**Connections between intergenerational
and marital mobility**
a case study - Leuven 1830-1910

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Social stratification can be considered as "the inter- and intragenerational reproduction of social inequality through homogamous marriage patterns and status inheritance over families and generations" (Haller, 1981: 789). Thus, scholars of social stratification regard the degree of social homogamy and occupational inheritance as empirical indicators of the 'openness' of a given society. In its general form, the main historical research question has been: Did boundaries between social strata become more permeable in the course of the economic and demographic modernisation of the 19th century, thus transforming patterns of social inequality by increasing social fluidity? (See the collection of historical-sociological research edited by Andrew Miles and David Vincent, 1993b; van Leeuwen and Maas, 1993 give a clear overview of the research agenda). This paper addresses methodological issues involved in measuring social mobility, using marital records data from the Belgian, 19th-century community of Leuven in support of a substantial case study.

1. Approaches to social mobility

1.1. Dissecting marital mobility

Marital mobility in a broad sense can be analysed using three different approaches: as homogamy or heterogamy (a) within the parental generation, (b) within the marrying generation, and (c) between two generations (Haller, 1981: 783). The first approach refers to the positions of origin or the ascribed positions of both bride and groom. Secondly, cross-tabulating their own occupations takes into account the achieved dimensions of occupational mobility. Many historical mobility studies, however, follow the third, intergenerational approach to homogamy, comparing the groom with the father of the bride. In this case, achieved occupational positions are compared with ascribed positions (Kalmijn, 1991, de Singly, 1987: 189). From the perspective of the bride, this third dimension deals with the relation between her original "social value", emanating from her father, on the one hand, and the value actualised by marriage, achieved by her husband, on the other (de Singly, 1987: 189).

Historical studies of marital mobility based on marriage records typically follow the first or the third approach, comparing the occupational status of the bride's father with the occupation of the groom or of the groom's father (e.g. Alter, 1978; Penn & Dawkins, 1983; Sundin, 1989; Segalen, 1991; van Leeuwen & Maas, 1991 and 1994; Dupâquier & Pelissier, 1992; Mitch, 1993).⁽¹⁾

It is clear that assessing the degree of homogamy using father's and/or father-in-law's occupations results in an intermingling of intergenerational mobility and marital mobility *strictu sensu*. This induces analytical ambiguity as to the mode of mobility: growing heterogamy might in fact reflect increasing intergenerational mobility instead of fading social

⁽¹⁾ The bride's own occupation is virtually never taken in account in studies concerning 19th-century societies. Indeed, there seems to exist a (tacit) consensus among scholars of marital mobility patterns of pre-war western societies that the bride's occupation is an inadequate indicator of her social status. The reasons are quite obvious: there are no female equivalents to many typically male occupations and vice versa, many women report 'no occupation' or 'housewife', and even if they report an occupation, it may often have been abandoned soon after the marriage ceremony (Dupâquier & Pelissier, 1992: 158-159). Direct evidence on women's work is more often than not absent (Miles & Vincent, 1993a: 2, 14-15).

borders on the marriage market. This point will be concretized in the following empirical analyses, which focus on social mobility as observed in marriage records from the perspective of the groom. In the interest of analytical clarity, the intergenerational approach to marital mobility will be dissected into two components, namely: marital mobility *strictu sensu* and intergenerational mobility.

Throughout the following, "marital mobility" refers to homogamy or heterogamy in the parental generation (groom's father by father-in-law). It is distinguished from intergenerational mobility between the groom and his father (see figure A).

Figure A

Dissection of "intergenerational marital mobility" into two components: marital mobility in the parental generation and intergenerational mobility

1.2. Social mobility and fluidity

Total intergenerational and marital mobility can each be decomposed into three genetic components. Variations in mobility may result from (a) structural composition effects, (b) structural difference effects, and (c) relative mobility effects (Simkus, 1984; Luijkx & Ganzeboom, 1989).

First, intergenerational mobility may be affected by the composition of the occupational structure. For instance, if peasants are less mobile than other occupational categories, then a society with a larger proportion of peasants will have, *ceteris paribus*, less total intergenerational mobility than a society with a lower proportion working in agriculture, even if relative mobility effects in both societies are equal. Second, mobility may result from different occupational opportunities in the respective generations. This component of mobility can be read from the marginal distributions of the mobility tables. If the two distributions are different, then structural difference effects are at work.

Relative mobility, the third component in total mobility, refers to social fluidity or circulation mobility. The magnitude of relative mobility effects represents the degree of 'openness' of the occupational structure: low relative mobility indicates that the father's occupational category determines to a large degree the occupation of his son; in a society with high relative mobility, more

occupational options are open to the son, given the profession of the father (see Goldthorpe, 1980, esp. 74).

These components of intergenerational mobility are found under different labels in the literature. Dupâquier and Kessler (1992: 56-57), for instance, distinguish between structural mobility and circulation mobility. The term "forced" mobility is rejected here, however, as an equivalent for structural mobility. It unwarrantedly suggests that changes in the occupational structure have causal priority over association effects (Luijkx & Ganzeboom, 1989: 23, note 8). Moreover, relative mobility may be 'forced' as well as structural mobility. For instance, differential fertility in occupational categories may saturate some professions and create a shortage of recruits in others. This may create pressure towards relative mobility without causing a change in the occupational distribution of the society in question. Whether or not this was the case historically, is an empirical question.⁽²⁾

The following deals with the third component of social mobility only. No attention is paid to the evolution of total or structural mobility. Instead, the analysis addresses the evolution of relative mobility only. To do this, however, relative mobility effects should be filtered out of the mobility tables, which feature all three components of social mobility.

Log-linear analysis has been firmly established as the technique most suitable for analysing marital and intergenerational mobility, distinguishing the genetic components of total mobility. More straightforward and intuitive approaches have been shown to yield misleading results, mainly because the simple mobility ratios depend on the marginal distributions of mobility tables. Log-linear analyses overcome this problem, but at the cost of analytical complexity (McCaa, 1989; see also Kaelble, 1981: 119-124; Muhsam, 1990: appendix 1; Hout, 1983: 16-18). More specifically, they allow us to disentangle the different components of mobility distinguished above (Luijkx & Ganzeboom, 1989; van Leeuwen & Maas, 1991; Kalmijn, 1991). All models in this paper were fitted using the IEM-program, recently developed by J. Vermunt (1993).

2. Setting and data: Leuven 1830-1910

2.1. Trades and services in the centre of Belgium

Leuven is a provincial town in the south of the historical duchy of Brabant and accommodates a Catholic university since 1425. Its population grew from 20 000 in 1800 to 42 000 on the eve of the First World War. Economically, it always remained a predominantly tertiary town, with an important but rather small-scale industry (mainly food industry, since it has always been closely connected to its rural environment).

⁽²⁾ Note, however, that this question - whether or not structural or relative mobility is 'forced' - *cannot* be answered using mobility tables based on marital registers only, whatever the technique of analysis. For such a claim, a broader analysis of the economic structure would be necessary.

Although its function as an administrative centre was overshadowed by the nearby capital city of Brussels, the services sector had expanded since the independence of Belgium in 1830.

Specifically, Leuven became an important educational centre, offering primary and secondary education to the provincial environment, and higher education to the whole country. Most educational institutions were connected with one of the many religious congregations. The same holds true for the hospitals. Virtually the total higher-educated clergy of Belgium spent several years studying in Leuven.

More worldly activities in the tertiary sector included transit, wholesale and retail trade, and an important military settlement. Most important for the growth of Leuven was the development of an excellent transport infrastructure. During the 18th century, not only were high-quality roads constructed but also a canal was dug, which connected Leuven with the expanding Belgian waterways. Important seaports like Antwerp and Oostende were now linked with the Leuven harbour, which became the economic heart of the town. Most industries settled in that neighbourhood: food industry (especially breweries), small-scale textile manufacturing (although this sector declined during the 19th century), tanneries and other, predominantly artisanal and small-scale industries. Further improving the infrastructure was the construction of railroads from 1837 onwards. By 1860, the economic centres of the country could be reached by train, and at the turn of the century, the rural hinterland was connected by branch lines. All this stimulated important commuting, from the rural environment to Leuven and from Leuven to Brussels.

In the middle of the 19th century, about a third of the labor force worked in mainly small-scale industry, while a fifth was employed in non-specific sectors. Intense but temporary immigration from the rural environment provided for a labour force of day labourers, that came and went with the seasons. Moreover, the petty bourgeois city recruited many servants, mainly young women coming from the rural villages. More than 10% of the labour force consisted of servants in 1846, of which 8 in 10 were female.⁽³⁾ Overall, 45% worked in services, trades or transport. Only 3% was employed in agriculture.

Never did Leuven experience a rapid and large-scale industrialisation. Instead, its economy drifted with the industrialising and rapidly expanding national economy. The provincial town played a supportive role in the Belgian industrialisation story, primarily through its functions as a centre of education, trades, and transport. The local industry expanded and modernized only gradually.

2.2. Data

This study is based on a one-in-three representative sample of civil marriage certificates from Leuven, collected in 1994 and 1995 by H. Peeters at the Department of Sociology of Population, Family, and Health Care, K.U.Leuven. Parallel samples are drawn in yet two other Belgian communities: Bierbeek, a neighbouring village of Leuven, which always remained a predominantly agricultural area; and Aalst, a typical example of a Flemish textile town that underwent a profound industrialisation process in the 19th century. Only the Leuven data for the period 1830-1910 are used in this paper (N=6176).

The marriage certificates contain the same information concerning the occupation of both the marriage partners and their parents throughout the period under study. However,

⁽³⁾ Data about the 1846 labour force stem from the census held in that year.

occupational information is included only for parents who are alive at the wedding date. As a result, the effective sample size for the analysis of intergenerational mobility and marital mobility in the parental generation is reduced substantially (to about 2500, see appendix A for details).

In order to enable loglinear analysis of the evolution of social mobility over time, four separate mobility tables will be analysed, covering four equally-long periods: 1830-49, 1850-69, 1870-89, and 1890-1909.

3. 19th-century social structure and social mobility

Classic sociological stratification theory asserts that occupational position is the best single indicator of social status. This assertion proved to be rather problematic, even when applied to post-war, 20th-century industrialised societies (see De Graaf, Ganzeboom & Kalmijn, 1989). It may be even more problematic when applied in historical research.

3.1. Classification or stratification?

Contemporary status hierarchies based on one single indicator, such as occupation, may be validated empirically by survey research. However, there are no reasons at all to accept the validity of these status rankings for 19th-century societies. Moreover, the sources most widely used in historical mobility studies lack the precision needed to justify the application of contemporary classification systems.⁽⁴⁾ Most often, only broad categories can be distinguished reliably.

The starting point for the present analysis are 13 occupational categories, established at face value from the contents of the male occupations as reported in 19th-century Belgian marriage records.⁽⁵⁾ A more detailed classification would make the status of a large number of rather vague occupations uncertain. The classification as such can not be considered as a hierarchy (see table A, first column).

Loglinear analyses of social mobility gain much power, however, when categories are ordered on a status scale. This ordinal level could, to begin with, be attained intuitively. For instance, it is entirely plausible that 19th-century professionals had more societal status than clerks. More difficult, however, is the ordering of categories that may not be so far apart.

⁽⁴⁾ For instance, the class scheme developed by Erikson, Goldthorpe, and Portocarero (the EGP-class scheme) for comparative research on social mobility can hardly be applied in historical mobility studies based on marriage records. Most often, the occupations reported are too vague to assess classification criteria like employment status (employed/employee) and supervision status (supervisors/supervised). Besides, these characteristics depend to a large degree on life-cycle stage. For instance, a supervised and not self-employed son may become supervisor and self-employed later in life, e.g. after the death of his father (see Luijkx & Ganzeboom, 1989: 8, referring to Goldthorpe, 1980).

⁽⁵⁾ The original 11 occupational categories were established by H. Peeters and prof. dr. K. Matthijs, members of the *Research Group of Sociology of Population, Family, and Health Care*, K.U.Leuven, Belgium. (Unpublished report: Hilde Peeters, *De beroepclassificatie toegepast op de huwelijksakten van Leuven, Bierbeek en Aalst, 1800-1913*, K.U.Leuven, Departement Sociologie, Afdeling Gezin, Bevolking en Gezondheidszorg, april 1996).

For example, the relative position of merchants and professionals can hardly be determined intuitively. A better approach would be to rely on an external criterion to determine an order. However, such criterion is not always available, as is the case for the present analysis. A third way is possible, however. It consists of estimating distances between classes from the data themselves (van Leeuwen & Maas, 1991: 73).

Many scholars of social stratification and mobility argue that both are intertwined to such an extent that information on mobility can be used to construct a hierarchical stratification. This is in line with the contention that, when studying social stratification, the specific characteristics of the instance of interaction in which it is studied, should be taken into account (Haller, 1981). From this perspective, the relative positions of the occupational strata should not be determined a priori, but

estimated from the data themselves. Theoretically, social stratification is then considered from an interaction-perspective: occupational categories are ordered according to the degree of observed interaction between them (e.g. inter-marriage or intergenerational mobility). Occupational categories that are observed frequently together (e.g. in marriage acts), are considered relatively close; categories that are seldom observed together, are considered to be relatively far apart.

This interaction-perspective can be operationalized using various techniques (Alter, 1978, for example, applied cluster analysis). In recent mobility research, however, mainly loglinear analysis is used, starting from Goodman's Equal Row and Column Effects Model II* (Goodman, 1979; applied, for example, by van Leeuwen & Maas, 1991; Fukumoto & Grusky, 1993; and Luijkx, 1994). This association model contains scores representing the relative position of the occupational categories, and is therefore called a 'scaled' model of association (Hout, 1983).

This kind of modelling is very well suited for application in marital and intergenerational mobility analysis, because the estimated relative positions of the occupational strata provide at the same time a parsimonious description of the association in mobility tables. That is, the total association in the mobility table is partitioned in a parameter summarizing the overall amount of association in the table (i.e. the 'uniform association parameter') and two parameters representing the relative positions of the two occupational strata concerned.

To estimate the relative positions of the 11 occupational categories, the same Quasi-equal row and column effect model II (QERCI) is used as in Luijkx (1994; see also Hout, 1983: 60-62).

$$F_{ij}^{OD} = \eta \tau_i \tau_j \delta_i e^{\phi \xi_i \xi_j} \quad (1)$$

where O denotes the rows ('origin', e.g. father's occupation), D denotes the columns (e.g. son's occupation), and F_{ij} is the frequency in row i and column j expected under the model. The first three parameters in the model have the usual meaning in loglinear modelling: η denotes the overall effect, τ_i the effect of pertaining to row i , τ_j the effect of pertaining to column j .⁽⁶⁾

The prefix quasi in the name of model (1), aims at the inclusion of the association parameter δ_i , pertaining to immobility and reproducing exactly the main diagonal of the $I \times J$ table (see also Goodman, 1979: 541-543). In addition, model (1) includes ϕ , which is the uniform association parameter. It denotes the average degree of association in the cross-tabulation of the occupational categories.

⁽⁶⁾ For an introduction to loglinear analysis, consult Hagenaars (1990, chapter 2).

The equal row and column parameters are ξ_i and ξ_j , which are in fact maximum likelihood estimates of the equal row and column category scores, denoting the relative position of the occupational categories. The term equal follows from the restriction that $\xi_i = \xi_j$ when $i=j$. Thus, a given occupational category in row i is given the same score as the same occupational category in column j .

Model (1) was applied to the intergenerational mobility table between grooms and their fathers, derived from a one-in-three sample of marriages contracted in Leuven, Belgium between 1830 and 1910 (see appendix, table A1). The estimated relative positions of the 13 male occupational categories are reported in table A⁽⁷⁾.

Table A
Male occupational classification and estimates of the relative position of and distance between the categories, based on intergenerational mobility table (groom X father of groom)

Original Classification	Relative position*
	-1.86
1. Big proprietors	
2. High-schooled professionals	-1.39
3. Manufacturers, entrepreneurs and merchants	-0.79
4. Artisans, shopkeepers, retailers (self-employed)	0.34
5. Schooled white-collar occupations	-0.48
6. Small proprietors without employment ('particulier')	-0.72
7. Peasants	0.53
8. Low-skilled workers (non-factory)	1.31
9. Clerks and servants	0.48
10. Self-employed persons with minimal capital	0.57
11. Low-skilled factory workers	1.24
12. Unskilled workers	1.32
13. No occupation ('sans profession')	-0.54

*Relative position of occupational categories are maximum likelihood estimates for the quasi-equal row and column effect parameters in an adapted version of Goodman's model II (see Hout, 1983: 51-62; Lijkx, 1994: 245-253). The adaptation consists of deleting the diagonals from the estimation of the equal row and column effect parameters (therefore: 'quasi').

3.1.1. Collapsing categories

As can be seen in table A1 in the appendix, some of the occupational categories contain very few cases, especially category 6, the peasants. Moreover, a glance at table A reveals that some categories have scores that are very close to each other. Therefore, the question arises whether the number of categories should better be reduced, collapsing categories that can be considered to belong to the same stratum.

Goodman (1981) established three criteria for determining whether a given set of categories in an $I \times J$ cross-classification should be combined to a $K \times L$ table (where $K < I$ and/or $J < L$). The first criterion is internal homogeneity, operationalized as statistical independence in the 2×2 subtable formed by cutting out the two categories considered for collapsing out of the $I \times J$ cross-classification.

⁽⁷⁾ Maximul likelihood estimates of the parameters in model (1) were calculated by *LEM 0.11*, a computer program developed by Jeroen K. Vermunt (WORC, Tilburg University, The Netherlands) for the calculation of parameters in log-linear and event history analysis (Vermunt, 1993).

Previous research has shown that this criterion, when strictly applied in mobility tables (where $I = J$), is too rigid. This is due to 'occupational inheritance' effects. Indeed, observed frequencies on the diagonals in mobility tables systematically exceed expected frequencies under the hypothesis of independence. Therefore, Goodman (1981), following Breiger, suggested to consider a weaker form of internal homogeneity, omitting occupational inheritance and only considering mobility between the categories.

The second criterion is external homogeneity, referring to the pattern of mobility between the categories to be collapsed on the one hand, and all other categories on the other hand. When external mobility patterns are the same, the external homogeneity criterion is met. The third and last touchstone is a structural condition. If the same structure (e.g. as operationalized in a log-linear

model) describes the collapsed $K \times L$ table as good as or better than the original $I \times J$ table, then the structural criterion is met.

Collapsability will be investigated here on the basis of intergenerational mobility tables (father of the groom by groom). Luijkx (1994: 245-254) proposed a method to evaluate both the homogeneity criteria and the structural criterion at the same time. It will be followed here. Again, model (1), applied to the 13 by 13 table of intergenerational mobility, is used as a starting point. Imposing equality restrictions on specified row/column effect-parameters (the ξ 's in model (1)) amounts to saying that the mobility patterns of these categories are the same. For instance, the scores of categories 6 and 9 of table a are very close. Setting $\xi_6 = \xi_9$ is the same as saying that both categories exhibit the same mobility pattern with the other categories (=external homogeneity) and with each other (=internal homogeneity). In accordance with the 'weaker' form of internal homogeneity, also δ -parameters are included in the model, and the same equality restrictions are imposed as on the row/column-effect parameters (e.g. $\delta_6 = \delta_9$). Thus, equality restrictions on the row/column-effect parameters and on the diagonal parameters force the homogeneity criteria to be met. The restricted model (and thus, the loss of information) is acceptable if the structural criterion is also met, that is, when it describes the data as well as or better than the original model. This is evaluated by means of the Bayesian Information Criterion (BIC). Indeed, the loss of fit (measured by the loglikelihood ratio chi-square L^2) may be compensated by gaining in parsimony (i.e. the number of degrees of freedom).⁽⁸⁾ The BIC takes both fit and parsimony, plus the sample size, into consideration.

If model (1) would be used to check the homogeneity criteria and the structural criterion, categories may be amalgated which differ significantly over time in intergenerational mobility behavior. This would occur if they exhibit the same overall mobility pattern when the period 1830-1910 is considered in one table. That, in turn, may happen when the relation between the classes has changed significantly over time or when the number of cases is very small in some years but large in others. Following van Leeuwen and Maas (1993: 14-15), a more conservative approach has been used here. The amalgamation criteria will be checked separately in 4 tables pertaining to different periods of 20 years: 1830-49, 1850-69, 1870-89, 1890-1909. This is done by including a time-dimension in model (1), resulting in:

$$F_{ijt}^{ODT} = \eta \tau_i \tau_j \tau_t \tau_{it} \tau_{jt} \delta_{it} e^{\phi_i \xi_{it} \xi_{jt}} \quad (2)$$

⁽⁸⁾ For an introductory discussion of the relation between fit and parsimony, i.e. between L^2 and the number of degrees of freedom, see Hagenaars (1990: 56-68).

Model (2), an adapted version of Goodman's heterogeneous equal row and column Model II, will be used in the amalgamation process (heterogeneous because the row/column- and diagonal effect parameters differ over time).

Table B
Results of the amalgamation procedure on the 13 by 13 intergenerational mobility table (father of groom by groom)

<i>Model</i>	<i>L²</i>	<i>df</i>	<i>BIC</i>
1. Unrestricted baseline: heterogenous quasi equal row- and column effects model II	507.30	432	-2941.25
2. MS12	540.99	440	-2971.41
3. MS11	524.29	446	-3036.01
4. MS10	558.03	453	-3058.15
5. MS9	566.59	463	-3129.43
6. MS8	596.94	470	-3154.95
7. MS7	627.87	478	-3187.89
8. MS6	679.10	486	-3200.52
9. MS5	704.47	494	-3239.01

The results of the amalgamation process are reported in table B. Only the best model is reported, given the number of categories and (thus) degrees of freedom. The best occupational stratification with 12 strata (MS12) has a deviance of $L^2=541.0$ with 440 degrees of freedom. It is formed by collapsing the low-skilled non-factory workers and the unskilled workers (categories 8 and 12 in table A). According to its BIC, it fits better than the unrestricted baseline model. MS11 is still better, though. It is formed by collapsing the large proprietors and the high-schooled professionals (categories 1 and 2 in table A) on the one hand, and small owners without occupation and men reporting 'no occupation' on the other hand. MS10 is formed by the amalgamation of the low-skilled non-factory workers and the unskilled workers in addition to MS11; MS9 by collapsing manufacturers, entrepreneurs and merchants with schooled white-collar occupations; MS8 by joining the low-skilled factory workers with the other blue collar workers of MS10 (categories 8, 11, and 12 in table A); MS7 by additional amalgamation of the self-employed categories 4 and 10. MS5 differs from MS6 in that the former collapses manufacturers, entrepreneurs, merchants, schooled white-collar occupations on the one hand and unemployed small proprietors and people reporting no occupation on the other, in one stratum. The resulting restricted model MS5, with 5 strata, yields the lowest reachable BIC.

The additional combination in this model, however, is of no aid in interpreting the data, since it contains men pursuing upper middle class occupations as well as men reporting not to pursue any occupation. Therefore, it was decided to work with MS6, instead of blindly following the BIC -rule-of-thumb. The new, 6-fold occupational stratification is presented in table C. It will be used in all following analyses of marital and intergenerational mobility.

Table C
Hierarchical stratification of male occupational categories, based on intergenerational mobility tables

Stratification	Occupational categories*
I. Economic and cultural elite	1, 2
II. (Self-)employed upper middle class	3, 5
III. Unemployed upper middle class	6, 13
IV. Self-employed lower middle class	4, 10
V. Servants, clerks, and peasants	7, 9
VI. Blue-collar working class	8, 11, 12

*see table A for occupational categories and their label

4. Marital mobility

As proposed in section 0, social mobility will be analysed from the groom's perspective, distinguishing marital mobility in the parental generation (i.e. homogamy/heterogamy with respect to the marrying partners's origins) and intergenerational mobility between father and groom.

If social borders with respect to marriage became more open in 19th century Leuven, it should be evident in the marital mobility tables. This would be in line with theories stating the rise of mate selection guided by romantic love ideals - the gradual replacement of Situationshe by Neigungshe - and the weakening of parental control on the one hand, and theories stating the rise of a more achievement-based society instead of a society where ascribed characteristics dominate. A weakening association in the marital mobility table can then result from both evolutions.

4.1. Parental stratification

To estimate the social distance between the occupational categories of the fathers, marital mobility will be modeled by a frequently used version of Goodman's row and column effects model II (Goodman, 1979; Hout, 1983). In shorthand notation, this model can be formalized as follows:⁽⁹⁾

$$\log F_{ijt} = (O + D) * T + DIA_i * T + (UA * S_O * S_D) * T \quad (1)$$

- O : groom's origin (father's occupation);
- D : groom's destination (father-in-law's occupation);
- DIA_i : stratum-specific parameters for the main diagonal ('homogamy-parameters');
- UA : uniform association parameter, representing the overall level of association in the mobility table given the relative positions of the strata;
- S_O : score for the social position of father's occupation;
- S_D : score for the social position of father-in-law's occupation;

⁽⁹⁾ In mathematical, log-multiplicative form, this model is:

$$\ln F_{ijk} = \mu + \lambda_i^O + \lambda_j^D + \lambda_t^T + \lambda_{it}^{OT} + \lambda_{jt}^{DT} + \lambda_i^{INH} + \phi_t^T \xi_{it}^{OT} \xi_{jt}^{DT}$$

T: the time-dimension (1830-49; 1850-69; 1870-89; 1890-1909).

The S-parameters are the scaled association parameters. By their inclusion in the model, it is assumed that strata that inter-marry frequently are relatively close. Model (1) is the heterogeneous version of Goodman's model II, because all parameters are allowed to vary through time (T). In other words: the distances between the strata, the level of homogamy, and the overall level of

association all are allowed to vary freely over the four tables representing the time-dimension. Moreover, the stratification for father and father-in-law need not be the same, because no equality restrictions are imposed on the stratification-parameters.

Table D
Models of father's stratification based on marital mobility tables (time by father by father-in-law),
Leuven, 1830-1909

Model	L^2	df	BIC	prob > L^2
1. Baseline: heterogenous, unequal stratification for father and father-in-law	34.52	40	-261.36	0.7147
2. Heterogenous, equal stratification for both fathers	73.37	56	-340.86	0.0596
3. Homogenous	83.61	68	-419.38	0.0961

This baseline model has a deviance of $L^2=34.52$ with 40 degrees of freedom (see table D, line 1). Clearly, this model is overfitted. According to the BIC, a model assuming an equal stratification for both father and father-in-law fits better (line 2). However, the model assuming that the parental stratification did not change over time fits still better (line 3).⁽¹⁰⁾ Thus, the social stratification of fathers was not subject to major transformations in Leuven in the course of the 80 years under study. This model will be used as a baseline in the analysis of marital mobility.

4.2. Marital mobility in the father by father-in-law table

In their 'research agenda' on historical changes in social mobility, van Leeuwen and Maas (1993) proposed several models to test prevailing theories about the extent and form of long term evolutions in social mobility. Their models are used here as a starting point, without repeating their argumentation (see also van Leeuwen & Maas, 1991; Miles & Vincent, 1993a).

The basic null-hypothesis is that there was no change at all in the marital mobility table. This is the most restrictive version of the quasi-equal homogeneous row- and column effects model II (the model accepted in section 0). There, it was assumed that the occupational stratification of both fathers remained the same in Leuven between 1830 and 1910, but the homogamy-parameter (DIA) and the level of overall association (UA) were allowed to vary freely over time ('trendless fluctuation', line 5 in table D). In the 'no change' model, these parameters are also restricted to remain equal over time (line 4 in table D). In the other

⁽¹⁰⁾ In the heterogeneous equal model, it is supposed that S_o and S_D are the same when $O = D$, that is, when father and father-in law are in the same occupational category. In the homogeneous version, neither the uniform or the scaled association scores are allowed to vary over time.

models, the association in the marital mobility table is specified to vary in different respects. In model 6, only the uniform association fluctuates freely over time, while in model 7, only the level of homogamy varies freely. The following models impose a linear trend on both homogamy and the uniform association (model 8), on the uniform association parameter only (model 9), and on the homogamy parameters only (model 10). Models 11 to 13 assume that the general level of association and/or the degree of homogamy changed rather abruptly between 1830 and 1850, taking a constant value thereafter.

Table E
Scaled association models of marital mobility (time by father by father-in-law), Leuven, 1830-1909

Model	L ²	df	BIC	prob> L ²
4. No change: (O + D)*T + DIA + UA*S _O *S _D	121.75	89	-536.58	0.0121
5. Model of ' trendless fluctuation ' in UA and DIA: (O+D)*T + DIA *T + (UA*T)*S _O *S _D	83.61	68	-419.38	0.0961
6. Trendless fluctuation of UA	115.91	86	-520.23	0.0175
7. Trendless fluctuation of DIA	88.65	71	-436.53	0.0765
8. Linear trend in UA and DIA (O+D)*T + β_{ti} *DIA + (β_{t2} *UA)*S _O *S _D	120.43	87	-523.11	0.0103
9. Linear trend in UA	121.43	88	-529.50	0.0106
10. Linear trend in DIA	121.39	88	-529.54	0.0106
11. Jump in UA and DIA between 1830 and 1850 (Same as model 5 but β taking only two values)	120.73	87	-522.81	0.0098
12. Jump in UA	120.75	88	-530.18	0.0118
13. Jump in DIA	121.39	88	-529.54	0.0106
14. Linear trend in DIA in the elite stratum (I), 'no change' of all the other parameters; equal DIA-parameters for all strata except I and V	121.97	91	-551.15	0.0168
15. Model 11 + symmetric linear evolution of mobility between strata I and II (see text)	107.92	91	-565.20	0.1088

Among this multitude of hypotheses, the 'no change' model fits best according to the BIC. Still, it is unlikely that this model is describing the (absence of) trends in marital mobility in Leuven adequately; the probability that the model is true given its deviance and degrees of freedom, is rather low. The conclusion that marital (im)mobility did not change in Leuven during the 19th century is therefore unwarranted. The BIC only indicates that the 'no change' model is better than the others; it is only a relative measure. However, the competing models of changing marital mobility and homogamy are not very subtle. They describe changes only in a very straightforward and undifferentiated way. The models including a linear change in homogamy, for instance, assume that this evolution was in the same direction and to the same extent in all strata at the same time. After all, that is a contention few theories would subscribe to.

Upon inspection of the homogamy parameters in the model of trendless fluctuation (model 5 in table E), it appears in fact that, in Leuven, only in the elite stratum immobility parameters changed notably (see figure B). Moreover, the immobility parameters seem to have been very much the same in the other strata. Thus, a new model was formulated, assuming a linear trend in homogamy in the elite stratum only, and imposing equality restrictions on the other homogamy parameters, except for the servants, clerks, and peasants (see model 14 in table E).⁽¹¹⁾ Clearly this model accords better with the data than all previous models, including the 'no change' model. Still, it should be rejected as describing the Leuven marital mobility table adequately.

Figure B
Evolution of the homogamy parameters in the model of trendless fluctuation, Leuven, 1830-1909
(father of groom by father of bride)

Model 14 states that immobility changed in Leuven during the 19th century in the elite stratum. Inspection of the odds of marrying heterogamous versus homogamous for the grooms originating from this stratum, reveals that their tendency to marry daughters of self-employed upper middle class fathers (stratum II) decreased dramatically between 1830 and 1909. On the other hand, sons of upper middle class fathers increasingly married daughters originating from the elite stratum. Thus, model 15 is an adapted version of model 14, imposing a symmetric linear evolution of immobility in strata I and II: decreasing mobility from elite to upper middle class (i.e. decreasing downward mobility for the sons of elite fathers), but increasing mobility from upper middle class to elite. This model, called the model of symmetric linear evolution of mobility in the upper strata, fits best according to the BIC and should not be rejected given the probability of its deviance.

To conclude, the overall image of marital mobility between the social strata of bride's and groom's fathers, remained much the same in Leuven during the 19th century. There were some significant changes in the upper strata, however. Sons from upper middle class fathers increasingly married elite daughters, while elite sons decreasingly married downwardly mobile (see figure C). The questions to be addressed in the following paragraph are thus:

1. were sons of elite fathers increasingly able to marry elite daughters thanks to their own

⁽¹¹⁾ Initially, homogamy parameters were also fixed to be equal in this fifth stratum, but this worsened the fit substantially.

occupational achievements (e.g. through higher education), or did this evolution take place irrespective of their own occupation?

2. could middle class sons marry into the elite stratum thanks to their own achieved occupational position or was their own occupation irrelevant for the described tendencies?

When the model of symmetric linear evolution among the upper strata can still be accepted after controlling for their own occupation, the model can be considered independent of the groom's occupation. Otherwise, they may result from evolutions concerning intergenerational mobility.

Figure C
Evolution of marital mobility: log odds of marrying upwardly mobile rather than downwardly mobile, Leuven, 1830-1910 (model 15) *

* For stratum I: log odds of immobility rather than downward mobility; for stratum VI: log odds of upward mobility rather than immobility

4.3. Interaction of groom's own occupation with marital mobility

The basic null-hypothesis here is that the parameters describing marital mobility in the model of linear symmetric evolution in the upper strata are independent from the groom's own occupation; that the achieved occupational position of the groom does not interact with the relation between the strata of father and father-in-law. Clearly, this null-hypothesis should be rejected (see model 16 in table F). The alternative model with the marital mobility parameters interacting with the groom's occupation fits better according to the BIC (line 17),

but as such, it too should be rejected as inadequately describing the relations in the 4-way cross-tabulation (time by groom by father by father-in-law).⁽¹²⁾

⁽¹²⁾ Note that, although model 16 is a restricted version of model 17, there can be no valid testing of the models against each other using the difference in L^2 and df, because none of the unrestricted models are acceptable as a 'true' model (see Goodman, 1981).

Models 16 and 17 include the same equality restrictions on the homogamy-parameters and on the trend parameter as the model accepted in the previous section. Thus, the basic pattern of symmetric linear evolution in the upper strata is left intact in these models.⁽¹³⁾ However, as suggested at the end of the previous section, it is possible that the trends discerned there disappears after controlling for the occupation of the grooms. Model 19 in table F is the 'no change' model rejected in the previous section, but including interaction with the 'control variable'. It assumes that the relation between the strata of father and father-in-law did not evolve over time when the occupation of the groom is taken into account.⁽¹⁴⁾ Interestingly, this model fits much better than it did without the interaction with the control variable. Model 20 restricts the stratification of fathers

and fathers-in-law to be the same irrespective of the groom's own occupation. According to the BIC, this model fits best.⁽¹⁵⁾

For the time being, we can conclude that the evolution of marital mobility discovered in the previous paragraph most probably resulted from changes concerning the occupation of the grooms. However, none of the models in table F can be accepted as truly describing the relations between the occupations of the groom, his father and his father-in-law. They all assume that the occupations of groom and father are independent, which is indeed a very unrealistic assumption. In the following paragraph, intergenerational mobility is integrated in these models.

Table F
Scaled association models for the interaction between marital mobility (father by father-in-law) and the groom's own occupation, Leuven, 1830-1909

Model	L^2	df	BIC	prob> L^2
Model of symmetric linear evolution in marital mobility (see line 12, table E) and:				
16. No interaction with groom's own occupation	1759.29	791	-4088.29	<0.00001
17. Interaction between groom's occupation and every marital mobility parameter	986.67	746	-4528.24	<0.00001
18. 'No change' model (line 1 in table E), and no interaction with groom's own occupation	1773.30	789	-4059.50	<0.00001
19. 'No change' but interaction between groom's occupation and all marital (im)mobility parameters	805.38	734	-4620.82	0.0341
20. 'No change' but interaction between groom's occupation and DIA- and UA-parameters only	897.44	761	-4728.36	0.0004

⁽¹³⁾ Be it that parameters are differentiated according to the groom's own occupational position.

⁽¹⁴⁾ This amounts to saying that there is no interaction between the time variable and the association between father's and father-in-law's stratum.

⁽¹⁵⁾ The probability reported for the L^2 of model 17 is not valid here, because the L^2 differs substantially from the χ^2 statistic. Therefore, the L^2 cannot be assumed to follow the χ^2 distribution, so the p-value is invalid.

5. Marital mobility and intergenerational mobility

5.1. Stratification of fathers and sons

As marital and intergenerational mobility will be modeled at the same time, relative distances between strata have to be estimated for the grooms, their fathers and their fathers-in-law. To do this, an extended version of model 20, table F is used. In shorthand notation, the log-multiplicative model is defined as:

$$\log F_{ijkt} = (O+D+G)*T + DIA_i^{OD}*G + DIA_i^{OG}*T + (UA^{OD}*G)*S_o*S_d + (UA^{OG}*S_o*S_g)*T \quad (2)$$

Where symbols have the same meaning as in section 0. In addition:

- G : groom's occupational category;
- DIA_i^{OG} : parameters on the diagonal of the father by groom cross-tabulations;
- S_G : score for the relative social position of groom's occupation;

This model incorporates the 'no change' model of marital mobility, with two marital mobility parameters in the father by father-in-law table interacting with the groom's own occupation ($DIA^{OD}*G$ and $UA^{OD}*G$). In addition, it incorporates intergenerational mobility by a scaled association model. The baseline model here (line 21 in table G) states that the stratification of the grooms is different from the parental stratification. Thus, scaled association scores for fathers and fathers-in-law are fixed to be equal in all tables and homogeneous over time, but they may differ from the grooms's scaled association scores, which can fluctuate freely over time. Model 22 is the all-homogeneous version of model 21, stating that the grooms's stratification scores are also stable over time. The last model in turn is the all-equal model: the scaled association scores are restricted to be homogeneous over time and equal for grooms, fathers, and fathers-in-law.

Table G
Models of fathers's and sons's stratification, Leuven, 1830-1909

Model	L^2	df	BIC	prob> L^2
21. Baseline: parental stratification: equal, homogeneous; grooms's stratification: unequal, heterogeneous	705.51	710	-4543.27	0.5405
22. Parental stratification: equal, homogeneous; grooms's stratification: unequal, homogeneous	716.44	725	-4643.23	0.5824
23. Both parental and grooms's stratification equal and homogeneous	718.22	693*	-4404.89	0.2460

* Model 20 includes a large number (43) of fitted zeroes, resulting in a loss of degrees of freedom (Vermunt, 1993: 38) and a higher BIC.

Model 22 is the preferred one: the relative positions of occupational categories are the same for fathers and fathers-in-law, but they differ from the grooms's occupational positions. None of the two stratifications changes over time.

5.2. Models of marital and intergenerational mobility

In section 0 a linear trend towards greater openness with respect to marriage was discerned in the upper classes: sons of upper middle class fathers increasingly married elite daughters. However, this trend disappeared after controlling for the groom's own occupation, as shown in section 0. It was suggested there that the trend first discovered may have been a result of increased intergenerational mobility: the growing tendency of upper middle class sons to marry elite daughters may have been a result of their own occupational achievements, as they were upwardly mobile with respect to their fathers.

The null-hypothesis that there was no evolution in intergenerational mobility, given that there was no change in marital mobility after controlling for the groom's occupation; that null-hypothesis should be rejected if the picture just outlined is empirically plausible.

Neither the models of trendless fluctuation (models 25 to 27) or the models implying an abrupt change in intergenerational mobility (models 31 to 33) are able to overcome the 'no change' model 24 that formulates the null hypothesis. The model of linear evolution of intergenerational occupational inheritance (parameter DIA^{OG} , model 30), however, fits better than the 'no change' model. This model claims that occupational inheritance between fathers and sons evolved linearly in the same direction in all strata. Inspection of the diagonal parameters in the model of trendless fluctuation suggests, however, that they may have increased in the upper strata I and II while they diminished in the other strata. Finally, there seemed to be no intergenerational inheritance effect whatsoever in the unemployed upper middle class (class III, 'particulier', without occupation).⁽¹⁶⁾ This is formulated in model 34. It fits better than the model imposing the same trend on all inheritance parameters. Model 35, then, is the model of symmetric linear evolution of intergenerational mobility between strata I and II (cf. section 0). It implies that intergenerational mobility in the upper middle class evolved in the same manner as it evolved in the elite class. According to its BIC and deviance, it fits slightly better than model 34. The following section presents model 35 in detail.

⁽¹⁶⁾ The diagonal-parameter for class III is indeed statistically insignificant. Exclusion of the parameter in model 34 increased L^2 by 0.0028 only, gaining one degree of freedom.

Table H
Scaled association models of marital (father by father-in-law) and intergenerational (father by groom) mobility , Leuven, 1830-1909

Model °	L ²	df	BIC	prob> L ^{2*}
24 No change in intergenerational mobility	773.42	747	-4748.89	0.2442
25 Model of ' trendless fluctuation ' in intergenerational mobility (in UA ^{OG} and DIA ^{OG})	716.44	725	-4643.23	0.5824
26 Trendless fluctuation of UA ^{OG}	761.00	744	-4739.13	0.3247
27 Trendless fluctuation of DIA ^{OG}	728.22	729	-4661.02	0.5012
28 Linear trend in intergenerational mobility (linear evolution of UA ^{OG} and DIA ^{OG})	761.15	745	-4746.37	0.3326
29 Linear trend in UA ^{OG}	772.41	746	-4742.51	0.2441
30 Linear trend in DIA ^{OG}	761.61	746	-4753.31	0.3378
31 Jump in intergenerational mobility between 1830 and 1850	770.74	745	-4736.78	0.2493
32 Jump in UA ^{OG}	772.86	746	-4742.06	0.2406
33 Jump in DIA ^{OG}	770.74	746	-4744.17	0.2576
34 Linearly increasing inheritance in strata I and II, linearly decreasing inheritance in all other strata (same slope), no inheritance in III (no occupation)	758.91	747	-4763.39	0.3730
35 Model 34 + symmetric linear evolution of intergenerational mobility between strata I and II	755.96	747	-4766.35	0.4020

* Probabilities of the L² are not valid for most models in this table, as the X²-statistic deffers largely from the L²-statistic.

° In all these models marital mobility is as in model 20 (no change, interaction of UA and DIA with groom's own occupation)

5.3. Connection between intergenerational and marital mobility

Clearly, intergenerational mobility influences marital mobility. One way to make this point evident is to look at densities of marital mobility and immobility with and without taking the groom's own occupation into account. Densities on the main diagonal follow a typical U-shaped curve in figure D, with the strongest immobility found at the higher and lower ends of the stratification (cf. Fukumoto & Grusky, 1993). Figure E shows the same densities after controlling for the groom's occupation: the U-curve has disappeared. When the groom's occupation is taken into account, immobility with respect to his origin is glaringly highest in the lower strata. Net immobility in the elite stratum is relatively low. This points to strong social inequality with respect to the possibilities to move away from one's own origins. Sons of working class fathers hardly marry middle or upper class daughters. Middle class sons are more likely to be heterogamous. This pattern may be explained by differential chances of intergenerational mobility.

Indeed, figure F shows that intergenerational immobility was strongest in the working classes (V and VI); the high degree of homogamy in these strata was due to low intergenerational mobility. Over time, however, occupational inheritance decreased in these strata, which resulted in weakening homogamy. As can be seen in figure H, intergenerational mobility has a positive impact on marital

mobility. To take the example of the blue-collar working class: sons who rose on the social ladder with respect to their father, were 2.5 times as likely to marry out of their stratum of origin than sons who were not mobile intergenerationally. Thus, as working class sons were more likely to achieve a higher social status occupation than their fathers, more were likely to marry out of their working class origin.

Among the elite, occupational inheritance grew in the course of the 19th century, while it remained stable in the upper middle class. Nevertheless, the odds of upward rather than downward mobility grew in the upper middle class. Sons of upper middle class fathers were increasingly able to advance socially into the elite stratum rather than descending to a lower or lower middle class occupation (see figure G). Again, intergenerational mobility had a positive impact on marital mobility (figure H): sons of middle class fathers who achieved an elite occupation were more than 1.5 times as likely to marry elite daughters than middle class sons who descended rather than ascended the social ladder with respect to their fathers. Thus, it was not so much decreasing occupational inheritance that caused decreasing homogamy (as observed in section 0) in this stratum, but rather decreasing downward mobility.

Figure D
Densities of marital mobility and immobility, Leuven, 1830-1910: total interaction without controlling for groom's occupation (model 15)

Figure E
Net densities of marital mobility and immobility after controlling for groom's own occupation,
Leuven 1830-1910 (model 35)

Figure F
Evolution of intergenerational immobility: log odds of being immobile rather than mobile by
father's occupational stratum, Leuven, 1830-1909 (model 35)

Figure G
Evolution of intergenerational mobility: log odds of upward mobility rather than downward mobility, Leuven, 1830-1910 (model 35) *

* For stratum I: log odds of immobility rather than downward mobility; for stratum VI: log odds of upward mobility rather than immobility

Figure H
Effect of intergenerational mobility on marital mobility: odds ratio of upward rather than downward mobility (model 35) *

* I.e. odds of upward rather than downward marital mobility when groom is upwardly mobile with respect to his father, divided by odds of upward rather than downward marital mobility when groom is downwardly mobile with respect to his father; for stratum I: odds ratio of immobility rather than downward mobility; for stratum VI: odds ratio of upward mobility rather than immobility

6. Conclusion

Most historical studies on social mobility, based on marriage records, analyse intergenerational and marital mobility separately. However, the operationalisation of marital mobility often mingles both implicitly. That is: marital mobility is assessed by comparing the occupation of the groom with his father-in-law's occupation. In fact, an intergenerational form of marital mobility is analysed in that case. In order to attain greater analytic clarity, two separate components of intergenerational mobility were posited in this article. First, marital mobility was defined as the relation between the occupational strata of father and father-in-law, second, the connection with intergenerational mobility between father and son was investigated.

Analysis of marital mobility in Leuven (without taking the groom's occupation into account) yielded a methodological as well as a substantial conclusion. Evaluating the evolution of the openness of a society by means of rather undifferentiated models may lead to misleading results. For instance: even if a model assuming no change over time fits better than a model allowing for free fluctuation, one cannot rule out the possibility that there were major changes with respect to marital mobility. It may be that mobility evolved (linearly) in different directions in different strata, leading to a higher deviance in the 'same linear trend in all strata' model. In order to formulate more differentiated models, inspection of less parsimonious models may be very instructive in elaborating more parsimonious models. In this paper, analysis of parameters in models of trendless fluctuation were instructive to determine more parsimonious models, assuming linear trends in specified strata only. In 19th century Leuven, the overall image of marital mobility remained much the same. There were, however, some significant changes in the upper strata. To wit, sons of middle class fathers increasingly married elite daughters, while elite sons decreasingly married downwardly mobile.

However, these tendencies may not have been a result of increasing fluidity with respect to marriage. Indeed, the tendencies disappeared after controlling for the groom's own occupation; there seemed to be no significant interaction between the time variable and the association between father and father-in-law after controlling for the groom's own occupation. The evolutions with respect to the origins of the marriage partners were apparently a result of intergenerational mobility.

Clearly, intergenerational mobility has a positive impact on marital mobility. In all strata, upward intergenerational mobility leads to higher chances of marrying upwardly mobile with respect to the parental origin. As occupational inheritance over generations was strongest in the working classes, net homogamy was strongest in that stratum too. As middle class sons were more mobile intergenerationally, they were also more mobile in marriage. If the social stratification became more open in Leuven between 1830 and 1910, it must have been a result of increased intergenerational rather than marital mobility.

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Appendix A

Table A1: Intergenerational mobility table of father of groom's occupation by groom's own occupation, Leuven, combined table 1830-1913

Period	Groom's father's occupation	Groom's occupation													Total
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	
1830-1849	1	1	7	3	1	2	2	0	2	0	0	0	0	0	18
	2	0	4	0	0	0	4	0	0	0	0	0	0	1	9
	3	0	6	4	2	4	5	0	3	0	0	0	1	2	27
	4	0	4	2	38	12	6	1	43	7	8	0	1	1	123
	5	0	4	2	0	4	2	0	1	0	0	0	0	2	15
	6	0	1	0	2	0	0	0	2	1	1	0	1	1	9
	7	0	2	0	1	2	0	16	46	20	4	1	4	0	96
	8	0	1	0	4	2	1	0	82	6	2	6	7	0	111
	9	0	0	1	1	0	1	0	4	4	0	1	1	1	14
	10	0	0	1	1	2	1	0	9	0	2	1	1	0	18
	11	0	0	0	1	0	0	0	15	3	0	3	1	0	23
	12	0	0	0	1	0	0	0	15	1	2	6	10	0	35
	13	0	1	1	0	0	0	0	2	1	0	0	0	0	5
Total		1	30	14	52	28	22	17	224	43	19	18	27	8	503
1850-1869	1	0	5	0	0	1	0	0	1	0	0	0	0	0	7
	2	0	10	0	1	4	0	0	0	1	1	0	0	2	19
	3	0	4	5	5	1	4	0	5	0	0	2	2	2	30
	4	0	1	4	41	9	2	0	25	3	10	4	2	8	109
	5	0	0	1	2	5	0	0	3	1	0	0	1	1	14
	6	0	0	1	0	0	2	0	1	0	0	0	0	0	4
	7	0	3	1	8	2	0	11	29	23	0	3	5	1	86
	8	0	0	0	7	1	0	0	88	5	6	10	10	0	127
	9	1	0	0	3	2	0	0	6	2	0	1	0	0	15
	10	0	0	0	2	2	0	0	12	0	3	0	0	0	19
	11	0	0	0	1	0	0	0	9	2	1	13	1	0	27
	12	0	2	0	4	3	0	0	28	3	1	6	22	0	69
	13	0	4	1	1	3	0	0	1	0	2	0	0	2	14
Total		1	29	13	75	33	8	11	208	40	24	39	43	16	540
1870-1889	1	1	14	5	0	4	0	0	0	0	0	0	0	4	28
	2	0	13	1	0	3	0	0	0	0	0	0	0	1	18
	3	0	11	10	12	11	0	0	5	4	2	1	0	9	65
	4	0	4	1	58	8	0	1	42	7	7	5	5	7	145
	5	0	4	0	6	10	0	0	4	2	0	2	1	1	30
	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	2	2	6	5	0	8	27	13	0	1	10	2	76
	8	0	0	1	17	2	0	0	147	16	2	19	15	0	219
	9	0	1	0	2	2	0	0	7	2	0	0	1	0	15
	10	0	0	1	8	1	0	0	10	2	7	3	1	1	34
	11	0	0	1	3	4	0	0	21	1	0	18	2	0	50
	12	0	0	0	3	0	0	0	30	4	1	4	18	0	60
	13	0	2	4	5	6	0	0	6	2	1	2	1	2	31
Total		1	51	26	120	56	0	9	299	53	20	55	54	27	771
1890-1909	1	1	15	4	2	6	0	0	1	0	1	0	0	2	32
	2	0	19	2	0	5	0	0	1	0	1	0	0	2	30
	3	0	15	17	15	12	0	1	6	8	0	5	1	6	86
	4	0	6	5	97	24	0	0	90	13	3	44	10	1	293
	5	0	10	6	6	22	0	0	5	6	0	3	2	2	62
	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	3	2	4	7	0	5	19	19	3	1	7	0	70
	8	0	2	3	26	8	0	0	100	9	3	35	15	0	201
	9	0	4	1	3	10	0	0	7	4	1	8	2	1	41
	10	0	0	1	13	4	0	0	22	4	21	9	5	1	80
	11	0	1	0	13	2	0	0	23	7	0	32	7	0	85
	12	0	0	1	7	0	0	0	36	5	3	8	23	0	83
	13	0	2	3	8	12	0	0	13	4	2	3	6	0	53
Total		1	77	45	194	112	0	6	323	79	38	148	78	15	1116
TOTAL		4	187	98	441	229	30	43	1054	215	101	260	202	66	2930

See table A for label of categories

Period	Groom	Father	Father-in-law						Total
			I	II	III	IV	V	VI	
1830-49	I	I	3	5	1	0	0	0	9
		II	0	2	0	3	0	0	5
		III	1	0	0	0	0	0	1
		IV	1	0	0	0	0	1	2
		V	1	0	0	0	0	1	2
		VI	0	0	0	0	0	0	0
	II	I	0	3	0	0	0	0	3
		II	0	2	0	2	0	1	5
		III	0	0	0	0	0	0	0
		IV	1	2	2	5	0	2	12
		V	1	0	0	2	0	0	3
		VI	0	0	0	0	1	0	1
	III	I	2	2	0	1	0	0	5
		II	0	2	1	1	2	0	6
		III	0	0	0	0	0	0	0
		IV	0	0	0	2	2	0	4
		V	1	0	0	0	0	1	2
		VI	1	0	0	0	0	0	1
	IV	I	0	0	0	0	0	0	0
		II	0	0	0	2	0	0	2
		III	0	0	0	0	0	0	0
		IV	0	1	2	14	5	8	30
		V	0	0	0	0	0	0	0
		VI	0	0	1	0	0	2	3
	V	I	0	0	0	0	0	0	0
		II	0	0	0	0	0	0	0
		III	0	0	0	1	0	0	1
		IV	0	0	0	2	1	1	4
		V	1	0	0	3	9	7	20
		VI	0	1	0	1	2	1	5
	VI	I	0	0	0	0	0	0	0
		II	0	0	0	1	0	1	2
		III	0	0	0	1	0	2	3
		IV	0	0	0	14	5	14	33
		V	0	1	0	4	7	8	20
		VI	0	0	1	15	9	37	62

Table A2 (continued)

1850-69	I	I	8	2	0	0	0	0	10
		II	0	2	0	0	0	0	2
		III	1	1	0	0	0	0	2
		IV	0	1	0	0	0	0	1
		V	1	0	0	0	1	0	2
		VI	0	1	0	1	0	0	2
	II	I	0	0	0	0	1	0	1
		II	1	1	0	2	0	0	4
		III	1	0	0	0	1	3	5
		IV	0	1	0	3	0	1	5
		V	0	0	0	1	0	0	1
		VI	0	1	0	0	0	2	3
	III	I	0	1	0	0	0	0	1
		II	0	0	0	0	0	0	0
		III	0	2	0	1	0	0	3
		IV	0	3	0	1	0	0	4
		V	0	0	0	1	0	0	1
		VI	0	0	0	0	0	0	0
	IV	I	0	0	0	1	1	0	2
		II	0	0	1	0	0	1	2
		III	0	0	0	1	0	0	1
		IV	1	2	2	15	4	3	27
		V	0	0	0	2	3	1	6
		VI	0	1	1	4	1	4	11
	V	I	0	0	0	0	0	0	0
		II	0	0	0	0	0	0	0
		III	0	0	0	0	0	0	0
		IV	0	0	0	2	0	0	2
		V	1	0	0	0	16	4	21
		VI	0	0	0	0	0	3	3
	VI	I	0	0	0	0	0	1	1
		II	0	1	0	3	2	0	6
		III	0	0	0	0	1	0	1
		IV	1	0	1	10	2	16	30
		V	0	0	0	4	5	4	13
		VI	1	5	1	21	14	56	98

Table A2 (continued)

1870-89	I	I	10	4	2	0	0	0	16
		II	1	1	0	2	0	0	4
		III	0	0	0	0	0	0	0
		IV	0	0	0	0	0	0	0
		V	0	0	0	1	0	0	1
		VI	0	0	0	0	0	0	0
	II	I	0	3	0	4	0	0	7
		II	0	1	0	12	2	2	17
		III	0	3	0	1	0	1	5
		IV	0	0	0	4	0	2	6
		V	0	1	1	3	0	3	8
		VI	0	0	0	3	0	3	6
	III	I	1	1	0	0	1	0	3
		II	3	2	0	1	0	0	6
		III	0	0	0	0	0	0	0
		IV	0	0	0	0	1	1	2
		V	0	0	0	0	0	0	0
		VI	0	0	0	0	0	0	0
	IV	I	0	0	0	0	0	0	0
		II	0	1	0	0	1	3	5
		III	0	0	0	2	1	2	5
		IV	2	9	2	23	5	10	51
		V	0	0	0	3	1	0	4
		VI	0	0	0	5	2	10	17
	V	I	0	0	0	0	0	0	0
		II	0	0	0	0	1	1	2
		III	0	1	0	0	0	0	1
		IV	0	1	0	2	2	1	6
		V	0	0	0	2	5	5	12
		VI	0	1	0	3	0	7	11
	VI	I	0	0	0	0	0	0	0
		II	0	0	1	2	0	4	7
		III	0	0	1	1	0	5	7
		IV	0	2	1	8	5	19	35
		V	0	0	0	8	10	10	28
		VI	0	1	4	19	10	108	142

Table A2 (continued)

1890-09	I	I	13	6	0	1	1	0	21
		II	5	8	1	1	1	2	18
		III	1	0	0	0	0	0	1
		IV	1	0	0	2	0	0	3
		V	0	2	0	1	0	0	3
		VI	1	1	0	1	0	0	3
	II	I	2	3	0	4	1	0	10
		II	2	14	2	15	2	2	37
		III	0	0	1	4	0	3	8
		IV	0	6	1	11	0	6	24
		V	0	1	2	4	2	1	10
		VI	0	1	0	5	0	3	9
	III	I	0	0	1	0	0	0	1
		II	1	2	0	1	0	1	5
		III	0	0	0	0	0	0	0
		IV	0	0	0	2	0	0	2
		V	1	0	0	0	0	0	1
		VI	0	0	0	0	0	0	0
	IV	I	0	0	0	2	0	1	3
		II	1	0	1	4	1	4	11
		III	0	2	1	3	0	4	10
		IV	3	6	4	36	7	25	81
		V	0	0	0	3	0	2	5
		VI	0	2	2	14	4	13	35
	V	I	0	0	0	0	0	0	0
		II	0	2	1	3	1	4	11
		III	1	0	1	0	1	0	3
		IV	0	1	1	5	2	2	11
		V	0	0	1	2	6	2	11
		VI	0	0	1	5	1	3	10
	VI	I	1	0	0	1	0	0	2
		II	0	1	1	3	1	8	14
		III	0	0	4	3	1	5	13
		IV	0	0	9	61	9	39	118
		V	0	2	0	7	6	9	24
		VI	0	4	8	63	6	94	175
Eindtotaal			120	170	72	559	231	651	1803

Abstract

Marriage records are a valuable source for historical-sociological, quantitative research on social (im)mobility. More specifically, they contain marital as well as intergenerational mobility indicators. Most studies analyse both movements through social strata separately, without considering possible relationships between them. This paper deals particularly with possible connections between marital and intergenerational mobility. The argument dwells on the methodological implications of distinguishing between marital and intergenerational mobility when using marriage records as the empirical basis. Second, marital and intergenerational mobility patterns are analysed in connection, using Goodman's log-multiplicative association models.