SOCIAL MOBILITY IN A DUTCH PROVINCE, UTRECHT
1850–1940

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Among the historical truisms of long standing, but without abundant docu-mentation, is the claim that societal constraints impeding free choice of work or partner acted more forcefully in past societies than they do in the present. In true "meritocratic" societies the utilization of talents and the expression of preferences is free from the inhibiting forces of tradition and power differences. Although such societies are not known to exist, modernization theorists often claim that a historical drive can be witnessed towards such an open society. Underlying the observed historical and national variations in mobility patterns, a universal undercurrent is at work, so it is claimed, equalizing opportunity chances on the labour and marriage market. This assumed transformation from "ascription" to "achievement" is of importance economically—raising produc-tivity through an optimal allocation of labour—and socially— while diminish-ing class tensions; the result legitimizes polity in general and that of twentieth century parliamentary democracies in particular.[1]

This article scrutinizes the claim of a universal movement towards a free society. Both total and relative mobility will be analyzed and some of the main theories on mobility in past societies will be tested. Empirical analyses will be based on data from the first phase of a nation-wide sample, the Historical Sample of the Netherlands. For the period between 1850 and 1940 this study offers information on three types of social mobility: the social position of the father compared with that of his son (intergenerational mobility), the social position of the son compared to that of his father-in-law (connubial mobility), and the social position of the father at the birth and at the marriage of his child (career mobility).

Historical and Sociological Traditions in Mobility Research

Intergenerational, career, and connubial mobility are all considered to be indicators of the openness of society, although in various ways.[2] Most research and theory on the openness of society, however, focus on intergenerational mobility. On the basis of surveys from a dozen Western countries after the Second World War, the sociologists Lipset and Zetterberg were led to believe that total intergenerational mobility—that is the number of persons who change class as a percentage of the total number of persons—is constant in contemporary industrialized countries.[3] Lipset and Zetterberg further assumed that in the past this was not so. According to them, total mobility in the past differed by country, but was uniformly lower than in present societies. In combination, these two assumptions lead to the notion of an "upward convergence" of mobility regimes: over time mobility is on the rise in all countries, but more so in countries with

a low level of mobility than in those with a high level, leading to stabilization at the uniform high level of mobility shown by their data.

Shortly after the formulation of this hypothesis, a theoretical explanation from the "logic-of-industrialism"-school of sociologists emerged.[4] This school maintains that the technological imperatives of industrial production with its drive towards ever rising efficiency, implies that managers increasingly recruit their workforce on the basis of capability as opposed to social origin or custom. The workforce itself is not merely clay in the hands of industrial production, but plays an active role in the process leading from "ascription" to "achievement." Via schooling, the workforce tries increasingly to free itself from the bounds of tradition and parental guidance, choosing more freely from a fuller gamut of occupations. These two processes would explain the assumed rise in mobility during industrialization. The logic-of-industrialism thesis struck a sympathetic chord among historians. A prominent and eloquent formulation is offered by Landes:

> Just as the industrial system tries to combine non-human factors of production efficiently, so will it seek to maximize its returns from wages and salaries by putting the right man in the right place. . . . The logical concomitant . . . is mobility. . . . A competitive industrial system . . . will increase social mobility, raising the gifted, and lucky, and lowering the inept, lazy, and ill-fortuned. This is the kind of thing one sees in eighteenth- or nineteenth century Germany . . . or in nineteenth- and twentieth century Japan . . . or in France . . . or in the India of today.[5]

Unfortunately, data have not been very friendly to the assumption of a constant and uniform level of total mobility in industrialized countries. It was shown that total mobility differs between and within countries and does not vary systematically with the level of industrialization.[6] From here, progress was made in several directions. First, it was proposed that the historical development of social mobility did not result from a single factor. For example, industrialization would only lead to more mobility in regions that had not yet urbanised.[7] Second, the theoretical distinction between total mobility, as discussed up to this point, and relative mobility, also labelled "openness" or "fluidity," was made. Openness is seen as that part of total mobility which is apparent after changes in the marginal distributions of tables have been filtered out. This rather opaque technical language should not obscure the fact that an important substantive notion is expressed. The marginal distributions of tables are the expression of, *inter alia*, temporal changes in the occupational structure and alterations over time of the demographic regime, notably migration and fertility. What remains after these demographic and economic changes have been filtered out are the relative probabilities that individuals of different social strata will follow in the steps of their parents, or conversely, will choose a different occupation. These relative probabilities reflect important social processes such as recruitment patterns of employers and access to education. The novel notion of relative mobility does not render total mobility an obsolete idea, but rather supplements it. In addition to, for example, asking the question, how much did mobility increase during industrialization, one may further ask, to what extent was such an increase due merely to the decline of certain economic sectors and the rise of others, or to the

fact that certain strata had higher reproduction rates than the economy could absorb, and to what extent were "sociological" processes at work, including a loosening of parental bonds on children, educational policies or a shift in value orientation from ascription to achievement.

Armed with the new concept of relative mobility, scholars were able to escape the defeat of the thesis of constant total mobility in industrialized countries through the introduction of the thesis of constant relative mobility, or, as it is commonly referred to, the "common social fluidity" hypothesis, formulated by Featherman, Jones and Hauser.[8] The latter claim that not total, but *relative* mobility is uniform in industrialized societies. Later studies have interpreted the historical implication of this hypothesis in a similar vein as had been the case with the older thesis by Lipset and Zetterberg: an upward convergence of relative mobility regimes of various countries over time.

The accuracy of this assumption with respect to intergenerational mobility is highly debated by two groups of sociologists, each equipped with a different set of methods and data, and reaching opposite conclusions. Erikson and Goldthorpe, on the one hand, gathered data on a small number of Western countries around 1973 in the so called CASMIN project ("Comparative Analysis of Social Mobility in Industrialized Nations").[9] These data are of excellent quality and high comparability. In order to infer historical changes, Erikson and Goldthorpe see differences in intergenerational mobility between the age groups as reflecting temporal changes in mobility over time, i.e. between 1910 and 1945. They conclude that meaningful dissimilarities between national mobility regimes are absent, thus corroborating the constant social fluidity hypothesis. They also infer that temporal changes are meaningless, thus repudiating the historical part of this hypothesis which expects an upward convergence in relative mobility over time.

These conclusions are contested by Ganzeboom, Luijkx and Treiman, following a different approach.[10] They collected as much data as they could find over as many nations as possible after the Second World War. The price to pay for this abundance of data is that quality and comparability inevitably suffer to some degree. As compensation, it means that it is no longer necessary to infer changes over time from differences between age groups. These can now be estimated directly from surveys relating to different years. In addition to using a different set of data, Ganzeboom, Luijkx and Treiman adhere to methods diverging from those of Erikson and Goldthorpe. Although both teams use log-linear models—to be discussed later—they make dissimilar assumptions on the nature of mobility regimes. Ganzeboom, Luijkx and Treiman conclude that relative mobility has grown slowly but steadily over the years. The growth rate amounts to approximately one per cent per year and is thus hard to detect over short periods, but, over long time periods it amounts to a significant opening up of the mobility regime. Additional support for this claim is found in recent studies establishing a similar increase during the twentieth century of the relative chances to marry persons with a different social background.[11]

A small number of scholars have engaged in this debate by applying the appropriate social science methods—loglinear models—to historical data. For the United States, two independent studies have demonstrated that relative mobility has been on the rise in the twentieth century. Grusky studied intergenerational

and career mobility for both the turn of the century and 1973, respectively reanalysing various new urban history studies based on linked censuses and a national survey from 1973. Guest, Landale and McCann also took the latter survey as the endpoint of their research, but employed samples from the censuses of 1880 and 1900 as starting point. In both cases, relative mobility was observed to have increased. The same is true for intergenerational mobility in England from the investigation by Miles, based on ecclesiastical marriage records in the period 1839–1914, and for the same form of mobility in the city of Berlin between 1825 and 1956. Results from three other cases, did not, however, point in the same direction. Fukumoto and Grusky observe stable relative mobility in Marseille, albeit over a short period, 1821–1869, as do Van Leeuwen and Maas for connubial mobility in Berlin, 1825–1956. De Sève and Bouchard find that in Quebec in the nineteenth and twentieth centuries fluidity is either stable or even decreasing.[12] Most of the long-term historical studies thus show an increase in fluidity, with three exceptions, but the number of studies conducted is still so small that there is no telling if the exceptions may turn out to be the rule when a sufficient body of empirical results is at our disposal. The Utrecht-data, analyzed in this article, will be a case in point.

Mobility research in the Netherlands

Historical research on stratification and mobility in the Netherlands is of recent date. Two debates concern the nature and development of the social stratification.[13] In the 1970s a fierce debate took place over the question of whether a marxist class scheme or a Weberian ranking of society is more appropriate. The first class scheme sees economic position as the sole indicator of one's position in society, whereas the latter scheme relies on a diversity of economic, social and political indicators. The two theoretical notions have been used to construct hierarchies of local historical populations using a variety of historical records, but no direct test of the superiority of either notion has been implemented. The second debate on the nature of Dutch social stratification is that posed by Brugmans, who claimed that Dutch society changes from containing only two social groups to three groups after 1850. In his view middle classes are largely absent before that date, as shopkeepers or clerks are small in number and do not form a distinct social group. Processing of food-stuff for example, in his view still takes place in the household to a large extent and paperwork is often done by the employer himself.[14]

Quantitative studies on social mobility of the whole society, as opposed to either narrative studies or investigations of particular social groups, have not prospered in the Netherlands. Five studies concern the nineteenth century and all deal with total and not relative mobility.[15] The first one shows that career mobility increases in Rotterdam from 18 to 29 per cent between 1830–40 and 1870–90. The second study is a follow-up of the first and researches career mobility in the city of Eindhoven, and both intergenerational as well as connubial mobility in Eindhoven and Rotterdam, the villages of Bommellerwaard and Hillegersberg and the countryside of the province of Zuid-Holland in the period 1850–1940. No trend or relation between mobility and degree of industrialization is visible. For example, intergenerational mobility in the industrial town

of Eindhoven around 1900 was not markedly higher than in non- or lesser in-
dustrialized areas. A third study has replicated the Eindhoven study on a bigger
and differently composed data set, showing stable career mobility and slightly
increasing intergenerational mobility between 1860 and 1920. The latter is also
discernible for the city of Tilburg between 1849 and 1920. A last study focuses on
both intergenerational and career mobility in the village of Hoogstraten in the
period 1810–1870 and does not detect a clear development over time. In sum,
the existing historical Dutch studies do not suggest a clear rise in total mobility
rates over time, nor a clear connection between mobility levels on the one hand
and industrialization on the other.

   Relative mobility has not been investigated by Dutch historians. Sociologi-
cal research has, however, shown that relative intergenerational and connubial
mobility have been on the rise in the second half of the twentieth century.[16]
Whether this is part of a long wave of openness, or a phenomenon merely relat-
ing to forty exceptional years—is an enigma, to be solved, in part, by the present
research.

Historical Sample of the Netherlands (HSN)

   The Historical Sample of the Netherlands (HSN) collects data on the "life-
course" of the Dutch population.[17] The point of departure is a sample of approx-
imately half a percent of the birth certificates in the period 1812–1922. Birth
registers contain not only information on the new born child, but also name,
address, age, occupation, and signature of parents and two witnesses. In a second
step, information on the death of all persons in the sample is collected. For the
oldest cohorts all data on the death certificates are added to the data set. The
search for death certificates was performed in all communities of the province
of birth, in all communities adjacent to this province, and, if necessary, in large
cities, such as Amsterdam and Rotterdam. For deaths after 1938 the so called
"Person- and Family-cards" could be used which are centrally kept. In this second
step, information on migration as well is collected, since persons are "followed"
through the registers from birth to death. In a third step, marriage certificates
are gathered. These are extraordinarily rich sources with data on address, occu-
pation, and signature of bride and groom, their parents, and their witnesses. The
resulting data set can be used to answer a wide range of important questions,
and, in addition, may serve as a base for further research by others. The HSN
will eventually cover the Netherlands as a whole, and at present the data for
the province of Utrecht have been processed. The sample of the province of
Utrecht consists of 3669 birth certificates. For 2636 persons death certificates or
Person/Family-cards were found. This can be considered to be a high "response"
rate taking into account that many of the youngest members of the sample are
still alive. The number of marriage certificates that were found is considerably
smaller (1288 of which 1225 refer to first marriages). It is clear that not all
marriages certificates are found, but secondarily, high child mortality in the be-
ginning of the nineteenth century contributes to the relatively low number of
marriages.

   The HSN-data cover many aspects of economic, demographic and social
life. For this article only data on social mobility are used. The HSN-data set

contains information on three types of mobility: intergenerational mobility, as derived from marriage records containing occupations of bridegrooms and their fathers; connubial mobility, between bridegrooms and their father-in-law from the same source; and career mobility as displayed by contrasting the occupations of fathers at marriage of their children to the occupations of these fathers on the birth certificates of the same child.

In many respects the province of Utrecht was a "miniature Netherlands." Economically speaking it was, however, a little backward. The country as a whole industrialized late, perhaps due to the availability of other sources of income inherited from the balmy days of merchant capitalism in the Golden Age, and due to the influx of colonial revenues from the East-Indies. Utrecht, however, was even for Dutch standards a late industrializer. For the country as a whole, industrialization is by most historians considered a phenomenon of the last quarter of the nineteenth century, with a few earlier exceptions. Utrecht was not among those exceptions. It was late in mechanizing the labour process. Only four places had any industrialization of importance—Amersfoort, the city of Utrecht, Zeist and Veenendaal; and then only from the last years of the nineteenth century onwards, after the construction of a canal linking the Rhine—a major European transport river—to Amsterdam in 1892. Other important events in this respect are the construction of two steel factories in 1913 and 1914, and the foundation of a mill processing coffee from the East Indies in 1919.[18] The earliest industrializing town may have been the city of Utrecht which developed as a major railroad centre, but even here industrialization proper occurred after the turn of the century. By 1940 the province, or at least its main cities of Amersfoort and Utrecht, had industrialized properly, in the sense of concentrating labour and making use of electric and gasoline engines as power sources. The share of small firms (employing five men or fewer) of the total number of firms in industry dropped, for example, from two-thirds in 1891 to one-third in 1930 in the city of Amersfoort. Horsepower increased from twelve in 1866, to 193 in 1891, 432 in 1901, 735 in 1911, 2,617 in 1919 and 4,984 in 1930. Industrialization was of lesser importance in Amersfoort than it was in other Dutch cities, and even in 1930 in the two most industrialized sectors of its economy—metal and foodprocessing—just under half of the total labour force continued to work in traditional, small scale workplaces without mechanical power sources.[19]

Keeping Utrecht's late industrialization in mind and given the fact that some ninety percent of all marriages in the sample took place between 1850 and 1940, the sample of marriage records has been subdivided here in two periods: first marriages through 1900 (N=499) and first marriages from 1901 onwards (N=726). By and large, the two marriage cohorts thus relate to respectively the period 1850–1900 and the period 1901–1940. Only occupations of men have been analyzed. Recorded occupations of women are few in number, mostly relating to unskilled labour.

The occupations in the HSN-data set have been grouped in seven categories following conventional Dutch historical and sociological categories. Occupations are categorized according to the definitions of the persons themselves. If the emphasis in the occupational title is on selling, persons are considered shopkeepers although they might have also been engaged in production. If they

emphasize production, they were considered artisans, unless the title indicates dependency, in which case they were scaled as workers. In general, this procedure is considered reliable by Dutch historians, despite occasional allocation problems concerning individual titles. The stated occupations in the Dutch historical vital registers are, on the whole, not markedly less precise than in contemporary surveys. Potentially problematic categories do exist, however. They refer to "merchants" and "farmers." These categories are sometimes said to contain persons of rather different fortunes, and contemporary sociological studies demonstrate that farmers in any case display a mobility pattern with a large degree of inheritance. It seems wise to allocate these titles a category of their own. The seven groups thus are:

I	Professions, high civil servants and entrepreneurs
II	Merchants
III	Artisans
IV	Shopkeepers and other self-employed
V	Technical and administrative personnel
VI	Unskilled labourers and rural labourers
VII	Farmers

The appendix contains the mobility tables following from this sevenfold distinction, over two time periods, for three types of mobility, with a distinction between towns and countryside.

Occupational Structure and Total Mobility

No general study of social life in the province of Utrecht is available, to provide a background sketch for the analysis of mobility and stratification. The scattered information available does not contradict the image of the province as mixed—religiously, socially and demographically—and not markedly different from the average Dutch province.[20]

Global changes in the occupational structure of the province of Utrecht, as reflected in the HSN-data, are visible from Table 1 by comparing the occupational distributions in the second column of the table of the bridegrooms of the earlier cohort—relating to the second half of the nineteenth century—to those of the later cohort in the fourth column—relating to the first half of the twentieth century. It is evident that the percentage of artisans declines over time, as do the shares of farmers and unskilled and rural labourers. The share of the technical and administrative personnel has grown. The table also displays the distribution of occupations of fathers of bridegrooms. Due to the omission of men without children in the table and because of large differences in fathers' age the occupations of the fathers cannot be viewed as representing neatly the occupations of a random sample of the male labour force at a particular point in time. It nevertheless remains interesting to note that the occupational distributions up to 1900, both those of fathers and those of sons, look similar (see the first three columns of Table 1). The occupational distribution of sons after 1900—in the fourth column—is decidedly different, suggesting that after that year shifts in the occupational structure will have caused "forced" mobility. Whether this is indeed the case will become clear after analysing the mobility tables.

Table 1

Changes in occupational structure

Social group		Marriage cohorts			
		≤ 1900		≥ 1901	
		Father	Son	Father	Son
		%	%	%	%
I	Professions, high civil servants,				
I	entrepreneurs	4	3	4	5
II	Merchants	7	5	7	6
III	Artisans	23	30	26	20
IV	Shopkeepers and other self employed	7	8	8	9
V	Technical and administrative personnel	10	11	12	31
VI	Unskilled and rural labourers	31	31	31	21
VII	Farmers	17	12	11	8
Total		100	100	100	100
N		247	486	405	712

Source: *HSN-release* 94.0

The number of persons who are occupationally mobile as a proportion of the total number, rises over time for all three forms of mobility, see Table 2. For intergenerational mobility, the share of the mobile goes from a third to one half, for connubial mobility from one half to two thirds, and in the case of career mobility it increases only slightly, from a quarter to somewhat more. Although the degree of total mobility is of course dependent on the number of classes and the periodisation chosen, some general observations are nevertheless permissable. To begin, it is clear that Utrecht society had a considerable degree of social mobility in the last half of the nineteenth as well as during the first half of the twentieth century. In addition the degree of mobility differed per type of mobility in a standard way. The possibility of changing social groups via choice of partner is highest, followed by escaping from parental social circles by choosing a different type of work than one's father, and, lastly, by changing social group in the course of a career.[21] Finally, it is clear that total mobility increased over time, irrespective of the particular type of mobility.

We will refrain from comparing total mobility numbers in our study with those from others. As the major synthesizing works on historical social mobility by Kaelble have demonstrated, it is a strenuous task to compare total mobility rates from published work. Observed differences may very well be spurious due to different class boundaries, a varying number of classes, and variations in the populations sampled due to the wide range of historical sources used.[22] In historical research the situation is more delicate than in contemporary sociological studies, and even there "the data ... at least in their published form, have been of such a limited degree of comparability that serious doubts must arise over whether any useful purpose at all can be served by bringing them together.... Even 'preliminary' conclusions based upon them would be as likely to mislead as to inform further enquiry."[23] Detailed comparisons with other places and time spans would require that individual level data from the same type of document,

Table 2
Total mobility per marriage cohort

Mobility type	Marriage cohort	%	N
Intergenerational	≤ 1900	34	242
	≥ 1901	49	399
Connubial	≤ 1900	53	266
	≥ 1901	66	474
Career	≤ 1900	25	260
	≥ 1901	28	417

Source: *Appendix 1*

Legend

Total mobility	Persons changing class as a percentage of the total number (N)
Intergenerational	Occupation of bridegroom at his marriage versus that of his father on the same occasion
Connubial	Occupation of bridegroom at his marriage versus that of his father-in-law on the same occasion
Career	Occupation of father at the birth of his child versus that at the marriage of his child

notably marriage certificates, would be coded according to the same grid—a notional Historical International Social Coding scheme of Occupations, that is the historical equivalent of the existing sociological ISCO—and grouped in the same class scheme. In the absence of such a project, it seems safe to adhere to Kaelble's synthetic observations demonstrating that total mobility rates from various European studies and epochs vary markedly without revealing a clear regional and temporal pattern. The observed Utrecht rates fall within this wide range.[24]

Some social strata hang on to their members more than others; in other words, it is more common for sons of these strata to enter the same type of occupation as their fathers and continue in this line of work for the rest of their life, and to marry a girl from the same social group. For example, the relatively high degree of farmers' inheritance is a well documented phenomenon in both past and present populations. It may relate to the conveyance of farmsteads difficult to obtain for outsiders, to geographical isolation, or to the fact that beginning a farm without being raised a farmer's boy is difficult due to lack of skills. The high immobility of farmers in Utrecht is indeed visible for all three types of mobility: sons of farmers become farmers themselves, farmers marry farmers' daughters, and once a farmer always a farmer (Table 3). Once a farmer always a farmer seems to have been especially true in the second cohort, whereas conversely intergenerational immobility of farmers declines in this period. The declining share of the agricultural labour force in this period seems to have diminished career mobility for farmers while at the same time stopping some sons of farmers from following in their fathers' steps.

Although in some instances numbers are too small to allow firm conclusions, the overall pattern is one of high class specific immobility. When comparing

Table 3
Immobility per class, type of mobility, and marriage cohort

Marriage cohorts ≤ 1900

Origin	Intergenerational		Connubial		Career	
	%	(N)	%	(N)	%	(N)
I	77	(9)	60	(5)	100	(5)
II	28	(18)	33	(15)	100	(10)
III	74	(58)	61	(59)	77	(36)
IV	67	(18)	11	(28)	67	(24)
V	57	(21)	14	(14)	46	(13)
VI	69	(77)	52	(92)	73	(94)
VII	68	(41)	51	(53)	81	(48)

Marriage cohorts ≥ 1901

Origin	Intergenerational		Connubial		Career	
	%	(N)	%	(N)	%	(N)
I	41	(17)	50	(18)	100	(6)
II	39	(28)	6	(33)	50	(22)
III	54	(106)	23	(113)	77	(128)
IV	47	(32)	27	(44)	69	(35)
V	62	(47)	38	(74)	66	(44)
VI	50	(125)	42	(139)	68	(151)
VII	55	(44)	47	(53)	94	(31)

Source: *Appendix* 1.

Legend
Immobility   Percentage of persons staying in their class of origin.
Social groups
I   Professions, high civil servants, entrepreneurs
II   Merchants
III   Artisans
IV   Shopkeepers and other self employed
V   Technical and administrative personnel
VI   Unskilled and rural labourers
VII   Farmers

marriage cohorts before and after 1900, it is clear that class specific *im*mobility usually decreases, in line with the previous finding of increasing overall mobility. There are some exceptions, notably for the class of technical and administrative personnel. The amount of immobility increased, e.g. up to 1900 one sixth (14%) of those in that class married a girl from the same class as opposed to one third (38%) after the turn of the century. Intergenerational immobility increased likewise; the growing share of technical and administrative personnel seems to have encouraged some sons to follow in their fathers' steps.

Some groups are more heterogeneous than others. The composition of three groups (farmers, technical and administrative personnel, and unskilled and rural laborers) is displayed in Table 4, showing recruitment patterns. Other data are not shown as they would be based on very small numbers. The so called "inflow"

Table 4
Inflow percentages for three occupational groups per marriage cohort

Farmers (VII)

Origin	Intergenerational		Connubial		Career	
	≤ 1900	≥ 1901	≤ 1900	≥ 1901	≤ 1900	≥ 1901
I	3	0	0	0	0	0
II	3	0	0	0	0	3
III	3	0	3	3	4	0
IV	0	4	6	6	2	0
V	0	0	3	3	0	0
VI	3	4	14	17	16	19
VII	88	92	75	71	78	78
Total (%)	100	100	100	100	100	100
N	32	26	36	35	50	37

Unskilled and rural laborers (VI)

Origin	Intergenerational		Connubial		Career	
	≤ 1900	≥ 1901	≤ 1900	≥ 1901	≤ 1900	≥ 1901
I	0	1	0	0	0	0
II	5	7	1	3	0	4
III	8	11	10	20	7	10
IV	1	2	6	5	2	4
V	1	6	4	9	2	4
VI	71	66	62	55	79	76
VII	13	6	17	8	9	1
Total (%)	100	100	100	100	100	100
N	75	94	78	107	87	136

Technical and administrative personnel (V)

Origin	Intergenerational		Connubial		Career	
	≤ 1900	≥ 1901	≤ 1900	≥ 1901	≤ 1900	≥ 1901
I	0	4	4	4	0	0
II	0	3	4	7	0	2
III	16	26	30	29	29	20
IV	12	5	12	8	0	3
V	48	25	8	20	43	48
VI	20	30	31	25	29	27
VII	4	5	12	7	0	0
Total (%)	100	100	100	100	100	100
N	25	115	26	138	14	60

Source: *Appendix 1.*

Legend:
Inflow percentages	Distribution in percentages of the number of persons in a given occupational group over the occupational group of origin
Origin	For intergenerational mobility: father's occupation; for connubial mobility: father-in-law's occupation; for career mobility: occupation at birth of child

rates show that farmers are an extremely homogeneous groups in both periods: some 70–90 percent of cases refer to self-recruitment. In so far as outsiders are recruited, they come mainly from the class of unskilled and rural laborers. In the case of career mobility, we may be dealing with sons of farmers who at the start of their occupational career work some time as farmhands before inheriting the farm. Among the unskilled and rural laborers only a few are found that originated in other classes. Most probably these are the wives and they tend to have an artisan or farm background. In both periods, the technical and administrative personnel is the least homogeneous group, which makes sense as it is rapidly growing in size. They increasingly have fathers from other classes. More than three quarters of the wives come from other classes, and more than half of all who are members of this class at the end of their career started their occupational career somewhere else. In all these cases those who flow into the class of technical and administrative personnel are most likely to come from the artisan and the unskilled labour class. Combining the results of tables 3 and 4, it is clear that in face of growing job opportunities, newcomers flocked to this class—reflected by the high inflow rates—and those already in tended to stay—reflected by the high immobility rates.

Variations in mobility regimes between town and countryside are seldom subject to scrutiny. Once one has painstakingly collected urban data, the desire to start a time-consuming project to gather rural information is usually and understandably limited. The Historical Sample of the Netherlands, however, samples cities as well as rural areas. The Utrecht HSN-data thus allow researchers to distinguish between the cities of Amersfoort and Utrecht (the provincial capital bears the same name as does the province as a whole) on the one hand, and, on the other hand, small towns, villages or hamlets, denoted here in short as "countryside." Total mobility in town and countryside is shown in Table 5. For all types of mobility and both periods, town inhabitants are more mobile than persons living in the countryside. And yet the countryside is not an immobile

Table 5
Total mobility for town and country

Mobility type	Region	Marriage cohorts			
		≤ 1900		≥ 1901	
		%	(N)	%	(N)
Intergenerational	town	48	(84)	51	(144)
	countryside	27	(158)	47	(255)
Connubial	town	59	(94)	82	(161)
	countryside	51	(172)	58	(313)
Career	town	29	(86)	29	(153)
	countryside	22	(174)	27	(264)

Source: *Appendix* 1.

Legend:
Town   Amersfoort and Utrecht
Countryside   All other places

society. Before the turn of the century, half of its inhabitants marry outside their own social class, a quarter of sons work in classes different from their father's, and a fifth change position during their occupational careers. After the turn of the century, total mobility in the countryside had risen to the level of mobility that existed in the towns in the prior period. Town and countryside, however, remain apart, as total mobility has also been on the rise in the towns. The chance to marry someone from another class has risen to the remarkable high level of 82% in the cities. The chance to be occupationally mobile over generations has risen only slightly, from 48% to 51%, while career mobility did not change at all.

Relative Mobility: Simple Models

Total mobility did increase in Utrecht from the nineteenth to the twentieth century, both in urban and rural areas, and for intergenerational, connubial and career mobility. Total mobility is indeed a useful "catch all" indicator of social change. The fact that the totality of the mobility world is expressed in one simple measure is both an asset—descriptive simplicity—as well as a drawback—the various constituent components of the mobility regime are not dissociated.

Important determinants of total mobility are changes in the occupational structure and demographic characteristics, such as average family size within social classes. These factors determine the numbers of fathers, fathers-in-laws, and sons in different social classes. Looking at a mobility table, these numbers are in the margins. For a dissociation of "societal openness" from these marginal or structural effects, the concept of relative mobility becomes useful. Relative mobility is the mobility that is left after economic and demographic influences are filtered out of the total mobility rates. The causes of relative mobility (also called openness, or social fluidity) in a society include social processes relating to, inter alia, educational opportunities and freedom in choosing an occupation or finding a partner.

The best tools available to measure relative mobility are log-linear models. Several models have been developed, each making different assumptions on the nature of the relative mobility regime. Details may be found elsewhere, but the underlying principles merit a short discussion here.[25] To determine which model best describes the pattern of relative mobility, model fit statistics are compared, that is the difference between observed cell frequencies in a table and those expected under the model, keeping in mind that simple models are to be preferred to more complex ones. If two models fit the data equally well, the more parsimonious one (estimating fewer parameters) is considered superior. To illustrate why "parsimony" is seen as a virtue, it may be useful to note that complex models are difficult to interpret, may capture nothing more than eventualities, and that the most complex loglinear model—the so called "saturated" model—is a full simulation of the data, that is, in a certain sense not a model at all but a mere description of the data. This is not to say that simple models are preferred per se, as they, as a rule, will be less accurate in predicting the data than the complex ones. The issue at stake is, how to achieve the optimal balance between truth-

fulness to the data and simplicity of the model. To this end many measures have been proposed, but two are most often used, and are presented here. The first is BIC, often used in mobility research. It is easy to use, in the sense that a model with a lower BIC is to be preferred to a model with a higher BIC. The second measure reported here is the L^2, a measure of the difference between observed and predicted cell frequencies and hence an indicator of the truthfulness of a model, used in combination with an indicator of the complexity of the model, the "degrees of freedom" or "dfs." As this measure is more complex in use than BIC, and in addition can be used when comparing some models—the "nested ones"—only, BIC will be our mainstay in the analysis, unless using L^2 would lead to markedly different conclusions, in which case both measures will be discussed.

The analyses will start by making use of two simple log-linear models, proposed by Erikson and Goldthorpe.[26] Both are log-linear models, thus eliminating changes in the marginal distribution of tables, and concentrating on relative mobility. Two models are compared. The first "constant fluidity model" states that the association between, for example, the occupation of a bridegroom and that of his father, or in other words, the degree to which father's occupation influences that of his son, does not change over time. The second "model of uniform change" on the contrary allows for a change in this association. For the whole mobility table, that is for all combinations of classes of fathers and sons, this change should be in the same direction: either an increase or a decrease in association. Both models have in common that they do not specify what the association actually looks like. They focus completely on the question of change in association over time. Should the model of uniform change fit the data better than the constant social fluidity model, this would mean that the openness is different for the marriage cohorts after 1900 than for the marriage cohorts before the turn of the century; in other words, relative mobility would have increased or decreased.

The two models mentioned have been applied to three sets of data (intergenerational, connubial and career), each having two tables (for the earlier and the later cohort). To illustrate how to read the ensuing results, it is worthwhile to focus on intergenerational mobility in the first two lines of Table 6. The model of uniform change estimates the same parameters as the model of constant social fluidity, plus an extra one allowing for a change over time. The difference in complexity between the two models thus amounts to one (parameter), which is reflected in the differences in degrees of freedom, 36 versus 35. The model of uniform change is more complex and, not surprisingly, fits the data better as is indicated by a lower L^2. This is a measure for the difference between the observed cell frequencies in the two intergenerational mobility tables and the cell frequencies as expected under the model. In this case the complex model reduces the misfit from 37 to 33.9, or, the other way around, improves the fit with 3.1. The question is if this improvement is significant. Is it worthwhile to have the one extra parameter if it results in a better approximation of the mobility tables of this order of magnitude? One way to answer this question statistically, is to consult a statistical table (a so called Chi-square table, with, in this case

Table 6

Global changes in relative mobility: fit of models

Mobility type	df	L^2	BIC
Intergenerational			
1. Constant social fluidity	36	37.0	–196
2. Uniform change	35	33.9	–193
Connubial			
1. Constant social fluidity	36	32.9	–206
2. Uniform change	35	32.6	–199
Career			
1. Constant social fluidity	36	34.4	–201
2. Uniform change	35	33.7	–195

a difference of df = 1, and, a significance level of, say, 0.05) and look up the critical value. If the observed improvement of fit is higher than the critical value (of 3.8 as the table consulted shows), it is significant and the more complex model is accepted. If it is lower, the more parsimonious model is preferred. As 3.1 is lower than 3.8, this is indeed the case: the constant social fluidity model is preferred over that of uniform change, in other words the openness did not increase significantly over time. Another way to look at the same question—and the preferred one in this article—is to simply compare BIC's. It is beyond this article to trace the intricacies of this measure, but its use is simple. The constant social fluidity model has a better fit than that of uniform change as it has a lower BIC (of –196 versus –193, or a difference of 3). BIC thus agrees with L^2/df: no change in openness over time.

Table 6, as stated, reports the fit of both models for the three types of mobility. Comparing the BICs of the models for connubial and career mobility shows the same pattern as in the case of intergenerational mobility. The conclusion is that relative mobility remains constant over the period 1850–1940. A look at the parameters of the model that lost the contest, that of uniform change, confirms the constant openness in Utrecht society. Although two of the parameters are negative, indicating a movement towards greater openness (weaker association) for two out of three types of mobility, this movement is so faint as to be statistically insignificant, see table 7. All told, the global models indicate that the openness of Utrecht society remains constant over the period 1850–1940.

This is, however, a global conclusion. The models used only test if the associations between, say, occupation of the bridegroom, and that of his father, change uniformly, that is in the same direction and with the same speed for all segments of the table, that is for all combinations of occupations, or, to put it yet differently, for all processes of social exchange between the different strata. It remains possible that the openness changes not uniformly but in a more subtle way. To test this, a different set of models is needed. These are conceptually and statistically more complex. These models also require information on the

Table 7

Global change in relative mobility: parameter values of the model of uniform change

Mobility type	estimated parameter value	standard error
Intergenerational Change in association from the first to the last cohort	–0.16	(0.09)
Connubial Change in association from the first to the last cohort	–0.07	(0.13)
Career Change in association from the first to the last cohort	0.07	(0.08)

Note:
Parameter estimates are significant if their value is two times their standard error or more.

hierarchy of social groups, whereas no such information is needed for the simple models. Before introducing the complex models, it seems best first to tackle the question of how to obtain information about the relative ranking of social groups in Utrecht.

Social Stratification

The ranking or stratification of social positions may be based on "expert-judgement," or in other words on intuition and common sense of researchers familiar with the social fabric of society. While there is nothing inherently wrong with such an approach, it is worthwhile to delve into this matter further and, by applying more formal methods of ranking, to see if the data corroborate, reject or refine such intuition. In principle two roads towards precision and validation are open. One may use external or internal criteria. In the first case material other than the mobility data are used, such as average income or wealth from tax records, literacy rates from marriage banns, or prestige rankings from contemporary sociological surveys. As such material is currently unavailable for the province of Utrecht, the second option—the use of internal criteria—is by default the preferred one. The question is: how to infer stratification from mobility?

Social mobility and stratification are often studied in conjunction. A venerable research tradition has it that the two are so intimately connected that the latter can be inferred from the former. The "social distance" between two occupational groups is seen as a reflection of the exchange between them. Groups are close if there is a high exchange between them and they are socially distinct

if little exchange occurs. On this premise, relative social distances can be estimated on the basis of mobility tables using Goodman's "row and column" model II.[27] This model estimates distances between classes on the basis of the amount of mobility between them. Besides estimating these distances, the model can be used to test whether the social distances change markedly over time, in other words if models with a different social ranking per period fit significantly better. The model constraining the social ranking to be the same in both periods fitted the Utrecht-data best.[28] This means that distances between social groups did not change markedly over time in Utrecht between 1850 and 1940. This is not to say that no changes occurred, but merely that the relative positions of the seven occupational groups in question did not alter drastically.

The social hierarchy estimated on basis of mobility between classes looks as follows (relative social positions may range from a high 1 to a low –1). Elite occupations can be found at one end of the social spectrum: the professions, high civil servants and entrepreneurs (relative position of 0.36), followed by artisans (0.24) and the technical and administrative personnel (0.24). Next in line are the merchants (0.06) and the shopkeepers and other self-employed (0.06), followed by the unskilled and rural labourers (–0.10). At the lower end of the social spectrum are farmers (–0.86). Utrecht farmers are not very mobile, but in so far as they exchange with other occupational groups, it is predominantly with those of lower social strata—such as unskilled labourers—rather than with those of higher strata.[29] The relatively high placement of the technical and administrative personnel is perhaps not entirely in accordance with a hierarchy based on status or income. This group includes office workers, assistant shopkeepers, middle and lower civil servants, and (semi) skilled workers including factory workers. It is conceivable that the social distance between artisans and their journeymen (skilled workers) is small and that the office workers or the middle civil servants elevate the group as a whole to a social position bordering that of artisans and shopkeepers.

Relative Mobility: Complex Models

The more complex models needed to investigate whether relative mobility has increased over time in a more complex fashion than the global models could indicate will make use of the social hierarchy reported above. These models have been developed by Goodman and are named models of "scaled association."[30] In a nutshell, they disentangle two aspects of the mobility world: processes of inheritance and processes of exchange. Processes of exchange are covered via the parameter of "uniform association," which models a mobility world in which moving from one class to another becomes increasingly difficult with increasing distance between classes (in this respect the models treat downward and upward mobility similar). Processes of inheritance can be modelled in two ways, and it is up to the data to decide which way fits significantly better. The first and simplest way just states that all classes are prone to the same degree of inheritance. In practice this means that one controls for the overrepresentation of persons staying in the same class—there is one parameter for all the diagonal

Table 8
Detailed changes in relative mobility: fit of scaled
association models

Models per mobility type	df	L^2	BIC
Intergenerational			
Model 1:			
– changes in uniform association			
and class specific inheritance	51	57.6	–273
Model 2:			
– changes in uniform association			
and inheritance	57	64.8	–305
Model 3:			
– changes in uniform association	58	69.9	–306
Model 4:			
– no change	59	70.1	–312
Connubial			
Model 1	51	37.2	–301
Model 2	57	51.1	–326
Model 3	58	53.5	–331
Model 4	59	53.6	–337
Career			
Model 1	51	47.9	–258
Model 2	57	63.9	–309
Model 3	58	63.9	–315
Model 4	59	64.8	–321

cells in a mobility table. The second, more complex way allows for variation in the amount of inheritance per class: some classes may have more "stayers" than others—there is one parameter for each class (for each diagonal cell in the table). When using these models to portray social mobility processes, the question of interest is: which type of model—a simpler or a more complex one— fits significantly better?—More complex may mean, for example, having class specific inheritance parameters, but it also can refer to change over time—that is, do models which allow relative mobility to increase or decrease fit significantly better than models that do not?

The first model on display sees the most nuances in the mobility world (Table 8). The mobility barriers—as described via the uniform association parameter— may be heightened or lowered over time. Inheritance may vary per class, and so may changes in inheritance over time. The second model constrains variation in inheritance: it may still differ per class, and may still vary over time but only to the same extent for all classes. For all three types of mobility this model fits better than the first one, as is reflected by the lower BIC reported in the table. The third model further restricts the variation in inheritance: it may differ per class but is the same for the first period (1850–1900) and the second (1901–1940), which means that only the mobility barriers (uniform as-

sociation) may change over time. This model fits still better and now becomes the preferred one. The fourth and final model is least flexible: it still assumes that mobility barriers and class specific inheritance practices exist, but sees no change over time. This model fits best of all, for intergenerational, connubial and career mobility, affirming the conclusion drawn from the simple models in the previous paragraph: the openness of Utrecht society does not change over time.[31]

Conclusion

An application of state of the art social science mobility models to the first results of the Historical Sample of the Netherlands, pertaining to the province of Utrecht 1850–1940, has allowed us to answer a key question in social history and historical sociology: how does the openness of society evolve? First, a scaling procedure demonstrated that the social stratification of this Dutch province does not change markedly over time. Thus, this result does not support Brugman's claim that Dutch society developed from a two-fold to a three-fold class society. Next, mobility models showed that the relative mobility or openness also did not change over time. This result was obtained through the use of two different types of log-linear models, developed by Erikson and Goldthorpe, and Goodman, respectively. "Openness" or "fluidity" or "relative mobility" is a concept referring to mobility after changes in the marginal distributions of tables have been controlled for. It measures the relative chances of persons from different classes to change class and is determined by such factors as educational opportunities and recruitment strategies by employers. Other research has already shown that the relative intergenerational mobility of Dutch society increased between 1954 and 1992. If Utrecht results are typical for the country as a whole—which can only be ascertained properly when in due time the Historical Sample of the Netherlands has covered enough Dutch ground—this means that the increase of openness in Dutch society in the period 1954–1992 is not the tail of a long movement towards a more open society, but a phenomenon of recent date.

Total mobility did increase over time, both for the cities and for the countryside where it was generally lower than in the cities. The most mobile group were the technical and administrative personnel, and the least mobile the farmers. Some phases in the life-cycle are more favourable to changing classes than others, as is reflected by the differences in total mobility between the various types of mobility. Changing class is most difficult during one's career, less so at marriage and most likely at the start of a career. As relative mobility does not change, the causes of the growing total mobility are to be found in processes influencing the marginal distributions of the table, notably changes in occupational structure, or, possibly, differential fertility or migration between the classes.

The results of this study, one hopes, are of some substantive interest for the general knowledge about Dutch society 1850–1940, mobility processes in the pre-survey era, and, consequently, for a proper interpretation of current mobility processes. In a methodological sense, the results of this and other recent studies

point to a merger of the sociological and historical traditions of mobility research. Such a disciplinary cross-fertilization may serve to overcome two serious problems heretofore faced by the two research traditions independently. The use of surveys in the sociological tradition has severely limited sociologists in answering their own research agenda, which is heavily focused towards testing the effects of industrialization on mobility and thus requiring data from the pre-survey era. The historical tradition offers such data, notably—but not solely—in the form of marriage records, and even offers these for a wide variety of Western countries and a long stretch of time in a comparable format. And yet progress on this road that Thernstrom and others showed historians some decades ago has been complicated by the lack of standard tools for dissociating total from relative mobility, for building and testing hypotheses on social stratifications and processes of class formation, and for determining class-boundaries. Both tools and data are now available. The road is once more open for further progress in describing and explaining the long sweeps in the openness of the Western world.

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Appendix
Mobility matrices for the province of Utrecht

Intergenerational mobility up to and including 1900, countryside

		I	II	III	IV	V	VI	VII	Total
	I	5	0	0	0	0	0	1	6
F	II	0	3	3	1	0	1	1	9
a	III	0	1	20	0	2	3	0	26
t	IV	0	1	1	10	1	1	0	14
h	V	0	1	4	0	5	1	0	11
e	VI	0	1	4	2	3	48	0	58
r	VII	0	0	0	1	0	8	25	34
	Total	5	7	32	14	11	62	27	158

Intergenerational mobility up to and including 1900, towns

		I	II	III	IV	V	VI	VII	Total
	I	2	1	0	0	0	0	0	3
F	II	0	2	4	0	0	3	0	9
a	III	1	0	23	2	2	3	1	32
t	IV	0	0	0	2	2	0	0	4
h	V	0	1	2	0	7	0	0	10
e	VI	0	0	9	2	2	5	1	19
r	VII	0	0	1	0	1	2	3	7
	Total	3	4	39	6	14	13	5	84

Intergenerational mobility after 1900, countryside

		I	II	III	IV	V	VI	VII	Total
	I	3	0	2	1	3	1	0	10
F	II	0	5	2	2	3	5	0	17
a	III	1	1	32	4	19	5	0	62
t	IV	2	2	1	8	5	2	1	21
h	V	1	1	4	1	16	3	0	26
e	VI	0	5	9	2	16	49	1	82
r	VII	1	1	1	5	3	4	22	37
	Total	8	15	51	23	65	69	24	255

Intergenerational mobility after 1900, towns

		I	II	III	IV	V	VI	VII	Total
	I	4	0	0	1	2	0	0	7
F	II	0	6	2	0	1	2	0	11
a	III	1	0	25	2	11	5	0	44
t	IV	0	0	3	7	1	0	0	11
h	V	1	0	4	0	13	3	0	21
e	VI	0	3	5	3	19	13	0	43
r	VII	0	0	0	0	3	2	2	7
	Total	6	9	39	13	50	25	2	144

Appendix (con't)
Mobility matrices for the province of Utrecht

Connubial mobility up to and including 1900, countryside

		I	II	III	IV	V	VI	VII	Total
	I	2	1	0	0	0	0	0	3
	II	0	3	1	1	0	1	1	7
S	III	0	3	13	3	2	12	6	39
o	IV	1	0	1	2	0	4	2	10
n	V	1	0	5	1	0	4	2	13
	VI	0	1	6	5	2	42	12	68
	VII	0	0	1	2	1	5	23	32
	Total	4	8	27	14	5	68	46	172

Connubial mobility up to and including 1900, towns

		I	II	III	IV	V	VI	VII	Total
	I	1	0	0	0	0	1	0	2
	II	0	2	0	3	1	0	0	6
S	III	0	4	23	8	4	9	1	49
o	IV	0	0	4	1	1	4	0	10
n	V	0	1	3	2	2	4	1	13
	VI	0	0	2	0	1	6	1	10
	VII	0	0	0	0	0	0	4	4
	Total	1	7	32	14	9	24	7	94

Connubial mobility after 1900, countryside

		I	II	III	IV	V	VI	VII	Total
	I	7	2	2	1	2	1	0	15
	II	1	1	4	3	2	8	1	20
S	III	1	5	17	4	7	7	6	47
o	IV	0	5	9	9	3	5	1	32
n	V	5	7	19	3	23	22	8	87
	VI	0	1	14	3	6	50	5	79
	VII	0	0	1	1	0	6	25	33
	Total	14	21	66	24	43	99	46	313

Connubial mobility after 1900, towns

		I	II	III	IV	V	VI	VII	Total
	I	2	1	2	1	4	1	0	11
	II	1	1	4	0	2	1	1	10
S	III	0	5	9	5	10	14	0	43
o	IV	0	1	4	3	5	3	0	16
n	V	1	2	21	8	5	12	2	51
	VI	0	2	7	2	4	9	4	28
	VII	0	0	0	1	1	0	0	2
	Total	4	12	47	20	31	40	7	161

Note: Each matrix has the header "Father-in-law" spanning columns I–VII, with "Son" labels (S o n) along the left rows.

Appendix (*con't*)
Mobility matrices for the province of Utrecht

Career mobility up to and including 1900, countryside

					Marriage child				
		I	II	III	IV	V	VI	VII	Total
	I	5	0	0	0	0	0	0	5
	II	0	4	0	0	0	0	0	4
BC	III	0	0	21	1	0	4	2	28
i h	IV	1	3	0	10	0	1	1	16
r i	V	0	0	4	0	2	1	0	7
t l	VI	0	2	2	3	1	59	6	73
h d	VII	0	1	0	0	0	6	34	41
	Total	6	10	27	14	3	71	43	174

Career mobility up to and including 1900, towns

					Marriage child				
		I	II	III	IV	V	VI	VII	Total
	I	0	0	0	0	0	0	0	0
	II	0	6	0	0	0	0	0	6
BC	III	0	1	30	1	4	2	0	38
i h	IV	0	1	0	6	0	1	0	8
r i	V	0	0	1	0	4	1	0	6
t l	VI	0	0	4	2	3	10	2	21
h d	VII	0	0	0	0	0	2	5	7
	Total	0	8	35	9	11	16	7	86

Career mobility after 1900, countryside

					Marriage child				
		I	II	III	IV	V	VI	VII	Total
	I	3	0	0	0	0	0	0	3
	II	1	4	0	0	0	5	1	11
BC	III	2	0	55	1	5	6	0	69
i h	IV	1	1	0	16	2	2	0	22
r i	V	4	1	2	0	16	2	0	25
t l	VI	2	7	4	4	10	72	7	106
h d	VII	0	0	0	0	0	2	26	28
	Total	13	13	61	21	33	89	34	264

Career mobility after 1900, towns

					Marriage child				
		I	II	III	IV	V	VI	VII	Total
	I	3	0	0	0	0	0	0	3
	II	0	7	0	2	1	1	0	11
BC	III	0	0	43	1	7	8	0	59
i h	IV	0	1	1	8	0	3	0	13
r i	V	1	0	1	0	13	4	0	19
t l	VI	0	6	1	1	6	31	0	45
h d	VII	0	0	0	0	0	0	3	3
	Total	4	14	46	12	27	47	3	153

Source: *HSN release 94.0*

Appendix *(con't)*
Mobility matrices for the province of Utrecht

Legend:
I   Professions, high civil servants and entrepreneurs
II   Merchants
III   Artisans
IV   Shopkeepers and other self-employed
V   Technical and administrative personnel
VI   Unskilled labourers and rural labourers
VII   Farmers

Towns   Amersfoort and Utrecht
Countryside All other places

ENDNOTES

We are grateful to the Historical Sample of the Netherlands (HSN) for providing us with the data (release 94.0), and to the following persons, who kindly commented on earlier versions of this article, suggested relevant literature, or helped with the occupational coding involved: Karen Aschaffenburg, Onno Boonstra, Harry Ganzeboom, Piet 't Hart, Ad Knotter, Jan Kok, Clé Lesger, Maarten Prak and Ronald Rommes. Robert Erikson graciously allowed us to employ his GLIM-macro's for the models developed by him and John Goldthorpe.

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18. H. Knippenberg, "Het hart van Nederland. De provincie Utrecht in de periode 1800–1940," in Mandemakers and Boonstra , *De levensloop*, 7, 15.

19. P. Brusse, *Amersfoort 1850–1930. Economische bedrijvigheid en sociale verhoudingen* (Amersfoort, 1993), 100–1, 164 and 188. On the history of social relations in the Netherlands in general see e.g., E. H. Bax, *Modernization and Cleavage in Dutch Society. A Study of Long Term Economic and Social Change* (Aldershot, 1990); see also W. Jansen, J. Dronkers and K. Verrips eds., *Similar or Different? Continuities in Dutch Research on Social Stratification and Social Mobility* (Amsterdam, 1989).

20. J. Kok, "The Province of Utrecht" (Typescript, 1995); J. J. M. van Tulder, *De beroepsmobiliteit in Nederland van 1919 tot 1954. Een sociaal-statistische studie* (Leiden, 1962), 198 offers a comparison between intergenerational mobility in Utrecht and the Netherlands as a whole.

21. The degree of intergenerational mobility in the Netherlands today is also higher than the degree of career mobility, De Graaf and Luijkx, "Beroepsmobiliteit," 72–3.

22. Kaelble, *Social Mobility in the 19th and 20th Centuries*, 7–8.

23. Erikson and Goldthorpe, *Constant Flux*, 27.

24. Kaelble, *Social Mobility in the 19th and 20th Centuries*, 8–20, 27–28.

25. See e.g. M. H. D. van Leeuwen and I. Maas, "Log-linear Analysis of Changes in Mobility Patterns: Some Models with an Application to the Amsterdam Upper Classes in the Second Half of the Nineteenth Century," *Historical Methods* 24 (1991): 66–79; for BIC, see A. Raftery, "Choosing Models for Cross-Classifications," *American Sociological Review* 51 (1986): 145–6. For the present analysis all cells in the tables have been augmented with 0.1.

26. Erikson and Goldthorpe, *Constant Flux*, 86–106.

27. L. A. Goodman, "Simple Models for the Analysis of Association in Cross-Classifications Having Ordered Categories," *Journal of the American Statistical Association* 74 (1978): 537–52.

28. Extensive information on the models, their fit, and the estimated parameters is not presented here, but can be obtained from the authors on request.

29. The same holds true for Dutch farmers today, Ganzeboom and Luijkx, 25.

30. Goodman, "Simple models."

31. A combined analysis of all three types of mobility, as opposed to three separate analyses, has also been undertaken. This procedure may serve to detect changes that are so weak that it takes abundant data to find them, and it confirmed the impression of no change in the openness of Utrecht society, see M. H. D. Van Leeuwen and I. Maas, "Maas, groeiende openheid van de Nederlandse samenleving: een nieuw fenomeen of een lange trend?: intergenerationele, huwelijks-en carrièremobliteit in de provincie Utrecht, 1850–1940," *Mens en Maatschappij* 70 (1995): 321–333.