# AMERICAN SOCIAL MOBILITY IN THE 19TH AND 20TH CENTURIES

DAVID B. GRUSKY

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## Abstract

This study provides new evidence about the effects of an advanced economy on the rates, patterns, and sources of social mobility for men in the United States. The data are drawn from census manuscripts and directories in 9 communities in the 19th century, and from the Occupational Changes in a Generation survey in the 20th century. In each data set, the occupational titles have been recoded into a common classification, so comparisons can now be made with a degree of confidence and precision. The main finding is that rates of social mobility in the 20th century are about twice as high as the corresponding rates in the 19th century. This result is partly due to the rapid reshaping and upgrading of the class structure, but it persists even after these changes are controlled by fitting the marginal effects in a mobility classification. In each sample, the major changes have taken place on the main diagonal of the mobility regime, yet the residue of trends off the diagonal are significant for some of the classes. These trends include (a) an emerging parity in the mobility chances of semiskilled and unskilled labor, (b) an increase in the exchanges between proprietors and manual workers, and (c) a substantial decline in the mobility chances of routine nonmanuals. The changes on the main diagonal may arise from the growth of universal values in the last century, whereas the trends off the diagonal probably proceed from class-specific changes in pay, skills, or prestige. It is argued that these trends should have offsetting effects on the potential for class action and identification in the 20th century. The emerging parity in the mobility chances of manual wage workers will reduce internal conflicts and cleavages, but the growth of widespread opportunities for these workers should induce them to forego collective strategies of action.

**Acknowledgments**

This project had its origin more than 3 years ago, when Robert Hauser introduced me to the quantitative monographs written by the new urban historians (e.g., *Poverty and Progress*, by Stephan Thernstrom). It became obvious upon reading these monographs that the historical data could be used to construct a new set of baseline measurements for a long-term study of the American mobility regime. I will always be indebted to Robert Hauser for introducing me to these data and encouraging me to reanalyse them in unit record form.

In the course of my subsequent work my debt to Robert Hauser has accumulated in many other ways. I have been guided by his efforts to apply log-linear models to mobility classifications, and I have used his ongoing research with the OCG data as a template for my own efforts to monitor trends in the more distant past. I have been greatly influenced by his comments, his encouragement, and his commitment to a scientific sociology.

I am also indebted to the other members of my doctoral committee. The comments offered by William Sewell helped me to sharpen my ideas about the cultural resources of parents and the effects of these resources on their children. On several occasions, I turned to Robert Mare for his thoughtful reactions to my ideas, and for his technical advice on the models and methods of analysis. If it were not for his comments, the results would have been less elegant, and the interpretations less convincing. The two readers on my committee, Ivan Szelenyi and John Sharpless, provided constructive comments on the completed manuscript and on drafts of related papers and proposals.

The preliminary results from this research have been presented at several seminars and annual meetings. I would like to thank Michael Hout, Peter Marsden, Ken Spenner, and Michael Sobel for the comments they offered at these presentations. The analyses and interpretations in the following chapters have been improved in important ways by their reactions.

I have also profited from my associations with members of the Sewell-Hauser project. It was through this project that I was able to form working relationships with sociologists from a wide range of countries and academic traditions. I am especially grateful to Taissa Hauser, Peter Mossel, Michael Massagli, Shu-Ling Tsai, Richard Williams, Jongchun Cha, and Mary Schlaefer. I have drawn upon their advice, comments, and counsel throughout all stages of my research.

It is obvious that this project could not have been completed without the prior efforts of dozens of social historians. I am grateful that so many of these scholars were willing to share their primary data in unit record form. In many cases, they went to great lengths to locate their data sets, to copy them onto tapes or cards, and to answer my queries about their contents. In all cases, my questions were answered

with the utmost patience, even when a closer reading of the original monographs might have provided the information I needed. My thanks go to Stuart M. Blumin, Peter R. Knights, Don H. Doyle, Clyde Griffen, Sally Griffen, Michael Katz, Dean R. Esslinger, Richard J. Hopkins, Laurence A. Glasco, Stephan Thernstrom, and Gordon W. Kirk, Jr.

The original data sets from the 19th century were made available in a wide variety of formats. If it were not for the technical skills of Ann Cooper, it would have been exceedingly difficult to translate these data sets into a format readable on the VAX 11/780. The assistance she rendered went far beyond her usual obligations as the data librarian at the Center for Demography and Ecology. I would also like to thank Laura Campbell from the Data and Program Library for her efforts to recover the Boston sample from the Inter-university Consortium.

The tables and figures for each chapter were expertly typed by Jennie Vanderlin, Sandy Ramer, and Michelle Doret. In the earlier stages of this project, Michael Vanko translated the data encoded on edge-punched cards, and Mary Sanders transferred the data from index cards into a machine readable format (see Chapter 1). These tasks were always carried out with a considerable amount of skill, diligence, and patience.

This project has been funded in part by a predoctoral grant from the National Science Foundation (SES-8416141). The computations were supported by a grant to the Center for Demography and Ecology from the National Institute for Child Health and Human Development (HD-5876). I have also been supported during the preparation of this manuscript by a predoctoral fellowship from the National Science Foundation, by a university fellowship from the University of Wisconsin-Madison, and by a training grant from the National Institute for Child Health and Human Development.

It is fitting to conclude by acknowledging the numerous contributions of Szonja Szelenyi. Indeed, it has to be conceded that she has borne many of the costs of this project, even though she has not equally shared in its rewards. I am sure that she is more relieved than I that the dissertation has finally come to an end.

The data used in this project were originally collected by Peter R. Knights, Clyde Griffen, Sally Griffen, Dean R. Esslinger, Stuart M. Blumin, Laurence A. Glasco, Gordon W. Kirk, Jr., Stephan Thernstrom, Richard J. Hopkins, Don H. Doyle, Robert M. Hauser, and David L. Featherman. The data collected by Stephan Thernstrom were made available in part by the Inter-university Consortium for Political and Social Research. Neither the original collectors of the data nor the Consortium bear any responsibility for the analyses or interpretations presented here.

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## Chapter 1: Introduction

The objective of this project is to examine trends in social mobility over the last 150 years, by reanalyzing a set of samples collected by social historians and sociologists in the last two decades. In each data set, the occupational titles have been recoded into a common classification, so comparisons can now be made with a degree of confidence and precision. The results from this analysis should clarify some of the partisan debates about the effects of economic development on social mobility in the United States.

There is a long history of controversy over this issue. The classical view says there is no immanent logic in history producing a long-term trend, either in the direction of increasing or declining rates. It was argued that a trend in any direction cannot be sustained, because of the constant struggle between the "forces of stratification and those of equalization" (Sorokin 1927, p. 63). In the postwar period, this classical position receded in popularity, and a new view on social mobility emerged. It was claimed that the American mobility regime had rigidified in the 20th century, because of recent changes in fertility patterns, immigration quotas, and trade union policies (e.g., Sibley 1942; Havighurst 1947). These claims resurfaced in the 1950s (Hertzler 1952), but by the next decade the terms of debate had shifted once again. The commentary in this period proceeded from the view that long-term trends arise from changes in the values that orient social action. It was argued, for example, that the rise of universalism in the last century had produced a more fluid mobility process in the United States (e.g., Blau and Duncan 1967; Treiman 1970; also, see Parsons 1970).

The current commentary has moved closer to the classical view advanced by Sorokin (1927). This shift in opinion has not been motivated by theoretical or political concerns, but by results from recent research in the United States, Europe, and other advanced industrial societies. Among these results, it is most relevant to cite:

1. the striking similarities in the mobility regimes of contemporary societies at different stages of development (Erikson and Goldthorpe 1985a; Grusky and Hauser 1984),
2. the trendless fluctuations in the United States for the last 60-70 years (Rogoff 1953; Duncan 1968; Hauser *et al.* 1975; Featherman and Hauser 1978; Baron 1980), and
3. the trendless fluctuations in Great Britain for the last 50-60 years (Goldthorpe 1980; Hope 1981).

In each case, the evidence is inconsistent with the postwar claims for a perpetual trend. There are small fluctuations in the mobility process, but they do not follow any simple pattern or depend upon any single cause.[1]

It is premature to conclude that these results arise from a permanent "homeostatic process" in the stratification system (see Goldthorpe 1980, pp. 274-75). In fact, the stability in the recent past may be seen as a temporary, short-term episode in history. This latter view has been adopted, at least implicitly, by commentators who take the recent stability as evidence of a "threshold effect" in the process of development. For example, Lipset and Zetterberg (1959) concede that the mobility regime may have stabilized at some point, but only after it reached a new historic level of fluidity in the early stages of economic development (also, see Lipset 1983; Davis 1962). In this way, the recent results can be reconciled with the postwar theories calling for a long-term trend in the stratification system.

If there was a threshold in the process of development, it probably took place before any data became available from contemporary surveys. The oldest cohorts in OCG I (Blau and Duncan 1967) entered the labor force around 1910, which is well after the transition to an advanced economy was in progress. It should be recalled that a major industrial expansion was underway even before the Civil War began; indeed, by 1890, the value of manufactured goods in the United States surpassed the value of agricultural products (Degler 1970, p. 238). Furthermore, in most cities, a modern school system was firmly in place by the early decades of the 20th century (e.g., see Katz et *al.* 1982). The first compulsory attendance law was not passed until 1852; nonetheless, by 1910, 79.9% of the children between the ages of 5 and 17 were enrolled in public or private schools (U.S. Bureau of the Census 1961, p. 207). It has been argued, in this context, that the "socio-economic take-off" was effectively completed in the brief period between the Civil War and the first World War (see Degler 1970, pp. 237-72). If a modern mobility regime emerged in this period, then the transition occurred too early in history to be disclosed in any of the contemporary surveys.

**19th Century Data**

The effects of the industrial take-off can be assessed by turning to new sources of data on the stratification system. It is often possible, for example, to recover the current occupations of early Americans from census manuscripts, local tax lists, or annual directories.[2] The first federal census was taken in 1790, but a detailed occupational item was not added to the questionnaire until the 1840 enumeration. However, in some cities, an annual directory was published prior to 1840, or even prior to the first census in 1790 (see Spear 1961). The directories were produced by printers or stationers, who sent out teams of canvassers to collect the name, address, and occupation of city residents (Knights 1971, pp. 127-39). In some cases, it is also useful to refer to local tax schedules, since the assessors usually recorded the current occupations of residents who owned personal property. The schedules were available throughout the 19th century; in fact, they often extended into the 18th century, or even into the early colonial period (e.g., see Smith 1980; Williamson and Lindert 1980).

Some examples of these documents are reproduced in Figures 1.1, 1.2, and 1.3. In all three figures, the data are coded in unit record form, with each record identified by a full name. This format makes it possible to reconstruct the careers of respondents, by linking their records across sources from different years. Moreover, if the respondents are traced far enough into the past, the occupations of their parents can be recovered from household records in the federal census (i.e., see Figure 1.1). In the mid-1960s, these methods were introduced by Stephan Thernstrom in his influential study of Newburyport (1964; also, see Thernstrom 1966; Curti 1959).

This study quickly became a classic. It was even replicated in dozens of cities in the United States, Canada, and Western Europe (e.g., Blumin 1969; Katz 1975; Sewell 1985). Of course, in most cases, the studies only covered 3 or 4 decades in the mid-19th century (but, see Smith 1980). The first set of results on long-term trends was not available until 10 years after the Newburyport study was published. Once again, it was Stephan Thernstrom who led the way, by carrying out a careful comparison of 5 samples from Boston and its suburbs (see Thernstrom 1973, pp. 265-88). The samples covered more than 8 decades; however, within this period, there was no evidence of any systematic fluctuations in the rates or patterns of mobility. This set of results has become the starting point for most of the subsequent commentary on long-term trends (e.g., see Hershberg 1981, pp. 12-22).

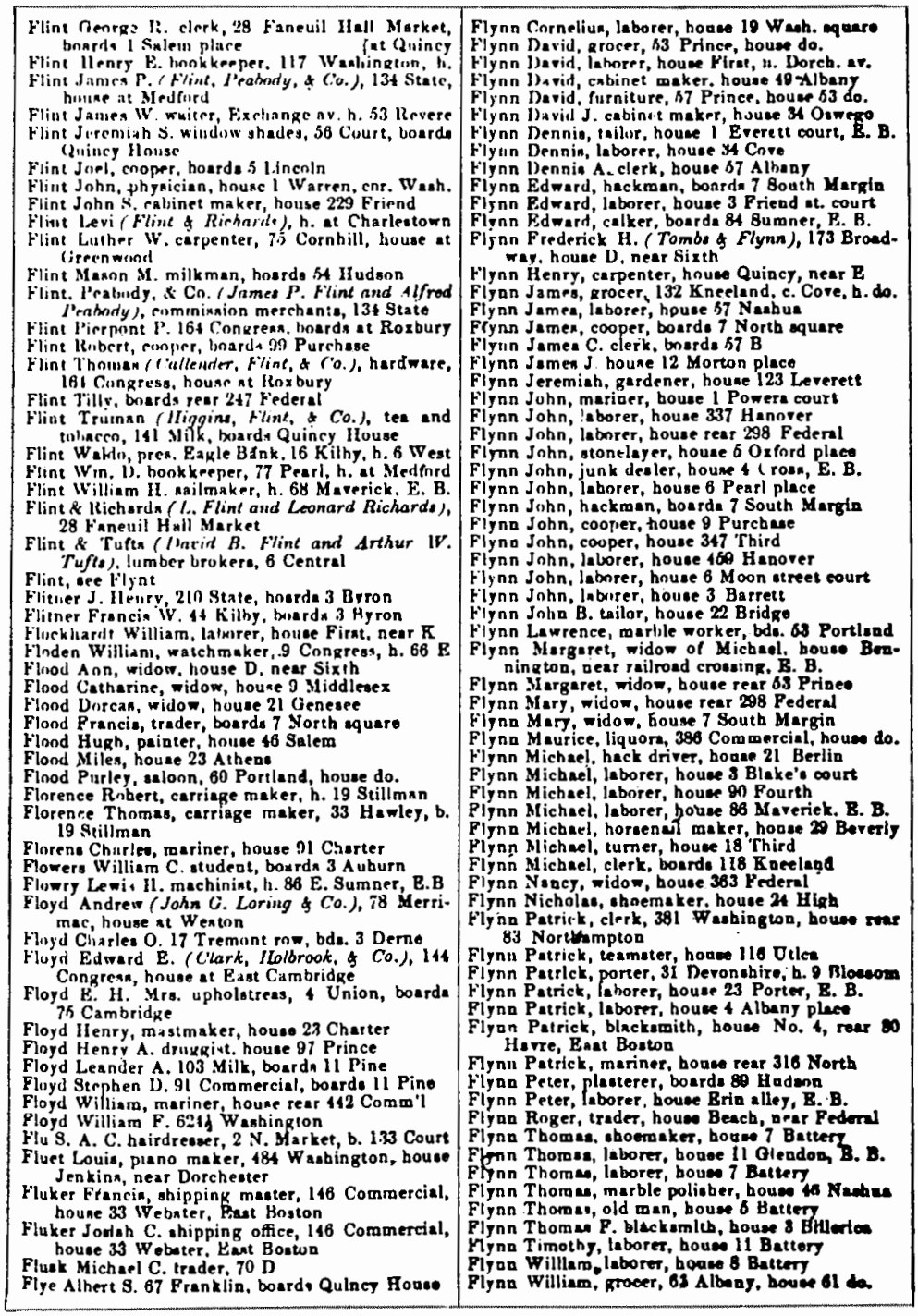
It has been argued that the results from Boston can be generalized to cities throughout the United States (e.g., see Thernstrom 1973, pp. 220-61). In fact, it is hard to assess this claim, since the data from other studies have not been collected with considerations of comparability in mind. Therefore, when a comparison is undertaken, some serious methodological problems arise at once. It is not uncommon for the original studies to differ in their methods of sampling, in their procedures for linking records, and even in their criteria for defining class positions (Hershberg 1981, pp. 15-16). In addition, the occupational categories are often aggregated in different ways, or the measurements are made at different points in the life course. These problems are certainly well-known; nonetheless, a few comparisons have been carried out on a "provisional basis" (e.g., see Kaelble 1981, 1986; Kirk 1978, pp. 135-45; Hazelrigg 1974; Thernstrom 1973, pp. 320-61).

The authors of these studies usually concede that the methodological problems are serious. At the same time, they still press on with their comparisons, after issuing the proper *caveats* and disclaimers (e.g., see Kaelble 1985, pp. 7-8). In most of this work, the analysis is based on published classifications, which were made comparable by collapsing them until a "lowest common denominator" was reached. The margins of error under this procedure may be large, since the original data were rarely published in enough detail to reconcile the

Figure 1.1 Excerpt from 1860 Federal Manuscript Schedule (New Orleans, LA)

| Dwelling-houses numbered in the order of visitation. | Families numbered in the order of visitation. | The name of every person whose usual place of abode on the first day of June, 1860, was in this family. | Description. Age. | Sex. | Color, {White, black, or mulatto.} | Profession, Occupation, or Trade of each person, male and female, over 15 years of age. |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 239 | 244 | John McGargan | 40 | M | | Baker |
| | | Anna " | 30 | F | | |
| | | Joseph " | 8 | M | | |
| | | Celia McMurk | 35 | F | | Washerwoman |
| | | Anna " | 20 | F | | " |
| | | Mary Eo " | 3 | F | | |
| 240 | 245 | Joseph Pellin | 38 | M | | Huckster |
| | | Jane Jane | 36 | M | | " |
| | 246 | Co. H. Saunders | 50 | M | | Sail Maker |

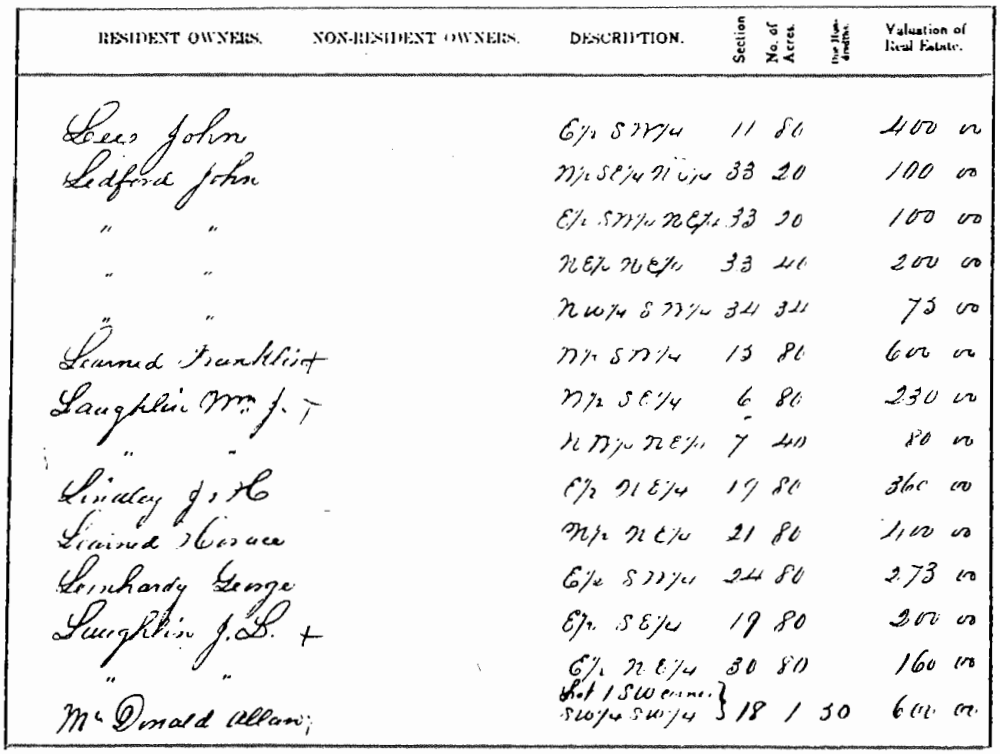
Figure 1.2 Excerpt from 1860 City Directory (Boston, Mass.)



Flint George R. clerk, 28 Faneuil Hall Market, boards 1 Salem place
Flint Henry E. bookkeeper, 117 Washington, h. [at Quincy
Flint James P. *(Flint, Peabody, & Co.)*, 134 State, house at Medford
Flint James W. waiter, Exchange av. h. 53 Revere
Flint Jeremiah S. window shades, 56 Court, boards Quincy House
Flint Joel, cooper, boards 5 Lincoln
Flint John, physician, house 1 Warren, cnr. Wash.
Flint John S. cabinet maker, house 229 Friend
Flint Levi *(Flint & Richards)*, h. at Charlestown
Flint Luther W. carpenter, 75 Cornhill, house at Greenwood
Flint Mason M. milkman, boards 54 Hudson
Flint, Peabody, & Co. *(James P. Flint and Alfred Peabody)*, commission merchants, 134 State
Flint Pierpont P. 164 Congress, boards at Roxbury
Flint Robert, cooper, boards 99 Purchase
Flint Thomas *(Callender, Flint, & Co.)*, hardware, 164 Congress, house at Roxbury
Flint Tilly, boards rear 247 Federal
Flint Truman *(Higgins, Flint, & Co.)*, tea and tobacco, 141 Milk, boards Quincy House
Flint Waldo, pres. Eagle Bank, 16 Kilby, h. 6 West
Flint Wm. D. bookkeeper, 77 Pearl, h. at Medford
Flint William H. sailmaker, h. 68 Maverick, E. B.
Flint & Richards *(L. Flint and Leonard Richards)*, 28 Faneuil Hall Market
Flint & Tufts *(David B. Flint and Arthur W. Tufts)*, lumber brokers, 6 Central
Flint, see Flynt
Flitner J. Henry, 210 State, boards 3 Byron
Flitner Francis W. 44 Kilby, boards 3 Byron
Flockhardt William, laborer, house First, near K
Floden William, watchmaker, 9 Congress, h. 66 E
Flood Ann, widow, house D, near Sixth
Flood Catharine, widow, house 9 Middlesex
Flood Dorcas, widow, house 21 Genesee
Flood Francis, trader, boards 7 North square
Flood Hugh, painter, house 46 Salem
Flood Miles, house 23 Athens
Flood Purley, saloon, 60 Portland, house do.
Florence Robert, carriage maker, h. 19 Stillman
Florence Thomas, carriage maker, 33 Hawley, b. 19 Stillman
Florens Charles, mariner, house 91 Charter
Flowers William C. student, boards 3 Auburn
Flowry Lewis H. machinist, h. 86 E. Sumner, E.B
Floyd Andrew *(John G. Loring & Co.)*, 78 Merrimac, house at Weston
Floyd Charles O. 17 Tremont row, bds. 3 Derne
Floyd Edward E. *(Clark, Holbrook, & Co.)*, 144 Congress, house at East Cambridge
Floyd E. H. Mrs. upholstress, 4 Union, boards 75 Cambridge
Floyd Henry, mastmaker, house 23 Charter
Floyd Henry A. druggist, house 97 Prince
Floyd Leander A. 103 Milk, boards 11 Pine
Floyd Stephen D. 91 Commercial, boards 11 Pine
Floyd William, mariner, house rear 442 Comm'l
Floyd William F. 624½ Washington
Flu S. A. C. hairdresser, 2 N. Market, b. 133 Court
Fluet Louis, piano maker, 484 Washington, house Jenkins, near Dorchester
Fluker Francis, shipping master, 146 Commercial, house 33 Webster, East Boston
Fluker Josiah C. shipping office, 146 Commercial, house 33 Webster, East Boston
Flusk Michael C. trader, 70 D
Flye Albert S. 67 Franklin, boards Quincy House

Flynn Cornelius, laborer, house 19 Wash. square
Flynn David, grocer, 53 Prince, house do.
Flynn David, laborer, house First, n. Dorch. av.
Flynn David, cabinet maker, house 49 Albany
Flynn David, furniture, 57 Prince, house 53 do.
Flynn David J. cabinet maker, house 34 Oswego
Flynn Dennis, tailor, house 1 Everett court, E. B.
Flynn Dennis, laborer, house 34 Cove
Flynn Dennis A. clerk, house 57 Albany
Flynn Edward, hackman, boards 7 South Margin
Flynn Edward, laborer, house 3 Friend st. court
Flynn Edward, calker, boards 84 Sumner, E. B.
Flynn Frederick H. *(Tombs & Flynn)*, 173 Broadway, house D, near Sixth
Flynn Henry, carpenter, house Quincy, near E
Flynn James, grocer, 132 Kneeland, c. Cove, h. do.
Flynn James, laborer, house 57 Nashua
Flynn James, cooper, boards 7 North square
Flynn James C. clerk, boards 57 B
Flynn James J. house 12 Morton place
Flynn Jeremiah, gardener, house 123 Leverett
Flynn John, mariner, house 1 Powers court
Flynn John, laborer, house 337 Hanover
Flynn John, laborer, house rear 298 Federal
Flynn John, stonelayer, house 5 Oxford place
Flynn John, junk dealer, house 4 Cross, E. B.
Flynn John, laborer, house 6 Pearl place
Flynn John, hackman, boards 7 South Margin
Flynn John, cooper, house 9 Purchase
Flynn John, cooper, house 347 Third
Flynn John, laborer, house 469 Hanover
Flynn John, laborer, house 6 Moon street court
Flynn John, laborer, house 3 Barrett
Flynn John B. tailor, house 22 Bridge
Flynn Lawrence, marble worker, bds. 53 Portland
Flynn Margaret, widow of Michael, house Bennington, near railroad crossing, E. B.
Flynn Margaret, widow, house rear 53 Prince
Flynn Mary, widow, house rear 298 Federal
Flynn Mary, widow, house 7 South Margin
Flynn Maurice, liquors, 386 Commercial, house do.
Flynn Michael, hack driver, house 21 Berlin
Flynn Michael, laborer, house 3 Blake's court
Flynn Michael, laborer, house 90 Fourth
Flynn Michael, laborer, house 86 Maverick, E. B.
Flynn Michael, horsenail maker, house 29 Beverly
Flynn Michael, turner, house 18 Third
Flynn Michael, clerk, boards 118 Kneeland
Flynn Nancy, widow, house 363 Federal
Flynn Nicholas, shoemaker, house 24 High
Flynn Patrick, clerk, 381 Washington, house rear 83 Northampton
Flynn Patrick, teamster, house 116 Utica
Flynn Patrick, porter, 31 Devonshire, h. 9 Blossom
Flynn Patrick, laborer, house 23 Porter, E. B.
Flynn Patrick, laborer, house 4 Albany place
Flynn Patrick, blacksmith, house No. 4, rear 80 Havre, East Boston
Flynn Patrick, mariner, house rear 316 North
Flynn Peter, plasterer, boards 89 Hudson
Flynn Peter, laborer, house Erin alley, E. B.
Flynn Roger, trader, house Beach, near Federal
Flynn Thomas, shoemaker, house 7 Battery
Flynn Thomas, laborer, house 11 Glendon, E. B.
Flynn Thomas, laborer, house 7 Battery
Flynn Thomas, marble polisher, house 46 Nashua
Flynn Thomas, old man, house 5 Battery
Flynn Thomas F. blacksmith, house 3 Billerica
Flynn Timothy, laborer, house 11 Battery
Flynn William, laborer, house 8 Battery
Flynn William, grocer, 63 Albany, house 61 do.

Figure 1.3 Excerpt from 1857 Assessment Roll (Black Earth, WI)



| RESIDENT OWNERS. | NON-RESIDENT OWNERS. | DESCRIPTION. | Section | No. of Acres. | No. Hundredths | Valuation of Real Estate. |
|---|---|---|---|---|---|---|
| Lees John | | E½ SW¼ | 11 | 80 | | 400 00 |
| Ledford John | | W½ SE¼ N E¼ | 33 | 20 | | 100 00 |
| " " | | E½ SW¼ NE¼ | 33 | 20 | | 100 00 |
| " " | | NE¼ NE¼ | 33 | 40 | | 200 00 |
| " " | | NW¼ S W¼ | 34 | 31 | | 75 00 |
| Lemmel Frankliet | | W½ SW¼ | 13 | 80 | | 600 00 |
| Laughlin Wm. J. T | | W½ SE¼ | 6 | 80 | | 230 00 |
| " " | | N W½ NE¼ | 7 | 40 | | 80 00 |
| Lindley J. H | | E½ NE¼ | 19 | 80 | | 360 00 |
| Lemmel Horace | | W½ NE¼ | 21 | 80 | | 100 00 |
| Lenhardy George | | E½ SW¼ | 24 | 80 | | 273 00 |
| Laughlin J. B. + | | E½ SE¼ | 19 | 80 | | 200 00 |
| " " | | E½ NE¼ | 30 | 80 | | 160 00 |
| Mc Donald Allan | | Lot 1 SW corner SW¼ SW¼ | 18 | 1 | 30 | 600 00 |

differences in any systematic way (see Bouchard 1984, pp. 48-52). Indeed, even if the errors are small, the categories in the collapsed tables are not detailed enough to carry out a close analysis.

It is a fitting occasion to complete a more systematic comparison of these data sets. The early studies have had the merit of being pioneering efforts, but we cannot expect to come to any secure conclusions until a rigorous comparison is made. It has been argued that a detailed study is "virtually impossible" to carry out (Hershberg 1981, p. 15), because it would be too costly to collect a new set of comparable data sets. However, in many cases, a systematic comparison can be made without resorting to efforts to collect new data. It is often possible to secure the original studies in unit record form; therefore, the occupational titles can be recoded into a new classification without collapsing them into a small number of categories. It is also possible to define the samples from these studies in similar ways, or even to take the occupational measurements at comparable points in the life course. In fact, when the data are available in unit record form, some of the most serious problems in a comparative analysis can be overcome.

The objective in most of the prior work has been to collect and compare as many studies as possible (e.g., see Kaelble 1985; Kirk 1978, pp. 135-45). Of course, when the original data are reanalyzed, this approach cannot be adopted. The comparison must be preceded by a large amount of archival work, so there are practical limits to the number of data sets that can be included in the analysis. Moreover, some of the studies must be eliminated at the outset, because the samples are extremely small, or because the data are not readily available in unit record form. In many cities, the original studies are over 20 years old; consequently, the data were often lost or destroyed, or the responses were stored on media too costly to copy or recode (e.g., double-punched cards).

However, despite these problems, it was still possible to secure a large number of high-quality data sets. The authors of 26 studies were contacted, and 11 data sets were eventually released in unit record form. In two cases, the documentation was not detailed enough to recode the data; therefore, in the final analyses, the comparisons were based on a set of 9 studies from the 19th century (see Figure 1.4). This set of data is only a "convenience sample" (Sudman 1976), but it does represent cities from several regions, and even cities of many sizes. The samples are drawn from two major cities on the east coast (Philadelphia and Boston), one city in the south (Atlanta), two regional centers (Poughkeepsie and Buffalo), and three towns on the frontier (South Bend, Jacksonville, and Holland). The western states are not represented, but this regional bias is not too important in the mid-19th century. Indeed, in 1850, only 8.6% of the population lived west of the Mississippi (U.S. Bureau of the Census 1961, pp. 12-13).

Figure 1.4. Supplementary Information on the Archival Sources

| City | Investigators | Sources[1] | Years | Coverage | Linkages | Exclusions |
|---|---|---|---|---|---|---|
| 1. Buffalo, NY | Laurence A. Glasco | Census | 1855 | Population | Intergenerational | Males younger than 16; all females[2] |
| 2. Poughkeepsie, NY | Clyde Griffen, Sally Griffen | Censuses | 1850-1870[3] | Population | Intragenerational, Intergenerational | Unemployed males younger than 16; all females |
| 3. Boston, MA | Peter R. Knights | Censuses, Directories | 1830-1840[4] | Random Sample | Intragenerational | Dependents (i.e., residents who are not household heads) |
| 4. Jacksonville, IL | Don H. Doyle | Censuses | 1850-1860 | Population | Intragenerational | Dependents (unless they are employed, or males older than 17) |
| 5. South Bend, IN | Dean R. Esslinger | Censuses | 1850-1870[5] | Population | Intragenerational | Second-generation natives |
| 6. Holland, MI | Gordon W. Kirk, Jr. | Censuses | 1850-1880 | Population | Intragenerational, Intergenerational | All females |
| 7. Atlanta, GA | Richard J. Hopkins | Censuses, Directories | 1870-1880 | Population | Intragenerational Intergenerational | Males younger than 20 or older than 39; all females |
| 8. Philadelphia, PA | Stuart M. Blumin | Directories | 1820-1830[6] | Systematic Sample | Intragenerational | Common names |
| 9. Boston, MA | Stephan Thernstrom | Census, Directories | 1880[7] | Systematic Sample | Intergenerational[8] | Males with common names; all females |

[1] The entries in this column refer to the primary sources used by the investigators. In some cases, other sources were also used to collect supplementary information on the respondents (e.g., vital records, tax schedules, and business directories).

[2] In fact, these respondents were included in the original data set, but the occupations of their parents were never identified (see Glasco 1973).

[3] The data sets released by Clyde Griffen differed slightly from those used in the original analysis (Griffen and Griffen 1978). It should be stressed that the discrepancies were too small to have any serious effects on the results.

[4] This study also included an additional sample from the 1850 census (see Knights 1971). However, it was excluded from the reanalysis, because it could not be recoded into a machine readable format.

[5] The results from these data sets should be interpreted cautiously. It appears that some of the linked cases were lost, since the persistence rates are substantially lower than those reported by Esslinger (1975, p. 43).

[6] The original study included two additional samples, but the index cards for these samples were recently lost or misplaced (Stuart M. Blumin, personal communication). It should also be noted that 58 cases were lost from the 1830 sample.

[7] This study was based on 5 separate data sets, but only the 1880 sample has been publicly released (see Thernstrom 1973, pp. 265-69).

[8] The original sample also included some intragenerational data (Thernstrom 1973, pp. 45-75). However, these data proved to be unusable, because the occupational variables were not detailed enough to recode them into a contemporary classification.

It should be stressed that some sectors of the population may be excluded from these samples. The enumerators in Philadelphia, for example, were instructed to compile a directory of residents who were "in business or heads of households" (see Blumin 1968, p. 58, for more details). In addition, even if no explicit restrictions were made, it is clear that a substantial number of blacks, laborers, and transients were never located by the enumerators (Blumin 1968, pp. 86-88; Thernstrom 1973, pp. 283-88; Knights 1971, pp. 133-39). It has been argued that this set of implicit exclusions may distort the rates of observed mobility, since it deflates the sizes of the manual categories in a mobility classification (e.g., Thernstrom 1973, p. 284). In fact, if this process is operating on both sets of margins, it should produce (a) an upward bias in the outflow rates for manual occupations, and (b) a downward bias in the inflow rates for nonmanual occupations (see Blumin 1968, p. 88). It is usually conceded that these effects are an "ominous possibility" (Thernstrom 1973, p. 284), but no attempts have been made to adjust for them in any systematic way. Of course, if the correct sizes of the occupational categories were known, then the effects of any exclusions could be offset by reweighting the samples. This procedure will be discussed in more detail in Chapter 2.

The last column in Figure 1.4 lists some of the additional restrictions made by the primary investigators. These restrictions were imposed before the samples were drawn, so the original set of respondents cannot be easily recovered. It must be emphasized that a sizable sector of the population has been excluded from some of the data sets (esp., see Lines 5 and 7). Indeed, it was not uncommon to exclude all the female residents, as well as young males and other economic dependents (e.g., see Lines 1, 2, 4). Moreover, the respondents with a common name were often eliminated, since they could not be reliably traced into any of the subsequent directories (Thernstrom 1973, pp. 269-70; Blumin 1968, p. 85). It should be kept in mind that this latter procedure may affect the ethnic composition of the samples (Alcorn and Knights 1975, pp. 104-6; Thernstrom 1973, pp. 271-276).

The original studies were not designed or collected with a comparative analysis in mind. Therefore, when a comparison is carried out, a number of steps must be taken to process the data sets. These steps were completed in the following order:

1. The files were translated into a machine-readable format. In some cases, the data had to be re-entered by hand, since the original files were stored or coded on edge-punched cards.
2. The occupational variables were re-designed to make them comparable to the measurements available in contemporary surveys (e.g., "first job" & "current job"). It was usually possible to construct a close analogue to these measurements (see Chapter 2 for more details).

3. The occupational titles were coded into the 1970 census classification (U.S. Bureau of the Census 1971). If other variables were available, they were also recoded into a common classification.
4. The samples were aggregated into a single data set. It was often useful to simulate a national sample, by weighting the pooled data up to the counts in the federal census.

This set of procedures is discussed in Chapter 2. It is important to discuss them in some detail, since the rest of the analysis will depend upon these efforts to standardize the original studies.

20th Century Data

The contemporary data will be taken from the 1973 OCG survey (Occupational Changes in a Generation II). In Figure 1.5, the sample design for this survey is outlined, and other background information on the study is presented (Featherman and Hauser 1978). The basic sample in the OCG study (see Line 1) was drawn from the March rotation of the 1973 Current Population Survey (CPS). In late August, a mailback questionnaire was sent out to this sample, and the responses were subsequently linked to the CPS data from the March interview. The two supplemental samples (see Lines 2 & 3) were drawn from the black and hispanic populations; in both cases, the respondents were asked to complete the March interview, as well as the OCG survey. Therefore, in all three samples, the socioeconomic data from the CPS will be available (see Featherman and Hauser 1978, pp. 6-9, for more details). The final sample is based on 33,613 civilian males in the noninstitutional population.

The 1973 survey includes a large set of retrospective items (see Featherman and Hauser 1978, pp. 515-22). In the OCG questionnaire, the respondents were asked to recall (a) the first occupation they held after leaving school, (b) the civilian occupation they held in 1962, and (c) the longest occupation they held in 1972 (Featherman and Hauser 1978, pp. 497-506). If the data from the last two items are cross-classified, the resulting intragenerational table will be directly comparable to the ten-year tables from the 19th century (see Chapter 2 for more details). It is these two retrospective items that make the OCG survey so attractive. Indeed, a comparable ten-year table cannot be produced from the items in any subsequent CPS, or even from the occupational items in the 1962 OCG study (Blau and Duncan 1967).

It has been argued that these retrospective reports may be less reliable than the contemporaneous data from the 19th century (e.g., Thernstrom 1973, p. 81). In fact, the correlations between the OCG items could be attenuated, since the retrospective reports may be affected by random errors. If this attenuation is strong enough, a long-term increase in mobility may be observed, even when the true rates are constant or declining.[3] It must be conceded that this type of argument is plausible, but it has failed to stand up to closer scrutiny over the last decade. The results from the remeasurement

Figure 1.5. Supplementary Information on the Occupational Changes in a Generation II Survey.

| | | |
|---|---|---|
| A. | Sample Design | |
| 1. | Basic March CPS sample | 30,228 |
| 2. | Black supplement | 2,313 |
| 3. | Spanish supplement | 1,172 |
| 4. | Total sample | 33,613 |
| B. | Additional Information | |
| 5. | Reference population | 52,989,000 |
| 6. | Response rate | 88% |
| 7. | Age restriction | 20-65 |

Source: Featherman and Hauser, 1978, pp. 8, 511

program of the OCG survey make it clear that retrospective reports are often as reliable as contemporaneous ones (Bielby *et al.* 1977a, b; also, see Featherman and Hauser 1978, pp. 515-22).

It is useful to divide the rest of the presentation into three sections. The next chapter describes the data sets, introduces the procedures for coding occupations, and reviews the steps taken to weight the data from the 19th century. In Chapter 3, the evidence on long-term trends is presented, and some hypotheses on the sources of these trends are discussed. The final chapter summarizes the results, and speculates on their implications for the American class structure.

## Notes

[1] It has been possible in some studies to locate a small trend in the British or American data (see Goldthorpe 1980, pp. 82-84; Hout 1984a, pp. 1391, 1397; Featherman and Hauser 1978, pp. 137, 217).

[2] There are also other useful sources of occupational data, such as savings bank schedules, state registration records, and cemetary interment indices (see Knights 1971, pp. 3-10).

[3] It is also claimed that a respondent may adopt a retrospective response that is consistent with his current status (e.g., Bowles 1972). In this case, the inter-item correlations will be upwardly biased, and a long-term decline in mobility may be observed.

## Chapter 2: Data and Methods

The essential task in any comparative analysis is to ensure that the data are sufficiently comparable. In this chapter, the original studies are introduced, and the steps taken to standardize the studies are outlined. It is important to review these steps carefully, since the results from any analysis can be seriously affected by procedural decisions (e.g., see Jencks 1979, pp. 251-89).

The analyses in Chapters 3 and 4 will be based on three sets of mobility classifications. In the next three sections, these classifications are presented, and the differences between them are reviewed in some detail. The rest of the chapter covers the procedures used to code, rank, and aggregate the occupational titles from the two centuries.

### 2.1 The Intragenerational Samples

The intragenerational tables for the 19th century will be produced from 17 samples in 7 cities and 8 decades (see Figure 2.1).[1] It should be emphasized that a respondent can appear in more than one sample, by staying in the same city for over 10 years, or by moving between two of the cities in Figure 2.1. In fact, 16.2% of the respondents were present in two samples, and another 6.0% of the respondents were present in three or more samples. It follows that the pooled data set may be substantially less efficient than a sample based on independent observations (also, see Sudman 1976, pp. 61-63).

The residents of these cities were asked to report their current occupation (i.e., see Figure 1.4). Therefore, the investigators had to reconstruct the careers of these residents, by linking their occupational records from successive decades. It must be kept in mind that some of the linked records may have "nothing more in common than the same name" (Hershberg 1981, p. 16). The data from the 19th century can be mismatched (a) when a name was mispelled by the enumerator, (b) when a clerical error was made, or (c) when the same name was shared by two residents of the same city.[2] It has been argued that these types of mismatches are not a serious problem, since the data sets were usually small enough to be linked by hand. The investigators also checked for mispellings by the enumerators (e.g., Thernstrom 1973, pp. 280-81), and the respondents with common names were often excluded from the analysis (see Figure 1.4).

The problems produced by migration may be more serious. Indeed, in the pooled data set, only 41.2% of the original residents could be found after ten years had elapsed.[3] The rest of the sample was missing because of errors by the enumerators, or because the respondents had died or migrated out of the immediate area. It is hard to separate these sources, but the best estimates say that 30% of the residents moved to a new city (Parkerson 1982, p. 107), 10 to 15% died in the ten year interval (Katz *et al.* 1978; Parkerson 1982, p. 102; Knights 1971, p. 105), and another 10 to 15% were overlooked by the enumerators. It

Figure 2.1. The Intragenerational Samples from the 19th Century

| City | Sample Year | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1820 | 1830 | 1840 | 1850 | 1860 | 1870 | 1880 |
| 1. Philadelphia | x | x | | | | | |
| 2. Boston (Knights) | | x | x | | | | |
| 3. Jacksonville | | | | x | x | | |
| 4. Poughkeepsie | | | | x | x | x | |
| 5. South Bend | | | | x | x | x | |
| 6. Holland | | | | x | x | x | x |
| 7. Atlanta | | | | | | | x |

Note: The entries refer to the dates when the original samples were drawn. See text for details (also, see Figure 1.4, footnotes 4 and 6).

should be pointed out that this attrition rate cannot be compared to the corresponding rate in the OCG survey (Figure 1.3, Line B6). The data from the 20th century were based on a retrospective design, so the sampling frame excluded residents who had died or emigrated before the survey was taken.

The results from a long-term comparison could be affected by eliminating the unlinked data. It has been suggested that the out-migrants may have been a "permanent floating proletariat" (Thernstrom 1973, p. 42); consequently, if these respondents are excluded, the mobility rates in the 19th century will be artificially inflated (see Glasco 1978, p. 155; Blumin 1968, pp. 86-88; Miller 1975, p. 95). It can also be argued that the bias will be in the opposite direction (e.g., see Blau and Duncan 1967, pp. 243-75). The mobility chances of a respondent may be improved by migrating, since it frees him from the restraints and expectations imposed by his prior employers. Moreover, the two types of mobility (i.e., social and spatial) could be spuriously correlated, because the same set of personal traits may be associated with each of them (e.g., "individual initiative"). If either of these processes is operating, then the results from the linked data could understate the mobility rates in the 19th century.

The evidence on these hypotheses is inconclusive. In the 19th century, the out-migrants cannot be located easily, since the records from dozens of sources have to be searched. The best-known project was completed in Boston (Knights 1971, pp. 103-18); however, only 27% of the out-migrants in this city could be located, even after an exhaustive search was carried out (also, see Kirk and Kirk 1974, pp. 157-59). The results from two new projects appear to be more promising (Knights 1985; Stephenson 1974), but the data from these efforts are still not available in any usable form. Therefore, the approach taken in Chapter 4 is to construct confidence intervals around the mobility rates, by re-calculating the estimates under a range of assumptions about the destinations of the unlinked respondents. If the same results are achieved under any set of assumptions, then the conclusions can be advanced with an added degree of confidence.

The residents of these cities will be followed for a ten-year period. In some of the cities, a classification covering a longer period could have been constructed, but the attrition rate for these classifications usually increased to unacceptable levels. The rate in Philadelphia, for example, was as high as 88% when the respondents were traced from 1820 to 1850 (Blumin 1968, p. 86).[4] In the 20th century, a corresponding ten-year table can also be constructed, by cross-classifying two items from the OCG and CPS questionnaires. The OCG item asks for a civilian job held in 1962, and the CPS item asks for the longest job held in 1972 (i.e., see Featherman and Hauser 1978, pp. 504-5). In both centuries, the classifications will include part-time jobs, as well as jobs held before the respondent completed his schooling.

The final samples will cover the civilian males in the active labor force.[5] In some of the cities, a subsample of females was available, but these cases will be eliminated from the rest of the analysis (see Figure 1.4). The respondents under the age of 25 were also excluded from the contemporary data; therefore, in 1962, the respondents were between the ages of 14 and 54 (see Figure 1.3). The same range of ages can also be covered in the 19th century, except when the original investigators had imposed more stringent restrictions, or when the ages of the respondents were not reported in the original sources. In fact, the average age of the respondents from the 19th century is 33.0, and the corresponding average in the 20th century is 34.6.[6]

## 2.2 The First Occupation Samples

The samples in Figure 2.2 were used to construct the intergenerational classifications for men in their early careers.[7] Once again, the same person can appear in more than one sample, by staying in the same city for ten or more years. If the samples from Figure 2.2 are pooled, then 5.8% of the cases refer to respondents who appeared twice, and another 3.5% refer to respondents who appeared three or more times.

The samples were used to search for the first occupation held by each respondent. It should be emphasized that this occupation was not pre-assigned by the original investigators in any of the cities (except, see Thernstrom 1973, pp. 94-97).[8] Consequently, in each sample, the variable could be defined under a standard set of procedures:

1. The records for each respondent were searched in ascending order until an occupation was found.
2. The age of the respondent was located at the time this occupation was held. If the respondent was not between 14 and 29 years old, then the case was excluded from the rest of the analyses.
3. The records were checked to determine whether the respondent had returned to school at a later date.[9] If he had, then the occupation was discarded, and the search was resumed. It was continued until the next occupation was found, or until the sources were exhausted.
4. If both conditions were satisfied (i.e., nos. 2 & 3), then the original occupation was assigned, and the search was halted.

Under these procedures, 76.8% of the cases were successfully assigned to a first occupation. The rest of the cases had to be excluded, because an occupation could not be located (19.2%), or because the age restrictions could not be met (4.0%).

Figure 2.2. The First Occupation Samples from the 19th Century

| City | Sample Year | | | | |
|---|---|---|---|---|---|
| | 1850 | 1855 | 1860 | 1870 | 1880 |
| 1. Buffalo | | x | | | |
| 2. Poughkeepsie | x | | x | x | |
| 3. Holland | x | | x | x | x |
| 4. Atlanta | | | | x | x |
| 5. Boston (Thernstrom) | | | | | x |

Note: The entries refer to the dates when the original samples were drawn. See text for details (also, see Figure 1.4, footnote 7).

It must be conceded that the data selected under these procedures are not completely comparable to the first occupations from the OCG survey (i.e., see Featherman and Hauser 1978, pp. 504-5). The most serious problem is that the sources from the 19th century may not extend far enough into the past; therefore, in some situations, the selected occupations may not be the first ones held by the respondents. It is especially easy to make these misassignments in the first sample from a city (e.g., the 1850 sample in Poughkeepsie), since the cases from this sample cannot be traced into the preceding decades. However, the same problem also occurs when a respondent holds a first occupation in the interim between two enumerations, or when a respondent enters the sample after holding an occupation in a different city. In both cases, the first occupation is inaccessible, and the respondent may be assigned to a subsequent one. It follows that the data from the 19th century may overstate the age when first occupations were being held.

This is not to say that the first jobs from the contemporary data were held at a substantially lower age. In fact, the OCG respondents entered their first jobs at an average age of 19.5, whereas the corresponding average in the 19th century was only 21.2 (Featherman and Hauser 1978, pp. 45-6). Moreover, in both centuries, the same range of ages will be covered by the samples. The age restrictions imposed in the 19th century can be easily reproduced (i.e., see condition 2, above), since the OCG respondents were asked to report the date when they held their first occupation. It is certainly reassuring that the analysis will be based on jobs held at similar ages (see Featherman and Hauser 1978, pp. 45-6, for more details). Indeed, the misassignments in the 19th century may have made the data more comparable, because the jobs were consequently selected at ages closer to the contemporary average.

The data from these samples can also be used to identify the parents of each respondent. In the 19th century, the intergenerational data can be recovered from the manuscript schedules, by tracing each respondent back to a census taken when his family was living together (Kirk 1978, pp. 13-14). If a coresiding family cannot be located, then the investigator can often draw upon additional evidence to identify the parental records. The data can be reliably linked, for example, when a respondent names his first-born son after his father (see Kirk 1978, pp. 13-14, for more details). However, it should be kept in mind that these procedures can also misidentify the parents, since the same name is often shared by two residents who are unrelated (e.g., Hershberg 1981, p. 16).[10] The errors from this source may make the occupational reports less reliable; thus, in the 19th century, the intergenerational correlations may be correspondingly attenuated (Zeller and Carmines 1977, pp. 48-76).

The results may also be affected by excluding the respondents who cannot be traced into a coresiding family. If we assume that most of these respondents were separated from their families prematurely, then it follows that the aspirations of their parents may not have been effectively transmitted (e.g., see Blau and Duncan 1967, p. 251).

Consequently, the intergenerational correlations could be artificially inflated by eliminating these cases, and a long-term trend may be observed even when the stratification system has been stable. It should be obvious that these conjectures cannot be tested as long as the parental data are unavailable. The safest approach in this situation would be to exclude a comparable subsample of respondents from the contemporary data; therefore, even if a selection bias was operating, it would presumably affect the estimates from each century in the same way. The OCG survey is especially attractive in this context, since each respondent was asked if he had lived with his parents during his childhood (see Featherman and Hauser 1978, p. 501). If a respondent was separated from his parents before the age of 16, then he was excluded from the analyses in the next two chapters.

It should be emphasized that the intergenerational variables were drawn from the original data sets. The final measurements were usually pre-assigned by the primary investigators; consequently, these measurements cannot be standardized, and the results may be affected by procedural differences between the studies. It might be claimed, for example, that the comparison will be distorted by differences in the timing of the intergenerational inquiries. The investigators usually collected the parental data from the original sample census (e.g., in Buffalo, the 1855 census), or from the census taken when the respondents entered the labor force for the first time. It was only in Holland that the parents were traced over the entire course of their careers; consequently, the data from this city could be used to construct an analogue to the OCG item, by selecting an occupation from the census taken when the respondent was approximately 16 years old (i.e., Featherman and Hauser 1978, p. 502). The variables from the other cities may not be directly comparable to the OCG item, but the various differences cannot be expected to influence the results in any serious way. It would be hard to argue that the parental data are so volatile that even small differences in the timing of the inquiries could affect the results (Duncan 1968, pp. 702-03).

It should be recalled that some sectors of the population have been excluded from the original data sets (see Figure 1.4). The final classifications were constructed after imposing an additional set of restrictions:

1. The residents over the age of 29 were excluded from each of the city samples. It is often these older residents who cannot be traced into a coresiding family, since the available sources are usually exhausted before reaching far enough into the past. Therefore, the response rate can be increased by eliminating these cases, and the sample selection effects in the 19th century should be correspondingly reduced.
2. The female residents had to be eliminated from the Buffalo sample. In the other cities, the females were directly excluded by the primary investigators, or by the original enumerators in the 19th century (see Figure 1.4).

3. The respondents who were currently enrolled in school were eliminated from the contemporary sample. In fact, none of these respondents could have entered a valid first job, since the OCG item was worded to exclude any jobs held by current students (Featherman and Hauser 1978, p. 503). The vast majority of respondents correctly followed these OCG instructions; however, a few jobs were clearly misreported, and these cases had to be eliminated before the classifications could be constructed.

The final classifications are presented in the appendix, and additional details on these restrictions are provided in Chapter 4.

## 2.3 The Current Occupation Samples

The second set of intergenerational tables will be based on 10 samples from 4 cities and 4 decades (see Figure 2.3). In each city, these samples were used to construct a classification for men in their mid-careers, by tracing the cases into a census taken in 1880 or 1890 (except in Boston, see below). The Buffalo sample had to be excluded from these analyses, since the respondents from this city cannot be traced into any subsequent enumerations (Glasco 1973).

The parental data were recovered using the techniques outlined in section 2.2. It was suggested in this section that the potential biases arising from these techniques could be partially counteracted by redefining the coverages in both centuries. The same procedures can be used in the present context:

1. The residents over 29 years old will be excluded from the city samples. Once again, the parental data can be recovered more effectively when this restriction is imposed, since the older residents cannot be easily traced into a coresiding family.
2. The contemporary analyses will be based on respondents who lived with their parents up to age 16. It was argued that this restriction will mimic the effects of excluding the unlinked cases in the 19th century.

In section 2.2, the potential biases in the parental data are reviewed, and the effects of these two sample restrictions are discussed in more detail.

The data from these samples will be used to construct an analogue to the current occupational variable from the OCG survey. In each city (except Boston), this replicate variable can be constructed by selecting a destination census from the available sources (e.g., in Poughkeepsie, the 1880 census), and then tracing the respondents from each sample into this census.[11] If the destination dates are chosen correctly, then the selected occupations should be held by residents who are approximately the same ages as the OCG respondents.[12] In fact, the city residents were slightly younger than their contemporary

Figure 2.3. The Current Occupation Samples from the 19th Century

| City | Sample Year | | | |
|---|---|---|---|---|
| | 1850 | 1860 | 1870 | 1880 |
| 1. Poughkeepsie | x | x | x | |
| 2. Holland | x | x | x | x |
| 3. Atlanta | | | x | x |
| 4. Boston (Thernstrom) | | | | x |

Note: The entries refer to the dates when the original samples were drawn. See text for details (also, see Figure 1.4, footnote 7).

counterparts, but the differences are probably too small to pose a serious problem. The occupations selected from the 19th century were held at an average age of 35.7, whereas the corresponding average in the 20th century was 39.4.

It is unfortunate that the same procedures cannot be used to select the occupations from Boston. The records from the 1880 enumeration were traced over a 50-year period (up until 1930), but only the last job held by each resident was coded in enough detail to be usable in a secondary analysis (see Thernstrom 1973, p. 62). In the next two chapters, this variable will be employed on a provisional basis, even though it obviously refers to jobs held by residents who were older than the OCG men. The results may be seriously affected by this definitional difference; therefore, the data should be interpreted with an extra degree of caution, and the reader would be well advised to ignore any trends of a small or unsystematic kind.

The final samples in both centuries will cover the civilian males in the active labor force. It should be recalled that additional restrictions have also been imposed by the primary investigators (see Figure 1.4), or even by the original enumerators in the 19th century (see Chapter 1). The raw sample counts for these final classifications are available in the appendix.

## 2.4 Occupational Coding

The occupations in the 19th century sources were coded into the 1970 census classification, using the protocol discussed in Hauser and Featherman (1977, pp. 51-80) and the *Alphabetical Index of Occupations and Industries* (1971, pp. iii-vi). Of course, it is often argued that the referents of occupational titles have changed too much to apply a contemporary classification to sources from the 19th century (e.g., Katz 1972). This claim appears to be overstated; in most cases, a title was the same in the two centuries only if it denoted the same function in the system of production. To be sure, this is not to say that a function must be carried out in each century with the same technology, or using the same set of skills (see Treiman 1977, p. 49). However, for the most part, these factors can change without altering the position of an occupation in the technical division of labor.[13]

It was no small task to complete this mapping, but not because of mismatches between the titles in the two centuries (Hauser 1982, pp. 112-13). The major problems stemmed from incomplete descriptions of the occupation, or from the absence of any information on the social class of the respondent (i.e., employed or self-employed). For example, it is unclear if a "shopkeeper" in the 19th century is a proprietor, or merely a salesperson; the same comment applies to "confectioners," "booksellers," and "storekeepers." Moreover, in some cities, the title specified a product or a worksite, but not an occupation; for example, the title might be "clothing store," "liquor store," or "groceries." In each case, it was assumed that the incumbents of these occupations were self-employed, since their rate of

property-holding was nearly as high as the rates for professionals, proprietors, and other nonmanuals (Hershberg and Dockhorn 1976, pp. 67-68).

Table 2.1 reports on the results of this exercise. In Line 1 of this table, the entries are the percentage of respondents with illegible titles, or with titles that could not be located in the *Alphabetical Index*. In each column, this percentage is small; it falls to as low as 0.2 in Column 3. In Line 2, the entries are the percentage of respondents who had to be allocated into one of the 12 major categories in the 1970 classification:

(1) professional, technical, and kindred workers,
(2) managers and administrators, except farm,
(3) sales workers,
(4) clerical and kindred workers,
(5) craftsmen and kindred workers,
(6) operatives, except transport,
(7) transport equipment operatives,
(8) laborers, except farm,
(9) farmers and farm managers,
(10) farm laborers and farm foremen,
(11) service workers, except private household, and
(12) private household workers (see *The Alphabetical Index of Occupations and Industries* 1971).

In about 5 to 8 percent of the cases, the titles had to be coded into one of these 12 categories, since the available data were not detailed enough to assign a minor code. This occurred, for the most part, when a primary investigator had recoded the original alphabetic titles into a new set of (less detailed) categories. The rest of the respondents, about 90% of the total, could be coded into the 1970 classification under the usual procedures (see Line 3). Of course, in some cases, a respondent was "force coded" into a single line, even if there was not enough information to safely eliminate each of the alternate lines.

Table 2.2 introduces the 7-category and 2-category occupational classifications, and presents the marginal distributions for these classifications in each century.[14] For most of the analyses, the 1970 census codes are aggregated into the 7 categories shown in Panel A of this table. If the 12 major categories are denoted by the numbers in the prior paragraph, then:

(1) "professionals" are drawn from category 1, and from salaried respondents in category 2,
(2) "proprietors" are drawn from self-employed respondents in category 2,[15]
(3) "routine nonmanuals" are drawn from categories 3 and 4,
(4) "craftsmen" are drawn from category 5,
(5) "semiskilled" workers are drawn from categories 6, 7, 11, and 12,

Table 2.1. Results on Occupational Coding for 19th Century Respondents in the Civilian Labor Force

| Code | Occupation | | | | |
|---|---|---|---|---|---|
| | Time 1 | Time 2 | Paternal | First | Current |
| 1. Unclassifiable | 0.60% | 0.68% | 0.23% | 0.33% | 0.82% |
| 2. Major Category Code | 5.55 | 5.78 | 6.85 | 4.99 | 7.81 |
| 3. Minor Category Code | 93.86 | 93.54 | 92.92 | 94.68 | 91.37 |

NOTE: Percentages may not sum correctly because of rounding error. The first two columns pertain to the occupations in the intragenerational table, and the next three columns pertain to the occupations in the intergenerational tables.

Table 2.2. Occupation Distributions in the 19th and 20th Centuries for Males Aged 20-54 in the Civilian Labor Force

| Occupation | 19th Century(%) | 20th Century(%) | Percentage Change |
|---|---|---|---|
| **A. Detailed Classification** | | | |
| 1. Professional | 4.57 | 26.66 | +483.4 |
| 2. Proprietor | 5.35 | 2.65 | - 50.5 |
| 3. Routine Nonmanual | 3.31 | 12.65 | +282.2 |
| 4. Craft | 18.68 | 22.63 | + 21.1 |
| 5. Semiskilled | 10.40 | 25.87 | +148.8 |
| 6. Laborer | 16.62 | 6.35 | - 61.8 |
| 7. Farm | 41.07 | 3.19 | - 92.2 |
| **B. Major Status Groups** | | | |
| 1. Nonmanual | 22.45 | 43.35 | + 93.1 |
| 2. Manual | 77.56 | 56.65 | - 27.0 |
| **C. Major Classes** | | | |
| 1. Self-employed | 16.62 | 7.77 | - 53.2 |
| 2. Employed | 83.38 | 92.23 | + 10.6 |

NOTE: The entries in Panels B and C pertain to the nonfarm civilian labor force. Percentages may not add to 100 because of rounding.

(6) "laborers" are drawn from category 8, and
(7) "farmers" are drawn from categories 9 and 10.

This modifies the 5-strata classification in Featherman and Hauser (1978) by adding categories for proprietors and laborers, and by relocating non-retail sales workers into a lower stratum.

The respondents were also coded into the status groups in Panel B and the classes in Panel C. In both panels, the classifications are restricted to the nonfarm labor force. In Panel B, the nonmanual stratum is drawn from categories A1 to A3, and the manual stratum is drawn from categories A4 to A6. In Panel C, the self-employed respondents are identified by business directories in the 19th century, and by responses to the class of worker item in the 20th century.[16] For this classification, the results from the 19th century are based on the studies from Poughkeepsie, Atlanta, Boston (Thernstrom), and Buffalo. In the other studies, the business directory was not consulted, so it was not possible to identify the self-employed respondents.[17]

**2.5 Occupational Ranking**

In most of the analyses, it will not be assumed that the occupations can be ranked, or that the rankings are the same in each century. However, in some cases, one or both of the prior assumptions are required. Therefore, in Table 2.3, a vertical hierarchy is defined by ranking the occupations in terms of socioeconomic, prestige, and economic criteria.[18] In both centuries, the socioeconomic rankings refer to Duncan SEI scores, and the prestige rankings refer to 1965 NORC scores (Hauser and Featherman 1977, pp. 320-29). In the 19th century, the economic ranking is the total value of personal property and real estate holdings; in the 20th century, it is the total income from all sources.[19] Of course, the two economic measures refer to distinct concepts, so the rankings may differ by century even if the hierarchy of occupations is stable.

The classes in Table 2.3 are listed in an order that partly corresponds to their ranking on each of the scales. The ordering in Panels B and C is confirmed in each column, but the one in Panel A is reproduced in only one case (see Column 6). In the other columns, the ranking is inverted in two ways: routine nonmanuals are scaled below craftsmen or semiskilled workers (see Columns 3 to 5), and farmers are scaled above laborers, semiskilled workers, or craftsmen (see Columns 1 to 5). The former inversion is not too serious, since it fails to occur in Columns 1 to 2. As for the latter, it must be conceded that a strong case could be made for ranking farmers above laborers, or even above semiskilled workers. However, this ranking violates past conventions (but, see Hope 1982), and is not always sustained when classes are freely scaled by the mobility process (see Chapter 4). Consequently, if an *a priori* ranking is required, the one in Panel A will be applied.

Table 2.3. Socioeconomic, Prestige, and Economic Rankings of 19th and 20th Century Occupations for Males Aged 20-54 in the Civilian Labor Force

| Occupation | Socioeconomic | | Prestige | | Economic | |
|---|---|---|---|---|---|---|
| | 19th Century | 20th Century | 19th Century | 20th Century | 19th Century | 20th Century |
| **A. Detailed Classifications** | | | | | | |
| 1. Professional | 74.61 | 70.25 | 65.30 | 57.09 | 5470 | 14877 |
| 2. Proprietor | 59.13 | 59.73 | 49.34 | 49.64 | 7151 | 10815 |
| 3. Routine Nonmanual | 46.07 | 49.77 | 36.36 | 37.75 | 646 | 10542 |
| 4. Craft | 23.65 | 32.18 | 37.44 | 38.69 | 854 | 9986 |
| 5. Semiskilled | 17.50 | 19.86 | 28.55 | 29.32 | 774 | 7988 |
| 6. Laborer | 8.33 | 9.28 | 18.32 | 19.52 | 226 | 6698 |
| 7. Farm | 12.58 | 12.23 | 35.94 | 33.22 | 1780 | 6611 |
| **B. Major Status Groups** | | | | | | |
| 1. Nonmanual | 61.27 | 63.41 | 51.67 | 50.79 | 5168 | 13314 |
| 2. Manual | 16.68 | 23.72 | 28.47 | 32.05 | 659 | 8663 |
| **C. Major Classes** | | | | | | |
| 1. Self-employed | 56.84 | 48.29 | 51.21 | 45.43 | 7204 | 12844 |
| 2. Employed | 20.96 | 40.30 | 30.18 | 39.73 | 512 | 10497 |

NOTE: All entries are means. The socioeconomic and prestige rankings in both centuries refer to Duncan SEI and Siegel (1965 NORC) Prestige scores for males (Hauser and Featherman 1977, pp. 320-29). The economic rankings refer to personal property and real estate holdings (in 1860 dollars) in the 19th century and to total income (in 1972 dollars) in the 20th century. The entries in Panels B and C pertain to the nonfarm civilian labor force. See text for details.

## 2.6 Sample Weights in the 19th Century

It is possible to simulate a national sample in the 19th century by weighting the margins of the mobility tables up to the counts in the 1860, 1870, and 1880 censuses. Two procedures were used to weight the tables. In the first procedure, the weights were applied to one of the two margins in each of the 7 × 7 tables for the pooled samples. For example, in the intragenerational table, the marginal frequencies for initial occupations were adjusted up to the counts in the 1860 census, and the original sample size was subsequently restored by dividing through by a scale factor. In the intergenerational tables, the margins for first occupations were adjusted up to the 1870 counts, and the margins for current occupations were adjusted up to the 1880 counts.[20] Once again, the original sample sizes for these tables were subsequently restored, by dividing through by a scale factor. The census date for each table was chosen to approximate the average year in which the occupations were held.

Of course, this procedure leaves outflow rates unaffected when origins are weighted, or inflow rates unaffected when destinations are weighted. It would be useful, then, to compute a second set of weights so that the two margins in each table can be adjusted at the same time. However, this is no simple task, since the 1860 to 1880 censuses do not give frequencies for paternal occupations, or for the second occupations in the intragenerational tables. Consequently, for each table, the same weight was applied to the corresponding occupation in each margin.[21] In the proof in Appendix C, it is demonstrated that under some conditions this procedure can reproduce the true frequencies, even though they are never directly observed. Therefore, if weights are used, the reported results will be based on tables weighted by this procedure.[22]

## Notes

[1] The studies in Boston and Philadelphia were based on random (or pseudo-random) samples, whereas the studies in the other cities were based on full populations (see Figure 1.4, Column 5). However, it is convenient to refer to these data sets as samples, even when the full population was recorded.

[2] The errors from these sources may increase the mobility rates, by producing random noise in the occupational reports.

[3] The attrition rate in Philadelphia had to be estimated, since the unlinked respondents had been excluded from the original data sets. In both decades, the rate was fixed at 50% (see Blumin 1968, pp. 86-88).

[4] However, a 10-year table cannot be constructed for the 1880 sample from Holland, since the manuscript records from the 1890 census are unavailable (see Kirk 1978, pp. 12-15, for more details).

[5] The respondents who emigrated to the United States after 1962 cannot be eliminated, because the date of their entry is not available from the OCG data.

[6] In both centuries, the averages were computed after excluding the cases with missing data.

[7] The intergenerational classifications have to be based on a new set of samples, since the respondents from some of the cities were never linked to their fathers (i.e., see Figure 1.4, Column 6).

[8] The original data set from Poughkeepsie also included a pre-assigned variable, but it was not detailed enough to be recoded into the 1970 census classification. Therefore, this variable was disregarded, and a new one was created using the procedures outlined below.

[9] The census enumerators often used the occupational item to report that a respondent was attending school (e.g., "at school"). However, in some of the cities, this information was unavailable.

[10] It has been argued that these errors cannot be a serious problem, since the investigators often used additional variables to confirm the matches (e.g., birthplace).

[11] The cases in each city were traced into the same census even if they were originally sampled in different decades.

[12] The respondents from Holland were traced into the 1880 census, and the respondents from Atlanta were traced into the 1890 census.

[13] There are some exceptions, and in these cases the occupations were recoded to accord with their function in the 19th century. For

example, a "carter," "wagoner," or "drayman" was coded as a truck driver, even though a naive coding might place them in a category for teamsters (see Tyree and Smith 1978, p. 884). Fortunately, this sort of exception is relatively rare, and a direct coding of titles sufficed in most situations.

[14] The entries in the first column of this table are from the intragenerational samples in the 19th century, and the entries in the second column are from the 1973 OCG survey.

[15] The self-employed respondents from the 19th century were usually identified by consulting the business directories (see the following paragraph for more details). However, in some cities, the data from these directories were not available, and the coding had to be based entirely upon the original occupational titles. It should be emphasized that these titles were rarely unambiguous; for example, a respondent who is coded as a "grocer" may be a self-employed proprietor, but he could also be a clerk employed by the owner. Therefore, some of the proprietors may have been miscoded, and the reader would be well advised to interpret the results for these respondents with an extra degree of caution.

[16] In some of these items, a respondent who was self-employed in an incorporated business was reclassified by the Census Bureau as a private wage and salary worker (see Featherman and Hauser 1978, p. 24). This recode was carried out for responses on 1972 and 1973 jobs, but not for responses on 1962, first, and paternal jobs. It is not possible to recover the original responses, so the rate of self-employment is understated in some of the analyses.

[17] In most of the studies, the business directories were used to separate master artisans from journeymen, but not to identify professionals who were self-employed. Consequently, in the 19th century sources, the business listings were supplemented by directly assigning some professionals into the category for self-employed respondents. This was done for lawyers (031), dentists (062), optometrists (063), pharmacists (064), physicians (065), embalmers (165), authors (181), photographers (191), auctioneers (261), hucksters (264), and real estate brokers (270).

[18] The entries in Columns 1, 3, and 5 are from the intragenerational samples in the 19th century, and the entries in Columns 2, 4, and 6 are from the 1973 OCG survey.

[19] The estimates for the economic scale in the 19th century are based on 1860 dollars. In Panel A, the effects of inflation were controlled by regressing property holdings on a set of dummy variables for 6 occupational categories and 7 sample years (see Figure 2.1). The same procedure was used to calculate the estimates in Panels B and C.

[20] Of course, the 1870 census does not give frequencies for first occupations, or even frequencies for occupations held between the ages of 14 and 29. These margins were estimated by pooling the 1870 samples in Figure 2.1, and then calculating the ratios of young incumbents (aged 14 to 29) to old incumbents (aged 16 to 59) in each of the 7 occupational categories. The prior ratios were applied to the census margins to estimate the frequencies for occupations held between the ages of 14 and 29 in 1870.

[21] In fact, the weights for the two margins differ slightly, since those for the second margin must be multiplied by a scale factor to restore the correct sample size. It follows that the relative size of the weights will be the same for the two margins, but the absolute size will always differ by a constant scale factor.

[22] It is reassuring that the results do not differ in any substantial way when the same analyses are carried out for tables weighted by the alternate procedure.

# Chapter 3: Trends in Inheritance

It is useful to begin this chapter by reviewing three of the current views on long-term trends in social mobility. These views have been drawn from diverse sources, so there is no simple correspondence between each one and any larger socio-political position. Indeed, it is often the case that commentators originating from different, or even opposing, positions will arrive at similar conclusions on trends in the last century. This is most striking in the case of the second view (see section 3.2), in which both nostalgic conservatives and orthodox marxists are led to posit a long-term decline in mobility chances (Petersen 1953). However, in general, the review that follows is not on the social motives of the commentators, but only on the substance of the arguments that they have advanced.

## 3.1 Sources of Mobility in Advanced Industrial Societies

The classical view is that rates of mobility are high in industrial societies, if only because the constant upgrading and reshaping of their economies forces labor to shift into expanding sectors. It is argued that these rapid changes in industrial economies proceed from a continual drive for efficiency, which in turn motivates the use of new technologies and new divisions of labor (Lipset and Zetterberg 1959; Blau and Duncan 1967, pp. 425-31). After the take-off in the late 19th century, the major occupational changes in the United States have been a modest increase in the share of men in nonmanual labor, and a sizable decline in the share in farming (Featherman and Hauser 1978, pp. 42-61). The prior shifts are beyond dispute, but it should be recalled that their effects on the margins of an intergenerational table are not so clear. In this regard, the shifts may be muted by other demographic processes, since the sizes of origin margins partly reflect the rates of marriage, paternity, and mortality within occupations (Duncan 1966).

The long-term decline in self-employment is a further source of mobility in the 20th century. It is argued that classes are reproduced more reliably when there is a farm, business, or professional practice to pass on from one generation to the next (Goldthorpe 1980, p. 100). Moreover, in some cases, the self-employed father can directly provide a job for his child, whereas the employed father must rely upon a third party to do so. It follows that the long-term decline in self-employment may increase rates of mobility, by shifting the labor force to sectors of the class structure in which inheritance is weakest (Blau and Duncan 1967 p. 41; Simkus 1984; Goldthorpe 1984). In fact, this process may affect the estimates of social fluidity, by changing the rates of self-employment within each occupation, class, or stratum.

In the last two decades, the focus has shifted to more ambitious views on the sources of mobility in the 20th century. The prevailing view, at least among American commentators, is that the high rates of mobility in industrial societies proceed in part from a fundamental

change in the values that orient social action (Blau and Duncan 1967, pp. 425-31; Featherman and Hauser 1978, pp. 12-13). In its most general form, the claim is that universal values have spread to all spheres of life, so that judgments no longer depend upon the particular parties at hand (see Parsons 1951, pp. 58-67). It follows that employers will allocate positions by impartial rules, and parents may find it difficult to pass on jobs to their children or to arrange for similar ones. Moreover, the spread of universalism means that the authority of parents may be called into question, so a father may be unable to impose or reproduce his aspirations in his child (see Gouldner 1979, p. 2). In both cases, the emphasis on rationality and efficiency acts to limit the control by parents over the occupations of their children. It should be clear that changes of this kind promote increases in rates of social fluidity, as well as in rates of mobility directly observed in a classification.

It also is claimed, again by American scholars, that the rise of mass schooling may have produced a more fluid regime. It is pointed out that the locus of training has shifted from the home to the school, so parents are unable to transfer occupational skills on the job (Featherman and Hauser 1978, p. 12). In addition, the locus of socialization has shifted to the school, so the aspirations of children may be shaped by the jobs of adults outside their homes.[1] In this regard, Gouldner (1979) has emphasized that the training of children in the 20th century is mediated by semi-autonomous peers and teachers who have no obligation to reinforce parental values. It follows that the effects of social origins on outcomes may have been stronger in the early 19th century, when public schooling was not yet firmly established in any of the advanced industrial societies.

### 3.2 Sources of Immobility in Advanced Industrial Societies

The prior arguments have given rise to frequent criticism, from the Left and Right alike. It is useful to begin with the postwar views on long-term trends, which suggested that prevailing changes in occupational supply and demand might depress rates of observed mobility in the United States. At this time, there was some concern that the rapid shifts in occupational distributions in the early 20th century could not be sustained, either because immigration had declined to a "mere rivulet" or because of an effective ceiling in the size of the nonmanual labor force (Sibley 1942; Hollingshead 1952; also, see Blau and Duncan 1967, pp. 425-31; Boudon 1974). However, the most serious concern raised at this time was the steady convergence in the fertility of nonmanual and manual strata in the first half of the 20th century (Chinoy 1955, pp. 183-84). If there were no compensating changes in the demand for labor, then these trends in fertility could depress rates of mobility by equalizing origin and destination margins for each stratum in the mobility classification. To be sure, it was pointed out that differentials in fertility may not disappear entirely (Blau and Duncan 1967, pp. 427-28), but any decline in their size may suffice to reduce rates of mobility in the 20th century.

It is also relevant here to consider the rapid growth in professional and managerial occupations in the last century. We would expect high rates of inheritance to prevail within these occupations, if merely because those who hold them have the resources and motivation to retain them. In fact, it has by now been established that rates of immobility in these categories are extremely high; indeed, they are surpassed only by the corresponding rates for proprietors, farmers, and farm laborers (e.g., Featherman and Hauser 1978, p. 179). In this context, Goldthorpe (1984, pp. 26-28) has noted that the upgrading of occupations in the last century has shifted the labor force into sectors of the class structure in which inheritance is strongest (also, see Simkus 1984, p. 304). At the same time, it is not obvious that this process can counteract the simultaneous declines in farming and in self-employment. If rates of inheritance are no less extreme in these categories, then the net result of "composition effects" on long-term trends is open to some debate.

In the last decade, the postwar fears have reemerged in a new view on trends in social fluidity in the 19th and 20th centuries. This view has appeared in many contexts, but the common focus is on strategies of "social closure" undertaken to safeguard certain positions in the class structure from the hazards of the marketplace (Collins 1979; Parkin 1979, pp. 44-73; also, see Weber 1968, pp. 40-46). In the 20th century, closure has been achieved in nonmanual occupations by using degrees and certificates as conditions of employment, and by forming professional associations to monitor and control the supply of entrants to an occupation. It is argued that this process may depress rates of upward mobility in the lifecourse, because credentials are established early in the career and cannot be acquired easily at any later point (see Goldthorpe 1980, pp. 54-57). In addition, rates of downward mobility may decline as well, since professional associations guarantee the competence of members to provide skills and services for the duration of their lives. If the manifest function of these associations is to enforce rigorous standards of technical competence, it is ironic that their latent function is to mask variations in on-the-job performance and shield the least competent from downward mobility. In this sense, then, the credential is nothing but a "meal ticket for life" (Parkin 1979, p. 56).

The use of formal organizations to control access to positions has become no less prominent in the manual trades. In this case, the partial closure of occupations has been secured by the spread of labor unions or internal labor markets for skilled craftsmen, operatives, and even unskilled workers. It is true that labor unions have not been as successful as professional associations in establishing closure, in part because the state does not always grant them a legal monopoly over the supply of labor (Collins 1979, p. 178; Parkin 1979, p. 57). Nonetheless, unions in most advanced industrial societies have gained some exclusionary privileges from the state by virtue of alliances with

democratic or social democratic parties. These privileges have been used, in many cases, to establish protective associations that bear some resemblance to the craft guilds in Europe in the 12th to 17th centuries. Indeed, both forms of closure may reduce rates of mobility over the lifecourse by restricting the supply of entrants to an occupation, and by providing incentives for building up seniority on a job. In addition, labor unions in the 20th century may directly influence mobility rates by bargaining for job security for their members.

The spread of labor unions and professional associations has restored to employees some of the control over jobs that was lost with the progressive decline in self-employment in the last century. However, the recovery of control is in no way complete, if only because degrees, credentials, and memberships are not transferable property that can be inherited by relatives or sold to interested parties. Consequently, if children of nonmanual origins wish to regain their class positions, they must pass the usual academic hurdles and barriers, with all the uncertainty that this implies. Indeed, even in the case of labor unions, the children of members are rarely provided with formal advantages that help them to secure union positions.[2] This has prompted some commentators to conclude that the new forms of closure have been used primarily to advance the well-being of incumbents, and not to transfer privileges and jobs to the next generation (see Parkin 1979, pp. 60-70). It follows that the strategies of closure undertaken in the 20th century may not have any strong effects on long-term trends in intergenerational mobility.

Of course, a different conclusion has been advanced in some quarters (e.g., Bourdieu and Passeron 1977, 1979; Bourdieu and Boltanski 1978; Carnoy 1974). It has been argued that rates of inheritance may be high if children from privileged families are adept at meeting academic standards, even when these are applied in an impartial fashion. It is relevant here that parents can pass on resources, both cultural and material, that may advance the academic careers of their children (see Bernstein 1971; Gouldner 1979). Moreover, even if the competition for credentials was not contaminated by these resources, we would still expect children of professional or managerial parents to profit from genetic advantages inherited at birth (see Young 1958, p. 176). The result in either case is a mobility regime that quietly discriminates by social class; this regime may be no more fluid than one that directly assigns occupations on the basis of origins alone. At the same time, it is by no means clear that these cultural, material, or genetic resources are transferred from parents to children with the efficiency that is sometimes assumed (see Blau and Duncan 1967, pp. 199-205).

### 3.3 Sources of Trendless Fluctuations in Mobility Regimes

The classical view says there is no immanent logic in history producing a long-term trend in mobility, either in the direction of increasing or declining rates (Sorokin 1927). The opinion six decades later has in fact shifted in this direction, in response to results from recent research on mobility regimes in various countries, in past decades, and in the 19th and 20th centuries. Among these results, it is most relevant to cite:

> (1) the trendless fluctuations in fluidity in the United States in the last 60-70 years, and in Great Britain in the last 40 years (Hauser *et al.* 1975; Goldthorpe 1980; but, see Hout 1984a),
> (2) the substantial similarity in the mobility regimes of contemporary societies at different stages of economic development (Erikson and Goldthorpe 1985a; Grusky and Hauser 1984), and
> (3) the "remarkable, almost eerie, continuity" in mobility rates in Boston in the last century (Thernstrom 1973, p. 110).

In each of these cases, the results are clearly inconsistent with claims of a "perpetual trend" in rates of mobility. At the same time, any closure on this issue may be premature, if only because the present evidence on long-term trends is based on small samples from a single city.

It is most unlikely that the long-term evidence will show a simple continuity in rates of observed mobility, since these rates fluctuate in response to changes in occupational supply and demand. The fluctuations may be minimized when comparisons are restricted to urban areas, but even so it may be overly brave to argue that observed rates have been constant for a 90-year period (Thernstrom 1973, pp. 45-110). This is not to say that these rates must vary in a systematic way in response to economic development or any other single variable. Indeed, it has been argued persuasively that the fluctuations may well be trendless, because the large set of factors that control occupational demand may never act in synchrony (see Goldthorpe 1985a, pp. 21-25). In the case of the United States, for example, the pattern of demand in the last century may have fluctuated in response to diverse changes in rates of investment in education, in state subsidies of industries, and in rates of female employment (Featherman and Hauser 1978, pp. 38-40).

However, an argument for long-term stability can be made if these changes in supply and demand are controlled. To carry out an argument of this kind, it has been useful to begin with the idea that rates of exchange are determined by the mobility propensities attached to positions in the class structure (Goldthorpe 1980, 1984; also, see Grusky and Hauser 1984). These propensities depend on two factors: the relative prestige of a class in comparison to other classes, and the resources conferred by a class that may be used to retain a position or acquire a new one. It is argued, for instance, that the exchanges

between craft and clerical occupations will increase in frequency only if the two positions become closer in prestige, pay, or general desirability. In fact, it is notable that the social and economic rankings of occupations have not changed in any substantial way for the last 50 years or longer (Hodge *et al.* 1964; Duncan 1966; Hauser 1982; Tyree and Smith 1978). It follows that the propensities for mobility may be stable for this period, which should induce a consequent stability in the patterns of exchange between social classes. In this sense, the inequalities in outcomes and opportunities are linked together in a direct fashion, with the stability in the former implying the same in the latter.

The prior view explains the trendless fluctuations in the last 50 years, and it suggests that the same outcome may be expected in the more distant past. However, there is a second view that cautions against an extrapolation of this kind, on the argument that the stability observed in the recent past is the result of a unique set of events in the 20th century. This position has been assumed, at least implicitly, in attempts to explain the recent record in terms of the rise of mass schooling and welfare politics in the last century. For example, Goldthorpe (1980, p. 275) has argued that these kinds of factors were an effective counterforce to the constant pressures from powerful groups to protect and expand their privileges. The net result was a rough stability in the class system, since the forces for equality and inequality offset each other in some approximate fashion. However, this stability is a fragile affair; it may not be found in the more distant past unless a different set of offsetting forces were present in the 19th century. In this regard, it may be overly mechanistic to assume that forces of this kind always emerge in each period to take the place of those that are declining (but, see Sorokin 1927, pp. 150-52). If they fail to do so, then the stability in the last 60-70 years may be only a temporary, short-term episode in history.

### 3.4 The Data and Methods

The evidence on these views is discussed in the remainder of this chapter. It is instructive to start by presenting the trends in observed rates of mobility, but most of the analysis is based on models that control for marginal effects on the counts. These models are used (a) to test for global changes in social fluidity, (b) to decompose these changes into components on and off the main diagonal, and (c) to monitor the trends in class, status, and job inheritance. It will be possible, in the course of this analysis, to reject some of the prior views, and to cast serious doubts on others. However, in many cases, the evidence is only indirect and suggestive, since it is silent on the sources of changes in the mobility regime.

The analysis is based on the 2-way tables introduced in Chapter 2, and on the 2-category and 7-category occupational classifications listed in Table 2.2. In the 20th century samples, the adjusted CPS weights are used to compensate for coverage errors, survey nonresponse, and sampling variability (Featherman and Hauser 1978, pp. 511-14).

In addition, weights are applied to some of the 19th century tables to adjust the marginal counts to frequencies observed in the 1860, 1870, and 1880 censuses (see Chapter 2). The latter weights are applied to each of the tables in section 3.5, but only to the 2 × 2 tables in the rest of the sections in this chapter (i.e., sections 3.6 and 3.7). In section 3.6, the 7 × 7 tables can be left unweighted, because the models in these sections fit the marginal counts perfectly. In fact, the weights could even distort the interaction effects, since the maximum likelihood estimates can be affected by changes in the relative sizes of the marginal categories (unless a saturated model is fit). However, the 2 × 2 tables in these sections will be weighted, even though the models fit the marginal counts perfectly. The latter weights will readjust the internal composition of each class; indeed, in both 2 × 2 tables, the weights will force the classes to represent the detailed categories in the proper proportions. The final tables for the two centuries are presented in the appendix, and the details on sampling, coding, and weighting are provided in Chapter 2.

The results in sections 3.5 to 3.7 are based on samples that were pooled across the 8 communities and 7 decades in the 19th century data. In Table 3.1, the unweighted samples are disaggregated to test for variability in the patterns of social fluidity in these times and places.[3] The tests in Table 3.1 are described by the standard notation for hierarchical models; for example, Model A1 is conditional independence, which allows the distributions of origin occupations (O) and destination occupations (D) to vary by community (R). In Line A2, the model permits origins and destinations to be associated, but it constrains the association to be the same in each community. The likelihood-ratio test statistic ($L^2$) for this model is 459.2 in the detailed classification, which is significant with 150 degrees of freedom (df).[4] At the same time, the model accounts for 96.7% of the association under the baseline model of independence (see Column 3), and it misclassifies only 5.6% of the cases under the index of dissimilarity ($\Delta$). The results are similar when the samples are disaggregated by decades (Lines 3 and 4), and when the models are applied to intergenerational tables (Panels B and C). In most of these tests, the likelihood-ratio statistic in Lines 2 or 4 is significant, but not large enough to account for a substantial amount of the association under the model of independence. It is useful in this case to present the major trends in mobility with the pooled samples in the 19th century.

## 3.5 Trends in Observed Mobility

It is instructive to begin with Table 3.2, which reports on global tests of change in inflow rates, outflow rates, and observed rates of mobility. In Line A1 of this table, the inflow rates are held constant by fitting a common set of origin marginal effects in the two centuries; this is the model (OD)(DC), where O = Origin, D = Destination, and C = Century. The outflow rates are held constant in the tables for the two centuries with the model (OD)(OC) in Line A2, and the observed rates are held constant by fitting (OD)(C) in Line

Table 3.1. Global Tests of Homogeneity in 19th Century Mobility Classifications Disaggregated by Community and Decade

| Model | Detailed Classification | | | | Major Status Groups | | | | Major Classes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $L^2$ | df | $L_h^2/L_t^2$ | Δ | $L^2$ | df | $L_h^2/L_t^2$ | Δ | $L^2$ | df | $L_h^2/L_t^2$ | Δ |
| **A. Intragenerational Tables** | | | | | | | | | | | | |
| 1. (OR)(DR) | 14084.4 | 175 | 100.0 | 50.3 | 6318.5 | 7 | 100.0 | 33.0 | 2406.8 | 2 | 100.0 | 21.8 |
| 2. (OR)(DR)(OD) | 459.2 | 150 | 3.3 | 5.6 | 54.5 | 6 | 0.9 | 1.3 | 21.5 | 1 | 0.9 | 1.6 |
| 3. (OT)(DT) | 14104.0 | 175 | 100.0 | 50.3 | 6326.2 | 7 | 100.0 | 33.3 | 2412.3 | 4 | 100.0 | 21.8 |
| 4. (OT)(DT)(OD) | 339.1 | 150 | 2.4 | 4.7 | 18.5 | 6 | 0.3 | 1.0 | 23.4 | 3 | 1.0 | 1.7 |
| **B. First Occupation Tables** | | | | | | | | | | | | |
| 1. (OR)(DR) | 2386.3 | 125 | 100.0 | 28.0 | 1129.9 | 5 | 100.0 | 19.6 | 256.4 | 4 | 100.0 | 5.8 |
| 2. (OR)(DR)(OD) | 268.3 | 100 | 11.2 | 7.2 | 28.9 | 4 | 2.6 | 2.3 | 9.6 | 3 | 3.7 | 1.1 |
| 3. (OT)(DT) | 2346.5 | 125 | 100.0 | 28.1 | 1107.5 | 5 | 100.0 | 19.9 | 282.8 | 5 | 100.0 | 5.9 |
| 4. (OT)(DT)(OD) | 211.8 | 100 | 9.0 | 6.0 | 26.2 | 4 | 2.4 | 1.7 | 31.5 | 4 | 11.1 | 1.2 |
| **C. Current Occupation Tables** | | | | | | | | | | | | |
| 1. (OR)(DR) | 932.0 | 100 | 100.0 | 23.9 | 435.4 | 4 | 100.0 | 18.7 | 157.2 | 3 | 100.0 | 9.7 |
| 2. (OR)(DR)(OD) | 193.0 | 75 | 20.7 | 9.3 | 16.5 | 3 | 3.8 | 2.5 | 14.3 | 2 | 9.1 | 2.6 |
| 3. (OT)(DT) | 858.2 | 75 | 100.0 | 23.7 | 422.8 | 3 | 100.0 | 18.9 | 157.2 | 3 | 100.0 | 9.7 |
| 4. (OT)(DT)(OD) | 113.9 | 50 | 13.3 | 7.2 | 3.2 | 2 | 0.8 | 1.0 | 14.3 | 2 | 9.1 | 2.6 |

NOTE: O=Origin Occupation, D=Destination Occupation, R=Community, T=Decade.

Table 3.2. Tests of Marginal Constraints on 19th and 20th Century Mobility Classifications

| Model | Detailed Classifications $L^2$ | df | Δ | Major Status Groups $L^2$ | df | Δ | Major Classes $L^2$ | df | Δ |
|---|---|---|---|---|---|---|---|---|---|
| **A. Intragenerational Tables** | | | | | | | | | |
| 1. Constant Inflow Rates | 1644.4 | 42 | 6.3 | 383.4 | 2 | 2.6 | 65.3 | 2 | 1.0 |
| 2. Constant Outflow Rates | 3121.0 | 42 | 9.3 | 459.1 | 2 | 3.7 | 422.7 | 2 | 3.4 |
| 3. Constant Observed Mobility | 11921.9 | 48 | 23.9 | 1409.9 | 3 | 10.4 | 886.2 | 3 | 5.9 |
| **B. First Occupation Tables** | | | | | | | | | |
| 1. Constant Inflow Rates | 2102.1 | 42 | 7.9 | 245.6 | 2 | 3.4 | 11.1 | 2 | 0.4 |
| 2. Constant Outflow Rates | 3202.2 | 42 | 11.6 | 535.7 | 2 | 4.9 | 148.9 | 2 | 1.4 |
| 3. Constant Observed Mobility | 6001.1 | 48 | 17.1 | 826.7 | 3 | 8.1 | 168.4 | 3 | 1.5 |
| **C. Current Occupation Tables** | | | | | | | | | |
| 1. Constant Inflow Rates | 1738.6 | 42 | 5.0 | 246.8 | 2 | 2.3 | 39.8 | 2 | 0.9 |
| 2. Constant Outflow Rates | 4039.7 | 42 | 9.6 | 385.3 | 2 | 3.4 | 139.7 | 2 | 1.3 |
| 3. Constant Observed Mobility | 6783.9 | 48 | 12.6 | 743.0 | 3 | 5.7 | 139.7 | 3 | 1.3 |

NOTE: Let O=Origin Occupation, D=Destination Occupation, and C=Century. Model 1 is (OD)(DC); Model 2 is (OD)(OC); and Model 3 is (OD)(C). See text for details.

A3. In this latter model, the joint constraints on the inflow and outflow rates force the observed percentages in each cell to be the same in each century. The same set of models are applied to the intergenerational tables in Panels B and C, to the status tables in Columns 4 to 6, and to the class tables in Columns 7 to 9.[5]

The $L^2$ values are significant for each of these tests on marginal effects in Table 3.2. In the most extreme case, 23.9% of the counts would have to be reclassified to make the observed regimes in the two centuries equivalent (Line A3, Column 3); the $\Delta$ values for the same tests in the first and current tables are 17.1% and 12.6%, respectively (Line B3, Column 3; Line C3, Column 3).[6] These results cast doubts on the view that rates of mobility have been stable in the last century (Thernstrom 1973, pp. 45-110), or at least they do so if this view is advanced in the strictest sense. The tables for the nonfarm population in Columns 4 to 6 may be more relevant to the claims made by Thernstrom (1973), but even here the $L^2$ values are significant and the $\Delta$ values are as large as 10.4%. However, it is of course true that some of the statistics in Table 3.2 might be seen as being too small or unreliable to be worthy of serious attention. It is notable, in this regard, that the $L^2$ and $\Delta$ values are far less impressive when the models are applied to tables based on class categories (Columns 7 to 9), or when inflow rates are tested in each of the panels and tables (Lines A1, B1, and C1). In fact, only 0.4% of the counts are misclassified when inflow rates are held constant in the class tables listed in Panel B. This latter result is partly ironic, in the sense that the classic arguments for stability have always been advanced for status groupings (see Thernstrom 1973, pp. 45-110).

The measures of net and gross mobility in Table 3.3 can be used to locate the sources of the prior changes. The first two measures in this table, in Lines 1 and 2, are based on the vertical rankings of occupations given in Table 2.3 (see Chapter 2).[7] The third measure is indifferent to these rankings; it is defined as the index of dissimilarity for the origin and destination margins in each classification (see Line 3). In this context, it may be interpreted as the percentage of counts that must be reallocated to convert one margin into the other (e.g., Featherman and Hauser 1978, pp. 70-71). The same index is used in Line 4; the rate in this line is the difference between the index of dissimilarity and the rate of total mobility in Line 5 (e.g., see Jackson and Crockett, 1964). Of course, in all cases, the amount of mobility that is recorded depends in part on the size and number of categories in the classification.

The results in Table 3.3 are striking. In the tables in Columns 1 to 4, the rates of mobility in the 20th century are about twice as large as the corresponding rates in the 19th century. The changes are not quite so large in some panels or for some measures (e.g., Line A3, Columns 3 to 4), but in no cases are the rates equal or the trends reversed. To be sure, the trends in the detailed tables (in Columns 1 to 2) arise in part from the decline in the share of men in farming in the last century. In section 3.1, it was argued that this decline may

Table 3.3. Summary Measures of Observed Mobility in 19th and 20th Century Mobility Classifications

| Summary Measures | Detailed Classification | | Major Status Groups | | Major Classes | |
|---|---|---|---|---|---|---|
| | 19th Cent. | 20th Cent. | 19th Cent. | 20th Cent. | 19th Cent. | 20th Cent. |
| **A. Intragenerational Tables** | | | | | | |
| 1. Upward Mobility | 11.52 | 26.29 | 5.91 | 10.72 | 2.95 | 3.40 |
| 2. Downward Mobility | 9.77 | 15.58 | 3.09 | 6.75 | 9.51 | 5.17 |
| 3. Forced Mobility | 3.77 | 7.41 | 2.82 | 3.97 | 6.56 | 1.77 |
| 4. Circulation Mobility | 17.52 | 34.47 | 6.17 | 13.50 | 5.90 | 6.80 |
| 5. Total Mobility | 21.29 | 41.87 | 9.00 | 17.47 | 12.46 | 8.57 |
| **B. First Occupation Tables** | | | | | | |
| 1. Upward Mobility | 20.86 | 39.52 | 8.90 | 19.12 | 17.70 | 18.13 |
| 2. Downward Mobility | 17.79 | 29.06 | 8.76 | 13.20 | 2.17 | 1.18 |
| 3. Forced Mobility | 13.31 | 25.55 | 0.14 | 5.92 | 15.53 | 16.95 |
| 4. Circulation Mobility | 25.34 | 43.03 | 17.52 | 26.40 | 4.34 | 2.36 |
| 5. Total Mobility | 38.65 | 68.58 | 17.66 | 32.32 | 19.87 | 19.31 |
| **C. Current Occupation Tables** | | | | | | |
| 1. Upward Mobility | 24.81 | 52.54 | 13.25 | 24.31 | 9.95 | 14.45 |
| 2. Downward Mobility | 13.35 | 20.86 | 5.85 | 11.77 | 8.45 | 5.65 |
| 3. Forced Mobility | 12.06 | 21.77 | 7.39 | 12.53 | 1.50 | 8.80 |
| 4. Circulation Mobility | 26.10 | 51.63 | 11.71 | 23.54 | 16.91 | 11.30 |
| 5. Total Mobility | 38.16 | 73.40 | 19.10 | 36.08 | 18.41 | 20.09 |

NOTE: The measures of upward and downward mobility are based on classifications ordered per Table 2.1. Percentages may not sum correctly because of rounding error.

depress rates of mobility in the 20th century, by shifting the labor force into those sectors of the class structure in which inheritance is weakest. This process is in effect, but Table 3.4 shows that the trends are still large when the rates are calculated for men with nonfarm origins and destinations (but, see Line C3).

The results are very different for the class tables in Columns 5 to 6 in Table 3.3. It is here, and here alone, that we find evidence for the view that rates of mobility have been stable or trendless in the last century. The trend in rates of total mobility is less than 4 percentage points in all panels, and the trend in rates of net mobility is greater than 5 points in only one panel (see Line C3). In addition, the direction of the trends in Columns 5 to 6 varies from panel to panel, and from line to line. It may be tempting to place some interpretations on these changes, but it is unlikely that the data can sustain so close an analysis. The best conclusion, in this case, is that the real changes are probably smaller than the margin of error in the data.

### 3.6 Trends in Social Fluidity

It could be argued that the preceding results arise entirely from the rapid reshaping and upgrading of the class structure in the 20th century (except, see Table 3.3, Lines A4, B4, and C4). In the present section, this argument is tested explicitly, by fitting a set of models that control for marginal effects on the counts.

It is useful to begin by measuring the global changes in the mobility regime. In Table 3.5, the first model says that origins and destinations are independent in each century; this is (OC)(DC), where O = Origin, D = Destination, and C = Century. Of course, this is not a serious hypothesis, but the $L^2$ value in this line is a useful measure of the total association in the tables. The important results are in Line 2, where the model says that origins and destinations covary in the same way in each century; this is given by (OC)(DC)(OD) in each panel. The test statistics for this model are significant, but not very large for samples of this size. Indeed, the model accounts for as much as 99.5% of the total association (Line A2, Column 11), and it misclassifies as few as 0.4% of the cases (Line B4, Column 12). It is notable that the corresponding $\Delta$ values were 3 to 4 times larger when the observed rates were held constant in Table 3.2 (except, see Line C3, Column 9, Table 3.2). These results make it clear that an argument for long-term stability is more credible when changes in occupational supply and demand are controlled. This is not to say that the departures from the model can be safely ignored. It is possible that the changes are large in certain sectors of the mobility regime, even if the $L^2$ values are small in the global tests for trends.

The major sources of change can be located and interpreted by imposing some models on the mobility regime. Table 3.6 gives the fit statistics for a set of log-linear and log-multiplicative models applied to the 7 $\times$ 7 classifications for each century. For example, in Line 1, the $L^2$

Table 3.4. Summary Measures of Observed Mobility in 19th and 20th Century Mobility Classifications for Men with Nonfarm Origins and Destinations

| Summary Measures | Detailed Classification | |
|---|---|---|
| | 19th Century | 20th Century |
| **A. Intragenerational Tables** | | |
| 1. Upward Mobility | 16.87 | 25.18 |
| 2. Downward Mobility | 10.89 | 15.89 |
| 3. Forced Mobility | 3.98 | 7.13 |
| 4. Circulation Mobility | 23.78 | 33.94 |
| 5. Total Mobility | 27.76 | 41.07 |
| **B. First Occupation Tables** | | |
| 1. Upward Mobility | 26.69 | 33.64 |
| 2. Downward Mobility | 27.06 | 35.67 |
| 3. Forced Mobility | 19.90 | 20.25 |
| 4. Circulation Mobility | 33.85 | 49.06 |
| 5. Total Mobility | 53.75 | 69.31 |
| **C. Current Occupation Tables** | | |
| 1. Upward Mobility | 38.13 | 43.23 |
| 2. Downward Mobility | 19.00 | 26.43 |
| 3. Forced Mobility | 20.42 | 16.60 |
| 4. Circulation Mobility | 36.72 | 53.06 |
| 5. Total Mobility | 57.13 | 69.66 |

NOTE: The measures of upward and downward mobility are based on classifications ordered per Table 2.1. Percentages may not sum correctly because of rounding error.

Table 3.5. Global Tests of Trend in 19th and 20th Century Mobility Classifications

| Model | Detailed Classifications | | | | Major Status Groups | | | | Major Classes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $L^2$ | df | $L_h^2/L_e^2$ | $\Delta$ | $L^2$ | df | $L_h^2/L_e^2$ | $\Delta$ | $L^2$ | df | $L_h^2/L_e^2$ | $\Delta$ |
| **A. Intragenerational Tables** | | | | | | | | | | | | |
| 1. Conditional Independence | 37236.2 | 72 | 100.0 | 45.2 | 13732.6 | 2 | 100.0 | 30.1 | 4994.2 | 2 | 100.0 | 11.5 |
| 2. All Two-way Interactions | 931.8 | 36 | 2.5 | 6.3 | 232.8 | 1 | 1.7 | 2.8 | 23.7 | 1 | 0.5 | 0.7 |
| **B. First Occupation Tables** | | | | | | | | | | | | |
| 1. Conditional Independence | 12234.6 | 72 | 100.0 | 24.1 | 2604.8 | 2 | 100.0 | 15.2 | 726.2 | 2 | 100.0 | 3.3 |
| 2. All Two-way Interactions | 781.0 | 36 | 6.4 | 5.2 | 158.9 | 1 | 6.1 | 2.8 | 8.7 | 1 | 1.2 | 0.4 |
| **C. Current Occupation Tables** | | | | | | | | | | | | |
| 1. Conditional Independence | 7303.1 | 72 | 100.0 | 18.0 | 1887.7 | 2 | 100.0 | 13.5 | 431.4 | 2 | 100.0 | 3.2 |
| 2. All Two-way Interactions | 413.6 | 36 | 5.7 | 2.7 | 76.1 | 1 | 4.0 | 1.3 | 37.2 | 1 | 8.6 | 0.8 |

NOTE: Let O=Origin Occupation, D=Destination Occupation, and C=Century. Then Model 1 is (OC)(DC) and Model 2 is (OC)(DC)(OD). See text for details.

Table 3.6. Selected Models Applied to 19th and 20th Century Mobility Classifications

| Model | 19th Century $L^2$ | df | $L_h^2/L_t^2$ | Δ | 20th Century $L^2$ | df | $L_h^2/L_t^2$ | Δ |
|---|---|---|---|---|---|---|---|---|
| **A. Intragenerational Tables** | | | | | | | | |
| 1. Independence | 19428.0 | 36 | 100.0 | 54.3 | 17808.2 | 36 | 100.0 | 39.8 |
| 2. Quasi-Perfect Mobility | 1104.4 | 29 | 5.7 | 6.9 | 1478.0 | 29 | 8.3 | 7.4 |
| 3. Uniform Association | 392.5 | 28 | 2.0 | 3.6 | 479.9 | 28 | 2.7 | 3.9 |
| 4. Model II* | 160.9 | 23 | 0.8 | 2.2 | 125.1 | 23 | 0.7 | 1.6 |
| 5. Model II | 139.8 | 18 | 0.7 | 2.0 | 92.5 | 18 | 0.5 | 1.5 |
| **B. First Occupation Tables** | | | | | | | | |
| 1. Independence | 5778.8 | 36 | 100.0 | 38.0 | 6455.8 | 36 | 100.0 | 19.9 |
| 2. Quasi-Perfect Mobility | 679.5 | 29 | 11.8 | 9.4 | 1126.1 | 29 | 17.4 | 7.2 |
| 3. Uniform Association | 354.7 | 28 | 6.1 | 5.7 | 262.8 | 28 | 4.1 | 3.7 |
| 4. Model II* | 171.3 | 23 | 3.0 | 3.1 | 75.3 | 23 | 1.2 | 1.8 |
| 5. Model II | 167.4 | 18 | 2.9 | 3.0 | 44.6 | 18 | 0.7 | 1.3 |
| **C. Current Occupation Tables** | | | | | | | | |
| 1. Independence | 2865.4 | 36 | 100.0 | 38.7 | 4437.6 | 36 | 100.0 | 15.3 |
| 2. Quasi-Perfect Mobility | 318.8 | 29 | 11.1 | 9.2 | 1325.8 | 29 | 29.9 | 7.8 |
| 3. Uniform Association | 236.9 | 28 | 8.3 | 7.0 | 333.7 | 28 | 7.5 | 3.5 |
| 4. Model II* | 129.6 | 23 | 4.5 | 5.0 | 132.1 | 23 | 3.0 | 1.8 |
| 5. Model II | 117.9 | 18 | 4.1 | 4.5 | 48.2 | 18 | 1.1 | 1.1 |

NOTE: Models 3, 4, 5 are applied to classifications with the main diagonal blocked. See text for details.

values in Columns 1 and 5 can be summed to produce the values for conditional independence in Table 3.5 (see Column 1). In Line 2, the model of independence is modified by adding a parameter for inheritance (or persistence) to each cell on the main diagonal of the tables (Goodman 1965, 1968, 1969a, 1969b). This model misclassifies less than 10% of the cases in each sample, but the $L^2$ ratios run as high as 29.9% (i.e., Panel C, Column 7). In Line 3, a single parameter is added to the former model to fit the interactions off the main diagonal (Goodman 1979b; Duncan 1979; Hope 1982). It is assumed in this model that the classes are ordered with equal intervals; the results in Line 3 are based on the ranking from Chapter 2 (i.e., Tables 2.2 and 2.3). In the 20th century tables, this ranking accounts for no less than 67.5% of the association in the off-diagonal cells (compare Lines 2 and 3). However, the same statistic is smaller in each of the tables in the 19th century; it falls to as low as 25.7% in Panel C.

In Lines 4 and 5, the prior model is complicated by adding row and column effects on the association in the tables (see Goodman 1979a, 1979b, 1981). It is assumed that the rows and columns are ordered, but they are freely scaled in the models without conditioning on any prior ranking. In Line 4, the same scale values are assigned to the corresponding classes in the rows and columns; in Line 5, this constraint is relaxed. The $L^2$ contrast between Lines 3 and 4 is large in all cases, so it follows that the optimal scaling under Model II* differs from the *a priori* scaling used for Model 3. In fact, under Model II*, there are inversions in the ranking of classes relative to the *a priori* ranking, as well as large variations in the estimated distances between the 7 classes.[8] However, when Models 4 and 5 are contrasted, the $L^2$ statistics are small or insignificant, which means that the scale values for origin and destination classes do not differ in any substantial way. It is useful, in this case, to describe the long-term trends with the estimates from Model II*.

It is now possible to partition the global changes in social fluidity into components on and off the main diagonal in the classifications. This is done in Table 3.7, by placing equality constraints across centuries on the row, column, and inheritance parameters from Model II*. In each panel in this table, the first line reproduces the fit statistics for simple independence, and the second line reproduces the fit statistics for Model II* (with inheritance effects). In each line, the fit statistics are for the pooled data, so the $L^2$ values are the sum of the corresponding values in Table 3.6. The models in Lines 3, 4, and 5 place successive constraints on the diagonal parameters, on the row and column parameters, and on both sets of parameters. In Lines 6 to 8, the $L^2$ values for these models are contrasted with the $L^2$ values for the unrestricted model in Line 2. It is clear from these contrasts that the changes on the main diagonal dominate those off the diagonal; the $L^2$ and $\Delta$ values are 3 to 8 times larger in Line 6 than in Line 7. At the same time, the contrasts in both lines are highly

Table 3.7. A Decomposition of Trends in Social Fluidity under Model II* in 19th and 20th Century Mobility Classifications

| Model | $L^2$ | df | $L_h^2/L_t^2$ | Δ |
|---|---|---|---|---|
| A. Intragenerational Tables | | | | |
| 1. (OC)(DC) | 37236.2 | 72 | 100.0 | 45.2 |
| 2. (OC)(DC)(VC)(IC) | 286.0 | 46 | 0.8 | 1.8 |
| 3. (OC)(DC)(VC)(I) | 751.3 | 53 | 2.0 | 4.9 |
| 4. (OC)(DC)(V)(IC) | 428.8 | 52 | 1.2 | 2.4 |
| 5. (OC)(DC)(V)(I) | 1215.4 | 59 | 3.3 | 6.9 |
| 6. 2 vs. 3 | 465.3 | 7 | 1.2 | 3.1 |
| 7. 2 vs. 4 | 142.8 | 6 | 0.4 | 0.6 |
| 8. 2 vs. 5 | 929.4 | 13 | 2.5 | 5.1 |
| B. First Occupation Tables | | | | |
| 1. (OC)(DC) | 12234.6 | 72 | 100.0 | 24.1 |
| 2. (OC)(DC)(VC)(IC) | 246.6 | 46 | 2.0 | 2.1 |
| 3. (OC)(DC)(VC)(I) | 628.3 | 53 | 5.1 | 4.6 |
| 4. (OC)(DC)(V)(IC) | 299.7 | 52 | 2.4 | 2.4 |
| 5. (OC)(DC)(V)(I) | 889.6 | 59 | 7.3 | 5.7 |
| 6. 2 vs. 3 | 381.7 | 7 | 3.1 | 2.5 |
| 7. 2 vs. 4 | 53.1 | 6 | 0.4 | 0.3 |
| 8. 2 vs. 5 | 643.0 | 13 | 5.3 | 3.6 |
| C. Current Occupation Tables | | | | |
| 1. (OC)(DC) | 7303.1 | 72 | 100.0 | 18.0 |
| 2. (OC)(DC)(VC)(IC) | 261.7 | 46 | 3.6 | 2.2 |
| 3. (OC)(DC)(VC)(I) | 521.9 | 53 | 7.1 | 3.5 |
| 4. (OC)(DC)(V)(IC) | 305.7 | 52 | 4.2 | 2.4 |
| 5. (OC)(DC)(V)(I) | 589.8 | 59 | 8.1 | 3.8 |
| 6. 2 vs. 3 | 260.2 | 7 | 3.6 | 1.3 |
| 7. 2 vs. 4 | 44.0 | 6 | 0.6 | 0.2 |
| 8. 2 vs. 5 | 328.1 | 13 | 4.5 | 1.6 |

NOTE: O=Origin Occupation, D=Destination Occupation, I=Occupational Inheritance, V=Model II* row and column effects, and C=Century.

significant. The remainder of this chapter describes the structure, strength, and direction of the trends in the diagonal parameters. In Chapter 4, the focus shifts to the residue of changes off the main diagonal in the classification.

The next table separates the class-specific changes in inheritance from the general change for all classes. In each panel of Table 3.8, the first line reproduces the fit statistics for simple independence, and the second line reproduces the fit statistics for Model II* (with inheritance effects). In the third line, a general parameter for inheritance is introduced; this term varies by century, but is the same for each class within each century (e.g., see Hauser 1984, p. 100). The diagonal parameters in this line are constrained to be constant, so the increase in $L^2$ is due to changes in inheritance that are not absorbed by the general parameter on the full diagonal. In the fourth line, the GC term is deleted from the prior line; this forces the densities on the diagonal to be the same in the two centuries. Of course, in this case, the general term can be suppressed in the display, since it becomes redundant when a parameter for inheritance is fit for each class. The contrasts in the next three lines pertain to changes in general inheritance (Line 5), in class-specific inheritance (Line 6), and in total inheritance (Line 7). It is clear from these contrasts that the class-specific changes are significant, but surpassed in size by the changes in the general parameter on the full diagonal. Indeed, the contrasts in Line 5 account for as much as 72.6% of the total changes in inheritance (see Panel B, Column 5). It follows that the major source of variation is a simple inflation effect on the main diagonal of the tables in one of the centuries.

The prior results are silent on the direction of the trends in the two centuries. This is resolved in Table 3.9, which lists the inheritance coefficients in each century for the quasi-perfect model and for Model II*. In each case, the estimates in the table are in logarithmic form and are deviations from the aggregate of off-diagonal cells. The first entry in Line A1 says that persistence by professionals in the 19th century is 44.08 times more likely than mobility off the main diagonal (i.e., $e^{3.786} = 44.08$). The same estimate in the 20th century is 11.47 (i.e., $e^{2.440} = 11.47$); therefore, over the last century, the probability of moving off the main diagonal has increased by a factor of 3.84 (i.e., $e^{1.346} = 3.84$). In fact, the trends are in the same direction in most of the classes, in both of the baseline models, and in each of the panels. The densities in most cases have declined by no less than a factor of two (in the multiplicative metric); in some cases, the changes are far more impressive (e.g., see Line A1, Column 6). Indeed, the only consistent exception is in Line 2, where the trend for proprietors is small or positive in each of the panels.

The other reversals in Table 3.9 are confined to Columns 4 to 6 (see Lines 3 and 6). Of course, the entries in these columns pertain to the residue of counts on the diagonal after row and column effects are fit. It follows that the reversals may disappear if the densities on the diagonal are measured by the product of the interaction terms for

Table 3.8. A Decomposition of Trends in Inheritance in 19th and 20th Century Mobility Classifications

| Model | $L^2$ | df | $L_h^2/L_t^2$ | $\Delta$ | $L_h^2/L_t^2$ |
|---|---|---|---|---|---|
| **A. Intragenerational Tables** | | | | | |
| 1. (OC)(DC) | 37236.2 | 72 | 100.0 | 45.2 | - |
| 2. (OC)(DC)(VC)(IC) | 286.0 | 46 | 0.8 | 1.8 | - |
| 3. (OC)(DC)(VC)(GC)(I) | 445.0 | 52 | 1.2 | 3.1 | - |
| 4. (OC)(DC)(VC)(I) | 751.3 | 53 | 2.0 | 4.9 | - |
| 5. 3 vs. 4 | 306.3 | 1 | 0.8 | 1.8 | 65.8 |
| 6. 2 vs. 3 | 159.0 | 6 | 0.4 | 1.3 | 34.2 |
| 7. 2 vs. 4 | 465.3 | 7 | 1.2 | 3.1 | 100.0 |
| **B. First Occupation Tables** | | | | | |
| 1. (OC)(DC) | 12234.6 | 72 | 100.0 | 24.1 | - |
| 2. (OC)(DC)(VC)(IC) | 246.6 | 46 | 2.0 | 2.1 | - |
| 3. (OC)(DC)(VC)(GC)(I) | 351.0 | 52 | 2.9 | 2.9 | - |
| 4. (OC)(DC)(VC)(I) | 628.3 | 53 | 5.1 | 4.6 | - |
| 5. 3 vs. 4 | 277.3 | 1 | 2.3 | 1.7 | 72.6 |
| 6. 2 vs. 3 | 104.4 | 6 | 0.9 | 0.8 | 27.4 |
| 7. 2 vs. 4 | 381.7 | 7 | 3.1 | 2.5 | 100.0 |
| **C. Current Occupation Tables** | | | | | |
| 1. (OC)(DC) | 7303.1 | 72 | 100.0 | 18.0 | - |
| 2. (OC)(DC)(VC)(IC) | 261.7 | 46 | 3.6 | 2.2 | - |
| 3. (OC)(DC)(VC)(GC)(I) | 347.5 | 52 | 4.8 | 2.8 | - |
| 4. (OC)(DC)(VC)(I) | 521.9 | 53 | 7.1 | 3.5 | - |
| 5. 3 vs. 4 | 174.4 | 1 | 2.4 | 0.7 | 67.0 |
| 6. 2 vs. 3 | 85.8 | 6 | 1.2 | 0.6 | 33.0 |
| 7. 2 vs. 4 | 260.2 | 7 | 3.6 | 1.3 | 100.0 |

NOTE: O=Origin Occupation, D=Destination Occupation, I=Occupational Inheritance, G=General Inheritance, V=Model II* row and column effects, and C=Century. The denominator in the first $L_h^2/L_t^2$ ratio is the total association under the model of independence (Line 1), and the denominator in the second ratio is the total variation in the diagonal parameters (Line 7).

Table 3.9. Occupational Inheritance Coefficients Estimated under Quasi-Perfect Mobility and Model II* in 19th and 20th Century Mobility Classifications

| Occupation | Quasi-Perfect Baseline | | | Model II* Baseline | | |
|---|---|---|---|---|---|---|
| | 19th Cent. | 20th Cent. | Change | 19th Cent. | 20th Cent. | Change |
| **A. Intragenerational Tables** | | | | | | |
| 1. Professional | 3.786 | 2.440 | -1.346 | 3.085 | 0.803 | -2.282 |
| | (.103) | (.046) | (.113) | (.141) | (.245) | (.283) |
| 2. Proprietor | 2.327 | 2.211 | -0.116 | 1.671 | 2.222 | 0.551 |
| | (.072) | (.106) | (.128) | (.098) | (.109) | (.147) |
| 3. Routine Nonmanual | 2.262 | 1.547 | -0.715 | 1.369 | 1.379 | 0.010 |
| | (.087) | (.050) | (.100) | (.144) | (.109) | (.180) |
| 4. Craft | 2.713 | 1.712 | -1.001 | 2.681 | 1.727 | -0.954 |
| | (.061) | (.042) | (.074) | (.063) | (.045) | (.078) |
| 5. Semiskilled | 1.855 | 1.411 | -0.444 | 1.795 | 0.847 | -0.948 |
| | (.067) | (.040) | (.078) | (.075) | (.066) | (.100) |
| 6. Laborer | 2.243 | 1.579 | -0.664 | 0.500 | 1.242 | 0.742 |
| | (.072) | (.072) | (.102) | (.239) | (.094) | (.257) |
| 7. Farm | 4.641 | 4.155 | -0.486 | 4.409 | 3.923 | -0.486 |
| | (.111) | (.094) | (.145) | (.149) | (.110) | (.185) |
| **B. First Occupation Tables** | | | | | | |
| 1. Professional | 2.234 | 1.275 | -0.959 | 1.730 | 0.350 | -1.380 |
| | (.149) | (.046) | (.156) | (.183) | (.106) | (.212) |
| 2. Proprietor | 1.477 | 2.293 | 0.816 | 0.878 | 1.874 | 0.996 |
| | (.131) | (.170) | (.215) | (.181) | (.184) | (.258) |
| 3. Routine Nonmanual | 1.337 | 0.530 | -0.807 | 0.352 | 0.227 | -0.125 |
| | (.134) | (.057) | (.145) | (.205) | (.073) | (.217) |
| 4. Craft | 1.083 | 0.455 | -0.628 | 1.056 | 0.464 | -0.592 |
| | (.066) | (.042) | (.078) | (.068) | (.042) | (.080) |
| 5. Semiskilled | 1.327 | 0.399 | -0.928 | 1.216 | 0.219 | -0.997 |
| | (.095) | (.036) | (.101) | (.104) | (.043) | (.113) |
| 6. Laborer | 1.551 | 0.742 | -0.809 | 0.612 | 0.304 | -0.308 |
| | (.080) | (.066) | (.103) | (.174) | (.089) | (.195) |
| 7. Farm | 4.462 | 2.969 | -1.493 | 4.303 | 2.757 | -1.546 |
| | (.111) | (.059) | (.126) | (.126) | (.068) | (.144) |
| **C. Current Occupation Tables** | | | | | | |
| 1. Professional | 1.817 | 1.135 | -0.682 | 1.373 | 0.176 | -1.197 |
| | (.168) | (.038) | (.172) | (.214) | (.110) | (.241) |
| 2. Proprietor | 1.235 | 0.953 | -0.282 | 0.622 | 0.864 | 0.242 |
| | (.130) | (.112) | (.172) | (.204) | (.118) | (.235) |
| 3. Routine Nonmanual | 1.133 | 0.414 | -0.719 | 0.610 | 0.174 | -0.436 |
| | (.186) | (.059) | (.195) | (.227) | (.081) | (.241) |
| 4. Craft | 0.970 | 0.267 | -0.703 | 1.030 | 0.300 | -0.730 |
| | (.094) | (.035) | (.100) | (.101) | (.036) | (.107) |
| 5. Semiskilled | 1.237 | 0.303 | -0.934 | 1.240 | 0.198 | -1.042 |
| | (.148) | (.035) | (.152) | (.157) | (.040) | (.162) |
| 6. Laborer | 1.066 | 0.678 | -0.388 | -0.347 | 0.323 | 0.670 |
| | (.130) | (.083) | (.154) | (.377) | (.097) | (.389) |
| 7. Farm | 4.276 | 2.779 | -1.497 | 4.290 | 2.281 | -2.009 |
| | (.144) | (.083) | (.166) | (.149) | (.096) | (.177) |

NOTE: Entries are coefficient, (standard error). The coefficients are in logarithmic form and are deviations from the aggregate of off-diagonal cells. The quasi-perfect baseline estimates are from Models A2, B2, and C2 in Table 3.6, and the Model II* estimates are from Models A4, B4, and C4 in Table 3.6.

each cell. In this context, it is useful to introduce a mobility index, $D_{ij}$, based on the estimates from Model II*. The formula is

$$D_{ij} = e^{u_i v_j} \delta_{ij} r_{ij} \qquad (1)$$

where i and j index rows and columns, $u_i$ is a row effect, $v_j$ is a column effect, $\delta_{ij}$ is a diagonal effect, and $r_{ij}$ is a residual term. In this case, the scale effects are the same in the rows and columns; $u_i = v_j$ if i = j. In addition, the effects are identified by imposing

$$\sum_{i=1}^{I} u_i = \sum_{i=1}^{J} v_j = 0 \qquad (2)$$

in each century (e.g., Goodman 1979a, p. 548).[9] It is possible to simplify Equation 1 by recalling that

$$x_{ij} = \alpha_i \beta_j e^{u_i v_j} \delta_{ij} r_{ij} \qquad (3)$$

where $x_{ij}$ is an observed frequency in cell *ij*, $\alpha_i$ is a row marginal effect, $\beta_j$ is a column marginal effect, and the other terms are defined as above. If $D_{ij}$ is substituted into the right-hand side of Equation 3, it follows that

$$D_{ij} = \frac{x_{ij}}{\alpha_i \beta_j} \quad . \qquad (4)$$

The same ratio of terms can be used to define the indexes proposed by Rogoff (1953), Glass (1954), or Featherman and Hauser (1978). However, the present index differs from the prior ones by virtue of the model used to estimate the marginal effects in the table.

The ratios for the two centuries are given in Table 3.10. The entries pertain to the cells on the main diagonal, so the counts are fitted perfectly by the parameters for class inheritance. This means that $r_{ij} = 1$, and

$$D_{ij} = e^{u_i v_j} \delta_{ij} \quad . \qquad (5)$$

In all but two cases, the densities in this table have declined in size in the last century; in some cases, the decline is substantial (e.g., Line 1, Columns 1 and 2; Line 7, Columns 3 to 6). The only exceptions are in Line 2, where the trend for proprietors is positive or small in each of the columns. It is reassuring that none of the other reversals in Table 3.9 appear in any of the ratios in Columns 1 to 6. These results are the strongest evidence in this section of a long-term trend in the mobility regime.

Table 3.10. Mobility Ratios in 19th and 20th Century Mobility Classifications

| Occupation | Intragen. Tables | | First Occ. Tables | | Current Occ. Tables | |
|---|---|---|---|---|---|---|
| | 19th Cent. | 20th Cent. | 19th Cent. | 20th Cent. | 19th Cent. | 20th Cent. |
| 1. Professional | 56.83 | 9.04 | 9.63 | 2.74 | 6.14 | 2.48 |
| 2. Proprietor | 9.26 | 10.17 | 4.08 | 10.07 | 3.04 | 2.84 |
| 3. Routine Nonmanual | 10.58 | 5.80 | 2.82 | 1.57 | 2.85 | 1.64 |
| 4. Craft | 14.89 | 5.86 | 3.02 | 1.64 | 2.93 | 1.38 |
| 5. Semiskilled | 7.00 | 3.34 | 4.23 | 1.50 | 3.91 | 1.36 |
| 6. Laborer | 9.38 | 5.54 | 4.86 | 2.42 | 2.66 | 2.13 |
| 7. Farm | 174.93 | 74.36 | 105.90 | 21.93 | 80.55 | 16.21 |

NOTE: The ratios are computed from Models A4, B4, and C4 in Table 3.6. See text for details.

The final table in this section reports on trends in the 2 × 2 classifications. The entries in Table 3.11 are from the GC term in (OC)(DC)(GC), where O = Origin, D = Destination, G = Inheritance, and C = Century. In a 2 × 2 table, there is only one degree of freedom for association, so only one parameter for inheritance can be identified in each century. In this case, the parameter is free to vary by century, but is the same in each class within each table.[10] For example, in Line A1, the entries say that the densities for the two cells on the diagonal have declined by 45.7% in the last century ($1 - e^{(-.611)} = .457$). The rate of decline is 42.0% in Line B1 ($1 - e^{(-.545)} = .420$), and 42.1% in Line C1 ($1 - e^{(-.546)} = .421$).

The trends are smaller in Line 2 of this table. For example, in Panel A, the densities for the class tables have declined by only 22.7% in the last century ($1 - e^{(-.257)} = .227$). The same statistic is 21.1% in Panel B ($1 - e^{(-.237)} = .211$), and 36.3% in Panel C ($1 - e^{(-.451)} = .363$). In fact, in the top two panels, the status term is surpassed in size by the class term, due to the faster rate of decline in the former quantity (see Column 2). It is notable that the trends in the class tables were equally small in Tables 3.2 and 3.3; the same result recurred again in Table 3.5 (also, see Line 2 of Table 3.10). In the next section, this result is elaborated and qualified, and its sources are partly uncovered.

### 3.7 Trends in Class, Status, and Job Inheritance

It was argued in the introduction that the decline in the "old middle class" produced a more fluid mobility regime in the 20th century. The point was that classes are reproduced less reliably when there is no farm, business, or professional practice to pass on to the next generation. It follows that the trends in section 3.6 may be induced by a decline in self-employment within each occupation or stratum. This hypothesis has some appeal, since the anomalous results have occurred in categories which have the same rate of self-employment in each century. For example, this rate is fixed for the class of proprietors, since a respondent must be self-employed to be coded to this category. It may be no coincidence, then, that the trends for proprietors are small or unstable in each sample (see Tables 3.9 and 3.10). Of course, the same interpretation may account for the size of the trends in the 2 × 2 tables for classes (see Table 3.11). In both cases, the anomalous results occur in categories that are unaffected by the rise of wage labor.

This interpretation is tested in the next few tables. It is instructive to begin with Table 3.12, which gives the rates of self-employment for the nonfarm labor force in the last two centuries.[11] In most categories, it is clear that the decline in these rates has not proceeded at a rapid pace (see Gagliani 1981, pp. 263-67). To be sure, a large decline is reported for professionals (Line A1), but the changes are far smaller for the other classes in

Table 3.11. Summary Measures of Trends in Inheritance in 19th and 20th Century Mobility Classifications

| Measure | 19th Century | 20th Century | Change |
|---|---|---|---|
| A. Intragenerational Tables | | | |
| 1. Status Inheritance | 2.173 | 1.562 | -0.611 |
| | (.037) | (.020) | (.042) |
| 2. Class Inheritance | 1.830 | 1.573 | -0.257 |
| | (.044) | (.031) | (.054) |
| B. First Occupation Tables | | | |
| 1. Status Inheritance | 1.229 | 0.684 | -0.545 |
| | (.040) | (.017) | (.044) |
| 2. Class Inheritance | 1.167 | 0.930 | -0.237 |
| | (.065) | (.048) | (.081) |
| C. Current Occupation Tables | | | |
| 1. Status Inheritance | 1.151 | 0.605 | -0.546 |
| | (.062) | (.016) | (.064) |
| 2. Class Inheritance | 0.929 | 0.478 | -0.451 |
| | (.068) | (.029) | (.074) |

NOTE: Let O=Origin, D=Destination, G=General Inheritance, and C=Century. The entries are from the GC term in the model (OC)(DC)(GC). See text for details.

Table 3.12. Rates of Self-employment in 19th and 20th Century Occupations for Males Aged 20-54 in the Nonfarm Civilian Labor Force

| Occupation | Percent Self-employed | |
|---|---|---|
| | 19th Century | 20th Century |
| A. Detailed Classification | | |
| 1. Professional | 43.67 | 5.07 |
| 2. Proprietor | 100.00 | 100.00 |
| 3. Routine Nonmanual | 4.34 | 5.55 |
| 4. Craft | 9.64 | 7.67 |
| 5. Semiskilled | 4.58 | 3.21 |
| 6. Laborer | 0.09 | 4.00 |
| B. Major Status Groups | | |
| 1. Nonmanual | 56.52 | 11.21 |
| 2. Manual | 4.99 | 5.14 |

this panel. In fact, the rate increases from 4.3 to 5.6 for routine nonmanuals (Line A3), and from 0.1 to 4.0 for laborers (Line A6; also, see Line B2). These results cast doubts on the prior hypothesis, or at least they imply that the rise of wage labor is not the only source of mobility in the 20th century. However, it is best to be cautious on this point, since the rates in this table may understate the true rates in the 19th century (see Chapter 2).

The issue can be pursued more directly by cross-classifying the categories in the class and status tables. It is natural to fit this 4 × 4 table with a topological model (Hauser 1978), but one which is modified to permit two or more parameters for interaction in each cell (e.g., Duncan and Schuman 1980; Erikson and Goldthorpe 1985b). These parameters are defined in Figure 3.1, by partitioning the 4 × 4 table into exclusive and exhaustive subsets of cells. For example, the display in Panel A defines a parameter for status inheritance, and the display in Panel B defines a parameter for class inheritance.[12] In each panel, the entries serve to partition cells into levels, but not to rank the levels by the densities in the table.

It is possible to test the prior hypothesis by fitting the effects in Panels B, C, and D to the 4 × 4 table in each century. The equation for this model is

$$F_{ijk} = \alpha_{ik}\ \beta_{jk}\ \delta^{B}_{ijk}\ \delta^{C}_{ijk}\ \delta^{D}_{ijk} \qquad (6)$$

where i and j index rows and columns, k refers to centuries, $F_{ijk}$ is an expected frequency, $\alpha_{ik}$ is a row effect, $\beta_{jk}$ is a column effect, and $\delta^{B}_{ijk}$, $\delta^{C}_{ijk}$, and $\delta^{D}_{ijk}$ are inheritance effects from Panels B, C, and D. In this context, the hypothesis is supported only if:

> (1) the estimates of $\delta^{D}_{ijk}$ at level 2 are larger than those at level 3 (see Panel D),
> (2) the estimates of $\delta^{C}_{ijk}$ at level 2 are larger than those at level 3, and the estimates of $\delta^{C}_{ijk}$ at level 4 are larger than those at level 5 (see Panel C), and
> (3) the estimates of $\delta^{B}_{ijk}$, $\delta^{C}_{ijk}$, or $\delta^{D}_{ijk}$ are the same in each century (e.g., $\delta^{B}_{ij1} = \delta^{B}_{ij2}$).

The first two premises say that the densities for inheritance are stronger for respondents with self-employed origins, and the third premise says that the trends disappear when this effect is controlled. If all three premises are upheld, then it follows that the trends in the 2 × 2 tables were induced by a decline in self-employment within each stratum. However, if the same trends reappear in the 4 × 4 tables, then they must arise from other sources, since the effects of self-employment are controlled by fitting $\delta^{B}_{ijk}$, $\delta^{C}_{ijk}$, and $\delta^{D}_{ijk}$.

Figure 3.1. Parameter Displays for Status, Class, and Job Inheritance in 16-Fold Table

| Origin | Destination: Self-employed Nonmanual | Employed Nonmanual | Self-employed Manual | Employed Manual |
|---|---|---|---|---|
| **A. Status Inheritance** | | | | |
| 1. Self-employed Nonmanual | 2 | 2 | 1 | 1 |
| 2. Employed Nonmanual | 2 | 2 | 1 | 1 |
| 3. Self-employed Manual | 1 | 1 | 2 | 2 |
| 4. Employed Manual | 1 | 1 | 2 | 2 |
| **B. Class Inheritance** | | | | |
| 1. Self-employed Nonmanual | 2 | 1 | 2 | 1 |
| 2. Employed Nonmanual | 1 | 2 | 1 | 2 |
| 3. Self-employed Manual | 2 | 1 | 2 | 1 |
| 4. Employed Manual | 1 | 2 | 1 | 2 |
| **C. Job Inheritance** | | | | |
| 1. Self-employed Nonmanual | 2 | 1 | 1 | 1 |
| 2. Employed Nonmanual | 1 | 3 | 1 | 1 |
| 3. Self-employed Manual | 1 | 1 | 4 | 1 |
| 4. Employed Manual | 1 | 1 | 1 | 5 |
| **D. Modified Status Inheritance** | | | | |
| 1. Self-employed Nonmanual | 2 | 2 | 1 | 1 |
| 2. Employed Nonmanual | 3 | 3 | 1 | 1 |
| 3. Self-employed Manual | 1 | 1 | 2 | 2 |
| 4. Employed Manual | 1 | 1 | 3 | 3 |
| **E. Modified Job Inheritance** | | | | |
| 1. Self-employed Nonmanual | 2 | 1 | 1 | 1 |
| 2. Employed Nonmanual | 1 | 2 | 1 | 1 |
| 3. Self-employed Manual | 1 | 1 | 3 | 1 |
| 4. Employed Manual | 1 | 1 | 1 | 3 |

The fit statistics for this model are reported in Line 2 of Table 3.13. In this case, the marginal effects are denoted by O and D, and the effects from Panels B, C, and D are denoted by $I_B$, $I_C$, and $I_D$ (see Figure 3.1). The results in Line 2 are impressive; the model accounts for no less than 99.2% of the total association, and it misclassifies no more than 0.8% of the counts. In Line 3, the first premise is tested by replacing $I_D$ with $I_A$ in each panel (see Panels A and D, Figure 3.1). Of course, the premise can be rejected at once, since the $L^2$ contrast for Lines 2 and 3 is no larger than 1.3 for any sample (see Lines A2 and A3, Column 5). In Line 4, the second premise is tested by replacing $I_C$ with $I_D$ in each panel (see Panels C and E, Figure 3.1). In this case, the $L^2$ contrast for Lines 3 and 4 is significant in 4 of 6 samples; the two exceptions are significant at $\alpha = .10$ or $\alpha = .15$ (see Lines C3 and C4, Columns 1 and 5). Moreover, in 10 of 12 cases, the densities estimated for $\delta^C_{ijk}$ can be ranked in the proper order (i.e., $\delta^C_{11k} > \delta^C_{22k}$, $\delta^C_{33k} > \delta^C_{44k}$). This result suggests that jobs are transferred more reliably when a business can be passed on to the next generation.

The final premise is tested in Table 3.14, by placing equality constraints on the effects for inheritance in the two centuries. In each panel of this table, the fit statistic for simple independence is reproduced in Line 1, and the fit statistic for Model 3 is reproduced in Line 2. In both lines, the $L^2$ are the sums of the corresponding values in the prior table. The models in Lines 3 to 6 constrain $I_A$, $I_B$, $I_C$ to be the same in each century. In Lines 7 to 10, the $L^2$ values for these models are contrasted with the values for the unrestricted model in Line 2. It is apparent from the contrasts that the total change is significant in each sample, and the change in the components is significant in 7 of 9 tests (see Lines A8 and C9). It follows that the final premise can be rejected, since the trends persist after the data are purged of the effects of self-employment.

This conclusion is reinforced in Table 3.15. The entries in this table are from the model $(OC)(DC)(I_AC)(I_BC)(GC)(I_C)$ where G is a general effect for job inheritance, and the other terms are defined in the stub of Table 3.14.[13] In this context, the general effect is the same for each cell on the main diagonal, so the changes in job inheritance are absorbed in a single parameter. It is clear from Column 3 that the trends in inheritance are significant in most of the samples (but, see Line C2). However, in each panel, the densities for class inheritance have <u>increased</u> in size, by as much as 90% in the multiplicative metric (in Line A2, $e^{.642} = 1.90$). This result was concealed in the analysis of the $2 \times 2$ tables, since the growth in class inheritance was offset by the decline in job inheritance (see Table 3.11). The net effect was to create the appearance of stability, which in turn led to the hypothesis advanced at the start of this section. It is by now clear that this hypothesis can be discarded, since the trends are significant for each parameter in the $4 \times 4$ table.

Table 3.13. Selected Models of Status, Class, and Job Inheritance in 19th and 20th Century Mobility Classifications

| Model | 19th Century | | | | 20th Century | | | |
|---|---|---|---|---|---|---|---|---|
| | $L^2$ | df | $L_h^2/L_t^2$ | $\Delta$ | $L^2$ | df | $L_h^2/L_t^2$ | $\Delta$ |
| **A. Intragenerational Tables** | | | | | | | | |
| 1. (O)(D) | 5668.3 | 9 | 100.0 | 33.1 | 10586.3 | 9 | 100.0 | 33.7 |
| 2. (O)(D)($I_B$)($I_C$)($I_D$) | 23.6 | 2 | 0.4 | 0.8 | 5.1 | 2 | 0.0 | 0.3 |
| 3. (O)(D)($I_A$)($I_B$)($I_C$) | 24.4 | 3 | 0.4 | 0.8 | 6.4 | 3 | 0.1 | 0.3 |
| 4. (O)(D)($I_A$)($I_B$)($I_E$) | 39.6 | 5 | 0.7 | 1.1 | 24.7 | 5 | 0.2 | 0.7 |
| **B. First Occupation Tables** | | | | | | | | |
| 1. (O)(D) | 1158.7 | 9 | 100.0 | 18.6 | 1984.0 | 9 | 100.0 | 15.1 |
| 2. (O)(D)($I_B$)($I_C$)($I_D$) | 2.7 | 2 | 0.2 | 0.2 | 5.3 | 2 | 0.3 | 0.2 |
| 3. (O)(D)($I_A$)($I_B$)($I_C$) | 2.8 | 3 | 0.2 | 0.2 | 5.6 | 3 | 0.3 | 0.3 |
| 4. (O)(D)($I_A$)($I_B$)($I_E$) | 13.7 | 5 | 1.2 | 0.8 | 37.4 | 5 | 1.9 | 0.7 |
| **C. Current Occupation Tables** | | | | | | | | |
| 1. (O)(D) | 507.8 | 9 | 100.0 | 17.5 | 1765.6 | 9 | 100.0 | 13.7 |
| 2. (O)(D)($I_B$)($I_C$)($I_D$) | 3.9 | 2 | 0.8 | 0.5 | 1.3 | 2 | 0.1 | 0.1 |
| 3. (O)(D)($I_A$)($I_B$)($I_C$) | 3.9 | 3 | 0.8 | 0.5 | 1.6 | 3 | 0.1 | 0.2 |
| 4. (O)(D)($I_A$)($I_B$)($I_E$) | 9.6 | 5 | 1.9 | 1.0 | 6.1 | 5 | 0.3 | 0.4 |

NOTE: O=Origin, D=Destination, $I_A$=Status Inheritance, $I_B$=Class Inheritance, $I_C$=Job Inheritance, $I_D$=Modified Status Inheritance, $I_E$=Modified Job Inheritance. See text for details.

Table 3.14. Selected Models of Trends in Status, Class, and Job Inheritance in 19th and 20th Century Mobility Classifications

| Model | $L^2$ | df | $L_h^2/L_t^2$ | $\Delta$ | $L^2/df$ |
|---|---|---|---|---|---|
| **A. Intragenerational Tables** | | | | | |
| 1. (OC)(DC) | 16254.6 | 18 | 100.0 | 33.6 | 903.0 |
| 2. (OC)(DC)($I_A$C)($I_B$C)($I_C$C) | 30.8 | 6 | 0.2 | 0.4 | 5.1 |
| 3. (OC)(DC)($I_A$)($I_B$C)($I_C$C) | 32.6 | 7 | 0.2 | 0.4 | 4.7 |
| 4. (OC)(DC)($I_A$C)($I_B$)($I_C$C) | 60.9 | 7 | 0.4 | 0.5 | 8.7 |
| 5. (OC)(DC)($I_A$C)($I_B$C)($I_C$) | 110.7 | 10 | 0.7 | 1.1 | 11.1 |
| 6. (OC)(DC)($I_A$)($I_B$)($I_C$) | 302.1 | 12 | 1.9 | 2.6 | 25.2 |
| 7. 2 vs. 3 (Change in Status Inheritance) | 1.8 | 1 | 0.0 | 0.0 | 1.8 |
| 8. 2 vs. 4 (Change in Class Inheritance) | 30.1 | 1 | 0.2 | 0.1 | 30.1 |
| 9. 2 vs. 5 (Change in Job Inheritance) | 79.9 | 4 | 0.5 | 0.7 | 20.0 |
| 10. 2 vs. 6 (Total Change in Inheritance) | 271.3 | 6 | 1.7 | 2.2 | 45.2 |
| **B. First Occupation Tables** | | | | | |
| 1. (OC)(DC) | 3142.7 | 18 | 100.0 | 15.8 | 174.6 |
| 2. (OC)(DC)($I_A$C)($I_B$C)($I_C$C) | 8.4 | 6 | 0.3 | 0.3 | 1.4 |
| 3. (OC)(DC)($I_A$)($I_B$C)($I_C$C) | 12.3 | 7 | 0.4 | 0.4 | 1.8 |
| 4. (OC)(DC)($I_A$C)($I_B$)($I_C$C) | 13.3 | 7 | 0.4 | 0.3 | 1.9 |
| 5. (OC)(DC)($I_A$C)($I_B$C)($I_C$) | 22.7 | 10 | 0.7 | 0.7 | 2.3 |
| 6. (OC)(DC)($I_A$)($I_B$)($I_C$) | 129.5 | 12 | 4.1 | 2.3 | 10.8 |
| 7. 2 vs. 3 (Change in Status Inheritance) | 3.9 | 1 | 0.1 | 0.1 | 3.9 |
| 8. 2 vs. 4 (Change in Class Inheritance) | 4.9 | 1 | 0.2 | 0.0 | 4.9 |
| 9. 2 vs. 5 (Change in Job Inheritance) | 14.3 | 4 | 0.5 | 0.4 | 3.6 |
| 10. 2 vs. 6 (Total Change in Inheritance) | 121.1 | 6 | 3.9 | 2.0 | 20.3 |
| **C. Current Occupation Tables** | | | | | |
| 1. (OC)(DC) | 2273.4 | 18 | 100.0 | 14.0 | 126.3 |
| 2. (OC)(DC)($I_A$C)($I_B$C)($I_C$C) | 5.5 | 6 | 0.2 | 0.2 | 0.9 |
| 3. (OC)(DC)($I_A$)($I_B$C)($I_C$C) | 11.4 | 7 | 0.5 | 0.3 | 1.6 |
| 4. (OC)(DC)($I_A$C)($I_B$)($I_C$C) | 7.3 | 7 | 0.3 | 0.2 | 1.0 |
| 5. (OC)(DC)($I_A$C)($I_B$C)($I_C$) | 23.2 | 10 | 1.0 | 0.4 | 2.3 |
| 6. (OC)(DC)($I_A$)($I_B$)($I_C$) | 99.7 | 12 | 4.4 | 1.4 | 8.3 |
| 7. 2 vs. 3 (Change in Status Inheritance) | 5.9 | 1 | 0.3 | 0.1 | 5.9 |
| 8. 2 vs. 4 (Change in Class Inheritance) | 1.8 | 1 | 0.1 | 0.0 | 1.8 |
| 9. 2 vs. 5 (Change in Job Inheritance) | 17.7 | 4 | 0.8 | 0.2 | 4.4 |
| 10. 2 vs. 6 (Total Change in Inheritance) | 94.2 | 6 | 4.1 | 1.2 | 15.7 |

NOTE: O=Origin, D=Destination, $I_A$=Status Inheritance, $I_B$=Class Inheritance, $I_C$=Job Inheritance, and C=Century. See text for details.

Table 3.15. Status, Class, and Job Inheritance Coefficients in 19th and 20th Century Mobility Classifications

| Inheritance | 19th Century | 20th Century | Change |
|---|---|---|---|
| A. Intragenerational Tables | | | |
| 1. Status Inheritance | 1.159 | 0.950 | -0.209 |
| | (.088) | (.060) | (.099) |
| 2. Class Inheritance | 0.402 | 1.044 | 0.642 |
| | (.099) | (.066) | (.106) |
| 3. Job Inheritance | | | -0.776 |
| | | | (.121) |
| B. First Occupation Tables | | | |
| 1. Status Inheritance | 0.927 | 0.652 | -0.275 |
| | (.084) | (.039) | (.091) |
| 2. Class Inheritance | 0.228 | 0.611 | 0.383 |
| | (.118) | (.079) | (.116) |
| 3. Job Inheritance | | | -0.389 |
| | | | (.125) |
| C. Current Occupation Tables | | | |
| 1. Status Inheritance | 0.753 | 0.477 | -0.276 |
| | (.123) | (.034) | (.127) |
| 2. Class Inheritance | 0.106 | 0.317 | 0.211 |
| | (.131) | (.048) | (.132) |
| 3. Job Inheritance | | | -0.534 |
| | | | (.174) |

NOTE: Entries are coefficient, (standard error). The coefficients are in logarithmic form. See text for details.

## 3.8 Summary

The major conclusion is that rates of mobility in the 20th century are about twice as high as rates in the 19th century (see Table 3.3). This is an important result, if only because the prevailing view says there is an an "eerie continuity" in the mobility regimes for the two centuries (Thernstrom 1973, p. 110). To be sure, it must be conceded that a major source of the trends is the rapid upgrading and reshaping of the class structure in the 20th century (see Table 3.3, Lines A3, B3, and C3). If these changes are controlled, the model of constant mobility can account for as much as 99.5% of the total association in the classification (see Table 3.5, Line A2, Column 11). In the introduction, it was argued that this stability arises from regularities in the resources and prestige attached to positions in the class structure.

This is not to say that the departures from the model of constant fluidity can be safely ignored. It is possible that the trends are large in certain sectors of the mobility regime, even if the $L^2$ values are small in the global tests for change. In fact, the major source of variation is a simple inflation effect on the main diagonal of the tables in the 19th century (see Table 3.8). This effect is not small; the ratios for immobility in the 19th century are as much as six times larger than the ratios in the 20th century (see Table 3.10, Line 1). Indeed, these trends in inheritance may be larger than the trends in Hungary during the transition to socialism (Simkus 1981).

The only exception to the prior conclusions is for the class of proprietors. In this case, the ratios for immobility in the 19th century are no larger than the corresponding ratios in the 20th century (see Table 3.10, Line 2). It has been argued that changes in the scale of industry may have depressed rates of mobility, by making it infeasible to start a business with the amount of capital that might be saved from wages (see Weber 1947, p. 427; Mendels 1976, p. 202). If this had occurred in 1850, it might have cleared one of the main obstacles to class formation in the American case (e.g., Sombart 1906). However, in the present context, the implications are not so serious, if only because the rise of a professional class has created new opportunities for mobility into a "*new* petty bourgeoisie" (Poulantzas 1974).

The trends in the other classes may proceed in part from a fundamental change in the values that orient social action (Blau and Duncan, pp. 425-31; Featherman and Hauser 1978, pp. 12-13). In the introduction, it was argued that universal values have spread to all spheres of life, so that parents may find it more difficult to pass on jobs to their children or to arrange for similar ones. Moreover, the rise of universalism means that the authority of parents may be called into question, so a father may be unable to impose or reproduce his

aspirations in his child. However, it is best to be cautious on these points, since no attempt has been made to measure the changes in values, or to correlate them with trends in mobility.

It was also suggested that the rise of mass schooling may have produced a more fluid mobility regime in the 20th century. The locus of socialization has shifted from the home to the school, so children now have new opportunities to learn skills or values that differ from those of their parents. In fact, the growth of mass schooling may have raised the aspirations of children, and reduced the parental expectations for occupational inheritance. Of course, this claim cannot be tested, but it is notable that most parents in the 20th century encourage their sons to attend some college (Sewell et al. 1980, p. 557). In this sense, then, the prevailing view is that children should "take advantage of opportunities that their parents never had" (see Goldthorpe 1980, p. 232).

It must be conceded, at the same time, that new forces for stratification may have emerged in the last century. For example, it was argued that the rise of unions and professional bodies can depress rates of mobility by restricting the supply of entrants to an occupation. However, if this process is operating, it has been effectively offset by the spread of universal values, or by other forces for equality in the 20th century. This is not to say that these strategies of social closure will be offset in the future, or that new strategies cannot arise in new contexts. Indeed, it is well to bear in mind that there is nothing in a trend which "guarantees its own continuation" (Duncan 1968, p. 679).

## Notes

[1] This is not to say that the rise of mass schooling has eliminated all effects of social origins on occupational aspirations. Of course, these effects are still strong in the 20th century (e.g., see Hauser *et al.* 1983).

[2] There are a few examples of labor unions requiring new entrants to be relatives of current members, but this restriction has not been imposed very frequently (see Parkin 1979, pp. 56-57).

[3] The respondents with farm origins or destinations are excluded from these tests, since 6 of the 8 communities in this study have very few or no farmers. If the tests are applied to the full samples, the results are nearly the same.

[4] References to statistical significance in the text are based on $\alpha = .05$.

[5] The $L^2$ statistic in this section should be viewed as a measure of how closely a model can reproduce the observed counts. In a strict sense, it cannot be used as a test statistic, if only because the tables in the two centuries are based on weighted counts. In many cases, the $L^2$ statistic changes substantially if the same model is fit to the corresponding unweighted table.

[6] It should be clear that the $\Delta$ value depends in part on the relative sizes of the samples in the two centuries.

[7] It is reassuring that the trends in Lines 1 to 2 are preserved when the order of the occupations is inverted in plausible ways. For example, the conclusions still hold if farmers are relocated to a position above laborers, craftsmen, or routine nonmanuals. Of course, it would be possible to reverse the trends in Lines 1 to 2 if the vertical rankings were allowed to differ in the two centuries.

[8] The row and column effects for Model II* are presented in Chapter 4.

[9] The index can change in nontrivial ways if other restrictions are used to identify the row and column effects.

[10] It can be shown that this parameter equals $\frac{1}{4}(\log \alpha)$, where $\alpha$ is the odds ratio in a $2 \times 2$ table.

[11] The entries in the first column are from the intragenerational samples in the 19th century, and the entries in the second column are from the 1973 OCG sample (Featherman and Hauser 1978). Of course, the rates of self-employment in these samples may not be the same as the rates for fathers in an intergenerational table (Duncan 1966).

[12] In Panel C, it is convenient to refer to the surplus on the diagonal as an effect of job inheritance, even if the respondents who stay on the diagonal may not have stayed in the same job.

[13] The $L^2$ values for this model are 69.4, 13.1, and 13.9 for Panels A, B, and C. In each case, there are 9 degrees of freedom.

## Chapter 4: Conclusion

The prior results are summarized, elaborated, and qualified in the next three sections of this chapter. In the first section, the mobility ratios are recalculated to correct for the effects of migration and coresidence. The second section presents the results on exchanges between the 7 classes, and the final section outlines an agenda for research on long-term trends.

### 4.1 New Estimates of Trends

It is useful to begin by examining some alternate explanations of the trends in inheritance. For example, it has been suggested by friendly critics that the mobility rates in the 19th century were distorted by coding the occupations into a contemporary classification. It seems fair to say that this claim is overstated, since the majority of titles from the 19th century could be directly coded under the usual procedures. Even if the rate of miscoding was high, it is by no means clear that this could account for a decline in inheritance. In fact, if the rate of random miscoding (and misreporting) was relatively high in the 19th century, then the association in the tables may be seriously attenuated. It follows that the estimates from the prior chapter may understate the real trends in mobility.

The attrition rate in the 19th century may be a more serious problem. In the intragenerational sample, about 30% of the respondents were lost by migration, and another 10 to 15% were lost because of enumerator omissions and clerical errors. The losses due to migration cannot be ignored, since the mobility chances for migrants may differ substantially from those for stayers. Of course, if rates of mobility for migrants are high, then the results in Chapter 3 may overstate the real changes in class persistence. This conjecture cannot be tested directly, but it can be tested indirectly by restricting the OCG sample to geographic stayers.

The results from this test are given in Table 4.1. In Column 2 of this table, the entries are the mobility ratios for respondents who were living in the same community at age 16 and in 1973. In Columns 1 and 3, the ratios from Table 3.10 are reproduced for purposes of comparison. The entries in each case are from the intragenerational samples, and are based on row, column, and diagonal effects in Model II* (see Equation 1, Chapter 3).[1] It is apparent from this table that the trends persist after the 1973 sample is restricted to stayers. To be sure, this restriction increases the ratio for farmers, but not nearly enough to close the gap between the estimates for the two centuries. In the other classes, this restriction has no effect (Lines 4, 5, and 6), a small effect (Lines 2 and 3), or an effect in the wrong direction (Line 1).

Table 4.1. Mobility Ratios in 19th and 20th Century Intragenerational Classifications

| Occupation | 19th Century | Corrected 20th Century | Uncorrected 20th Century |
|---|---|---|---|
| 1. Professional | 56.83 | 4.84 | 9.04 |
| 2. Proprietor | 9.26 | 13.01 | 10.17 |
| 3. Routine Nonmanual | 10.58 | 7.27 | 5.80 |
| 4. Craft | 14.89 | 5.73 | 5.86 |
| 5. Semiskilled | 7.00 | 3.36 | 3.34 |
| 6. Laborer | 9.38 | 5.29 | 5.54 |
| 7. Farm | 174.93 | 125.52 | 74.36 |

NOTE: The ratios in Columns 1 and 3 are from Model A4 in Table 3.6. See text for details.

These results are by no means conclusive, since the mobility patterns for migrants may differ in the two centuries (Thernstrom 1973, pp. 42-44). It is clear, however, that the trends in persistence would disappear only under extreme assumptions about the class destinations of migrants in the 19th century. For example, if 30% of the sample migrated, then 89.9% of the migrants would have to be mobile to equalize the observed rates in the 7 × 7 tables. This estimate is calculated from Line 5 of Table 3.3, which gives mobility rates of 21.3 and 41.9 for the two centuries; it follows that (.899 × .30) + (.213 × .70) = .419. Of course, a mobility rate of 89.9% is implausibly high. It is almost 4 times the rate for stayers in the 19th century, about 2 times the rate for the full sample in the 20th century, and about 1½ times the rate for movers in the 20th century. Indeed, it may be hard to find an example of a comparable rate in any country, century, or region.

The process of attrition is more complex for the intergenerational samples, since paternal occupations were missing for many reasons. It was possible to match fathers and sons when they coresided, when the son lived near his parents, or when the son named his children after his parents. In fact, only 36.1% of the sons were matched in the first occupation sample, and only 43.6% of the sons were matched in the current occupation sample. However, in some of the studies, the process of matching poses no problem, because it was carried out when respondents were young and the chances of coresidence were high. If sons over the age of 19 are excluded, then 76.7% of the first occupation sample can be matched. In the current occupation sample, the corresponding rate is 84.4.

Table 4.2 presents the mobility ratios for these subsamples of young respondents. In Column 2 of this table, the ratios are for respondents under the age of 20; in Columns 1 and 3, the ratios from Table 3.10 are reproduced. In each case, the estimates are from the row, column, and diagonal effects in Model II* (see Equation 1, Chapter 3).[2] It is clear from this table that the densities for inheritance are often smaller when the sample is restricted to young respondents. At the same time, the effect of this restriction is small, so the gap between the two centuries stays large (but, see Line B6). It must be conceded that the estimates may still be biased, since about 15 to 25% of the fathers could not be located, even after the restrictions were made. Of course, the same bias may be present in the estimates from the OCG sample. In this case, about 14% of the respondents were excluded because they lived apart from their fathers for most of their childhood (see Chapter 2).

Table 4.2. Mobility Ratios in 19th and 20th Century Intergenerational Classifications

| Occupation | Uncorrected 19th Century | Corrected 19th Century | 20th Century |
|---|---|---|---|
| A. First Occupation Tables | | | |
| 1. Professional | 9.63 | 9.80 | 2.74 |
| 2. Proprietor | 4.08 | 3.79 | 10.07 |
| 3. Routine Nonmanual | 2.82 | 2.41 | 1.57 |
| 4. Craft | 3.02 | 2.62 | 1.64 |
| 5. Semiskilled | 4.23 | 3.67 | 1.50 |
| 6. Laborer | 4.86 | 4.13 | 2.42 |
| 7. Farm | 105.90 | 92.67 | 21.93 |
| B. Current Occupation Tables | | | |
| 1. Professional | 6.14 | 4.30 | 2.48 |
| 2. Proprietor | 3.04 | 3.65 | 2.84 |
| 3. Routine Nonmanual | 2.85 | 2.71 | 1.64 |
| 4. Craft | 2.93 | 2.43 | 1.38 |
| 5. Semiskilled | 3.91 | 3.85 | 1.36 |
| 6. Laborer | 2.66 | 1.86 | 2.13 |
| 7. Farm | 80.55 | 72.11 | 16.21 |

NOTE: The ratios in Columns 1 and 3 are from Models B4 and C4 in Table 3.6. See text for details.

## 4.2 Trends in Interclass Exchanges

The prior analyses have focused on patterns of inheritance because the major changes have taken place on the main diagonal. It should be recalled, however, that the residue of changes off the diagonal were significant in each of the samples (see Lines A7, B7, and C7 in Table 3.7). In this section, the trends in class exchanges are presented, and three hypotheses on the sources of these trends are introduced.

Table 4.3 gives the row and column effects for the classifications with the main diagonal omitted. In each column, the effects are from Model II*; the fit statistics for this model are listed in Lines A4, B4, and C4 in Table 3.6. The scale values in Line 1 are fixed at zero, so the values in the other lines should be read as deviations from the professional class. Of course, this parameterization is not always convenient, so Table 4.4 gives a matrix of changes in interclass distances under the same model. For example, the first entry in Line 1 says that the distance between proprietors and professionals has increased by .639 in the last century. This estimate was calculated by subtracting the 19th century distance between the two classes, .232, from the corresponding distance in the 20th century, .871 (see Line 2, Table 4.3).[3] In each panel in Table 4.4, the entries are symmetric about the main diagonal, so the distances for the classes can be read across the lines or down the columns.

The entries in this table provide new evidence on three propositions about interclass exchanges. It is useful to begin with the hypothesis that increases in the scale of industry have raised the cost of acquiring a business beyond the means of the working class. In the early 20th century, it was commonly argued that the emergence of automated production and monopoly capitalism has reduced the number of businesses that could be started with the capital saved from wages (see Katz *et al.* 1982, pp. 16-17; Mendels 1976, p. 202; Griffen and Griffen 1978, pp. 103-17). In fact, there is no evidence in Table 4.4 that the exchanges between proprietors and manual workers have declined in frequency.[4] The changes in interclass distances can be read across Line 2; in each case, the entries are negative in the columns for blue-collar workers (Columns 4, 5, and 6). In 3 of 9 cases, the changes are significant at $\alpha = .05$.

This result may arise from the transition to a service-rendering economy, where new businesses are less capital intensive and may require fewer skills (Bell 1973; also, Chinoy 1955, p. 183). Moreover, in a post-industrial society, the aspirations of the middle class are redirected to professions, so there may be more opportunities for working class incumbents to open small stores or businesses. In this sense, then, the working class is able to enter these positions only because more desirable ones have emerged in the last century. If this interpretation is correct, then the distance between professionals and proprietors should have increased in the last century. Indeed, this change has occurred in Panel A; in the other panels, the changes are in

Table 4.3. Row and Column Effects for 19th and 20th Century Mobility Classifications

| Occupation | Intragen. Tables | | First Occ. Tables | | Current Occ. Tables | |
|---|---|---|---|---|---|---|
| | 19th C. | 20th C. | 19th C. | 20th C. | 19th C. | 20th C. |
| 1. Professional | 0 | 0 | 0 | 0 | 0 | 0 |
| | - | - | - | - | - | - |
| 2. Proprietor | .232 | .871 | .005 | .151 | -.034 | .433 |
| | (.163) | (.218) | (.210) | (.167) | (.309) | (.154) |
| 3. Routine Nonmanual | -.018 | .568 | -.097 | .335 | .004 | .289 |
| | (.206) | (.252) | (.250) | (.138) | (.269) | (.153) |
| 4. Craft | 1.118 | 1.387 | .957 | .987 | .874 | 1.002 |
| | (.151) | (.171) | (.179) | (.104) | (.236) | (.105) |
| 5. Semiskilled | 1.367 | 1.781 | 1.208 | 1.244 | 1.018 | 1.188 |
| | (.156) | (.157) | (.198) | (.100) | (.268) | (.102) |
| 6. Laborer | 2.295 | 1.868 | 1.717 | 1.571 | 1.816 | 1.513 |
| | (.203) | (.176) | (.221) | (.120) | (.321) | (.119) |
| 7. Farm | 1.847 | 1.804 | 1.331 | 1.385 | .980 | 1.566 |
| | (.223) | (.193) | (.229) | (.112) | (.277) | (.099) |

NOTE: Entries are coefficient, (standard error). The row and column effects are deviations from professionals. The estimates are from Models A4, B4, and C4 in Table 3.6.

Table 4.4. Changes in Interclass Distances for 19th and 20th Century Mobility Classifications

| Occupation | Occupation (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| A. Intragenerational Tables | | | | | | | |
| 1. Professional | | .639* | .586* | .269 | .414* | -.427 | -.043 |
| 2. Proprietor | .639* | | .053 | -.370* | -.225 | -1.066* | -.682* |
| 3. Routine Nonmanual | .586* | .053 | | -.317* | -.172 | -1.013* | -.629* |
| 4. Craft | .269 | -.370* | -.317* | | .145 | -.696* | -.312 |
| 5. Semiskilled | .414* | -.225 | -.172 | .145 | | -.841* | -.457* |
| 6. Laborer | -.427 | -1.066* | -1.013* | -.696* | -.841* | | -.384 |
| 7. Farm | -.043 | -.682* | -.629* | -.312 | -.457* | -.384 | |
| B. First Occupation Tables | | | | | | | |
| 1. Professional | | .146 | .432 | .030 | .036 | -.146 | .054 |
| 2. Proprietor | .146 | | .286 | -.116 | -.110 | -.292 | -.092 |
| 3. Routine Nonmanual | .432 | .286 | | -.402* | -.396* | -.578* | -.378 |
| 4. Craft | .030 | -.116 | -.402* | | .006 | -.176 | .024 |
| 5. Semiskilled | .036 | -.110 | -.396* | .006 | | -.182 | .018 |
| 6. Laborer | -.146 | -.292 | -.578* | -.176 | -.182 | | -.200 |
| 7. Farm | .054 | -.092 | -.378 | .024 | .018 | -.200 | |
| C. Current Occupation Tables | | | | | | | |
| 1. Professional | | .467 | .285 | .128 | .170 | -.303 | .586* |
| 2. Proprietor | .467 | | .182 | -.339 | -.297 | -.770* | .119 |
| 3. Routine Nonmanual | .285 | .182 | | -.157 | -.115 | -.588* | .301 |
| 4. Craft | .128 | -.339 | -.157 | | .042 | -.431 | .458* |
| 5. Semiskilled | .170 | -.297 | -.115 | .042 | | -.473 | .416* |
| 6. Laborer | -.303 | -.770* | -.588* | -.431 | -.473 | | -.889* |
| 7. Farm | .586* | .119 | .301 | .458* | .416* | -.889* | |

NOTE: The estimates are from Models A4, B4, and C4 in Table 3.6. Estimates with an asterisk are significant at $\alpha = .05$.

the proper direction, but not significant (see Column 1 in Lines A2, B2, and C2). It follows that the trends for proprietors may proceed in part from changes in the desirability of their positions.

The second theory on interclass exchanges says there is an emerging parity in the mobility chances of craftsmen, operatives, and laborers. It is argued that the "aristocracy of labor" is displaced when machinery is inserted into the workplace, and when scientific management is used to dilute skills or subdivide tasks (see Braverman 1974; Marglin 1974). In fact, in Panel A of Table 4.4, the distance between craftsmen and laborers has declined by .696 (Line A4), and the distance between semiskilled workers and laborers has declined by .841 (Line A5). In Panels B and C, the corresponding entries are also negative, but not significant (Lines B4, B5, C4, and C5). In all panels, the distances between craftsmen and semiskilled workers have not declined (Lines A4, B4, and C4). It follows that the new parity in the manual class arises primarily from an improvement in the mobility chances of laborers. Of course, this is not to say that the transition to an advanced economy has "obliterated all distinctions of labor" (Marx 1978, p. 480). Indeed, the distances between laborers and semiskilled workers are still significant for 2 of 3 tables in the 20th century.

The third theory says that clerical labor has been deskilled by the subdivision of tasks and the introduction of new office machinery (Braverman 1974; also, see Giddens 1973, pp. 193-4). As early as 1935, one commentator concluded that a typical large office was "nothing but a white-collar factory" (Corey 1935, p. 250). Indeed, the results in Table 4.4 show a substantial decline in the mobility chances of sales or clerical employees. For example, in Panel A, the distance between lower nonmanuals and craftsmen has declined by .317 (Line A3, Column 4), and the distance between lower nonmanuals and professionals has increased by .586 (Line A3, Column 1). In fact, the distance between professionals and clericals is not significant in any of the samples from the 19th century (see Table 4.3, Line 3).

The results on the last two hypotheses suggest that the American working class may be strengthened by the transition to an advanced economy. To be sure, the manual sector has declined in size, but this may be countered by the waning of internal cleavages in the last century. If the prospects for advancement are the same for skilled and unskilled workers, then both sectors have the same interests in identifying with their class or acting on its behalf (see Breiger 1981). This means that the conflicts between the "aristocracy of labor" and other manual sectors may disappear, and the working class may become a unified force on political and economic issues. Moreover, the working class may be strengthened by the decline in the mobility chances of lower nonmanuals. If these occupations are reduced to a so-called proletarian condition, then the contraction in the manual sector is offset by a growth in the number of occupations within the working class. Of course, the distances between manuals and lower

nonmanuals are still large, so the boundaries of the working class can be extended only at the cost of introducing new cleavages (see Table 4.3, Lines 3 and 4).

These changes may be countered, however, by the increases in mobility rates in all classes. It is commonly argued that widespread opportunities for mobility induce manual wage workers to forego collective strategies of action (Blau and Duncan 1967, pp. 439-40; Lipset and Gordon 1953). If workers have ample prospects for advancement, then they are less likely to act on behalf of their class, or to identify with their class or its members. It follows that the process of stratification is less structured in the 20th century, in the sense that the rise of identifiable groups is inhibited by the flux of individuals from job to job. This fluidity may prevent the emergence of a strengthened working class, even in the context of a new parity in its mobility chances.

## 4.3 Lines of Future Research

It is useful to conclude this chapter by reviewing some of the issues that can be addressed in future research on long-term trends. The data sets from the 19th century are now in comparable form, so they should prove to be a continuing resource for studies on social mobility in the United States.

It is natural to extend the prior analyses by disaggregating the data from the two centuries into comparable regions or communities. Of course, the results in Table 3.1 showed that a model of constant fluidity could account for most of the association in the disaggregated data. At the same time, the departures from this model were significant, and they may be of some sociological interest. It may be argued, for example, that communities on the western frontier offered "unfettered opportunity" (Elkins and McKitrick 1954, p. 349), because they were too new to have developed strong social or cultural barriers to mobility (also, see Billington 1968; Robbins 1970). These differences may disappear by the 20th century if the logic of industrialism exerts a standardizing effect on regional economies (Featherman and Hauser 1978, pp. 386-87). It is possible, however, that the past histories of communities will "live on" in their patterns of mobility even after regional economies shed their distinctive features.

The data should also be disaggregated by race, since the long-term trends for blacks may not mimic the corresponding trends for the full population. It is likely that blacks in the 19th century experienced a "perverse openness," in the sense that parents who had high status jobs were unable to transfer these jobs to their children. However, in the 20th century, the mobility regimes for the two races may begin to converge, so the children of blacks may profit from social origins in the same way as their white counterparts (Featherman and Hauser 1978, pp. 313-84; Wilson 1978). It follows that class inheritance by blacks should increase, even as the trend for the majority population is

moving in the opposite direction. This account is validated by results on trends in the past few decades (Hout 1984b), but no results are available on long-term changes. It should be recalled that the classic study by Thernstrom (1973, pp. 176-219) was based on trends in the distribution of occupations, but not on trends in mobility *per se*.

It is also possible to compare long-term trends in the United States and Europe (see Kaelble 1981). The results from this comparison may make it clear that the United States has not experienced exceptionally high rates of social mobility. Of course, it is now known that the present mobility regimes of industrial societies are very similar, but the proponents of "American exceptionalism" can still claim that the past regimes of this country were unusually fluid. This interpretation can explain why Americans in the 20th century believe that their class system is so open, even when the present research finds no objective source for this belief. It is argued that the ideology originated in the relatively high rates of mobility in the 19th century, and then persisted even after the regimes in Europe and America converged into a common pattern.[5] This case for "American exceptionalism" can be evaluated only by comparing the data from Europe and America in the 19th century. It should be clear, however, that the present study casts doubts on this interpretation, since the rates of mobility in the United States have evidently increased over the last century.

## Notes

[1] This model returns an $L^2$ value of 46.6 in the 20th century table for stayers. The fit statistics in the other samples are given in Table 3.6.

[2] The $L^2$ values for this model are 144.8 in the first occupation sample for young respondents, and 130.2 in the current occupation sample for young respondents. The fit statistics in the other samples are given in Table 3.6.

[3] The entries in Table 4.4 include the effects of inversions in the rank order of classes. For example, in the current occupation table, the entry for proprietors and professionals is .433 - (-.034) = .467.

[4] The category for proprietors does not include all the self-employed respondents, so the results in Table 4.4 may differ from the results in the 2 × 2 tables for classes.

[5] There is no need to invoke this explanation if Americans do not believe that their class system is exceptionally fluid. This possibility has been suggested by Goldthorpe (1985b, p. 19).

# Appendix A

## 19th Century Mobility Classifications

Table A.1. Unweighted 7x7 Tables for the 19th Century

| Occupation | Occupation (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| A. Intragenerational Tables | | | | | | | |
| 1. Professional | 719 | 68 | 50 | 21 | 15 | 5 | 6 |
| 2. Proprietor | 84 | 1162 | 123 | 73 | 74 | 24 | 15 |
| 3. Routine Nonmanual | 112 | 228 | 492 | 68 | 53 | 33 | 2 |
| 4. Craft | 68 | 250 | 58 | 2880 | 211 | 101 | 34 |
| 5. Semiskilled | 46 | 143 | 54 | 231 | 1092 | 191 | 12 |
| 6. Laborer | 26 | 73 | 34 | 216 | 274 | 1063 | 129 |
| 7. Farm | 11 | 29 | 8 | 45 | 16 | 60 | 947 |
| B. First Occupation Tables | | | | | | | |
| 1. Professional | 96 | 20 | 133 | 57 | 26 | 8 | 15 |
| 2. Proprietor | 41 | 128 | 349 | 129 | 78 | 37 | 9 |
| 3. Routine Nonmanual | 15 | 11 | 153 | 48 | 11 | 16 | 1 |
| 4. Craft | 38 | 48 | 301 | 920 | 235 | 170 | 43 |
| 5. Semiskilled | 8 | 9 | 85 | 110 | 275 | 75 | 11 |
| 6. Laborer | 9 | 11 | 130 | 320 | 215 | 520 | 46 |
| 7. Farm | 23 | 36 | 30 | 51 | 105 | 79 | 1058 |
| C. Current Occupation Tables | | | | | | | |
| 1. Professional | 75 | 26 | 39 | 30 | 11 | 7 | 6 |
| 2. Proprietor | 45 | 130 | 114 | 55 | 24 | 19 | 6 |
| 3. Routine Nonmanual | 17 | 21 | 60 | 12 | 12 | 7 | 0 |
| 4. Craft | 46 | 64 | 140 | 386 | 105 | 52 | 27 |
| 5. Semiskilled | 10 | 13 | 43 | 44 | 96 | 26 | 0 |
| 6. Laborer | 17 | 31 | 63 | 176 | 109 | 139 | 29 |
| 7. Farm | 39 | 59 | 20 | 42 | 52 | 44 | 750 |

Table A.2. Weighted 7x7 Tables for the 19th Century

| Occupation | Occupation (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| A. Intragenerational Tables | | | | | | | |
| 1. Professional | 413 | 28 | 23 | 12 | 9 | 4 | 12 |
| 2. Proprietor | 39 | 390 | 46 | 34 | 37 | 16 | 23 |
| 3. Routine Nonmanual | 54 | 80 | 190 | 33 | 28 | 23 | 3 |
| 4. Craft | 40 | 108 | 28 | 1710 | 137 | 88 | 68 |
| 5. Semiskilled | 29 | 66 | 27 | 146 | 757 | 177 | 25 |
| 6. Laborer | 19 | 39 | 20 | 159 | 222 | 1149 | 320 |
| 7. Farm | 16 | 31 | 9 | 65 | 26 | 128 | 4622 |
| B. First Occupation Tables | | | | | | | |
| 1. Professional | 61 | 12 | 58 | 38 | 23 | 7 | 21 |
| 2. Proprietor | 27 | 81 | 158 | 90 | 72 | 34 | 13 |
| 3. Routine Nonmanual | 7 | 5 | 49 | 24 | 7 | 11 | 1 |
| 4. Craft | 22 | 27 | 120 | 563 | 191 | 138 | 54 |
| 5. Semiskilled | 6 | 7 | 45 | 90 | 299 | 82 | 18 |
| 6. Laborer | 7 | 8 | 69 | 260 | 232 | 562 | 76 |
| 7. Farm | 23 | 35 | 21 | 54 | 147 | 111 | 2276 |
| C. Current Occupation Tables | | | | | | | |
| 1. Professional | 38 | 11 | 11 | 14 | 7 | 7 | 8 |
| 2. Proprietor | 20 | 48 | 29 | 22 | 14 | 18 | 7 |
| 3. Routine Nonmanual | 6 | 6 | 12 | 4 | 5 | 5 | 0 |
| 4. Craft | 24 | 27 | 41 | 182 | 68 | 56 | 36 |
| 5. Semiskilled | 7 | 8 | 18 | 29 | 86 | 38 | 0 |
| 6. Laborer | 20 | 29 | 42 | 185 | 158 | 331 | 86 |
| 7. Farm | 28 | 34 | 8 | 27 | 47 | 65 | 1369 |

Table A.3. Unweighted Status Tables for the 19th Century

| Status | Status (1) | Status (2) |
|---|---|---|
| A. Intragenerational Tables | | |
| 1. Nonmanual | 3038 | 366 |
| 2. Manual | 752 | 6259 |
| B. First Occupation Tables | | |
| 1. Nonmanual | 946 | 410 |
| 2. Manual | 639 | 2840 |
| C. Current Occupation Tables | | |
| 1. Nonmanual | 527 | 177 |
| 2. Manual | 427 | 1133 |

Table A.4. Weighted Status Tables for the 19th Century

| Status | Status (1) | Status (2) |
|---|---|---|
| A. Intragenerational Tables | | |
| 1. Nonmanual | 1262 | 197 |
| 2. Manual | 377 | 4545 |
| B. First Occupation Tables | | |
| 1. Nonmanual | 460 | 306 |
| 2. Manual | 311 | 2416 |
| C. Current Occupation Tables | | |
| 1. Nonmanual | 180 | 95 |
| 2. Manual | 215 | 1133 |

Table A.5. Unweighted Class Tables for the 19th Century

| Class | Class (1) | Class (2) |
|---|---|---|
| **A. Intragenerational Tables** | | |
| 1. Employed | 4771 | 762 |
| 2. Self-employed | 251 | 1136 |
| **B. First Occupation Tables** | | |
| 1. Employed | 3078 | 104 |
| 2. Self-employed | 818 | 196 |
| **C. Current Occupation Tables** | | |
| 1. Employed | 1291 | 183 |
| 2. Self-employed | 322 | 203 |

Table A.6. Weighted Class Tables for the 19th Century

| Class | Class (1) | Class (2) |
|---|---|---|
| **A. Intragenerational Tables** | | |
| 1. Employed | 5018 | 658 |
| 2. Self-employed | 204 | 1040 |
| **B. First Occupation Tables** | | |
| 1. Employed | 3141 | 91 |
| 2. Self-employed | 743 | 222 |
| **C. Current Occupation Tables** | | |
| 1. Employed | 1486 | 169 |
| 2. Self-employed | 199 | 145 |

Table A.7. Unweighted Class x Status Tables for the 19th Century

| Class x Status | Class x Status (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| A. Intragenerational Tables | | | | |
| 1. Self-Employed Nonmanual | 797 | 144 | 15 | 60 |
| 2. Employed Nonmanual | 245 | 687 | 22 | 124 |
| 3. Self-Employed Manual | 31 | 14 | 293 | 33 |
| 4. Employed Manual | 224 | 173 | 271 | 3787 |
| B. First Occupation Tables | | | | |
| 1. Self-Employed Nonmanual | 160 | 381 | 2 | 175 |
| 2. Employed Nonmanual | 33 | 261 | 3 | 117 |
| 3. Self-Employed Manual | 17 | 69 | 17 | 193 |
| 4. Employed Manual | 55 | 452 | 13 | 2248 |
| C. Current Occupation Tables | | | | |
| 1. Self-Employed Nonmanual | 150 | 162 | 3 | 71 |
| 2. Employed Nonmanual | 39 | 124 | 6 | 45 |
| 3. Self-Employed Manual | 18 | 27 | 32 | 62 |
| 4. Employed Manual | 90 | 253 | 48 | 869 |

Table A.8. Weighted Class x Status Tables for the 19th Century

| Class x Status | Class x Status (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| A. Intragenerational Tables | | | | |
| 1. Self-Employed Nonmanual | 711 | 107 | 12 | 51 |
| 2. Employed Nonmanual | 145 | 400 | 14 | 76 |
| 3. Self-Employed Manual | 31 | 13 | 286 | 33 |
| 4. Employed Manual | 231 | 169 | 267 | 4374 |
| B. First Occupation Tables | | | | |
| 1. Self-Employed Nonmanual | 184 | 255 | 3 | 256 |
| 2. Employed Nonmanual | 25 | 125 | 3 | 109 |
| 3. Self-Employed Manual | 13 | 34 | 22 | 197 |
| 4. Employed Manual | 46 | 234 | 16 | 2672 |
| C. Current Occupation Tables | | | | |
| 1. Self-Employed Nonmanual | 104 | 71 | 2 | 57 |
| 2. Employed Nonmanual | 21 | 47 | 3 | 29 |
| 3. Self-Employed Manual | 13 | 13 | 26 | 57 |
| 4. Employed Manual | 92 | 147 | 53 | 1263 |

Table A.9. Unweighted 7x7 Tables for Respondents Under the Age of 20 in the 19th Century

| Occupation | Occupation (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| A. First Occupation Tables | | | | | | | |
| 1. Professional | 29 | 6 | 50 | 24 | 13 | 5 | 10 |
| 2. Proprietor | 17 | 51 | 207 | 86 | 50 | 20 | 9 |
| 3. Routine Nonmanual | 6 | 5 | 93 | 22 | 7 | 8 | 1 |
| 4. Craft | 18 | 21 | 213 | 476 | 177 | 99 | 33 |
| 5. Semiskilled | 4 | 6 | 57 | 56 | 177 | 47 | 8 |
| 6. Laborer | 5 | 7 | 105 | 189 | 139 | 289 | 35 |
| 7. Farm | 17 | 31 | 21 | 40 | 89 | 55 | 954 |
| B. Current Occupation Tables | | | | | | | |
| 1. Professional | 27 | 10 | 16 | 19 | 4 | 4 | 5 |
| 2. Proprietor | 23 | 81 | 62 | 39 | 14 | 12 | 5 |
| 3. Routine Nonmanual | 11 | 14 | 39 | 9 | 8 | 6 | 0 |
| 4. Craft | 35 | 36 | 107 | 226 | 73 | 37 | 23 |
| 5. Semiskilled | 8 | 7 | 33 | 29 | 66 | 16 | 0 |
| 6. Laborer | 11 | 19 | 49 | 126 | 83 | 85 | 21 |
| 7. Farm | 37 | 50 | 18 | 31 | 47 | 38 | 689 |

Table A.10. Weighted 7x7 Tables for Respondents Under the Age of 20 in the 19th Century

| Occupation | Occupation (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| A. First Occupation Tables | | | | | | | |
| 1. Professional | 34 | 6 | 27 | 23 | 15 | 7 | 18 |
| 2. Proprietor | 19 | 50 | 107 | 82 | 55 | 26 | 16 |
| 3. Routine Nonmanual | 4 | 3 | 28 | 12 | 4 | 6 | 1 |
| 4. Craft | 16 | 16 | 86 | 350 | 151 | 98 | 45 |
| 5. Semiskilled | 4 | 5 | 25 | 45 | 167 | 51 | 12 |
| 6. Laborer | 6 | 7 | 53 | 176 | 150 | 362 | 61 |
| 7. Farm | 16 | 26 | 9 | 32 | 83 | 60 | 1431 |
| B. Current Occupation Tables | | | | | | | |
| 1. Professional | 16 | 5 | 5 | 9 | 3 | 5 | 6 |
| 2. Proprietor | 13 | 36 | 17 | 18 | 8 | 13 | 6 |
| 3. Routine Nonmanual | 4 | 4 | 8 | 3 | 3 | 5 | 0 |
| 4. Craft | 22 | 19 | 34 | 119 | 49 | 46 | 31 |
| 5. Semiskilled | 7 | 5 | 13 | 20 | 58 | 26 | 0 |
| 6. Laborer | 16 | 22 | 34 | 147 | 124 | 233 | 63 |
| 7. Farm | 25 | 27 | 6 | 17 | 33 | 49 | 979 |

# Appendix B

## 20th Century Mobility Classifications

Table B.1. Weighted 7x7 Tables for the 20th Century

| Occupation | Occupation (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| A. Intragenerational Tables | | | | | | | |
| 1. Professional | 3140 | 88 | 376 | 259 | 172 | 31 | 25 |
| 2. Proprietor | 100 | 166 | 80 | 53 | 72 | 9 | 13 |
| 3. Routine Nonmanual | 824 | 110 | 1222 | 241 | 306 | 76 | 17 |
| 4. Craft | 468 | 122 | 222 | 2777 | 631 | 147 | 37 |
| 5. Semiskilled | 402 | 126 | 320 | 900 | 2952 | 330 | 60 |
| 6. Laborer | 116 | 36 | 124 | 273 | 407 | 390 | 26 |
| 7. Farm | 64 | 30 | 44 | 142 | 226 | 88 | 727 |
| B. First Occupation Tables | | | | | | | |
| 1. Professional | 1075 | 22 | 517 | 310 | 404 | 146 | 38 |
| 2. Proprietor | 415 | 65 | 349 | 168 | 256 | 114 | 34 |
| 3. Routine Nonmanual | 502 | 15 | 488 | 212 | 375 | 137 | 35 |
| 4. Craft | 771 | 15 | 744 | 1139 | 1405 | 656 | 116 |
| 5. Semiskilled | 538 | 12 | 736 | 684 | 1811 | 664 | 124 |
| 6. Laborer | 104 | 2 | 152 | 198 | 520 | 357 | 65 |
| 7. Farm | 361 | 12 | 393 | 528 | 1116 | 542 | 1711 |
| C. Current Occupation Tables | | | | | | | |
| 1. Professional | 1771 | 73 | 561 | 445 | 467 | 98 | 27 |
| 2. Proprietor | 529 | 99 | 236 | 214 | 188 | 49 | 21 |
| 3. Routine Nonmanual | 821 | 66 | 414 | 325 | 370 | 82 | 11 |
| 4. Craft | 1421 | 146 | 706 | 1582 | 1297 | 295 | 60 |
| 5. Semiskilled | 1127 | 121 | 651 | 1242 | 1707 | 321 | 46 |
| 6. Laborer | 243 | 35 | 167 | 386 | 552 | 190 | 20 |
| 7. Farm | 836 | 174 | 470 | 1322 | 1635 | 462 | 875 |

Table B.2. Weighted Status Tables for the 20th Century

| Status | Status (1) | Status (2) |
|---|---|---|
| A. Intragenerational Tables | | |
| 1. Nonmanual | 6106 | 1220 |
| 2. Manual | 1937 | 8806 |
| B. First Occupation Tables | | |
| 1. Nonmanual | 3446 | 2122 |
| 2. Manual | 3073 | 7434 |
| C. Current Occupation Tables | | |
| 1. Nonmanual | 4569 | 2236 |
| 2. Manual | 4617 | 7573 |

Table B.3. Weighted Class Tables for the 20th Century

| Class | Class (1) | Class (2) |
|---|---|---|
| **A. Intragenerational Tables** | | |
| 1. Employed | 15671 | 934 |
| 2. Self-employed | 614 | 850 |
| **B. First Occupation Tables** | | |
| 1. Employed | 12691 | 190 |
| 2. Self-employed | 2914 | 280 |
| **C. Current Occupation Tables** | | |
| 1. Employed | 14655 | 1073 |
| 2. Self-employed | 2744 | 523 |

Table B.4. Weighted Class x Status Tables for the 20th Century

| Class x Status | Class x Status (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| A. Intragenerational Tables | | | | |
| 1. Self-Employed Nonmanual | 465 | 276 | 62 | 120 |
| 2. Employed Nonmanual | 325 | 5040 | 56 | 983 |
| 3. Self-Employed Manual | 85 | 64 | 237 | 155 |
| 4. Employed Manual | 230 | 1558 | 324 | 8090 |
| B. First Occupation Tables | | | | |
| 1. Self-Employed Nonmanual | 157 | 1098 | 23 | 675 |
| 2. Employed Nonmanual | 69 | 2123 | 16 | 1407 |
| 3. Self-Employed Manual | 26 | 348 | 73 | 794 |
| 4. Employed Manual | 59 | 2640 | 45 | 6521 |
| C. Current Occupation Tables | | | | |
| 1. Self-Employed Nonmanual | 273 | 1034 | 55 | 561 |
| 2. Employed Nonmanual | 310 | 2952 | 90 | 1531 |
| 3. Self-Employed Manual | 106 | 484 | 90 | 666 |
| 4. Employed Manual | 379 | 3649 | 294 | 6523 |

Table B.5. Weighted 7x7 Intragenerational Table for 20th Century Respondents Living in the Same Community at Age 16 and in March 1973

| Occupation | Occupation (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| 1. Professional | 709 | 25 | 105 | 87 | 44 | 8 | 5 |
| 2. Proprietor | 29 | 67 | 21 | 16 | 30 | 2 | 2 |
| 3. Routine Nonmanual | 266 | 32 | 448 | 79 | 113 | 28 | 5 |
| 4. Craft | 161 | 55 | 82 | 988 | 229 | 63 | 14 |
| 5. Semiskilled | 117 | 47 | 130 | 329 | 1082 | 125 | 27 |
| 6. Laborer | 44 | 18 | 51 | 104 | 143 | 150 | 11 |
| 7. Farm | 19 | 10 | 15 | 45 | 84 | 30 | 401 |

## Appendix C: Sample Weights in the 19th Century

Suppose that two samples are drawn, one from region A and another from region B. Let the counts in the $2 \times 2$ tables for these regions be denoted by $x_{ija}$ and $x_{ijb}$, where i indexes first occupations, and j indexes current occupations. In the pooled sample, the marginal frequency in category 1 is $x_{11a} + x_{12a} + x_{11b} + x_{12b}$ for origins, and $x_{11a} + x_{21a} + x_{11b} + x_{21b}$ for destinations. Now, suppose that residents in region A were undersampled by a factor of r. In the population, then, the marginal frequency in category 1 is $rx_{11a} + rx_{12a} + x_{11b} + x_{12b}$ for origins, and $rx_{11a} + rx_{21a} + x_{11b} + x_{21b}$ for destinations. In this case, the correct weight for the origin category in the pooled sample is

$$W = \frac{rx_{11a} + rx_{12a} + x_{11b} + x_{12b}}{x_{11a} + x_{12a} + x_{11b} + x_{12b}} .$$

It is claimed that the destination frequency in the population can be reproduced by applying the prior weight to the destination frequency in the sample:

$$rx_{11a} + rx_{21a} + x_{11b} + x_{21b} = W\,(x_{11a} + x_{21a} + x_{11b} + x_{21b}).$$

If the terms are multiplied, canceled, and rearranged, we can obtain

$$\frac{x_{11a} + x_{12a}}{x_{11a} + x_{21a}} = \frac{x_{11b} + x_{12b}}{x_{11b} + x_{21b}} .$$

It follows that the prior procedure produces the true counts if the marginal frequencies for corresponding origins and destinations are in the same ratio for each region.

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