

Status attainment in the Netherlands, 1811-1941

Spatial and temporal variation before and during industrialization

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Spatial and temporal variation before and during industrialization

**Statusverwerving in Nederland,
1811-1941**

Ruimtelijke en temporele variatie voor en tijdens de industrialisatie
(met een samenvatting in het Nederlands)

Proefschrift

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Richard Lindert Zijdeman

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Contents

List of Tables	III
List of Figures	IV
1 Introduction	1
1.1 Background	1
1.2 Status attainment by marriage and intergenerational status attainment	4
1.3 Status attainment during industrialization	5
1.4 Previous findings on status attainment during industrialization in the Netherlands	6
1.5 Research questions	8
1.6 Outline	10
2 Measuring social structure in the past. A comparison of HIS-CAM with occupational stratification scales and historical class schemes using Dutch nineteenth- and early twentieth-century data	11
2.1 Introduction	11
2.2 Measurement of historical occupations and occupational stratification	12
2.2.1 HISCO	12
2.2.2 HISCO-based measures of occupational stratification and social class	13
2.2.3 Established occupational stratification scales	15
2.3 Data and methods	16
2.4 Results	18
2.4.1 Distributions of HISCO-coded occupations across occupational stratification scales and class schemes	18
2.4.2 Associations between stratification scales and class schemes	19
2.4.3 Explanatory power of schemes	25
2.5 Conclusion	27
3 Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)	31
3.1 Introduction	31
3.2 Theories and hypotheses	33
3.2.1 Preferences, third parties, and the marriage market	35
3.2.2 Effects of industrialization on partner selection: the industrialism thesis	36
3.2.3 Extensions of the industrialism thesis	38
3.3 Area, data, measurements, and methods	40
3.3.1 Area	40
3.3.2 Data	42
3.3.3 Measurements	43
3.3.4 Methods	49
3.4 Results	50
3.4.1 Regional and temporal variation in achievement and ascription	51
3.4.2 Mate selection and macro-level developments	56
3.5 Conclusion and discussion	58
4 Like my father before me. Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)	61
4.1 Introduction	61

4.2	Theory	63
4.3	Setting	68
4.4	Method	70
4.5	Data and measurement	71
4.6	Results	75
4.6.1	Regional and temporal variation in intergenerational status transfer	75
4.6.2	Intergenerational status transfer and macro-level processes	80
4.7	Conclusions and discussion	83
5	Ascription and achievement from a historical contextual perspective (the Netherlands 1887-1941)	87
5.1	Introduction	87
5.2	Research design	88
5.3	The status attainment process: two interpretations of change over time	89
5.4	Earlier results	94
5.5	Data and methods	95
5.5.1	Data	95
5.5.2	Methods	102
5.6	Results	104
5.6.1	The social background of the HSN and VHMO cohorts for 1880-1881 and 1920	104
5.6.2	The status attainment process: regional differences and changes over time	107
5.7	Conclusion and discussion	112
6	Conclusions and discussion	117
6.1	Research questions and approach	117
6.2	Summary of findings and conclusion	118
6.2.1	Findings in relation to the first research question	118
6.2.2	Findings in relation to the second research question	121
6.3	Discussion	124
6.3.1	Theoretical implications	124
6.3.2	Suggestions for future research	127
A	References to occupational coding macros	131
B	Municipal, district, and regional archives used to recover marriage records of VHMO pupils	132
C	Standardized regression results, bootstrapped standard errors, and difference tests of the intergenerational status attainment model by cohort and context	133
	References	139
	Summary in Dutch	153
	Acknowledgements	161
	About the author	165
	ICS dissertation series	167

List of Tables

Table 2.1	HISCLASS (full version) and HISCLASS 7 (collapsed seven-class version)	14
Table 2.2	Correlations between four different stratification scales (grooms' occupations)	24
Table 2.3	Associations between two different class schemes and other stratification scales (grooms' occupations)	25
Table 3.1	Descriptive statistics of individual and contextual variables and group size	49
Table 3.2	Hierarchical linear regression of occupational status of bride's father on individual and contextual characteristics, Zeeland, The Netherlands, 1811-1915	51
Table 3.3	Hierarchical linear regression of occupational status of bride's father on individual and contextual characteristics, Zeeland, The Netherlands, 1811-1890	53
Table 3.4	Hierarchical linear regression of occupational status of bride's father on individual and contextual characteristics, Zeeland, The Netherlands, 1851-1915	55
Table 3.5	Correlation matrix of contextual variables	57
Table 4.1	Descriptives: mean, standard deviation, minimum and maximum values, Zeeland, the Netherlands, 1811/1851-1915	75
Table 4.2	Hierarchical linear regression of son's occupational status on individual and contextual characteristics, Zeeland, the Netherlands, 1811-1915	76
Table 4.3	Hierarchical linear regression of son's occupational status on individual and contextual characteristics, Zeeland, the Netherlands, 1811-1890	77
Table 4.4	Hierarchical linear regression of son's occupational status on individual and contextual characteristics, Zeeland, the Netherlands, 1851-1915	79
Table 4.5	Correlation matrix of several indicators at the contextual level, Zeeland, the Netherlands, 1851-1915	82
Table 5.1	Absolute and relative distribution of number of cases, by cohort and dataset	99
Table 5.2	Descriptive statistics	99
Table 5.3	Distribution of fathers' occupational status across three notional datasets	103
Table 5.4	Difference scores and test scores in path coefficients in the status attainment model between less and more advanced contexts for the 1880-1881 and 1920 cohorts	109
Table 5.5	Test scores of differences in path coefficients in the status attainment model between the 1880-1881 and 1920 cohorts within less and more advanced contexts	111
Table 6.1	Overview of findings concerning the influence of local contexts on ascribed and achieved characteristics in the status attainment process in the Netherlands during the nineteenth and early twentieth centuries	122

List of Figures

Figure 2.1	Distribution of grooms' occupational titles coded in HISCO for four different occupational stratification scales: HIS-CAM, SIOPS, Ultee and Sixma, and Van Tulder, 1835-1939	18
Figure 2.2	Distribution of grooms' occupational titles coded in HISCO for HIS-CAM, SOCPO, and HISCLASS 7, 1835-1939	19
Figure 2.3	Scores of grooms' occupations on four different stratification scales, 1835-1939	21
Figure 2.4	R ² and BIC for predicted son's HIS-CAM by father's occupational classification position derived from several occupational stratification scales and class schemes, 1835-1939	26
Figure 2.5	R ² and BIC for predicted son's HIS-CAM by father's occupational classification position derived from several occupational stratification scales and class schemes, 1835-1939, excluding sons in HISCO = 6-12.20	27
Figure 3.1	Symmetric and asymmetric models of marital choice	34
Figure 3.2	Economic selection criteria with regard to marital choice in preindustrial and industrial societies	38
Figure 3.3	Cultural selection with regard to marital choice in preindustrial and industrial societies	40
Figure 3.4	Proportion of missing occupational titles of grooms' fathers by grooms' occupational status and by decade	45
Figure 4.1	The influence of contextual processes on the status attainment model according to the industrialism thesis	65
Figure 4.2	The influence of contextual processes on the status attainment model according to the status maintenance theory	67
Figure 5.1	Simple status attainment model	90
Figure 5.2	Two interpretations of the status attainment model	91
Figure 5.3	Coverage of municipalities of birth for the 1880-1881 (left) and 1920 (right) cohorts	100
Figure 5.4	Fathers' occupational status (HIS-CAM) of HSN "respondents" in the 1880-1881 and 1920 cohorts	105
Figure 5.5	Fathers' occupational status (HIS-CAM) for VHMO pupils from the 1880-1881 and 1920 cohorts	106

1 Introduction

1.1 Background

Ever since the rise of industrialization, researchers have been trying to describe and explain its impact on the likelihood of people maintaining or enhancing their position in society (Collins 1979; Glass and Berent 1954; Grusky 1983; Sorokin 1959). Industrialization – in terms of mechanization – was accompanied by a number of other macro-level processes such as educational expansion, mass communication, urbanization, and migration (Blau and Duncan 1967; Treiman 1970). In the research literature the distinction between mechanization and these processes is seldom made explicit; combined, the processes are referred to as *modernization* (De Graaf 1987; Rijken 1999). There are two schools of thought on how modernization has influenced the stratification process. A functionalist approach argues that modernization diminished social barriers, allowing for greater mobility between social strata (Bendix and Lipset [1959] 1991; Blau and Duncan 1967; Kerr *et al.* 1960). Modernization changed the occupational structure, requiring an increasingly educated workforce. As a result, fathers were less able to pass on their occupations and occupational skills to their sons, decreasing the influence of social background on occupational status attainment. Furthermore, modernization brought about a cultural shift and change in the value system, due to which people were decreasingly valued for what they inherited (*ascription*) and increasingly valued for their accomplishments (*achievement*) (Blau and Duncan 1967; Parsons and Shils [1951] 2001; Treiman 1970). Although this hypothesis comes in several forms, bearing multiple labels, in the present dissertation it is referred to as the industrialism thesis (Grusky 1983).¹

A second school of thought, referred to as a conflict approach, argues that even when the direct effect of a father's occupational status on his son's occupational status diminished, the effect of industrialization on status attainment was negligible, because elites were able to pass on their higher status positions to their offspring by investing in other resources, such as higher quality or more prestigious education and cultural capital for their children (Bourdieu and Passeron [1977] 1990; Collins 1971; Grusky 1983). In the present dissertation it will be referred to as the status maintenance theory (Grusky 1983), although other names for this theory appear in the literature.² Furthermore, the benefits of being able to maintain status positions or transfer status positions to one's children do not seem to be restricted to the elite. In this dissertation the interpretation of the status maintenance theory is therefore a more universal one. The industrialism thesis and the status maintenance theory have coexisted for over four decades.

Strong improvements in stratification research, with regard to the size and quality of the data as well as advancements in statistical analyses, have failed to settle the theoretical debate between the industrialism thesis and the status maintenance theory.

¹ Some examples are: the logic of industrialism thesis (Kerr *et al.* 1960), the meritocracy thesis (De Graaf 1987), and modernization theory (Breen and Jonsson 2005; Ganzeboom and Luijkx 1995). I use the term industrialism thesis since it reflects best the fact that possible changes in the stratification process are thought to have started with the mechanization of labour.

² Others refer to this as reproduction theory (Bourdieu and Passeron [1977] 1990) or conflict theory (Collins 1971). Although the status maintenance theory focuses on postindustrial societies, I use this term since its name reflects the fact that those at risk of losing occupational status will try to maintain their status positions.

Findings in stratification research on whether there were regional differences and changes over time in the stratification process have been inconclusive, despite the use of comparable measures of class and occupational status (Breen and Jonsson 2005; Ganzeboom, Treiman, and Ultee 1991). While some empirical studies suggest that the status attainment process differs substantially between countries and became more open over time (Breen and Luijckx 2004; Ganzeboom, Luijckx, and Treiman 1989), other studies report hardly any differences between countries (Erikson and Goldthorpe 1992) and fail to find evidence of change in the status attainment process over time (Shavit and Blossfeld 1993). Breen (2004) argues that these differences may result from different analytical techniques, differentiation in measurement at the country level, and lack of statistical power in small cross-national studies. Despite the convincing nature of these arguments, they do not account entirely for the inconsistency of the findings reported. In their analyses of different models based on 149 tables on men's intergenerational occupational mobility in 35 countries, Ganzeboom, Luijckx, and Treiman (1989, p. 47) argue that the differences they find are substantial and not "methodological artifacts". Furthermore, incongruent results are found even for country-specific studies. In the UK for example, it is suggested that social mobility has increased (Heath and Payne 1999; Lambert, Prandy, and Bottero 2007; Miles 1999), has remained stable (Glass and Berent 1954; Goldthorpe and Mills 2004), and even decreased (Blanden *et al.* 2004).³ The difficulties with regard to determining whether differences between countries and changes over time exist have deterred stratification sociologists from the initial question, namely how industrialization affects changes in the stratification process (Ganzeboom, Treiman, and Ultee 1991).

For the Netherlands, a pattern towards increasing openness is found in the second half of the twentieth century (Dronkers and De Graaf 1995; Ganzeboom and Luijckx 1995; Ganzeboom, Kalmijn, and Peschar 1995). But the relationship between industrialization or modernization and social mobility has hardly been studied in a direct way, except for some cross-national comparative studies which include the Netherlands and in which modernization is measured as the energy consumption per capita (Sieben and De Graaf 2001) or the number of telephones per capita (Ultee and Luijckx 1990).

The cross-national sociological studies cover several decades and are characterized by the use of occupation as an indicator of people's social position. They contrast with historical research on the nineteenth century (Ultee 1983). Due to the time-consuming nature of acquiring historical data, studies are most often confined to a particular population (Boonstra and Mandemakers 1995), for example the elite in Amsterdam (De Vries 1986), female domestic servants in Zeeland (Bras 2002), teachers (De Graeve *et al.* 1985), and nuclear and extended families in Tilburg (Janssens 1993). Furthermore, historical studies are often confined to a small region, and since most researchers expect there to have been a relationship between industrialization and social mobility, industrializing cities especially have been topics of research (Aminzade and Hodson 1982; Brown and Neumeier 2004; Linton 1987; Lundgreen 1988). The representativeness of such studies is often unknown

³ See Lambert, Prandy, and Bottero (2007) for a concise review of the findings on the UK in the nineteenth and twentieth centuries.

(Guest, Landale, and McCann 1989). With regard to the Netherlands, the study by Van Dijk, Visser, and Wolst (1984) is one of the few historical studies that specifically address the relationship between modernization and social mobility, while focusing on rural as well as industrializing urban areas.

Another incongruence between historical and sociological stratification research originates with the scarcity of occupational information in historical sources, and the lack of a comparable measure of stratification that is satisfactory to historians (Boonstra and Mandemakers 1995; Prak 1988). Perhaps as a result, few studies actually cover the topic of occupational status attainment (De Vries 1986, p. 13). While occupation is a key indicator of social position in contemporary sociological research, historical researchers who study status attainment seem to avoid occupational titles and use instead creative indicators of social position, for example the type and location of a person's pew in church (Lucassen and Trienekens 1978) or the amount of tax paid (De Vries 1986; Kooij 1986). Historical studies that do use occupational titles are confronted with confusion in occupational terminology "across time and space, within as well as between languages" (Van Leeuwen, Maas, and Miles 2002, p. 9). Moreover, researchers wanting to compare the results of occupation-based studies face the challenge of comparing a variety of class schemes with different numbers of classes (Boonstra and Mandemakers 1995, p. 134).

Thus, while contemporary sociological studies on the stratification process have access to large comparative datasets and widely used measures of social class (EGP, for example; Erikson and Goldthorpe 1992) and occupational status (ISEI, for example; Ganzeboom and De Graaf 1992), mixed results within countries and over time hamper researchers in drawing firm conclusions on the relationship with the process of industrialization or modernization. While there are many historical studies on stratification relating to the era of industrialization and modernization, they suffer from a lack of comparability with regard to data as well as to measurements of social position.

Several developments over the last two decades have significantly improved opportunities for historical stratification research. For one, a large number of initiatives aimed at digitizing historical records have led to much wider access to census data, as well as to personal records, such as birth, marriage, and death records. Due to the scope of these initiatives an incredible amount of information on individuals, including their occupational activities, has become available. This development not only enhances the analytical power of historical studies, it also allows for comparative studies of the status attainment process across space and time.

Another fundamental advance is the clarification of occupational terminology resulting from the development of the Historical International Standard Classification of Occupations (HISCO) (Van Leeuwen, Maas, and Miles 2002). HISCO is based on occupational titles derived from 2.4 million personal records drawn from eight countries for the period 1692 to 1950 and facilitates international and temporal comparisons of occupations based on occupational activities (Van Leeuwen, Maas, and Miles 2002).

Furthermore, historical studies can now, in a comparable way, classify individuals based

on their occupations. Recently, an occupational stratification scale, HIS-CAM (Lambert *et al.* 2006; Zijdemans and Lambert 2010), and two class schemes, HISCLASS (Van Leeuwen, Maas, and Miles 2005) and SOCPO (Van de Putte and Miles 2005), were developed. Also, tools to link HISCO-coded occupations to these class schemes and to an occupational stratification scale are now available (see for example the GEODE project).

Together, these developments have already yielded a large number of studies covering longer periods of time, covering more extensive, and more varied, regions than earlier historical studies (see for example the studies in Maas, Van Leeuwen, and Mandemakers 2008; Van Leeuwen, Maas, and Miles 2005). However, so far there has been no study explicitly linking specific processes of modernization to the status attainment process.

1.2 Status attainment by marriage and intergenerational status attainment

During the whole period under study, the two main ways of achieving a higher position in society compared to that of one's parents were either to marry up or to secure a better occupation. This section provides a brief overview of relevant theories on status attainment by marriage, and on intergenerational status attainment. Based on these theories, section 1.3 argues how industrialization would have changed status attainment by marriage and intergenerational status attainment. Finally section 1.4 provides research findings for the Netherlands on the two ways of attaining status in the past.

Based on the sociological literature, Kalmijn (1998) distinguishes three elements that determine people's marriage choices: (1) people's preferences in terms of the socioeconomic and cultural resources of the marriage partner, (2) the degree to which third parties influence the selection process, and (3) the constraints of the marriage market.

People's preferences in terms of the resources owned by potential partners are important because, as in an economic market, a high demand for a particular resource will increase its value. As a result, potential spouses who own this popular resource will be in greater demand than others. Given that these popular spouses are also looking for popular resources, "the most attractive candidates select among themselves, while the least attractive candidates have to rely on one another" (Kalmijn 1998, p. 398). Even when future spouses have a preference for a partner with complementary rather than similar resources, the most popular partners will select among themselves, for example by exchanging a male's income or prestige against a female's class background or cultural participation (Arum, Roksa, and Budig 2008; Uunk 1996).

The selection of a marriage partner based on socioeconomic resources differs, however, from partner selection based on cultural resources. With respect to socioeconomic resources, people prefer a partner with many resources, whereas with regard to cultural resources they prefer a partner with similar resources (Kalmijn 1998).

Another element that plays an important part in theory on status attainment by marriage

is third-party influence. Spouses share not only each other's personal resources, they also share the resources from their social networks with each other. Third parties have an interest in ensuring that a future marriage partner does not deplete their pool of resources and may even influence others to pursue a high-status partner to enrich their network. Although this protection by third parties seems beneficial for the spouse as well, what is considered to be the "best" partner might well differ between spouses and third parties. Hence, a spouse's individual preferences may collide with third-party interests. The more marriage candidates depend on a third party (their parents for instance) and the more they are integrated within a social network (such as the Church), the more successful third parties will be in influencing the choice of marriage partner.

Finally, opportunities for marrying up are constrained by the marriage market. The influence of the marriage market is based on the notion that the more often one meets persons with certain characteristics, the higher the probability of a marriage. The probability of meeting members of a group depends on several group characteristics, such as the size and the geographical positioning of the group (Blau and Schwartz 1984). Groups that are geographically more concentrated are more likely to marry endogamously (Lieberson and Waters 1988).

Next to marriage, another important way to influence one's social standing is through the labour market. The process of occupational status attainment is characterized by ascription and achievement (Blau and Duncan 1967; Parsons and Shils [1951] 2001). While ascription refers to those characteristics that a person "inherits", achievement refers to individual performance. For example, the support that parents provide to their children to attain education or to acquire an occupation are examples of ascription. The more resources parents have, the better they are able to help their children. This aid may be provided directly by investing in prestigious education or by indirect investments, for example in a student's daily expenses and housing (Dronkers and De Graaf 1995). The relationship between a son's educational attainment and his occupational status is an example of achievement. Thus the larger the influence of a son's educational attainment on his occupational status relative to the influence of his father's occupational status, the more a son's occupational status is the result of his own performance rather than of his background.

1.3 Status attainment during industrialization

It is argued that industrialization as well as other modernization processes such as educational expansion changed the process of mate selection as well as the process of intergenerational status attainment. With the rise of industrialization, the efficiency of agricultural production increased and the proportion of the labour force engaged in agriculture decreased (Kuznets 1957; Treiman 1970). Furthermore, the need for non-manual workers increased due to a shift from the production of goods to the provision of

Introduction

services (Kuznets 1957, pp. 28-31) and the growing need for administrative and clerical staff, especially in public bureaucracies (Hurd and Johnson 1967, pp. 60-1) and the leisure sector (Landes 1969). Since these “new” jobs required knowledge that could hardly be passed on from father to son (Treiman 1970), the importance of educational attainment grew and is today a more important determinant of a son’s occupational status than his father’s occupational status is (Hout and DiPrete 2006; Kalmijn 1991).

The increasing importance of education has changed individual preferences with regard to mate selection as well. The future resources of marriage partners are unknown (Oppenheimer 1988). To decrease the uncertainty about a spouse’s future resources, people looking for a partner make use of proxies (Kalmijn 1991, p. 502). It is likely that before industrialization a person’s background was a good proxy for a partner’s future economic and cultural resources. With industrialization, education has become a more important determinant of economic success than background. As a result, in industrialized regions marriage partners will select each other on the basis of educational attainment rather than on the basis of ascription (Goode 1964). Kalmijn (1991, p. 502) argues that this argument extends to marriage candidates looking for culturally similar others. Educational attainment has an effect on values, attitudes, and lifestyle (Davis 1982). Thus the more people go to school and the longer they stay in school, the more accurate educational attainment will become as a proxy for cultural resources (Blau and Duncan 1967).

Another important change relating to industrialization is the shift in the value system towards universalism and achievement (Parsons and Shils [1951] 2001, p. 188). Mass communication and educational expansion diminished regional and class differences in attitudes and added to the development of a common culture (Treiman 1970, p. 219). Since children are likely to adopt the values promoted by schools (Davis 1982), educational expansion reduces the influence of third parties on mate selection (Shorter 1975; Smits 1996) and decreases the opportunities of fathers to aid their children (Goode 1964, pp. 108-9).

Modernization processes, such as educational expansion and improving means of transport, also changed the geographical size of the labour and marriage markets. The introduction of steam trams and trains increased people’s opportunities to work outside the local community, and outside that community they would have to achieve success on the basis of their own talent “without either the help or hindrance they would derive from the status of their parents in the smaller communities” (Treiman 1970, p. 220). Better means of transport also decreased the importance of regional aspects of marriage markets (Millard 1982; Van Poppel and Ekamper 2005). Furthermore, with educational expansion, schools became more important “marriage markets” (Arum, Roksa, and Budig 2008; Kalmijn and Flap 2001).

In sum, it is argued that industrialization as well as other modernization processes changed the process of mate selection as well as intergenerational status attainment. While social origin became a less important proxy for mate selection and intergenerational status attainment, educational attainment has become more important in both the

selection of a spouse and for status transfer from father to son.

The industrialism thesis and the status maintenance theory differ as to whether the increasing importance of education has actually led to a shift from ascription to achievement. The industrialism thesis argues that with industrialization and other processes of modernization not only did the direct influence of a father's occupational status on a son's occupational status decrease, so too did a father's influence on his son's educational attainment. With educational attainment becoming more important for spouse selection and intergenerational attainment, the industrialism thesis posits that in regions and periods with greater industrialization ascription becomes less important, while achievement becomes more important for status attainment.

The status maintenance theory argues that if the influence of a father's occupational status on that of his son decreases, fathers will redirect their influence. Education entails certain costs, and since those from a higher background tend to have more resources they are able to invest in more prestigious education, of greater duration, or provide their children with a more comfortable residential situation. Furthermore, by investing in cultural capital outside the school (by encouraging their children to visit museums and read literature for example), parents provide their children with cultural resources, enhancing their children's performance in school. As a result, the decreasing influence of a father's occupational status on that of his son is indirectly compensated through education. Thus, according to the status maintenance theory, in regions and periods with greater industrialization the influence of ascription remains as important.

1.4 Previous findings on status attainment during industrialization in the Netherlands

Unfortunately, few quantitative historical studies address status homogamy and intergenerational status attainment in the Netherlands during industrialization. Most marriage studies take social status into account, but only to explain other aspects of marriage, such as marriage timing (Bras 2002 (Chapter 6); Kalmijn 1995; Van Poppel, Monden, and Mandemakers 2008), age homogamy (Smeenk 1998; Van Poppel *et al.* 2001), and regional homogamy (Kok and Mandemakers 2005; Van Poppel and Ekamper 2005). But there are exceptions. For the province of Utrecht in the nineteenth century, Van Leeuwen and Maas (1995) found higher marriage mobility rates in urban areas than in rural areas. In a study of the Dutch province of Friesland, Maas and Van Leeuwen (2001) report that the percentage of marriages within one's own social class did not vary between 1850-1899 and 1920-1929. However, the same authors, using a sample of marriage records for the whole of the Netherlands, report a decline in homogamy around the turn of the century, as a result of changes in class structure (Van Leeuwen, Maas, and Mandemakers 2005). For Dutch marriage cohorts between 1947 and 1992, Uunk finds that the homogamy of social origin decreased strongly, while educational homogamy showed a trendless fluctuation

(Uunk 1996, p. 54). Other studies of educational homogamy in the Netherlands show a decline in the postwar period (Dessens, Jansen, and Ultee 1990).

Although there are somewhat more studies on intergenerational status attainment in the Netherlands during industrialization, as far as I am aware only one relates patterns in status attainment to industrialization, while most other studies limit themselves to changes over time. In their study of intergenerational mobility between the lower and middle classes, Van Dijk, Visser, and Wolst (1984) find no unequivocal relationship between social mobility rates and industrialization. For the province of Utrecht Van Leeuwen and Maas (1995) find that total mobility rates are higher in urban areas than they are in rural areas. Van Dijk and Mandemakers (1985) find that, between 1880 and 1920, for students who were enrolled in secondary education, the effect of a father's occupational status on a son's occupational status decreased, while the effect of a son's educational attainment on a son's occupational status increased. De Graaf and Luijkx (1995) report similar findings for the period 1929 to 1982. These findings are in line with both the industrialism thesis and the status maintenance theory, but shed no light on whether elites are able to pass on their high-status positions through educational resources. There is some indirect evidence that supports the status maintenance theory though. Boonstra (1989) reports that in the city of Eindhoven at the end of the nineteenth century the literacy of the father (ascription) became a more important determinant of a son's success in becoming a skilled worker. Also, in a more recent study covering the whole of the Netherlands in the nineteenth century, Boonstra (Boonstra 2008) concludes that sons from illiterate backgrounds are relatively disadvantaged and that acquiring literacy cannot undo this disadvantage. Contemporary research shows that in the twentieth century there was indeed a relationship between parents' cultural resources and children's educational achievements (Ganzeboom 1984), although De Graaf (1987) finds that the effect of social background on cultural resources decreased.

1.5 Research questions

To reveal the influence of industrialization and other modernization processes and to test the industrialism thesis and the status maintenance theory on their historical home ground, this dissertation will describe and explain the process of status attainment in the Netherlands between 1811 and 1941, a period before and during Dutch industrialization. This study will determine the importance of ascribed characteristics (occupation of the father for example) and achieved characteristics (education, occupation, and migration for instance) for an individual's status position in the marriage and labour markets. To disentangle the mechanisms of modernization and to test the opposing hypotheses concerning their effects on the status attainment process, regional differences within the Netherlands as well as changes over time are studied. The thesis addresses the following questions:

1. How much variance existed – temporally and regionally – in the effects of ascribed and achieved characteristics on status attainment in the Netherlands between 1811 and 1941?
2. How can changes and regional differences in the process of status attainment in the Netherlands between 1811 and 1941 be explained?

To answer these questions, the present study focuses on the status attainment by marriage and intergenerational status attainment from the perspective of men. This focus results from the fact that this thesis draws on marriage records as a source of occupational information. The number of occupational titles recorded for women is relatively low, and declines over time. Since little is known about the representativeness of women's occupations, the research questions are answered only for men. Another limitation of marriage records is that they provide occupational information only for a specific point in time. Intragenerational status attainment, which requires multiple observations over the life course, cannot therefore be considered.

Building on the recent achievements resulting from the painstaking work of a great many historians and sociologists, this study aims to provide more conclusive answers to these questions than were possible in the past. First, the digitization of personal records permits a study of the status attainment process for every year over a period of more than a century. This is beneficial since changes in the status attainment process seem to occur slowly. For example, Ganzeboom, Luijkx, and Treiman found a decrease in the association between social origin and destination of about one percent per annum, and "(a)lthough this is negligible amount in the short run (and therefore difficult to estimate over short periods), it implies a very substantial change in the long run" (Ganzeboom, Luijkx, and Treiman 1989, pp. 44-45).

Second, I will study the status attainment process at a detailed regional level, that of the municipality, for all municipalities in Zeeland (about 100) in chapters 3 and 4, and for a representative number of municipalities in the Netherlands (a few hundred) in Chapter 5. This means that virtually all types of municipality, large and small, urban and rural, ancient and new, Protestant and Catholic, industrial and agricultural, are included. Thus the data used in this study have much more power at the individual and regional levels and allow for stronger analyses over time.

Third, to study the influence of modernization, this dissertation moves beyond a dichotomization of regions or periods as being modern or not. Treiman (1970) has posited that several developments relating to industrialization may affect the status attainment process. These developments may occur at different points in time and expand at different rates. The present thesis studies the influence of industrialization, educational expansion, mass communication, mass transport, urbanization, and in-migration on the status attainment process, separately, and in relation to each other. For each of these modernization processes, separate indicators will be used, that vary regionally (at the

municipal level) as well as over time. To analyse the influence of context on the status attainment process, hierarchical linear regression models will be used which allow for time-varying characteristics.

1.6 Outline

Before we answer the research questions in chapters 3 to 5, Chapter 2 assesses the validity of the measurement of occupational status that I will use: the historical occupational stratification scale HIS-CAM (Lambert *et al.* 2006; Zijdeman and Lambert 2010). Although a number of researchers have already put HIS-CAM to use (Knippenberg and De Vos 2008; Maas and Van Leeuwen 2008; Zijdeman 2007) the question of how it compares to other measurements of social stratification is still open. Therefore, Chapter 2 provides a comparison of HIS-CAM with both historically oriented class schemes as well as contemporary stratification scales.

Chapters 3 and 4 study the existence of regional and temporal differences in status attainment in the Dutch province of Zeeland between 1811 and 1915. Chapter 3 studies the importance of ascribed and achieved characteristics for status attainment by marriage, while Chapter 4 does so for intergenerational status attainment. Both chapters test hypotheses on how the importance of these characteristics relate to regional contexts, such as the degree of industrialization and urbanization.

Like Chapter 4, Chapter 5 studies the process of intergenerational status attainment in regional contexts. At the expense of limiting the period under study (1887-1941), it covers the whole of the Netherlands. However, with regard to Chapter 4, the main extension of this chapter is the inclusion of information on education at the individual level. As a result, this chapter is at the frontier of assessing the Blau and Duncan status attainment model (Blau and Duncan 1967) during the expansion of higher education in the nineteenth and early twentieth centuries.

Finally, Chapter 6 presents our conclusions and discusses the implications of this dissertation, from which suggestions for future research are derived.

2 Measuring social structure in the past. A comparison of HIS-CAM with occupational stratification scales and historical class schemes using Dutch nineteenth- and early twentieth-century data⁴

2.1 Introduction

With the introduction of the Historical International Standard Classification of Occupations (HISCO) problems with regard to the comparability of historical occupational titles between countries, languages, and over time have been tackled (Van de Putte and Miles 2005; Van Leeuwen, Maas, and Miles 2002; Zijdemans 2007). Subsequently, historians and sociologists produced tools to study people's social position in society, based on the occupations that people performed. Currently, two HISCO-based class schemes exist: HISCLASS (Van Leeuwen, Maas, and Miles 2005) and the Social Power scheme (SOCPO) (Van de Putte and Miles 2005; Van de Putte 2003). There is also one HISCO-based occupational stratification scale: HIS-CAM (Lambert *et al.* 2006). The need for these tools is evident from the quickly increasing number of sociological historical studies that are applying these measures. Examples include the studies in Van Leeuwen, Maas, and Miles (2005) for HISCLASS; Van Poppel and Liefbroer (2005) and Van de Putte and Miles (2005) for SOCPO; and Maas and Van Leeuwen (2008), Zijdemans (2008), and Zijdemans and Mandemakers (2008) for HIS-CAM.

The present thesis, which studies the status attainment process in the nineteenth and early twentieth centuries, makes use of the recently developed historical occupational status scale HIS-CAM. As with any scale that has only recently appeared, the question arises to what extent the results retrieved using HIS-CAM are comparable to results retrieved using more established measures of occupational stratification, such as the Standard International Occupational Prestige Scale (SIOPS) (Treiman 1977). Besides comparability with measures of occupational stratification, the question emerges to what degree HIS-CAM and the recently developed HISCO-based measures of class are alike. In sum, this chapter's research questions are: (1) To what extent is HIS-CAM comparable with established occupational stratification scales and class schemes? (2) To what extent is HIS-CAM comparable with HISCLASS and SOCPO?

A comparison of HIS-CAM with existing measures of class and occupational stratification provides some insight into whether it is useful to compare results obtained from the different measures. The more the results obtained with different measurements are alike, the easier it is to compare those results across studies, although a (near) perfect relationship between HIS-CAM and the other measures of occupational stratification and class would indicate that time-specific measures of class schemes and stratification scales are expendable.

To assess the comparability of HIS-CAM with established stratification scales and the HISCO-based measures of class, this chapter considers three attributes of the scales and schemes. The first comparison concerns a description of the distribution of HISCO-

⁴This chapter is a revised version of an article co-authored with Paul S. Lambert (2010), "Measuring Social Structure in the Past. A Comparison of Historical Class Schemes and Occupational Stratification Scales on Dutch Nineteenth- and Early Twentieth-Century Data." *Revue Belge d'Histoire Contemporaine* 1-2: *forthcoming*". This chapter focuses especially on HIS-CAM, while the original article also compares HISCLASS with SOCPO, and both of them with established stratification scales and class schemes. I am grateful to Erik Bihagen, Onno Boonstra, Harry Ganzeboom, Ineke Maas, Marco Van Leeuwen, and Bart Van de Putte for providing me with tools to translate HISCO codes into various class schemes and prestige scales. I would also like to thank two anonymous reviewers whose comments improved the article substantially.

Measuring social structure in the past.

A comparison of HIS-CAM with occupational stratification scales and historical class schemes using Dutch nineteenth- and early twentieth-century data

coded occupations across scales and schemes. This exercise shows to what extent HISCO-coded occupations receive equal scores (or occupy comparable relative positions) across stratification scales and end up in similar classes in HISCLASS and SOCPO. The second comparison shows to what degree the stratification scales and class schemes are statistically associated with each other. This comparison provides insight into the degree to which stratification scales and class schemes measure similar dimensions of social stratification. Finally, the third comparison is between the scales and schemes with regard to their explanatory power in the analysis of social mobility. This comparison shows to what extent HIS-CAM, stratification scales, and historical class schemes are alike in explaining variance in a key dependent variable.

2.2 Measurement of historical occupations and occupational stratification

2.2.1 HISCO

Large-scale comparisons of occupations are hampered by lingual and regional differences and by changes over time in occupational titles. To increase the comparability of historical occupational titles a group of historians and sociologists have designed a historical classification based on the International Labour Organization's "contemporary" classification ISCO-68 (ILO 1969): HISCO (Van Leeuwen, Maas, and Miles 2002). In HISCO occupations are categorized according to tasks that need to be fulfilled in that occupation. HISCO divides occupations into eight major groups, each of which is divided into two to ten minor groups. These 83 minor groups are again subdivided into 284 unit groups. Finally, these unit groups consist of 1,881 occupational categories, the lowest level of detail. Occupations with comparable tasks are grouped into one of these categories. The occupational categories are identified by a unique five-digit code. The first digit represents the major group, the second the minor group, while the third represents the unit group. The last two digits distinguish a specific occupational category. For example, a railway service supervisor (2-22.30) is grouped into major group 2 "Administrative and Managerial Workers", minor group 2-2 "Supervisors, Foremen and Inspectors", unit group 2-22 "Transport and Communication Supervisors", and finally into an occupational category 30.

Apart from occupational titles, historical documents sometimes provide more information closely related to the occupation at hand. HISCO provides the possibility of categorizing this additional information into three subsidiary classifications: *status*, *relation*, and *product*. The *status* dimension provides 15 two-digit codes to include information on ownership, level of artisan career, rank of an employee, level of tertiary education, and status titles. Ten two-digit codes represent the subsidiary classification *relationship*, which allows for the preservation of information on the subject reporting the occupational title. This includes information on whether the subject is retired, whether the subject performed a voluntary or honorary occupation, whether the occupation is performed by a

home worker (housewife for instance), and whether the subject suffered from a physical or mental disability. Finally, if the subject is not the one performing the occupation, information on the family relationship to the person performing the occupation can be stored.

The *product* classification is used to store information on products that are traded or manufactured, although in the latter case a specific occupational code is usually available. The product classification is based on part of the United Nations Central Product Classification (CPC) (UN 1998).

Through its classification and subsidiary classifications HISCO provides a structure through which occupations are, to a certain extent, hierarchically ordered. However, the hierarchical structure in HISCO was not designed to be representative of hierarchical structures of occupations as they are present in societies. Class schemes and occupational stratification scales do serve this purpose. In the next section, recently developed HISCO-based class schemes and stratification scales are discussed.

2.2.2 HISCO-based measures of occupational stratification and social class

HIS-CAM

HIS-CAM is a HISCO-based occupational stratification scale (Lambert *et al.* 2006). It is constructed according to the principles of Cambridge Social Interaction and Stratification (CAMSIS) scaling (Prandy 2000; Stewart, Prandy, and Blackburn 1980). The theoretical argument on which the scales are based is that the closer individuals are related in terms of social standing, the more they interact in for example friendship and marriage. These interactions are representative of the overall occupational stratification structure (Bottero 2005; Chan and Goldthorpe 2004; Prandy 2000; Prandy and Lambert 2003; Stewart, Prandy, and Blackburn 1980). For the construction of HIS-CAM, data on intergenerational connections between occupational titles were analysed (Lambert *et al.* 2006). Data were derived from 1.5 million marriage records from six different countries (Britain, Canada, France, Germany, the Netherlands, and Sweden) covering the period 1800-1938. Despite the large number of observations, certain HISCO occupational unit groups were hardly represented. The constructors of HIS-CAM decided to merge occupational unit groups with less than 20 observations with occupational unit groups closely related in terms of duties and tasks performed. This resulted in a total of 581 occupational unit groups. Associations between a child's and parent's occupational unit group are estimated using RCII association models (Goodman 1979) as implemented in the LEM program (Vermunt 1997). Finally, these associations were transformed into a scale ranging from 1 (low) to 99 (high).

HISCLASS

HISCLASS is a HISCO-based class scheme. The constructors of HISCLASS aimed at "a historical social class scheme that is both theoretically grounded – in identifying and

Measuring social structure in the past.

A comparison of HIS-CAM with occupational stratification scales and historical class schemes using Dutch nineteenth- and early twentieth-century data

closely following the underlying dimensions of social class in the past – and firmly tied to an empirical body of knowledge on these dimensions” (Maas and Van Leeuwen 2005). As theoretical underpinning, the authors constructed a scheme based on the following dimensions: manual / non-manual division, skill level, degree of supervision, and economic sector. The dimensions are an evaluation of what “historians with self-construed local class schemes seem to agree [upon as] the main dimensions of [a] social class scheme” (Maas and Van Leeuwen 2005). The scheme is derived by cross-classifying these dimensions in a manner which identifies 12 classes. Since there are not always enough data available to represent each of the 12 classes, the HISCLASS developers provide a collapsed seven-class version as well (see Table 2.1) (Maas and Van Leeuwen 2005). HISCO unit groups are allocated to the class scheme by assigning scores to the occupational unit groups for each of the dimensions. The scores are based on information on tasks and duties of occupations and workers present in the *Dictionary of Occupational Titles* (DOT) (US Department of Labor 1965). To validate the results seven experts in the field of work were asked to assign occupations directly to any of the 12 classes. If the DOT and the experts differed on the designation of an occupation, in most cases the judgement of the experts was followed.

Table 2.1 HISCLASS (full version) and HISCLASS 7 (collapsed seven-class version)

Class	HISCLASS 12	Class	HISCLASS 7
1	Higher managers	1	(1+2) Higher managers and professionals
2	Higher professionals		
3	Lower managers		
4	Lower professionals, clerical and sales personnel	2	(3+4+5) Lower managers and professionals, clerical and sales personnel
5	Lower clerical and sales personnel		
6	Foremen	3	(6+7) Foremen and skilled workers
7	Medium-skilled workers		
8	Farmers and fishermen	4	(8) Farmers and fishermen
9	Lower-skilled workers	5	(9) Lower-skilled workers
10	Lower-skilled farmworkers		
11	Unskilled workers	6	(11) Unskilled workers
12	Unskilled farmworkers	7	(10+12) Lower-skilled and unskilled farmworkers

Source: *Maas and Van Leeuwen (2005, pp. 280-1).*

SOCPO

SOCPO is another HISCO-based class scheme based on what its constructors refer to as “social power” (Van de Putte and Miles 2005). Social power is defined as “the potential to influence one’s destiny – or ‘life chances’ – through control of (scarce) resources” (Van de Putte and Miles 2005, p. 63). The constructors of SOCPO differentiate social power along two dimensions: economic power and cultural power. The degree of economic power results from material resources and is dependent on self-employment, skill, and authority (at work). The degree of cultural power is based on the manual / non-manual division and designation of “pure” status that is not related to the position one has at work. For both economic and cultural power the constructors separate out the underlying dimensions, which results in five economic power levels and five cultural power levels. Next, the power levels of the economic and cultural dimension are merged into a five-level social power scheme. The highest social power level (level five) consists of “high commanders”, “macro-scale self-employed”, “non-manual super skilled”, and the nobility. The lowest level (level 1) consists of unskilled workers.

2.2.3 Established occupational stratification scales

There is a wide range of established stratification scales to compare HIS-CAM with. Since the focus of this dissertation is on occupational status attainment in the Netherlands, this section first describes two Dutch occupational prestige scales, one by Van Tulder (1962) and one by Sixma and Ultee (1983). Next, it describes an international prestige scale: Treiman’s Standard International Occupational Prestige Scale (SIOPS). This scale was chosen since its development is the cornerstone of the argument put forward by sociologists, that prestige hierarchies are more or less the same through time and space (Hout and DiPrete 2006).

VAN TULDER’S DUTCH OCCUPATIONAL PRESTIGE SCALE

Van Tulder’s occupational prestige scale is the first Dutch occupational prestige scale representative of the male Dutch labour force (Van Tulder 1962). It was constructed by asking a representative sample of the Dutch population aged 18 and older (N=500) to hierarchically rank 57 cards with occupational titles from high to low according to their social standing (*maatschappelijk aanzien*) (Van Tulder 1962, p. 225). Each of the occupations was assigned a score of between 1 and 57 according to the position indicated by the respondents. Finally, the scale was constructed by taking the mean of all scores for each occupation. The highest score (52.2) was assigned to the occupation of university professor (*hoogleraar*), while the occupation of messenger (*loopknecht, besteller*) received the lowest score (5.1).

ULTEE AND SIXMA (U&S) OCCUPATIONAL PRESTIGE SCALE

The Ultee and Sixma (U&S) occupational prestige scale is a successor to the occupational prestige scale of Van Tulder (Sixma and Ultee 1983). Its constructors claimed that the

Measuring social structure in the past.

A comparison of HIS-CAM with occupational stratification scales and historical class schemes using Dutch nineteenth- and early twentieth-century data

earlier scale was outdated and no longer used (Sixma and Ultee 1983, p. 362). For the new scale the constructors selected 116 occupations based on the following selection criteria. First, the resulting new scale had to be comparable with existing national and international occupational prestige scales. This resulted, for example, in an overlap with the 57 occupations of Van Tulder's prestige scale. Second, an overlap with the occupational classifications of Statistics Netherlands was required. The third aim was to incorporate all occupations performed by 5,000 or more Dutch workers. The 116 selected occupations were presented in sets of 28 occupations to a representative sample of the Dutch population. Each of the respondents was asked to rank the set of occupations according to how they thought the social standing of the occupation was considered in society (Sixma and Ultee 1983, p. 366). The highest score was assigned to the occupation of surgeon (*chirurg*) (89.1), while the lowest score was given to the occupation of dustman (*vuilnismen*) (13.4).

TREIMAN'S STANDARD INTERNATIONAL OCCUPATIONAL PRESTIGE SCALE (SIOPS)

The Standard International Occupational Prestige Scale was derived by Treiman, who used data from existing prestige studies (Treiman 1977, p. 167). In each of the studies respondents were asked to "rate or rank a set of occupational titles with respect to their prestige or social standing" (Treiman 1977, p. 25). There was quite some variation in the rating tasks with regard to (1) the terms used ("prestige", "respect", "social standing", for example); (2) the number of occupations that had to be ranked; and (3) the way in which the occupations had to be ranked. Nevertheless Treiman found high correlations between studies within as well as between countries. In the Dutch case for example, correlations between four local studies and a national study were all above 0.94. All in all, occupational prestige scores were derived for 509 occupations from prestige studies of 55 countries or parts of countries. For all occupations in a given country, standard metrics were derived. The SIOPS scores were then derived by averaging the country scale scores for each occupational title.

2.3 Data and methods

To compare HIS-CAM with the occupational stratification scales and the HISCO-based class schemes, occupational data from the database of marriage records of the Historical Sample of the Netherlands (HSN) (Mandemakers 2001a) are used. Ultimately, the HSN database will consist of life-course data of a representative sample of all persons born in the Netherlands between 1812 and 1922 (N=77,000) (HSN 2008). The current database of marriage records consists of data on 21,820 Dutch marriages conducted between 1812 and 1994, although the annual number of marriages conducted before 1845 and after 1942 is low (HSN 2007). The analyses are based on occupational titles of grooms and their fathers which are derived from the marriage records from 1835 to 1939. On nearly

all records, information on the occupation of the groom is present (95.2 percent), while on only 47.5 percent of the records is information on the occupation of the groom's father available. Although common among datasets of marriage records, the large proportion of missing data is sometimes said to bias analyses of the association between father's and son's occupations (Delger and Kok 1998). However, this issue is not especially problematic for the present analyses, since they focus on similarities and differences between measurements of class and status, rather than on calculating precise estimates of father-son associations. Available information on the occupations of grooms and their fathers was coded into HISCO by matching occupations with two database files consisting of Dutch occupational titles and corresponding HISCO codes (Maas 2007; see Appendix A).

HISCO units were transformed into alternative class schemes and stratification scales using a number of conversion macros, which are listed in Appendix A. The procedures for exploiting these macros are relatively complex, usually requiring bespoke programming in suitable software languages (such as SPSS and Stata). To assist other researchers who may wish to replicate the analyses, the macros listed in Appendix A have also been deposited with the online facility Grid Enabled Occupational Data Environment (GEODE, <http://www.geode.stir.ac.uk>), which seeks to provide an Internet portal allowing easy access to such occupational information resources.

Automated coding procedures are widely used, and those occupation-based schemes which are deliberately constructed for detailed HISCO unit groups (SOCPO, HISCLASS, and HIS-CAM) ought, in principle, to have favourable measurement properties, since HISCO unit groups preserve relatively much detail on differences between occupational units. Moreover, an attraction of automated coding approaches is that they allow researchers to deal with the increasing size of historical occupational datasets, where manual coding of occupations is otherwise less feasible. This chapter therefore seeks to evaluate the structural properties of occupational data after they have been subject to standard (automated) coding approaches.

Measuring social structure in the past.

A comparison of HIS-CAM with occupational stratification scales and historical class schemes using Dutch nineteenth- and early twentieth-century data

2.4 Results

2.4.1 Distributions of HISCO-coded occupations across occupational stratification scales and class schemes

A first way to compare HIS-CAM with the stratification scales and class schemes is to see whether occupations coded in HISCO are assigned to the same classes, and receive comparable scale scores across different scales and schemes. Figures 2.1 and 2.2 depict a general overview of the distribution of grooms' occupational titles across the four stratification scales and the two class schemes. The figures show where each separate HISCO code is placed: for each HISCO code a circle is drawn, its size proportional to the number of grooms from the HSN sample found in that code. Although at first sight overwhelming, these figures give a detailed insight into the allocation of particular large and small occupational units to the respective stratification scales and class schemes. The larger number of circles for HIS-CAM and SIOPS indicate that they allow for more occupational detail than the two Dutch scales.

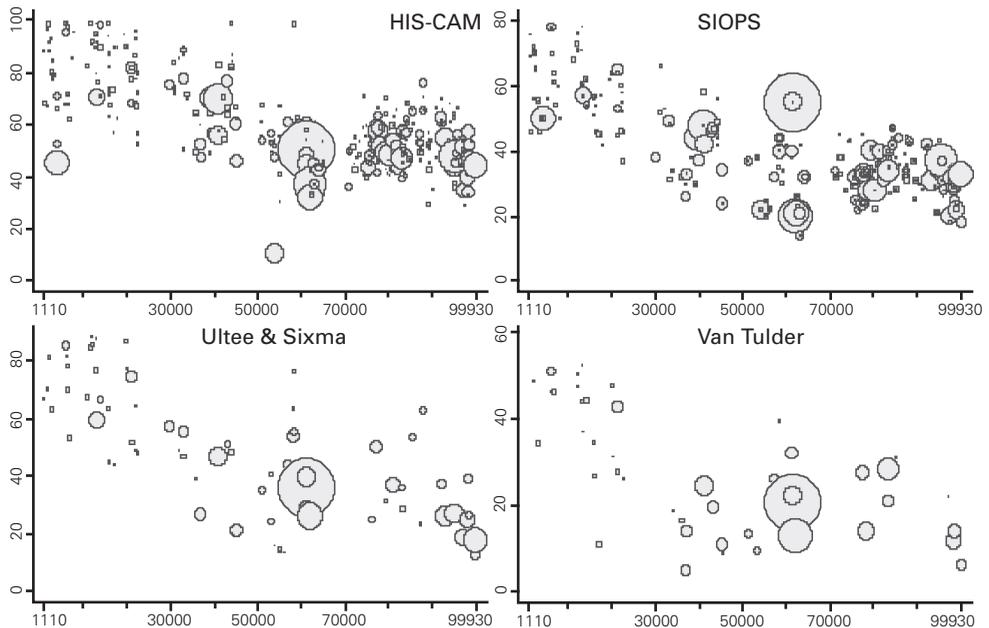


Figure 2.1 Distribution of grooms' occupational titles coded in HISCO for four different occupational stratification scales: HIS-CAM, SIOPS, Ultee and Sixma, and Van Tulder, 1835-1939, N=17,334
Source: Historical Sample of the Netherlands, release 2007_01(2007).

Horizontal axis shows HISCO 5-digit unit groups.

Size of circles shows number of grooms from each HISCO unit. N varies between scales (see section 2.4.1).

Apart from information on where a specific HISCO code is classified, the figures also provide information on the distribution of HISCO codes across HISCO major groups. They show for example that HISCO major group 2 (the values 20000-30000 on the horizontal axes) contains by far the smallest number of cases. They also show that the HISCO major groups 7, 8, and 9 consist of many different HISCO codes, while major group 6 is dominated by only three HISCO codes. The largest single HISCO code is the large circle associated with HISCO unit group 6-12.20 (Field Crop Farmers).

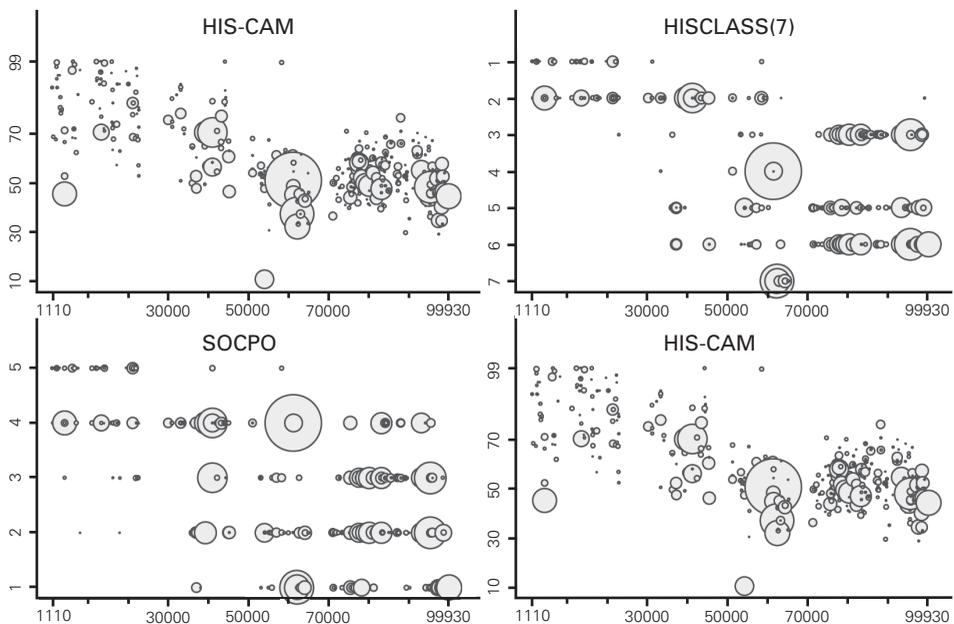


Figure 2.2 Distribution of grooms' occupational titles coded in HISCO for HIS-CAM, SOCPO, and HISCLASS 7, 1835-1939, N=17,334*

Source: Historical Sample of the Netherlands, release 2007_01 (2007).

Horizontal axis shows HISCO 5-digit unit groups.

Size of circles shows number of grooms from each HISCO unit in each class category.

*The values and labels of the collapsed HISCLASS scheme are as follows (original classes between brackets):

HISCLASS 1: Higher managers and professionals (1+2)

HISCLASS 2: Lower managers and professionals, clerical and sales personnel (3+4+5)

HISCLASS 3: Foremen and skilled workers (6+7)

HISCLASS 4: Farmers and fishermen (8)

HISCLASS 5: Lower-skilled workers (9)

HISCLASS 6: Unskilled workers (11)

HISCLASS 7: Lower-skilled and unskilled farmworkers (10+12)

Measuring social structure in the past.

A comparison of HIS-CAM with occupational stratification scales and historical class schemes using Dutch nineteenth- and early twentieth-century data

Figures 2.1 and 2.2 show that this group is located in different relative positions across schemes and scales. The relative positioning of Field Crop Farmers on the HIS-CAM scale is comparable to the positioning on the Ultee and Sixma and the Van Tulder scales, while Treiman's SIOPS assigns a relatively higher position to Field Crop Farmers. In comparison to HIS-CAM, the relative positioning of Field Crop Farmers is also higher in SOCPO (Figure 2.2). The relative position of Ship's Master (Sea or Inland Water) (HISCO 0-42.17) is more or less the same between HIS-CAM and SIOPS, but SOCPO and HISCLASS assign it a relatively higher position. These examples give a clear indication that wherever a particular classification assigns large occupational unit groups, such as these ones, this can have a critical effect upon the subsequent properties of the relevant scheme or scale.

To further assess the distribution of HISCO-coded occupations across occupational stratification scales, Figure 2.3 provides an overview of selected occupations in the four occupational stratification scales (HIS-CAM, Van Tulder, U&S, and Treiman's SIOPS). Of these stratification scales Van Tulder's scale is the most limited in the sense that it provides scale scores for only 57 occupations. Since some occupations were assigned the same HISCO code, and some of Van Tulder's occupations are not performed by grooms (such as "chambermaid in a hotel"), Figure 2.3 is based on only 28 unique HISCO codes. The lines in Figure 2.3 represent the occupational stratification scale scores for each of the occupational stratification scales. The lines show some variation in the overall height of the assigned scale scores. HIS-CAM assigns the highest scores, followed by the U&S and Treiman's SIOPS scale. Van Tulder's scale yields the lowest scores, which is not surprising since this scale has a theoretical maximum score of 57. It is important to be aware of these differences when directly comparing scale scores between occupational stratification scales.

For comparisons of the results for status attainment based on different scales, differences in the relative scale scores are more important. From figures 2.1 and 2.3 it becomes clear that the four different scales assign relatively different values to a number of occupations. HIS-CAM assigns a relatively lower score to the *general veterinarian* (HISCO 06510) and the *able or ordinary seaman* (HISCO 98135). The U&S and Van Tulder scales assign relatively lower scores to *painters, artists* (HISCO 16130) than the HIS-CAM and Treiman's scales. Treiman's SIOPS provides relatively lower scores for *general butchers* (HISCO 77310). Striking are the relatively higher scores for *field crop farmers* (HISCO 61220) and *horticultural farmers* (HISCO 61270) on the SIOPS scale.

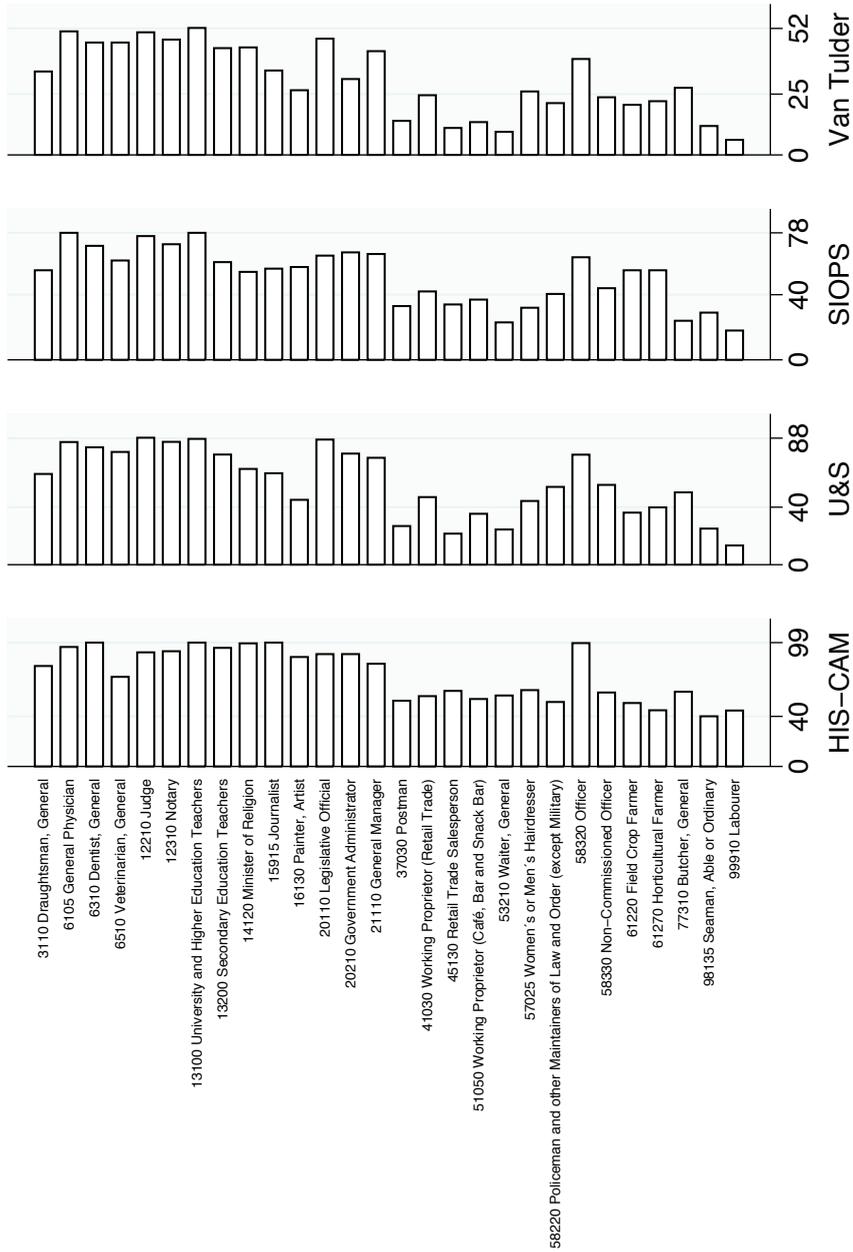


Figure 2.3 Scores of grooms' occupation on four different stratification scales, 1835-1939, N=4,013. Source: Historical Sample of the Netherlands, release 2007_01 (2007).

Measuring social structure in the past.

A comparison of HIS-CAM with occupational stratification scales and historical class schemes using Dutch nineteenth- and early twentieth-century data

In sum, the comparison of the distribution of HISCO occupations and major groups across the scales and classes provides a mixed picture. On the one hand there is a certain degree of overlap on how major groups, and unit groups, are placed. In all schemes HISCO occupational titles of major group 0/1 and 2 are found in the upper classes or scale scores, while major groups 4 and 6 are scattered across all classes, and occupations in major groups 7/8/9 are concentrated mostly in the lower classes or scale scores. On the other hand figures 2.1, 2.2, and 2.3 also show considerable differences between schemes. One cannot draw conclusions on which scheme is right or wrong from these examinations alone. However, the descriptive findings do suggest that variation in the designation of HISCO-coded occupational titles across schemes and scales is likely to result in different outcomes between studies using different schemes and scales. For example, HIS-CAM showed much resemblance to the two Dutch occupational prestige scales, while SIOPS seemed to evaluate farming occupations more highly. Such differences in the relative positioning of occupations are troublesome when they relate to occupations that account for a large proportion of the labour force.

While it is clearly possible to observe the different allocations of occupational units between scales and schemes, and recognize their probable implications, it is also of interest to question how these differences arise. Differences in the allocation of occupations may reflect the deliberate intentions of the different measurement instruments, since each class scheme and scale attempts to emphasize a somewhat different concept of social stratification and occupational inequality. However, as noted above, it is also possible that some differences in the allocation of occupations might arise for accidental reasons, such as errors or limitations in the coding and classification procedures. It is ultimately possible to evaluate the validity of the criteria of the different schemes and scales in these terms, namely by asking whether the differences between their treatment of particular occupations accurately reflect genuine differences between the occupations in terms of the concepts covered by the respective schemes. A comparable review of the properties of differences between classification schemes, for contemporary data, is presented by Lambert and Bihagen (2007). They argue that differences in how particular occupations are classified do sometimes reflect the underlying concepts embraced by the schemes, but they also observe that, overall, the average patterns of differences between the properties of different schemes do not, in large part, reflect their different conceptual foundations. An authoritative test of such properties for historical data is beyond the scope of this chapter. The review of distributions presented above does, however, suggest that many of the differences with respect to how particular occupations are located could plausibly be attributed to intentional conceptual differences between the schemes – an example being that farmers are ranked relatively higher in the SIOPS scale than in other scales, perhaps because the prestige associated with farming is higher than its average social stratification rewards.

2.4.2 Associations between stratification scales and class schemes

Another way to compare HIS-CAM with the stratification scales and class schemes is to

examine the associations between them. The more the schemes and scales are associated with HIS-CAM, the higher their comparability. Sometimes such a comparison consists of a correlation of the stratification scales and class schemes using each occupation as a single case. Each occupation is then given equal weight in the correlation analysis and the distribution of persons over occupations (cases) is thereby ignored. However, in this chapter the correlations of the measures of occupational stratification and class use the actual number of occurrences of a certain occupation in the dataset. This approach provides greater insight into the comparability of studies using different measures of class and status than the first approach.

In the analyses four association statistics will be used: Pearson's r , Spearman's r , Cramer's V , and eta. These are four commonly used association statistics, which summarize the extent of the correlation between two variables. They range in magnitude from 0 (no association) to 1 (complete correlation). The four measures are appropriate for different levels of measurement for the variables being compared. The exact values of the statistics are not strictly comparable (though they are broadly so). Primarily, they are appropriate for comparing magnitudes within any particular measure.

The four stratification scales can be treated as continuous, metric measures. However, while the SOCPO class scheme is intended to be an ordinal scheme, the authors of the HISCLASS scheme state explicitly that the scheme is only partly ordinal (although, in practice, it is not uncommon for other researchers to use these nominal schemes in an ordinal manner). For comparisons of the associations between schemes, these differences in levels of measurement present a challenge. The analyses therefore comprise statistics that treat these class schemes as both nominal (Cramer's V) and ordinal (Spearman's r), both when comparing them with each other and when making comparisons with the four stratification scales (using Spearman's r or eta respectively).

Table 2.2 shows the Pearson correlations between the four different occupational stratification scales. The first panel in Table 2.2 encompasses all four stratification scales. Since the scales differ in the type and number of occupations they represent, the table encompasses three different correlation matrices. The first panel shows the correlations between the four stratification scales for the cases and occupations that are available for all four scales. The panel depicts strong associations between HIS-CAM and the two Dutch stratification scales ($\geq .8$). The strongest correlation ($r=.951$) exists between the Dutch scales of Van Tulder and Ultee and Sixma. This result confirms the conclusion by Sixma and Ultee (1983) that both scales are very similar. HIS-CAM and the two Dutch scales show relatively weak correlations ($r<.5$) with Treiman's SIOPS.

The second panel in Table 2.2, based on the number of cases that are available in a pairwise comparison, shows similar high correlations ($r>=.7$) between HIS-CAM and the two Dutch scales. Overall the correlation between SIOPS and the other three scales have improved, especially the correlation ($r=.7$) between HIS-CAM and SIOPS. Apparently the additional cases are more similarly distributed over occupational groups.

Measuring social structure in the past.

A comparison of HIS-CAM with occupational stratification scales and historical class schemes using Dutch nineteenth- and early twentieth-century data

Table 2.2 Correlations between four different stratification scales (grooms' occupations)

	Van Tulder		U&S		SIOPS	
<i>Pearson correlation (with listwise n) for cases coded to all 4 schemes</i>						
HIS-CAM	0.820	(4,013)	0.796	(4,013)	0.250	(4,013)
Van Tulder			0.951	(4,013)	0.529	(4,013)
U&S					0.397	
<i>Pearson correlation (with pairwise n) for all cases</i>						
HIS-CAM	0.694	(5,960)	0.786	(6,866)	0.661	(19,979)
Van Tulder			0.951	(4,013)	0.569	(5,962)
U&S					0.591	(6,868)
<i>Pearson correlation (with pairwise n) for all cases excluding Field Crop Workers (HISCO=6-12.20)</i>						
HIS-CAM	0.697	(3,534)	0.791	(4,440)	0.763	(17,553)
Van Tulder			0.961	(1,587)	0.753	(3,536)
U&S					0.758	(4,442)

Source: *Historical Sample of the Netherlands (all marriages 1835-1939)*.
All correlations significant at $p < 0.001$.

Like the second panel, the third shows the associations between the four scales based on pairwise comparisons, but now excludes field crop farmers. Figure 2.1 showed that this is the largest HISCO group and had a relatively different position in the SIOPS scale. The panel reveals that the associations between HIS-CAM and the two Dutch scales hardly differ from the previous two matrices. The associations between Treiman's SIOPS and the other scales increase quite extensively. This suggests that, as Treiman argues, the positioning of farmers on Treiman's occupational stratification scale should be carefully considered (Treiman 1977).

Table 2.3 shows correlations between the four stratification scales and HISCLASS and SOCPO. It therefore reports both ordinal (Spearman's r) and nominal (Cramer's V and η^2) measures of association. The table suggests that the class schemes are connected with all scales, but less strongly connected with HIS-CAM than with the scale structures of Treiman, Van Tulder, and U&S. Subsequent analyses of the distributions of scale scores within class categories (not shown here) reveal that there are often greater standard deviations for HIS-CAM within classes than within other scales. This indicates that HIS-CAM reports relatively larger differences between occupations within classes. One reason for this could be that HIS-CAM allows for a more detailed examination of occupations within class groups than other scales. Using η^2 rather than Spearman's r suggests stronger associations between HIS-CAM and HISCLASS and SOCPO when the schemes are treated nominally than when they are restricted to an ordinal comparison. The higher non-ordinal association is also found when comparing HISCLASS and SOCPO with the other occupational stratification scales. In the case of SOCPO, this finding is remarkable, since its constructors present it as an ordinal class scheme.

Table 2.3 Associations between two different class schemes and other stratification scales (grooms' occupations)

	SOCPO (5 categories)		HISCLASS (7 categories)	
Spearman's <i>r</i> / Cramer's <i>V</i> (all cases, n=16,620)	<i>Spearman's r</i>	<i>Cramer's V</i>	<i>Spearman's r</i>	<i>Cramer's V</i>
SOCPO			0.743	0.761
HISCLASS	0.743	0.761		
<i>Spearman's r / eta (pairwise)</i>	<i>Spearman's r</i>	<i>Eta</i>	<i>Spearman's r</i>	<i>Eta</i>
<i>n for all valid cases)</i>				
HIS-CAM (n=16,604)	0.601	0.659	0.661	0.754
Van Tulder (n=5,950)	0.605	0.882	0.710	0.876
U&S (n=6,843)	0.740	0.794	0.780	0.871
SIOPS (n=16,619)	0.855	0.873	0.634	0.913

Source: *Historical Sample of the Netherlands (all marriages 1835-1939)*.
All correlations significant at $p < 0.001$.

2.4.3 Explanatory power of schemes

Figures 2.4 and 2.5 show gradations in the explanatory power of alternative occupation-based social classifications of fathers' occupations to predict sons' social positions. For all measures, the position of the son is treated as ordinal and continuous. This approach is not uncommon in the literature, although, from a statistical point of view, it is more appropriate for the occupational stratification scales than for the class schemes. While Figure 2.4 applies to all sons and fathers for whom occupational information was available, Figure 2.5 excludes sons who are field crop farmers (HISCO 6-12.20). For each social classification, the explained variance (R^2) of a father's occupational position in predicting his son's position is given. Furthermore, a measure for the increase in the Bayesian Information Criterion (BIC) statistic relative to the null model is provided. An advantage of the BIC statistic over R^2 is that it takes the efficiency of a model into account. The more parameters a model has, the more variance is explained. The BIC statistic takes both the explained variance as well as the number of parameters into account. This is important when comparing the class schemes with the continuous stratification scales. In the null model there are no variables and a son's social position is predicted by a constant. So the relative BIC measure shows the increase in explanation between a model with no explanatory variables and a model with just one explanatory variable for occupational stratification schemes and a number of dummy variables equal to the number of classes for each of the class schemes.

Figures 2.4 and 2.5 show that there is some variation across measures in how well a father's social position explains that of his son. HIS-CAM assumes an average position, while the Ultee and Sixma scale is most successful in explaining a son's occupational prestige. However, these graphs are not particularly well suited to evaluating what the better scale is. The scales and schemes differ in many characteristics, which might influence their explanatory

Measuring social structure in the past.

A comparison of HIS-CAM with occupational stratification scales and historical class schemes using Dutch nineteenth- and early twentieth-century data

success in technical rather than substantive ways. For example, an extreme class scheme consisting of just one class would perfectly explain the association between a father's and a son's occupational status. Lambert and Bihagen (2007) show that a simple manual / non-manual social classification does quite well in explaining patterns of employment risk. Nevertheless, figures 2.4 and 2.5 do show that the occupation-based measures of social classification differ in the extent to which they consistently explain a son's social position in contexts with farmers (Figure 2.4) and contexts without farmers (Figure 2.5). While HIS-CAM and most other measures provide more or less similar outcomes, SIOPS as well as SOCPO show different levels of explained variance. This again underlines the influence of differences in the positioning of a large occupational group (farmers) on the measurement properties and comparability of different stratification scales and class schemes

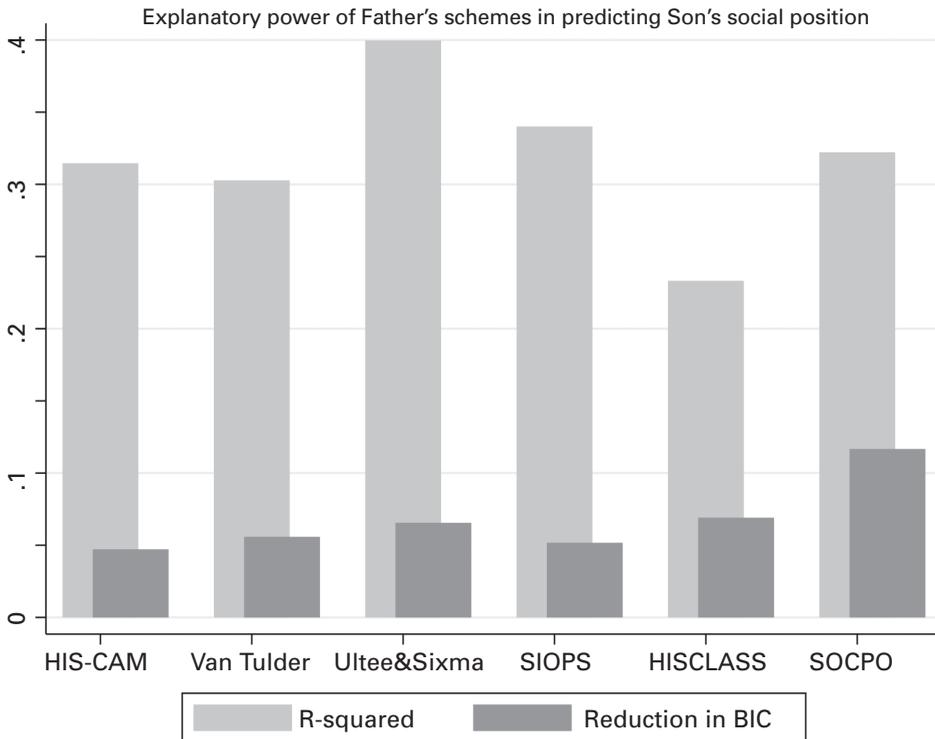


Figure 2.4 R^2 and BIC for predicted son's HIS-CAM by father's occupational classification position derived from several occupational stratification scales and class schemes, 1835-1939, $N \approx 11,000$. **Source:** Historical Sample of the Netherlands, release 2007_01 (2007). Graph shows R^2 for linear regression with only one explanatory variable, the occupation-based social classification (using dummy variables for class schemes). Scaled BIC statistic compares the BIC of the regression with that of the Null model with no explanatory variables ($(BIC - \text{Null BIC}) / \text{Null BIC}$). Unweighted data.

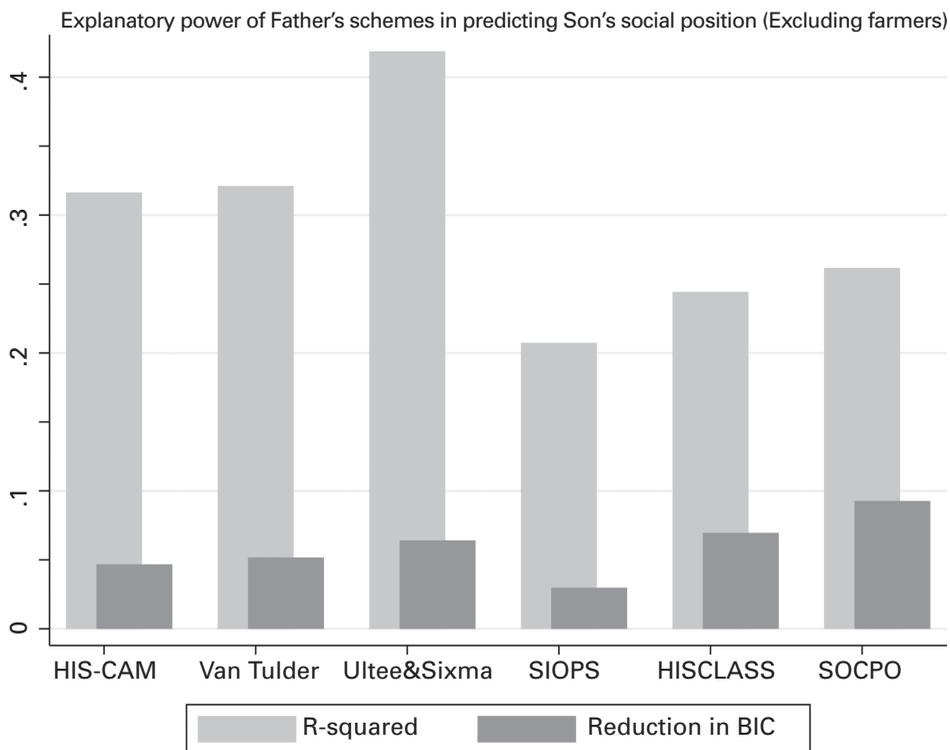


Figure 2.5 R^2 and BIC for predicted son's HIS-CAM by father's occupational classification position derived from several occupational stratification scales and class schemes, 1835-1939, $N \approx 10,000$, excluding sons in HISCO = 6-12.20

Source: *Historical Sample of the Netherlands, release 2007_01 (2007)*. Graph shows R^2 for linear regression with only one explanatory variable, the occupation-based social classification (using dummy variables for class schemes). Scaled BIC statistic compares the BIC of the regression with that of the Null model with no explanatory variables ($(BIC - \text{Null BIC}) / \text{Null BIC}$). Unweighted data.

2.5 Conclusion

The development of HISCO, a classification of historical occupations, and the construction of a HISCO-based occupational stratification scale (HIS-CAM) and two HISCO-based class schemes (HISCLASS and SOCPO) are important steps towards the development of large-scale studies of stratification research. The present chapter considered the comparability of HIS-CAM with HISCLASS, SOCPO, and contemporary measures of occupational stratification.

Measuring social structure in the past.

A comparison of HIS-CAM with occupational stratification scales and historical class schemes using Dutch nineteenth- and early twentieth-century data

There are several ways to evaluate the comparability of stratification scales and class schemes. One might compare the theoretical arguments used in the construction of those schemes and scales (although, as noted above and argued by Lambert and Bihagen (2007), it cannot be assumed that the theoretical origins of a measure necessarily translate into the measurement properties of a scheme or scale). One might also choose a measure pragmatically, perhaps based upon the convenience of access and implementation or the highest volume of previous use – this represents the dominant strategy employed in contemporary sociological analyses. This chapter tries to allow for a third type of decision, based upon comparisons of measurements when applied to a historical, large-scale dataset: a representative sample of marriage records of those born between 1822 and 1922 in the Netherlands. Such a comparison provides an understanding of the empirical properties of different measures and an answer to the important question of to what degree results from studies using different measurements of class and occupational stratification can be compared with each other.

The HISCO-based occupational stratification scale HIS-CAM was compared with two Dutch stratification scales and a contemporary international stratification scale: Treiman's SIOPS. There is much resemblance between HIS-CAM and the two Dutch scales. This finding is not only relevant for an assessment of the comparability of HIS-CAM, it also shows that two conceptually very different methods to derive occupational stratification scales, HIS-CAM on the one hand and Van Tulder's and Ultee and Sixma's prestige scale on the other, lead to comparable results.

There is less resemblance between HIS-CAM and Treiman's SIOPS. In a way, this had been predicted by Treiman, who wrote that the SIOPS does "a poorer job of estimating the prestige of agricultural occupations in countries with high proportions of the labour force engaged in agriculture than in countries with a largely non-agricultural labour force" (Treiman 1977, p. 183). Further analyses have indeed shown that Treiman's SIOPS evaluates the occupational prestige of farming occupations rather differently from the other three scales. Furthermore, farming occupations are quite common in the data used (consisting of marriage records of a representative sample of Dutch born between 1822 and 1922). This calls into question the usefulness of Treiman's SIOPS for stratification research in the preindustrial era. Although it is claimed that the scale is universal and can be used for all countries and regions, it does seem to evaluate farming occupations differently. Furthermore, SIOPS differs in its effectiveness in explaining farmer / non-farmer occupations. Both these issues are most problematic when one is studying the influence of industrialization on the status attainment process, since most societies in the preindustrial era have large proportions of farmers in the labour force and experienced a decline in agricultural labour.

Another finding is that, although based on the same historical data, there is sufficient discrepancy (lack of correlation) between the schemes to conclude that the class schemes HISCLASS and SOCPO yield a somewhat different assessment of the occupational hierarchy compared with the stratification scale HIS-CAM. This hampers the comparability

of studies using these different measures above and beyond the methodological issues that should be taken into account when comparing results based on concepts of class and occupational stratification.

For a long time, the lack of large-scale occupational data and a universal classification of occupations compromised our understanding of social stratification in the nineteenth and early twentieth centuries. Now that both data on occupations and a universal classification of occupations are available, it is understandable that different measures of occupational stratification have emerged. Although these measures are mostly congruent, they do feature some considerable differences relevant to the comparability of results. Researchers of historical occupational stratification may therefore want to reflect on what measure(s) to use, in order to safeguard the comparability of studies and to increase our understanding of social stratification in the nineteenth and early twentieth centuries.

In subsequent chapters HIS-CAM will be used as a measure of occupational stratification. The choice of a continuous measurement of social stratification allows for the modelling of individual and contextual characteristics of the status attainment process. This chapter has shown that HIS-CAM is comparable with continuous measures of stratification used in contemporary research, such as Treiman's SIOPS. However, for a number of reasons, HIS-CAM seems more suitable than a contemporary continuous measurement of social stratification for studying the status attainment process in the Netherlands in the nineteenth and early twentieth centuries. For one, HIS-CAM was designed especially for occupations and occupational structure in the nineteenth and early twentieth centuries. Furthermore, as the present chapter has shown, HIS-CAM, like SIOPS, allows for greater occupational detail than the two Dutch stratification scales of Van Tulder and Ultee and Sixma. Moreover, this chapter has revealed that the placement of farmers is a key characteristic of any stratification scheme, and that the positioning of farmers in SIOPS did not match as well with the two Dutch scales as the positioning of farmers in HIS-CAM did.

In sum, HIS-CAM seems an appropriate measure of occupational stratification for this dissertation because (1) it applies to the period at hand, (2) it allows for greater occupational detail than national measures, while (3) it provides a more correct evaluation of occupational stratification in the Netherlands than the so-called universal scale, SIOPS.

3 Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)⁵

3.1 Introduction

Over the past few decades, numerous researchers have studied the question of who marries whom (Kalmijn 1998). This topic is of interest to social scientists and important to society because it enhances our understanding of the stratification of society. When high marries high and low marries low, there are strong barriers between status groups, and society can be considered socially closed. This is even more the case when characteristics determining partner choice are mainly ascribed and not achieved. In this case, the position in society of the future spouse can already be predicted at birth. Research shows that in recent marriage cohorts achieved characteristics (education for example) are more important predictors of marital choices than ascribed characteristics (father's occupational status for example) (Blau and Duncan 1967; Kalmijn 1991; Kalmijn 1994; Mare 1991; Uunk 1996). However, drawing on the industrialism thesis (Kerr *et al.* 1960; Treiman 1970) one can conclude that in the past partner choices were predominantly affected by ascribed characteristics. Only when industrialization took place did societies become more open, barriers between status groups become weaker, and achieved characteristics become more important.

This study investigates the validity of the claims that openness has increased by studying whether, and if so how, macro developments during early industrialization changed the process of partner selection in the Dutch province of Zeeland between 1811 and 1915. Focusing on the bridegroom, this chapter addresses the following questions: (1) To what extent did the occupational status of his father (ascribed characteristic) and his own occupational status (achieved characteristic) increase his likelihood of marrying a woman from a high-status group? (2) Did the influence of ascribed and achieved characteristics on partner selection differ between regions and periods? (3) To what extent can such differences be explained by macro processes such as industrialization, mass communication, and urbanization?

Theories concerning the effects of industrialization on status attainment were originally formulated in relation to attainment in the labour market, but they have since been extended to partner selection (Blau and Duncan 1967; Uunk 1996). With industrialization, labour markets and societal life changed. Industrialization can be defined as "the use of mechanical contrivances and inanimate energy (fossil fuels and water power) to replace or augment human power in the extraction, processing, and distribution of natural resources or products derived therefrom" (Davis 1955, p. 255). It created many new occupations and changed the content of existing occupations. In industrial labour markets it became more rational for employers to select employees on the basis of achieved characteristics, such as the level of education, than on the basis of ascribed characteristics. Accordingly, achieved characteristics became more important predictors of an individual's success on

⁵This chapter was coauthored with Ineke Maas. A slightly different version is forthcoming: Zijdemans, R.L. and I. Maas. Forthcoming. "Assortative Mating by Occupational Status during Early Industrialization". *Research in Social Stratification and Mobility*. I am grateful to Vincent Buskens, Jeroen Weesie, and the members of the Migration and Social Stratification seminar and the ISOL seminar for their comments. A previous version of this chapter was presented at the European Social Science History Conference, Amsterdam, March 2006.

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

the labour market than ascribed characteristics. This has consequences for mate selection. One of the characteristics that potential mates value in each other is (future) economic success (Kalmijn 1998, p. 502). In industrialized societies, ascribed characteristics should therefore be less important for mate selection and achieved characteristics more important, compared with preindustrialized societies (Blau and Duncan 1967; Uunk 1996).

Apart from industrialization, other characteristics of society, thought to have affected mate selection, changed as well during the same period. Urbanization negatively affected the scope for parental control of their children's behaviour, increasing the ability of children to escape from their own status group. Other processes, such as the development of mass communication, means of mass transport, and educational expansion are thought to have affected the openness of society by disseminating universalistic values (Kerr *et al.* 1960; Treiman 1970). Industrialization, together with these other processes, is often referred to as "modernization", while the mechanism of how all of these processes influence social mobility and homogamy is referred to as modernization theory. However, I will refrain from using the term modernization theory here. It is unclear what processes are considered to be part of modernization, and on what grounds. This makes it difficult to specify the mechanism behind modernization and to empirically test how modernization influences the processes of homogamy (Nettl and Robertson 1966). Moreover, the term "modernization" leads to a characterization of regions as either modern or traditional (Eisenstadt 1974). Even studies that solve this issue by scaling the degree of modernization (Smits, Ultee, and Lammers 2000) cannot take into account differences in how advanced the separate modernization processes were.

Despite the time that has elapsed since the formulation of the industrialism thesis and the large amount of research on mate selection, there is no definite answer yet to the question whether industrialization and its accompanying macro processes changed the importance of ascribed and achieved characteristics for the selection of a spouse. Historical studies addressing partner choice in the nineteenth and early twentieth centuries have often focused on partner characteristics other than occupational status, such as the age of the spouses or the geographical distance between the spouses (Kalmijn 1995; Lynch 1986; Oris 2000; Van Poppel and Nelissen 1999; Van Poppel and Ekamper 2005). Historical studies that do address the role of status attainment in partner selection tend to focus on a specific social group, a small region, or study a few points in time, making it difficult to generalize the research findings (Kocka 1984; Lanzinger 2005; Mitch 1993; Schüren 1993). Recent historical studies of marriage patterns, using log-linear analyses, do cover larger regions and longer periods, but they distinguish only a few periods and do not explicitly relate marriage choice to macro developments (Van Leeuwen and Maas 2005). Sociological studies of homogamy more often study longer periods, larger regions, more variables, and a sample of the total population. However, their analyses seldom predate World War II, by which time the process of industrialization had been more or less completed in all Western countries (Smits, Ultee, and Lammers 1998; Ultee and Luijkx 1990).

The present study will improve on previous research in four ways. First, it investigates

processes of partner selection in a Western country over a very long period, starting before the onset of industrialization and finishing when industrialization and its accompanying macro processes were advanced. In this way, the industrialism thesis can be tested on its home ground, i.e. during industrialization. Second, it distinguishes between local contexts within the province of Zeeland. This allows us to take into account the fact that macro-level developments such as industrialization did not occur throughout society at the same time. Some regions remained mainly agricultural long after industrialization had begun in other regions. Consequently, mate selection is expected to differ regionally, an expectation that has already found some support in research on occupational status attainment (Grusky 1983; Zijdemans 2008). Third, this study improves on previous research by relating several macro-level developments to the process of mate selection. Previous research has often been limited in the number of indicators it has used to characterize macro developments, while sometimes only time is used to indicate the development of industrialization and other macro processes. The macro-level developments that occurred in the nineteenth and early twentieth centuries have a more structural side, i.e. changes in the labour market that favour selection based on achieved characteristics, and a more cultural side, i.e. changes in human relations and values due to urbanization, educational expansion, mass communication, and mass transport (Craig 1981; Garnier and Hage 1991; Rijken 1999; Treiman 1970). Both aspects will be operationalized and we will test which of the macro-level developments were more important in explaining processes of marital choice. Finally, to test the hypotheses this study utilizes a large dataset, including all marriages that took place among the total population of a large region encompassing over 100 municipalities over the course of more than a century. This will circumvent the selection problems encountered by previous studies and enable us to study macro-level changes and differences with sufficient power.

In the next section general notions about partner choice will be combined with the industrialism thesis to derive hypotheses on the changing effects of ascribed and achieved characteristics on partner choice. The hypotheses will be tested using data from all civil marriage records for the Dutch province of Zeeland in the period 1811-1915, supplemented by annual data on developments at the level of municipality, such as industrialization and urbanization. Using multilevel analyses this study will show whether the effects of one's own and one's father's occupational status on the likelihood of marrying a high-status bride differed between regions and periods. In a second step, we will explain these differences using data on macro-level developments.

3.2 Theories and hypotheses

The process of finding a mate has often been compared with that of finding a job (Oppenheimer 1988). Individuals in search of a mate enter the marriage market and start to search for an attractive partner. Whether a marriage takes place depends not only on

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

an attractive mate being found, but also on this potential mate having similar feelings. In contemporary Western societies, the future bridegroom and bride both have a say in this. Researchers interested in the effect of achieved and ascribed characteristics on marital choices therefore model marital choices in a symmetric way, taking into account both the characteristics of the bridegroom and those of the bride (Hendrickx 1994; Kalmijn 1991; Uunk 1996). In the nineteenth and early twentieth centuries though the mate selection process was less symmetric. The reason is not that the bride (or the groom) had less to say about whom they wanted to marry. Marrying off a child was a very rare phenomenon. Parents tried to affect the partner choice of their children, but usually not to the extent that the children's preferences were ignored. Asymmetry was caused by the high likelihood of women ending their occupational career at marriage and their low likelihood of attaining a high-status occupation. As a consequence, their occupation at marriage was not a good predictor of the future economic success of the couple. This societal process is reflected in the data. Many women either did not have an occupation at marriage, or did not bother to mention it, or the occupation was deemed unimportant and therefore not registered. The status of the father of the bride was a more important predictor of the couple's economic success. High-status fathers could help the young couple with money, finding a house, and promoting the career of the son-in-law. I therefore model the mate selection process in the preindustrial and industrializing period as an asymmetrical process, omitting the status of the bride (Figure 3.1) not because she did not play an active role in searching for a spouse, but because she often had no occupational status and, even if she had, it would hardly have affected the future economic success of the couple.

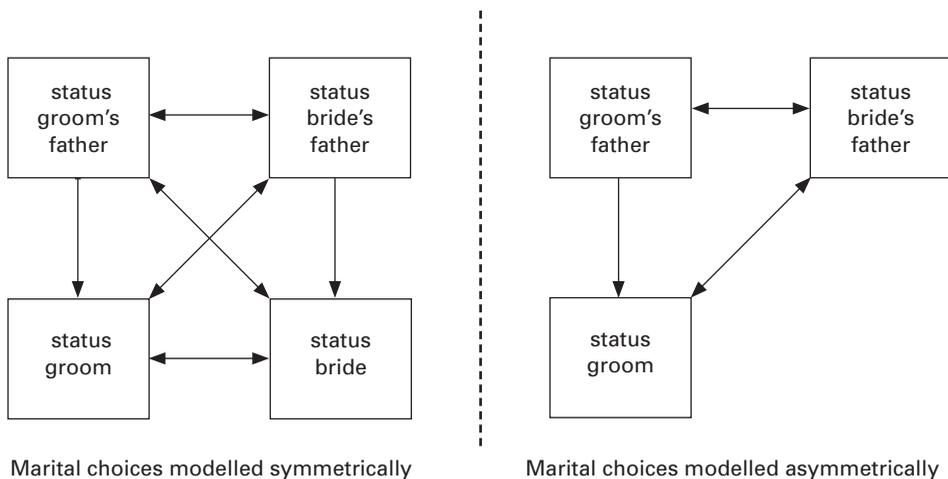


Figure 3.1. *Symmetric and asymmetric models of marital choice*
Single-headed arrows indicate causal relationships, double-headed arrows indicate selection processes.

Ascribed and achieved characteristics of bride and groom are easy to distinguish in theory, but more difficult in this model. Whereas the association between the status of the father of the bridegroom and that of the father of the bride clearly reflects ascription, the association between the status of the groom and that of his father-in-law is a combination of ascription and achievement. This association combines the effect of the achieved status of the groom with that of the ascribed status of the bride. In both cases, of course, these effects describe selection processes and not causal effects.

3.2.1 Preferences, third parties, and the marriage market

The hypotheses on changes in the process of marital selection will be derived both from general notions on marital choice and from the industrialism thesis. Based on the sociological literature, Kalmijn (1998) distinguishes three elements that determine the selection of a marriage partner: (1) people's preferences concerning the socioeconomic and cultural resources of the marriage partner, (2) the influence of third parties, and (3) the structure of the marriage market.

People's preferences for resources owned by potential partners are important because, as in a market for goods or jobs, a high demand for a particular resource increases its value. As a result, potential spouses possessing this popular resource are more desired than those who do not. Given that these popular spouses are also looking for popular resources, "the most attractive candidates select among themselves, while the least attractive candidates have to rely on one another" (Kalmijn 1998, p. 398). Kalmijn (1998) notes that people do not always prefer more resources to fewer resources. He argues that although people prefer partners with a larger quantity of socioeconomic resources, with regard to cultural resources they prefer partners similar to themselves.

A second element that plays an important part in theories on marital choice is third-party (such as parents, peers, Church) influence. Spouses share not only personal resources, but also resources from their social networks. Therefore, third parties have an interest in ensuring that marriage does not corrode their pool of resources. Although this seems beneficial for the spouse as well, the individual preferences of the spouse and third-party interests might collide. The more marriage candidates depend on a third party (parents) and the more they are integrated into a third party's social network (such as the Church), the higher the probability of their reconciling themselves to that third party's influence.

Selection of the marriage partner also depends on the marriage market. The influence of the marriage market is based on the notion that the more often one meets individuals with a specific characteristic, the higher the probability of selecting a marriage partner with that particular characteristic. The probability of meeting members of a group depends on several group characteristics, such as the size and the geographical positioning of the group (Blau and Schwartz 1984). Members of groups that are larger and geographically more concentrated are more likely to marry endogamously (Lieberson and Waters 1988).

The industrialism thesis argues that industrialization and its accompanying macro

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

processes have changed the interplay between individual preferences, third-party preferences, and the marriage market. In the next sections, I will derive hypotheses from this thesis concerning the effects of the status of parents and bridegrooms on marital choices.

3.2.2 Effects of industrialization on partner selection: the industrialism thesis

According to the general notions on partner choice, people have a preference for a partner with many economic and similar cultural resources. Since marriage is aimed at a long-lasting relationship, future marriage partners will have an interest not only in the current resources of the spouse, but also in the spouse's future resources. The quality and quantity of these future resources is uncertain (Oppenheimer 1988). To decrease this uncertainty, people will look for proxies for future success (Kalmijn 1991). According to the industrialism thesis, before industrialization the characteristics of the family of origin were especially good proxies for the spouse's future socioeconomic position. Sons would often eventually have similar occupations as their fathers. Some fathers would be able to pass on their own occupation directly to their sons. Others could help their sons in the local job market to attain an occupation with a status similar to that of their own. Often, daughters stopped working on marriage, if they had an occupation at all. Before industrialization, the occupational positions of the fathers of the bride and groom were therefore important indicators of the success of the bride and groom later in life.

The rise of industrialism changed the main indicator for the future socioeconomic position of the bridegroom. New and more diverse occupations emerged, making it more difficult for fathers to pass on the required occupational skills to their sons (Treiman 1970). Instead, schools or firm-specific training programmes would provide the necessary skills, making the education and occupational status of the bridegroom rather than the occupational status of the groom's father the best proxy for future socioeconomic resources.

Industrialization also changed the influence of third parties, especially the parents. Before industrialization, the economic success of the children depended heavily on their parents. As a consequence, parental influence on the lives of their children, including their marital decisions, was considerable. Given the lack of a social security system to provide for them in old age, parents had an interest in promoting the future resources of their children by having them marry a member of a family at least as "good" as their own. Due to the new occupational opportunities created by the industrialization process, children became less economically dependent on their parents (Shorter 1975). As a result, they were less inclined to concede to parental advice and preferences with respect to their future spouse.

To summarize, according to the industrialism thesis future socioeconomic success was a highly valued resource in a partner both before and after industrialization. Before

industrialization, the best proxy for future success is the father's occupational position, and parental preferences mattered a great deal in partner choice. After early industrialization the best proxy for socioeconomic success is the bridegroom's level of education and his achieved occupational status. The focus of a bride and her father therefore shifted from the groom's father to the groom. However, the focus of the groom and his father remained the occupational status of the bride's father (Figure 3.2), since during early industrialization brides seldom had an occupational status that could be used as an indicator for future economic success. Thus the shift in the focus of the bride's father decreased the association between the occupational status of both fathers, while increasing the association between the occupational status of the groom and that of the bride's father. I hypothesize:

Hypothesis 1a: The more industrialized a region or period, the weaker the association between the occupational status of the groom's father and that of the bride's father.

Hypothesis 1b: The more industrialized a region or period, the stronger the association between the occupational status of the groom and that of the bride's father.

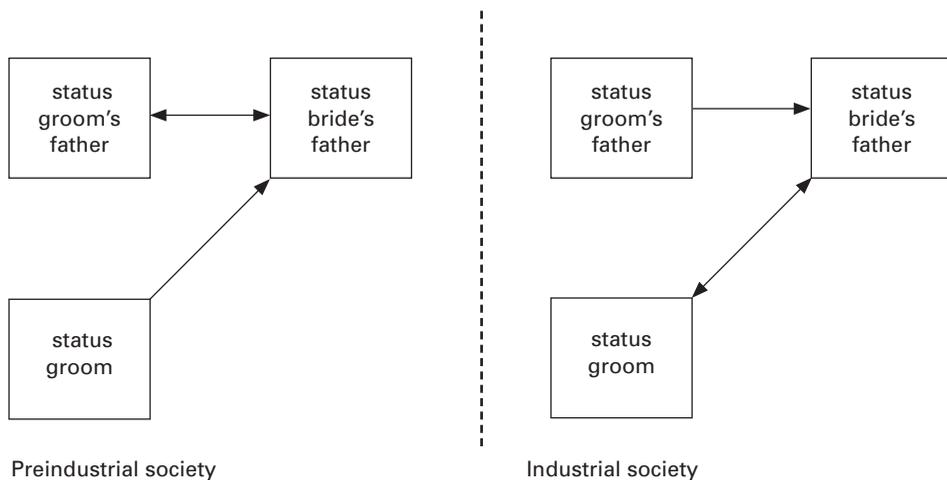


Figure 3.2. Economic selection criteria with regard to marital choice in preindustrial and industrial societies

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

3.2.3 Extensions of the industrialism thesis

Apart from industrialization, other macro processes such as migration and urbanization are hypothesized to influence the process of mate selection. However, while it is argued that industrialization changed economic preferences especially, it is also argued that the processes accompanying industrialization influenced cultural preferences and opportunities to meet in particular. Due to mass communication, urbanization, geographical mobility, educational expansion, and mass transport, people were increasingly confronted with elements (ideas, habits, individuals) from outside their own group (family, municipality, Church, or class), decreasing their orientation towards their own group and the influence of their own group. This led to a more open society by decreasing the influence of both ascription *and* achievement. The present chapter considers this assumption by explaining a number of processes that accompanied industrialization and testing to what extent each of them influenced homogamy. More specifically, Treiman's hypotheses that (a) more pervasive mass communications, (b) greater urbanization, (c) increased geographical mobility, and (d) educational expansion "break down the rigidity of the class structure of traditional society, and thus [to] increase the ease of mobility" are tested (Treiman 1970, p. 219). In addition, this chapter provides a new hypothesis on the influence of means of mass transport on homogamy.

As a characteristic of modern societies, mass communication is said to develop a common culture and to decrease regional, ethnic, and class differences in attitudes and behaviour (Treiman 1970). Mass communication is able to "form historically new bases for collective thought and action quickly, continuously and pervasively across previous boundaries of time, space and status" (Treiman 1970, p. 219). I expect that due to mass communication the preference of a groom for marrying a bride from the same status group will decline. Not because his preference for a culturally similar spouse becomes less, but because the observed cultural differences between members of different status groups become smaller. Parents and other interested third parties, such as peers and neighbours, will also observe fewer cultural differences and therefore object less to marriages with someone with a different status (Gerbner 1967). Urbanization and increased geographical mobility have the same effects as mass communication, but they are hypothesized to have changed processes of partner selection in other ways too. Treiman (1970) argues that people living in smaller communities are more easily helped (or hindered) by their parents, while people who move to a new area or who live in large cities have to depend on themselves. As a consequence, men and women on the marriage market are less affected by third parties in deciding whether to marry a partner with a high social status. Uunk adds that in large municipalities third parties, including parents, are less able to influence whom young people meet than in small municipalities (Uunk 1996, p. 62). He also claims that urbanization caused an increasing number of people to grow up in more heterogeneous areas with regard to social status and education, creating opportunities for social mixing (Uunk 1996, p. 62). Taken together, urbanization and geographical mobility seem to have decreased the influence of both ascribed and achieved characteristics on

partner choice, although achieved characteristics were probably affected less.

Apart from these existing hypotheses, I derive a new hypothesis on the effects of means of mass transport. As is the case with urbanization and migration, transport increases people's opportunities to escape from third-party influence and to meet people from other social and regional backgrounds. Transport, however, differs from urbanization and migration in that it allows a more gradual experience of what is outside the local community. People using transport for work or leisure experience what is outside their own group, even when living in less urbanized regions or in communities with low migration rates. Also, "outsiders" using transport "invade" local communities and allow the local population to experience different habits (such as clothing, manner of speech), changing their preferences and increasing their opportunities.

A last macro development that is hypothesized to increase people's understanding of other groups and to decrease their orientation towards their own group is the expansion of education. The decline in illiteracy rates in the Netherlands throughout the nineteenth century suggests that an increasing number of children gained access to primary education. In the first half of the nineteenth century there were still large regional differences in rates of illiteracy (Boonstra 1995; Hoogerhuis and Jansen 1987). In the second half of the nineteenth century almost all children in the Netherlands attended primary school for at least a few years (Boonstra 1993; Boonstra 1995; Knippenberg 1986). Although even in the first half of the nineteenth century there was already a form of schooling that gave access to university, it was not until 1863 that a statutory education system was created that provided different types of secondary schooling for general and practical education (Bartels 1963; Mandemakers 1996a). It is likely that these schools increased their pupils' knowledge of the world outside their own municipality and thereby weakened their in-group preferences. Schools probably also increased opportunities to meet people from other social strata, although not directly people of the opposite sex. Only later, when tertiary education was expanded and opened up to women too, did universities become marriage markets coupling partners with the same achieved status (Blossfeld and Timm 2003). Prior to 1915, however, secondary schools affected one's knowledge of other groups more than that they functioned as marriage markets.

In sum, the arguments as to why macro processes accompanying industrialization affect homogamy focus on the cultural preferences of a spouse and/or on marriage markets. With the rise of a mass culture, people from different backgrounds become more alike, weakening the relationship between ascribed characteristics and a culturally similar other. Furthermore, due to increased opportunities to meet, people from different strata have a higher probability of meeting and potentially mating. While industrialization is argued to have actually changed the selection process, the processes accompanying industrialization merely weakened the selection based on status (Figure 3.3). I therefore expect that:

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

Hypothesis 2a: The more mass communication, urbanization, migration, means of transport, and education in a region or period, the weaker the association between the occupational status of the groom's father and that of the bride's father.

Hypothesis 2b: The more mass communication, urbanization, migration, means of transport, and education in a region or period, the weaker the association between the occupational status of the groom and that of the bride's father.

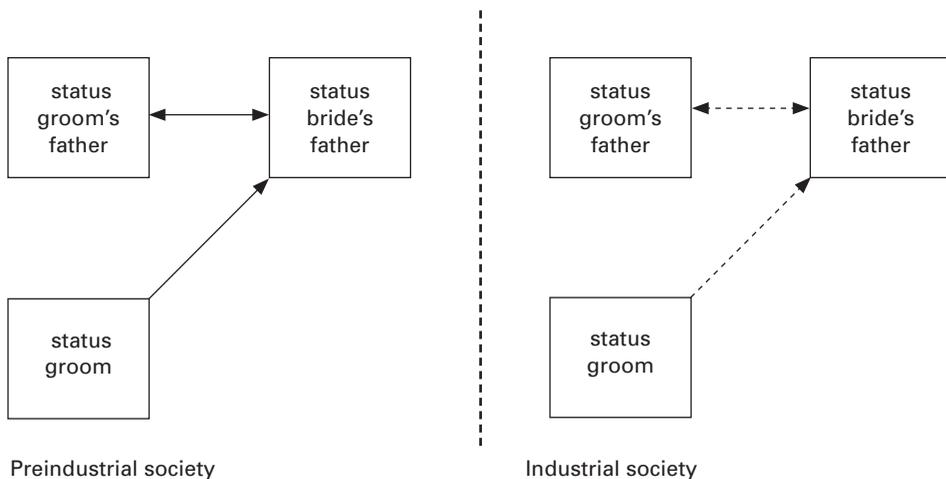


Figure 3.3. Cultural selection with regard to marital choice in preindustrial and industrial societies

Dashed lines indicate weak selection, continuous lines indicate strong selection.

3.3 Area, data, measurements, and method

3.3.1 Area

The area under study is the Dutch province of Zeeland, situated in the southwest of the Netherlands and bordering the North Sea to the west and Belgium to the south. In the period being studied it consisted of two strips of land connected to the mainland north of Belgium and to the southwest of the Netherlands and of about five inhabited small islands (the precise number changed over time). By reclaiming land from the sea through dykes and water management, several islets were merged and between 1817 and 1910 the area of land under cultivation in Zeeland increased from 311,833 to 366,259 acres (Priester 1998, p. 446).

As a province, Zeeland can be characterized as largely agricultural. In the first half of the nineteenth century the main crop grown was wheat (Priester 1998). Wheat being rather exhaustive for the clay soil, farmers chose from time to time either not to use their land or to grow other crops that were less exhaustive, such as rape-seed, common flax, rose madder, and sugar beet (Hoekveld 1972; Knippenberg and De Pater 2002; Landbouw 1871; Landbouw 1872). These other crops were grown mainly for trade, but by the end of the nineteenth century sugar beet and to a lesser extent common flax were grown on an increasingly large scale for the production of sugar and textiles respectively in factories in Zeeland (Franken and Adriaanse 2004; Priester 1998). Given the large size of the agricultural sector and thus the large amount of manual labour required, it is remarkable how slowly the sector was mechanized and how slowly manual labour was replaced. Priester (1998) explains this by the special technique used in Zeeland to grow wheat, which involved thorough manual weeding. The extremely labour-intensive weeding resulted in clean sheaves for which there was a large demand throughout the country. However, the weeding required the wheat to be sown over a wide area, whereas the sowing machinery introduced from abroad sowed seeds in a concentrated fashion and row-wise. Also, thrashing machinery would damage too much of the scarce high-quality wheat and was therefore not used. Furthermore, the imported machinery designed for the large farms in Britain and the United States was simply too large for Zeeland's farms or too heavy for the moist clay soil. Another problem was that the cost of purchasing machinery was too high to be beneficial for a single farmer. The cost of a steam plough was roughly four times the annual wage of an agricultural labourer (Van Zanden 1992, p. 65).

Despite these difficulties, initiatives to acquire and use machinery in agriculture developed. While some farmers bought machines together and helped each other with sowing and harvesting, others bought a machine and employed personnel for hiring it out (Priester 1998, p. 241). Also, the increasing demand from and better contracts provided by factories for large-scale production of crops such as sugar beet is likely to have stimulated the purchase of "modern" machinery by the growing number of large-scale farmers (Bakker 1992; Priester 1998, p. 245).

There was also increasing mechanization in the more urbanized municipalities in Zeeland, resulting in an expansion of the industrial sector. Alongside the flax and sugar industries mentioned above, various types of other industry were present in Zeeland, including shipbuilding, beer brewing, shoemaking, textiles, concrete production, and wood sawing (Franken and Adriaanse 2004). These factories were to be found not just in the two largest cities in Zeeland, Middelburg and Vlissingen (Flushing), but in various smaller municipalities as well (Franken and Adriaanse 2004).

Later on in the nineteenth century, mechanization extended further to the realm of transport. Between 1868 and 1872 the first four train stations in Zeeland were opened, although in the four decades after that this number did not increase. Zeeland's first steam tram arrived later, in 1882, but it proved a more successful means of mechanized transport. In 1915 there were more than 25 municipalities that could be reached by tram (Sluiter 2002).

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

Apart from its agricultural character and the late development of mechanization, Zeeland was also characterized by regional differentiation with regard to land use, religion, and social differentiation, an observation confirmed by various historical accounts (Bouman 1946; Bras and Kok 2005; Priester 1998). Perhaps the most striking example of Zeeland's regional focus was the attempt by the Dutch government to introduce a single standard time throughout the country. Anticipating repeated requests by transport companies for one standard time in the Netherlands, the Dutch Minister of Internal Affairs asked the municipalities to introduce it by 1 May 1892 (after a previous request in 1858 had failed). Of Zeeland's 109 municipalities only eight complied, while another 51 stated that they were inclined to do so. The remaining 50 municipalities did not comply; almost all chose an alternative local time (Knippenberg and Nauta 1989).

In sum, characterizing Zeeland as a homogeneous agricultural province does not do justice to the various pockets of industrialization in the province. While some municipalities changed scarcely at all, others tried to adopt the technical developments taking place in agriculture, production, and transport. It is exactly this regional and temporal variation that makes Zeeland suited to testing our hypotheses.

3.3.2 Data

The hypotheses will be tested using data on marriages and annual data on macro processes such as industrialization and mass communication at the municipal level. The marriage data stem from all marriage records in Zeeland for the period 1811-1915 (N=143,890)⁶. These records are part of the Civil Records of Zeeland Database located at the Zeeuws Archief in Middelburg (the Netherlands). At the contextual level, information on six macro-level processes is derived from various sources. With regard to industrialization, information on steam engines was derived from the Registers of the Dutch Department for Steam Engineering, which are reports on the safety of steam engines (Lintsen and Nieuwkoop 1989-1991)⁷. The annual reviews on Dutch education, the *Verslagen van den Staat der Hooge-, Middelbare en Lagere Scholen*, for the period 1860-1915 were consulted for information on educational expansion (Scholen 1862-1917). Concerning communication, data on the presence of a post office in a municipality were derived from the *Verslagen aan den Koning betreffende de Dienst der Posterijen en der Telegrafien* in 1879 for the period 1811-1879 and from the annual reviews 1880-1915 for subsequent years (Posterijen 1880-1916). To gain an insight in the availability of means of mass transport, data on the presence of railway and steam tram stations in a municipality were gathered from

⁶ I am grateful to L. Hollestelle for providing access to this dataset. The dataset encompasses 163,715 records of marriages in Zeeland in the period 1795 to 1923. The number of marriages before 1811 and after 1922 is extremely small compared with the data for 1811 and 1922 respectively, and I assume that the recording of marriages was incomplete both prior to 1811 and after 1922. Since most of the contextual data are available for the period up to 1915, I use the marriage records for the period 1811-1915 (N=143,890). Due to changes in the names of municipalities, which affected 148 marriage records, no contextual information could be retrieved for those records. I thus use the data drawn from a total of 143,742 marriage records.

⁷ The Registers of the Dutch Department for Steam Engineering are available through the Data Archiving and Networked Services at <http://www.dans.knaw.nl> [last accessed 10 February 2010]. I would like to thank H.W. Lintsen for making his data available for public use. A description of the registers can be found in Lintsen and Nieuwkoop (1989-1991).

a study on Dutch tram and railway companies between 1881 and 1981 (Sluiter 2002). Data on urbanization and migration were retrieved from the Historical Ecological Database (HED) (1851-1880 and 1900-1915), the Historical Database of Dutch Municipalities (1811-1850 and 1880-1900), and the Dutch Census (1851-1915). These sources also provide information on religious denomination at the municipal level.

3.3.3 Measurements

For a long time, an important issue in historical studies of social stratification was that of determining people's position in society. The use of an occupational title as an indicator of social position, as is common in present-day research, was criticized in historical research for a number of reasons. Occupational titles would provide too little information on a person's socioeconomic position (De Vries 1986). Also, there would be confusion in occupational terminology "across time and space, within as well as between languages" (Van Leeuwen, Maas, and Miles 2002, p. 9). Further, extracting occupational titles from individual archive records is rather time consuming, limiting the focus of any research to a small number of municipalities or a short period of time. In the past, studies have dealt with these issues by using creative indicators of an individual's position in society, such as the location of their pew in church (Lucassen and Trienekens 1978) or the level of taxes they paid (De Vries 1986). Some historical studies did use occupational titles, but they tended to develop their own occupational scheme, making it difficult to compare studies with one another.

Over the past few decades, however, each of these issues has been tackled. By reporting a high correlation between mean income of occupations and the prestige of these occupations as measured by the prestige scale of Heek (1958), Mandemakers (1987) showed that, as in contemporary societies, historical occupational titles provide adequate information on social status. Furthermore, comparability of historical occupational titles between languages and over time has been achieved by the development of the Historical International Standard Classification of Occupations (HISCO) (Van Leeuwen, Maas, and Miles 2002). Based on ISCO-68 HISCO provides a classification of historical occupational titles based on occupational titles derived from 2.4 million personal records drawn from eight countries for the period 1692 to 1950 (Van Leeuwen, Maas, and Miles 2002). Also, historical research on status attainment is no longer bound to local regions or short periods. Numerous projects digitizing personal records (including marriage records) now provide information on occupational titles over longer periods and covering larger geographical areas. And finally, the development of a universal historical occupational stratification scale HIS-CAM (v.0.1) increases the comparability of studies of historical stratification (Lambert *et al.* 2006; Zijdemans and Lambert 2010). For each occupational code in HISCO, HIS-CAM provides a score that represents the position of that occupation in the stratification structure. The theoretical scale scores range from 1 to 99. HIS-CAM is a historical version of the CAMSIS scales and as such assumes that the overall occupational

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

stratification structure is represented by patterns of social interaction between people from different occupational strata (Bottero 2005; Prandy 2000; Prandy and Lambert 2003; Stewart, Prandy, and Blackburn 1980). This means that the more often people with a certain occupation interact, the closer these occupations will be to one another in the occupational stratification structure. To estimate the patterns of association, Goodman's RCII models are used (Goodman 1979). The estimates are based on 1.5 million marriage records drawn from six countries (Britain, Canada, France, Germany, the Netherlands, and Sweden) and covering the period 1800-1938.

In order to assign HIS-CAM scores to the occupational titles of the Zeeland grooms, grooms' fathers, and brides' fathers, I first coded the occupations into HISCO. Unfortunately, not all marriage records provided accurate enough information on all three occupational titles. The 143,742 marriages yielded 72,138 (50.2%) coded occupations for brides' fathers, 65,211 (54.4%) for grooms' fathers, and 138,532 (96.4%) for grooms. The number of marriages for which all three status scores are available for the period 1811-1915 is 38,513 (26.8%). The large number of missing data is not surprising (Bras and Kok 2005; Van de Putte 2003). For example, in a study of the marriage records of 994 higher education students in 1880 and 1920, 54.8 percent of the occupations of grooms' fathers were omitted (Zijdeman and Mandemakers 2008). A missing occupation might have meant that the father had no occupation (and no earnings), or that he had earnings from sources other than work, such as property, or, most likely, that the parents were deceased. Delger and Kok (1998) argue that this potentially leads to bias in the data. Since the early death of fathers might be related to poor living and working conditions, and such conditions are generally more common among those with a low occupational status, the associations estimated will be more representative for those of higher than lower status. Furthermore, over time the number of fathers who deceased before their children married decreased. Thus in later periods the estimates are a better representation of the "actual" associations. However, recent studies of the Netherlands in the second half of the nineteenth and first half of the twentieth centuries find no relationship between social position and mortality rates. Van Poppel and Van Gaalen (2008) specifically address the relationship between social position and mortality in their study, and they find no such relationship for Dutch adult men born between 1850 and 1920.

To identify any possible bias due to the attrition of the occupation of grooms' father in our data, Figure 3.4 depicts the proportion of missing occupations of grooms' fathers by occupational status of the groom for each decade between 1820 and 1910. The graph shows that the proportion of missing occupational titles of grooms' fathers was remarkably stable over time and hardly altered with the occupational status of the groom. In fact, if there is any tendency to be identified it is that the proportion of missing occupational titles increases rather than decreases with the grooms' occupational status. The large number of missing occupational titles of grooms' fathers is unfortunate, but it does not appear to be related to the occupational status of grooms. This matter is discussed further in section 3.5.

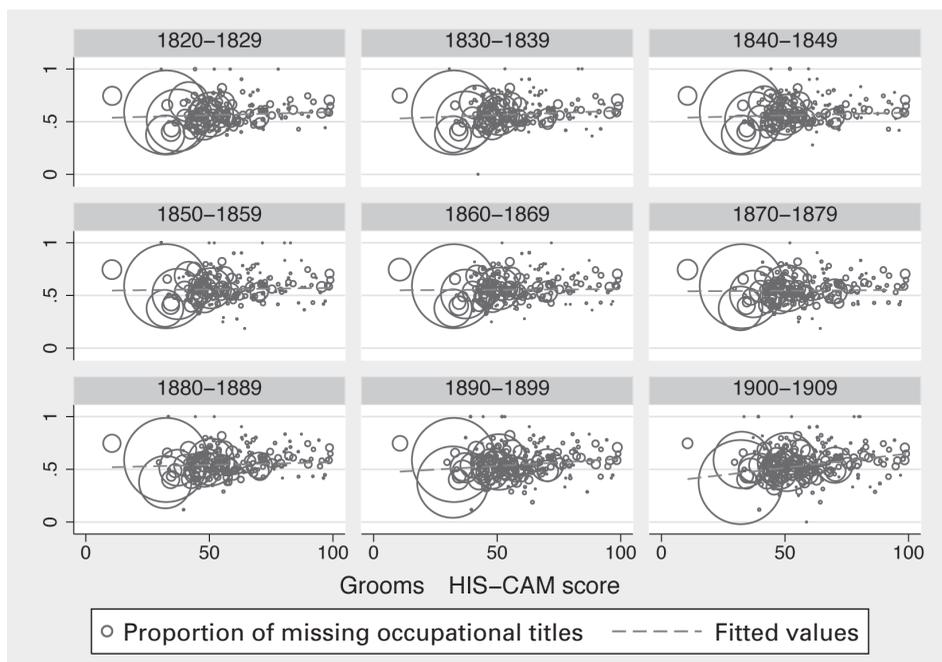


Figure 3.4. Proportion of missing occupational titles of grooms' fathers by grooms' occupational status and by decade
 The size of the circles indicates the number of grooms with a specific occupation.

DEPENDENT VARIABLE

The dependent variable in all analyses is the *occupational status of the bride's father*. It is constructed by assigning a HIS-CAM score corresponding to the occupation of the bride's father as registered on the marriage record of his daughter and son-in-law. HIS-CAM scores range from 1 to 100.

INDEPENDENT VARIABLES

The independent variables used in the analyses are indicators at the individual as well as the contextual level. At the individual level the independent variables are:

Status of the groom's father: The occupational status of the groom's father is the HIS-CAM score of his occupation as registered on his son's marriage record. To enhance the interpretability of the results, the status of the groom's father is centred on the grand mean for the period 1811-1915, i.e. the value of this variable is set to zero for grooms' fathers who are of average status.

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

Status of the groom: The occupational status of the groom is created by assigning a HIS-CAM score corresponding to the occupation of the groom as registered on his marriage record. The status of the groom is centred on the grand mean for the period 1811-1915.

The contextual variables refer to the characteristics of the municipality in the year of a groom's marriage. They are:

Industrialization: To operationalize industrialization I looked for an indicator that remains close to the definition of industrialization as "mechanization of labour". The Registers of the Dutch Department for Steam Engineering are one of the few data sources (if not the only) that provide information on the mechanization of production at a regional level over a longer period. The registers provide an account of steam engines that were checked for safety and reliability, and cover the period up to 1890. It was not possible to calculate the actual volume of horsepower or number of steam engines in use in the municipality in a certain year, because the registers do not provide detailed information on the capacity of the machine nor on the period during which a steam engine was in use. I have therefore used the number of steam engines ever purchased in a given municipality. To account for the fact that in larger municipalities there was potentially more work that could be mechanized, I relate the number of steam engines ever purchased to the number of inhabitants in the municipality in the year of marriage.

Mass communication: Newspapers were the main mode of mass communication in the nineteenth century, providing not only regional and, later on, national news, but also information on developments in agricultural machinery for example (Priester 1998, p. 240). Furthermore, newspapers provided an opportunity to place advertisements. Apart from the commercial advertisements placed by companies, there were also adverts for domestic servants and contact ads placed by individuals (Bras 2002; Van Poppel and Ekamper 2005). Unfortunately, due to the large number of different newspapers, it is not possible to count the number of newspapers distributed, nor, more importantly, to identify to whom they were distributed. However, the delivery of newspapers was directed through post offices. Furthermore, letters, telegrams, and fashion brochures through which people could learn of habits and fashion from regions other than their own were distributed through the post offices. In the absence of a more precise measure of mass communication I have therefore created a dichotomous variable, indicating whether or not a post office existed in the municipality and year of marriage.

Urbanization: Urbanization is measured by the size of the population of the municipality of marriage in the year of marriage. By combining the Historical Ecological Database (HED), the Historical Database of Dutch Municipalities, and the Dutch Census, I was able to obtain information on municipal population size for every tenth year for the period 1811-1915. To be able to include information from the marriage records for those years for which data on urbanization was missing, estimates were used. The estimates are weighted means of the years for which information on population size was available. The weights are determined by the proximity to the years for which information on population

size was available.⁸

Geographical mobility: Geographical mobility is indicated by the proportion of in-migrants to a municipality relative to the population of that municipality in the year of marriage. Where no information on geographical mobility could be obtained from the databases, estimates of the number of in-migrants were derived in a manner analogous to that for urbanization.

Mass transport: Mass transport is taken to refer to mechanized transport such as cars, trains, and trams. Cars appeared in the Netherlands at the end of the nineteenth century, but archives report only national aggregates of the number of motor vehicles, while regional accounts cover only short time periods (Linders-Rooijendijk 1989). Although there is a detailed account of Dutch railway stations, only four cities in the province of Zeeland had a railway station in the period under study (Sluiter 2002). There was greater regional differentiation in the case of tram stations. Although in contemporary society trams are a means of transport within cities, in Zeeland in the nineteenth century trams were chiefly used to travel between cities. Lacking a detailed account of the frequency with which trams journeyed between cities, I created a dummy variable indicating the presence of a steam tram station or steam train station in a municipality in the year of marriage. The steam tram and steam train data are available for the entire period, but the first steam train station in Zeeland was not opened until 1868. Until 1915 no stations were closed in Zeeland.

Educational expansion: As a measure of educational expansion I use the number of students enrolled in secondary education in the municipality and year of marriage relative to the size of the population. In each municipality and for every five years, I recorded the number of students registered as full-time students for all types of secondary education, including gymnasium students.⁹ For the years in between, I used the same estimation procedure as that employed for urbanization.

Several control variables will be included in the models. At the individual level these are:

Groom's age: Since occupational status tends to increase over the life course, I control for the age of the groom at marriage (mean centred). The data sources provide no information on the age of the groom's father or bride's father.

Groom is a migrant: This variable indicates whether the groom's municipality of birth is different from the municipality of marriage. It should be noted that this is only an approximation of migration, since the municipality of marriage may not always correspond with the place of residence at the time of marriage. Pélissier *et al.* show in a study of nineteenth- and twentieth-century France that migrants are more likely to marry a spouse from a different social background (Pélissier *et al.* 2005).

Bride is a migrant: Similarly, I take into account whether the bride's municipality of birth is different from the municipality of marriage.

⁸For example, the estimated population size in 1882 is equal to the sum of seven times the population size in 1880 and twice the population size in 1889, divided by nine.

⁹Although gymnasium students are recorded in the reviews of "higher education", I have included them because they were actually in secondary education preparing for higher education (Mandemakers 1996a).

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

Groom's mother deceased: This is a dummy variable indicating whether the groom's mother was deceased before the marriage. This variable models differences in mate selection due to the loss of parents (and thus due to the loss of their influence; see Van Leeuwen and Maas (2005; 2002). It is not possible to control for whether the groom's or bride's father was deceased, because for those fathers there is no information on occupational status.

Bride's mother deceased: This variable indicates whether the bride's mother was deceased before the marriage.

Groom was married before: This dummy variable indicates whether the groom married for a second or consecutive time. In the literature several arguments have been put forward claiming that people who remarry might look for characteristics in a future spouse which are different from those of their first spouse (Duberman 1975; Jacobs and Furstenberg 1986; Kalmijn 1998). In their study of the Netherlands between 1850 and 1940, Van Leeuwen and Maas (2007) found that first marriages were more homogenous with regard to age and literacy.

Bride was married before: This is a dummy variable to indicate whether the bride married for a second or consecutive time.

Finally, at the contextual level I use religious composition and time as control variables for contextual processes that are not captured by our independent variables:

Religious composition: In the Netherlands between 1811 and 1915 there were about a dozen Protestant denominations. Almost everyone who was not affiliated to a Protestant denomination belonged to the Catholic Church. Very few belonged to another denomination or were registered as not belonging to a Church. Our measure of religious composition is therefore the proportion of Protestants within a municipality and assumes that those who are not Protestant are Catholic. In years for which no information was available on religious composition, the same estimation procedure as that employed for urbanization was used.

Decade: This is a continuous indicator of time, with a value of zero in 1800 increasing by 0.1 every year after 1800.

An overview of the descriptive statistics of the variables is provided in Table 3.1.

Table 3.1 Descriptive statistics of individual and contextual variables and group size

Variable	Period	N	Mean	S.D.	Min	Max
Status of bride's father	1811-1915	38,198	44.750	12.651	10.600	99.000
Status of groom's father (c)	1811-1915	38,198	45.133	12.794	10.600	99.000
Status of groom (c)	1811-1915	38,198	43.391	13.050	10.600	99.000
Groom's age (c)	1811-1915	38,198	25.707	4.261	16.000	62.000
Groom's mother deceased	1811-1915	38,198	0.305		0.000	1.000
Bride's mother deceased	1811-1915	38,198	0.283		0.000	1.000
Groom is migrant	1811-1915	38,198	0.505		0.000	1.000
Bride is migrant	1811-1915	38,198	0.315		0.000	1.000
Groom was married before	1811-1915	38,198	0.034		0.000	1.000
Bride was married before	1811-1915	38,198	0.018		0.000	1.000
<i>Industrialization</i>						
Steam engines (per 100 inhabitants)	1811-1890	6,213	0.014	0.057	0.000	0.751
<i>Mass communication</i>						
Post office	1811-1915	8,791	0.107		0.000	1.000
<i>Urbanization</i>						
Population (per 1000 inhabitants)	1811-1915	8,791	1.800	2.327	0.103	21.973
<i>Mass transport</i>						
Steam tram and/or railway station	1851-1915	8,791	0.111		0.000	1.000
<i>Time</i>						
Decade since 1800	1811-1915	8,791	6.936	2.880	1.100	11.500
<i>Geographical mobility</i>						
In-migrants (proportion)	1851-1915	6,218	0.056	0.028	0.000	0.350
<i>Educational expansion</i>						
Students (per 100 inhabitants)	1851-1915	6,218	0.069	0.380	0.000	4.560
<i>Religious composition</i>						
Protestants (proportion)	1851-1915	6,218	0.778	0.331	0.000	1.000
<i>Group size</i>						
Observations per group	1811-1915	8,791	4.345	5.381	1.000	74.000

Note: *N* = Number of individuals in the case of individual characteristics, number of groups (municipalities x years) in the case of contextual characteristics. In the analyses, variables labelled (c) are centred around the mean of all available values of that variable.

3.3.4 Methods

To analyse the data I use hierarchical linear regression. This type of regression enables one to analyse clusters of data at the lower level(s). Furthermore, it allows the intercept and slopes to be variable across groups (Hox 2002; Snijders and Bosker 1999). In the analyses, individuals are nested in groups at a space x time level, meaning that a group is defined as all marriages in a municipality in a given year. In any given year the number

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

of groups equals the number of municipalities where marriages occur, while the size of each group is determined by the number of marriages in a particular municipality in a given year. The group sizes thus vary between municipalities and over time. When group size varies and has a substantive meaning, it is advisable to control for group size (Snijders and Bosker 1999). Since group size tends to be larger in larger municipalities, urbanization is used in each model as a control variable for group size.

The models consist of fixed effects and random effects for the intercept, the status of the groom and the status of the groom's father. A fixed effect represents the average across all groups (years and municipalities of marriage). It is referred to as "fixed", since, being an average, it is the same across all groups. In contrast to a fixed effect, a random effect is allowed to vary between groups:

$$Y_{ij} = \gamma_0 + \gamma_1 x_{1ij} + \gamma_2 x_{2ij} + \gamma_3 x_3 + \dots + \gamma_k x_k + U_{0j} + U_{1j} x_{1ij} + U_{2j} x_{2ij} + R_{ij}$$

The first part of the model is the fixed part, the second part contains the random effects. Subscript i refers to an individual, whereas subscript j refers to a group: all individuals in a given municipality and year of marriage. For example, γ_{ij} , the dependent variable, is the status of a bride's father i in municipality and year of marriage j . γ_0 is the fixed part of the intercept. γ_1 is the fixed part of the effect of the status of a groom's father, x_{1ij} . γ_2 is the fixed part of the effect of a groom's status, x_{2ij} . γ_3 to γ_k are the fixed effects of x_3 to x_k , the other independent variables in the fixed part. These include variables at both levels and interaction effects. The random part of the model consists of the random intercept U_{0j} , and the random slopes U_{1j} and U_{2j} for the status of a groom's father and groom's status respectively. R_{ij} is the residual at the individual level.

Since not all of the explanatory variables are available for 1811-1915, the analyses are divided over three time slots, represented in tables 3.2 to 3.4. The models in Table 3.2 provide results for the entire period (1811-1915), but contain indicators only of macro processes that could be derived for this period. Table 3.3 provides a more in-depth look at the first part of the period, 1811-1890, by encompassing information on industrialization in the models. Table 3.4 applies to all macro processes discussed in this chapter, except industrialization, for the period 1851-1915. Each table contains a base model without contextual variables (except for urbanization) (Model 1), a "saturated" model with all available contextual characteristics (Model 2), and finally a "best fit" model (Model 3) based on the results of Model 2. In addition Table 3.2 contains an "empty" model (Model 0), to investigate how much of the variance in the occupational status of the bride's father is at the group level.

3.4 Results

3.4.1 Regional and temporal variation in achievement and ascription

Table 3.2 shows the effects of the occupational status of the groom's father and of the

groom on the occupational status of the bride's father between 1811 and 1915.¹¹ Before I test our hypotheses, I consider our claims that (1) the status of the bride's father varies between groups, and that (2) there are group-specific effects of the groom's father and the groom on the bride's father. From Model 0 it follows that the variance in the status of the bride's father at the group level is 13.598 (with a standard error of 0.745) and that the proportion of group variance relative to total variance is 0.086 (13.598/(145.232+13.598)).

Table 3.2 Hierarchical linear regression of occupational status of bride's father on individual and contextual characteristics, 1811-1915 (n=38,198)

	Model 0		Model 1		Model 2		Model 3	
<i>Fixed effects</i>	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Constant	44.257*	.080	46.835*	.228	46.893*	.239	46.873*	.229
Status groom's father			.440*	.019	.451*	.020	.461*	.019
Status groom			.279*	.020	.266*	.021	.267*	.020
Time			-.321*	.023	-.322*	.025	-.322*	.023
× status groom's father			-.017*	.002	-.013*	.003	-.015*	.002
× status groom			.001	.002	.001	.003	.000	.002
Urbanization			.153*	.014	.105*	.020	.117*	.019
× status groom's father					-.001	.002		
× status groom					-.002	.002		
Mass communication					.426*	.195	.377*	.184
× status groom's father					-.086*	.020	-.108*	.014
× status groom					.083*	.021	.066*	.014
Mass transport					.035*	.173		
× status groom's father					-.032	.018		
× status groom					-.012	.018		
Groom's age			.038*	.013	.040*	.013	.040*	.013
Groom is migrant			.789*	.106	.781*	.106	.791*	.106
Bride is migrant			-.769*	.114	-.787*	.114	-.779*	.114
Groom's mother deceased			-.453*	.120	-.452*	.120	-.454*	.120
Bride's mother deceased			.858*	.122	.857*	.122	.856*	.122
Groom was married before			-1.984*	.310	-2.003*	.310	-1.994*	.310
Bride was married before			.887*	.404	.891*	.403	.886*	.403
<i>Random effects</i>								
<i>Level 2 random effects</i>								
Intercept	13.598*	.745	2.067*	.365	2.052*	.347	2.054*	.348
Status groom's father			.038*	.003	.035*	.003	.036*	.003
Status groom			.040*	.004	.039*	.004	.039*	.004
<i>Level 1 variance</i>								
Intercept	145.232*	1.149	98.456*	.826	98.467*	.825	98.453*	.825
IGLS Deviance	301220.800		286566.700		286488.100		286500.100	

Note: * $p < 0.05$.

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

There was indeed similarity with respect to occupational status between different individuals from the same group (year and municipality of marriage), although differences within groups were much larger than differences between groups. The constant indicates that across all groups the “average” groom married a bride whose father had a status score of 44.257. However, the significant effect of the random intercept shows that the average status of brides’ fathers differed substantially between groups. According to the model, in some of the groups the “average” father-in-law had a status score as low as 36.882 ($44.257 - 2\sqrt{13.598}$, two standard deviations below the mean) and in some groups as high as 51.632 (two standard deviations above the mean).

Our second claim, that the effects of the groom’s father and of the groom differ between groups, is supported as well. Model 1 distinguishes a linear change over time in these effects from additional, mainly regional, variance. The negative interaction effect between the status of the groom’s father and decade in Model 1 implies that the effect of the status of the groom’s father decreased over time. There is no indication that the effect of the groom’s status changed linearly. As a result, the effects of the status of the groom’s father and groom became more equal. Whereas in the early nineteenth century the effect of the status of the groom’s father is about 1.5 times as large as the effect of the groom’s status (0.440/0.279), according to this model in the beginning of the twentieth century the effect of the groom’s occupational status was even slightly larger than that of the groom’s father (0.245/0.279).

If we compare these results (for the whole period) with those for the early (1811-1890) and later periods (1851-1915), we also find a decreasing influence of the occupational status of the groom’s father in the later period, but not in the early period. This suggests that the influence of the groom’s father started to diminish only in the second half of the nineteenth century.

Besides the change in the effect of the groom’s father’s status over time, there is residual variance between groups in both the effect of the groom’s father and of the groom. Although at first sight the variances in the random slopes seem small, the 95 percent interval values shows clear differences between groups in the effect of the status of the groom’s father and the groom on the status of the bride’s father. For example, according to Model 1 in Table 3.2 in the upper 2.5 percent of the groups the effect of the status of the groom’s father was almost twice as large (0.830) as the average effect of the status of the groom’s father, while at the other extreme the effect was less than one-tenth of that (0.05). The 95 percent interval values for the groom’s occupational status show that in some groups the effect of the groom’s status was more than twice (0.679) the average effect, while in other groups the effect of the groom’s status was actually negative (-0.121). Although some of the variance in these effects will reflect non-linear changes over time, I assume that most of it reflects regional differences.

¹¹ To improve readability, I describe the results for the associations between the occupational status of the bride’s father, the groom’s father, and the groom in terms of “effects”. From a theoretical point of view it is more correct to refer to “associations” or “selection effects”.

Table 3.3 Hierarchical linear regression of occupational status of bride's father on individual and contextual characteristics, 1811-1890 (n=20,551)

	Model 1		Model 2		Model 3	
<i>Fixed effects</i>	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Constant	45.947*	.298	45.854*	.307	45.718*	.293
Status groom's father	.378*	.025	.391*	.026	.388*	.010
Status groom	.280*	.026	.285*	.028	.254*	.011
Time	-.220*	.038	-.196*	.040	-.178*	.037
× status groom's father	-.004	.004	.001	.004		
× status groom	.001	.004	-.004	.004		
Urbanization	.174	.021	.155*	.032	.174*	.032
× status groom's father			-.004	.003		
× status groom			-.005	.003		
Mass communication			.282	.288	.163	.285
× status groom's father			-.074*	.031	-.100*	.021
× status groom			.110*	.032	.081*	.022
Industrialization			-3.858*	1.497	-4.115*	1.484
× status groom's father			-.468*	.176	-.472*	.165
× status groom			.520*	.180	.462*	.170
Groom's age	-.024	.017	-.023	.017	-.024	.017
Groom is migrant	.877*	.142	.879*	.142	.879*	.142
Bride is migrant	-.846*	.150	-.840*	.150	-.836*	.150
Groom's mother deceased	-.287	.153	-.295	.152	-.288	.152
Bride's mother deceased	.933*	.154	.929*	.154	.928*	.154
Groom was married before	-1.400*	.364	-1.404*	.363	-1.389*	.363
Bride was married before	.953*	.461	.948*	.460	.964*	.460
<i>Random effects</i>						
<i>Level 2 random effects</i>						
Intercept	2.188*	.540	2.121*	.536	2.155*	.537
Status groom's father	.046*	.005	.043*	.005	.043*	.005
Status groom	.055*	.006	.053*	.006	.053*	.006
<i>Level 1 variance</i>						
Intercept	94.010*	1.125	94.063*	1.123	93.983*	1.123
IGLS Deviance	153581.900		153516.200		153525.300	

Note: * $p < 0.05$.

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

In the following subsections I discuss to what extent indicators of industrialization and other macro-level developments account for differences between municipalities and over time in the effects of the status of the groom's father and of the groom on the status of bride's father. This section ends with a brief discussion of the results with respect to the control variables.

With the exception of the models in Table 3.3 (1811-1890) all models show that older grooms had higher-status fathers-in-law. Without exception, the models in all tables show that grooms who married in a municipality different from that in which they were born married a bride from a higher-status family. On the other hand, grooms marrying a bride in a municipality different from that in which she was born had lower-status fathers-in-law. Although not significant in the period 1811-1890 (Table 3.3), grooms whose mothers were no longer alive at marriage had on average lower-status fathers-in-law, though the size of the effect is quite small (around -0.4). On the other hand, grooms marrying brides whose mothers were deceased became related to higher-status fathers-in-law. These findings on the mothers of the bride and groom support the idea that mothers acted as marriage brokers, providing indirect evidence of third-party influence. The difference in the size of the effect of a groom's or bride's mother having passed away before her child's marriage seems to suggest that mothers were more influential brokers with regard to their daughters than with regard to their sons. Grooms marrying for the first time had higher-status fathers-in-law than widowed grooms (or, far less likely, divorced grooms), while grooms marrying a "maiden" bride had on average lower-status fathers-in-law than grooms marrying a widowed (or divorced) bride. Finally, models 2 and 3 in Table 3.4 (1851-1915) show that the influence of the occupational status of the groom's father on the status of the bride's father was larger in regions more Protestant than in regions more Catholic. On average, the percentage of Protestants in a municipality was 76. In such a municipality the effect of the groom's father was .040 larger than in municipalities whose entire population was Catholic.

Table 3.4 Hierarchical linear regression of occupational status of bride's father on individual and contextual characteristics, 1851-1915 (n=31,736)

	Model 1		Model 2		Model 3	
<i>Fixed effects</i>	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Constant	48.212*	.356	47.696*	.444	47.673*	.414
Status groom's father	.597*	.035	.546*	.045	.582*	.042
Status groom	.239*	.036	.196*	.046	.210*	.042
Time	-.452*	.037	-.445*	.040	-.439*	.037
× status groom's father	-.033*	.004	-.031*	.004	-.033*	.004
× status groom	.006	.004	.006	.004	.007	.004
Urbanization	.150*	.015	.098*	.022	.110*	.021
× status groom's father			-.002	.002		
× status groom			-.001	.002		
Mass communication			.443*	.212	.470*	.202
× status groom's father			-.102*	.022	-.120*	.018
× status groom			.086*	.022	.081*	.018
Mass transport			.171	.181		
× status groom's father			-.032	.019		
× status groom			-.006	.019		
Educational expansion			-.036	.139	-.049	.138
× status groom's father			.023	.014	.015	.012
× status groom			-.027*	.013	-.030*	.012
Geographical mobility			2.129	2.598		
× status groom's father			.475	.268		
× status groom			.352	.274		
Religious composition			.583*	.224	.591*	.224
× status groom's father			.055*	.025	.051*	.025
× status groom			.002	.024	.001	.024
Groom's age	.055*	.015	.062*	.015	.062*	.015
Groom is migrant	.724*	.116	.724*	.118	.722*	.116
Bride is migrant	-.735*	.126	-.745*	.127	-.745*	.126
Groom's mother deceased	-.446*	.134	-.433*	.134	-.433*	.134
Bride's mother deceased	.667*	.137	.677*	.137	.675*	.137
Groom was married before	-1.948*	.362	-1.995*	.362	-1.988*	.362
Bride was married before	.772	.478	.753	.478	.761	.478
<i>Random effects</i>						
<i>Level 2 random effects</i>						
Intercept	1.840*	.360	1.786*	.357	1.802*	.358
Status groom's father	.034*	.004	.031*	.004	.032*	.004
Status groom	.034*	.004	.032*	.003	.032*	.004
<i>Level 1 variance</i>						
Intercept	99.345*	.901	99.360*	.900	99.351*	.900
IGLS Deviance	238101.000		238004.600		238023.000	

Note: * $p < 0.05$.

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

3.4.2 Mate selection and macro-level developments

The extent of industrialization is indicated by the number of steam engines per 100 inhabitants of a municipality in a certain year. Models 2 and 3 in Table 3.3 (1811-1890) clearly show that the effect of the occupational status of the groom's father on the status of the bride's father decreased, while the effect of the groom's status increased with industrialization. The predicted differences in the effects are substantial. For example, the effect of the status of the groom's father on the bride's father in municipalities where there was one steam engine for every 250 inhabitants was almost half that of the figure for municipalities without steam engines ($(.388 - .472 \times 0.4) / .388 = 0.513$). Although this is a relatively high ratio of steam engines, from 1872 onwards there were five municipalities (Breskens, Hulst, Kerkwerve, Nieuwerkerk, and Sas van Gent) which had at least one steam engine for every 250 inhabitants. In those municipalities the effect of the groom's occupational status on the status of the bride's father was 1.7 times as large as that in municipalities with no steam engines ($(.254 + .462 \times 0.4) / .254$). The effects of the occupational status of the groom's father and of the groom were equally large at an industrialization ratio of 0.135, i.e. one steam engine for every 740 inhabitants. About one-sixth of all municipalities in Zeeland reached this level of industrialization before 1890. In Middelburg and Vlissingen (Flushing), Zeeland's largest cities by far, with the largest number of steam engines ever purchased, the ratio of steam engines to inhabitants never rose above 1:2,000 and 1:2,500 respectively.

More pervasive mass communication decreased the effect of the status of the groom's father on the status of the bride's father, while it increased the effect of the groom's occupational status between 1811 and 1915 (models 2 and 3 in tables 3.2, 3.3, and 3.4). In municipalities with a post office the effect of the groom's father was about 20 percent smaller than in municipalities that lacked this facility, while the effect of the groom's status was about 35 percent larger. While the smaller influence of the groom's father supports our hypothesis, the larger influence of the groom's occupational status does not.

In models without other indicators for macro-level developments (not shown), urbanization affects the influence of the occupational status of the groom's father and the groom in the same way as mass communication: it decreases the influence of the status of the groom's father on the status of the bride's father, while it increases the influence of the groom's occupational status. There are, however, moderate to large correlations between urbanization on the one hand and mass communication, mass transport, and educational expansion on the other (Table 3.5). Once controlled for these other macro characteristics, population size does not affect the effects of the status of the groom's father and of the status of the groom. These findings are consistent in all three tables. Although urbanization is hypothesized to directly influence the associations between the status of the groom's father, groom, and bride's father, it appears that the influence of urbanization is a derivative of other macro-level developments.

Table 3.5 Correlation matrix of contextual variables (N=3,640)

	Industrialization	Mass communication	Urbanization	Geographical mobility	Mass transport	Educational expansion	Religious composition	Time
Industrialization	1.000							
Mass communication	0.235	1.000						
Urbanization	0.124	0.636	1.000					
Geographical mobility	0.080	0.031	-0.052	1.000				
Mass transport	0.190	0.304	0.303	0.090	1.000			
Educational expansion	0.130	0.490	0.576	0.020	0.333	1.000		
Religious composition	0.040	-0.090	-0.061	0.083	0.008	0.023	1.000	
Time	0.250	0.013	0.046	0.231	0.275	0.116	-0.034	1.000

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

Data on geographical mobility measured as the ratio of in-migrants relative to the population are available only for the period 1851-1915 (Table 3.4, Model 2). Neither the interaction effect with the status of the groom's father nor that with the status of the groom is significant. The expected negative influence of regional mobility on the effect of the status of the groom's father and of the groom is not observed.

The availability of mass transport, indicated by the presence of a railway station or steam tram station, did not affect the influence of the occupational status of the groom's father on that of the bride's father. Although the effect is in the hypothesized direction, it is not significant. Furthermore, the results do not support a decreasing influence of the groom's occupational status due to mass transport (tables 3.2 and 3.4).¹²

The sixth and final macro-level process I consider in this chapter is that of educational expansion (models 2 and 3 in Table 3.4). An increase in the number of students relative to the population does not decrease the effect of the occupational status of the groom's father on the status of the bride's father. This is contrary to our hypothesis. However, the decreasing effect of the groom's occupational status on the status of the bride's father is consistent with this theory. Substantially, this decrease is not very important. One standard deviation difference in the number of students in secondary education leads to a difference in the effect of the occupational status of the groom of .011 ($.380 \times .030$) (Table 3.4).

3.5 Conclusion and discussion

In this study I have shown that the process of mate selection, and more precisely the importance of ascribed and achieved characteristics for marrying a woman with a high status, varied considerably over time and between regions in the long century in which the Dutch province of Zeeland industrialized. In general, grooms who either had a high occupational status themselves or came from a high-status family married higher-status brides. In some municipalities and in some years, however, the effects were much stronger than in other places and periods. Only in the case of the influence of the father could this variation partially be expressed as a linear decrease over time.

The first question to be addressed is whether this decrease might have resulted from the fact that not all marriages could be included in the analyses. As discussed before, if either the father or the father-in-law had died before the marriage of their child, their occupational status would not have been recorded. Those marriages had to be excluded. It has been claimed that, especially at the beginning of the period of our study, death was common and not random. Higher-status fathers were more likely to survive until their children's marriage, while later in the nineteenth and twentieth centuries the association between status and survival became weaker. However, two recent studies, as well as

¹² Mass transport is not included in the models for the period 1811-1890 because before 1890 very few municipalities had either a train or a tram station.

our own results, indicate that in the Netherlands in the nineteenth and early twentieth centuries mortality rates were not related to social status. Nevertheless, the death of the father could have had (at least) two effects on mate selection. First, it is likely that the children of deceased fathers were at a disadvantage. They would marry lower-status partners than would be predicted on the basis of their own and their deceased father's status. This main effect of death should not bias our results, since it applies to the fathers of both brides and grooms. The exclusion of grooms with a deceased father made the regression line of the effect of the father's status on the father-in-law's status less steep; however, the exclusion of brides with a deceased father compensated for this bias.

Secondly, the death of a father could cause the influence of the status of the father to become weaker and the influence of the groom's own status to become stronger. Because the likelihood of an early death was greater at the beginning of the nineteenth century than during the twentieth century, this would lead to biased results. Leaving out grooms for whom the mate selection process was hardly affected by their father's status and strongly affected by their own status led to an overestimate of the effect of the father's status and an underestimate of the effect of the groom's status. The linear decrease over time in the importance of the father's status might thus have been caused by the decrease in early deaths among the fathers. However, the fact that there is no evidence of an increase in the importance of the groom's status over time is not consistent with this explanation. Furthermore, even if the complete change over time in the parental effect is due to the selection of deceased fathers, this still does not much affect our conclusions. All models include both interactions of ascribed and achieved characteristics with time and interactions with indicators of industrialization and accompanying macro-level processes. It is very unlikely that the survival rate of men was directly related to regional variations in industrialization, mass communication, or any other macro-level process. I will therefore assume that, even if the linear trend was caused by selection, conclusions about the effects of the indicators of industrialization and the accompanying macro-level processes are sound.

I tested a series of hypotheses to explain the variation in the importance of the father's and groom's status for mate selection. The hypothesis that has been central in the literature on this topic is the industrialism thesis, according to which industrialization caused ascribed characteristics to become less important and achieved characteristics to become more important for partner choice. For the first time, this hypothesis has been tested on a large-scale dataset, with reference to the period before and during industrialization and with explicit measurement of regional and temporal variations in industrialization. The findings support the industrialism thesis. With increasing industrialization (1) the association between the occupational status of the groom's and the bride's father decreased, while (2) the association between the status of the groom and that of the bride's father increased. The latter association is a combination of selection on achieved characteristics (status of the groom) and ascribed characteristics (status of the bride's father). The actual increase in the importance of achieved characteristics was, thus, probably stronger than the change

Assortative mating by occupational status during industrialization (Zeeland, 1811-1915)

in this association shows.

Macro-level processes other than industrialization were hypothesized to make both ascribed and achieved characteristics less important for mate selection because of a decline in the orientation towards one's own group. Mass communication, urbanization, regional mobility, the development of mass transport, and educational expansion would promote the development of a common culture and decrease regional, ethnic, and class differences in attitudes and behaviour. These hypotheses do not find much support. Only the development of mass communication led to a decrease in the effect of the father's status, whereas educational expansion decreased the effect of the status of the groom. Opposing effects are found just as often. With the development of mass communication the effect of the groom's status became more important, while the rise of mass transport and urbanization and increasing regional mobility do not seem to be related to processes of mate selection.

Taken together, the findings on changes in ascription are relatively consistent. With industrialization and the development of mass communication, ascription became less important over time. The effects on achievement are less clear. The association between the groom's status and that of his father-in-law did not show a linear change over time; it increased with industrialization and the development of mass communication, but decreased with educational expansion. These inconsistent results might have been caused by the fact that the association between a groom's status and that of his father-in-law reflected a mixture of effects of ascribed and achieved characteristics. On the other hand, the theory on the influence of macro-level processes on the effects of achieved characteristics on mate selection is not unequivocal either. While developments such as mass transport and mass communication provide opportunities to meet and communicate with people from all social standings, the extent to which these opportunities are utilized may well depend on "individual" characteristics, such as lifestyle, taste, or physical attraction, fostering new social barriers.

4 Like my father before me.

Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)¹³

4.1 Introduction

In Western Europe in the eighteenth and nineteenth centuries, industrialization structurally changed the labour market. Machines replaced manual labour, and new occupations related to working with and maintaining machinery emerged. As a result, sons could not follow in their fathers' footsteps as frequently as before and thus needed to take up occupations different from those of their fathers.

Before industrialization, many sons performed the same occupation as their fathers, attaining status positions similar to their fathers. According to the industrialism thesis, the decreasing likelihood of occupational "inheritance" caused the occupational status positions of sons to become decreasingly associated with that of their fathers (Blau and Duncan 1967; Kerr *et al.* 1960; Treiman 1970). However, the status maintenance theory argues that despite industrialization and the changes in the labour market it brought about fathers were still able to pass on their status positions to their sons by investing in more years of education and at more prestigious schools (Bourdieu and Passeron [1977] 1990; Collins 1971; Grusky 1983). The question thus remains whether industrialization did indeed change the status attainment process and, if so, whether the association between a father's occupational status and that of his son declined.

This question has been addressed in many sociological and historical studies on intergenerational social mobility. Sociological studies of contemporary intergenerational social mobility either find no pattern in relative social mobility (Erikson and Goldthorpe 1992) or only a small increase in relative mobility after the postwar period (Ganzeboom, Luijkx, and Treiman 1989). To discover whether such a trend is linked to industrialization, contemporary research compares social mobility patterns from countries with different levels of industrialization. However, the outcomes of these studies are not conclusive since today's industrializing countries industrialize in a manner different from countries in the nineteenth century. More explicit tests of the impact of industrialization are scarce. As a result, there is no conclusive evidence in contemporary research concerning the impact of industrialization on patterns of social mobility (Ganzeboom, Treiman, and Ultee 1991).

Also, historical studies on the influence of industrialization on status attainment face comparability issues (Kaelble 1981; Kaelble 1983). Due to the enormous amount of work involved in gathering historical occupational data, many of these studies are confined to a small number of cities, a short period of time, or a specific part of the population (Aminzade and Hodson 1982; De Vries 1986; Kaelble 1981). Furthermore, studies trying to provide a more general view based on these splinter studies are hindered by the many different occupational classifications and class schemes used.

However, several developments in the field of historical social mobility provide

¹³ This chapter appeared in 2009 as "Like my Father before me: Intergenerational Occupational Status Transfer during Industrialization (Zeeland, 1811–1915)" in *Continuity & Change* 24:455-86. It has benefited from the comments of the reviewers and of participants in the Social Stratification Research Seminar, Cambridge, 2006, the International Sociological Association Research Committee on Social Stratification and Mobility (RC28), Montreal, 2007, the European Social Science History Conference, Lisbon, 2008, and the Migration and Social Stratification Seminar (Utrecht University). I would like to thank Vincent Buskens for his comments on the analyses. The comments of the editor of *Continuity & Change* and of two anonymous referees enhanced the quality of the article.

Like my father before me.

Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)

opportunities to combine the scale advantages of contemporary sociological research with the authenticity of historical data. Digitization projects have revealed enormous quantities of occupational information, while regional, temporal, and language differences in occupational titles have to a large extent been overcome by the development of the Historical International Standard Classification of Occupations (HISCO). Based upon occupational titles derived from 2.4 million personal records drawn from eight countries between 1692 and 1950, HISCO provides a specific code for occupations in which equivalent tasks are performed (Van Leeuwen, Maas, and Miles 2002; Van Leeuwen, Maas, and Miles 2004). Furthermore, specific historical class schemes (including HISCLASS (Van Leeuwen, Maas, and Miles 2005) and SOCPO (Van de Putte and Miles 2005)) and an occupational stratification scale (HIS-CAM (Lambert *et al.* 2006; Zijdeman and Lambert 2010)) linked to HISCO have recently been developed. This enables researchers to systematically assign class categories and scale scores to occupations. Taken together, these developments increase the comparability of studies, and therefore our understanding of status attainment in the past.

The present study has benefited greatly from these developments and uses digitized data from all marriage records from the Dutch province of Zeeland between 1811 and 1915 to answer the following questions.¹⁴ First, to what extent does the influence of a father's occupational status on his son's status differ between regions and over time? Second, how can regional and temporal differences in the influence of a father's occupational status on his son's status be explained?

By answering these questions, this chapter contributes to the existing research on social mobility (historical and other) in four ways. First, it provides a large-scale test of the influence of industrialization on the status attainment process. This study encompasses all strata, in over 100 municipalities, over a period of more than a century. Since the data are derived from all marriage records in the Dutch province of Zeeland between 1811 and 1915, the results of this study are easier to generalize than results from contemporary studies on industrialization or more confined historical studies. Second, the regional variation in industrialization in the province of Zeeland allows for a comparison of the status attainment process in a number of agricultural and industrialized regions. Third, since the data cover a period of more than a century, even small changes over time, as found thus far in the historical and contemporary literature (Fukumoto and Grusky 1993; Ganzeboom, Treiman, and Ultee 1991; Lambert, Prandy, and Bottero 2007; Miles 1999; Smits, Ultee, and Lammers 1998), can be detected. Finally, deploying municipality characteristics this chapter studies the influence of contextual differences on intergenerational mobility beyond a *static* dichotomization of rural (traditional) and urban (modern) areas, which usually goes under the heading of modernization.

This last contribution deserves elaboration. The term "modernization" implies that there is a single mechanism at hand that causes a number of macro-level developments. Modernization theory describes this mechanism, but given the diversity of macro-level

¹⁴ Since relatively few women had an occupation, as registered on the marriage record, I restrict the analyses to the male population.

developments it does so in a general manner. By labelling a region or period as either “traditional” or “modern”, the fact that these concepts are not mutually exclusive is neglected (Tipps 1973). In “modern” societies, traditional values and institutions can still persist. Furthermore, the term “modernization” implies that, once it has started, it will expand within every aspect of society. However, there is neither theoretical argumentation nor empirical support for such a “domino” effect between macro-level developments. Several authors even emphasize the autonomous nature of different aspects of “modernization” (see for example Bendix (1964) and Smelser (1964)).

Both issues, dichotomizing areas as either traditional or modern and treating several macro-level processes as one, have had a substantive impact on the empirical tests of modernization theory. The theory is often tested at the national level and with just one indicator of modernization. However, the criticisms above show that, within societies, there can be variation in the development of different aspects of modernization and, furthermore, these developments may occur independently of others or at a different pace. It is therefore questionable whether tests of modernization theory at the *national* level including only a *single* indicator of modernization are valid. This chapter, therefore, concentrates on the level of the municipality and focuses on the modernization processes distinguished by Treiman (1970) – industrialization, educational expansion, mass communication, and geographical mobility – as well as mass transport. Hypotheses on how each of these processes influences the status attainment process are derived and tested using hierarchical linear regression models.

4.2 Theory

A basic version of the status attainment process modelled by Blau and Duncan describes a direct and indirect relationship between the occupational status of a father and son (Blau and Duncan 1967). The direct relationship represents a direct transfer of status from father to son. A father passing his occupation on to his son or a father using resources to find his son a job are illustrations of this direct relationship (Miles 1999).

A son’s occupational status is also indirectly influenced by his father’s status. While a son’s educational attainment influences his occupational status, his educational attainment itself is influenced by his father’s status. Before educational expansion, a son often attained skills through educational training within the family. It is argued that, with educational expansion, a father’s status influenced his son’s educational attainment through investment in formal schooling and financial aid with regard to living conditions, such as housing and daily expenses. The skills and/or the diploma then determine a son’s status.

Industrialization, educational expansion, mass communication, mass transport, urbanization, and geographical mobility probably all affect the status attainment process. Davis (1955, p. 255) defines industrialization as “the use of mechanical contrivances and

Like my father before me.

Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)

inanimate energy (fossil fuels and water power) to replace or augment human power in the extraction, processing, and distribution of natural resources or products derived therefrom". Industrialization affects all three relationships in the status attainment model. First, industrialization decreases the direct association between the occupational status of the father and that of the son. The mechanization of labour decreased the need for manual labour in the agricultural sector (Kuznets 1957), making some of the more traditional occupations superfluous and preventing some sons from following in their father's footsteps. Factories provided a new market for manual labour. At the same time, a demand for non-manual occupations arose due to the shift from the production of goods to the production of services (Kuznets 1957, pp. 28-31) and to a growing demand for administrative and clerical workers in public bureaucracies (Hurd and Johnson 1967). This newly created demand offered sons the possibility to take up occupations different from their fathers.

Second, industrialization diminished the influence of a father's status on his son's educational attainment, since the occupational skills passed on within the family became of less use with the changes in the occupational structure described above.

Third, industrialization increased the association between a son's educational attainment and his occupational status. In regions with industrialization, the production process shifted from a craft system, in which a single individual creates a given article, to an assembly-line system, and the production process was split into "a set of discrete operations, each of which can be carried out in a routine manner by a semiskilled workman or machine attendant" (Treiman 1970). This specialization of occupations, together with the increasing scale of economic activity, adds to the complexity of the production process and increases the need for the synchronization of its components. It can be assumed that such synchronization demands a labour force with increased communication and arithmetic skills in order to align the production process in an efficient way. Furthermore, more supervisors and managers are needed to guide the production process. Unlike fathers, schools are able to provide the skills for these non-manual occupations and "new" manual occupations. By increasing the demand for these non-manual and manual occupations, industrialization increases the value of education. Thus the influence of a father's occupational status on the son's status as well as on his educational attainment is expected to be less in more industrialized regions, while the influence of the son's educational attainment on his occupational status is expected to be greater (Figure 4.1a).

Educational expansion influences a single relationship in the status attainment model: it decreases the influence of a father's occupational status on his son's educational attainment (Figure 4.1b), since, due to educational expansion, the cost of education decreased and education became available to a more diverse audience, diverse that is with regard to socioeconomic background. Before educational expansion, education was provided mainly by private teachers or in small schools and universities with a small number of students. The increasing demand for a semiskilled workforce expanded education and decreased the cost of education per student. Furthermore, central and

local government started subsidizing education for those from lower-class backgrounds, thereby decreasing the cost of education even further (Grusky 1983; Treiman 1970). Thus, the more educational expansion there is in a region, the less the influence of a father's occupational status on his son's educational attainment.

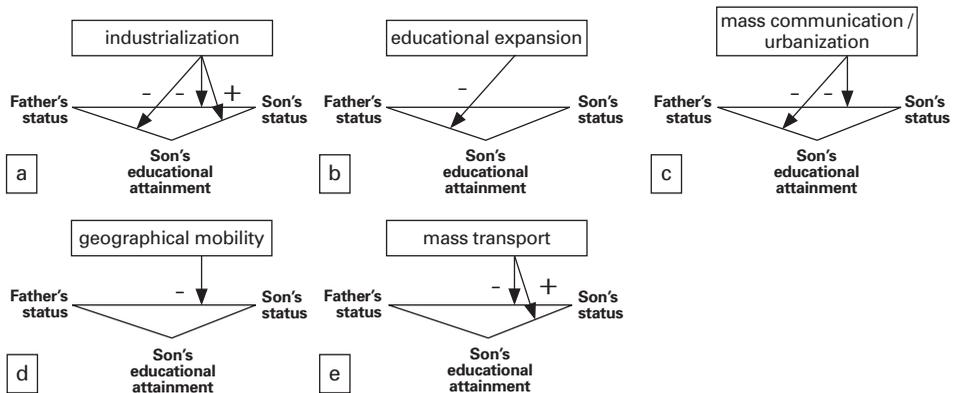


Figure 4.1 The influence of contextual processes on the status attainment model according to the industrialism thesis

Before the rise of mass communication, information was disseminated mostly from person to person. This means that access to information on job opportunities, for instance, would have depended heavily on the social circles in which one moved. With the rise of mass communication, such “private” knowledge became more widespread, through *inter alia* newspapers. Information on national events, technological developments, and fashion trends, for instance, were shared through newspapers among individuals from different regions and social standings. To a certain extent this decreased the exclusivity of information based on background. In the case of job opportunities, many more individuals learned of a particular job opening, most likely decreasing the value of information attained through the father's social network. As a result, the influence of a father's occupational status on that of his son decreased.

Mass communication is also said to have diminished the association between a father's occupational status and his son's educational attainment. Through mass communication, people were able to learn about how people outside their local region lived. The latest fashion trends were no longer exclusive to “haute couture” traders, but appeared in local newspapers. Treiman even posits that mass communication led to “a common culture and the diminution of regional, ethnic, and class differences in attitudes and behaviour” (Treiman 1970, p. 219). In such cases, differentiation in social skills and behaviour between people of different social standing decreased and diminished the influence of background.

Like my father before me.

Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)

At schools too, pupils would then become more alike in the way they dressed and behaved. Pupils would therefore stand out less in terms of their social background. I therefore expect the direct influence of a father's occupational status on his son's status and educational attainment to be less, the greater the means of mass communication (Figure 4.1c).

Urbanization and geographical mobility are yet other developments that would have reduced the influence of ascribed characteristics in the status attainment process (Treiman 1970, p. 220). First, lower-class children in urbanized areas would be under less pressure to leave school at an early age, or to leave school temporarily to help generate family income. Second, due to the size of urbanized municipalities and partially as a result of migration, individuals in more urbanized areas were less hampered or advantaged by their background status (Treiman 1970, p. 220). Thus the direct influence of a father's occupational status on his son's status will be less in more urbanized regions and regions with greater geographical mobility (figures 4.1c, 4.1d). Furthermore, in more urbanized regions the influence of a father's status on his son's educational attainment will be smaller (Figure 4.1c).

Another macro-level development during industrialization was the mechanization of mass transport. While means of mass communication provided information from outside the local region, means of mass transport enhanced the opportunities to act on this information. The decreasing cost of transport made it possible for people from different backgrounds to pursue jobs outside the local region and outside the social network of the father. Mass transport also influences the association between a son's educational attainment and his occupational status. In cities with mechanized mass transport, many people from outside the local region are brought in. To assess these people, family background is no longer of use as a reputation mechanism, since their family history is unknown beyond the local region. Therefore, another indicator of skills and behaviour is required. Diplomas serve this purpose. In sum, the influence of a father's occupational status on the son's status will be less in regions with greater means of mass transport, while the influence of a son's educational attainment on his occupational status will be greater (Figure 4.1e).

Alternative hypotheses on the influence of industrialization and other macro-level developments on intergenerational status attainment can be derived from the status maintenance theory (Bourdieu and Passeron [1977] 1990; Collins 1971; Grusky 1983). This theory contends that even if a father's direct influence on his son's occupation diminishes, those from a higher background are still able to pass on their status positions through education. Two principal reasons are given. First, those with higher-status positions often have greater economic resources and are able to invest in higher-quality and longer education for their children (Bourdieu and Passeron [1977] 1990). Contemporary research also shows that individuals from higher strata improve the conditions under which their children study by supporting them in their daily expenses and improving their housing conditions. Second, students from higher strata are said to have an advantage over

students from lower strata in the educational system, since higher strata students have more of the cultural capital on which part of the curriculum is based. For example, by partaking with their parents in such cultural activities as reading and visiting museums and theatres, higher-strata students acquire knowledge and skills that are valued in schools. Both these arguments contend that with industrialization and educational expansion the influence of a father's status on his son's educational attainment increases.

Another way for those from the higher strata to pass on their status positions to their sons is through selection on educational attainment (Collins 1971). The status maintenance theory argues that even if schools provide students with the same quality and type of skills, schools differ with regard to the cultural skills they teach their students. For example, these skills teach them how to interact with others, have an opinion on certain topics, behave, and how to dress and talk according to a desired manner of speech. The type and length of one's education would influence the development of these cultural skills. Hence, even if students from higher backgrounds can no longer be distinguished by their subject-matter skills, they can be distinguished by their cultural skills and are thus selected on the basis of those. These cultural skills are also beneficial to people who attain diplomas providing access to occupations at the lower and middle level: "Educational requirements for employment can serve both to select new members for elite positions who share the elite culture and, at a lower level of education, to hire lower and middle employees who have acquired a general respect for these elite values" (Collins 1971, p. 1011).

In sum, it follows from the status maintenance theory that a loss in the direct influence of the father's occupational status on his son's status due to industrialization and educational expansion can be compensated for through education (Figure 4.2).

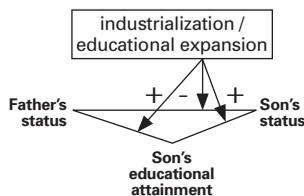


Figure 4.2 *The influence of contextual processes on the status attainment model according to the status maintenance theory*

For each of the macro-level processes mentioned by Treiman, as well as for mass transport, I have now derived hypotheses on how these processes influence the three relationships in the status attainment model. However, the data I use allow for a test only of the overall association between a father's occupational status and the son's status. Since the son's educational attainment is not registered on the marriage records, changes

Like my father before me.

Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)

in the indirect influence of the father's status on his son's status cannot be distinguished from the direct effect of a father's status (with these data). Therefore, I need to derive hypotheses on the overall association between the father's occupational status and his son's status. This can be done efficiently with figures 4.1a to 4.1e for the hypotheses derived from the industrialism thesis and with Figure 4.2 for the status maintenance theory.

Except for industrialization and mass transport, each of the figures 4.1a to 4.1e shows either one or two decreasing associations in the status attainment model and no increasing associations. In these instances, the total influence of a father's status on his son's status is expected to decrease, since all relationships are either stable or decreasing. Thus, the industrialism thesis expects the influence of a father's status to diminish with educational expansion, mass communication, urbanization, and geographical mobility. In the case of industrialization and mass transport, there are both decreasing and increasing associations. This means that the decreasing associations caused by industrialization and mass transport might be countered, with the overall association between father and son remaining stable. This is least likely in the case of industrialization, since the increasing association between the son's educational attainment and his occupation would then have to compensate for the decreasing influence of a father's status on both his son's educational attainment and status. Thus, according to the industrialism thesis the overall association between a father's status and that of his son is likely to diminish with industrialization (Treiman 1970). It is not clear how mass transport changes the overall association between a father's occupational status and that of his son. Mass transport is hypothesized to *decrease* the direct influence of a father's status on that of his son; it is expected to *increase* the association between a son's educational attainment and his occupational status. Since there are no theoretical arguments on the size of the two effects, an increase or decrease in the overall association is an empirical matter.

Finally, from Figure 4.2 it becomes clear that even if the influence of a father's occupational status on his son's status were to diminish with industrialization or educational expansion, the status maintenance theory expects this loss to be compensated. The increasing influence of a father's status on his son's educational attainment and the increasing influence of a son's educational attainment on his occupational status will counter the diminishing direct influence of the father. The total association between the occupational status of the father and that of the son is therefore expected to remain stable with industrialization and/or educational expansion.

4.3 Setting

The focus of this study is the Dutch province of Zeeland in the southwest of the Netherlands, bordering the North Sea to the west and Belgium to the south. Zeeland consisted of two strips of mainland and about five inhabited islands, the number of which

has changed over time. Through dykes and water management, some of the islands have merged. Between 1817 and 1910, the span of cultivated land increased more than 17 percent from 311,833 to 366,259 acres (Priester 1998, p. 446).

Although Zeeland was once mainly agricultural, by the end of the nineteenth century mechanization had found its way into agriculture, the industrial sector, and transport. The main crop grown in the first half of the nineteenth century was wheat (Priester 1998, p. 446). Since wheat exhausted the clay soil, farmers would sometimes grow other crops that were less demanding, such as rape-seed (*Brassica napus*), common flax (*Linum usitatissimum*), rose madder (*Rubia tinctorum*), and sugar beet (*Beta vulgaris*) (Hoekveld 1972; Knippenberg and De Pater 2002; Landbouw 1871; Landbouw 1872). Although at first mainly intended for trading purposes, by the end of the nineteenth century sugar beet and common flax were grown on an increasingly large scale for the production of sugar and textiles, respectively, in factories in Zeeland (Franken and Adriaanse 2004; Priester 1998). The demand from Zeeland's factories for these crops grew and their contracts with farmers improved. This development is said to have stimulated the use of machinery in agriculture (Bakker 1992; Priester 1998, p. 245), since the cost of purchasing a steam plough was very high: about four times the annual wage of an agricultural labourer (Van Zanden 1992, p. 65). Some farmers joined up to buy machinery together and helped each other out with sowing and harvesting. Others bought a machine and employed personnel to hire it out (Priester 1998, p. 241).

In addition to the flax and sugar industries, various other types of industry were present in Zeeland, such as shipbuilding, beer brewing, shoemaking, textiles, concrete production, and wood sawing (Franken and Adriaanse 2004). These factories were to be found not just in Middelburg and Vlissingen (Flushing), the two largest cities in Zeeland, but in various smaller municipalities as well (Franken and Adriaanse 2004).

Furthermore, transport became mechanized. Between 1868 and 1872, three railway lines were constructed. The first two connected the southern part of Zeeland, Zeeuws-Vlaanderen, with Belgium. The third line connected the peninsula of Walcheren with the Dutch mainland. In total, the three lines linked up 15 municipalities and some smaller settlements (Bramer; Sluiter 2002). The steam tram appears to have been a beneficial means of mass transport as well. The first such tram appeared in 1882, and by 1915 over 40 municipalities and settlements could be reached by tram (Sluiter 2002). By 1915, 49 municipalities had either a train station or tram station, or both.

Various historical accounts of Zeeland draw attention to the regional differences with regard to land use, religion, and social differentiation (Bouman 1946; Bras and Kok 2005; Priester 1998). Perhaps the most striking example is the attempts of the Dutch government to introduce a single standard time. After an initial request in 1858 failed, eight out of 109 municipalities in Zeeland complied with a subsequent request in 1892, 51 municipalities stated they were inclined to do so, while 50 municipalities chose an alternative local time (Knippenberg and Nauta 1989).

All in all, Zeeland was mainly an agricultural province, but with distinct regional

Like my father before me.

Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)

differences. While developments in the mechanization of agriculture, industrial production, and transport were embraced in some regions, more traditional ways of life were still preferred in others. It is exactly this variation that makes Zeeland a suitable test case for the hypotheses.

4.4 Method

To test the hypotheses, I use hierarchical linear regression analysis. This regression technique is especially suited to testing hypotheses that distinguish between different levels of analysis. In this chapter, all the hypotheses state that a process at the contextual level (industrialization for instance) influences the intergenerational transfer of occupational status at the individual level. Unlike “regular” ordinal least squares regression analysis, hierarchical linear regression analysis also takes account of the fact that observations within a specific context may be more alike than observations across contexts. The characteristics of grooms, as observed from the marriage records of a single municipality and/or year, may be more alike than the observed characteristics of grooms across municipalities and/or years. Ignoring this dependence between observations leads to estimates of standard errors that are too small, producing spurious “significant” results (Hox 2002; Snijders and Bosker 1999).

To apply hierarchical linear regression models, a specification of the clustering or grouping of the observations is needed. Space (municipalities) and time (years) are the dimensions on which the individual-level observations can be grouped. However, the theoretical interest of this chapter lies specifically in the combination of the two dimensions. Therefore, the group structure, or context, is defined as spacetime. In other words, all observations at the individual level are grouped at the contextual level: the municipality and year of marriage (for example Middelburg 1811, Middelburg 1880, Vlissingen (Flushing) 1880). In larger municipalities, the number of marriages will be larger and as a result the size of the groups will vary. When group size varies and has a substantive meaning, here the size of the municipality, it is advisable to control for group size (Snijders and Bosker 1999). Therefore, each model in the analyses will contain a variable to control for group size.

Another characteristic of hierarchical linear models is that they distinguish between fixed effects and random effects. Fixed effects are the same for all research units, while random effects may be different between groups of observations. In the analyses below, all explanatory variables have a fixed effect. In addition, I will estimate a random effect for the intercept and the effect of the father’s occupational status, i.e. the intercept or average value of the son’s status and the effect of his father’s status are allowed to differ between municipalities in the same year, and between years within the same municipality. By relating (interacting) a father’s occupational status with contextual variables that vary between municipalities and over time, the variation of the effect of the father’s status can be explained.

4.5 Data and measurement

Characteristics at the individual level, such as the father's occupation and that of his son, are derived from records of all marriages registered in Zeeland in the period 1811 to 1915. The database containing these records is located at the Zeeuws Archief in Middelburg.¹⁵ To ensure that the sons are at a comparable stage in their careers I take into account only marriage records of couples marrying for the first time. Sons marrying for a second or third time, or sons marrying a widow (or divorcée), are likely to be older and more advanced in their careers. The fact that fathers are at a stage in their careers different from that of their sons is of no concern. Since all fathers are at a later stage in their careers, the association between the occupational status of fathers and sons is comparable between pairs of fathers and sons. In total there are 88,401 records of first marriages in Zeeland between 1811 and 1915, of which 58,261 (65.9 percent) marriage records provide an occupational title for both father and son.¹⁶

The large number of missing occupational titles is an unfortunate, but common, characteristic of marriage records (Delger and Kok 1998). While the occupation of a son is missing only occasionally, that of the father is often missing. These missing occupational titles are frequently caused by the early deaths of fathers. Delger and Kok argue that this could bias the data. If early deaths of fathers are related to lower occupational status, people from lower strata are then underrepresented in the marriage data. However, in a study of the Netherlands based on the marriage records of students in secondary education (all from mediocre or high social backgrounds) during the period 1880-1920 an even higher proportion (54.8 percent) of the occupations of fathers was found to be missing (Zijdeman and Mandemakers 2008). Furthermore, specifically addressing the relationship between social position and mortality, Van Poppel and Van Gaalen find that for Dutch adult men born between 1850 and 1920 there is no relationship between social position and mortality (Van Poppel and Van Gaalen 2008).

To measure the occupational status of fathers and sons for which an occupational title was available, occupations were first coded using HISCO (Van Leeuwen, Maas, and Miles 2002; Van Leeuwen, Maas, and Miles 2004), and next using a historical occupational stratification scale: HIS-CAM v0.1 (Lambert *et al.* 2006; Zijdeman and Lambert 2010). By coding occupations into HISCO, all occupations that are alike in terms of occupational activities are given one and the same code. This procedure standardizes the occupations, but does not yet provide a ranking score for the occupations to indicate which occupations have a low status and which occupations have a high status. The occupations were therefore coded using HIS-CAM, which provides a ranking score for all HISCO codes.

HIS-CAM is a historical version of the contemporary CAMSIS scales (Stewart, Prandy, and Blackburn 1980). CAMSIS scales are based on the assumption that patterns of social interaction between people from different occupational strata are representative of the

¹⁵ I am grateful to the volunteers who input the data during 1997-2001 and to Leo Hollestelle for making the data available.

¹⁶ In this chapter only first marriages are taken into account. Therefore the percentage of marriage records without an occupational title for the groom's father differs from the percentage in chapter 3 (54.4%).

Like my father before me.

Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)

overall occupational stratification structure (Bottero 2005; Prandy 2000; Prandy and Lambert 2003; Stewart, Prandy, and Blackburn 1980). The HIS-CAM scale is an estimation of the stratification structure, based on 1.5 million marriage records from six different countries (Britain, Canada, France, Germany, the Netherlands, and Sweden) covering the period 1800-1938. To estimate the association scores, Goodman's RCII models were applied (Goodman 1979). The association scores were then transformed into an occupational stratification scale, theoretically ranging from 1 (low) up to and including 99 (high). Some examples of occupations and their corresponding HIS-CAM scores are: domestic servant (10.6), farm labourer (general) (37.2), field crop farmer (50.7), primary school teacher (70.4), and public health physician (99.0).

The dependent variable in the analyses is *son's occupational status*. This is the HIS-CAM score associated with the son's occupation as registered on his marriage record. The individual-level explanatory variable is derived from the marriage record of the son.

Father's status. The occupational status of the groom's father is created by assigning a HIS-CAM score associated with his occupation as registered on his son's marriage record. The father's status is centred on the grand mean for the period 1811-1915, thereby setting the average for the occupational status for all fathers to zero and so enhancing the interpretability of the results.

The explanatory variables at the contextual level are derived from various sources. In this chapter, contexts are operationalized at the level of the municipality and year of marriage. Next, follows a description of contextual characteristics and how they are operationalized.

Industrialization. To account for the influence of industrialization I use an indicator that is closely related to Davis's definition of industrialization as the use of mechanical contrivances and inanimate energy (Davis 1955). I use the number of steam engines ever purchased in a municipality in a given year. Since potentially more labour could be mechanized in larger municipalities, the number of steam engines purchased is divided by the population size of the municipality in the year of marriage. This information is derived from the Registers of the Dutch Department for Steam Engineering. These registers are one of the few sources (if not the only) that provide information on steam engines at the level of the municipality over a long period (up to 1890). The amount of horsepower or the unit of measurement of power is not given for all steam engines. Therefore, I cannot use a more refined measure other than the number of steam engines. Even so, the number of steam engines provides a *direct* measure of industrialization in terms of the replacement of manpower by mechanical contrivances. Another important characteristic of this indicator is that it measures industrialization in both rural and urban regions. Finally, this indicator of industrialization is available at a refined contextual level (the municipality) over a long period.

Educational expansion. In order to measure educational expansion, the number of students enrolled in secondary education in the municipality and the year of marriage relative to the size of the population is used. In each municipality, and for every five

years, I recorded the number of students registered as full-time students for all types of secondary education provided in the annual reviews on Dutch education between 1860 and 1915 (Scholen 1862-1917). Students from gymnasias are also included. Although they are registered in the reviews of “higher” education, they were in fact at secondary schools, preparing for higher education (Mandemakers 1996a). For the years in which no information on student enrolment was retrieved, estimates were used in order to utilize the marriage data from these years as well. The estimates are the weighted means of the years for which information on student enrolment was retrieved. The weight was determined by the proximity to years for which information on educational expansion was available.¹⁷

Mass communication. In the Netherlands, mass communication developed only towards the end of the nineteenth century. However, letters, telegrams, fashion brochures, and newspapers also informed people about cultures and regions other than their own. Further, advertisements kept people in touch with new technological developments, while newspapers were also used to place job advertisements and contact ads (Bras 2002; Van Poppel and Ekamper 2005). Unfortunately, information about these means of communication at the level of the municipality is available only for a small number of municipalities over a short period in the nineteenth century. However, the delivery of these items was directed through post offices. Lacking other information, I therefore use the presence of a post office in a municipality in the year of marriage as an indicator for mass communication. Information on the existence of post offices is derived from the annual reports of the Dutch postal services, which can be found in the archive of the Museum of Communication in The Hague.¹⁸

Urbanization. Urbanization is measured by the population size (divided by 1,000) in the municipality and year of marriage. I combined data from the Historical Ecological Database (HED) and the Historical Database of Dutch Municipalities and retrieved the population size for every tenth year.¹⁹ For the years in between, estimates were derived in the same way as with educational expansion. Urbanization is used in each model, in order to control for variation in group size.

Geographical mobility. The argumentation for the hypothesis on geographical mobility is based largely on an increasing diversity of the population in the municipalities. Therefore, I use the proportion of in-migrants (those who move into the municipality of marriage in the year of marriage) relative to the population as an indicator for geographical mobility.

Mass transport. As an indicator of mechanized transport I use a dummy variable that indicates the presence of a steam train or steam tram station in the year and municipality of marriage (Bramer; Sluiter 2002). On the whole, the first stations to appear were train stations, but the tram stations were geographically more widespread. It is important to note that in Zeeland in the nineteenth century trams were, above all, a means of transport

¹⁷ For example, the estimated number of students in 1902 is the equivalent of three times the number of students in 1900 and twice the number of students in 1905, divided by five.

¹⁸ I would like to thank Saskia Spiekman of the archive of the Museum of Communication for her advice and support.

¹⁹ For a description of the data, see Beekink et al. (2003).

Like my father before me.

Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)

between cities, rather than within cities as is the case today. Data on steam trams are available for the entire period, but the first steam tram station in Zeeland was opened in Middelburg in 1882. Before the end of the period under study (1915), no steam tram stations had been closed in Zeeland (Sluiter 2002).

More detailed information, such as timetables indicating the frequencies of trains and trams travelling between municipalities, could not be derived from the archives. Cars are another form of mechanized transport, but archives report either only national aggregates of the number of motor vehicles while regional accounts cover shorter periods (Linders-Rooijendijk 1989).

The models also contain control variables at the individual as well as the contextual levels. Since the father's occupational status and that of his son change over the life course, the age of the groom centred on the grand mean is controlled for. The age of the father is not recorded in the data. Since occupational status may be different for those living in a municipality their entire life and for those who migrated to a municipality later on in life, I control for migrant/non-migrant sons. This measure is derived by comparing the name of the municipality at birth with the name of the municipality where a son married. No other information on places of residence is available. It should be noted that the municipality of marriage may differ from the place of residence at the time of marriage. Finally, at the individual level I control for whether a son's mother is still alive at marriage. Miles indicates that mothers and other family members were important for both the transition into regular work and for later job transitions (Miles 1999). Miles also reports that in nineteenth- and early-twentieth-century England fathers were the most dominant facilitators of a "boy's transition into regular work". Since the occupation of a deceased father was not registered on the marriage record, these observations cannot be used. Since all deceased fathers are omitted from the analyses, there is no control variable for whether a father was alive at the time of his son's marriage.

At the contextual level, there are two control variables: *time* and *religious composition*. Time is measured in decades and is equal to the number of years since 1800, divided by ten. To take possible cultural differences with regard to status attainment into account, I control for religious composition. Research on Swiss at the end of the nineteenth and beginning of the twentieth century shows that Protestants and Catholics not only differed in participation rates of schooling, but also that the content of education differed between Protestant and Catholic schools (Praz 2007). As a measure of religious composition, the proportion of Protestants in the year and municipality of marriage is used. I do not distinguish between the many different types of Protestantism. Since almost all of those individuals who were not affiliated to a Protestant denomination belonged to the Catholic Church, I assume that those who are not Protestant are Catholic. In some cases, the proportion of Protestants turned out to be somewhat larger than one. This may be the result of discrepancies within the census data. Proportions above one were rounded down to one.

Descriptive statistics for all variables are provided in Table 4.1. This table also includes information on the number of observations per context (municipality and year of marriage).

Table 4.1 Descriptives: mean, standard deviation, minimum and maximum values, Zeeland, the Netherlands, 1811/1851-1915

Variable	Period	N	Mean	S.D.	Min	Max
Son's occupational status	1811-1915	58,261	43.334	13.128	10.6	99
Father's occupational status	1811-1915	58,261	45.021	12.862	10.6	99
Son's age	1811-1915	58,261	25.690	4.079	16	64
Son is migrant	1811-1915	58,261	0.489		0	1
Son's mother deceased	1811-1915	58,261	0.327		0	1
<i>Time</i>						
Decades since 1800	1811-1915	10,044	6.636	2.932	1.1	11.5
<i>Urbanization</i>						
Population (per 1,000 inhabitants)	1811-1915	10,044	1.685	2.211	0.103	21.973
<i>Industrialization</i>						
Steam engines (per 100 inhabitants)	1811-1890	7,406	0.013	0.056	0	0.751
<i>Educational expansion</i>						
Students (per 100 inhabitants)	1851-1915	6,703	0.064	0.367	0	4.560
<i>Mass transport</i>						
Steam tram and/or railway stations	1811-1915	10,044	0.099		0	1
<i>Mass communication</i>						
Post office	1811-1915	10,044	0.098		0	1
<i>Geographical mobility</i>						
In-migrants (proportion)	1851-1915	6,703	0.056	0.029	0	0.350
<i>Religious composition</i>						
Protestants (proportion)	1851-1915	6,703	0.767	0.339	0	1
<i>Group size</i>						
Observations per group	1811-1915	10,044	5.801	7.496	1	105

4.6 Results

4.6.1 Regional and temporal variation in intergenerational status transfer

Since not all contextual indicators are available for the entire period (1811-1915), I divided the analyses over three time slots, presented in tables 4.2 to 4.4. Table 4.2 covers the whole period (1811-1915), but contains few contextual indicators. Table 4.3 covers the period 1811-1890 and focuses on the influence of industrialization. The analyses in Table 4.4 cover the period 1851-1915 and include all but one contextual indicator (industrialization).

Table 4.2 shows the effects of the father's occupational status on that of his son between 1811 and 1915. Before I elaborate on the results, I first consider my assumptions that (a) the occupational status of sons differed between groups (year and municipality of marriage) and (b) the influence of a father's occupational status on that of his son differed between groups.

Like my father before me.

Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)

Table 4.2 Hierarchical linear regression of son's occupational status on individual and contextual characteristics, Zeeland, the Netherlands, 1811-1915 (n=58,261).

	Model 0		Model 1		Model 2		Model 3	
<i>Fixed effects</i>	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Constant	41.727*	.075	38.442*	.160	38.551*	.165	38.535*	.164
Status groom's father			.522*	.013	.496*	.014	.494*	.014
Time			.257*	.019	.236*	.020	.236*	.020
× status groom's father			.005*	.002	.009*	.002	.009*	.002
Urbanization			.536*	.011	.342*	.019	.354*	.015
× status groom's father					-.002	.002		
Mass communication					2.652*	.175	2.591*	.165
× status groom's father					.076*	.016	.066*	.012
Mass transport					.303	.158	.296	.158
× status groom's father					-.073*	.014	-.075*	.014
Groom's age			.198*	.010	.202*	.010	.202*	.010
Groom is migrant			1.410*	.081	1.398*	.080	1.399*	.080
Groom's mother deceased			-.105	.090	-.098	.090	-.099	.090
<i>Random effects</i>								
Level 2 random effects								
Intercept	20.588*	.724	6.024*	.316	5.181*	.297	5.177*	.297
Status groom's father			.053*	.002	.052*	.002	.052*	.002
Level 1 variance								
Intercept	143.262*	.903	87.051*	.563	87.057*	.561	87.062*	.561
IGLS Deviance	459871.800		430356.600		430022.600		430023.100	

Note: * $p < 0.05$.

Model 0 in Table 4.2 is a so-called "empty model" and contains no effects other than the fixed and random effects of the intercept. From this model I can deduce whether the occupational status of sons did indeed differ between contexts. The variance in a son's status at the contextual level is 20.6 (with a standard error of 0.724) and accounts for 12.6 percent of the total variation (20.588/(20.588+143.262)). Thus the status of sons did indeed differ between contexts, although most variation existed within contexts. The constant shows that the status of sons is on average 41.7. To assess the size of the difference between contexts Snijders and Bosker suggest comparing the scores of groups (here: contexts) two standard deviations below and two standard deviations above the mean (Snijders and Bosker 1999). In contexts two standard deviations below the mean the "average" son had

an occupational status of 32.7 (41.727-2√20.588), while in contexts two standard deviations above the mean the “average” son had an occupational status of 50.8.

Model 1 in Table 4.2 shows that a father’s occupational status influences that of his son and that this influence differs between contexts. The fixed effect of a father’s status (0.522) is positive and significant. On average, for every ten points of a father’s occupational status, a son’s status increases by somewhat more than five points.

Table 4.3 Hierarchical linear regression of son’s occupational status on individual and contextual characteristics, Zeeland, the Netherlands, 1811-1890 (n=34,361).

	Model 1 ^a		Model 2	
<i>Fixed effects</i>	Coef.	S.E.	Coef.	S.E.
Constant	40.349*	.199	39.253*	.206
Status groom’s father	.485*	.017	.472*	.018
Time	.123*	.030	.070*	.031
× status groom’s father	.012*	.003	.009*	.003
Urbanization	.541*	.016	.592*	.021
× status groom’s father			.009*	.002
Industrialization			6.380*	1.206
× status groom’s father			.256*	.113
Groom’s age	.109*	.012	.109*	.012
Groom is migrant	1.127*	.100	1.133*	.100
Groom’s mother deceased	.016	.107	.019	.106
<i>Random effects</i>				
Level 2 random effects				
Intercept	7.035*	.430	6.931*	.424
Status groom’s father	.064*	.003	.064*	.003
Level 1 variance				
Intercept	78.320*	.674	78.242*	.674
IGLS Deviance		252857.600		252802.800

Note: ^a Model 1 shows results after 125 iterations, since the model did not fully converge. This means that effects and standard errors should be considered approximations. Models similar to Model 1 with additional contextual variables do converge and provide similar results. I provide Model 1 to maintain consistency between the models of the different time periods, while I use the results from Model 2 to test the hypotheses.

* $p < 0.05$.

Like my father before me.

Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)

Model 1 in Table 4.2 depicts a linear increase over time in the effect of a father's occupational status on that of his son. For every decade, the influence of a father's status increases by nearly one percent ($0.522+0.005 \times 1/0.522$). An increasing linear change over time in the influence of a father's status of about two percent ($0.472+0.009 \times 1/0.472$) is found in Model 2 of Table 4.3 over the period 1811-1890, but not in the models of Table 4.4 over the period 1851-1915. This suggests that the increase in the influence of a father's status during the nineteenth century levelled off around the turn of the nineteenth and twentieth centuries.

The significant random effect of a father's occupational status implies that the influence differed between contexts. The random coefficient may seem small (0.053), but it actually indicates substantial differences between some groups in the influence of a father's status on that of the son. In some contexts the influence of a father's status was as low as 0.062 ($0.522-2 \times 0.053$, two standard deviations below the mean), while in other contexts that influence was as high as 0.982 (two standard deviations above the mean). In contexts where the influence of a father's status was strong, a son gained nearly ten status points for every ten status points of his father's occupation, while in contexts in which the influence of a father's occupational status was weak a son gained less than a single status point for every ten points of his father's occupational status.

The next section discusses the results for the influence of macro-level processes on the association between the occupational status of father and son. This section ends with a brief description of the results for the control variables. The individual control variables show that older sons have, on average, a higher occupational status. Model 3, in Table 4.2, shows that on average, for the period 1811-1915, for every five years of age a son's occupational status increases by one point (5×0.202). This model shows furthermore that sons who migrated have, on average, 1.40 status points more than sons who did not. Whether a son was a maternal orphan prior to his marrying does not seem to have influenced his occupational status. At the contextual level, Table 4.4 controls for the religious composition of municipalities, measured by the proportion of Protestants in a municipality. Model 3 in Table 4.4 suggests that the influence of a father's occupational status was nearly 20 percent less in municipalities that were entirely Protestant than in municipalities that were entirely Catholic ($(0.699-0.138 \times 1)/0.699$). Thus in Protestant municipalities, people could either more easily escape, or had less use of, their social background.

Table 4.4 Hierarchical linear regression of son's occupational status on individual and contextual characteristics, Zeeland, the Netherlands, 1851-1915 (n=46,204).

	Model 1		Model 2		Model 3	
<i>Fixed effects</i>	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Constant	36.579*	.292	36.624*	.350	36.796*	.325
Status groom's father	.566*	.025	.660*	.032	.699*	.018
Time	.452*	.032	.393*	.033	.368*	.029
× status groom's father	.000	.003	.005	.003		
Urbanization	.536*	.012	.262*	.021	.281*	.016
× status groom's father			-.003	.002		
Mass communication			2.216*	.189	2.076*	.179
× status groom's father			.057*	.017	.033*	.014
Mass transport			-.077	.162	-.065	.159
× status groom's father			-.047*	.015	-.045*	.014
Educational expansion			1.184*	.125	1.242*	.105
× status groom's father			-.010	.011		
Geographical mobility			8.860*	2.159	9.119*	2.157
× status groom's father			-.391*	.197	-.355	.197
Religious composition			.206	.183	.195	.183
× status groom's father			-.135*	.017	-.138*	.017
Groom's age	.245*	.011	.254*	.012	.255*	.012
Groom is migrant	1.570*	.092	1.530*	.092	1.531*	.092
Groom's mother deceased	-.232*	.105	-.184	.104	-.184	.104
<i>Random effects</i>						
Level 2 random effects						
Intercept	5.271*	.336	3.963*	.296	3.964*	.296
Status groom's father	.045*	.003	.045*	.002	.045*	.002
Level 1 variance						
Intercept	90.310*	.648	90.194*	.643	90.197*	.643
IGLS Deviance	342436.200		341916.700		341923.500	

Like my father before me.

Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)

4.6.2 Intergenerational status transfer and macro-level processes

Industrialization, measured by the number of steam engines ever purchased per hundred inhabitants of a municipality in a given year, increased the influence of a father's occupational status on that of his son. This result does not substantiate the industrialism thesis but does support the status maintenance theory. In about one-sixth of the municipalities in Zeeland, before 1890 there was an industrialization ratio of at least 0.135, i.e. one steam engine for every 740 inhabitants. Model 2 in Table 4.3 (1811-1890) shows that in these municipalities the influence of a father's occupational status was 7.3 percent greater than in municipalities with no steam engines ($(0.472+0.256 \times 0.135)/0.472$). In five municipalities (Breskens, Hulst, Kerkwerpe, Nieuwerkerk, and Sas van Gent), from 1872 onwards the industrialization ratio was as high as at least one steam engine purchase for every 250 inhabitants. In these municipalities the influence of a father's occupational status was 1.2 times as great as in municipalities with no steam engines ($(0.472+0.256 \times 0.4)/0.472$). In Middelburg and Vlissingen (Flushing), Zeeland's two largest municipalities by far, the maximum ratio of steam engines ever purchased to 100 inhabitants was 1:5.35 and 1:4.71 (i.e. one steam engine for every 535 inhabitants and one for every 471 inhabitants) respectively.

Educational expansion, measured by the number of students relative to the population, did not decrease the association between a father's occupational status and that of his son between 1851 and 1915 (Table 4.4, Model 2). The non-significant interaction between a father's occupational status and educational expansion again compromises the industrialism thesis. Although educational expansion did not change the influence of a father's status on that of his son, from the bivariate relationship between a father's and a son's status alone it cannot be concluded that the influence of a father's occupational status on the son's educational attainment increased. Therefore, I can only conclude that this finding provides indirect support for the status maintenance theory.

The influence of mass communication is tested in Table 4.2 (1811-1915) and Table 4.4 (1851-1915). According to models 2 and 3 in Table 4.2 (1811-1915), the influence of a father's occupational status on that of his son is more than 10 percent greater in municipalities with a post office than in municipalities without a post office (Model 3: $(0.494+0.066 \times 1)/0.066$). Models 2 and 3 in Table 4.4 for the period 1851-1915 also show a positive influence of mass communication on the association between a father's and a son's status, albeit somewhat less: 8.6 and 4.7 percent respectively. Mass communication thus enhanced the association between a father's and a son's status, rejecting the industrialism thesis.

All tables encompass the effect of urbanization on the association between a father's and a son's occupational status. Only Table 4.3 for the period 1811-1890 shows a significant interaction between urbanization and a father's occupational status. The effect is quite small. In 1890 the average population of municipalities in Zeeland was 2,000. In that same year only six municipalities (Goes, Hontenisse, Middelburg, Terneuzen, Vlissingen (Flushing), and Zierikzee) had more than 5,000 inhabitants. In municipalities with 5,000

inhabitants the influence of a father's occupational status would be somewhat more than five percent greater than in municipalities where the average number of inhabitants in 1890 was 2,000 $((0.472+5\times 0.009)/(0.472+2\times 0.009))$. Of the six municipalities mentioned, in 1890 only Middelburg and Vlissingen (Flushing) had far more than 5,000 inhabitants, at 17,362 and 13,634 respectively. Compared to municipalities with an average of 2,000 inhabitants, in Middelburg and Vlissingen (Flushing) the influence of a father's occupational status was nearly 1.3 times as great. In sum, where the industrialism thesis expects the influence of a father's occupational status to decrease, in the nineteenth century urbanization increased the influence of a father's occupational status, while the models also covering the early twentieth century provide no support for a change in the influence of a father's occupational status due to urbanization.

Table 4.4 provides a mixed picture for the influence of greater geographical mobility, as measured by the proportion of in-migrants, in the second half of the nineteenth and early twentieth centuries. In Model 2 a borderline significant effect indicates that the association between a father's occupational status and that of his son decreases in municipalities with a larger number of in-migrants. In Model 3, however, the negative influence of geographical mobility is no longer significant. Subsequent analyses not shown reveal that this effect is significant only in the presence of an interaction effect between a father's occupational status and urbanization, suggesting the presence of multicollinearity. Indeed, Table 4.5 shows moderate to high correlations between the contextual indicators educational expansion, mass communication, urbanization, and mass transport for the period 1851-1915. In the conclusions and discussion section I will elaborate on the significance of these findings for the industrialism thesis.

Mass transport, indicated by whether there was a steam train station or steam tram station present in the municipality and year of marriage, decreases the influence of a father's occupational status on that of his son. Models 2 and 3 in Table 4.2 show that the influence of a father's occupational status is 15.1 percent less in municipalities in which there is a steam train or steam tram station present than in municipalities without a train or tram station (Model 3: $0.494 - 0.075 \times 1/0.494$). Models 2 and 3 in Table 4.4 also show a negative influence of mass transport, albeit somewhat less. Here the influence of a father's occupational status on that of his son is 6.4 percent less in a municipality with mass transport. The hypothesis of the industrialism thesis, that enhanced means of transport decrease the influence of a father's occupational status, is therefore supported. The industrialism thesis also hypothesized that the influence of a son's educational attainment on his occupational status increased due to enhanced means of mass transport. It is not possible to accept or reject this thesis, since only the total status association between father and son is tested. But even if such an increase in the importance of educational attainment existed, it must have been less influential than the decreasing influence of a father's occupational status. Otherwise, the total association between the occupational status of father and son would not have decreased.

Like my father before me.

Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)

Table 4.5 Correlation matrix of several indicators at the contextual level, Zeeland, the Netherlands, 1851-1915 (N=6,703)

	Time	Urbanization	Mass communication	Mass transport	Educational expansion	Geographical mobility	Religious composition
Time	1.000						
Urbanization	0.095	1.000					
Mass communication	0.079	0.591	1.000				
Mass transport	0.312	0.365	0.460	1.000			
Educational expansion	0.137	0.550	0.460	0.327	1.000		
Geographical mobility	0.133	-0.052	0.025	0.110	0.015	1.000	
Religious composition	-0.019	-0.041	-0.082	-0.010	0.009	0.038	1.000

4.7 Conclusions and discussion

This chapter takes advantage of major developments in historical social mobility research and is one of the first studies to examine the influence of industrialization, educational expansion, and other macro-level processes on intergenerational status attainment before and during industrialization. Researchers tend to refer to these macro-level developments as “modernization”, implicitly assuming that there is a single mechanism in operation, which affects the status attainment process. However, this chapter shows that according to the arguments available in the literature industrialization, educational expansion, and other macro-level developments influence the type and number of relationships in the status model differently. By analysing the arguments for each of the relationships and deriving separate hypotheses for the macro-level developments, I provide more refined hypotheses on the influence of industrialization and other macro-level processes on the status attainment process.

Another contribution of this study is the extended empirical test of the hypotheses. Having combined a dataset consisting of all marriage records from the more than 100 municipalities in the Dutch province of Zeeland between 1811 and 1915 with contextual data from other datasets and data derived from archives, I use hierarchical linear regression to test my hypotheses over a long period of time at a regionally detailed level, that of the municipality.

The results indicate a linear increase over time in the association of a father’s occupational status and that of his son in the first half of the nineteenth century, after which the increase stagnated. However, the results also show that apart from this general trend there are non-linear temporal differences as well as regional differences in the association between a father’s occupational status and that of his son. This is in line with contemporary findings on regional variation in the status attainment process (Grusky 1983). It suggests that it is difficult to generalize results from studies confined to a single municipality, while studies that focus on the national level fail to take intra-country variation into account.

Macro developments partially explain differences in the association between a father’s and a son’s occupational status. In the nineteenth century, the influence of a father’s occupational status increased with industrialization and urbanization. As with urbanization, during the same period mass communication increased the association between a father’s occupational status and that of his son, but the influence of mass communication extended well into the twentieth century. Post offices played an important role in the dissemination of a shared culture by serving as a channel for distributing national newspapers and fashion magazines, but it appears that post offices most of all enhanced the influence of social background. Through letters, and later on telegrams, personal information could be shared within family networks even when family members were far apart. Perhaps this enhanced parents’ opportunities to support their children.

Educational expansion did not change the association between a father’s occupational status and that of his son, while mass transport decreased the influence of a father’s

Like my father before me.

Intergenerational occupational status transfer during industrialization (Zeeland, 1811-1915)

occupational status. For some sons from lower social backgrounds steam trams and trains may literally have provided a way out. For those who stayed, railways also expanded their geographical horizon, providing opportunities to experience what was outside the local community. Whether increased rates of in-migration influenced the relationship between a father's and a son's occupational status remains inconclusive. Although in one of the models for the late nineteenth and early twentieth centuries the influence of geographical mobility showed a significant decrease, the absence of that effect in another model covering the same period suggests that effect should be interpreted cautiously. The moderate to large correlations between some of the contextual indicators might indicate the presence of collinearity.

Another point to consider is the size of the effects of mass communication and mass transportation in models covering the whole of the period (1811-1915) and the models covering the second half of the nineteenth century and early twentieth century (1851-1915). On the whole, the influence of the contextual indicators on the association between a father's occupational status and his son's occupational status was greater in models covering the entire period. Therefore, one might conclude that the influence of the contextual indicators was especially strong in the first half of the nineteenth century. However, this conclusion is ambiguous. In the early nineteenth century there was hardly any mass communication, nor mass transport. Therefore, in models including the entire nineteenth century there is much more variation, since they basically compare a period with and a period without mass communication and mass transport.

In light of these considerations, the results provide hardly any support for the industrialism thesis, while they do favour the status maintenance theory. Although expected by the industrialism thesis, with the exception of mass transport none of the macro-level developments decreased the association between a father's and a son's occupational status. The status maintenance theory is supported by the findings that the influence of a father's occupational status on that of his son increased with industrialization, and did not change with the onset of educational expansion.

To obtain these results I have had to make compromises, and future studies may improve on these. Marriage data do not allow for a direct test of the separate relationships in the status attainment model due to the absence of information on a son's educational position. Future research may try to gather such specific information at the individual level to allow for a direct test of the hypotheses derived in this chapter.

A further point for discussion concerns the indicators of macro-level developments that are comparable between regions and over time. An advantage of the indicators used in this chapter is that they are available over a long period of time and at a regionally detailed level. An often proposed alternative indicator, the proportion of farmers in the labour force, is not. Furthermore, the indicators used are analogous to those used in contemporary research, such as school enrolment as a proportion of population size (Raab *et al.* 2008). Nevertheless, this study is the first to use these indicators for a long period of time, including the nineteenth century, and future research may address the validity of

these indicators in comparison with other possible indicators.

A final consideration for future research is the optimal choice of methods to study the status attainment process. Studies regularly use log-linear models, since they control for structural changes in occupational mobility. However, these models allow only for a limited number of parameters, and even the data used in this study would not be rich enough to fill all cells sufficiently. Therefore, I chose to use hierarchical linear analysis, which enabled me to study the status attainment process in regional contexts and over time, and to explain differences in the process between contexts. In addition, it allows for a continuous measurement of occupational status, which takes into account the fact that occupations are not only hierarchically structured between classes but also within classes (Blackburn and Prandy 1997). Furthermore, correlations do control for structural changes to some extent, and indicators such as industrialization do, in fact, reflect some of the structural changes in the occupational structure.

A discussion of the optimal research method should not, however, be allowed to deflect attention away from the research questions relating to social mobility, past and present, as it has done in the past (Ganzeboom, Treiman, and Ultee 1991, pp. 289, 295). The present study shows that recent developments in historical social mobility research now allow for historical studies of the status attainment process in extensive regions and over long periods. As such, they paint a more complete picture of status attainment. The decline in the association between a father's and a son's status as found in the Netherlands after the Second World War did not, in the province of Zeeland, start with the onset of industrialization. On the contrary, it seems that at the onset of industrialization fathers were more able to pass on their status positions to their sons than before.

One possible explanation relates to those who made investments in machinery and assets. The costs as well as the risks of these investments were high, and until the last quarter of the nineteenth century no diplomas existed to indicate whether one was qualified to operate or maintain these machines. Therefore, trust in handling those investments is likely to have been placed with a dense network, in the nineteenth century the family, where the risk of placing that trust was smallest (Buskens 2002, pp. 4, 57). Furthermore, in economically difficult times family members can be compensated by non-monetary means; that is not the case with contracted employees. For sons, it must have been worthwhile as well to be employed in the family company. Sons were well placed to take over the firm, without the need for the necessary initial investment in machinery and assets.

Another possible explanation for the increasing influence of a father's occupational status on that of his son relates to the factories that employed an increasingly large part of the labour force. Children, joining their parents at work, learned the acquired skills needed in the factory at a young age. Unable to go to school to learn a different occupation, their careers were likely already cut out for them at an early age. According to the findings in this chapter, only mass transport and perhaps geographical mobility allowed sons to attain a status position different from that of their fathers.

5 Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)²⁰

5.1 Introduction

Since the last decade of the twentieth century, large-scale digitization of historical data on individuals has been providing new insights into the intergenerational status attainment process. For one, historical data now paint a more universal picture of the status attainment process in the past. Whereas historical studies used to relate to a small number of cities over a limited period of time, nowadays such studies cover entire provinces over periods of time extending beyond a single century (Bras and Kok 2005; Van Leeuwen and Maas 1995; Zijdeman 2008). Furthermore, the “new” data offer the possibility to test trend-like developments in intergenerational mobility. Data covering long periods increase the detectability and comprehensibility of changes over time in the intergenerational status attainment process (Ganzeboom, Treiman, and Ultee 1991; Ganzeboom and Luijckx 1995).

To understand regional differences and changes over time in the status attainment process, researchers often draw upon two rival theories: the industrialism thesis and the status maintenance theory. The industrialism thesis states that parental influence on status attainment decreases with increasing industrialization (Blau and Duncan 1967; Kerr *et al.* 1960; Treiman 1970). The status maintenance theory, on the other hand, argues that people will expend their resources in alternative ways in order to pass on their status positions to their children. In the period under study, industrialization would diminish a parent’s influence on a child’s occupational attainment and as result parents would exert their influence indirectly, by providing their children with more prestigious schooling and of greater duration (Collins 1971; Collins 1979). However, when in the postindustrial era educational expansion has reached its peak, people will look again for more direct ways to pass on their status positions, such as the parental occupational network (Grusky 1983).

While data derived from historical sources provide insight into the status attainment process over a long time, they allow only for a limited test of both theories, for personal records, such as birth and marriage records, provide no information on a person’s educational level. One cannot therefore use those sources to study whether occupational status is transferred more directly or more indirectly. An exception is made by studies using the presence of a signature provided on a document as an indicator of literacy, reflecting at least some years of educational training (Boonstra 1993; Boonstra 1995). At least for the Netherlands, the use of this indicator is compromised, however, by the fact that as early as the mid-nineteenth century the percentage of illiterates was minor and decreasing rapidly. In the province of Utrecht, one of three provinces with relatively high rates of illiteracy, less than five percent of grooms born in 1850 did not sign their marriage record (Boonstra 1993; Boonstra 1995).

²⁰This chapter is based on: R. L. Zijdeman and K. Mandemakers. 2008. “De Rol van het Gymnasiaal en Middelbaar Onderwijs bij de Intergenerationele Overdracht van Status, Nederland 1865-1940.” Pp. 149-72 in *Honderdvijftig Jaar Levenslopen. De Historische Steekproef Nederlandse Bevolking*, edited by I. Maas, M.H.D. Van Leeuwen, and K. Mandemakers. Amsterdam: Amsterdam University Press. I would like to express my gratitude to Jeroen Weesie for his extensive assistance with the analyses, and to the participants in the COST Action A-34 seminar / ESTER Symposium, Minho, Portugal, April 2007, and the participants in the Cambridge Social Stratification Seminar, Stirling, Scotland, September 2007, for their valuable comments. Finally, I would like to acknowledge the resources of the digital archives mentioned in Appendix B, since the large-scale retrieval of marriage records for VHMO pupils would not have been possible without their existence.

Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)

A direct test of the industrialism thesis and the status maintenance theory is possible when data from historical personal registers are combined with archival data on educational careers. Van Dijk and Mandemakers (1985) do so for two cohorts of gymnasium and secondary-level pupils (1880-1881 and 1920) in Rotterdam. Until the so-called Mammoth Act (*Mammoetwet*), an education act, enacted in 1963, this type of education was referred to as VHMO (*Voorbereidend Hoger en Middelbaar Onderwijs*, Preparatory Higher and Secondary Education). From school archives, Van Dijk and Mandemakers collected individual-level data on pupils (such as age, address, parents' names) and combined these with information derived from census data.

The present study deploys a similar strategy and contributes to existing research on intergenerational status attainment in three ways. First, this study provides insight into the status attainment processes, including the indirect influence of a father's occupational status through education, in the Netherlands at the end of the nineteenth and the beginning of the twentieth centuries. Previous historical studies rarely provided information on educational level, or if they did it was restricted to students (Van Dijk and Mandemakers 1985). Second, while most historical studies limit themselves to a number of cities (Lundgreen, Kraul, and Ditt 1988), this study incorporates over 400 municipalities, more than one-third of all Dutch municipalities, increasing the generalizability of the results. Finally, the large number of municipalities in this study allows the analyses of the status attainment process to be embedded in municipal contexts. As a result, the analyses will show not only whether there are regional differences in the status attainment process, but also whether those differences are associated with contextual developments in mass communication, educational expansion, urbanization, and in-migration – as hypothesized by the industrialism thesis. These improvements allow the following questions to be answered:

1. To what extent did the status attainment process change in the Netherlands between the second half of the nineteenth century and the first half of the twentieth century?
2. To what degree can changes in the status attainment process be explained by differences in regional developments?

5.2 Research design

To answer those research questions this chapter draws on data at the individual level and data at the regional level. Two datasets provide information on the individual level. The first dataset consists of the marriage records of a representative sample of the Dutch population: the Historical Sample of the Netherlands (HSN 2008; Mandemakers 2001a). This dataset provides information on occupations of fathers and sons. The second dataset used in this chapter is based on the VHMO dataset (Mandemakers 1996a). This dataset is a representative sample of three cohorts of Dutch pupils who attended secondary school in

1880-1881, 1920, or, not used here, 1965. The cohort years refer to the year commencing secondary education. The first cohort consists of two years in order to increase sample size. Using information on the student's background, marriage records for the 1880-1881 and 1920 cohorts were retrieved in order to obtain information on the occupation of both the fathers and sons of pupils in secondary education.

Individually, the two datasets are too limited to answer our research questions. The HSN provides a wide range of information on the Dutch population, but not their level of education. Of the VHMO pupils it is known that they entered secondary education; in fact, this dataset comprises only those attending secondary school. By using information on the distribution of a father's occupational status and the probability of a son attending a VHMO institution, one can estimate the proportion of the HSN population which had no secondary education. This allows us to construct a single data matrix with information on the occupational status of fathers and sons and information on the educational attainment of sons. Using this matrix, the status attainment process can be studied for the period 1887-1941, when 95 percent of the marriages in our sample took place. The analyses are restricted to the status attainment process for men, since the number of women in secondary education was very low at the turn of the century.

Data at the level of the municipality are used in order to study the influence of contextual characteristics on the status attainment process. The municipality characteristics, such as the presence of secondary schools, are those of the municipality and year of birth of "respondents". For each of the characteristics, one can determine whether a municipality is either more advanced, or less advanced, and thus the status attainment process can be studied in more and less advanced contexts. Since the individual-level data comprise two cohorts, the difference between more and less advanced contexts can be studied at two points in time: at the end of the nineteenth century and at the beginning of the twentieth. Furthermore, within either more advanced or less advanced contexts the status attainment process can be studied over time.

5.3 The status attainment process: two interpretations of change over time

In their classic work, *The American Occupational Structure*, Blau and Duncan (1967) introduced the status attainment model. In the most elementary version of the model, a father's occupational status influences that of his son both directly and indirectly (Figure 5.1). Arrow A depicts the direct influence. It represents the influence of a son's social background on his occupational career in a direct way, for example, through parental occupational contacts and wealth (Grusky 1983). There is also an indirect effect of a father's occupational status. A father's occupational status influences his son's educational level (arrow B), while this educational attainment influences the son's occupational status (arrow C).

**Ascription and achievement from
a historical contextual perspective
(the Netherlands, 1887-1941)**

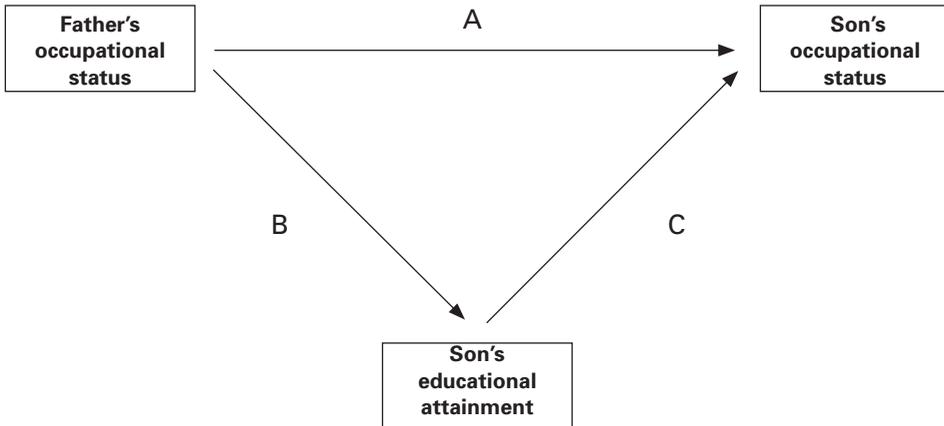


Figure 5.1. *Simple status attainment model*

In the literature, two theories have coexisted for more than four decades, providing a similar image of the status attainment process in preindustrial societies (Figure 5.2a) but having contradictory expectations regarding the influence of industrialization and other modernization processes on the status attainment process (figures 5.2b and 5.2c). The industrialism thesis (Blau and Duncan 1967; Kerr *et al.* 1960; Treiman 1970) as well as the status maintenance theory (Bourdieu and Passeron [1977] 1990; Collins 1971; Grusky 1983) expect, in a preindustrialized society, the existence of a strong positive association between both a father's occupational status and his son's occupational status and between a father's occupational status and his son's educational attainment (arrows A and B in Figure 5.2a). Not only did sons often take up their fathers' occupation, their "education" consisted of occupational training, by helping out in their parents' work. Due to the strong influence of the parental home on both a son's future occupation, and his education, both theories expect the effect of educational attainment (arrow C in Figure 5.2a) on a son's occupational status to have diminished in the period before industrialization.

In an industrializing society both the industrialism thesis as well as the status maintenance theory anticipate a decrease in occupational ascription and an increase in occupational achievement. According to the industrialism thesis, the direct influence of a father's occupational status on that of his son decreased during and after industrialization. Traditional occupations disappeared due to the mechanization of occupations, and to decreasing occupational inheritance between fathers and sons. Furthermore, there was a shift from the production of goods to the production of services (Kuznets 1957; Van Zanden and Griffiths 1989). The demand for technical and administrative staff increased with the development of a complex production, distribution, and marketing system (Treiman 1970). Therefore sons found it increasingly difficult to take up their fathers' traditional occupations, while

“new” occupations provided them with alternative occupational opportunities. However, the knowledge required to take up the new occupations was seldom available within the family, reducing the influence of a son’s social background on his educational training. These processes also occurred in the Netherlands. By 1850 there was already a relatively strong service structure, but particularly after 1900 the number of knowledge-based occupations increased sharply (Mandemakers 2001b; Van Zanden and Van Riel 2000)

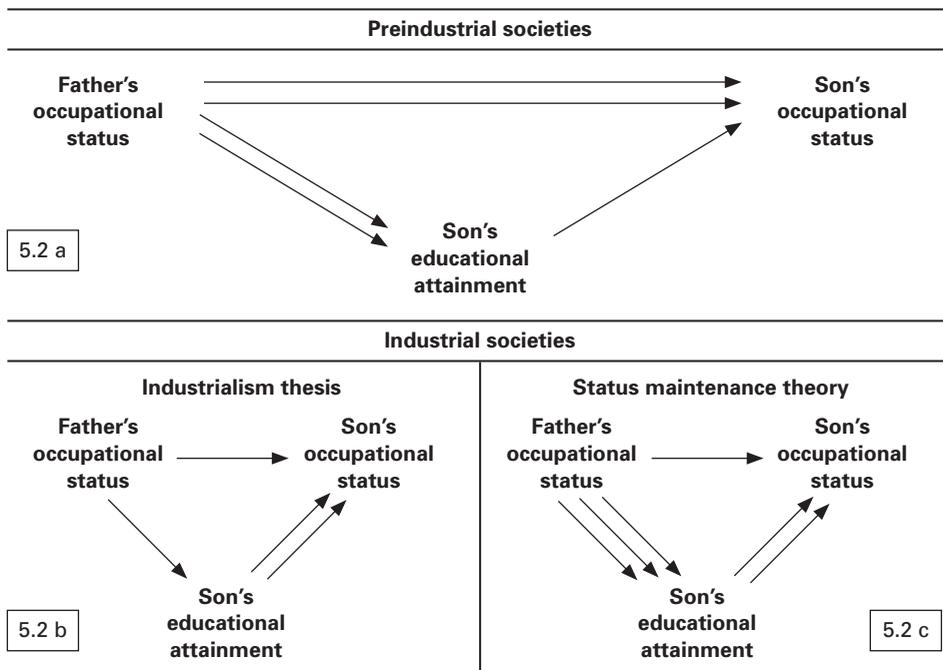


Figure 5.2. Two interpretations of the status attainment model
Note: The figure depicts the relationships in the status attainment model in a preindustrial society (Figure 5.2a), in an industrial society according to the industrialism thesis (Figure 5.2b), and in an industrial society according to the status maintenance theory (Figure 5.2c). All arrows represent causal relationships. Multiple arrows indicate stronger relations.

The industrialism thesis supposes furthermore that a shift in values occurred during industrialization. Before industrialization, ascribed characteristics would be especially important, while during industrialization achieved characteristics would be increasingly valued (Parsons and Shils [1951] 2001). As a result, selection on the labour market would have increasingly been based on individual achievements and less on ascription. This would have enhanced the importance of education (for comparison, note the double arrows in Figure 5.2b).

Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)

The status maintenance theory concurs with the view that in industrializing societies educational attainment became more important for occupational status, albeit through a different mechanism (Figure 5.2c). Education provides people with certain values, the skills necessary to converse about certain topics, and it enables them to experience activities within a specific group (Collins 1971). The type and length of education one receives therefore has implications for the level of culture one attains. Collins suggests that employers are thereby able to select employees with a preferred cultural background: *“Educational requirements for employment can serve both to select new members for elite positions who share the elite culture and, at a lower level of education, to hire lower and middle employees who have acquired a general respect for these elite values”* (Collins 1971, p. 1011).

The status maintenance theory differs from the industrialism thesis by arguing that once changes in the status attainment process hamper intergenerational transfers of status people will adopt alternative strategies to pass on their status positions (Grusky 1983). Once, during industrialization, the direct association between a father’s occupational status and that of his son decreases, parents will start to invest in longer periods of education and higher-quality education for their children. Since the elites tend to have more resources, and because educational culture tends to be more closely related to that of the elites themselves, children originating from higher social classes will be more successful in the educational track (Bourdieu and Passeron [1977] 1990). They can also afford to invest more to improve the conditions under which their children study, by providing daily expenses and housing (Dronkers and De Graaf 1995). As a result, the influence of a father’s occupational status on his son’s educational attainment is expected to increase.

Figure 5.2c depicts the change in the strength of the associations in the status attainment model due to industrialization and educational expansion, according to the status maintenance theory. The economic developments that occurred during industrialization were accompanied by a number of other macro-level processes, such as educational expansion and mass communication (Treiman 1970; Zijdeman 2009). A broader version of the industrialism thesis incorporates how these processes influence intergenerational status attainment (see Treiman 1970). Since there is no suitable indicator for industrialization and mass transport available in the period under study, I focus on just four of those processes here: mass communication, educational expansion, urbanization, and in-migration.

Changes in the occupational structure caused by the mechanization of labour caused a shift in the demand for skills provided by the workforce (Treiman 1970). Skills required for these “new” occupations were taught in schools, rather than passed on from father to son. Furthermore, with educational expansion the cost of obtaining education decreased, making education affordable for an increasing number of people of various social standings (Mandemakers 1999; Van der Ploeg 1993). As a result, the influence of a father’s occupational status on his son’s educational attainment is expected to decrease with educational expansion.

The specialization of the production system must have required more extensive means of communication. Production firms had to retrieve raw materials and commodities from

various non-local regions and also had to attract personnel. Whereas before industrialization the need for personnel could be resolved through family networks, newspapers allowed companies to place job advertisements, reaching a much larger audience. In these companies, information on job openings obtained through the occupational network of the father was therefore much less exclusive, for people increasingly secured an occupation through job advertisements and application letters (Duijvendak and Kooij 1992, p. 77). As a result, mass communication is expected to diminish the direct influence of a father's occupational status on that of his son.

An increasing number of post offices also allowed for other media to be distributed, such as magazines, fashion brochures, and postcards. These sources provided information from outside the local region, and mass communication would have led to "a common culture and the diminution of regional, ethnic, and class differences in attitudes and behaviour" (Treiman 1970, p. 219). With people becoming more alike, differences in background with regard to speech, social mannerisms, and clothing diminished as well. At schools, students' backgrounds would also have stood out less. Where educational expansion allowed for students from various backgrounds to participate in education, mass communication might have obscured differences in those backgrounds, decreasing the influence of a father's occupational status on his son's educational attainment.

Urbanization and geographical mobility are other contextual processes that are said to have diminished the influence of social background (Treiman 1970; Uunk 1996, Chapter 4). When municipalities expand in terms of population size or when they experience more geographical mobility, it becomes increasingly difficult for people to keep track of one another's background. As a result, the direct influence of a father's occupational status on that of his son is expected to diminish. Furthermore, in comparison with parents in rural areas, parents in more urbanized regions would have had fewer incentives to force their children to leave school periodically or prematurely to help increase the family income. In more urbanized regions the influence of a father's occupational status on his son's educational attainment is therefore also expected to be smaller.

To summarize, the industrialism thesis argues that apart from changes in the occupational structure, other macro-level processes decrease parental influence on a son's educational attainment as well as on a son's occupational status. While mass communication, urbanization, and geographical mobility are expected to decrease the direct influence of a father's occupational status on that of his son, the influence of a father's occupational status on his son's educational attainment is hypothesized to decline with educational expansion, mass communication, and urbanization.

In the introduction I argued that a direct test of the industrialism thesis and the status maintenance theory should incorporate educational attainment as a variable. Now, I can illustrate why. The industrialism thesis and the status maintenance theory both state that the associations between the different components in the status attainment model will change. However, neither of the two theories provides information on the size of those changes. As a result, to determine whether the total association between a father's and

Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)

a son's occupational status changes, one has to make assumptions about the size of the changes in the three associations of the status attainment model, when educational attainment is unknown (Treiman 1970; Grusky 1983; Zijdeman 2009). If such an indicator is available, both theories can be tested by focusing on their different expectations of the influence of a father's occupational status on his son's educational attainment.

5.4 Earlier results

Earlier studies do not allow for unequivocal conclusions on the status attainment process in the Netherlands in the nineteenth and early twentieth centuries. The limited number of studies differ widely in the size of the population being studied, and in their regional, temporal, and methodological aspects (Boonstra and Mandemakers 1995; Van Dijk and Mandemakers 1985; Van Leeuwen and Maas 1997). Two studies report an increase in total mobility rates, but fail to find a relationship between those increasing mobility rates and industrialization (Boonstra and Mandemakers 1995; Van Leeuwen and Maas 1997). Another study, using data on the Dutch province of Utrecht, reports no clear increase in relative mobility (Van Leeuwen and Maas 1997). For the province of Zeeland, the association between a father's occupational status and that of his son appears to have increased during the nineteenth century with industrialization, urbanization, and mass communication (Zijdeman 2009). However, around 1900 this increase stagnated. While the association was still larger in municipalities with mass communication, mass transportation decreased the association and other contexts no longer influenced the status transfer between fathers and sons (Zijdeman 2009).

Only two studies take educational attainment into account in their analyses of intergenerational status attainment. Van Dijk and Mandemakers (1985) studied the status attainment process by comparing the path coefficients of two cohorts of VHMO pupils in Rotterdam in 1880/1881 and 1920 respectively. They found no change over time, neither in educational ascription nor in occupational achievement. Boonstra (1993) uses the presence of a signature on a marriage certificate as an indicator of educational attainment in his study of the city of Eindhoven and some nearby smaller municipalities covering the late eighteenth century and the whole of the nineteenth century. Boonstra studied a path model as in Figure 5.1, but using a father's educational attainment as an additional explanatory variable. Unfortunately Boonstra provides no standard errors, making it difficult to draw conclusions about the significance of changes in the status attainment process over time (Boonstra 1993, Table 7.14). Nevertheless, he reported a decrease in the direct association between a father's occupation status and that of his son over the whole period. The direct negative effect of an illiterate father increased during the nineteenth century, while the indirect effect mediated by the social status of the father decreased. The direct positive effect of a son's educational attainment decreased after 1850 (Boonstra 1993, p. 207). This result could indicate a decrease in occupational

achievement, but it might also be the result of the steady disappearance of illiteracy in the second half of the nineteenth century. Literacy, measured by the presence of a signature on a personal record, lost its characteristic as an indicator of relatively high social status during the course of the nineteenth century. Therefore, this chapter uses information on access to VHMO education instead.

5.5 Data and methods

5.5.1 Data

To derive occupational titles for sons and their fathers I use marriage records. Despite the fact that marriage records provide a unique source to study intergenerational mobility and many recent studies make use of them (Bras and Kok 2005; Van Leeuwen and Maas 2007; Van Poppel, Monden, and Mandemakers 2008; Zijdemans 2007), in the past the use of marriage records has been criticized (Delger and Kok 1998; Van Dijk, Visser, and Wolst 1984). One point of critique concerns the fact that the occupation of the father, as registered on the marriage record, applies to a more advanced career stage than the occupation of his son. However, since the present study focuses on a comparison between cohorts, it is of chief importance that within as well as between cohorts the occupations are derived at a comparable point in the careers of fathers and sons. Marriage records, especially those of first marriages, when grooms are in an early stage of their career, suit this purpose well. Another point of criticism of the use of occupational titles concerns those relating to fathers that are missing. These are said to be associated with early deaths of fathers rather than to be randomly missing. Assuming that the early deaths of fathers is negatively associated with social background, there would indeed be an underrepresentation of individuals with a lower social status. However, Van Poppel and Van Gaalen have studied the specific association between social position and mortality and found no evidence of such an association for Dutch adult men born between 1850 and 1920 (Van Poppel and Van Gaalen 2008). Nevertheless, this remains an important issue, which will be dealt with later on.

In order to estimate the influence of education in the simple status attainment model (Figure 5.1), ideally one will have access to data providing information on a father's and a son's occupational status, as well as on a son's educational attainment. Unfortunately, no such dataset exists for the Netherlands in the nineteenth century. I have therefore combined two datasets. The first is the Historical Sample of the Netherlands (HSN), a representative sample of the Dutch population born between 1812 and 1922 (HSN 2008; Mandemakers 2001a). The second is based on the VHMO database (Mandemakers 1996a), from which information on two cohorts (1880-1881 and 1920) of VHMO pupils is used.

The first dataset used in this study is a HSN release of marriage records (HSN 2007). Eventually, the dataset will encompass all marriages of individuals in the HSN sample.

Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)

The release I use here encompasses marriages for all Dutch provinces, but marriages for the provinces of Zeeland, Utrecht, and Friesland, as well as marriages of people marrying in the same province as that in which they were born, are overrepresented. To increase comparability between the VHMO and HSN data, I selected first marriages of grooms aged 13 between 1875-1885 and 1915-1925 from the HSN data. I used the age of 13 because this was the modal age of entry at VHMO in both the 1880-1881 as well as the 1920 VHMO cohorts (Mandemakers 1996b, Table 14.6). The selected dataset consists of 3,219 marriage records in which the groom's occupation is registered. Here too, the number of records providing an occupational title for both father and son is limited: 1,854 records (57.6%). Furthermore, for some cases it is not possible to incorporate contextual data for the municipality and year of birth because information on the context or year or municipality of birth is missing. This reduces to 42.8 percent the proportion of HSN records suitable for use (N=1,379).

Mandemakers's research on the social background and educational careers of pupils of VHMO schools resulted in the VHMO database, which includes only male students (Mandemakers 1996a). This limitation is the result of the research's original strong focus on the relationship between education and social mobility, for earlier studies had shown that this relationship existed almost exclusively among boys; social mobility among girls would have related mainly to marriage mobility, not occupational mobility (Mandemakers 1996b, pp. 181-2; Van Dijk and Mandemakers 1985). Mandemakers deployed a cohort approach and compared three generations (1880, 1920, and 1965). The year 1880 was chosen because by then the VHMO had been almost fully implemented. The 1920 cohort followed the strong rise in the number of pupils between 1900 and 1920.

The VHMO database is constructed from information derived from the archives of VHMO schools. The availability of archival data, 80 percent of all the schools in 1880 and 70 percent of all the schools in 1920, made it possible to draw a national representative sample. The sample encompasses those pupils who entered VHMO for the first time on 1 September 1880 or 1 September 1920. To improve the sample size, the sample for the 1880 cohort was drawn from 1880 and 1881 (hereafter referred to the 1880-1881 cohort). The present study uses the VHMO database's national sample, with sampling proportions of 0.234 for the 1880-1881 cohort and 0.125 for the 1920 cohort (Mandemakers 1996b, p. 191). In total, the database provides information on 1,853 pupils.

In order to obtain information on pupils that is comparable to the HSN dataset, I have as far as possible retrieved the municipality and date of marriage of the VHMO pupils.²¹ Furthermore, additional information on the pupils' life courses was retrieved to determine *inter alia* whether pupils deceased without ever getting married. The information was recovered from various digital archives.²² Those digital archives provide information on where a record had been created. This information was used to localize the actual records from provincial as well as municipal archives. The marriage records were then

²¹ To retrieve the marriage records, I drew upon Mandemakers's notes on the life courses of each VHMO pupil (Mandemakers 1992).

²² Appendix B provides an overview of the digital archives I used.

retrieved and computerized.²³ For 261 of the 1,853 pupils, evidence that they had never married was retrieved. Of the remaining 1,592 pupils, 1,156 married at least once, while the marital status of the other pupils remains unknown. For the married pupils, I retrieved 990 marriage records of first marriages providing an occupational title for the pupil. Unfortunately, a cross-check of the schools showed that 19 pupils went to schools that might not officially have been recognized as VHMO schools. Furthermore, only 447 records provided an occupational title for the pupil's father. It should be noted that the percentage of marriage records without both the occupational title of groom and groom's father is actually somewhat larger (54.8%) than it was in Chapter 4 (34.1%). The VHMO pupils are mainly from higher social backgrounds, whereas Chapter 4 takes all marriage certificates into account. This finding thus contrasts with the arguments claiming that the attrition of fathers' occupations is biased due to the early deaths of fathers from lower social positions.

In order to preserve more cases, an alternative measure of the occupation of the pupil's father is used, namely when the pupil is about 13 and enters VHMO. Information on this occupation is derived from population registers and tax records (Mandemakers 1996a, pp. 215-18). On average, the alternative occupational titles of fathers were recorded 15 years earlier than the occupational titles of fathers given in the marriage records. At that point a father would have been less advanced in his career than at the time of his son's marriage. I therefore address the question to what extent the occupational status derived from the alternative measure of fathers' occupations differs from the occupational status based on fathers' occupations as registered in the marriage records. The average occupational status of fathers whose occupation was recorded in the marriage records is 70.1, with a standard deviation of 16.3. The average occupational status of fathers calculated using an alternative measure of their occupations is 69.6, with a standard deviation of 16.4. These differences appear to be marginal. This is confirmed by a Student's t-test, which reports no significant differences in the mean ($t=0.396$; $p=0.693$), and by a Levene's test, showing no significant differences in variance ($f=0.982$, $p=0.850$). I therefore assume that the use of the alternative occupational titles will not influence the results significantly. The use of the alternative measure of fathers' occupations results in 878 pairs of occupational titles for fathers and sons. In order to link the transfer of occupational status to contextual information I also need the year and municipality of birth of the son and information on the specific context. This is not available in 84 cases. Therefore, the "response" rate relative to all possible married VHMO pupils is 52.6 percent ($((878-84)/(1529-19))$), while relative to all VHMO pupils for whom a marriage record was retrieved the "response" rate is 69.8 percent ($((878-84)/(1156-19))$).

In the analyses, I deploy three variables at the individual level:

Father's occupational status and *son's occupational status*. To append a measure of occupational status to the occupations of fathers and sons, the occupational titles were

²³ The data file is now part of the Historical Sample of the Netherlands (HSN) and is stored as Dataset Huwelijksakten VHMO-leerlingen 1880-'81 en 1920 (HVL), release 2006.01 (Zijdeman 2006).

Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)

first coded using the Historical International Standard Classification of Occupations (HISCO) (Van Leeuwen, Maas, and Miles 2002). HISCO is a classification of historical occupations based on the International Standard Classification of Occupations 1968 of the International Labour Office (1969). Applying the HISCO classification, occupations with similar tasks and activities receive a unique five-digit code. To rank the occupations according to occupational status I apply a historical continuous occupational stratification scale: HIS-CAM, version 0.1 (Lambert *et al.* 2006; Zijdemans and Lambert 2010). HIS-CAM is a historical version of the CAMSIS scales that suppose patterns of social interaction between individuals from different occupational groups are representative of the entire occupational stratification structure. The HIS-CAM scale is based on the associations between occupations of brides and grooms and of their parents derived from 1.5 million marriage records from six different countries (Canada, France, Germany, Britain, the Netherlands, and Sweden) covering the period 1800-1938. The association scores were estimated using Goodman's RCII models (Goodman 1979). The scale scores range from 1 to 99.

Son's educational attainment indicates whether a son did not attend a VHMO school (0), followed a three-year course of HBS²⁴ education (1), followed a five-year course of HBS education (2), or went to a gymnasium (3). By assigning these values to the different types of education, the different forms of education are hierarchically distinguished from each other. Although Mandemakers (1996a) used the same categorization for VHMO pupils, the fact that the scale scores are defined as being at equal distances is of course arbitrary. To define the hierarchy, ideally one would use information such as whether a diploma was obtained, or the number of years a son went to school. This information is unavailable however.

Table 5.1 provides an overview of the dataset by cohort and by sample (HSN/VHMO). It shows that the total number of cases from the 1920 cohort (1,292) is somewhat larger than the corresponding number from the 1880-1881 cohort (881). This holds too for the percentage of HSN cases (63.0) and VHMO cases (53.3) in the 1920 cohort. Compared with the VHMO dataset, the percentage of cases from the HSN dataset is somewhat larger for both the 1880-1881 (57.9) and 1920 cohorts (67.3). Table 5.2 lists the descriptive statistics of the variables for the VHMO and HSN samples combined, while Figure 5.3 provides a geographical representation of the municipalities included in the analyses for the 1880-1881 and 1920 cohorts.

²⁴HBS, or Hogere Burger School, a form of secondary school offering a more practically oriented education, contrasting with the gymnasia, which prepared pupils for university.

Table 5.1 Absolute and relative distribution of number of cases, by cohort and dataset

	Cohort 1880-1881		Cohort 1920		Total	
	Absolute	Percentage	Absolute	Percentage	Absolute	Percentage
HSN marriage records	510	37.0	869	63.0	1,379	100.0
Percentage	57.9		67.3		63.5	
VHMO marriage records	371	46.7	423	53.3	794	100.0
Percentage	42.1		32.7		36.5	
Total (HSN + VHMO)	881	40.5	1,292	59.5	2,173	100.0
Percentage	100.0		100.0		100.0	

Sources: *Marriage records VHMO pupils and HSN release marriage records, July 2006*

Table 5.2 Descriptive statistics

Variable	N	Mean	Std. Dev.	Min	Max
Son's occupational status (HIS-CAM)	2,173	60.798	18.213	10.6	99
Father's occupational status (HIS-CAM)	2,173	57.484	16.181	10.6	99
Son's educational attainment	2,173	0.700	1.017	0	3
Year of birth	2,173	1888	19.776	1862	1912
VHMO sample (dummy)	2,173	0.365		0	1
Cohort 1920 (dummy)	2,173	0.595		0	1
Context 1880-1881					
Educational expansion	363	0.051	0.165	0.000	1.395
Mass communication	363	0.240	0.427	0.000	1.000
Urbanization	363	5.666	16.710	0.371	264.672
Geographical mobility	363	3.000	6.656	0.040	80.420
Context 1920					
Educational expansion	430	0.090	0.268	0.000	1.905
Mass communication	430	0.363	0.481	0	1
Urbanization	430	9.151	37.348	0.256	580.960
Geographical mobility	430	6.170	20.588	0.040	294.180

Sources: *Marriage records VHMO pupils, HSN release marriage records July 2006, Historical Ecological Database*

**Ascription and achievement from
a historical contextual perspective
(the Netherlands, 1887-1941)**



Figure 5.3. Coverage of municipalities of birth for the 1880-1881 (left) and 1920 (right) cohorts
Sources: Marriage records VHMO pupils, HSN release marriage records July 2006, Historical Ecological Database. Images generated using NLGIS: <http://nlgis.dans.knaw.nl/HGIN/Home.ctrl> Url last accessed 12 February 2010). Grey areas indicate the municipalities of birth that are represented in the data.

To test whether the status attainment process differs between contexts, I use four contextual variables: educational expansion, mass communication, urbanization, and geographical mobility. These variables apply to the son's year and municipality of birth. Below follows a description of the contextual variables and of how municipalities are operationalized as either more or less advanced.

Educational expansion. In the Netherlands, education was socially segmented in the nineteenth century: primary education for the lower social classes and higher education for the upper classes (Ringer 1979). The Secondary Education Act (1863) created an intermediate education category. Because of its open character, the act provided for all kinds of new schools. It created not only the Hogere Burger School (HBS), with three- and five-year courses, but also made it possible to provide various new and existing vocational and professional schools with a legal and financial basis. In 1880 VHMO included about 100 schools, of which 27 were municipally founded gymnasia, 37 were municipally or state-founded HBSs offering a five-year course, with a further 20 offering a three-year course, and 12 were municipal MMS (Middelbare Meisjes Scholen), girls schools. The schools were quite dispersed over the country, and taught a total of about 8,000 pupils.

After 1900, and especially after 1910, the increase in the number of pupils accelerated. This increase was encouraged by the creation of new types of VHMO school, such as the commercial schools and commercial classes to supplement the three-year HBS course. After 1920 it was the lyceum, a hybrid form of HBS/gymnasium, which grew most (Mandemakers 1996a).

Educational expansion is measured as the number of students going to HBS, gymnasia, and MMS schools in the son's year and municipality of birth, relative to that municipality's population. The information is derived from the annual reviews on Dutch education (Scholten 1862-1917). Since the distribution of educational expansion is highly skewed, this variable basically differentiates between municipalities based on whether or not they had HBS, gymnasia, or MMS schools.

Mass communication. Before 1850 people and companies from different municipalities communicated through formal post routes between large cities and municipalities and through a more informal network of, for example, barges (Van der Woud 2007, p. 339). From 1850 onwards many new developments occurred, tripling the number of mail exchanges to 32.5 million around 1870 (Van Zanden and Van Riel 2000). With the Post Office Act of 1850 (the *Postwet*) the government institutionalized mail services, allowing for regular mail exchange with less densely populated areas. In 1860 the cost of sending letters ceased to be dependent on distance, while in 1870 the same change was implemented for parcel post (Van der Woud 2007). Also, postal charges were lowered several times between 1850 and 1870 (Van der Woud 2007; Van Zanden and Van Riel 2000). Furthermore, in 1870 the issue of whether the sender or the receiver had to pay postal charges was solved by charging the sender by default. Some might argue that these post-office-related aspects apply especially to person-to-person communication. In addition to letters, however, newspapers, fashion brochures, and other magazines were disseminated throughout the country, providing people from various regional and social backgrounds with the same information. For example, Van der Woud reports that a magazine called *De Economist* tried to persuade its readers that the sender should pay any postage costs and that everybody ought to have a letter box at home (Van der Woud 2007).

Since accounts of the delivery of media such as magazines like *De Economist*, or newspapers for that matter, are available at best only for a small number of municipalities and for just a few years, I use the presence of a post office as an indicator of mass communication instead. Information on the presence of a post office is derived from the annual reports of the Dutch postal services, available at the archive of the Museum of Communication in The Hague. The variable mass communication indicates the presence of a post office in the son's year and municipality of birth.

Urbanization and geographical mobility. In the Netherlands in the course of the nineteenth century, the contrast between life in more rural and in more urban areas blurred (Van der Woud 2007). The number of municipalities with fewer than 20,000 inhabitants decreased slowly but steadily, while the number of municipalities with more than 100,000 inhabitants

Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)

increased (Postmus 1928). While this urbanization is explained most often by economic factors, such as the mechanization of agricultural labour and agricultural crises, Van der Woud shows that there were also cultural reasons why life in the city became more attractive. Cities were at the frontier of the new civilization of mass communication, mass mobility, and mass consumption (Van der Woud 2007). With new innovations in communication, travel, dress, and leisure, city life was experienced as being more intense and varied (Verrijn Stuart 1910-1917), although some thought it more “nervous” (Van der Woud 2007).

As an indicator of urbanization I use a municipality’s population size, derived from the Historical Ecological Database (HED). For the 1880-1881 cohort the median population size of municipalities was 2,500; the corresponding figure for the 1920 cohort was 3,000. In order to have a single cut-point for the two cohorts, the mean of these medians is used: 2,750. Larger values indicate that a son’s municipality of birth was urbanized by the year he was born.

Geographical mobility is defined by the number of in-migrants per 100 inhabitants in the son’s year and municipality of birth. I focus only on in-migration because the debate concerning how contexts with greater in-migration might affect the status attainment process refer solely to the expansion of a municipality. Data on in-migration are derived from the HED. For both the 1880-1881 as well as the 1920 cohorts the median number of in-migrants per 100 inhabitants in a municipality was three. I therefore use this figure as a cut-point to distinguish between municipalities with more and less geographical mobility.

5.5.2 Methods

To test the hypotheses, path analysis will be applied. Path analysis assumes a causal relationship between the variables in a model. Figure 5.1 provides these assumptions for the status attainment model. The father’s occupational status has a direct effect on that of his son. There is, however, also an indirect relationship between a father’s occupational status and his son’s, since the father’s occupational status influences his son’s educational attainment, which in turn influences the son’s occupational status. These associations are represented in the following equations:

$$Y_1 = a_1 + b_1 * X_1 + e_1 \quad (5.1)$$

$$Y_2 = a_2 + b_2 * X_1 + b_3 * Y_1 + e_2 \quad (5.2)$$

where X_1 equals the father’s occupational status, Y_1 equals the son’s educational attainment, and Y_2 equals the son’s occupational status. Since the model is recursive (the causal relationships all point in the same direction), equations 5.1 and 5.2 can be estimated separately using OLS regression and assuming that the errors in the underlying population regressions are statistically independent (Retherford and Choe 1993, p. 95).

However, standard OLS regression analysis cannot be applied, since two different

datasets are used. On the one hand, the VHMO dataset contains information on educational attainment but is representative only of VHMO pupils. On the other hand, the HSN dataset provides no information on educational attainment but is nationally representative. Therefore, the HSN dataset also comprises small numbers of grooms who attended VHMO. In order to construct a single nationally representative dataset, I estimate which part of the HSN population had no VHMO background, using the distribution of the fathers' occupational status on the one hand and the probability of sons attending VHMO on the other. An example will clarify this approach. Table 5.3 provides a notional distribution of fathers' occupational status over three categories – low, average, and high – for both the VHMO sample as well as the HSN sample. Furthermore, let us assume that five percent of the boys attended VHMO.

Table 5.3 Distribution of fathers' occupational status across three notional datasets

	Low	Average	High
VHMO (5% population)	10%	20%	70%
HSN (100% population)	55%	30%	15%
HSN (95% population)	57.4% [A]	30.5% [B]	12.1% [C]

The percentage of sons who did not have VHMO-educated fathers is estimated as follows. Fifty-five percent of the HSN population had a father with a low occupational status score. This includes sons who attended VHMO. Overall, the percentage of sons with a VHMO education is five percent. However, of the sons from low status backgrounds only 10 percent of that five percent attended VHMO. Thus the relative proportion of sons from low status backgrounds without a VHMO education should be larger than the proportion of sons from lower status backgrounds in the HSN sample with VHMO. With regard to cell A in Table 5.3, this equals $(55 - 10 \times 0.05) / 0.95 = 57.4$ percent. With regard to cells B and C the percentages are 30.5 and 12.1 respectively.

The example above provides an impression of the estimation technique I used. For the actual estimation of VHMO participation I used different percentages for 1880 and 1920. In 1880, 4.1 percent of all boys attended the first year of a VHMO school, while by 1920 this had increased to 8.1 percent (Mandemakers 1996a, Table 14.15, p. 593). Furthermore, rather than categorizing the fathers' occupational status into three classes, a continuous variable is used: HIS-CAM. Formulas for conditional moments (see, for example, Rao 1973) allow one to estimate the VHMO participation rate of the HSN population, based on the mean and standard deviation of fathers' occupational status. For both cohorts this results in variance-covariance matrices for the three variables in the model: father's occupational status, son's educational attainment, and son's occupational status. Using these matrices, the regression models are estimated.

Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)

However, for this exercise the standard errors of the regression coefficients cannot be used, since the covariance matrices were not estimated in the usual manner. Therefore, a stratified bootstrap method is applied (Treiman 2009). This method estimates the standard errors and confidence intervals by repeatedly drawing samples from the observed population.²⁵

Finally, in the above example no distinction was made between less and more advanced contexts. For both the 1880-1881 and 1920 cohorts the status attainment process will be studied separately in municipalities that are less and more advanced with regard to: educational expansion, mass communication, urbanization, and geographical mobility. The data description above provides information on how less and more advanced contexts are operationalized and distinguished. By focusing on differences in the status attainment process between less and more advanced contexts as well as between contexts, the hypotheses are tested in two ways. First and foremost, the analyses will show whether the status attainment process differs in, for example, regions with more educational expansion compared with regions with less educational expansion. However, it also allows for a test of changes over time within contexts, i.e. of whether the status attainment process for the 1880-1881 cohort in, for example, regions with more mass communication differed from the status attainment process in 1920 in regions with more mass communication.

5.6 Results

5.6.1 The social background of the HSN and VHMO cohorts for 1880-1881 and 1920

While the next section tests hypotheses on the influence of social background on educational and occupational attainment, this section provides descriptive results of change over time in social background. These descriptions provide insight into the degree to which secondary education became more open to pupils from various backgrounds. Descriptive analyses of the distribution of the social background of the whole population (HSN) and of the social background of the VHMO pupils are given for the 1880-1881 and 1920 cohorts separately. Figure 5.4 depicts the distribution of the fathers' occupational status of the whole population.

²⁵ A Stata script of the estimation method is available on request.

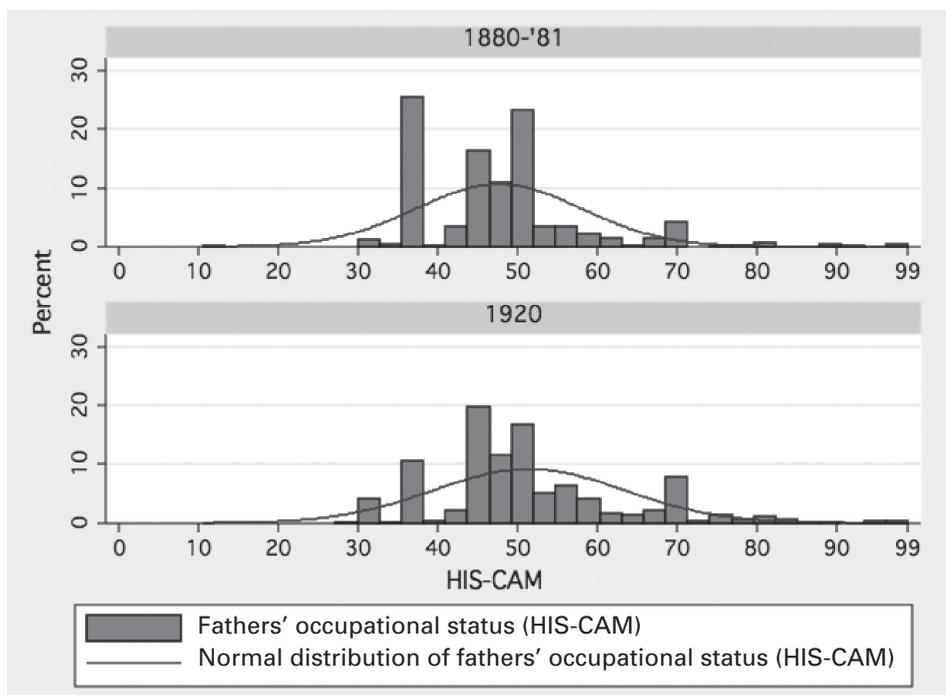


Figure 5.4 Fathers' occupational status (HIS-CAM) of HSN "respondents" in the 1880-1881 and 1920 cohorts (N=1,854)
 Source: HSN marriage records, release 2007.01.

Figure 5.4 shows that the spread of a father's occupational status was larger for the 1920 cohort than for the 1880-1881 cohort. A Levene's test of variance indicates that this difference is significant ($f=0.750$; $p=0.000$). From Figure 5.4 it is also apparent that a father's occupational status was on average higher for the 1920 cohort (51.5) than for the 1880-1881 cohort (47.7). A Student's t-test for groups with unequal variances suggests that this difference in the mean is significant ($t=-7.122$; $p=0.000$). With regard to the 1880-1881 cohort, the social background of sons from the 1920 cohort was thus higher on average, but the differences in social background were larger as well.

Figure 5.5 also depicts differences in the social background of VHMO pupils from the 1880-1881 and 1920 cohorts. In contrast to the findings reported for the whole population, the average occupational status of fathers of VHMO pupils declined. Fathers' occupational status for the 1880-1881 cohort was 71.6 on average; the corresponding figure for the 1920 cohort was significantly lower: 68.2 ($t=3.069$; $p=0.001$). Can this finding be explained by an increase in the number of VHMO pupils from lower social backgrounds?

Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)

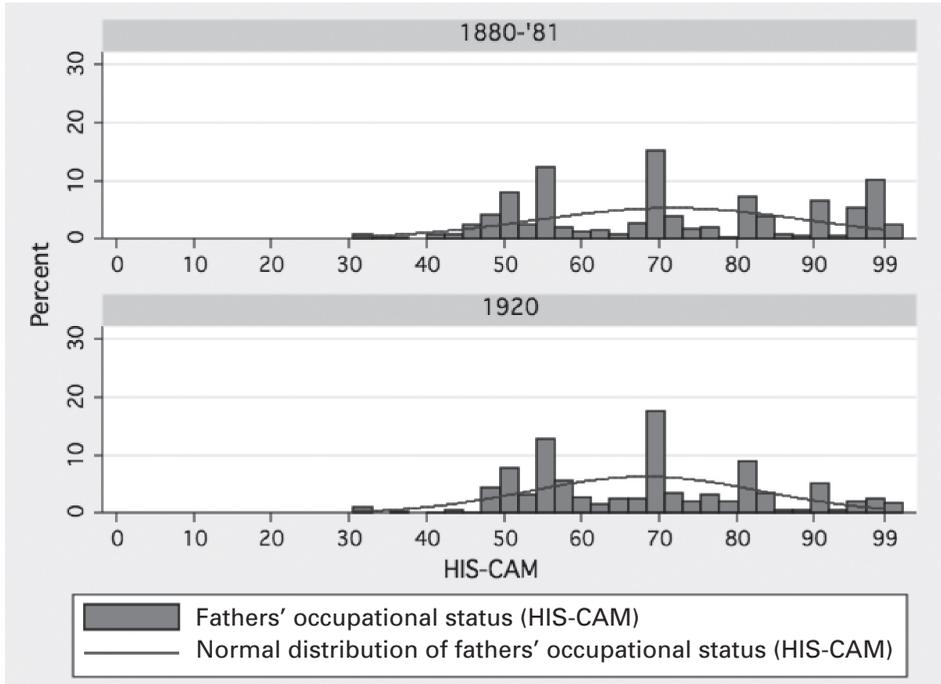


Figure 5.5 *Fathers' occupational status (HIS-CAM) for VHMO pupils from the 1880-1881 and 1920 cohorts (N=878)*

Source: Marriage certificates pupils in higher secondary education (HVL), release 2006.01.

From Figure 5.5 it is apparent that there was a relative decline in the proportion of fathers with an extremely high HIS-CAM score (>90). Also, a Levene's test of variance shows that the spread in fathers' occupational status was significantly smaller in 1920 than in 1880-1881 ($f=1.411$; $p=0.000$). The rise in the number of VHMO pupils between 1880 and 1920 (400 percent) was caused mainly by pupils from an average status background and only to a slight degree by pupils from higher status backgrounds; sons from higher status backgrounds were often already attending VHMO schools by 1880. The proportion of pupils whose fathers had a HIS-CAM score lower than 40 did not increase however. In 1920, the probability of a son from a working class background (40 to 50 percent of Dutch society) going to a VHMO school was only 6 percent (Mandemakers 1996b, pp. 249-252). The decrease in the mean and spread of fathers' occupational status was thus caused by a relative increase in the number of pupils from average status backgrounds

5.6.2 The status attainment process: regional differences and changes over time

To test the hypotheses, both one-sided and two-sided tests will be used. Both the industrialism thesis and the status maintenance theory expect the direct influence of a father's occupational status on that of his son to diminish. Both theories have similar expectations too regarding the influence of a son's educational attainment on his occupational status, which is expected to increase. Therefore, these directional hypotheses, which have similar expectations, will be tested one-sided. The industrialism thesis and the status maintenance theory differ in their expectations concerning regional differences and changes over time with regard to a son's educational attainment. While the industrialism thesis expects the influence of a father's occupational status on his son's educational attainment to decline, the status maintenance expects this relationship to strengthen. Therefore, the directional hypotheses which have contradictory expectations will be tested two-sided. In line with previous chapters, the total association between a father's and a son's occupational status will be tested two-sided.

Table 5.4 provides difference scores ($\Delta\beta_{\text{high-low}}$) and a test statistic (p) for the standardized regression results of the status attainment model for each context. To enhance readability the table presents only significant results. Appendix C provides an overview of all the path models for each specific context and cohort, as well as the difference scores between contexts and cohorts, and finally the number of "respondents" and municipalities included in the analyses.

The first row in Table 5.4 shows the results when no context is specified, that is when all municipalities are included and the 1880-1881 cohort is compared with the 1920 cohort (Model 0). For the 1920 cohort the total influence of a father's occupational status on his son's was significantly smaller than for the 1880-1881 cohort ($\Delta\beta_{\text{high-low}}=0.142$; $p=0.004$). The direct influence of a father's occupational status on that of his son decreased significantly over time ($\Delta\beta_{\text{high-low}}=0.152$; $p=0.003$), while a father's influence on his son's educational attainment did not decrease significantly. The direct influence of a son's educational attainment was stronger for the 1920 cohort than it was for the 1880-1881 cohort. In sum, the results imply that, in the Netherlands, compared with those living at the end of the nineteenth century people in the first half of the twentieth century were less advantaged or disadvantaged by their social background, while they had more to gain from their own achievements.

I will now retest the hypotheses to see whether this picture for the Netherlands as a whole is repeated when account is taken of differences between municipalities that are more and less advanced with regard to educational expansion, mass communication, urbanization, and geographical mobility. Thus municipalities with schools offering higher secondary education are compared with municipalities without such schools, municipalities with a post office are compared with municipalities without one, more populated municipalities are compared with less populated municipalities, while, finally, municipalities with high numbers of in-migrants are compared with municipalities with

Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)

few in-migrants. A negative difference score indicates that an association was smaller in more advanced contexts.

The direct relationship between a father's and a son's occupational status did not differ, in any type of context, between more and less advanced contexts, neither for the 1880-1881 nor for the 1920 cohorts. This finding refutes hypotheses from both the industrialism thesis as well as the status maintenance theory which state that the influence of a father's occupational status on that of his son would be weaker in more advanced contexts.

The influence of a father's occupational status on his son's educational attainment did weaken in some contexts. The educational opportunities of sons in the 1880-1881 cohort born in a municipality with a post office were less dependent on social background than the educational opportunities of sons born in a municipality without a post office (Model 2a). For the 1920 cohort a son's educational attainment was less dependent on his father's occupational status in municipalities with schools offering secondary education (gymnasium, HBS, or MMS) than in municipalities without secondary schooling (Model 1b). The influence of a father's occupational status on his son's educational attainment did not significantly differ in contexts that were more or less advanced in terms of urbanization and geographical mobility.

The final relationship in the status attainment model is the influence of son's educational attainment on son's occupational status. Both the industrialism thesis and the status maintenance theory expect an increase in this relationship. However, neither for the 1880 cohort nor for the 1920 cohort is there evidence of such an increase. Moreover, for the 1920 cohort the influence of a son's educational attainment was less in municipalities with greater mass communication. Therefore hypotheses from both theories are rejected.

In sum, the results provide no support for the hypotheses shared by the industrialism thesis and status maintenance theory. The direct influence of father's occupational status and the influence of son's educational attainment on son's occupational status did not differ between municipalities that were more or less advanced with regard to educational expansion, urbanization, or in-migration. However, at the end of the nineteenth century the influence of a father's occupational status on his son's educational attainment was smaller in municipalities with greater mass communication, while in the early twentieth century this association was weaker in municipalities with a higher degree of educational expansion. These findings support the industrialism thesis and refute the status maintenance theory with regard to the relationship between social origin and educational attainment.

So far, the hypotheses have been tested by comparing municipalities that differed with regard to their advancement in a given context, such as educational expansion. These tests account for differences in the status attainment model between more and less advanced contexts. However, they do not take into account whether the status attainment process changed within contexts at one point in time. Was there a difference only between more and less advanced contexts, or were there also differences within more and less advanced contexts over time?

Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)

To answer this question and to test the hypotheses further, Table 5.5 provides the differences between the 1880-1881 and 1920 cohorts within less and more advanced contexts. Now, a negative difference score ($\Delta\beta_{1920-1880-1881}$) indicates that the strength of a specific relationship in a given context was lower for the 1920 cohort compared with the 1880 cohort. For sons born in municipalities without secondary schools, the direct influence of a father's occupational status on that of his son was smaller for the 1920 cohort than for the 1880-1881 cohort (Model 1l). So even in municipalities without secondary education, the direct influence of a father's occupational status on his son's status declined. One interpretation of this effect is that the educational expansion had a smooth but universal impact on the labour market. Smooth, because Table 5.4 showed that there was no significant difference between municipalities with and without educational expansion at one point in time. Universal, because the declining influence over time of a father's occupational status on that of his son appears both in municipalities with (Model 1h) and without (Model 1l) secondary schooling. The direct association between a father's and a son's occupational status did not change over time in municipalities that were less advanced with regard to mass communication, nor did it change in municipalities with lower levels of urbanization and geographical mobility.

The influence of a father's occupational status on that of his son and on his son's educational attainment did not differ between sons in the 1880-1881 and 1920 cohorts born in municipalities with less advanced contexts, for any of the contexts under study. Thus, except for educational expansion, the results indicate that there was no change over time in the status attainment process in municipalities with less advanced contexts. In comparison with the changes over time in municipalities with less advanced contexts, Table 5.5 provides a rather different picture of changes over time in the status attainment process in more advanced contexts. For the 1920 cohort, the direct influence of a father's occupational status was less than for the 1880-1881 cohort, in all the contexts studied.

Table 5.5 shows no change over time in the influence of a father's occupational status on his son's educational attainment in more advanced contexts. However, the table does show an increase between 1880-1881 and 1920 in the influence of a son's educational attainment on his occupational status in contexts with higher levels of educational expansion, urbanization, and in-migration. Hence one can conclude that in these more developed contexts educational attainment became more influential over time.

Table 5.5 Test scores of differences in path coefficients in the status attainment model between the 1880-1881 and 1920 cohorts within less and more advanced contexts

Type of context	Model	Model description	Father's occupational status on son's occupational status (total effect)	$\Delta\beta_{1920-1880-1881}$	p	Father's occupational status on son's occupational status (direct effect)	$\Delta\beta_{1920-1880-1881}$	$p_{one-sided}$	Father's occupational status on son's educational attainment	$\Delta\beta_{1920-1880-1881}$	p	Son's educational attainment on son's occupational status	$\Delta\beta_{1920-1880-1881}$	$p_{one-sided}$
Educational expansion	1l	low: 1920-1880	-0.160	0.016	-0.167	0.013								
	2l	low: 1920-1880												
Mass communication	3l	low: 1920-1880												
	4l	low: 1920-1880												
Urbanization	1h	high: 1920-1880			-0.168	0.040						0.070	0.045	
	2h	high: 1920-1880												
Mass communication	3h	high: 1920-1880	-0.156	0.012	-0.166	0.007						0.055	0.038	
	4h	high: 1920-1880	-0.228	0.002	-0.242	0.001						0.070	0.020	

Note: $\Delta\beta_{1920-1880-1881}$ is the difference between the path coefficients in the status attainment model in the 1880-1881 and 1920 cohorts in either a low (less advanced) or a high (more advanced) context. The table only displays significant effects ($p < .05$). Appendix C provides an overview of all results.

Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)

Table 5.5 also illustrates why it is advantageous to study all relationships in the status attainment model as opposed to studying only the total association between occupational status of father and son. If information on only the total association between a father's and a son's occupational status had been known, Model 1h would have led one to conclude that in regions with secondary schools intergenerational status attainment did not change over time. However, the partial effects show that in these regions the influence of social background on educational attainment diminished, while the influence of a son's educational attainment on his occupational status increased.

In sum, while there were no significant differences in the direct influence of a father's occupational status on that of his son between more and less advanced contexts for the 1880-1881 and 1920 cohorts, there was a significant decrease over time in the direct influence of a father's occupational status on his son's status in more advanced contexts. Furthermore, between more and less advanced contexts there were no significant differences in the association between a son's educational attainment and his occupational status (with the exception of the negative influence of mass communication for the 1920 cohort). However, over time, educational attainment became more important for occupational status in more advanced contexts. Thus, the status attainment process was not much different in more and less advanced contexts at the end of the nineteenth century or the first half of the twentieth century, with the exception of the decreasing influence of a father's status on his son's educational attainment in some contexts. However, the more consistent pattern of change towards a meritocratic status attainment process is found over time in the more developed municipalities.

5.7 Conclusion and discussion

Empirical tests of the influence of industrialization and educational expansion on the status attainment process in the Netherlands in the nineteenth and early twentieth centuries are scarce, despite strongly formulated hypotheses. Furthermore, the limited number of empirical studies that are available often focus on the relationship between a father's occupational status and that of his son, while competing theories, the industrialism thesis and the status maintenance theory, actually differ from one another in their expectations of the importance of education. By combining two unique datasets, this study provides, for the first time, insight into the status attainment process, including the role of education, in an industrializing country (the Netherlands) at the end of the nineteenth and the first half of the twentieth centuries.

Furthermore, empirical tests of these theories are often restricted to changes over time, assuming that later periods are, on average, more "modern", which would result in changes in the status attainment process. Apart from changes over time, this study focuses on regional differences in the status attainment process, in order to reveal whether the status attainment process differed between more and less developed

contexts. Also, these contexts were clearly defined in terms of educational expansion, mass communication, urbanization, and geographical mobility, rather than restricted to an overarching and, so, unspecified concept such as “degree of modernization”.

Before analysing the status attainment process, this study focused on the question of whether the increase in the number of VHMO pupils due to educational expansion made the distribution of pupils according to social background more equal between 1880 and 1920. It has shown that between 1880 and 1920 there was a relative decline in the proportion of pupils from extremely high social backgrounds, due to an increase in the number of pupils from average to high social backgrounds, such as the offspring of office clerks, engineers, teachers, and other new average status groups. Even in 1920 there was only limited access to VHMO for pupils from a working class background. For almost all sons from low status backgrounds VHMO remained unattainable even as late as 1920, almost 60 years after its implementation.

Nevertheless, on the whole, the association between a father’s and a son’s occupational status decreased between 1880 and 1920. This is the result mainly of a decrease in the direct influence of a father’s occupational status on that of his son. This finding is consistent with those of a study by Boonstra (1993), who reports a decline in the association between a father’s occupational status and that of his son for the whole of the nineteenth century. Boonstra also reports that the influence of literacy, the result of at least some years of educational attainment, on occupational status decreased after 1850 (Boonstra 1993, p. 207). He argues though that this was due to the rapid decrease in the number of illiterates in the nineteenth century. This phenomenon decreased the discriminating power of literacy on occupational status. The results of the present study support Boonstra’s argument that literacy no longer served as a useful indicator of educational attainment, for between 1880 and 1920 there seems to have been an increase rather than a decrease in the influence of educational attainment on occupational status.

More refined analyses taking regional differences in development into account show that the total association between a father’s and a son’s occupational status and the direct influence of a father’s occupational status on that of his son did not differ between municipalities with educational expansion, mass communication, urbanization, and geographical mobility in a direct comparison with municipalities in which these processes had developed to a lesser extent. This finding holds for the late nineteenth as well as the early twentieth centuries. One interpretation of this result is that the differences between more and less developed municipalities were rather small at the end of the nineteenth and the beginning of the early twentieth centuries. The influence of technological and cultural developments may have reached beyond the borders of the “modern” municipalities, perhaps due to the introduction of the bicycle, allowing one to travel over longer distances (Van der Woud 2007; Van Poppel and Ekamper 2005), or to the increased means of mass transport, allowing city dwellers to visit the countryside and villagers to experience city life (Van der Woud 2007). That is not to say that the status attainment process was similar everywhere. The analyses revealed two notable differences in the status attainment

Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)

process between more and less advanced contexts at one point in time. For the 1880-1881 cohort, the influence of ascription was weaker with regard to educational attainment in municipalities with more mass communication, while for the 1920 cohort it was weaker in regions which had seen greater educational expansion.

There were other notable regional differences as well. The finding that, on average, in the Netherlands, the influence of ascription declined over time while that of educational attainment became more important applies solely to the more developed municipalities at the beginning of the twentieth century. In municipalities with greater educational expansion, more mass communication, more urbanization, and greater geographical mobility, the direct influence of a father's status on that of his son was weaker for sons in the 1920 cohort than for sons in the 1880-1881 cohort. This finding is consistent with Van Leeuwen and Maas (1995, p. 122), who find an increase in mobility rates in the cities of the Dutch province Utrecht, but not in more rural areas. Furthermore, it was only among the 1920 cohort that the influence of a son's educational attainment on his occupational status was larger for those born in municipalities with greater educational expansion, urbanization, and geographical mobility, and only in comparison with sons from the 1880-1881 cohort who were also born in more advanced contexts. What this implies is that the influence of educational attainment did differ within more advanced municipalities between the end of the nineteenth and the beginning of the twentieth centuries, but that it did not differ between more and less advanced contexts.

The paradox that though the influence of educational attainment changed over time within advanced contexts it did not differ between more and less advanced contexts can be explained. The influence of educational attainment on a son's occupational status is likely to have increased in both more and less advanced contexts, but at a different pace. In less advanced contexts the increase will have been slow, since there was no significant change over time in the influence of educational attainment in these lesser developed contexts. In more advanced contexts the increasing influence of educational attainment will have been more rapid, since in those contexts there was a significant change over time. However, the results showed that there were no significant differences between more and less advanced regions at one point in time. Thus the pace at which the influence of educational attainment increased in advanced regions was not very different from the pace at which educational attainment became more influential in less advanced regions.

The unique data used in the present study provided the possibility for a direct test of the industrialism thesis and the status maintenance theory on their home ground: the period of industrialization and educational expansion. As expected by both theories, the influence of a father's occupational status had decreased by the early twentieth century, though the decrease in influence was notable over time only in the more developed areas, and not between less and more advanced contexts at one point in time. Both theories expected the importance of educational attainment for occupational status to increase. The results support this hypothesis as well, but, again, the differences between more and less developed municipalities were not as evident as they were within more developed

municipalities over time.

The two theories differed with regard to their expectations of the influence of social background on educational attainment. While the industrialism thesis expected a decline, the status maintenance theory expected an increase in the importance of ascription. Tests of this hypothesis showed that ascribed characteristics were less important for educational attainment in areas with mass communication at the end of the nineteenth century, while ascription was also less important in regions with greater educational expansion at the beginning of the twentieth century. In none of the many analyses in this chapter was evidence found of an increasing influence of a father's occupational status on his son's educational attainment. In other words, while there was some evidence of a declining influence of ascription with regard to a son's occupational status as well as to a son's educational attainment, none of the results indicate that this loss of influence was compensated for, a claim advocated by the status maintenance theory. The results produced by this exercise therefore favour the industrialism thesis, while refuting the status maintenance theory.

Future research may benefit as well as improve on the findings provided in this chapter. For one, this chapter has shown that the lack of change in the total association between the occupational status of a father and son obscures changes in the status attainment process. This applies especially to changes with regard to a son's educational attainment. The decreasing influence of a father's occupational status on his son's educational attainment never translated into a decreasing total association between the occupational status of father and son. Likewise, the increasing influence of a son's educational attainment on a son's occupational status never crystallized into an increasing total association between a father's and a son's occupational status. However, the decreasing direct effect of a father's occupational status on his son's status did, most of the time, decrease the total status association between father and son. Thus changes found in the total status association between father and son were most likely driven by changes in the direct influence of a father's occupational status on that of his son. Nevertheless, whether the total association between a father's occupational status and that of his son changed or not, researchers should be aware of hidden changes in the status attainment process when information on a son's educational attainment is unavailable.

Future research may improve on a number of issues related to data limitations. First of all, rather than combining two datasets in order to analyse the status attainment model, as was done in this chapter, advances in digitization may lead to a single dataset from which the status attainment process during industrialization may be studied. One way to construct such a dataset is to digitize records of students still available in school archives and match those to the digitized life course data which is increasingly becoming available.

Another improvement concerns the availability of regional indicators. For one, there is need for an indicator of industrialization. Such an indicator might be available for other countries or time periods, and might become available for the Netherlands when the

Ascription and achievement from a historical contextual perspective (the Netherlands, 1887-1941)

proportion of people working in the primary and/or secondary sectors can be estimated at the municipal level. National census data would be a key source for such an indicator; it is to be hoped that these will become available in the near future. Furthermore, other indicators might become available as well, for example with regard to means of transport, such as the number of bicycles or the availability of trams and trains.

The indicators used for several modernization processes covered in this chapter are rather innovative. This raises issues with regard to the validity of the measures used. Future research could test the indicators used in this chapter by comparing them with other indicators. For example, mass communication could be tested using data on newspaper coverage. More and more newspapers from the past are being digitized, and they might provide insight into the extent to which information that used to be restricted to personal networks was disseminated among large groups. For example, the type and number of job advertisements and contact ads could be used to determine the extent to which mass communication was a resource to those looking for a job or a partner.

The method of analysis employed could be improved as well. Despite the fact that some of the indicators are continuous variables, cut-points were chosen to differentiate between more and less advanced contexts in order to estimate the regression models. Perhaps a more advanced technique could take advantage of the measurement level, while estimating the number of people who had secondary education from the HSN sample. Furthermore, the influence of each context was tested separately, rather than in a multivariate model. Such a multivariate model might indicate the relative importance of each of the indicators.

Notwithstanding this scope for improvement, the approach taken in this chapter provides a novel view of developments in the status attainment process during industrialization and educational expansion, as well as a fruitful test of the industrialism thesis and the status maintenance theory. It is clear from our findings that the importance of social origin decreased, while achievement became more important for occupational status, although this change might not have touched upon those from lower social backgrounds until well into the twentieth century. Although more important in more developed regions, there was a gradual, but geographically universal, shift towards openness throughout the Netherlands in the intergenerational status attainment process.

6 Conclusions and discussion

6.1 Research questions and approach

In sociology, for almost an entire century social mobility research has been preoccupied mainly with two research questions. The first concerns the degree to which a person's background (*ascription*) and skills (*achievement*) determine their position in society. The second addresses whether industrialization changed the relative importance of ascription and achievement (Ganzeboom, Treiman, and Ultee 1991; Hout and DiPrete 2006; Sorokin 1959). Ganzeboom, Treiman, and Ultee describe how a long tradition of research has struggled with these questions (Ganzeboom, Treiman, and Ultee 1991). Many studies provide contradictory findings on the existence of a trend towards greater openness. As a result, researchers spent much of their time trying to improve on the available methods of analysis. Less attention was paid to specific tests of the influence of industrialization on the status attainment process. A number of studies do address the relationship between industrialization and the status attainment process, but most of them use time as an indicator of the degree of industrialization. Furthermore, the more advanced studies are restricted to the period after World War II, and are confined to comparisons of countries that are already industrialized or of developing countries that nowadays industrialize in a fashion different from that of the past. The present thesis aims to add to this long research tradition by studying determinants of people's position in society in a period before and during industrialization. To do so, it addresses the following questions:

1. How much variance existed –temporally and regionally– in the effects of ascribed and achieved characteristics on status attainment in the Netherlands between 1811 and 1941?
2. How can changes and regional differences in the process of status attainment in the Netherlands between 1811 and 1941 be explained?

This dissertation encompasses the nineteenth and early twentieth centuries, which is beneficial for two reasons. For one, the period covers a long time span, allowing smaller changes over time which are typical for status attainment research to be detected (Ganzeboom, Luijkx, and Treiman 1989). But, more importantly, it focuses on a period before and during industrialization. This implies that apart from studying differences over time in the degree of industrialization, one can also assess regional differentiation, since industrialization occurred neither everywhere at the same time nor at the same pace. To account for this regional variation the thesis zooms in on the level of the municipality, rather than the national level as is common in contemporary comparative research. Thus the approach taken also allows for the detection of regional differences.

Another contribution made by this dissertation is that it spells out the arguments available in the literature on why “modernization” would influence the status attainment process. It shows that, according to the theories, processes of modernization, such as industrialization, urbanization, and mass communication, affect the status attainment process in different ways. To test the specific hypotheses, the thesis proposes indicators

Conclusions and discussion

for each of the modernization processes.

This research also takes an innovative approach by combining individual-level data and contextual-level data. This approach would not have been feasible without the magnificent efforts of those responsible for digitizing marriage records and data on the characteristics of municipalities in the Netherlands. For the purpose of this dissertation new data have been retrieved as well, enriching the existing data. At the individual level, about 1,000 additional marriage records were retrieved and digitized by the Historical Sample of the Netherlands (Zijdeman 2006). The additional data allow for an explicit study of the influence of educational attainment in the status attainment process in the Netherlands at the end of the nineteenth and the beginning of the twentieth centuries. Additional data have been gathered too at the macro level, in order to study the influence of modernization processes such as educational expansion and mass communication in the Netherlands in the nineteenth and early twentieth centuries.

To test the hypotheses based on the individual-level and macro-level data, in this dissertation specific hierarchical linear regression models are estimated. These models allow for analyses of the influence of time-varying contextual characteristics on individual outcomes. In other words, using this technique regional differences, as well as changes over time, in the status attainment process in the Netherlands in the nineteenth and early twentieth centuries can be studied.

Finally, my work has contributed to the recently developed historical occupational stratification scale: Historical CAMSIS (HIS-CAM) (Lambert *et al.* 2006; Zijdeman and Lambert 2010). As a CAMSIS scale (Prandy 2000; Stewart, Prandy, and Blackburn 1980) HIS-CAM is based on associations between individuals' occupations, in this case derived from 1.5 million records from six different countries covering the period 1800 to 1938. It is the first and only continuous occupational stratification scale available that can be used with a wide range of historical occupations. In this dissertation the validity of HIS-CAM is studied by comparing it with a number of other measures of class and occupational status. As a historical measure of occupational stratification HIS-CAM proved to be closely related to two Dutch occupational stratification scales. This finding has two important implications. One is that HIS-CAM is an appropriate measure for historical occupational data in the Netherlands. The other, which is probably more significant, is that occupational scales derived using entirely different measures produce very similar outcomes.

6.2 Summary of findings and conclusion

6.2.1 Findings in relation to the first research question

In the literature, two types of mechanism have been discerned that influence the status attainment process: ascription and achievement. Ascription refers to the influence of ascribed characteristics, characteristics that are part of one's heritage and cannot be altered. Achievement refers to the influence of one's own actions that are based on

talent. To answer our research questions, this study focuses on two instances of the status attainment process: the transfer of status through marriage and the transfer of status from father to son. In the case of marriage, ascription is determined through the association between the occupational status of a groom's father and a bride's father. In the case of intergenerational status attainment, the influence of a father's occupational status on his son's status and on his son's educational attainment is considered to be ascription. Achievement is measured by the influence of a son's educational attainment on his occupational status.

Some relationships in the status attainment models in this study consist of both ascribed and achieved characteristics. With regard to marriage this is the relationship between a groom's occupational status and that of his father-in-law. A groom's choice of bride based on her social origin (her father's occupational status) is considered ascription. The bride's selection of the groom based on his occupational status is considered to be achievement. Historical studies of intergenerational status attainment seldom have access to information on a son's educational attainment. In that case, only the association between a father's and a son's occupational status can be studied. This "total" association consists of both ascribed and achieved characteristics.

The influence of ascribed and achieved characteristics on status attainment by marriage, as well as on intergenerational status attainment, changed over time and differed regionally in the Netherlands in the nineteenth and early twentieth centuries. In the province of Zeeland around 1850, the association between the social origins of bride and groom started to decline at the rate of about five percent per decade. The association between the groom's occupational status and the bride's social origin did not change over time. As a result, by the beginning of the twentieth century the association between the social origin of the bride and groom had become somewhat weaker than the association between the bride's social origin and the groom's occupational status. In other words, to be selected as a marriage partner a groom's achieved characteristics had become more important than his ascribed characteristics.

That is not to say that the effects of ascription and achievement were the same everywhere. In some municipalities, the influence of ascription that young couples experienced was twice as large as the average, while in other municipalities it was only a tenth of the average. Also, the association between a groom's occupational status and the bride's social origin differed regionally. In some regions it was twice as large as the average, while in other regions the relationship was virtually non-existent.

The results found for Zeeland and the Netherlands might appear contradictory, possibly indicating that the status attainment process in Zeeland differed from that in the whole of the Netherlands. One argument in favour of that position might seem to be that the province of Zeeland was more agricultural than the Netherlands as a whole, which may have led to a different status attainment process in Zeeland than in the Netherlands generally. However, this argument does not apply to the findings in this dissertation. All analyses

Conclusions and discussion

have been conducted at the level of the municipality, taking contextual characteristics such as the degree of urbanization into account. Whether or not there were municipalities in Zeeland less urbanized on average than the Netherlands as a whole is therefore not relevant.

Another possible interpretation of the findings in Zeeland and the whole of the Netherlands around the turn of the century is that they describe an inverted U-shaped pattern. The results for Zeeland covering the period 1811-1890 show the increasing influence of a father's occupational status on that of his son. The analyses for the province of Zeeland between 1851 and 1915 show no change over time in the association between a father's and a son's occupational status. The analyses for the whole of the Netherlands between 1887 and 1941 show a decrease in the association between the occupational status of a father and son. The results found in Zeeland for the period including the turn of the century could thus describe the top of an inverted U-shaped pattern, while the findings for the whole of the Netherlands in a slightly later period describe the right-hand side of the inverted U-shaped pattern. This interpretation of the findings suggests that the general trend towards a more open society, as found in the Netherlands after World War II (Ganzeboom and Luijkx 1995), started at the turn of the century.

The transfer of status between a father and son did not only change over time, it differed regionally too. While in Zeeland the total association between a father's occupational status and that of his son was on average 0.5, in some municipalities this association was nearly twice as large, whereas in others it was only a tenth of the average.

The importance of taking regional variation into account also becomes evident from the results for the whole of Netherlands around the turn of the century. In general, i.e. when regional variation is not accounted for, the results indicate that there was a decrease in the direct effect of a father's occupational status on that of his son (ascription), as well as an increase in the influence of a son's educational attainment on his occupational status (achievement). However, the analyses that specify regional differences show that these changes in ascription and achievement occurred mainly in regions that were more developed.

In sum, the answer to the first research question is twofold. With regard to the selection of a marriage partner, the influence of ascribed characteristics declined halfway through the nineteenth century. The intergenerational status attainment process was, in contrast, characterized by the increasing importance of ascription throughout the nineteenth century. It was not until the start of the twentieth century that the influence of ascribed characteristics weakened. However, these changes did not occur everywhere to the same degree; in some places they did not occur at all. For both status attainment by marriage and intergenerational status attainment were characterized by regional variation.

6.2.2 Findings in relation to the second research question

The second research question addresses the question of how to account for the changes and regional differences in the status attainment process. In order to do so, this dissertation focused on the influence of several contextual developments that are sometimes classified under the general heading of “modernization”. These developments are: industrialization, educational expansion, mass communication, mass transport, urbanization, and geographical mobility. Table 6.1 provides an overview of our findings concerning the influence of these macro-level processes on status attainment at the individual level.

Various macro-level developments decreased the influence of ascribed characteristics on status attainment by marriage as well as on intergenerational status attainment. The first column in Table 6.1 shows that the association between the occupational status of the bride’s father and that of the groom’s father was weaker in more industrialized regions in the nineteenth century. In the nineteenth and early twentieth centuries the association between the occupational status of the bride’s father and that of the groom’s father was also weaker in regions with greater mass communication.

Mass communication also diminished the direct influence of a father’s occupational status on that of his son in the last few decades of the nineteenth century and the first few decades of the twentieth century. In the same period, the direct influence of a father’s status on that of his son also diminished in regions characterized by higher rates of educational participation. Furthermore, in regions that were more urbanized and had higher rates of geographical mobility the direct influence of a father’s occupational status on that of his son diminished around the turn of the century.

The final characteristic of ascription studied in this dissertation is the influence of a father’s occupational status on his son’s educational attainment. While mass communication diminished the influence of a father’s occupational status at the end of the nineteenth century, educational expansion decreased a father’s influence on his son’s educational attainment in the first few decades of the twentieth century. None of the other macro-level processes could account for the decreasing importance of ascription with regard to a son’s educational attainment.

In sum, of all the macro-level developments studied in this dissertation, the impact of mass communication on ascription seems to have been the most universal, since it diminished the influence of social background on obtaining a partner, education, and occupational status. Industrialization, studied only with regard to status attainment by marriage, accounted for the decreasing influence of ascription. Educational expansion did not diminish the influence of ascription in the process of obtaining a partner, but it did decrease the direct influence of a father’s occupational status on his son’s occupational status and on his son’s educational attainment. Urbanization, geographical mobility, and mechanized transport were less systematically related to the decreasing influence of ascription.

Table 6.1 Overview of findings concerning the influence of local contexts on ascribed and achieved characteristics in the status attainment process in the Netherlands during the nineteenth and early twentieth centuries

	Industrialization	Urbanization	Mass communication	Urbanization	Mass communication	Urbanization	Geographical mobility	Educational expansion	Mass transport	Mass communication	Urbanization	Geographical mobility	Educational expansion	Mass communication	Urbanization	Geographical mobility	Educational expansion	
	1811-1890			1851-1915			1887-1941			The Netherlands								
1: Derived from Table 4.2 for the period 1811-1915																		
(): Significant but unsubstantial effects between brackets																		
Ascription	OF ↔ OFIL	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Occupation father – Occupation father-in-law																	
	OS																	
	OF → OS																	
Achievement	ES																	
	OF ↔ OS																	
	Occupation father – Education son																	
	ES																	
Mixed	OF ↔ OS																	
	Education son – Occupation son																	
	ES																	
	OF ↔ OS																	
Mixed	OF ↔ OS																	
	Occupation father – Occupation son (total)																	
	ES																	
	OF ↔ OFIL																	
Mixed	OS																	
	Occupation son – Occupation father-in-law																	
	ES																	
	OS																	

According to Table 6.1 macro-level developments also account for the increasing importance of achievement in intergenerational status attainment. In regions that were more developed in terms of having a higher rate of educational participation, urbanization, or geographical mobility at the end of the nineteenth as well as at the beginning of the twentieth centuries, the influence of a son's educational attainment on his occupational status increased over time. In regions with greater mass communication, the influence of a son's educational attainment on his occupational status was smaller than in regions with less mass communication. This latter effect is at odds with the theories tested in this dissertation, and I have no arguments that can convincingly explain it.

Finally, Table 6.1 shows the findings concerning the associations that are composed of ascribed as well as achieved characteristics. The influences of the macro-level developments on these associations are quite mixed, but on the whole in line with the descriptive results illustrated above. In the nineteenth century, industrialization strengthened the association between a groom's occupational status and that of his father-in-law. In the same period, industrialization also increased the total association between the occupational status of a father and son. Mass communication also increased the association between the occupational status of a groom and that of his father-in-law in the nineteenth and the beginning of the twentieth centuries. The total association between the occupational status of father and son increased as well due to mass communication in the nineteenth century. However, in the first half of the twentieth century the influence of mass communication reversed. Urbanization had a positive influence on the total status association between a father and son until the end of the nineteenth century. By the late nineteenth century this influence had disappeared. The total association between the occupational status of a father and that of his son was not influenced by geographical mobility and educational expansion either in the late nineteenth century. Nor did any of these processes have a substantial influence on the association between a groom's occupational status and that of his father-in-law. However, in the first half of the twentieth century urbanization, geographical mobility, and educational expansion all decreased the total association between the occupational status of a father and that of his son.

Statements on whether the results of these mixed associations changed due to ascription or achievement can only be speculative. Nevertheless, the findings in Table 6.1 for the whole of the Netherlands on the total association between the occupational status of father and son (row 5) are more representative of the results found for ascription (row 2 and 3) than for achievement (row 4). If this representativeness was stable over time, then the results on the mixed associations indicate that industrialization and mass communication increased the importance of ascription in the nineteenth century.

In sum, to answer the second research question the influence of various macro-level processes on the status attainment process has been considered. Spatial and temporal variation in ascription and achievement, in both status attainment by marriage and in the intergenerational status attainment process, are best explained by industrialization and mass communication. Having said this, mass communication was unexpectedly found

Conclusions and discussion

to diminish the influence of achievement in intergenerational status attainment. The expansion of secondary education, which started in the second half of the nineteenth century, accounts for the decreasing influence of ascription and the increasing importance of achievement in the intergenerational status attainment process, but not until the start of the twentieth century.

6.3 Discussion

6.3.1 Theoretical implications

Two theories have played a central role in this study: the industrialism thesis (Blau and Duncan 1967; Kerr *et al.* 1960; Treiman 1970) and the status maintenance theory (Bourdieu and Passeron [1977] 1990; Collins 1971; Collins 1979; Grusky 1983). The industrialism thesis expects the outcome of the status attainment process to change, since macro-level developments such as industrialization and educational expansion diminish the influence of ascription and enhance the importance of achievement. The status maintenance theory argues, in contrast, that as a result of industrialization and educational expansion people deploy compensatory strategies to maintain and pass on their status positions. The status maintenance theory thus expects the status attainment process to return to its original state.

I will evaluate the efficacy of these theories by discussing their usefulness with regard to the derivation of hypotheses as well as to their empirical success in explaining the results found in this study. At the macro level, the industrialism thesis has the advantage that it specifies for a large number of processes how they affect status attainment. For example, in Chapter 3 it was argued that with regard to the selection process of marriage partners industrialization would enhance the importance of a groom's occupational status, since it became a more important determinant of future resources. Other macro-level developments, such as mass communication and the expansion of education, were expected to diminish cultural differences and so decrease the importance of a groom's status as a criterion in the process of selecting a spouse. Furthermore, Chapter 4 provides a concise overview of arguments in the literature on how industrialization and other processes differ in how they influence the status attainment model. For example, urbanization was said to diminish the influence of a father's occupational status on both his son's educational attainment and occupational status, while arguments on the influence of geographical mobility are restricted to the influence of a father's occupational status on his son's status. In sum, the industrialism thesis allows for the derivation of specific macro-level hypotheses.

The industrialism thesis is less conclusive at the individual level, especially with regard to the motives for people's actions. Its main argument is that there is a growing tendency to strive for achievement and to accept people based on their skills. Therefore people will pursue educational attainment in order to increase their own skills and so their chances

of being selected in the marriage and labour markets. However, it is unclear how this mechanism can be applied with regard to the relationship between fathers and sons. The industrialism thesis expects a weaker relationship between fathers and their children's educational attainment, but if skills become more important would fathers not then invest in their children's education? If they do, then ascription would, as the status maintenance theory suggests, become more important.

The status maintenance theory is more conclusive regarding what people aim for and argues that people will try to maintain or pass on their status positions. Furthermore, status maintenance theory claims that individuals will look for new means to do so when current ways of status transfer become inefficient. However, it is more difficult to derive hypotheses from this theory on how macro-level developments influence status maintenance.

A change in the strategy to maintain status draws on two assumptions. One is that one or more macro-level developments compromise the current strategy. The other assumption is that there is an alternative available through which the status position can be maintained. In the classic version of the status maintenance theory, for example, industrialization diminished opportunities for the direct transfer of status, while educational expansion provided opportunities for an alternative transfer of status.

Whether one should expect status to be maintained in industrializing regions in which educational expansion has not yet developed completely (in the Netherlands in the second half of the nineteenth century for instance) is unclear. Nor is the deriving of hypotheses on what other macro-level developments might have functioned as a threat to direct occupational status or as an opportunity for the alternative transfer of status a straightforward matter. For example, mass communication diminished cultural barriers. As a result it must have been increasingly difficult to recognize others from the same social standing in order to maintain status positions. How did people re-establish these cultural barriers? Could, for example, tourism, which became increasingly popular around the turn of the twentieth century, offer people a new alternative to distinguish themselves by allowing them to invest their resources in journeys to other municipalities, or even abroad?

Finally, the status maintenance theory is often phrased in terms of elite, or upper class, people trying to maintain their position. The theory is less clear on whether "status maintenance" is a more universal approach or rather a strategy reserved for those in society's higher positions. The approach in this dissertation is a more universal one. The benefits of passing on and maintaining status positions do not seem to be dependent on one's social origin or one's current position.

In sum, both the industrialism thesis and the status maintenance theory provide hypotheses on how industrialization and educational expansion changed the status attainment process. Hypotheses on how other macro-level developments influence status attainment are more easily derived from the industrialism thesis than from the status maintenance theory, although the latter is more precise with respect to the purposive

Conclusions and discussion

action of individuals.

Another way to evaluate both theories is to compare them based on their performance in empirical tests. With regard to mate selection, hypotheses were derived only from the industrialism thesis. The industrialism thesis correctly predicted the pattern in ascription and achievement between more and less industrialized regions. Out of ten other hypotheses on the influence of macro-level developments on ascribed and achieved characteristics only two were correct. Thus, it appears that with regard to partner selection the industrialism thesis cannot be generalized to macro-level developments other than industrialization.

Of the six hypotheses drawn from the industrialism thesis on the total association between a father's and a son's occupational status only two were confirmed. Two hypotheses were derived from status maintenance theory, of which one was confirmed and the other was indirectly supported. As a result, Chapter 4 concluded that the findings did not support the industrialism thesis but did corroborate the status maintenance theory. However, in light of the findings of Chapter 5 this conclusion needs to be revisited.

Chapter 5 focused on the intergenerational status attainment process, including the influence of a son's educational attainment. It showed that the influence of a father's occupational status was smaller in regions that were more developed with regard to educational expansion, mass communication, urbanization, and geographical mobility. Furthermore in these regions the influence of ascription declined over time, while the importance of achievement increased (with the exception of regions with mass communication). When comparing the hypotheses derived from the industrialism thesis in Figure 4.1 with the results in Table 6.1, five out of six hypotheses on four macro-level processes are confirmed. When comparing Figure 4.2 on the status maintenance theory with the results from Table 6.1, two out of three hypotheses on one macro-level development (educational expansion) are confirmed. These results favour the industrialism thesis, since that thesis is more generalizable and more accurate in its predictions.

Moreover, there is one status attainment hypothesis that makes the crucial difference between the industrialism thesis and the status maintenance theory. This hypothesis states that the influence of a father's occupational status will decrease (industrialism thesis) or increase (status maintenance theory) with educational expansion. As predicted by the industrialism thesis, the strength of this relationship diminished. This result thus supports the industrialism thesis, while it rejects the status maintenance theory.

Chapter 5 also revealed that macro-level processes affected the status attainment process in more ways than was hypothesized by the industrialism thesis. These "unforeseen" effects apply most of all to the increasing influence of a son's educational attainment on his occupational status. Since there were no theoretical arguments for these positive effects, I did not take them into consideration, and assumed that the total association between the occupational status of a father and son could only diminish according to the logic of industrialism thesis. It was therefore concluded that according to the industrialism thesis changes in status attainment could only decrease. However,

if relationships in the status attainment model are both strengthening and weakening one cannot a priori determine whether the total association between a father and son is increasing or decreasing. Looking at the separate relationships in the status attainment model, Table 6.1 shows that all significant effects related to ascription are negative, while all but one of the significant effects related to achievement are positive. Although not all of them were predicted by the industrialism thesis, these results corroborate the industrialism thesis and reject status maintenance theory.

The discussion above provides a straightforward conclusion. The findings in this dissertation are more consistent with a shift from ascription to achievement in status attainment by marriage and intergenerational status attainment than they are representative of a consolidation of status positions. Hence, there is general support for the industrialism thesis, while the status maintenance theory is rejected. Also, the industrialism thesis proved to be more generalizable than the status maintenance theory. Nevertheless, many of the hypothesized effects of macro-level processes other than industrialization on status attainment by marriage were not found. Furthermore, some macro-level processes, such as educational expansion and geographical mobility, influenced the intergenerational status attainment process in more ways than anticipated by the industrialism thesis.

6.3.2 Suggestions for future research

The aim of this dissertation was to answer the challenge posed by previous research to try to explain changes in the status attainment process from a contextual perspective (Ganzeboom, Treiman, and Ultee 1991). In an attempt to do so, a number of issues were encountered on which future research might shed some light.

At a theoretical level progress can be achieved by expanding the theoretical framework of the industrialism thesis in two ways. To explain changes in status attainment by marriage, a framework of individual preferences, third-party influence, and structural boundaries exists from which hypotheses can be derived (Kalmijn 1998). This framework should be expanded in order to explain regional differences and changes over time in intergenerational status attainment. Such a specification would provide more explicit hypotheses on the choices people would like to make and the choices they actually make due to the influence of others and as a result of contextual restrictions.

Special attention should be paid to the influence of third parties. Currently most arguments emphasize the decreasing importance of traditional third parties, such as parents, family, and Church. Structural changes that occurred with industrialization would have decreased the overlap between the activities of individuals and third parties, such as work and leisure (Coleman 1990; Fischer *et al.* 1977). As a result, relationships that served multiple purposes would have become single-purpose relationships. However, today, multipurpose relationships are still no exception, and personal matters are more likely to be discussed in such multiplex relationships than in single-purpose relationships (Mollenhorst 2008). Thus, personal networks, increasingly consisting of non-kin relations, might have affected individual's choices differently over time.

Conclusions and discussion

In a review of 55 years of sociological research by the International Sociological Association's Research Committee 28 (RC28), the research committee on social stratification and mobility, Hout and DiPrete (2006) argued that the RC28's number one finding is that occupations are ranked in the same order in most nations over time, a phenomenon referred to as the Treiman constant. This conclusion is quite remarkable, especially since Treiman himself noted that his ranking of occupations does "a poorer job of estimating the prestige of agricultural occupations in countries with high proportions of the labour force engaged in agriculture than in countries with a largely non-agricultural labour force" (Treiman 1977, p. 183). The comparison of Treiman's SIOPS with two Dutch stratification scales and HIS-CAM on historical data did indeed show discrepancies with regard to the positioning of farmers between Treiman's occupational prestige scale on the one hand and HIS-CAM and the two Dutch scales on the other. Since preindustrialized societies are characterized by a large proportion of farmers in the labour force, this finding raises doubt about the universality of Treiman's prestige scale. Likewise, it brings into question whether the occupational ranking provided by HIS-CAM is universally representative, especially in an era in which the occupational structure changes quite dramatically. By comparing HIS-CAM with other measures of social hierarchy, such as taxation of income or property, future research might determine the extent to which occupational rankings were universal both before and during industrialization.

The main source of occupational titles in this dissertation was marriage records. Despite the richness of this source, it also comes with certain limitations that future research might want to improve upon. One limitation is that, for women, the number of occupations registered in marriage records is relatively low and decreased over time. As a result, large-scale historical studies on status attainment are usually limited to men. Future research might investigate whether there was any systematic underregistration of female occupations, as well as the level of detail with which female occupations are recorded.

Another limitation on the use of marriage records for status attainment research is that they can be used only to study status attainment by marriage and intergenerational status attainment. They cannot be used to study intragenerational status attainment. Intragenerational status attainment requires multiple measures over the life course, while a marriage record provides only an occupational measure at one point in time.

Also, marriage records often fail to produce an occupational title for the fathers of the groom and bride. With regard to first marriages, about 30 percent of the occupational titles were missing, while for all marriages about 50 percent of the occupational titles of fathers were missing. This reduces any sample for which one wants to compare the occupations of the groom, the groom's father, and the groom's father-in-law to about 25 percent of the original population. In Chapter 5, an alternative source for the occupational titles of fathers was used (derived from school and municipal archives) and compared with marriage records. Although there seemed to be no selection bias, future research using life course data might unravel the source of attrition in relation to the occupations of fathers given in marriage records.

Furthermore, such research might also study the extent to which the occupation of the groom is representative of his future life course. The occupational status of the groom is likely to change over his life course, but the question is to what extent and how rapidly after marriage this occurs. This issue is especially important if differences in career patterns depend on social background. In that case the occupational title on a marriage record would for some be more representative of their position in society than for others.

To study the influence of macro-level processes on status attainment, this dissertation incorporated a number of indicators to represent these processes. Some of those indicators, such as educational expansion as indicated by the proportion of the population in school, are also used in contemporary research (Raab *et al.* 2008). However, the use of such indicators in historical research is not very common, and their validity should be tested using similar and comparable indicators.

A number of the indicators can already be improved by taking into account the fact that in some cases their influence extends beyond the level of the municipality. For example, the existence of a secondary school is beneficial not only to children in the municipality in which the school is located, but also to children in surrounding municipalities. By applying a proximity measure based on the geographical characteristics of municipalities (longitude and latitude for instance), such spillover effects may be easily incorporated. More advanced proximity measures would take geographical barriers into account.

Finally, future research might address two new research questions that result from the findings in this dissertation. With regard to intergenerational status attainment, we have shown that in the first half of the twentieth century the influence of one's social background diminished. However, this was preceded by the increasing importance of ascribed characteristics throughout the nineteenth century. Thus the question is why macro-level developments, such as industrialization, first enhanced the importance of ascription and later on decreased the influence of ascription in intergenerational status attainment. One possible explanation is that those with more resources were better able to benefit from these structural developments by investing in machinery and other property that could be passed on from father to son.

The second question concerns the difference in the development of the intergenerational status attainment process and the process of status attainment by marriage. With regard to intergenerational status attainment, the influence of social background increased during the nineteenth century but decreased in the early twentieth century. Furthermore, achievement became more important in the early twentieth century. The outcome of the status attainment process by marriage did not change at the beginning of the nineteenth century, but around 1850 the importance of a groom's social background in finding a suitable bride diminished. This prompts the question as to why the two processes of status attainment developed differently. Furthermore, the question arises as to whether the shift from ascription to achievement in intergenerational status attainment was the result of the change in status attainment by marriage.

Appendix A

Appendix A: References to occupational coding macros

Name of macro	Author(s)	Available from
isco68.sps <i>Derives Güveli social class scheme from ISCO-68 (after recoding from HISCO to ISCO-68)</i>	Güveli (2006)	http://www.ayseguveli.nl/research.aspx
isco88_mnm.sps <i>Derives manual-non-manual dichotomy from ISCO-88 (after recoding from HISCO to ISCO-88)</i>	Lambert and Bihagen (2007)	http://www.geode.stir.ac.uk/
Hisco_egp.inc <i>Derives EGP 11 class from HISCO (by adapting ISCO-68 to EGP link of Ganzeboom 2008)</i>	Maas (1997)	http://www.geode.stir.ac.uk/
Hisco_isco68.inc <i>Translates HISCO to ISCO-68</i>	Maas (2001)	requested author by email
Hisco_treiman.inc <i>Derives SIOPS from HISCO (by adapting ISCO-68 to SIOPS link of Ganzeboom 2008)</i>	Maas (2001)	requested author by email
Netherlands.sav <i>Derives HISCO from Dutch occupational titles</i>	Maas (2007)	requested author by email
occs_coded.sav <i>Derives HISCO from Dutch occupational titles</i>	Maas (2007)	requested author by email
syntax_m51_03.10.07.sps <i>Derives SOCPO from HISCO</i>	Van de Putte (2007)	requested author by email
hco_hca_v01.inc <i>Derives HIS-CAM(v.0.1) from HISCO</i>	Zijdeman (2006)	requested author by email
hsca_tulp.inc <i>Derives van Tulder scale from HISCO</i>	Zijdeman (2007)	http://www.geode.stir.ac.uk/
hsca_us82.inc <i>Derives Ultee and Sixma scale from HISCO</i>	Zijdeman (2007)	http://www.geode.stir.ac.uk/

Urls last accessed 10 February 2010.

Appendix B

Appendix B: **Municipal, district, and regional archives used to recover marriage records of VHMO pupils**

Archief Eemland

<http://www.archiefeemland.nl/>

Archiefdienst Dordrecht

http://www.archieven.nl/zoeken?p_vast=46&p_tab=1&p_form=9002

Archieven.nl

<http://www.archieven.nl/>

Brabants Historisch Informatie Centrum

<http://www.bhic.nl/>

Digitale stamboom Delft

<http://delft.digitalestamboom.nl/>

Digitale stamboom Kennemerland

<http://haarlem.digitalestamboom.nl/>

Gemeentearchief Rotterdam

<http://www.gemeentearchief.rotterdam.nl/content/>

Gemeentearchief Schiedam

<http://archief.schiedam.nl/>

Genealogie in Limburg

<http://genealogie-limburg.net/>

Genlias

<http://www.genlias.nl/nl/page0.jsp>

Groene Hart Archieven

<http://www.groenehartarchieven.nl/>

Het verleden in beeld

<http://www.geneaknowhow.net/in/beeld.htm>

ISIS – Zeeuws Archief

<http://www.zeeuwengezocht.nl/SISIS.DLL>

Noord-Hollandsche Huwelijcken

<http://genea.pedete.net/>

Regionaal Archief Leiden

<http://www.leidenarchief.nl/>

Streekarchief Voorne-Putten en Rozenburg

<http://www.streekarchiefvpr.nl/>

Toegang Op Personen (TOP)

<http://top.archiefplein.nl/websitepubliek/>

Tresoar

<http://www.tresoar.nl/>

Virtuele Studiezaal Gemeente Den Haag

<http://195.242.171.17/hga/virtuelestudiezaal/WebsitePubliek/>

Historisch Centrum Overijssel

<http://www.historischcentrumoverijssel.nl/hcoroot>

* URLs last visited on January 28th, 2010

Appendix C

Appendix C: **Standardized regression results, bootstrapped standard errors, and difference tests of the intergenerational status attainment model by cohort and context**

This appendix provides an overview of all standardized regression results, bootstrapped standard errors and difference tests presented in Chapter 5. Each tabel in this appendix compares the status attainment model of the 1920 cohort with that of the 1880 cohort. The first table applies to the Netherlands as a whole. Subsequent tables apply to specific contexts: mass communication, educational expansion, urbanization and geographical mobility. These tables not only provide comparisons between more and less advanced contexts (e.g. more or less urbanized municipalities), but within more and less advanced contexts over time as well.

In each table `tot_focc_socc` refers to the total association between the occupational status of father and son. `focc_sedu` is the influence of father's occupational status on son's educational attainment. `dir_focc_socc` is the direct effect of father's occupational status on son's occupational status. `sedu_socc` is the influence of a son's educational attainment on his occupational status. Finally, `ind_focc_socc` represents the indirect influence of father's occupational status on son's occupational status (via son's educational attainment). `N` indicates the number of cases, while `Nm` refers to the number of cases.

Appendix C:

No context specified												
N=881			N=1292			1920			Difference 1880-1920			
1880			No context			1920			No context			
Nm=363	beta	boot std err	P> z	Nm=430	beta	boot std err	P> z	b1920-b1880	P _{two-sided}	P _{one-sided}		
	0.627	0.040	0.000	tot_focc_socc	0.485	0.029	0.000	tot_focc_socc	0.004			
	0.255	0.021	0.000	focc_sedu	0.239	0.015	0.000	focc_sedu	0.532			
	0.601	0.044	0.000	dir_focc_socc	0.449	0.032	0.000	dir_focc_socc		0.003		
	0.103	0.022	0.000	sedu_socc	0.149	0.016	0.000	sedu_socc		0.046		
	0.026	0.006	0.000	ind_focc_socc	0.036	0.004	0.000	ind_focc_socc	0.208			

Mass communication											
N=384	1880	LOW	N=497		1880	HIGH	1880: Difference LOW-HIGH				
Nm=277	beta	boot std err	P> z	Nm=88	beta	boot std err	P> z	bHIGH-bLOW	P _{two-sided}	P _{one-sided}	
	0.587	0.055	0.000	tot_focc_soccc	0.605	0.061	0.000	tot_focc_soccc	0.017	0.833	
	0.315	0.042	0.000	focc_sedu	0.214	0.024	0.000	focc_sedu	-0.102	0.034	
	0.544	0.064	0.000	dir_focc_soccc	0.585	0.066	0.000	dir_focc_soccc	0.041		0.327
	0.137	0.042	0.001	sedu_soccc	0.091	0.028	0.001	sedu_soccc	-0.046		0.180
	0.043	0.014	0.002	ind_focc_soccc	0.019	0.007	0.005	ind_focc_soccc	-0.024	0.132	
N=400	1920	LOW	N=892		1920	HIGH	1920: Difference LOW-HIGH				
Nm=277	beta	boot std err	P> z	Nm=164	beta	boot std err	P> z	bHIGH-bLOW	P _{two-sided}	P _{one-sided}	
	0.469	0.056	0.000	tot_focc_soccc	0.431	0.040	0.000	tot_focc_soccc	-0.038	0.585	
	0.272	0.042	0.000	focc_sedu	0.216	0.017	0.000	focc_sedu	-0.056	0.220	
	0.408	0.063	0.000	dir_focc_soccc	0.402	0.043	0.000	dir_focc_soccc	-0.006		0.466
	0.225	0.035	0.000	sedu_soccc	0.138	0.018	0.000	sedu_soccc	-0.087		0.014
	0.061	0.014	0.000	ind_focc_soccc	0.030	0.005	0.000	ind_focc_soccc	-0.031	0.038	
LOW: Difference 1880-1920											
b1920- b1880	P _{two-sided}	P _{one-sided}	b1920- b1880		b1920- b1880		b1920- b1880				
-0.118	0.133		tot_focc_soccc	-0.173	0.018						
-0.043	0.462		focc_sedu	0.003	0.925						
-0.136		0.065	dir_focc_soccc	-0.184		0.010					
0.087		0.055	sedu_soccc	0.047		0.082					
0.018	0.379		ind_focc_soccc	0.010	0.212						

Educational expansion											
N=458	1880	LOW	N=423	1880	HIGH	1880: Difference LOW-HIGH					
Nm=316	beta	boot std err	P> z	Nm=54	beta	boot std err	P> z	bHIGH-bLOW	P _{two-sided}	P _{one-sided}	
	0.627	0.053	0.000	tot_focc_soccc	0.570	0.075	0.000	tot_focc_soccc	-0.057	0.534	
	0.281	0.034	0.000	focc_sedu	0.231	0.028	0.000	focc_sedu	-0.050	0.257	
	0.589	0.059	0.000	dir_focc_soccc	0.551	0.082	0.000	dir_focc_soccc	-0.039		0.351
	0.134	0.034	0.000	sedu_soccc	0.084	0.035	0.017	sedu_soccc	-0.050		0.154
	0.038	0.011	0.000	ind_focc_soccc	0.019	0.009	0.034	ind_focc_soccc	-0.018	0.193	
N=612	1920	LOW	N=680	1920	HIGH	1920: Difference LOW-HIGH					
Nm=380	beta	boot std err	P> z	Nm=55	beta	boot std err	P> z	bHIGH-bLOW	P _{two-sided}	P _{one-sided}	
	0.467	0.041	0.000	tot_focc_soccc	0.414	0.047	0.000	tot_focc_soccc	-0.053	0.398	
	0.276	0.027	0.000	focc_sedu	0.204	0.019	0.000	focc_sedu	-0.073	0.028	
	0.422	0.046	0.000	dir_focc_soccc	0.383	0.050	0.000	dir_focc_soccc	-0.039		0.281
	0.162	0.025	0.000	sedu_soccc	0.154	0.021	0.000	sedu_soccc	-0.008		0.404
	0.045	0.009	0.000	ind_focc_soccc	0.031	0.005	0.000	ind_focc_soccc	-0.013	0.191	
HIGH: Difference 1880-1920											
b1920- b1880	P _{two-sided}	P _{one-sided}	b1920- b1880	P _{two-sided}	P _{one-sided}						
-0.160	0.016		tot_focc_soccc	0.077							
-0.004	0.922		focc_sedu	0.427							
-0.167		0.013	dir_focc_soccc		0.040						
0.028		0.257	sedu_soccc		0.045						
0.007	0.609		ind_focc_soccc	0.258							

Urbanization											
N=252	1880	LOW	N=629	1880	HIGH	1880: Difference LOW-HIGH					
Nm=196	beta	boot std err	P> z	Nm=169	beta	boot std err	P> z	bHIGH-blOW	P _{two-sided}	P _{one-sided}	
	0.604	0.070	0.000	tot_focc_soccc	0.620	0.052	0.000	tot_focc_soccc	0.015	0.859	
	0.293	0.046	0.000	focc_sedu	0.244	0.022	0.000	focc_sedu	-0.048	0.349	
	0.561	0.082	0.000	dir_focc_soccc	0.597	0.056	0.000	dir_focc_soccc	0.037		0.355
	0.150	0.051	0.003	sedu_soccc	0.091	0.026	0.000	sedu_soccc	-0.059		0.151
	0.044	0.017	0.011	ind_focc_soccc	0.022	0.007	0.001	ind_focc_soccc	-0.022		0.246
N=236	1920	LOW	N=1056	1920	HIGH	1920: Difference LOW-HIGH					
Nm=185	beta	boot std err	P> z	Nm=257	beta	boot std err	P> z	bHIGH-blOW	P _{two-sided}	P _{one-sided}	
	0.437	0.075	0.000	tot_focc_soccc	0.464	0.034	0.000	tot_focc_soccc	0.027	0.741	
	0.331	0.060	0.000	focc_sedu	0.221	0.016	0.000	focc_sedu	-0.109	0.076	
	0.366	0.092	0.000	dir_focc_soccc	0.432	0.037	0.000	dir_focc_soccc	0.065		0.254
	0.213	0.062	0.001	sedu_soccc	0.146	0.017	0.000	sedu_soccc	-0.067		0.148
	0.070	0.027	0.009	ind_focc_soccc	0.032	0.004	0.000	ind_focc_soccc	-0.038		0.165
LOW: Difference 1880-1920											
b1920- b1880	P _{two-sided}	P _{one-sided}	HIGH: Difference 1880-1920		b1920- b1880	P _{two-sided}	P _{one-sided}				
-0.168	0.102		tot_focc_soccc	-0.156	0.012						
0.038	0.614		focc_sedu	-0.023	0.399						
-0.194		0.057	dir_focc_soccc	-0.166		0.007					
0.063		0.215	sedu_soccc	0.055		0.038					
0.027	0.409		ind_focc_soccc	0.010	0.217						

Appendix C:

Geographical mobility											
N=407	1880	LOW	N=474	1880	HIGH	1880: Difference LOW-HIGH					
Nm=289	beta	boot std err	P> z	Nm=81	beta	boot std err	P> z	bHIGH-bLOW	P _{two-sided}	P _{one-sided}	
	0.580	0.058	0.000	tot_focc_soccc	0.644	0.060	0.000	tot_focc_soccc	0.064	0.439	
	0.304	0.035	0.000	focc_sedu	0.222	0.025	0.000	focc_sedu	-0.082	0.058	
	0.540	0.066	0.000	dir_focc_soccc	0.626	0.065	0.000	dir_focc_soccc	0.086		0.177
	0.133	0.039	0.001	sedu_soccc	0.084	0.028	0.003	sedu_soccc	-0.049		0.153
	0.040	0.013	0.002	ind_focc_soccc	0.019	0.007	0.008	ind_focc_soccc	-0.022	0.135	
N=408	1920	LOW	N=884	1920	HIGH	1920: Difference LOW-HIGH					
Nm=289	beta	boot std err	P> z	Nm=163	beta	boot std err	P> z	bHIGH-bLOW	P _{two-sided}	P _{one-sided}	
	0.470	0.053	0.000	tot_focc_soccc	0.416	0.041	0.000	tot_focc_soccc	-0.054	0.419	
	0.289	0.040	0.000	focc_sedu	0.213	0.017	0.000	focc_sedu	-0.076	0.081	
	0.419	0.060	0.000	dir_focc_soccc	0.384	0.043	0.000	dir_focc_soccc	-0.036		0.315
	0.176	0.035	0.000	sedu_soccc	0.154	0.019	0.000	sedu_soccc	-0.022		0.291
	0.051	0.013	0.000	ind_focc_soccc	0.033	0.005	0.000	ind_focc_soccc	-0.018	0.199	
HIGH: Difference 1880-1920											
b1920-	P _{two-sided}	P _{one-sided}	b1920-	P _{two-sided}	P _{one-sided}						
b1880			b1880								
-0.110	0.161		-0.228	0.002							
-0.015	0.777		-0.009	0.766							
-0.120		0.090	-0.242		0.001						
0.043		0.205	0.070		0.020						
0.010	0.567		0.014	0.102							

References

- Aminzade, R. and R. Hodson. 1982. "Social Mobility in a Mid-Nineteenth Century French City." *American Sociological Review* 47:441-57.
- Arum, R., J. Roksa, and M. J. Budig. 2008. "The Romance of College Attendance. Higher Education Stratification and Mate Selection." *Research in Social Stratification and Mobility* 26:107-21.
- Bakker, M. S. C. 1992. "Voeding in Nederland." Pp. 39-51 in *Geschiedenis van de Techniek in Nederland. De Wording van een Moderne Samenleving 1800-1890*, vol. 1, edited by H.W. Lintsen. Zutphen: Walburg Pers.
- Bartels, A. 1963. *Een Eeuw Middelbaar Onderwijs, 1863-1963*. Groningen: Wolters.
- Beekink, E., O. Boonstra, T. Engelen, and H. Knippenberg, editors. 2003. *Nederland in Verandering. Maatschappelijke Ontwikkelingen in Kaart Gebracht, 1800-2000*. Amsterdam: Aksant.
- Bendix, R. and S. M. Lipset. [1959] 1991. *Social Mobility in Industrial Society*. Berkeley: University of California Press.
- Bendix, R. 1964. "Industrialization, Ideologies, and Social Structure." Pp. 300-9 in *Social Change. Sources, Patterns, and Consequences*, edited by A. Etzioni and I. Etzioni. New York: Basic Books.
- Blackburn, R. M. and K. Prandy. 1997. "The Reproduction of Social Inequality." *Sociology* 31:491.
- Blanden, J., A. Goodman, P. Gregg, and S. Machin. 2004. "Changes in Intergenerational Mobility in Britain." Pp. 122-46 in *Generational Income Mobility in North America and Europe*, edited by M. Corak. Cambridge: Cambridge University Press.
- Blau, P.M. and O.D. Duncan. 1967. *The American Occupational Structure*. New York: Wiley.
- Blau, P.M. and J.E. Schwartz. 1984. *Crosscutting social circles. Testing a Macrostructural Theory of Intergroup Relations*. Orlando: Academic Press.
- Blossfeld, H.-P. and A. Timm. 2003. *Who Marries Whom? Educational Systems as marriage Markets in Modern Societies*. Dordrecht: Kluwer Academic Publishers.
- Boonstra, O.W.A. 1989. "The Intergenerational Transmission of Social Inequality in a Pre-Industrial Society. Ascription and Achievement in Eindhoven, 1800-1900." Pp. 161-74 in *Generations in Labour History. Papers presented to the Sixth British-Dutch Conference on Labour History*, edited by A. Blok. Amsterdam: IISG.
- Boonstra, O.W.A. 1993. *De Waardij van eene Vroege Opleiding. Een Onderzoek naar de Implicaties van het Alfabetisme op het Leven van Inwoners van Eindhoven en Omliggende Gemeenten, 1800-1920*. Wageningen: Afdeling Agrarische Geschiedenis, Landbouwuiversiteit.
- Boonstra, Onno W. A. 1995. "Het Einde van het Analfabetisme." Pp. 68-85 in *De Levensloop van de Utrechtse bevolking in de Negentiende Eeuw*, edited by K. Mandemakers and O.W.A. Boonstra. Assen: Van Gorcum.
- Boonstra, Onno. W. A. 2008. "Functioneel Analfabetisme in Nederland, 1775-1900." Pp. 127-47 in *Honderdvijftig Jaar Levenslopen. De Historische Steekproef Nederlandse*

References

- Bevolking*, edited by I. Maas, M.H.D. Van Leeuwen, and K. Mandemakers. Amsterdam: Amsterdam University Press.
- Boonstra, O.W.A. and K. Mandemakers. 1995. "'Ieder is het Kind zijner Eigenen Werken'. Sociale Stratificatie en Mobiliteit in Nederland in de Achttiende en Negentiende Eeuw." Pp. 125-41 in *Verschuivende Ongelijkheid in Nederland. Sociale Gelaagdheid en Mobiliteit*, edited by J. Dronkers and W.C. Ultee. Assen: Van Gorcum.
- Bottero, W. 2005. *Stratification. Social Division and Inequality*. London: Routledge.
- Bouman, P. J. 1946. *Geschiedenis van den Zeeuwschen landbouw in de Negentiende en Twintigste eeuw en van de Zeeuwsche Landbouw-Maatschappij, 1843-1943*. Wageningen: Veenman.
- Bourdieu, P. and J.-C. Passeron. [1977] 1990. *Reproduction in Education, Society and Culture*. London: Sage.
- Bramer, W. "Stationsweb." Retrieved 12 November 2008 (<http://stationsweb.nl>).
- Bras, H. 2002. *Zeeuwse Meiden: Dienen in de Levensloop van Vrouwen, ca. 1850-1950*. Amsterdam: Aksant.
- Bras, H. and J. Kok. 2005. "'They Live in Indifference Together'. Marriage Mobility in Zeeland, the Netherlands, 1796-1922." Pp. 247-74 in *Marriage Choices and Class Boundaries. Social Endogamy in History*, edited by M.H.D. Van Leeuwen, I. Maas, and A. Miles. Cambridge: Cambridge University Press.
- Breen, R., editor. 2004. *Social Mobility in Europe*. Oxford: Oxford University Press.
- Breen, R. and R. Luijckx. 2004. "Social Mobility in Europe between 1970 and 2000." Pp. 37-75 in *Social Mobility in Europe*, edited by R. Breen. Oxford: Oxford University Press.
- Breen, R. and J.O. Jonsson. 2005. "Inequality of Opportunity in Comparative Perspective. Recent Research on Educational Attainment and Social Mobility." *Annual Review of Sociology* 31:223-43.
- Brown, J. C. and G. Neumeier. 2004. "Working Class Careers. On-the-Job Experience and Career Formation in Munich, 1895-1910." Pp. 259-78 in *Origins of the Modern Career*, edited by D. Mitch, J. Brown, and M.H.D. Van Leeuwen. Burlington, VT: Ashgate Pub Ltd.
- Buskens, V. 2002. *Social Networks and Trust*. Boston, Massachusetts: Kluwer Academic Publisher.
- Chan, T.W. and J.H. Goldthorpe. 2004. "Is there a Status Order in Contemporary British Society? Evidence from the Occupational Structure of Friendship." *European Sociological Review* 20:383-401.
- Coleman, J.S. 1990. *Foundations of social theory*. Cambridge, Massachusetts: Belknap Press of Harvard University Press.
- Collins, R. 1971. "Functional and Conflict Theories of Educational Stratification." *American Sociological Review* 36:1002-19.
- Collins, R. 1979. *The Credential Society. An Historical Sociology of Education and Stratification*. London: Academic Press.
- Craig, J.E. 1981. "The Expansion of Education." *Review of Research in Education* 9:151-213.

- Davis, J.A. 1982. "Achievement Variables and Class Cultures. Family, Schooling and Forty-Nine Dependent Variables in the Cumulative GSS." *American Sociological Review* 47:569-86.
- Davis, K. 1955. "Social and Demographic Aspects of Economic Development in India." Pp. 263-315 in *Economic Growth: Brazil, India, Japan, Durham*, edited by E.W. Moore, S. Kuznets, and J.J. Spengler. Durham, N.C.: Duke University Press.
- Delger, H. and J. Kok. 1998. "Bridegrooms and Biases. A Critical Look at the Study of Intergenerational Mobility on the Basis of Marriage Certificates." *Historical Methods* 31:113-121.
- Dessens, J.A.G., W. Jansen, and W.C. Ultee. 1990. *Stratificering 1974-1988*. The Hague: Distributie Overheid en Particulieren (DOP).
- Van Dijk, H. and K. Mandemakers. 1985. "Secondary Education and Social Mobility at the Turn of the Century." *History of Education* 14:199-226.
- Van Dijk, H., J. Visser, and E. Wolst. 1984. "Regional Differences in Social Mobility Patterns in the Netherlands between 1830 and 1940." *Journal of Social History* 17:435.
- Dronkers, J. and P.M. De Graaf. 1995. "Ouders en het Onderwijs van hun Kinderen." Pp. 46-66 in *Verschuivende Ongelijkheid in Nederland. Sociale Gelaagdheid en Mobiliteit*, edited by J. Dronkers and W.C. Ultee. Assen: Van Gorcum.
- Duberman, L. 1975. *The Reconstituted Family. A Study of Remarried Couples and Their children*. Chicago: Nelson-Hall.
- Duijvendak, M. and P. Kooij. 1992. *Sociale Geschiedenis. Theorie en Thema's*. Assen: Van Gorcum.
- Eisenstadt, S.N. 1974. "Studies of Modernization and Sociological Theory." *History and Theory: Studies in the Philosophy of History* 13:225.
- Erikson, R. and J.H. Goldthorpe. 1992. *The Constant Flux. A Study of Class Mobility in Industrial Societies*. Oxford: Clarendon Press.
- Fischer, C.S., R.M. Jackson, C.A. Stueve, K. Gerson, L. McCallister Jones, and M. Baldassare. 1977. *Networks and Places. Social Relations in the Urban Setting*. New York: Free Press.
- Franken, T. and L. Adriaanse. 2004. *Op Stoom! Industrieel Erfgoed in Zeeland (1850-1970)*. Middelburg: Provincie Zeeland.
- Fukumoto, I.K. and D.B. Grusky. 1993. "Social Mobility and Class Structure in Early Industrial France." Pp. 40-67 in *Building European society. Occupational Change and Social Mobility in Europe 1840-1940*, edited by A. Miles and D. Vincent. Manchester: Manchester University Press.
- Ganzeboom, H.B.G. 1984. "Causal Models for Intergenerational Transmission of Social Inequality in the Netherlands in 1958 and 1977." Pp. 109-22 in *Social Stratification and Mobility in the Netherlands*, edited by J. Dronkers and H.B.G. Ganzeboom. Amsterdam: SISWO.
- Ganzeboom, H.B.G., P.M. De Graaf and D.J. Treiman. (with J. De Leeuw) 1992. "A Standard International Socio-Economic Index of Occupational Status." *Social Science*

References

- Research* 21:1-56.
- Ganzeboom, H.B.G. and R. Luijkx. 1995. "Intergenerationele Beroepsmobiliteit in Nederland. Patronen en Historische Veranderingen." Pp. 14-30 in *Verschuivende Ongelijkheid in Nederland. Sociale Gelaagdheid en Mobiliteit*, edited by J. Dronkers and W.C. Ultee. Assen: Van Gorcum.
- Ganzeboom, H.B.G., R. Luijkx, and D.J. Treiman. 1989. "Intergenerational Class Mobility in Comparative Perspective." *Research in Social Stratification and Mobility* 8:3-84.
- Ganzeboom, H.B.G., D.J. Treiman, and W.C. Ultee. 1991. "Comparative Intergenerational Stratification Research. Three Generations and Beyond." *Annual Review of Sociology* 17:277-302.
- Ganzeboom, H.B.G., M. Kalmijn, and J.L. Peschar. 1995. "Het Nederlandse Stratificatiepatroon in Internationaal Perspectief." In *Verschuivende Ongelijkheid in Nederland. Sociale Gelaagdheid en Mobiliteit*, edited by J. Dronkers and W.C. Ultee. Assen: Van Gorcum.
- Garnier, M.A. and J. Hage. 1991. "Class, Gender, and School Expansion in France. A Four-System Comparison." *Sociology of Education* 64:229-50.
- Gerbner, G. 1967. "Mass Media and Human Communication Theory." Pp. 40-57 in *Human Communication Theory*, edited by F.E.X. Dance. New York: Holt, Rinehart & Winston.
- Glass, D.V. 1954. *Social Mobility in Britain*. London: Routledge & Kegan Paul.
- Goldthorpe, J.H. and C. Mills. 2004. "Trends in Intergenerational Class Mobility in the Later Twentieth Century." Pp. 195-225 in *Social Mobility in Europe*, edited by R. Breen. Oxford: Oxford University Press.
- Goode, W.J. 1964. *The Family*. Englewood Cliffs, N.J.: Prentice-Hall.
- Goodman, L.A. 1979. "Simple Models for the Analysis of Association in Cross-Classifications having Ordered Categories." *Journal of the American Statistical Association* 74:537-52.
- De Graaf, P.M. 1987. *De Invloed van Financiële en Culturele Hulpbronnen in Onderwijsloopbanen*. Nijmegen: Instituut voor Toegepaste Sociale Wetenschappen.
- De Graaf, P.M. and R. Luijkx. 1995. "Paden naar Success. Geboorte of Diploma's?" Pp. 31-45 in *Verschuivende Ongelijkheid in Nederland. Sociale Gelaagdheid en Mobiliteit*, edited by J. Dronkers and W.C. Ultee. Assen: Van Gorcum.
- De Graeve, B., F. Simon, M. Du Bois-Reymond, and M. Mutsaers. 1985. "Het Onderwijzersberoep en Intergenerationaleiteit. Een Vier-Generatie-Onderzoek in Vlaanderen en Nederland op Basis van Oral History." *Tijdschrift voor Sociale Geschiedenis* 11:324-48.
- Grusky, D.B. 1983. "Industrialization and the Status Attainment Process. The Thesis of Industrialism Reconsidered." *American Sociological Review* 48:494-506.
- Guest, A.M., N.S. Landale, and J.C. McCann. 1989. "Intergenerational Occupational Mobility in the Late Nineteenth Century United States." *Social Forces* 68:351-78.
- Heath, A. and C. Payne. 1999. "Twentieth Century Trend in Social Mobility in Britain." *CREST Working Paper* 70:1-34.

- Van Heek, F. 1958. *Sociale Stijging en Daling in Nederland. Dl. I*. Leiden: Stenfert Kroese.
- Hendrickx, J. 1994. "The analysis of religious assortative marriage. An application of design techniques for categorical models." Nijmegen: University of Nijmegen.
- Hoekveld, G.A. 1972. "Nederland in West-Europa." Pp. 186-229 in *Geografische Verkenningen*, vol. 4, edited by G.A. Hoekveld and P. Schapt. Roermond: Romen.
- Hoogerhuis, O.W. and L.F.S. Jansen. 1987. "Analfabetisme en onderwijsdeelname in Goes gedurende de negentiende eeuw." *Historisch jaarboek voor Zuid- en Noord-Beveland* 13:5-36.
- Hout, M. and T.A. DiPrete. 2006. "What we have Learned: RC28's Contributions to Knowledge about Social Stratification." *Research in Social Stratification and Mobility* 24:1-20.
- Hox, Joop. 2002. *Multilevel Analysis. Techniques and Applications*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.
- HSN. 2007. "Historical Sample of the Netherlands (HSN). Release 2007_01." <http://www.iisg.nl/hsn/> Last accessed 10 February 2010.
- HSN. 2008. "Historical Sample of the Netherlands." <http://www.iisg.nl/hsn/> Last accessed 10 February 2010.
- Hurd, G.E. and T.J. Johnson. 1967. "Education and Social Mobility in Ghana." *Sociology of Education* 40:55-79.
- ILO. 1969. *International Standard Classification of Occupations: ISCO-68*. Geneva: International Labour Office.
- Jacobs, J.A. and F.F. Furstenberg Jr. 1986. "Changing places. Conjugal Careers and Women's Marital Mobility." *Social Forces* 64:714-32.
- Janssens, A.A.P.O. 1993. *Family and Social Change. The Household as a Process in an Industrialising Community*. Cambridge: Cambridge University Press.
- Kaelble, H. 1981. *Historical Research on Social Mobility. Western Europe and the USA in the Nineteenth and Twentieth Centuries*. New York: Columbia University Press.
- Kaelble, H. 1983. *Soziale Mobilität und Chancengleichheit im Neunzehnten und Zwanzigsten Jahrhundert: Deutschland im Internationalen Vergleich*. Göttingen: Vandenhoeck & Ruprecht.
- Kalmijn, M. 1991. "Status Homogamy in the United States." *American Journal of Sociology* 97:496-523.
- Kalmijn, M. 1994. "Assortative Mating by Cultural and Economic Occupational Status." *The American Journal of Sociology* 100:422-52.
- Kalmijn, Matthijs. 1995. "Bruid, Bruidegom en Bruiloft. Sociale en Economische Achtergronden van het Huwelijkspatroon." Pp. 86-102 in *De Levensloop van de Utrechtse Bevolking in de Negentiende Eeuw*, edited by K. Mandemakers and O.W.A. Boonstra. Assen: Van Gorcum.
- Kalmijn, M. 1998. "Intermarriage and Homogamy: Causes, Patterns, and Trends." *Annual Review of Sociology* 24:395.
- Kalmijn, M. and H. Flap. 2001. "Assortative Meeting and Mating: Unintended Consequences

References

- of Organized Settings for Partner Choices." *Social Forces* 79:1289-312.
- Kerr, C., J.T. Dunlop, F. Harbison, and C.A. Myers. 1960. *Industrialism and Industrial Man: The Problems of Labor and Management in Economic Growth*. Cambridge, MA: Harvard University Press.
- Knippenberg, H. 1986. "Deelname aan het Lager Onderwijs in Nederland gedurende de Negentiende Eeuw: Een analyse van de Landelijke Ontwikkeling en van de Regionale Verschillen." University of Amsterdam, Amsterdam.
- Knippenberg, H. and B. Nauta, 1989. "Naar Eenheid van Tijd in Nederland, 1835-1909." *Tijdschrift voor Sociale Geschiedenis* 15:325-46.
- Knippenberg, H. and B. De Pater. 2002. *De Eenwording van Nederland. Schaalvergroting en Integratie sinds 1800*. Nijmegen: SUN.
- Knippenberg, H. and S. De Vos. 2008. "Vroege Ontkerkelijking in Nederland. Een Analyse van het Geboortecohort 1850-1882." Pp. 97-126 in *Honderdvijftig Jaar Levenslopen. De Historische Steekproef Nederlandse Bevolking*, edited by I. Maas, M.H.D. Van Leeuwen, and K. Mandemakers. Amsterdam: Amsterdam University Press.
- Kocka, J. 1984. "Family and Class Formation: Intergenerational Mobility and Marriage Patterns in Nineteenth-Century Westphalian Towns." *Journal of Social History* 17:411-33.
- Kok, J. and K. Mandemakers. 2005. "Vrije Keuze uit een Beperkt Aanbod. De Huwelijksmarkt in Utrecht en Zeeland 1840-1940." Pp. 213-29 in *Genegenheid En Gelegenheid. Twee Eeuwen Partnerkeuze en Huwelijk*, edited by J. Kok and M.H.D. Van Leeuwen. Amsterdam: Aksant.
- Kooij, P. 1986. *Groningen, 1870-1914. Sociale Verandering en Economische Ontwikkeling in een Regionaal Centrum*. Groningen: Rijksuniversiteit Groningen.
- Kuznets, S. 1957. "Quantitative Aspects of the Economic Growth of Nations: II. Industrial Distribution of National Product and Labor Force." *Economic Development and Cultural Change* 5:1-111.
- Lambert, P.S. and E. Bihagen. 2007. "Concepts and Measures: Empirical Evidence on the Interpretation of ESeC and Other Occupation-Based Social Classifications." Paper presented to the RC28 Summer meeting, Montreal, 14-17 August 2007.
- Lambert, P.S., R.L. Zijdeman, I. Maas, K. Prandy, and M.H.D. Van Leeuwen. 2006. "Testing the Universality of Historical Occupational Stratification Structures Across Time and Space." Paper presented to the ISA RC28 Social Stratification and Mobility Spring 2006 meeting, Nijmegen, 11-14 May 2006.
- Lambert, P.S., K. Prandy, and W. Bottero. 2007. "By Slow Degrees: Two Centuries of Social Reproduction and Mobility in Britain." *Sociological Research Online* 12.
- Landbouw. 1871. "Verslag van den Landbouw in Nederland over 1870." The Hague: s.n.
- Landbouw. 1872. "Verslag van den Landbouw in Nederland over 1871." The Hague: s.n.
- Landes, D.S. 1969. *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present*. Cambridge: Cambridge University Press.

- Lanzinger, M. 2005. "Homogamy in a Society Orientated Towards Stability: A Micro Study of a South Tyrolean Market Town, 1700-1900." Pp. 123-48 in *Marriage Choices and Class Boundaries: Social Endogamy in History*, edited by M.H.D. Van Leeuwen, I. Maas, and A. Miles. Cambridge: Cambridge University Press.
- Van Leeuwen, M.H.D. and I. Maas. 1995. "Sociale Mobiliteit in de Steden en op het Platteland." Pp. 103-27 in *De Levensloop van de Utrechtse Bevolking in de Negentiende Eeuw*, edited by K. Mandemakers and O.W.A. Boonstra. Assen: Van Gorcum.
- Van Leeuwen, M.H.D. and I. Maas. 1997. "Social Mobility in a Dutch Province, Utrecht 1850-1940." *Journal of Social History* 30:619-644.
- Van Leeuwen, M.H.D. and I. Maas. 2002. "Partner Choice and Homogamy in the Nineteenth Century: Was there a Sexual Revolution in Europe?" *Journal of Social History* 36:101-123.
- Van Leeuwen, M.H.D. and I. Maas. 2005. "Endogamy and Social Class in History: An overview". Pp. 1-23 in *Marriage Choices and Class Boundaries: Social Endogamy in History*, edited by M.H.D. Van Leeuwen, I. Maas and A. Miles. Cambridge: University Press.
- Van Leeuwen, M.H.D. and I. Maas. 2007. "Herhaald Huwen. Een Historische Studie naar Heterogamie." Pp. 43-58 in *De Maakbaarheid van de Levensloop*, edited by T. Van der Lippe, P.A. Dykstra, G. Kraaykamp, and J. Schippers. Assen: Van Gorcum.
- Van Leeuwen, M.H.D. and I. Maas. 2007. "Economische Specialisering en Veranderende Sociale Verhoudingen in de Negentiende en Twintigste Eeuw: Een Studie op basis van de Nederlandse Volkstellingen en Huwelijksakten." Pp. 181-205 in *Twee Eeuwen Nederland Geteld: Onderzoek met de Digitale Volks-, Beroeps- en Woningtellingen, 1795-2001*, edited by O.W.A. Boonstra, P.K. Doorn, M.P.M. Van Horik, J.G.S.J. Van Maarseveen, and J. Oudhof. The Hague: DANS and CBS.
- Van Leeuwen, M.H.D., I. Maas, and A. Miles. 2002. *HISCO: Historical International Standard Classification of Occupations*. Leuven: Leuven University Press.
- Van Leeuwen, M.H.D., I. Maas, and A. Miles. 2004. "Creating an Historical International Standard Classification of Occupations (HISCO): An Exercise in Multinational, Interdisciplinary Co-Operation." *Historical Methods* 37:186-97.
- Van Leeuwen, M.H.D., I. Maas, and K. Mandemakers. 2005. "Het Kiezen van een Huwelijkspartner in Nederland 1840-1940. De Rol van de Familie." Pp. 63-84 in *Genegenheid en Gelegenheid. Twee Eeuwen Partnerkeuze en Huwelijk*, edited by J. Kok and M.H.D. Van Leeuwen. Amsterdam: Aksant.
- Van Leeuwen, M.H.D., I. Maas, and A. Miles, editors. 2005. *Marriage Choices and Class Boundaries: Social Endogamy in History*. Cambridge: Cambridge University Press.
- Lieberson, S. and M.C. Waters. 1988. *From Many Strands: Ethnic and Racial Groups in Contemporary America*. New York: Russell Sage Foundation.
- Linders-Rooijendijk, M.F.A. 1989. "Gebaande Wegen voor Mobiliteit en Vrijtijdsbesteding: De ANWB als Associatie, 1883-1927." Heeswijk: Katholieke Universiteit Brabant.
- Linton, D.S. 1987. "Industrialization and Intergenerational Social Mobility in a Rhenish

References

- Textile Town." *Journal of Interdisciplinary History* 18:107-26.
- Lintsen, H.W. and J.A.W. Nieuwkoop. 1989-1991. *De Registers van de Dienst voor het Stoomwezen*. Amsterdam: NEHA.
- Lucassen, J. and G. Trienekens. 1978. "Om de Plaats in de Kerk. Een Onderzoek naar Maatschappelijke Ongelijkheid, voornamelijk in de Negentiende Eeuw." *Tijdschrift voor Sociale Geschiedenis* 4:239-304.
- Lundgreen, P. 1988. "Educational Opportunity and Status Attainment: Two Different Cities in Nineteenth Century Germany." *Journal of Social History* 22:323-37.
- Lundgreen, P., M. Kraul, and K. Ditt. 1988. *Bildungschancen und Soziale Mobilität in der Städtischen Gesellschaft des Neunzehnten Jahrhunderts*. Göttingen: Vandenhoeck & Ruprecht.
- Lynch, K.A. 1986. "Marriage Age among French Factory Workers: An Alsatian Example." *Journal of Interdisciplinary History* 16:405-29.
- Maas, I. and M.H.D. Van Leeuwen. 2001. "Huwelijksmobiliteit in Friesland tussen 1850-1929." *It Beaken* 63:164-78.
- Maas, I. and M.H.D. Van Leeuwen. 2005. "Total and Relative Endogamy by Social Origin: A First International Comparison in Marriage Changes during the Nineteenth Century." Pp. 275-95 in *Marriage Choices and Class Boundaries: Social Endogamy in History*, edited by M.H.D. Van Leeuwen, I.Maas, and A. Miles. Cambridge: Cambridge University Press.
- Maas, I. and M.H.D. Van Leeuwen. 2008. "Van een Dubbeltje naar een Kwartje? Beroepsloopbanen van Mannen en Vrouwen in Nederland tussen 1865 en 1940." Pp. 173-202 in *Honderdvijftig Jaar Levenslopen. De Historische Steekproef Nederlandse Bevolking*, edited by I. Maas, M.H.D. Van Leeuwen, and K. Mandemakers. Amsterdam: Amsterdam University Press.
- Maas, I., M.H.D. Van Leeuwen, and K. Mandemakers, editors. 2008. *Honderdvijftig Jaar Levenslopen: De Historische Steekproef Nederlandse Bevolking*. Amsterdam: Amsterdam University Press.
- Mandemakers, K. 1987. "Aanzet tot een Beroepsstratificatie voor Nederland omstreeks 1900, Tiel 1884 en 1918." *Tijdschrift voor Sociale Geschiedenis* 13:198-222.
- Mandemakers, K. 1992. "Education and Social Mobility: Organizing and Storing an Historical Survey." Pp. 149-61 in *Data, Computers and the Past. Proceedings of the Conference Archiving and Disseminating Historical Machine Readable Data*, edited by P. Doorn, C. Kluts, and E. Leenarts. Hilversum: Verloren.
- Mandemakers, K. 1996a. *Gymnasiaal en Middelbaar Onderwijs: Ontwikkeling, Structuur, Sociale Achtergrond en Schoolprestaties, Nederland, Ca. 1800-1968*. Amsterdam: Stichting Beheer IISG.
- Mandemakers, K. 1996b. *Gymnasiaal En Middelbaar Onderwijs: Ontwikkeling, Structuur, Sociale Achtergrond en Schoolprestaties, Nederland, Ca. 1800-1968, Band II*. Ph.D., Erasmus University, Rotterdam.
- Mandemakers, K. 1999. *Onderwijsdeelname, 1870-1990*. Amsterdam: Stichting Beheer IISG.

- Mandemakers, K. 2001a. "The Historical Sample of the Netherlands (HSN)." *Historical Social Research* 4:179-90.
- Mandemakers, K. 2001b. "De Sociale Structuur in Nederland rond 1900: De Samenleving in het Perspectief van de Modernisering 1850-1990." Pp. 185-207 in *Nederland een Eeuw Geleden Geteld. Een Terugblik op de Samenleving rond 1900*, edited by J.G.S.J. Van Maarseveen and P.K. Doorn. Amsterdam: Stichting Beheer IISG.
- Mare, R.D. 1991. "Five Decades of Educational Assortative Mating." *American Sociological Review* 56:15-32.
- Miles, A. 1999. *Social Mobility in Nineteenth and Early-Twentieth Century England*. Basingstoke: Palgrave.
- Millard, J. 1982. "A New Approach to the Study of Marriage Horizons." *Local Population Studies* 28:10-31.
- Mitch, D. 1993. "Inequalities which Everyone may Remove: Occupational Recruitment, Endogamy, and the Homogeneity of Social Origins in Victorian England." Pp. 140-64 in *Building European Society*, edited by A. Miles and D. Vincent. Manchester: Manchester University Press.
- Mollenhorst, G. 2008. "Context Overlap and Multiplexity in Personal Relationships." Pp. 55-77 in *Why Context Matters. Applications of Social Network Analysis*, edited by Thomas N. Friemel. Wiesbaden: Verlag für Sozialwissenschaften.
- Nettl, J.P. and R. Robertson. 1966. "Industrialization, Development Or Modernization." *The British Journal of Sociology* 17:274-91.
- Oppenheimer, V.K. 1988. "A Theory of Marriage Timing." *The American Journal of Sociology* 94:563-91.
- Oris, M. 2000. "The Age at Marriage of Migrants during the Industrial Revolution in the Region of Liege." *History of the Family* 5:391.
- Parsons, T. and E.A. Shils. [1951] 2001. *Toward A General Theory of Action. Theoretical Foundations for the Social Sciences*. New Brunswick: Transaction Publishers.
- Péllissier, J.-P., D. Rébaudo, M.H.D. Van Leeuwen, and I. Maas. 2005. "Migration and Endogamy According to Social Class: France, 1803-1986." Pp. 219-46 in *Marriage Choices and Class Boundaries: Social Endogamy in History*, edited by Marco H.D. Van Leeuwen, I. Maas, and A. Miles. Cambridge: Cambridge University Press.
- Van der Ploeg, S.W. 1993. *The Expansion of Secondary and Tertiary Education in the Netherlands*. Nijmegen: Instituut voor Toegepaste Sociale Wetenschappen.
- Van Poppel, F. and J. Nelissen. 1999. "The Proper Age to Marry: Social Norms and Behavior in Nineteenth-Century Netherlands." *History of the Family* 4:51.
- Van Poppel, F. and P. Ekamper. 2005. "De Goudse Horizon Verruimd. Veranderingen in de Herkomst van Goudse Bruiden en Bruidegoms." Pp. 181-211 in *Genegenheid en Gelegenheid. Twee Eeuwen Partnerkeuze en Huwelijk*, edited by J. Kok and M.H.D. Van Leeuwen. Amsterdam: Aksant.
- Van Poppel, F. and A.C. Liefbroer. 2005. "Living Conditions during Childhood and Survival Rates in Later Life: Study Design and First Results." *Historical Social Research* 3:265-85.

References

- Van Poppel, F. and R. Van Gaalen. 2008. "Sociale Klasse, Sociale Mobiliteit en Sterfte in Nederland, 1850-2007." Pp. 203-36 in *Honderdvijftig Jaar Levenslopen: De Historische Steekproef Nederlandse Bevolking*, edited by I. Maas, M.H.D. Van Leeuwen, and K. Mandemakers. Amsterdam: Amsterdam University Press.
- Van Poppel, F., A.C. Liefbroer, J.K. Vermunt, and W. Smeenk. 2001. "Love, Necessity and Opportunity: Changing Patterns of Marital Age Homogamy in the Netherlands, 1850-1993." *Population Studies* 55:1-13.
- Van Poppel, F., C. Monden, and K. Mandemakers. 2008. "Marriage Timing Over the Generations." *Human Nature: An Interdisciplinary Biosocial Perspective* 19:7-22.
- Posterijen. 1880-1916. "Verslagen aan den Koning betreffende de Dienst der Posterijen en der Telegrafien in Nederland." The Hague: s.n.
- Postmus, J. 1928. *Een Onderzoek naar Omvang en Aard van de Bevolkingsconcentratie in Nederland sedert 1830*. Amsterdam: s.n.
- Prak, M. 1988. "Sociale Geschiedschrijving van Nederlands Ancien Régime." *Tijdschrift voor Sociale Geschiedenis* 14:133-59.
- Prandy, K. 2000. "The Social Interaction Approach to Measurement and Analysis of Social Stratification." *International Journal of Sociology and Social Policy* 19:215-49.
- Prandy, K. and P.S. Lambert. 2003. "Marriage, Social Distance and the Social Space: An Alternative Derivation and Validation of the Cambridge Scale." *Sociology* 37:397-411.
- Praz, A.-F. 2007. "Four Swiss Villages, 1860-1930. Putting Gender back into Historical Demography." *Gender and History* 19: 242-259.
- Priester, P.R. 1998. *Geschiedenis van de Zeeuwse Landbouw circa 1600-1900*. Wageningen: Wageningen University.
- Van de Putte, B. 2003. *Het Belang van de Toegeschreven Positie in een Moderniserende Wereld. Partnerkeuze in de Negentiende Eeuwse Vlaamse Steden (Leuven, Aalst en Gent)*. Leuven: Katholieke Universiteit Leuven.
- Van de Putte, B. and A. Miles. 2005. "A Social Classification Scheme for Historical Occupational Data. Partner Selection and Industrialism in Belgium and England, 1800-1918." *Historical Methods* 38:61-92.
- Raab, M., M. Ruland, B. Schönberger, H.-P. Blossfeld, D. Hofäcker, S. Buchholz, and P. Schmelzer. 2008. "GlobalIndex: A Sociological Approach to Globalization Measurement." *International Sociology* 23:596-631.
- Rao, C.R. 1973. *Linear Statistical Inference and its Applications*. New York: John Wiley.
- Retherford, R.D. and M.K. Choe. 1993. *Statistical Models for Causal Analysis*. New York: Wiley.
- Rijken, S. 1999. *Educational Expansion and Status Attainment: A Cross-National and Over-Time Comparison*. Amsterdam: Thela Thesis.
- Ringer, F.K. 1979. *Education and Society in Modern Europe*. Bloomington: Indiana University Press.
- Scholen. 1862-1917. "Verslag van den Staat der Hooge-, Middelbare en Lagere Scholen". The Hague: s.n.

- Schüren, R. 1993. "Intergenerational Occupational and Marital Mobility in German Cities in the Nineteenth and Early Twentieth Centuries." Pp. 68-91 in *Building European Society*, edited by A. Miles and D. Vincent. Manchester: Manchester University Press.
- Shavit, Y. and H.-P. Blossfeld, editors. 1993. *Persistent Inequality. Changing Educational Attainment in Thirteen Countries*. Boulder, CO: Westview Press.
- Shorter, E. 1975. *The Making of the Modern Family*. New York: Basic Books.
- Sieben, I. and P.M. De Graaf. 2001. "Testing the Modernization Hypothesis and the Socialist Ideology Hypothesis: A Comparative Sibling Analysis of Educational Attainment and Occupational Status." *British Journal of Sociology* 52:441-67.
- Sixma, H. and W.C. Ultee. 1983. "Een Beroepsprestigeschaal voor Nederland in de Jaren Tachtig." *Mens en Maatschappij* 58:360-82.
- Sluiter, J.W. 2002. *Overzicht van de Nederlandse Spoor- en Tramwegbedrijven*. Utrecht: Matrijs.
- Smeenck, W. 1998. *Opportunity and Marriage. The Impact of Individual Resources and Marriage Market Structure on First Marriage Timing and Partner Choice in the Netherlands*. Nijmegen: Katholieke Universiteit Nijmegen.
- Smelser, N.J. 1964. "Toward a Theory of Modernization." Pp. 258-74 in *Social Change. Sources, Patterns, and Consequences*, edited by Amatai Etzioni and Eva Etzioni. New York: Basic Books.
- Smits, J. 1996. "Trouwpatronen en Sociale Openheid. Opleidingshomogamie en Beroepshomogamie in een Zestigjarige Landen". Nijmegen: Katholieke Universiteit Nijmegen.
- Smits, J., W.C. Ultee, and J. Lammers. 1998. "Educational Homogamy in 65 Countries: An Explanation of Differences in Openness using Country-Level Explanatory Variables." *American Sociological Review* 63:264-85.
- Smits, J., W. Ultee, and J. Lammers. 2000. "More or Less Educational Homogamy? A Test of Different Versions of Modernization Theory using Cross-Temporal Evidence for 60 Countries." *American Sociological Review* 65:781-8.
- Snijders, T.A.B. and R.J. Bosker. 1999. *Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling*. London: Sage Publications.
- Sorokin, Pitirim A. 1959. *Social and Cultural Mobility*. New York: Free Press.
- Stewart, A., K. Prandy, and R.M. Blackburn. 1980. *Social Stratification and Occupations*. London: Macmillan.
- Tipps, D.C. 1973. "Modernization Theory and the Comparative Study of Societies: A Critical Perspective." *Comparative Studies in Society and History* 15:199-226.
- Treiman, D.J. 1970. "Industrialization and Social Stratification." *Social Inquiry* 40:207-34.
- Treiman, D.J. 1977. *Occupational Prestige in Comparative Perspective*. New York: Academic Press.
- Treiman, D.J. 2009. *Quantitative Data Analysis: Doing Social Research to Test Ideas*. New York: Jossey-Bass.
- Van Tulder, J.J.M. 1962. *De Beroepsmobiliteit in Nederland van 1919 tot 1954. Een*

References

- Sociaal-Statistische studie*. Leiden: Stenfert Kroese.
- Ultee, W.C. 1983. "Het Aanzien van Beroepen, op andere Plaatsen en Vooral in Andere Tijden. Een Analyse van een Aantal Recente Historische Studies." *Tijdschrift voor Sociale Geschiedenis* 9:28-48.
- Ultee, W.C. and R. Luijckx. 1990. "Educational Heterogamy and Father-to-Son Occupational Mobility in 23 Industrial Nations. General Societal Openness or Compensatory Strategies of Reproduction?" *European Sociological Review* 6:125-49.
- UN. 1998. *Central Product Classification (CPC). Version 1.0 (Draft)*. New York: United Nations.
- US Department of Labor. 1965. *Dictionary of Occupational Titles*. Washington, D.C.: US Government Printing Office.
- Uunk, W. 1996. *Who Marries Whom? The Role of Social Origin, Education and High Culture in Mate Selection of Industrial Societies during the Twentieth Century*. Nijmegen: Katholieke Universiteit Nijmegen.
- Vermunt, J.K. 1997. "LEM: A General Program for the Analysis of Categorical Data." Tilburg: Department of Methodology and Statistics, Tilburg University.
- Verrijn Stuart, C.A. 1910-1917. *Inleiding tot de Beoefening der Statistiek*. Haarlem.
- De Vries, B. 1986. *Electoraat en Elite. Sociale Structuur en Sociale Mobiliteit in Amsterdam 1850-1895*. Amsterdam: De Bataafsche Leeuw.
- Van der Woud, A. 2007. *Een Nieuwe Wereld. Het Ontstaan van het Moderne Nederland*. Amsterdam: Bert Bakker.
- Van Zanden, J.L. 1992. "Mest en Ploeg." Pp. 53-70 in *Geschiedenis van de Techniek in Nederland*, vol. 1, edited by H. Lintsen. Zutphen: Walburg Pers.
- Van Zanden, J.L. and R.T. Griffiths. 1989. *Economische Geschiedenis van Nederland in de Twintigste Eeuw*. Utrecht: Het Spectrum.
- Van Zanden, J.L. and A. Van Riel. 2000. *Nederland 1780-1914: Staat, Instituties en Economische Ontwikkeling*. Amsterdam: Balans.
- Zijdeman, R.L. 2006. "Historical Sample of the Population of the Netherlands (HSN). Marriage Certificates Pupils of Dutch Higher Secondary Education (HVL), Release 2006.01." <http://www.iisg.nl/hsn/projects/hvl.html> Last accessed 10 February 2010.
- Zijdeman, Richard L. 2007. "Nieuwe data, 'nieuwe' methode? Een sociologisch historische toepassing van multiniveau-analyse." Pp. 441-54 in *Twee eeuwen Nederland geteld: onderzoek met de digitale volks-, beroeps- en woningtellingen, 1795-2001*, edited by O.W.A. Boonstra, P.K. Doorn, M.P.M. Van Horik, J.G.S.J. Van Maarseveen, and J. Oudhof. The Hague: DANS and CBS.
- Zijdeman, R.L. 2008. "Intergenerational Transfer of Occupational Status in Nineteenth Century Zeeland, The Netherlands: A Test of the Influence of Industrialisation, Mass Communication and Urbanisation in 117 Municipalities." *International Journal of Sociology and Social Policy* 28:204-16.
- Zijdeman, R.L. 2009. "Like my Father before me. Intergenerational Occupational Status Transfer during Industrialization (Zeeland, 1811-1915)." *Continuity & Change* 24:455-86.

- Zijdeman, R.L. and I. Maas. Forthcoming. "Assortative Mating by Occupational Status during Early Industrialization". *Research in Social Stratification and Mobility*.
- Zijdeman, R.L. and K. Mandemakers. 2008. "De Rol van het Gymnasium en Middelbaar Onderwijs bij de Intergenerationele Overdracht van Status, Nederland 1865-1940." Pp. 149-72 in *Honderdvijftig Jaar Levenslopen. De Historische Steekproef Nederlandse Bevolking*, edited by I. Maas, M.H.D. Van Leeuwen, and K. Mandemakers. Amsterdam: Amsterdam University Press.
- Zijdeman, R.L. and P.S. Lambert. 2010. "Measuring Social Structure in the Past. A Comparison of Historical Class Schemes and Occupational Stratification Scales on Dutch Nineteenth- and Early Twentieth-Century Data." *Revue Belge d'Histoire Contemporaine* 1-2: forthcoming.

Summary in Dutch

Samenvatting: Statusverwerving in Nederland, 1811-1941. Ruimtelijke en temporele variatie voor en tijdens de industrialisatie

Inleiding

In de maatschappij nemen mensen verschillende statusposities in. Welke positie iemand inneemt, wordt enerzijds bepaald door iemands afkomst, het afkomstbeginsel, en anderzijds door iemands verdienste, het prestatiebeginsel. Een centrale vraag in de stratificatiesociologie is of met de opkomst van de industrialisatie er een verschuiving heeft plaats gevonden in het relatieve belang van het afkomst- en het prestatiebeginsel voor de verwerving van status.

Reeds enkele decennia bestaan er twee theorieën waaruit tegengestelde hypothesen afgeleid kunnen worden over de invloed van de industrialisatie op het statusverwervingsproces. De moderniseringstheorie stelt dat, doordat industrialisatie structurele veranderingen op de arbeidsmarkt te weeg bracht, vaders steeds minder invloed uit konden oefenen op de arbeidsmarktpositie van hun zonen. Daarnaast zouden andere moderniseringsprocessen, zoals bijvoorbeeld onderwijsexpansie en urbanisatie, voor een culturele omslag hebben gezorgd. Verschillen tussen sociale lagen zouden zijn verminderd en er zou een verandering in waarden zijn opgetreden, waardoor mensen steeds minder werden gewaardeerd om hun afkomst en steeds meer om hun verdienste. Hierdoor zou het belang van opleiding voor de eigen statuspositie toenemen. Volgens de moderniseringstheorie neemt dus door industrialisering het relatieve belang van afkomst voor de verwerving van status af, terwijl het belang van verdienste, in de vorm van opleiding, toeneemt.

De status-behoud-theorie stelt dat wanneer de invloed van ouders op de statuspositie van hun kinderen afneemt, zij alternatieven zoeken om alsnog hun statusposities door te kunnen geven. Wanneer door industrialisering en andere moderniseringsprocessen directe overdracht van status wordt belemmerd, zullen zij investeren in opleiding en cultureel kapitaal voor hun kinderen. Immers ook de status-behoud-theorie veronderstelt dat opleiding een steeds prominentere rol in het statusverwervingsproces is gaan spelen. Mensen met hoge statusposities hebben meer hulpbronnen dan mensen met lage statusposities, waardoor zij meer in de opleiding van hun kinderen kunnen investeren. Hierdoor zullen de statusposities van generatie tot generatie behouden blijven. Samenvattend, de status-behoud-theorie stelt dat het relatieve belang van afkomst niet af zal nemen door industrialisatie.

Eerder historisch en sociologisch onderzoek geeft geen eenduidig beeld van de invloed van industrialisering en andere moderniseringsprocessen op het statusverwervingsproces. Historische studies zijn onderling slecht vergelijkbaar, doordat het historisch bronnenmateriaal vaak beperkt is tot een kleine regio of een specifieke populatie. Sociologisch onderzoek maakt weliswaar gebruik van gestandaardiseerde methoden en grote datasets, maar de bevindingen hebben vrijwel zonder uitzondering betrekking op de periode na de Tweede Wereldoorlog, waardoor een ingewikkelde vertaalslag naar de industrialisering in de negentiende eeuw dient te worden gemaakt.

Recente ontwikkelingen op het gebied van historische methoden en digitalisering van archiefmateriaal maken het mogelijk om de invloed van industrialisering op het

statusverwervingsproces vanuit een nieuw perspectief te benaderen. De hoofdvraag in dit proefschrift luidt dan ook in hoeverre er een verband is tussen temporele en regionale verschillen in het statusverwervingsproces enerzijds en ontwikkelingen in de mate van modernisering anderzijds. Door gebruik te maken van gedigitaliseerde huwelijksakten kan het statusverwervingsproces van grote groepen mensen worden bestudeerd over een periode van meer dan een eeuw. Hierbij wordt zowel gekeken naar statusverwerving via het huwelijk als naar intergenerationele statusoverdracht. Door het statusverwervingsproces in een groot aantal gemeenten te bestuderen kunnen bovendien verschillen in statusverwerving worden gerelateerd aan de mate waarin en de manier waarop gemeenten zijn gemoderniseerd. Hierbij zal modernisering niet beperkt blijven tot een dichotomisering van gebieden en perioden als wel of niet modern, zoals dat tot nu toe gebruikelijk in de literatuur. In dit proefschrift worden namelijk een zestal moderniseringsprocessen onderscheiden: industrialisatie, onderwijsexpansie, massacomunicatie, massatransport, urbanisatie en migratie. Voor elk van deze processen worden indicatoren gebruikt die zowel regionaal als over de tijd kunnen verschillen. Met behulp van multi-niveau modellen kan vervolgens worden bepaald in welke mate er ruimtelijke en temporele verschillen in het statusverwervingsproces zijn en in hoeverre en in welke vorm modernisering hierop van invloed is geweest.

De opbouw van het proefschrift is als volgt. In hoofdstuk 1 wordt de probleemstelling uiteengezet en worden de onderzoeksvragen geformuleerd. Hoofdstuk 2 is een methodologisch hoofdstuk, waarin het meetinstrument voor beroepsstatus dat in dit proefschrift wordt gebruikt, wordt vergeleken met historisch-georiënteerde klassenschema's en hedendaagse statusschalen. Vervolgens gaan de hoofdstukken 3, 4 en 5 in op de onderzoeksvragen. In hoofdstuk 3 wordt statusverwerving via het huwelijk bestudeerd. In hoofdstuk 4 staat intergenerationele statusoverdracht centraal, waarna hoofdstuk 5 zich concentreert op de invloed van opleiding in het proces van intergenerationele statusoverdracht. Tenslotte beantwoord ik in hoofdstuk 6 de onderzoeksvragen aan de hand van een overzicht van de onderzoeksbevindingen en doe ik aanbevelingen voor toekomstig onderzoek.

HIS-CAM, een meetinstrument voor beroepsstatus in het verleden

Om de beroepsstatus van beroepen uit de negentiende en begin twintigste te bepalen wordt in dit proefschrift een recent ontwikkelde statusschaal gebruikt: HIS-CAM. Hoofdstuk 2 richt zich op de vraag in welke mate HIS-CAM vergelijkbaar is met bestaande historisch georiënteerde klassenschema's enerzijds en hedendaagse schalen voor beroepsstatus anderzijds. Daartoe worden er drie vergelijkingen gemaakt. Ten eerste wordt een beschrijvende vergelijking gemaakt tussen de statusschalen en de klassenschema's om te zien in hoeverre de positionering van beroepen overeenkomt tussen HIS-CAM en de andere schalen. Ten tweede worden maten van statistische associatie gebruikt om de HIS-CAM en de andere schalen met elkaar te vergelijken. Tenslotte wordt gekeken hoe

de schalen zich tot elkaar verhouden door in een analyse van sociale mobiliteit de mate van verklaarde variantie tussen de schalen te vergelijken.

De uitkomsten laten zien dat er veel samenhang bestaat tussen HIS-CAM en de statusschalen en klassenschema's. Het is echter ook duidelijk geworden dat er tussen de schalen en schema's verschillen bestaan in de toekenning van statusposities van bepaalde beroepen. Deze verschillen spelen een grotere rol, naarmate een bepaalde beroepsgroep groter is, zoals met name die van boeren. Een veelgebruikte statusschaal, de *Standard International Occupational Prestige Scale* (SIOPS), blijkt een hogere waarde toe te kennen aan de beroepsstatus voor boeren dan het geval is bij de andere statusschalen. Daarmee blijkt deze schaal gevoelig voor het al dan niet opnemen van de beroepsgroep boeren in de analyses. Hoewel van deze schaal wordt aangenomen dat hij universeel is, lijkt HIS-CAM een beter alternatief bij de analyses van statusverwerving in de negentiende eeuw, waarin de agrarische sector nog groot was, maar door de komst van de industrialisering ook onderhevig was aan veranderingen.

Statusverwerving via het huwelijk

Hoofdstuk 3 bestudeert statusverwerving via het huwelijk in de provincie Zeeland tussen 1811 en 1915. Door te huwen met iemand uit een andere sociale laag kan iemands status positie stijgen of dalen. In hoofdstuk 3 staan drie vragen centraal. Ten eerste wordt gekeken in hoeverre voor een bruidegom de beroepsstatus van zijn vader (afkomstbeginsel) en zijn eigen beroepsstatus (prestatiebeginsel) bepalend is om te huwen met een vrouw uit een hogere statusgroep. Ten tweede wordt gekeken in hoeverre er regionale en temporele verschillen zijn in het relatieve belang van het afkomst- en het prestatiebeginsel. Ten derde wordt bestudeerd of dergelijke verschillen samenhangen met macroprocessen zoals industrialisatie, massacommunicatie en urbanisatie.

Volgens de moderniseringstheorie zou met de komst van industrialisering het afkomstbeginsel aan belang inboeten, terwijl het prestatiebeginsel een meer invloedrijke rol zou gaan spelen. Met de analyses in dit hoofdstuk wordt deze hypothese voor het eerst getoetst op een grootschalige dataset in een periode voor en tijdens de industrialisatie. De moderniseringstheorie wordt ondersteund. Met toenemende industrialisering neemt het verband tussen de beroepsstatus van vaders van de bruid en de bruidegom af. Daarnaast is er een toename in het verband tussen de beroepsstatus van een bruidegom en die van diens schoonvader, een relatie die zowel elementen van het afkomst- als het prestatiebeginsel omvat. Aangezien het belang van afkomst verminderde, zal het belang van verdienste nog meer zijn toegenomen, dan het gemengde verband tussen de beroepsstatus van de bruidegom en de status van de bruids vader laat zien.

De uitkomsten met betrekking tot de andere macroprocessen, onderwijsexpansie, massacommunicatie, massatransport, urbanisatie en migratie vertonen een gemengd beeld. Van de moderniseringstheorie werd de hypothese afgeleid dat voor al deze processen zowel het belang van het afkomstbeginsel als het prestatiebeginsel zou verminderen. Alleen massacommunicatie verminderde daadwerkelijk de invloed van

het afkomstbeginsel, terwijl onderwijsexpansie tot een verminderde invloed van het prestatiebeginsel leidde.

De conclusie met betrekking tot het afkomstbeginsel is helder. De invloed van afkomst in het statusverwervingsproces via huwelijk, verminderde over de tijd, met de opkomst van industrialisatie en met de ontwikkeling van massacommunicatie. De bevindingen met betrekking tot het prestatiebeginsel zijn echter minder eenduidig. Dit kan komen doordat het getoetste verband tussen de beroepsstatus van een bruidegom en diens schoonvader zowel elementen van het afkomst- als het prestatiebeginsel omvat. De gemengde bevindingen met betrekking tot het prestatiebeginsel zouden echter ook kunnen worden verklaard door het feit dat de moderniseringstheorie niet eenduidig is over de invloed van de macroprocessen op het prestatiebeginsel bij het huwelijk. Hoewel massatransport en massacommunicatie voor nieuwe ontmoetingsmogelijkheden zorgden voor mensen van alle sociale lagen, betekent dit niet perse dat deze mogelijkheden door mensen uit verschillende lagen in dezelfde mate werden aangegrepen.

Intergenerationele statusoverdracht

In de hoofdstukken 4 en 5 wordt gekeken naar een tweede statusverwervingsproces, namelijk dat van de intergenerationele overdracht van status. In hoofdstuk 4 worden twee onderzoeksvragen gepresenteerd. De eerste vraag luidt of er regionale en temporele verschillen zijn in de invloed van beroepsstatus van vaders op de status van hun zonen in Zeeland tussen 1811 en 1915. De tweede vraag in dit hoofdstuk luidt of dergelijke verschillen te verklaren zijn door macroprocessen, zoals industrialisatie, massa communicatie en urbanisatie.

Een eerste bijdrage van dit hoofdstuk is de explicitering van hypothesen voor de verschillende moderniseringsprocessen. Hierdoor wordt duidelijk hoe deze moderniseringsprocessen het statusverwervingsproces beïnvloeden, in het bijzonder of ze invloed uitoefenen op het afkomstbeginsel, dan wel het prestatiebeginsel.

De resultaten laten zien dat het verband tussen de beroepsstatus van vaders en dat van hun zonen toenam in de eerste helft van de negentiende eeuw, waarna deze trend afvlakte. Industrialisering en urbanisering hadden een positieve invloed op het verband tussen beroepsstatus van vaders en zonen. Ook onder de invloed van massacommunicatie nam de invloed van vaders beroepsstatus toe, zowel in de negentiende als in het begin van de twintigste eeuw. Onderwijsexpansie lijkt de relatie tussen beroepsstatus van vaders en zonen ongemoeid te hebben gelaten in de late negentiende en vroeg twintigste eeuw. Alleen massatransport verminderde de overdracht van status tussen vaders en zonen. Over het geheel genomen ondersteunen deze resultaten de status-behoud-theorie en weerleggen ze de moderniseringstheorie.

Een belangrijke opmerking bij de interpretatie van deze resultaten is echter dat in hoofdstuk 4 de totale associatie tussen beroepsstatus van vaders en zonen centraal stond. De voor de analyses gebruikte huwelijksakten verschaffen geen informatie over het opleidingsniveau van zonen. Derhalve kan dus niet worden bepaald of de invloed van

vaders op de opleiding van hun zonen veranderd is en ook niet of het belang van opleiding voor de beroepsstatus van zonen is toegenomen. Het is dus mogelijk dat het totale verband tussen beroepsstatus van vaders en zonen toeneemt, als gevolg van een kleine afname in de invloed van vaders beroepsstatus op de opleiding en beroepsstatus van de zoon enerzijds en een sterke toename in het belang van opleiding voor de beroepsstatus van de zoon anderzijds. In dat geval zou de moderniseringstheorie toch bevestigd worden, terwijl er sprake is van een toename van het totale verband tussen beroepsstatus van vaders en zonen.

In tegenstelling tot hoofdstuk 4, wordt in hoofdstuk 5 het belang van opleiding in het intergenerationele statusverwervingsproces wel onderzocht. Hiertoe zijn de huwelijksakten van een steekproef van leerlingen van het Voorbereidend Hoger en Middelbaar Onderwijs (VHMO) verzameld en vergeleken met de huwelijksakten van een steekproef van Nederlanders die geen onderwijs hebben genoten. Ook in dit hoofdstuk wordt getracht regionale en temporele verschillen in het statusverwervingsproces te verklaren aan de hand van macroprocessen, te weten: onderwijsexpansie, massacommunicatie, urbanisatie en migratie. De studie heeft betrekking op het statusverwervingsproces in enkele honderden Nederlandse gemeenten in de periode 1887-1941.

De resultaten laten zien dat het totale verband tussen beroepsstatus van vaders en zonen afnam. Dit werd voornamelijk veroorzaakt door een afname van het directe effect van vaders beroepsstatus op dat van zijn zoon. Het statusverwervingsproces lijkt in minder ontwikkelde gemeenten niet veel anders te zijn geweest dan in meer ontwikkelde gemeenten. In de meer ontwikkelde gemeenten vond er in de loop van de tijd echter wel een verschuiving plaats in het statusverwervingsproces. In deze gemeenten nam de invloed van vaders beroepsstatus op de opleiding van de zoon af, en werd de invloed van de zoons opleiding op eigen beroepsstatus groter. In tegenstelling tot de resultaten uit hoofdstuk 4, bevestigen deze resultaten, die het complete proces van intergenerationele statusoverdracht omvatten, de moderniseringstheorie en weerleggen ze de status-behoud-theorie.

Conclusie en discussie

In dit proefschrift is voor het eerst aan de hand van grootschalige historische datasets onderzocht in hoeverre industrialisering en andere macroprocessen zoals onderwijsexpansie en urbanisatie het statusverwervingsproces hebben beïnvloed. In hoofdstuk 6 worden de onderzoeksvragen beantwoord aan de hand van een overzicht van de resultaten uit dit proefschrift.

De onderzoeksresultaten geven aan dat er regionale verschillen en verschillen over de tijd waren in het statusverwervingsproces. Dit geldt zowel voor statusverwerving via het huwelijk als ook voor de intergenerationele overdracht van status. Deze resultaten wijzen uit dat het lastig is om generaliserende conclusies te verbinden aan historische studies die slechts enkele steden omvatten, terwijl sociologische studies op het niveau van landen voorbij gaan aan belangrijke verschillen in het statusverwervingsproces binnen landen.

Bij het kiezen van een huwelijkspartner nam het belang van afkomst voor statusverwerving af in de provincie Zeeland in de negentiende eeuw, waardoor in het begin van de twintigste eeuw voor het vinden van een huwelijkspartner de eigen statuspositie van de bruidegom belangrijker was dan zijn afkomst.

In het intergenerationele statusverwervingsproces werd in Zeeland gedurende de negentiende eeuw het verband tussen de afkomst van de bruidegom en zijn statuspositie sterker. Een stijging die rond de eeuwwisseling afvlakte. De gegevens voor Nederland laten zien dat de relatie tussen afkomst en beroepsstatus afnam aan het einde van de negentiende en het begin van de twintigste eeuw. Deze bevindingen suggereren een omgekeerd U-patroon in het statusverwervingsproces. De verschuiving van het afkomstbeginsel naar het prestatiebeginsel in Nederland na de Tweede Wereldoorlog, zoals gevonden in eerder onderzoek, lijkt dus te zijn begonnen aan het begin van de twintigste eeuw.

De onderzoeksresultaten laten ook zien dat macroprocessen, zoals industrialisering, onderwijsexpansie en urbanisatie, voor een deel veranderingen kunnen verklaren in de invloed van zowel het afkomst- als het prestatiebeginsel. Door industrialisatie en massacommunicatie nam de invloed van afkomst bij statusverwerving via het huwelijk af. Tevens had massacommunicatie, evenals de expansie van middelbaar onderwijs, urbanisatie en migratie, een negatieve invloed op de directe statusoverdracht tussen vaders en zonen. Daarnaast verminderden massacommunicatie en de expansie van middelbaar onderwijs het belang van afkomst voor het bereiken van een bepaald opleidingsniveau. Massacommunicatie had ook een onverwacht effect: het verminderde de invloed van het prestatiebeginsel bij de intergenerationele overdracht van status. Tenslotte versterkten de expansie van onderwijs, urbanisatie en migratie de invloed van het prestatiebeginsel, doordat in gebieden die in deze opzichten meer modern waren, de invloed van opleiding op iemands eigen statuspositie toenam. Over het geheel genomen steunen de resultaten in dit proefschrift de moderniseringstheorie en weerleggen ze de status-behoud-theorie. Het proefschrift besluit met aanbevelingen voor toekomstig onderzoek. Voor de analyses in dit proefschrift is gebruik gemaakt van huwelijksakten. Op deze akten bleek het beroep van vaders vaak te ontbreken. Verschillende analyses wezen uit dat het ontbreken van beroepstitels geen verband lijkt te houden met de sociale status van bruidegommen en dus waarschijnlijk niet van invloed is op de resultaten. Desalniettemin zou toekomstig onderzoek aan de hand van levensloopdata kunnen achterhalen wat de oorzaak van het ontbreken van deze beroepstitels is om daarmee het effect ervan nader te kunnen duiden.

Om de invloed van macroprocessen op statusverwerving te kunnen schatten zijn indicatoren voor deze processen gebruikt. Indien mogelijk heb ik gebruik gemaakt van indicatoren die ook in hedendaags onderzoek worden gebruikt, zoals het aantal leerlingen voor onderwijsexpansie en het aantal inwoners voor de urbanisatiegraad van een gemeente. Voor andere processen, waarvoor geen geïkete indicatoren voor handen waren, heb ik nieuwe indicatoren gebruikt, zoals het aantal stoommachines ooit aangeschaft

voor industrialisering, de aanwezigheid van een postkantoor voor massacommunicatie en de aanwezigheid van een tram of treinstation voor massatransport. Ik heb getracht indicatoren te vinden die zo nauw mogelijk aansluiten bij de moderniseringsprocessen als het archiefmateriaal dat toestaat. Echter, toekomstig onderzoek zal de validiteit van deze indicatoren moeten uitwijzen, zoals dat overigens het geval is bij iedere indicator, die voor het eerst wordt gebruikt.

Tenslotte brengen de bevindingen in dit proefschrift twee nieuwe onderzoeksvragen te berde. Bij de bestudering van het intergenerationele statusverwervingsproces bleek dat bij de overgang van de negentiende naar de twintigste eeuw de invloed van het afkomstbeginsel afnam. Hieraan ging echter een toename van het belang van afkomst vooraf, onder andere door de invloed van industrialisatie. De vraag rijst dus, hoe het mogelijk is dat macroprocessen, zoals industrialisatie, eerst een positieve en later een negatieve invloed uitoefenden op het afkomstbeginsel. Een mogelijke verklaring is dat mensen met meer hulpbronnen aanvankelijk beter konden anticiperen op de macroprocessen door te investeren in machines, vastgoed en ander kapitaal dat van vader op zoon kon worden overgedragen. Door het massale karakter van de moderniseringsprocessen zouden individuele investeringen uiteindelijk te kort schieten, waardoor er voor een groeiend aantal mensen investeringsmogelijkheden ontstonden.

De tweede vraag betreft de verschillende ontwikkeling tussen het statusverwervingsproces via huwelijk en het proces van intergenerationele statusoverdracht. Waar het belang van afkomst in de tweede helft van de negentiende eeuw afnam bij de keuze van een huwelijkspartner, nam de invloed van afkomst bij intergenerationele statusoverdracht toe, om vervolgens af te nemen aan het eind van de negentiende en het begin van de twintigste eeuw. Bovendien nam de invloed van het prestatiebeginsel toe in het begin van de twintigste eeuw. De vraag rijst dus waarom de twee processen van statusverwerving zich verschillend ontwikkelden. Ook kan men zich afvragen of er een wisselwerking was tussen de beide processen van statusverwerving. Was de latere afnemende invloed van afkomst bij intergenerationele statusoverdracht een gevolg van de eerdere afnemende invloed van afkomst bij statusverwerving via het huwelijk?

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About the author

Richard L. Zijdeman (1976) was born in Gouda, The Netherlands. In August 1999 he graduated in Social Health Care Work at the Windesheim University of Applied Sciences (Zwolle, The Netherlands). During his internship at the Jugendheimstätte Puckenhof (Erlangen, Germany) he followed several courses at the University of Nürnberg (Nürnberg, Germany), which eventually raised his interest in Sociology. In July 2003 he obtained his Master's degree in Sociology at Utrecht University (Utrecht, The Netherlands). In the same year he started his Ph.D. project at the Interuniversity Center for Social Theory and Methodology (ICS) at the Department of Sociology, Utrecht University. During his Ph.D. he was several times a visiting scholar at the Department of Applied Social Science, University of Stirling (Scotland). Currently, he is employed as a postdoctoral researcher at the Department of Sociology/ICS at Utrecht University.

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