact of social background on final educational attainment and on educational transitions over time is an important piece of information about the validity of the two competing theoretical perspectives on educational stratification: modernization theory and cultural reproduction theory (Collins 1979; De Graaf 1986; Ganzeboom, De Graaf, and Robert 1990). The one hand, functionalism theory posits the lowering of financial and social thresholds, and suggests that the influence of (ascended) family characteristics will decline with modernization. On the other hand, cultural reproduction (conflict) theory suggests that this influence will be stable.

This supposed trend toward meritocracy appeared to be supported by two tendencies, one intended, and one accidental. First, Western countries promoted education aimed at equality of opportunity. In the 1950s and 1960s states started to sell education at below its real cost, partly because they thought that international economic competition demanded a well-educated labor force, and partly because a value was placed on individual development per se. Secondly, increasing affluence and job security caused a reduction in both the direct and opportunity costs of education. Thus, modernization theory hypothesized that financial resources of the family of origin would no longer have a direct effect on educational outcomes, and that, for this reason the dependence of educational attainment on family background would necessarily be weakened.

Cultural reproduction theory counters these arguments by pointing to the enduring influence of status culture in education, particularly in secondary and tertiary schooling (Bourdieu and Passeron 1977). It is stressed, that the educational system is not a neutral testing device for the capabilities of individuals, but functions instead as a filter that favors those children who bring with them from their homes the cultural preferences and competences that are rewarded in school. For this reason, and because selection within the educational system is often self-selection produced by a mismatch between the cultural background of children and the (perceived) cultural patterns of school, equality of results has not been achieved despite the existence of equality of financial opportunity. The proper test for such a conflict theory of stratification is to see whether the association between family background and children's educational attainment can be explained by control over cultural resources (DiMaggio 1982; DiMaggio and Moir 1985; De Graaf 1986, 1988).

The assessment of historical developments in the relative effects of family background factors on educational attainment does not tell us anything about
the implied mechanisms, but it can help us to make a decision as to the relevant weight to be attached to the competing theories. With respect to the third issue—the relative effects of father's education and father's occupation—our expectations are shaped by the competing views of modernization theory and cultural reproduction theory. Modernization theory, on the one hand, posits a decreasing influence of family background by pointing to lowered financial thresholds. Given that father's occupation is a more direct indicator of family income than father's education, we would expect modernization to show up more strongly in the impact of father's occupation than in the impact of father's education. On the other hand, cultural reproduction theory argues that control over cultural codes is responsible for the enduring inequality of educational opportunity, and that father's education is a more direct indicator of important cultural resources than father's occupation. The two theories are in fact compatible and lead us to conclude that the impact of father's education is stronger and more resistant to change than that of father's occupation.

The Educational System in the Netherlands

In comparison to the comprehensive and essentially one-dimensional progression that characterizes the educational system in the United States, the Dutch educational system is relatively complex. Fortunately, however, the changes and reforms that have taken place during the period under analysis have not altered the fundamental contours of the system, although the names of the various schools have changed (see Figure 4.1).

Primary Education

Primary school has been compulsory for children aged from six to twelve years throughout the period analyzed (1900-1980). Pre-primary school or Kindergarten was quite common for children aged four to five years of age, but was not compulsory during the educational careers of the birth cohorts investigated in this study. In primary school children are taught general non-vocational skills. Classes are usually made up of children with a wide variety of aptitudes who are taught a common curriculum, although some informal streaming may take place towards the end of primary school. Parallel to the standard primary education there is a small and in the present context, negligible, stream of special education for children with particular cognitive and/or behavioral problems.

Secondary Education

Throughout the entire period under review, the branching point in the Dutch educational system comes at the age of twelve, after six years of primary education. This is the major turning point in the educational career when students decide on the type and level of secondary education in which to enroll. It has been quite normal for children to choose from among up to six alternatives, each with a different level of complexity and prospects of conti-

![Figure 4.1: Contours of the Netherlands' educational system](image)

**Abbreviations:**
- LBO: junior vocational training
- MBO: senior vocational training
- HBO: vocational colleges
- MAVO: junior general secondary education
- MAVO: senior general secondary education
- VWO: pre-university education

The most fundamental choice, however, is between the vocational track (that is, preparing for manual occupations), and the general track. Secondary education falls into two groups: the lower level takes in lower occupational and lower general education (LBO and MAVO respectively) and is normally completed by the age of fifteen or sixteen; the higher level also takes in a vocational and a general track (MBO and MAVO and VWO respectively), which is normally completed by the age of about eighteen. It is important to note that in many cases the transition from lower to higher secondary education is not a true transition as virtually all students with a higher general secondary education diploma have already chosen this type of education at the age of twelve. Students who complete the higher secondary level in the vocational track may have come from both the vocational and general lower secondary tracks. Both tracks of higher secondary education lead to a diploma, which gives access to tertiary education, albeit to different tracks.

Tertiary Education

Tertiary education is also divided into two tracks: the university level; and colleges for non-academic professions (HBO). Both last for from four to six years and are normally completed by the age of twenty-three. In this study, we distinguish between four categories of the highest educational level attained:
Family Background and Educational Attainment

...each other in the career. This is especially the case for transitions in secondary schooling, where different types of school curriculum run parallel to one another. After primary education most students go directly into either a lower or a higher level of secondary education and remain in that track. In the analysis of transitions reported below, we have chosen to disregard these issues, largely because the three decision processes involved take place one after the other in the educational career.

Data

In order to cover a maximum time-span and a maximum number of individuals, we have merged all available national Dutch cross-sectional data-sets which contain information on the educational attainment of the respondents and their fathers, together with respondent’s gender and year of birth (see Table 4.1). The analysis is limited to respondents for whom we have complete information on education, father’s education, father’s occupation, age, and gender, and who were aged twenty-five or over at the time of the interview. Without this latter limitation we would have created a selection bias on the dependent variable “educational attainment” because the longest educational careers are not completed until the age of twenty-five. Therefore our analysis will be limited to the seven ten-year cohorts born before 1960.

<table>
<thead>
<tr>
<th>Table 4.1 Data sources used</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Election Survey 1970</td>
</tr>
<tr>
<td>Seven Nations Study (Irving and Neimeyer)</td>
</tr>
<tr>
<td>Income Satisfaction Survey 1976</td>
</tr>
<tr>
<td>Life Situation Survey 1977 (Central Bureau of Statistics)</td>
</tr>
<tr>
<td>National Election Survey 1977 (Research Group National Election Survey, 1973)</td>
</tr>
<tr>
<td>Political Action, second survey (van der Klaauw)</td>
</tr>
<tr>
<td>Prestige and Occupation Mobility (Ulfar and Slade, 1983)</td>
</tr>
<tr>
<td>National Labor Market Survey Program (Chen and Weis, 1984)</td>
</tr>
<tr>
<td>Organization Stratification (Labor Market Research (OSRA, not in Steinmetz Archives)</td>
</tr>
<tr>
<td>Income Satisfaction Survey 1982 (Steinmetz and Van Wijngaarden, not in Steinmetz Archives)</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Between them, the four levels of schooling and the three transitions sum up the general contours of the Dutch educational system, but may conceal some important differences. First, all those who have no diploma after primary education are classified in the lowest educational category. To some extent this conceals real differences in educational attainment: members of the older birth cohorts largely fall into the category “only primary education,” whereas there may in fact be substantial differences in acquired skills among individuals. Second, although our approach produces an adequate representation of the final level of educational attainment and can therefore be used as a dependent variable in a regression analysis, it obviously has some drawbacks when it comes to mapping educational careers. Students entering a particular school type but not passing the examinations are recorded as not having had that particular level of education at all. This may conceal transition probabilities within the educational career. On the other hand, the procedure aggregates several transitions within a certain curriculum into a single transition, and therefore still matches selection procedures within the educational career. The third, and probably the most serious (conceptual) problem, is that our four levels of educational attainment do not necessarily follow
(see Table 4.2). The operational definitions of the variables analyzed are shown in Table 4.2.

The oldest cohort are those born in the 1890s and who first completed their educational careers around the year 1900. The youngest people in our analysis were born in 1960 and have only recently finished their educational careers. Thus, the analysis covers mobility processes from 1900 to 1980, but, since both the oldest and youngest cohorts are sparse, our conclusions primarily reflect events in the period 1910–1970.

Different coding schemes for educational attainment were used in the ten surveys, and these sometimes varied within a single survey between respondents and their fathers. However, all the graduations of educational attainment of respondents and their fathers were recoded into our fourfold classification with the help of the detailed educational codings used in the individual surveys.

Father’s occupational status is coded according to two alternative classification schemes. The first, with which we will work only briefly, is a modified class scheme (Erikson and Goldthorpe 1987) (see Table 4.2). In order to limit the number of parameters in our models, we will primarily use a metric scale, for which we will use a Dutch Socio-Economic Index of occupations (SEI), developed by Klaassen and Luijks (1987). In addition to being parsimonious, this has the conceptual advantage of being the most straightforward measurement of economic resources in the parental family.

### Table 4.2 Description of classifications used

<table>
<thead>
<tr>
<th>Birth cohort</th>
<th>men</th>
<th>women</th>
</tr>
</thead>
<tbody>
<tr>
<td>1891–1900</td>
<td>112</td>
<td>91</td>
</tr>
<tr>
<td>1901–1910</td>
<td>263</td>
<td>282</td>
</tr>
<tr>
<td>1911–1920</td>
<td>620</td>
<td>646</td>
</tr>
<tr>
<td>1921–1935</td>
<td>1097</td>
<td>812</td>
</tr>
<tr>
<td>1931–1940</td>
<td>1361</td>
<td>1009</td>
</tr>
<tr>
<td>1941–1950</td>
<td>1494</td>
<td>1025</td>
</tr>
<tr>
<td>1951–1960</td>
<td>961</td>
<td>940</td>
</tr>
<tr>
<td>Total</td>
<td>6128</td>
<td>5116</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Educational attainment of respondents and their fathers</th>
<th>Level completed</th>
<th>Age at completion</th>
<th>Decision age span</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Primary (no diploma afterwards)</td>
<td>12–13</td>
<td>12 through 13</td>
<td></td>
</tr>
<tr>
<td>2. Secondary, lower level</td>
<td>13–16</td>
<td>12 through 16</td>
<td></td>
</tr>
<tr>
<td>3. Secondary, higher level</td>
<td>18–19</td>
<td>12 through 18</td>
<td></td>
</tr>
<tr>
<td>4. Tertiary</td>
<td>22–25</td>
<td>16 through 25</td>
<td></td>
</tr>
</tbody>
</table>

Father’s occupation

1) Modified class scheme of Erikson, Goldthorpe and Portocarero (1987):
   - EGP I/II Business and administrative - elite and intermediate professionals - academic and non-academic
   - EGP II Routine non-manual workers
   - EGP IV Self-employed small shopkeepers and artisans
   - EGP V/VI Supervising and skilled manual workers
   - EGP VI1/VI2 Semi- and unskilled manual workers
   - EGP VI1b Farm owners and farm laborers

2) SEI: Socio-Economic Index of occupational status (Klaassen and Luik, 1987)
   - Range: 0 through 8 (recoded from original range from 0 through 80: SEI=(SEI-8)/10

### Table 4.3 Educational attainment, highest level completed, by birth cohort and gender

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1. Primary education only</td>
<td>67.9</td>
<td>51.3</td>
<td>39.5</td>
<td>28.2</td>
<td>21.4</td>
<td>13.7</td>
<td>9.7</td>
</tr>
<tr>
<td></td>
<td>2. Secondary education, lower level</td>
<td>26.5</td>
<td>27.8</td>
<td>32.7</td>
<td>30.0</td>
<td>29.4</td>
<td>28.4</td>
<td>26.2</td>
</tr>
<tr>
<td></td>
<td>3. Secondary education, higher level</td>
<td>7.1</td>
<td>13.3</td>
<td>18.4</td>
<td>26.2</td>
<td>29.2</td>
<td>24.9</td>
<td>40.7</td>
</tr>
<tr>
<td></td>
<td>4. Tertiary education</td>
<td>4.3</td>
<td>7.6</td>
<td>9.4</td>
<td>13.7</td>
<td>19.8</td>
<td>23.0</td>
<td>25.5</td>
</tr>
<tr>
<td>Number of cases</td>
<td>112</td>
<td>263</td>
<td>620</td>
<td>1097</td>
<td>1361</td>
<td>1694</td>
<td>981</td>
<td></td>
</tr>
</tbody>
</table>

| Mean         | 1. Primary education only | 76.9 | 70.9 | 62.7 | 49.9 | 30.6 | 19.7 | 11.6 |
| | 2. Secondary education, lower level | 14.2 | 15.5 | 23.0 | 28.8 | 30.2 | 40.4 | 27.0 |
| | 3. Secondary education, higher level | 7.7 | 10.6 | 11.4 | 19.4 | 22.5 | 28.2 | 41.3 |
| | 4. Tertiary education | 1.1 | 5.0 | 3.0 | 4.8 | 8.8 | 11.7 | 20.2 |
| Number of cases | 91 | 282 | 466 | 852 | 1069 | 1395 | 961 |
In the first step, a dummy variable was created for each of the seven cohorts, and each dummy variable is multiplied with the predictor variables father's educational attainment (FEDUC), and father's occupational status (FOCC). This generates a model with twenty-one regression effects for both sexes; seven intercepts for the separate cohorts; and seven effects of father's education and father's occupation. This model is equivalent to the reported regression models of Table 4.4 (when using father's SEI score) and the estimated effects can be read from Table 4.4.

Subsequently, these twenty-one regression effects are constrained, first by introducing the variable COHORT as a metric variable, and secondly by computing the products of COHORT and FEDUC and of COHORT and FOCC respectively. These three metric variables are then introduced, one by one, into the model, replacing the dummy variables and their interactions. This procedure generates a number of nested models, and the contrast between model₁ and model₉, evaluated by an F-test, according to the following formula:

$$F(df_a - df_b, N - df_a) = \frac{(SS_a - SS_b)}{(SS_{total} - SS_b)} / (N - df_b)$$

In this formula $df_a$ and $df_b$ stand for the numbers of degrees of freedom, $SS_a$ and $SS_b$ stand for the sums of squares of the models, $SS_{total}$ is the total sum of squares, and $N$ is the number of cases. In the final step we tested whether the linear interaction effects in fact resembled a trend or a stability.

Table 4.5 gives the relevant fit statistics. Model 1 is the baseline; all twenty-one parameters are estimated separately. Model 2 constrains the intercept to follow a linear trend. This brings five degrees of freedom, whereas the sum of squares decreases by 5.69 points for men and by 6.32 points for women. The F-test shows that both for men and women this constraint does not weaken the model. The same holds true when both the effects of father’s education and father’s occupation are modelled to follow a linear trend over cohorts (Models 3 and 4). However, when any of these parameters is constrained to be stable over time in Models 5, 6 and 7, the model fit worsens significantly. Thus Model 4 is the preferred model. This implies that all the effects as observed in the cohort specific models of Table 4.4 can be represented via linear trends, for both men and women.

The estimates are presented in Table 4.6. Cohorts are numbered from 0 (oldest cohort) to 6 (youngest cohort), and so the intercepts in the interaction effects represent the implied effect in the oldest cohort. The overall intercept increases with 0.257 for each birth cohort of men, and with 0.252 for women, net of changing family background. The effect of the two family background indicators decrease significantly. According to Model 4, the effect of father’s educational attainment was $b = 0.600$ for men in the first birth cohort, and has
decreased by 0.065 for each successive birth cohort, giving an effect of $b = 0.240$ for the last birth cohort. For women the effect of father’s educational status started at $b = 0.528$ for the first cohort, and has decreased by 0.037 for each successive cohort to $b = 0.306$ for the last birth cohort.

The effects of father’s occupational status have also decreased dramatically. Again according to the preferred Model 4 of Table 4.5, the effect of father’s SEI was $b = 0.188$ for the oldest cohort and has gradually decreased until it reached a value of $b = 0.050$ for the youngest cohort. For women the effect was $b = 0.128$ for the oldest cohort and $b = 0.056$ for the youngest cohort. The trends in both background factors are displayed in Figure 4.2. The downward trend is somewhat steeper for men than for women, and the standard errors of the interaction effects suggest that these differences are significant (see Table 4.6). The interaction effects of father’s educational background and cohort differ by 0.028 between the sexes ($-0.065$ for men and $-0.037$ for women), while the standard errors are around 0.010. For occupational status the difference between the interaction effects for men and women is 0.013 with a standard error of 0.005, again a significant difference. The reduction in the influence of family background factor has been stronger for men than for women.
We are also interested in the relative effects of father’s educational attainment and father’s occupational status. To evaluate these, we standardized the regression coefficients of predictor variable \( x \) in our preferred model using the standard errors for each birth cohort:

\[
\beta_{(c)} = \frac{b_{(c)} Sx_{(c)}}{Sy_{(c)}}
\]

Where \( b \) is the effect of \( x \) on \( y \) as implied by the model in cohort \( c \) and \( Sx_{(c)} \) and \( Sy_{(c)} \) are the relevant standard deviations in cohort \( c \).

The results are reported in Table 4.7 for both men and women. For each cohort, father’s education has a greater effect on the educational attainment of his children than his occupational status. Both effects decrease over cohorts, but the difference between the standardized effects of educational and occupational background has widened. This suggests that cultural resources are now more important than financial resources, while both kinds of resources were of about equal importance before. To some extent, this corroborates cultural reproduction theory.

We conclude our OLS analysis regression analysis of the impact of family background on final educational attainment by summarizing that for both men and women the effects of father’s educational and occupational status have decreased over cohorts in a linear way, and that in general father’s educational status is the major family factor predicting educational success.

Transitions in the Educational Career: Logit Analysis

In this section, we will analyze the transitions within the educational career. Figure 4.3 shows the gross development of the percentiles of those making the three transitions over birth cohorts. The first transition—to any diploma in secondary education after primary education—was only made by a small proportion of the oldest cohort, whereas 90% of the youngest cohorts obtained at least one certificate after primary education. Boys made this transition more often than girls throughout the entire period, but now this difference has almost disappeared.

For the second transition—from any diploma in secondary education to any diploma in higher secondary education—the increase in the transition rate is less striking. Whereas the fluctuations in the early cohorts are probably due to the small number of cases involved, the trend seems to be from 40% in the oldest cohort to 70% in the youngest cohort. Again the differences between the sexes decrease sharply in the youngest cohorts.

The third transition—from any diploma in higher secondary education to completed tertiary education—shows a remarkable pattern. For men, the transition rate is around 40% for all cohorts, and for women the rate is stable at 30%. Given a diploma in higher secondary education, the probability of continuing the educational career has apparently been stable.

Table 4.8 presents the result of selected logit models of conditional continuation probabilities by sex and transition. The second panel of Table 4.8 gives the contrasts in fit statistics between the models. The table starts with a logit analysis of the transition to any diploma after primary education. The analytical design is the same as that used in the regression analysis. First, separate parameters for all seven birth cohorts are estimated, which then are constrained to follow linear trends or to be stable over time. For both men and women, Model 1.4 is the preferred model as it models the intercept, and the effects of father’s education and occupation as linear over time.

The second transition is not quite as simple. For men, we again find that linear interaction effects adequately represent the changes in the intercept, and in the effects of father’s education and occupation. However, the preferred model here is Model 2.5, and we cannot reject the hypothesis that there are no changes in effects of father’s occupation at all and that this effect is constant across cohorts, while the effect of father’s education is historically declining. The situation is even more complicated for women. The comparison between Model 2.1 and Model 2.2 shows that there are changes in the educational attainment of women, net of changing family background, but that these cannot be represented by a linear trend. While this comparison (for the changes in the intercept) is still on the borderline of statistical significance, this is not true for the comparison between Model 2.4 and Model 2.3, which is strongly significant. This proves that the changing effects of father’s occupation cannot be represented by a linear trend. The subsequent comparisons show that linear trend specifications of the effects of father’s occupation and father’s education do not differ significantly from the situation of no trend at all. Were we to disregard the evidence in the comparison between Model 2.4 and Model 2.3, which shows a significant over-time fluctuation in the effect of father’s occupation, the models would suggest that there are no significant linear changes in the effect of family background on transition to the third level for women.

The models become very simple again for the third transition, towards completion of tertiary education. None of the comparisons between the models is anywhere near statistical significance, and so the most constrained model fits the situation for both men and women: there is no historical change at all in continuation towards tertiary level, nor any change in the dependence of this continuation upon family background.

Table 4.9 gives the estimated parameters of Model 1.4. This first transition
Figure 4.3 Description of conditional school continuation decisions of men and women, birth cohorts 1891-1960
in the educational career shows a clear decline in the impact of family background. For men the effect of father’s education decreases by 0.206 for each birth cohort, starting at 1.768 for the oldest cohort, and according to the model, sinking to 0.532 for the youngest. For women the effect of father’s educational attainment declines with decrements of 0.119 from 1.365 for the oldest cohort to 0.649 for the youngest cohort. The effects of father’s occupation on the probability of surviving lower secondary education have decreased even more dramatically. For men, the effect was 0.506 for the oldest cohort, and 0.203 for the youngest cohort, whereas for women this effect decreases from 0.477 to virtually nil in the time span studied. Apart from these declining family background effects there has been a general increase in the transition rate at this level, as shown by the gradual rise in the intercept over cohorts. In sum, the situation at the first transition strongly resembles the situation described above for the final level of education.

The second transition in the educational career, from any diploma to a diploma in higher secondary education, is less dependent on family background than the first. The models of Table 4.8 again show that the effect of father’s education only changes significantly over birth cohorts in the case of men. Although the other three interaction terms are not statistically significant, it is important to note that they all go in the same direction, namely that of decreasing influence of father’s statuses. More importantly, the non-significant interaction parameters are substantial when compared to their value in the first cohorts. For example, although the interaction parameter for father’s education is not significant for men, they still imply that the effect of father’s education in the youngest cohort is only half of what it used to be in the oldest cohort. This illustrates once again that even given the generous amount of data we have amassed for our analysis and the parsimonious models used to estimate trends, it is still difficult to pick up sizeable changes.

The third transition—from a diploma in higher secondary education to completed tertiary education—is less dependent upon family background than the second transition. Father’s occupational status has no effect for any cohort, while the effect of father’s educational status was small and constant for all birth cohorts.

Figure 4.4 displays the estimated trend effects in the logit models of tran-
Figure 4.4: Trends in effects of father's educational status and father's occupational status on educational transitions of men and women, of birth cohorts 1891-1960, (models (1.4), 2.4) and (3.4) of Table 4.8.

- Effect of father's education for men
- Effect of father's occupation for men

Birth cohort

- Effect of father's education for women
- Effect of father's occupation for women

Birth cohort
Conclusion

As a result of our analysis of the trends in educational opportunity in the Netherlands for cohorts born between 1891 and 1960, we have reached several conclusions.

First, there is a clear downward trend in the determination of final educational level by father's education and father's occupation. This trend is stronger for men than for women. On average, the effect of father's education is greater than the effect of father's occupation. The rate of decline differs between the two indicators of father's status: the effect of education declines to about 50% in the period of investigation, whereas the effect of father's occupation has virtually vanished in the most recent cohorts. The standardized coefficients also indicate that father's educational status has more predictive power than father's occupational status and that it has not decreased as dramatically over time.

Second, if we disaggregate the data on final level of educational attainment into the progression rates at the three transitions in the educational career, we find that the effect of father's education and father's occupation are far from uniform over the educational career. We find that the largest effects are in the early stage of the career, at the transition from primary to secondary education, and that it becomes smaller with each successive transition.

For the first two of the three transitions, we find a substantive downward trend in the effects of father's education and father's occupation on the likelihood of continuation for men. For women, on the other hand, the only significant downward trend is for the first transition, with an irregular pattern for the second transition. For the final transition (from secondary to tertiary education) we find that the effects of father's status are stable over cohorts, for both men and women.

In response to our three research questions then we find that there has been a marked overall decline in the effect of father's education and father's occupation on final educational attainment. Second, we find that the significant downward effects of family background on transitions in the educational career are restricted to the first transition (between primary and secondary education) for both sexes. The effects of family background on transitions to higher secondary and tertiary education are generally smaller than on the transition to secondary education; we do find significant and substantive changes at the second transition for men, but for women the downward trend is neither significant nor substantive. For the third transition, the effects of social background are significant, but quite small and there is no evidence of change over time. Third, across regression models of educational attainment and logit models of educational transitions, father's education is a more important predictor than father's occupation. At the same time, the contrast between the two has widened: father's education is more resistant to change than father's occupation. This pattern confirms the expectations of cultural reproduction theory rather than those of modernization theory.

In discussion, two things need to be noted. First, we want to stress the significance of both types of analysis applied to the data. Several authors,
starting with Mare (1980, 1981b) suggest that regression-type analysis of educational attainment is inadequate, because it fails to take into account the varying degrees of association found at different levels of educational attainment. The basic finding here is that parental influence decreases at the more advanced stages of the educational career: parental status is very important for the progression from primary to secondary education, but has a negligible impact for those that have survived secondary education. Combined with the higher levels of educational attainment of younger cohorts, these different levels of association may be responsible for declining trends in metric regressions. Although we have found in our data that this is not the case in the Netherlands, and that there are also decreasing social background effects for transition rates, we would like to stress that neither of these representations of the data are the sole true representation, but that they present complementary views. While it is important to know that the association of transition rates with parental status have been stable or even increased, it is equally important to know to what extent the general growth of education has produced a lower association across the board. Here again, there are important theoretical and political issues at stake. If the composition effects do produce declining association, notwithstanding an unchanged pattern of transition rates, this is owing to increased educational enrollment. This explanation of over-time trends in terms of composition effects is important, but does not mean that over-time trends are not important per se: declining parental influence over the total educational outcome is of great social and sociological importance in itself. In events that occur after the completion of the educational career (such as entry into the labor and marriage markets), it is normally the level of completed education, relative to the distribution of the relevant cohort, that counts and nothing else. A general decrease in the influence of parental status on the final level of completed education appears to be a primary factor in explaining the drop of association in intergenerational occupational mobility (Luijkx and Ganzeboom 1989) and educational homogeneity (Sixma and Ultee 1984).

As regards educational policy, an important implication of the decreasing effects of family background on educational continuation is that the promotion of educational attainment at large pays off in terms of increased social opportunity for the underprivileged as compared to privileged status groups. This is not only important from the point of view of social engineering, but is also in striking contrast with received views of educational selection processes (Boudon 1974) which stress that longer educational careers sharpen or increase the effect of family background.

Secondly, we want to point out the importance of the number of observations for trend analyses. It is clear that even given the generous size of the data set available to us for this analysis, we have been unable to distinguish between substantial trends in effects and the hypothesis of no change. Many of the effects observed in this trend analysis would not have been observed had our data been smaller. In our opinion, this is the most plausible explanation why we find significant (and substantial) changes, where other researchers have found no evidence of trends. Since many trend analyses norm-

ally employ smaller data sets than those which have been used, it may well be that conclusions of "no trend" are simply due to low statistical power.

Notes

We would like to thank the original investigators of the data sets analyzed in this study and the Steinmetz Archives in Amsterdam for their valuable services. Thanks also go to the members of the ISA Research Committee 28 on Social Stratification and the SISW0 working group on Social Stratification and Mobility for their helpful comments and advice; in particular, Bart Bakker, Jos Dessens, Nan Dirks De Graaf, Jaap Dronkers, Wim Jansen, Ruud Luijkx, Paul Nieuw Beerta, Yossi Shavit, Sjoer van der Ploeg and Wout C. Ultee.

1. Our findings that there is a historically declining association between fathers' and respondents' educational attainments in variance with conclusions reached earlier by Dutch researchers (Pescar 1980; Pescar and Poppings 1986; Dronkers 1988; Vrooman and Dronkers 1986) who found that this association had remained stable. However, this can be explained by differences in data and methods employed (see De Graaf and Ganzeboom 1990); in particular, the statistical power in our analysis is greater than that of earlier research. Estimates of the minimal size needed to observe the decline of effects we have observed (De Graaf and Ganzeboom 1990) suggest that 3,000 cases are necessary to reach a conclusion of statistical significance on the interaction between the effects of birth cohort and family background on educational attainment. This result is not reached because these interaction effects are small and negligible; the effects of family background variables have more than half-ed in the period under investigation.

2. Association pattern and marginal distributions in the educational mobility table differ from the pattern in the occupational mobility table by their relative smoothness. A simple uniform association model fits the whole pattern very well and we come close to a regression-like, single-parameter type of representation of the data. Because of this, we feel encouraged to conduct OLS regression analyses on these data.

3. This analysis echoes the conclusions reached in earlier analyses; see Ganzeboom and De Graaf 1989 and De Graaf and Ganzeboom 1990. The only respect in which it differs from earlier analyses is the different categorization of the cohorts involved.

4. In the period studied, compulsory schooling in the Netherlands has developed as follows: until 1928, compulsory school-leaving age was twelve; this subsequently rose to thirteen in 1928, to fourteen in 1942, and to fifteen in 1950. After 1950 there have been only partial changes in compulsory schooling age, requiring young people aged sixteen to seventeen who are in the labor force to take vocational courses for one or two days a week (Van Kemenade 1981).