

Chapter 5

Occupations and Social Mobility: Gradational, Big-Class, and Micro-Class Reproduction in Comparative Perspective

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THE PURPOSE of this chapter is to revisit the classical sociological questions about social mobility with a new cross-national data set and a new approach to analyzing mobility data. We first present a model of mobility that estimates the net amount of gradational, occupational, and big-class reproduction, and we then apply this model to examine cross-national variability in mobility and recent trends in mobility. This chapter thus adds to a small but growing collection of recent works that are reviving and reinventing the sociological approach to studying mobility (Beller and Hout 2006; Breen 2004; Breen and Jonsson 2005; Harding et al. 2005).

It may be useful to start off by reminding ourselves why sociologists care about mobility. There are two lines of questioning that have historically animated sociologists who study mobility: the formation of self-aware and politically active social groups (the "collective action" question), and the effects of social origins on life chances (the "equal opportunity" question). The first question may be understood as European in provenance, while the second has been embraced more frequently by U.S. scholars.

For mobility scholars oriented toward the collective action question, the presumption has long been that high levels of social mobility, manifested both within and across generations, undermine the formation of (homogeneous) social classes. When, for example, Werner Sombart (1906)

considered why the United States did not take to socialism, he concluded that U.S. workers were disinclined to identify with their class or to act on its behalf because they were not counting on remaining within it for very long. It might be said that the main mobility project to which U.S. workers were oriented was that of individual advancement rather than collective advancement. The amount of social mobility may additionally affect the demographic and cultural composition of a social class. As John Goldthorpe (1980) has noted, when members of a class are drawn diversely from various social origins, the class then becomes too heterogeneous to develop a coherent classwide culture.

This focus on class formation, once the mainstay of the sociological interest in mobility, has arguably become less important in the field. In recent years, it has increasingly given way to an interest in equality of opportunity, as revealed by the extent to which children born into more- or less-privileged families have different opportunities for getting ahead. The mobility table tells us, in other words, how much children's starting point matters for their subsequent life chances.

This same interest in monitoring departures from equal opportunity would appear to motivate much mobility research within the discipline of economics as well. Insofar, then, as sociologists have shed their interest in questions of class formation, we can no longer draw sharp distinctions between the two disciplines in the motivations underlying intergenerational mobility analysis. The main disciplinary difference in the contemporary period is now principally found in the way those motivations are expressed. The ideal-typical economist explores departures from equal opportunity through the prism of economic standing and income mobility, while the ideal-typical sociologist explores such departures through the prism of social standing and social mobility.

Sociologists' interest in social standing and mobility has led them to focus almost exclusively on the intergenerational transmission of occupations. Indeed, sociologists are arguably obsessed with occupations, the now-famous claim being that occupations are the "backbone" of the stratification system (Blau and Duncan 1967; Parkin 1971). Although some economists (Björklund and Jäntti 1997; Nicoletti and Ermisch 2007) have also incorporated occupations into their mobility analyses (albeit indirectly), to do so remains comparatively rare within the economics tradition.

Why do sociologists make so much of occupations? The short answer is that, because occupations are deeply institutionalized in the labor market, they serve as a powerful omnibus indicator of the social world within which individuals work and live. At a dinner party, we tend to ask a new acquaintance, "What do you do?" because the response, almost invariably conveyed in the form of an occupation, provides at once evidence on life chances and capacities (skills and credentials, earnings capacity, networks), honor and esteem (prestige, socioeconomic status), and the social

and cultural world within which interactions occur (consumption practices, politics, attitudes). We care, in other words, about occupations because they are pregnant with information on the life chances, social standing, and social world of their incumbents (see Weeden and Grusky 2005). The (largely untested) bias in this regard is that occupation is far more strongly correlated with these variables than is income.

The Three Forms of Reproduction

When occupations are treated as an omnibus indicator of social conditions, there are three main ways in which we can then examine how an individual's origin (as expressed in the mother's and father's occupations) influences her or his destination (as expressed in the individual's adult occupation). First, occupations can be *scaled* or *graded* in ways that signal the general desirability of the labor market position, with the origin-destination association then revealing the extent to which those born into families in which parents have desirable occupations are likely themselves to assume desirable occupations. This association between origin and destination desirability arises because parents at the top of the desirability distribution control the resources that make it possible for their children to get ahead. That is, their children can secure desirable occupations by virtue of (1) their access to the economic resources needed to obtain an elite education or capitalize on entrepreneurial opportunities, (2) their access to the social networks that provide information about or entry into the most rewarded occupations, and (3) their access to the skills and cultural resources that allow them to qualify for and succeed in such occupations. Although some sociologists have sought to measure desirability directly (Jencks, Perman, and Rainwater 1988), most unidimensional scales measure desirability only indirectly by asking respondents about the general "social standing" of occupations (prestige scales) or by indexing the occupational resources, such as education and income, that are presumed to signal overall desirability (socioeconomic scales). There is a long and lively history of debates among proponents of prestige scales (Goldthorpe and Hope 1974; Nakao and Treas 1992; Treiman 1977), socioeconomic scales (Duncan 1961; Ganzeboom, de Graaf, and Treiman 1992; Hodge 1981), and other closely related scales (Hauser and Warren 1997).

The second main way in which sociologists deploy occupations for the purpose of studying mobility is to aggregate them into *big social classes* and then examine the exchanges among these classes. The typical big-class scheme defines three, seven, or twelve categories (such as the salariat, craft workers, the petty bourgeoisie, farmers). Although most big-class schemes do not rely exclusively on occupational information for the purpose of defining classes (and may additionally rely on self-employment, industry,

or job characteristics), in practice occupations have been understood as the most fundamental arbiter of class position (for an important exception, see Wright 1997).

The big classes so defined are assumed to transmit a constellation of working conditions, a social context that affects behavior and decision-making, and a cultural context that is an adjustment to this social context. Unlike the scaling tradition, the big-class tradition draws attention to the effects of class-specific resources, the claim being that children from two big classes of similar general desirability do not necessarily have the same mobility chances. Although craft workers and the petty bourgeoisie, for example, may be roughly similar in overall desirability, the children of craft workers should develop a taste and capacity for craft work while the children of the petty bourgeoisie should develop a taste and capacity for entrepreneurship. The big-class formulation additionally assumes that all children born into the same class (such as the salariat) have similar mobility chances even though their parents originate from very different detailed occupations (such as doctor, lawyer, or professor). These myriad detailed occupations are presumed to be similar enough in working conditions, employment form, or culture to preclude any need to differentiate them.

The contest between gradational and big-class approaches has often been acrimonious and, until recently, has obscured a third and equally fundamental way of deploying occupations for the purpose of mobility analysis. This third way, the *micro-class* approach, shares with the big-class approach the assumption that mobility regimes take on a discrete form and cannot be understood wholly in terms of a gradational imagery. This lumpiness assumes, however, an especially detailed form: the claim is that unit occupations (such as lawyer, policeman, secretary) are, at least in some societies, more deeply institutionalized than any big-class combinations of those occupations (such as craft workers or professionals). In the micro-class view, parents tend to "bring home" their occupations, and children accordingly learn occupation-specific skills, profit from occupation-specific networks, and develop occupation-specific aspirations. The daughter of an architect, to take but one example, may be socialized into appreciating the aesthetic features of buildings, exposed to drawing and programming skills that are relevant to the architectural practice, find that she has a comparative advantage in relevant subjects in school, and intern during the summer with a business partner of her parent. The probability that an architect's child will become an architect, a carpenter's child will become a carpenter, and a farmer's child will become a farmer is accordingly high (when compared to the corresponding probabilities for children from occupations of the same general desirability and same big class). The strong big-class reproduction that we long thought was revealed in mobility tables may instead be artifactual

and express nothing more than the tendency for reproduction at the detailed occupational level.

Both of these forms of class models differ from gradational models in allowing for so-called inheritance effects. Because parents are understood to be transferring class-specific resources to their children (rather than more generalized ones), the main departure from equal opportunity under a class formulation takes the form of a tendency for class inheritance, not a tendency for mobility between occupations of roughly equal desirability, prestige, status, or income. When we tabulate social origin class with destination class, the inheritance effects show up as a particularly strong association in cells in the main upper-left to lower-right diagonal. The resulting statistical models thus fit a full set of inheritance terms, one for each class, and are less parsimonious than ones that estimate a single intergenerational income elasticity parameter or summarize the association in a tabular array in a single association term. Although an equality constraint on such inheritance terms could be imposed, it is not uncommon to hypothesize (and to find) that some classes have rather stronger holding power than others (Breen 2004; Erikson and Goldthorpe 1992; Jonsson et al. 2009).

It would, of course, be possible to presume that reproduction takes on an exclusively gradational, big-class, or micro-class form and to build a mobility model that then capitalizes on the imagery underlying that particular form. The field has indeed often proceeded in just this way—that is, big-class analysts have often insisted on building purist big-class models, while gradationalists have insisted on building purist gradational models. By contrast, the model that we have developed combines all three forms (big-class, micro-class, gradational) and thereby makes it possible to tease out the contribution of each.

How Does Social Reproduction Vary Across Countries?

In any given country, some types of social reproduction are deeply institutionalized, while others appear only in attenuated form. We advance here some hypotheses about the structure of such cross-national differences in reproduction.

The gradational form is likely to be relatively well developed in all countries for two reasons: desirable occupations tend to come with the resources that allow parents to assist their children in getting ahead, and undesirable occupations tend to be combined with reduced resources that then prevent parents from assisting with upward mobility projects for their children. There are nonetheless *some* differences across countries in the extent to which desirable occupations are bestowed with reproduction-enhancing resources. In a country that rewards desirable occupations with

especially high income or wealth, parents in these occupations can “buy” reproduction more reliably, and the gradational effect accordingly is stronger. We are not suggesting that income inequality in and of itself automatically promotes gradational reproduction. Rather, the key question is the extent to which such inequality takes on a gradational form, a pattern in which desirable occupations are especially laden with income while undesirable occupations are especially poor. If, for example, a compensating differentials logic dominates, then the occupations that are highly paid tend to be less desirable on so-called intrinsic factors, and thus we might expect gradational reproduction to be reduced. Although there is a strong association in all countries between occupational income and other desirable occupational assets (such as prestige or autonomy), this association might well be attenuated in some countries, such as Sweden, in which occupational assets are provided more universally.¹

We expect yet more substantial cross-national variability in the extent of big-class and micro-class reproduction. What determines whether these two forms of reproduction are weak or strong? The key consideration in this regard is whether a country’s division of labor, wage bargaining systems, labor market, and educational and vocational institutions are organized in big-class or micro-class terms. If, for example, in a society the big-class form is built into its core institutions (such as collective bargaining arrangements), then a big-class identity is not only salient for parents but their life chances are decisively established at the big-class level. This identity is then transferred to their children with more reliability than in societies in which big classes are just statistical constructions that reflect mainly the tastes and theories of social scientists. By the same logic, in countries where occupations or micro-classes are highly institutionalized (such as Germany), we would expect social reproduction to follow micro-class lines.

Although we might think of big-class and micro-class reproduction as polar opposites and hence negatively related, it is not necessarily the case that reproduction is a zero-sum game and that societies must be organized exclusively at one and only one level. To the contrary, some countries are balkanized along both micro-class and big-class lines, whereas others evince little class structuration of either sort. If the amount of micro-class reproduction (high or low) is cross-classified against the amount of big-class reproduction (high or low), we accordingly arrive at four ideal-type mobility regimes. We suggest here that the United States, Japan, Sweden, and Germany may be understood as representatives of these ideal types (see also Grusky 2005; Jonsson et al. 2009).

Germany, for example, can be understood as a country in which both types of class reproduction are strong. The vocational training system (Müller and Gangl 2003) gives institutional backing to occupational distinctions and renders them salient to parents and children alike, whereas

big-class reproduction is promoted by trade unions and employment regulation (Ebbinghaus and Visser 2000; Kocka 1981) that institutionalize the demarcation between white-collar salaried employees (*Angestellte*) and blue-collar workers (*Arbeiter*). By contrast, Japan is conventionally regarded as a country that has suppressed both big-class and micro-class forms of organization, with the firm instead serving as the main organizational form in the labor market (Ishida 1993; Nakane 1970).

The United States and Sweden can each be regarded as "mixed cases" in which one of the two forms of reproduction is present. The big-class form is, of course, characteristically Swedish in the sense that Swedish trade unions are organized at the big-class level, wage negotiations have likewise taken a centralized form, and Swedish political platforms are crafted to appeal to big-class constituencies (Esping-Andersen 1990; Korpi 1983). The micro-class form is poorly developed in Sweden, however, because of the historically early decline of the guilds. The U.S. case takes the obverse form in which occupational organization trumps big-class organization. Here craft and professional organizations are well developed, whereas overarching forms of big-class organization are viewed with some suspicion.

We assess these hypotheses by applying our multidimensional model of social mobility to over-time data from our four countries of interest. By examining gradational, big-class, and micro-class reproduction in each of these countries, we are able to establish whether and where cross-national differences occur. This approach allows us to go beyond conventional comparative analyses that conflate the various forms of reproduction and simply presume that cross-national differences, if any are found, will assume the same pattern regardless of form.

Mechanisms for Trend

The patterning of trend in social mobility has also been intensively debated and researched during the last decades (for a review, see Breen and Jonsson 2005). In the 1960s and 1970s, it was argued that the "natural development" of industrial societies led to a gradual decline in intergenerational reproduction, a decline that was assumed to occur in tandem with a decline in income inequality (Bell 1973; Blau and Duncan 1967; Treiman 1970). This upward trend in mobility was understood to be driven by (1) a long-term shift toward universalistic values and a corresponding decline in class-based discrimination by teachers or employers, (2) a rise in geographic mobility that further undermined class-based discrimination by preventing teachers or employers from knowing the class origins of their students or workers, and (3) the spread of a competitive market that obliged employers to emphasize merit over class origins in their hiring and recruitment decisions. More recently, some scholars have additionally suggested that class-based forms

of organization are withering away and that class identities are becoming less salient, with these developments in turn weakening class-based reproduction (Pakulski 2005).

The evidence on such claims has been mixed. For example, Harry Ganzeboom, Ruud Luijkx, and Donald Treiman (1989) have concluded that there is a worldwide trend toward decreasing intergenerational association (at the big-class level), just as the modernization hypothesis would have it. The most recent collaborative effort in the big-class mobility tradition (see Breen 2004) also finds a decline in intergenerational association in several European countries, albeit not all of them. By contrast, Robert Erikson and John Goldthorpe (1992) have suggested that such fluctuations as can be found are largely trendless, and they emphasize that these changes are best understood as the consequence of quite idiosyncratic forces within each country, not the grand worldwide forces that modernization hypothesis stresses.

The studies mentioned all treat reproduction in generic terms rather than recognizing that it takes distinct forms (big-class, micro-class, gradational) and may be evolving in different ways for each. There are many reasons why trends may prove to be form-specific. For example, the standard convergence hypothesis suggests that idiosyncratic labor market forms are not sustainable over the long run as the forces of globalization and institutional isomorphism (such as European Union integration) play out. This formulation implies that the big-class politics of Sweden, the micro-class vocationalism of Germany, and the firm-based employment of Japan will gradually dissipate under the forces of globalization and integration. The convergence hypothesis is relevant here because it is precisely these idiosyncratic institutional forms that drive our hypotheses about why some countries have distinctively weak or strong micro-class or big-class effects. If these institutional forms are becoming less prominent or distinctive, then we might expect national idiosyncrasies in mobility to gradually wither away as well (see Goldthorpe 2002; Breen 2004).

Data, Variables, and the Definition of Classes

The data sources used here are presented in table 5.1. The variables drawn from these sources are father's and respondent's occupation, sex, age, and a small number of other variables needed to code micro-class (such as employment status and branch of industry). The data for Sweden come from the 1970, 1975, 1980, 1985, and 1990 censuses. The occupations of parents can be recovered in Sweden by linking individual respondents to their parents in the 1960 and 1970 censuses (see Erikson and Jonsson 1993).

The building block of our mobility tables is the micro-class scheme. Because we identify eighty-two micro-classes and are therefore analyzing eighty-two-by-eighty-two mobility tables, we need large samples of

Table 5.1 Data Sources for Intergenerational Mobility Analysis

Survey	Period	Ages	Birth Cohorts	Occupational Scheme ^a	Sample Size
Occupational Changes in a Generation I (OCG-I)	1962	30 to 64	1898 to 1932	1960 SOC	17,544
Occupational Changes in a Generation II (OCG-II)	1973	30 to 64	1909 to 1943	1960 to 1970 SOC	18,856
General Social Survey (GSS)	1972 to 2006	30 to 64	1908 to 1973	1970 to 1980 SOC	9,986
Survey of Social Stratification and Mobility (SSM)	1955 to 2005	30 to 64	1891 to 1975	Japanese SCO	6,703
Japan General Social Survey (JGSS)	2000 to 2002	30 to 64	1936 to 1972	Japanese SCO	1,917
German Social Survey (ALLBUS)	1980 to 2008	30 to 64	1916 to 1978	ISCO-68, ISCO-88	6,656
German Socio-Economic Panel (GSOEP)	1986, 1999, 2000	30 to 64	1922 to 1970	ISCO-68, ISCO-88	2,887
German Life History Study LV I-III	1981 to 1989	30 to 64	1921 to 1959	ISCO-68	1,234
ZUMA-Standard Demographic Survey	1976 to 1982	30 to 64	1912 to 1952	ISCO-68	2,928
International Social Justice Project (ISJP)	1991, 1996, 2000	30 to 64	1927 to 1970	ISCO-88	888
1970, 1975, 1980, 1985, and 1990 Swedish census (linked to 1960 and 1970 censuses)	1970 to 1990	30 to 35	1936-1960	NYK	1,244,740

Source Authors' compilation.

the sort that, in most countries, can only be created by pooling multiple data sets.² By virtue of these data requirements, we have been forced to make some compromises, such as including surveys that pertain to somewhat different time periods in each country. We can, however, control for some of these differences in our trend analyses.

The respondents' occupations are ascertained when they are between thirty and sixty-four years old. In Sweden, the respondents are much younger, ranging in age from thirty to thirty-five. This approach eliminates any overlapping respondents across time points. We have assessed elsewhere the effects of survey differences in age coverage (Jonsson et al. 2009) and found them to be trivial in their consequences. We have also reestimated many of our models using an expanded data set that includes older Swedish respondents and found only trivial changes in the estimates (relative to the results reported here).

We have sought to maximize the comparability of the occupation and class schemes by returning to the detailed occupational codes in each country and painstakingly coding them into our eighty-two-category scheme. This classification is designed to capture the socially defined boundaries in the division of labor (see Jonsson et al. 2009). We define the micro-class as "a grouping of technically similar jobs that is institutionalized in the labor market through such means as (a) an association or union, (b) licensing or certification requirements, or (c) widely diffused understandings . . . regarding efficient or otherwise preferred ways of organizing production and dividing labor" (Grusky 2005, 66). Although some compromises in the coding protocol were required because of our small sample size and because of cross-national differences in occupational classification, there is much evidence that, despite all such compromises, micro-class schemes of this sort capture some of the most profound institutional boundaries in the labor market (see Weeden and Grusky 2005). The full eighty-two-category scheme is presented in table 5.2, described in further detail in Jan Jonsson and colleagues (2009), and implemented with the protocol laid out at www.classmobility.org.

In our analyses, we examine micro-class reproduction by using the categories of table 5.2 in their original categorical form, while we examine gradational reproduction by assigning these categories to a prestige scale (using the scores developed by Nakao and Treas 1992).³ We have chosen a prestige scale because we wish to apply a measure that signals relative desirability rather than occupational resources (such as education or income). Indeed, the resource distribution may well be shifting over time, most notably insofar as rising income inequality implies a stretching-out of that distribution. This type of shift complicates efforts to distinguish changes in the underlying scale from changes in the intergenerational association. There is good reason, however, to believe that judgments of prestige or desirability are quite resistant to change—hence our

Table 5.2 Micro-Classes Nested in Manual-Nonmanual Classes, Macro-Classes, and Meso-Classes

Nonmanual Class			Manual Class	
Professional-Manual	Proprietors	Routine Nonmanual	Manual	Primary
Classic professions	Proprietors	Sales	Craft	Fishermen
Jurists		Real estate agents		Farmers
Health professionals		Agents, not elsewhere classified		Farm laborers
Professors and instructors		Insurance agents		
Natural scientists		Cashiers		
Statistical and social scientists		Sales workers		
Architects		Clerical		
Accountants		Telephone operators		
Authors and journalists		Bookkeepers		
Engineers		Office workers		
Managers and officials		Postal clerks		
Officials, government, and nonprofit organizations				
Other managers				
Commercial managers				
Building managers and proprietors				
Other professions				
Systems analysts and programmers				
Aircraft pilots and navigators				
Personnel and labor relations workers				
Elementary and secondary teachers				
Librarians				
Creative artists				
Ship officers				
Professional and technical, not elsewhere classified				
Social and welfare workers				
Workers in religion				
Nonmedical technicians				
Health semiprofessionals				
Hospital attendants				
Nursery school teachers and aides				
Chemical processors				
Miners and related workers				
Longshoremen				
Food processing workers				
Textile workers				
Sawyers				
Metal processors				
Operatives and related workers, not elsewhere classified				
Forestry workers				
Service workers				
Protective service workers				
Transport conductors				
Guards and watchmen				
Food service workers				
Mass transportation operators				
Service workers, not elsewhere classified				
Hairdressers				
Newsboys and deliverymen				
Launderers				
Housekeeping workers				
Janitors and cleaners				
Gardeners				

Source: Authors' calculations based on original research. See appendix for data sources.

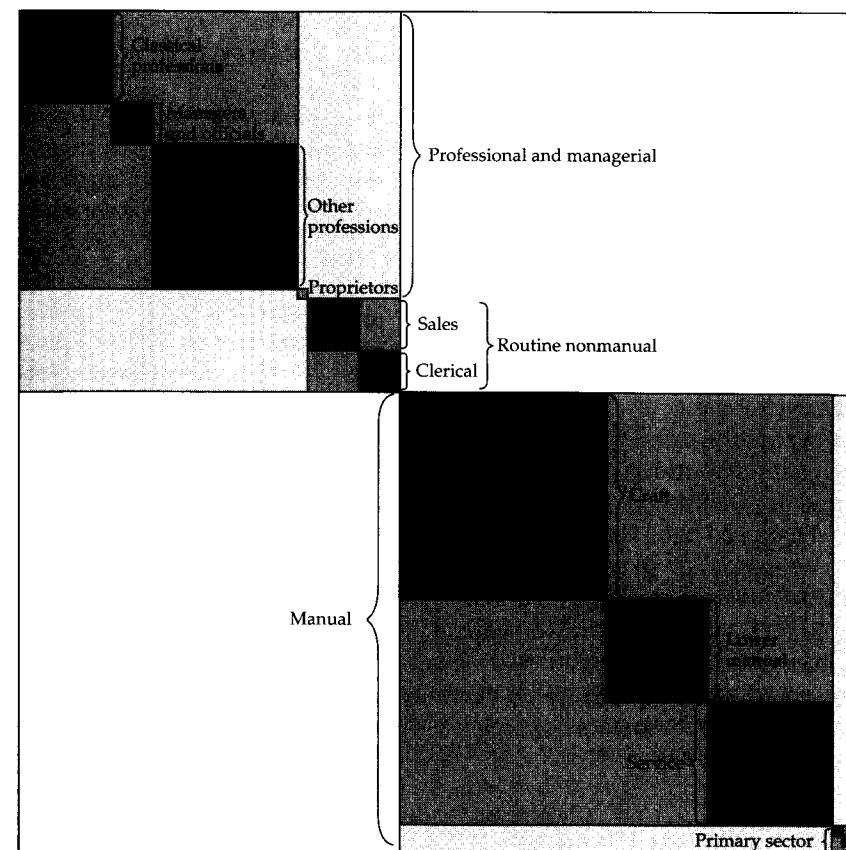
decision to condition on a prestige scale. We can then account for possible changes in the amount of gradational reproduction in terms of changes in the association between occupational desirability and the various occupational resources, such as income, that are associated with desirability. Although we present results based on a prestige scale, we have additionally carried out side analyses with other gradational scales (devised by Ganzeboom, de Graaf, and Treiman 1992; Siegel 1971). Because the prestige scale we use correlates quite highly with such alternative scales, the main results we show do not hinge on the choice of scale.⁴

We next aggregated our eighty-two micro-classes into a big-class scheme. Given the wide range of competing big-class models, we were disinclined to rely exclusively on any one of them; instead, our preference was to build a hybrid classification that represents the many and varied distinctions adopted in the most popular class models. The manual-nonmanual divide is the starting point for our scheme because it is one of the core barriers in contemporary labor markets and incorporated into most (but not all) big-class models. We further distinguish three big classes within the nonmanual sector (professional-managerial, proprietor, routine nonmanual) and two big classes within the manual sector (manual, primary). We refer to these five categories as “macro-classes.” Finally, our macro-classes are themselves subdivided into “meso-classes,” yielding another ten categories (including, for example, classic professions, sales workers, and craft workers). The end result of this classification exercise is eighty-two micro-classes nested within ten meso-classes, five macro-classes, and the manual-nonmanual division (see table 5.2 for a full listing).

These three types of big-class effects are layered over parameters that capture reproduction at the micro-class and gradational levels. This overlapping parameterization makes it possible to isolate effects at different big-class levels as well as distinguish such big-class effects from those operating at the micro-class or gradational levels. The father-to-child mobility table in figure 5.1 depicts this full set of overlapping parameters and demonstrates how they capture affinities off the micro-class diagonal, off the meso-class diagonal, and even off the macro-class diagonal.

We can use this parameterization to tease out the net amount of reproduction of each type. This means, for example, that the inheritance parameter for lawyers reveals the extent to which the son of a lawyer is more likely than someone else (from an equally desirable classic profession) to become a lawyer. The inheritance effect for classic professions represents, by contrast, the extent to which the mobile sons of lawyers (that is, those who *do not* become lawyers) are likely to end up in some other classic profession (with the comparison group now being sons who come from outside the classic professions but are within the professional-managerial macro-class). With this specification, we can therefore estimate inheritance

Figure 5.1 Nested Forms of Manual-Nonmanual and Macro-Class, Meso-Class, and Micro-Class Inheritance



Source: Jonsson et al. (2009), reprinted with permission.

effects that are net of other confounded effects, allowing us to locate with some precision the main rigidities in the class structure.

The gradational effect, which is also included in our models, reflects the degree to which exchange follows a desirability gradient net of micro-class, meso-class, and macro-class inheritance. There are, of course, some mobility scholars who would rely exclusively on a gradational parameter to characterize exchange. By contrast, we treat it as a residual parameter, one that “mops up” some of the affinities that persist even after micro-class, meso-class, and macro-class reproduction are fully controlled. This parameter is therefore the only one governing flows in the white off-diagonal zones of figure 5.1 and is likewise the only one distinguishing off-diagonal

exchanges within each meso class. If, for example, the son of a lawyer does not become a lawyer, we assume that his likelihood of ending up in some other classic profession is governed exclusively by the relative desirability of those professions. The lawyer is more likely under this specification to become an architect (roughly equal in status) than an accountant (rather lower in status).

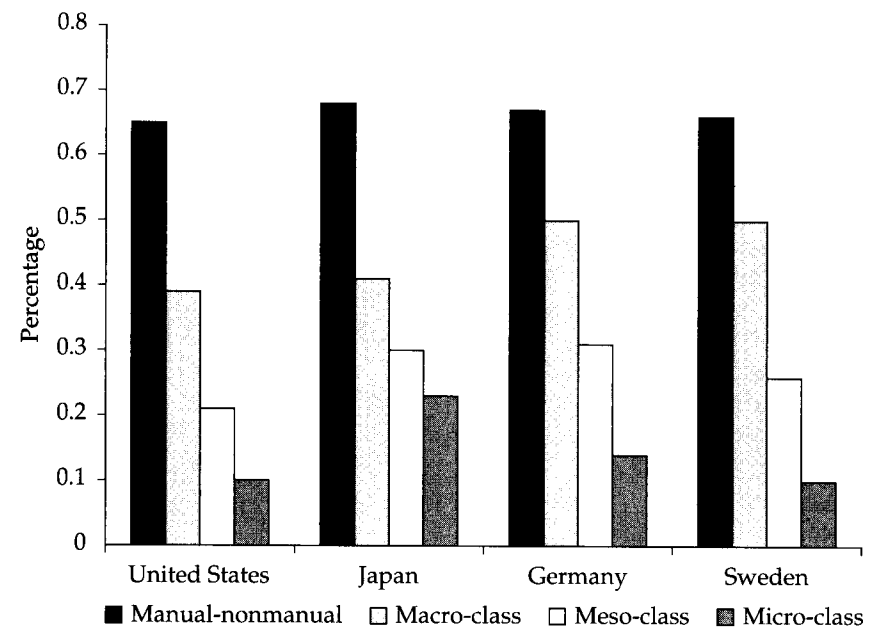
We do not pretend that our specification, exhaustive though it may appear to be, is a complete specification of all exchange in our highly detailed cross-classification. The model is not intended to capture particularistic affinities (or disaffinities) between occupations that reflect the effect of tastes or skills that are not captured by a desirability effect. We have found, for example, an excess affinity between fishermen and ship officers that might be understood as reflecting seafaring tastes, skills, or networks. We elsewhere report more comprehensively on such affinities (Jonsson et al. 2009). Although our model does not capture such particularistic exchanges, it is not necessary to meticulously model the occupational topography given that our objective here is to identify the structure of reproduction and the most important and systematic departures from equal opportunity.

We should note, finally, that our analyses here pertain to men, an unfortunate restriction to which we were forced to resort because many of our data sources are male-only. As is frequently emphasized, women's mobility is complicated to model because, even more so than for men, the process of intergenerational transmission operates through both parents. We have presented elsewhere (Jonsson et al. 2009) selected results on women's mobility that set the stage for future analyses that will focus exclusively on women's mobility.

How Common Is Immobility?

We set up our core analyses by first reporting simple immobility rates for each of the four types of immobility featured in our analyses. These rates, displayed in figure 5.2, show that approximately two-thirds of all respondents do not cross the manual-nonmanual divide, a result that does not differ very much across countries. The conventional assumption that Sweden and Germany are class societies is better revealed at the macro-class level, as here we find that almost half of Swedish and German offspring remain in their macro-class of origin, an inheritance rate that is rather higher than what prevails in the United States (0.39) and Japan (0.41). The immobility percentages are, of course, lower still for meso-class inheritance. Here the United States is the most mobile country, while Japan and Germany are the least mobile. The final bar in figure 5.2 represents micro-class immobility. Although Germany comes in, as expected, with a relatively high micro-class immobility rate, it is notable that here again Japan's is yet higher.

Figure 5.2 Immobility by Country and Type of Immobility



Source: Authors' calculations based on original research. See appendix for data sources.

Notes: We have defined an exhaustive meso-class scheme by treating "proprietors" and the "primary sector" as meso-classes, and we have defined an exhaustive micro-class scheme by treating "proprietors" as a micro-class.

The Japanese result is remarkable given that occupations and occupational reproduction are not typically featured in analyses of Japanese society. We have examined (see Jonsson et al. 2009) whether this result simply reflects the large size of the primary sector in Japan. That is, because farming and fishing are high-immobility occupations, a country with many such occupations would tend to register much overall immobility. It turns out, however, that even outside the primary sector Japan's immobility rate is quite high, a result that suggests that occupations play a more fundamental role in Japan than is typically appreciated.

Modeling Social Fluidity and Reproduction

For a proper test of the association between origin and destination, we turn to an analysis of *relative rates* of mobility (or "social fluidity"), an analysis that speaks to issues of equal opportunity. In such an analysis, the marginals of the mobility table are fit, and the class and gradational parameters

are therefore unaffected by the relative sizes of occupations. We expect differences across countries and generations in those relative sizes.

The model that we apply includes parameters for gradational, big-class, and micro-class reproduction. It takes the following form (in each country):

$$m_{ij} = \alpha \beta_i \gamma_j \phi^{u_i} \delta_{ij}^A \delta_{ij}^B \delta_{ij}^C \delta_{ij}^M \quad (5.1)$$

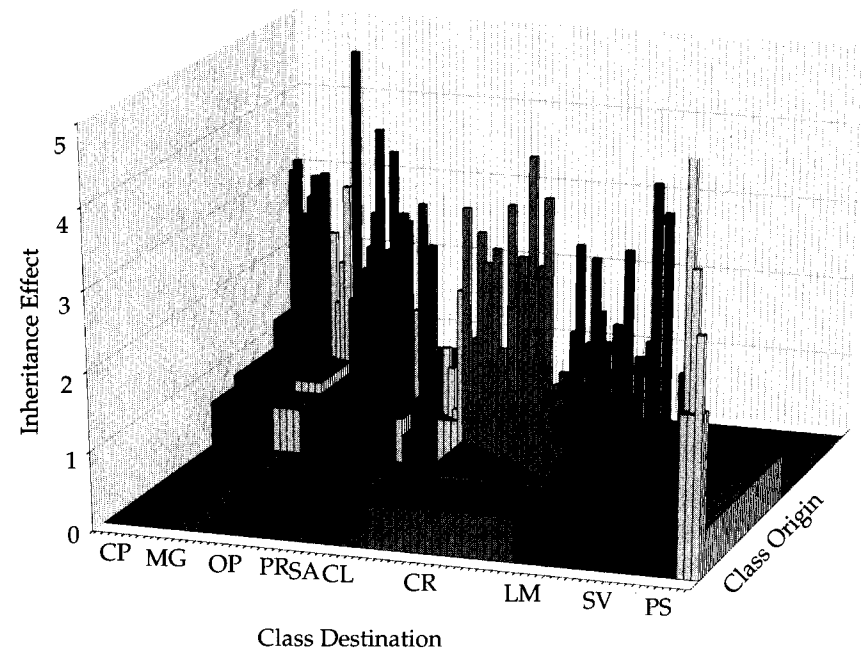
where i indexes origins and j destinations, m_{ij} refers to the expected value in the ij^{th} cell, α is the main effect, β_i and γ_j are row and column marginal effects, ϕ refers to the prestige effect, μ_i (origin) and μ_j (destination) are the prestige values assigned to each of the eighty-two micro-classes, and δ^A , δ^B , δ^C , and δ^M represent the manual-nonmanual, macro-class, meso-class, and micro-class effects, respectively. It is an important feature of the model that the δ parameters are fit simultaneously and therefore represent net effects. The manual-nonmanual parameter, for example, reflects the average density across the cells pertaining to manual or nonmanual inheritance after accounting for the inheritance at the macro-class, meso-class, and micro-class levels (see Herting, Grusky, and van Rompaey 1997).

The prestige parameter, ϕ , captures the tendency of offspring to assume an occupation that is close (in desirability) to their origin occupation (see Hout 1988). If this parameter were omitted, the tendency for desirability-based clustering might show up as class reproduction. We want instead to identify reproductive effects that are not attributable to simple gradational differences between classes.⁵

We begin by presenting the results from a simple model that constrains all densities of social reproduction (gradational, big-class, micro-class) to be the same across countries. The resulting model, graphed in figure 5.3, provides evidence on the baseline structure of social reproduction.⁶ The height of the bars represents the size of the inheritance effects, and hence the most striking feature of figure 5.3 is the extreme micro-diagonal clustering splitting the table into two triangles. This clustering appears at the top of the class structure, throughout the middle classes, and at the bottom of the class structure. Although the “middle regions” have sometimes been identified as a zone of considerable fluidity (Featherman and Hauser 1978), figure 5.3 conveys a picture of impressive micro-class inheritance even there.

These micro-class terms are overlaid on big-class terms that, while less substantial, are by no means trivial in size. The most prominent big-class parameter, the one pertaining to the manual-nonmanual divide, reveals itself as a cliff marking off both the manual and nonmanual quadrants. Within each quadrant, the remaining meso-class and micro-class effects are for the most part less prominent, thus creating the effect

Figure 5.3 The Contours of Reproduction



Source: Authors' figure based on original research. See appendix for data sources.
Note: Coefficients are drawn from model that standardizes sample size to ten-thousand cases in each country. CP = classical professions; MG = managers and officials; OP = other professions; PR = proprietors; SA = sales; CL = clerical; CR = craft; LM = lower manual; SV = service; PS = primary sector.

of nonmanual and manual plateaus. The manual-nonmanual divide is in this regard an especially prominent big-class barrier to equal opportunity.

The other big-class effects are less impressive in strength. We have shown elsewhere that big-class effects appear large in conventional big-class analyses because of omitted micro-class and gradational reproduction (Jonsson et al. 2009). That is, when the gradational and micro-class terms are omitted, the big-class effects loom far larger and create the appearance of substantial big-class reproduction—which is descriptively true, but largely a function of simple aggregation of occupational inheritance. This result is important because it implies that, insofar as one seeks to reduce inequality of opportunity (as manifested in class inheritance), it is necessary to address both micro-class and gradational reproduction.

Table 5.3 Immobility Parameters by Country and Type of Reproduction

Coefficients	United States	Japan	Germany	Sweden
Meso-class ^a	0.18	0.24	0.07*	0.16
Macro-class ^a	0.39	0.48*	0.66*	0.63*
Manual-nonmanual	0.66	0.51*	0.66	0.54*
Micro-class ^a	1.29	1.76*	1.82*	1.45*
Gradational ^b	1.03	1.06	1.37*	1.33*

Source: Authors' calculations based on original research. See appendix for data sources.

*Significantly different from the U.S. coefficient (at $\alpha = 0.05$).

^aParameter estimates averaged across all categories making up this type of class.

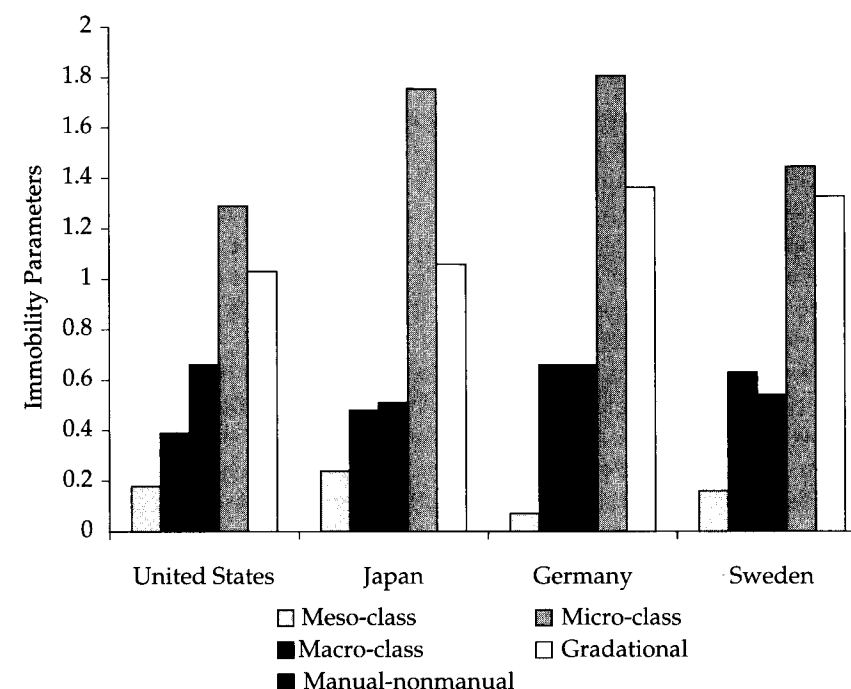
^bCoefficients multiplied by 1,000.

Cross-National Variation in Social Reproduction

We next consider whether this pooled model conceals much cross-national variability in the structure of mobility. This question can be addressed by estimating a model that constrains all cross-national variability to be captured in a set of shift parameters for each immobility coefficient (Erikson and Goldthorpe 1992; Xie 1992). The core parameters from this model are presented in table 5.3 and then graphed in figure 5.4 (for model fit statistics, see appendix table 5A.1). For purposes of summary, we have not presented here the full set of either meso-class or micro-class estimates, and instead we have simply averaged across them. The meso-class entry for the United States, for example, implies that the average of the eight meso-class estimates is 0.18.⁷

The estimates in table 5.3 are only partly consistent with the conventional view that big classes are relatively well developed in Europe. Although the macro-class coefficients are indeed strong in Sweden and Germany, the other big-class coefficients (meso-class, manual-nonmanual) do not reveal any corresponding evidence of such European exceptionalism (for a similar conclusion, see Ishida 2010). The meso-class parameter is in fact significantly smaller in Germany than in the United States.

In our opening comments, we did not anticipate much variability in gradational reproduction, an expectation that is borne out in the quite similar gradational coefficients for the United States, Japan, and Sweden. However, the gradational effect for Germany and Sweden is especially strong, a result that suggests that desirable occupations in these countries have especially ample resources that allow children born into them to fare especially well. Although we can at this point merely speculate about the reasons for this result, we can note that in these two countries many high-status occupations require university degrees, meaning that it is likely

Figure 5.4 Immobility Parameters by Country and Type of Reproduction

Source: Authors' compilation based on original research. See appendix for data sources.

that there is an unusually strong association between human capital and occupational prestige in these countries.

Is the variability in micro-class effects also consistent with our expectations? As shown in table 5.3 and figure 5.4, the micro-class effects are indeed weak in Sweden and strong in Germany (as predicted), but they are also surprisingly weak in the United States and surprisingly strong in Japan. We do not wish to exaggerate such cross-national variability in micro-class effects. In all four countries, the most extreme departures from equal opportunity occur at the micro-class level, and much of what was previously presumed to be big-class reproduction turns out instead to be a finer form of micro-class reproduction. We explicitly selected two countries, Japan and Sweden, that would not conventionally be regarded as home grounds for micro-class processes, yet we find for both that the micro-class form is quite prominent. Even in Japan, which has long been represented as a "de-occupationalized" regime, we find evidence of much micro-class reproduction. Likewise, micro-class reproduction is prominent

in Sweden, even though it is typically featured in scholarly and popular accounts as a prototypical big-class regime.

Trends in Mobility and Fluidity

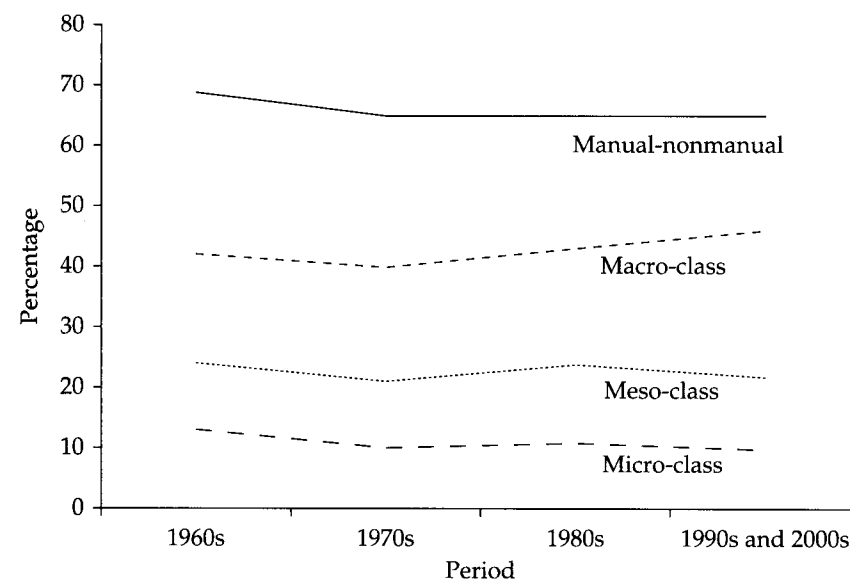
We suggested in our opening comments that a multidimensional mobility model is also useful in identifying where change is occurring. Are all countries experiencing the same pattern of change? Is big-class reproduction, for example, declining in all countries, just as postmodernists would have it? Or are trends playing out differently in different countries? Is there any evidence of a convergence in mobility regimes whereby each country is shedding its idiosyncratic features and moving toward some generic mobility form?

We take on these questions by disaggregating our mobility tables by period. Rather than insisting mechanically on the same periodization in each country, we have allowed for cross-national differences in periodization to accommodate idiosyncrasies in data availability and also, where possible, to reflect conventional national periodizations of social and economic history. We have pooled the U.S. data into four periods: the 1960s (1962 Occupational Changes in a Generation [OCG]), the 1970s (1973 OCG and 1972 to 1979 General Social Survey [GSS]), the 1980s (1980 to 1989 GSS), and the 1990s and beyond (1990 to 2006 GSS). The Japanese data are likewise pooled into four periods, but with slightly different break points: 1955 to 1965 ("early expansion"), 1975 to 1985 ("consolidation"), 1985 to 1995 ("the lost decade"), and 2000 to 2005 ("the contemporary period"). As noted earlier, the Swedish data consist of five periods pertaining to the quintannual censuses from 1970 to 1990 (with 1990 being the last census in Sweden). And finally, we have disaggregated the German data into three time periods: the 1970s (1976 to 1982), the 1980s (1983 to 1990), and the 1990s and beyond (1991 to 2008).

We should note that a methodological complication arises insofar as trends in mobility are driven by cohort effects and associated cohort replacement processes (Breen and Jonsson 2007). It is possible that patterns of mobility differ across the mobility tables defined by our periods principally because the mix of birth cohorts represented in these tables shifts as older cohorts age out of the labor market. However, an analysis based on age-by-cohort tables would, with the exception of Sweden, be too sparse given the data available to us, and we are therefore forced to resort to the common device of monitoring trend via period alone. Although the signal is perforce muted under this approach (because cohorts age out of the labor force only gradually), such muted trends are at least descriptively correct as an overall characterization of the extent of fluidity in each period (Breen and Jonsson 2007).

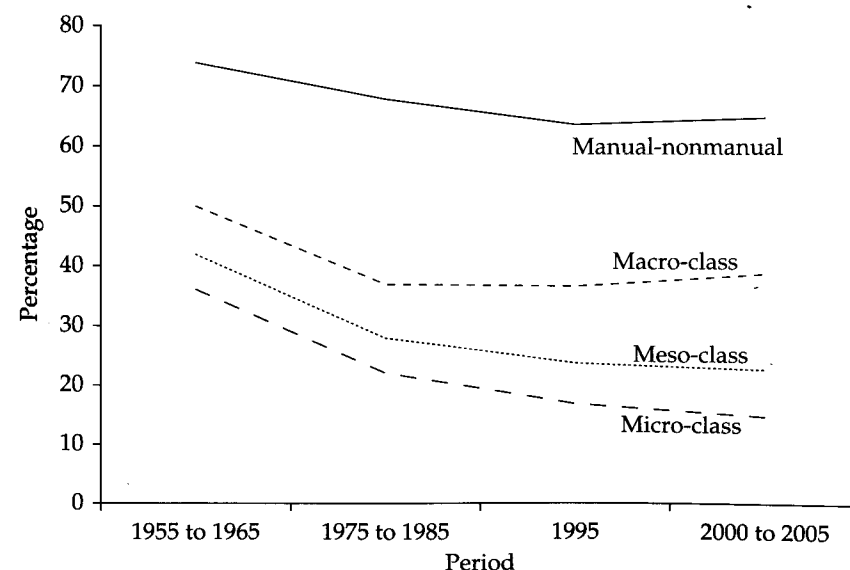
We begin our analysis by examining simple observed rates of immobility. As shown in figures 5.5 to 5.8, the case for across-the-board declines in

Figure 5.5 Immobility in the United States by Type of Immobility

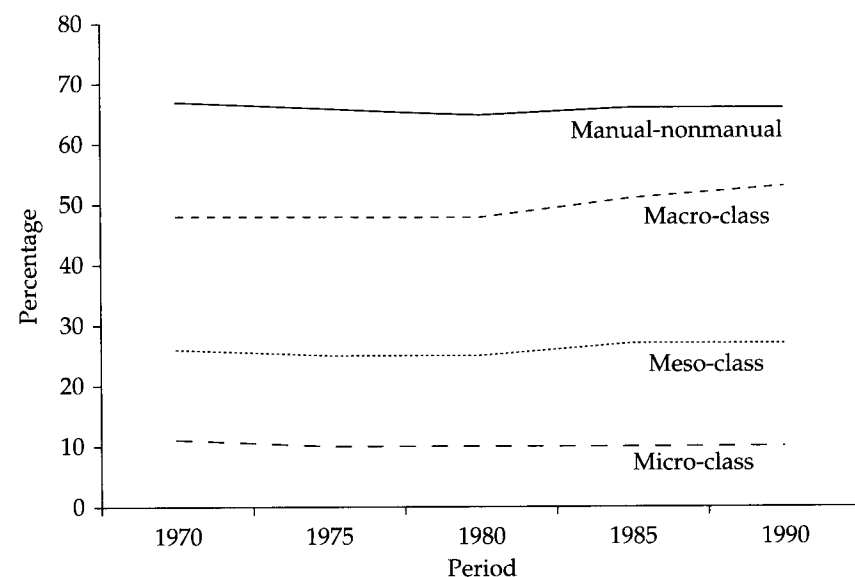


Source: Authors' calculations based on original research. See appendix for data sources.

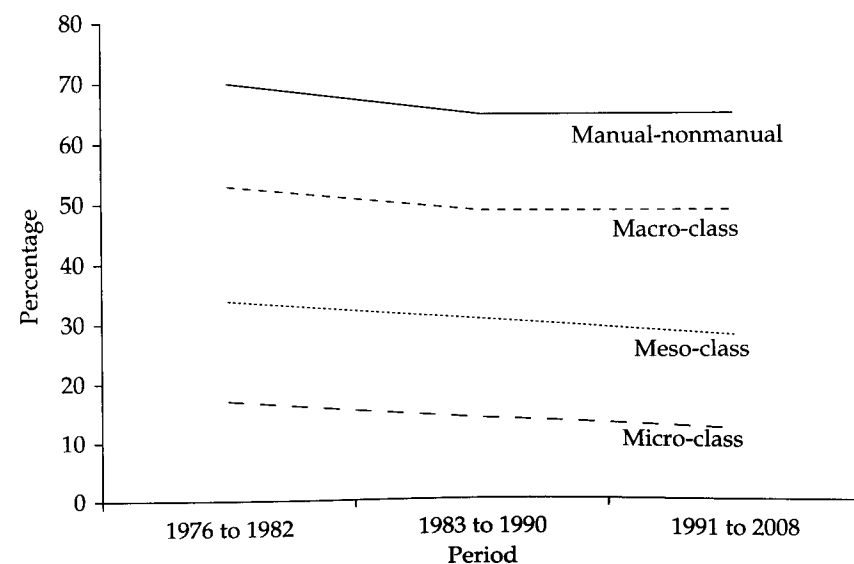
Figure 5.6 Immobility in Japan by Type of Immobility



Source: Authors' calculations based on original research. See appendix for data sources.

Figure 5.7 Immobility in Sweden by Type of Mobility

Source: Authors' calculations based on original research. See appendix for data sources.

Figure 5.8 Immobility in Germany by Type of Immobility

Source: Authors' calculations based on original research. See appendix for data sources.

immobility is most evident in the early years in the United States, Japan, and Germany. This result is typical of societies characterized by a rapid decline of the agricultural sector and a consequent "forced immobility" for farming children. There is more to this particular result, however, than mere forced immobility: when farmers are excluded from the analysis, the decline in immobility in the early period is less substantial in the United States, Japan, and Germany, but it is still prominent (analyses not presented here).

The trends after this early decline are neither as striking nor as consistent. In the United States, Japan, and Germany, the manual-nonmanual and macro-class trend lines prove resistant to further decline, and indeed there is more than a hint of increasing macro-class immobility. The latter is in fact the only visible trend in Sweden. The meso-class and micro-class trend lines reveal, by contrast, either trendless fluctuation (the United States), slight decline (Japan and Germany), or stability (Sweden).

Figures 5.5 to 5.8 imply that the objective experience of mobility remains, for the most part, quite common in all four countries. Although the manual-nonmanual divide is only rarely crossed (in all time periods and countries), it is common to experience all other types of mobility monitored here. Additionally, we find that absolute mobility rates change only slowly and that such patterns of change as obtained here do not show great similarity across countries. The "trendless fluctuation" narrative thus has some force in the context of absolute mobility rates.

Important as absolute rates of mobility are, they do not speak to the matter of equality of opportunity, and we therefore turn next to trends in social fluidity. We begin by carrying out an analysis of social fluidity, using the conventional form. That is, we first fit a gradational model that forces the association in a mobility table to follow a prestige (or desirability) gradient, and we then fit a big-class model that instead absorbs the association with a set of meso-class inheritance terms. These two models may be represented as follows (within each time period and country):

$$m_{ij} = \alpha\beta_i\gamma_j\phi^{\mu_i\mu_j} \quad (5.2)$$

$$m_{ij} = \alpha\beta_i\gamma_j\delta_{ij} \quad (5.3)$$

where ϕ refers to the prestige effect, μ_i (origin) and μ_j (destination) are the prestige values assigned to each of the eighty-two micro-classes, δ_{ij} represents the full set of ten meso-class inheritance effects, and the marginal effects are defined as with equation 5.1. We appreciate that these are simplified models, but they nonetheless serve the function of setting up our own more complicated analyses with some instructive baselines.

Because the gradational model represented here captures all association with a single parameter, it is accordingly straightforward to allow

that parameter to vary over time (separately within each country). For the meso-class model, the association is captured in ten inheritance terms, and we therefore proceed by fitting a shift effect that allows for a global increase or decrease in inheritance that applies equally to all ten terms. The tables are simply too sparse (except in Sweden) to attempt anything more elaborate. Although our model fits the full set of ten inheritance parameters in the base time period, for presentational purposes we report only the mean of those base parameters in table 5.4.⁸ Also, because our disaggregated tables are so sparse, we have opted to further impose a linear constraint across periods on these shift effects, meaning that change is summarized with a single slope parameter indicating the amount of change per period. We have also estimated models that relax this constraint and fit separate shift effects for each period. The conclusions from such models are quite similar to those implied by our more parsimonious specification (and hence we do not report the nonlinear results here).⁹

As shown in the two upper rows of table 5.4, the conventional models all reveal a simple decline in association, although the trend in the Swedish meso-class model is small (but significant) while the point estimate for the U.S. meso-class model is somewhat larger but not significant. The decline in the father-to-son associations are in several cases noteworthy. In particular, the gradational effect in Japan decreased by some 30 percent over the entire time period ($0.31 \times 3 / 3.12 = 0.298$), and non-negligible changes in the gradational effect register also for the other three countries. The decline in class inheritance is not as impressive, but in Japan and Germany it is reasonably large and significant. These types of results, which are quite commonly reported (see Breen 2004), inform the conventional view that there is an across-the-board decline in association (in at least most countries).

Is it the case, however, that *all* forms of reproduction are uniformly declining in all countries? We cannot take on this question without next turning to our full model, which allows us to distinguish trends for different types of reproduction. We proceed, as before, by fitting shift effects that are constrained to trend linearly, but now we impose this specification simultaneously on each of the five types of reproduction terms (gradational, nonmanual-manual, macro-class, meso-class, micro-class). The results from this specification are presented in the bottom panel of table 5.4 (see also the fit statistics in appendix table 5A.1).

The parameter estimates presented here, which again take the form of a base coefficient for the first time period and a slope coefficient representing per-period change, reveal very clearly that there is a great deal of decline in association. Of the twenty trend coefficients, seven are significant, and six of those seven are in turn negative. We are in this regard simply reproducing an already established result: the gradational and meso-class models with which we led off likewise implied that the origin-by-destination association is declining.

Table 5.4 Trends in Social Reproduction

Coefficients	United States		Japan		Germany		Sweden	
	Base	Change	Base	Change	Base	Change	Base	Change
Conventional change models								
Gradational	2.27	-0.15*	3.12	-0.31*	2.93	-0.18*	2.96	-0.15*
Meso-class	0.98	-0.09	1.41	-0.08*	1.51	-0.09*	1.13	-0.00*
Net change model								
Gradational	0.94	-0.05	0.29	0.12	1.38	0.02	1.61	-0.12*
Manual-nonmanual	0.73	-0.05*	0.50	0.00	0.73	-0.03	0.67	-0.06*
Macro-class	0.32	0.03	0.35	0.01	0.62	0.00	0.55	0.05*
Meso-class	0.21	-0.02	0.36	-0.11*	-0.02	-0.01	0.16	-0.00
Micro-class	1.48	0.01	2.18	0.02	2.02	-0.14*	1.61	-0.01*

Source: Authors' calculations based on original research. See appendix for data sources.
 *Significantly different from zero (at $\alpha = .05$).

The main virtue of our model, however, is that it allows us to further identify the *type* of reproduction that is weakening. For example, does this decline mainly take the form of weakening big-class reproduction, just as standard-issue postmodernist scholars would argue? Or are all forms of reproduction instead declining in some across-the-board fashion? The results of table 5.4 imply that both of these accounts are too simple and that mobility regimes are instead evolving in nation-specific ways. Although we find, for example, that big-class effects are indeed declining straightforwardly in the United States and Japan (as the postmodernists would suggest), there is no evidence of an equally strong big-class decline in either of our two European countries. The persisting strength of the big-class form in Europe is consistent with a standard European exceptionalist account.

The German case is fascinating because it shows strong evidence of decline in micro-class reproduction rather than big-class reproduction. The distinctive feature of Germany is, of course, its well-developed vocationalism and associated institutional support for micro-class reproduction. According to our model, such micro-class reproduction is withering away in Germany by roughly 13 percent per period ($e^{-.14} = 0.87$), implying that the net propensity for reproduction declines from 7.54 in the base period ($e^{2.02} = 7.54$) to 5.70 in 2008 ($e^{1.74} = 5.70$). The latter implied value for 2008 is no longer especially high relative to what prevails in other countries. The micro-class trend in Germany may be understood, then, as a convergence-generating one, as it has the effect of pushing an outlier country closer to the international mean.

The Swedish case is distinctive, by contrast, for its quite striking decline in the gradational term. We suggested earlier that gradational reproduction rests fundamentally on "loading up" desirable occupations with all sorts of assets that then facilitate reproduction. If the most desirable occupations are, for example, loaded up with high income, then parents in such occupations can use their income to assist their children in securing desirable occupations. The distinctive feature of Swedish egalitarianism, as it played out during the latter part of the twentieth century, is that it had the effect of distributing assets more uniformly across occupations and thereby prevented privileged parents from always being able to assist their children.

The standard account that fluidity is everywhere increasing thus conceals the manifold ways in which this increase is generated. If Sweden's distinctive form of egalitarianism dismantled gradational inequality (and preserved big-class inequality), the U.S. variant focused mainly on big-class inequality (and preserved gradational inequality), while the German decline has played out entirely at the micro-class level. It is a strength of our approach to reveal how these fundamental differences in the weakening of the origin-by-destination association comes about.

Conclusions

The purpose of this chapter has been to take seriously the sociological view that occupations are the "backbone" of the stratification system. We have advanced a new multidimensional model of mobility that incorporates the three main ways in which occupational reproduction is generated (gradational, big-class, micro-class). We then used this model to examine cross-nationally common features of mobility, cross-national differences in mobility, and the pattern of trends in mobility.

We find that all three forms of reproduction are in evidence in Sweden, the United States, Japan, and Germany. Although the importance of big-class and gradational reproduction has long been appreciated by mobility analysts, our results indicate that micro-class reproduction is also a prominent feature of contemporary mobility regimes. If this type of reproduction is ignored, as it conventionally is, it artificially inflates big-class reproduction and thus misleads us about the way in which opportunities are unequally distributed. This conclusion holds in all of the countries we examined, even in those, such as Japan, that are not typically understood as ones with deeply institutionalized occupations.

We also replicate here the increasingly accepted finding that social reproduction is declining in most industrial countries. However, conventional "black-box" models of trends cannot identify the sources of such decline, whereas our multidimensional mobility model reveals that the decline is achieved in country-specific ways. Although standard postmodernist accounts have long stressed the generic decline of the big-class form, we find that, contrary to such accounts, the big-class form is declining only in those non-European countries that were never all that hospitable to the big-class form. In Sweden and Germany, the big-class form remains as strong as ever, and the decline in reproduction is instead generated in other ways. We have suggested that U.S. egalitarianism takes the form of an attack on big-class inequality, Swedish egalitarianism takes the form of an attack on gradational inequality, and German institutional developments have rendered the micro-class form especially vulnerable.

Although micro-class reproduction is weakening in Germany, it remains, of course, exceedingly strong there, as well as in all of the other countries studied here. Should we be troubled by this especially strong form of reproduction? The skeptic might suggest that only an academic would worry that the child of a construction worker, for example, has a particularly high propensity to become a construction worker. We find such an argument unconvincing. The micro-class form cannot be dismissed in this fashion precisely because it is generating much of the big-class reproduction that is observed in a mobility table. We *should* care about the immobility of construction workers because micro-class immobility of this sort is a principal mechanism ensuring that the working class

reproduces itself across generations. The results from our earlier analyses (see Jonsson et al. 2009) show that big-class reproduction arises largely because offspring frequently remain within their micro-class of origin.

Does this imply that policy should be redirected to rooting out such micro-class reproduction? We think not. Indeed, because there is still net big-class and gradational reproduction that is *not* occupationally generated, we are surely well advised to continue attacking those residual forms with the usual policy tools (such as equalizing access to education). Given the prominence of micro-class reproduction, we cannot pretend that such tools will ever achieve full equalization, but at this point it is likely that they purchase the most equalization at the lowest cost.

Appendix

Occupational Changes in a Generation (OCG I & II)

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Table 5A.1 Fit Statistics for Selected Models

Model	L^2	df	Δ	BIC
1. Cross-nationally constant reproduction (figure 5.3)	137,234	24,880	11.18	-211,892
2. Cross-nationally variable reproduction (table 5.3 and figure 5.4)	136,520	24,865	11.13	-212,396
3. Linear trend in the United States (table 5.4)	20,816	25,026	20.61	-248,229
3. Linear trend in Japan (table 5.4)	8,385	19,592	26.71	-172,951
3. Linear trend in Germany (table 5.4)	11,579	17,403	29.29	-155,499
3. Linear trend in Sweden (table 5.4)	141,380	31,900	11.54	-306,328

Source: Authors' calculations based on original research. See appendix text for data sources.

Notes

1. This line of reasoning implies that countries with high rates of income mobility may not necessarily have high rates of gradational mobility (as measured here). Although there are many reasons why such differences might emerge across types of mobility (see Erikson and Goldthorpe 2010), one important source is cross-national differences in the occupation-income correlation (and hence the extent to which desirable occupations are laden with reproduction-ensuring income).
2. The fit statistics for our model contrasts remain correct even when data are sparse.
3. We calculated the eighty-two micro-class scores by assigning them to detailed occupations within the U.S. samples and then aggregating these detailed occupations up to the micro-class level.
4. When applied to our eighty-two-category scheme, the Nakao-Treas prestige scale correlates 0.87 with the international ISEI scale (Ganzeboom, de Graaf, and Treiman 1992) and 0.79 with the scale values derived by Goodman's RC model (Goodman 1979).
5. Some class analysts treat gradational effects as part and parcel of big-class effects. In deference to such analysts, we have also fitted models without the gradational term (Jonsson et al. 2009), and in so doing the class effects, of course, increase. We separate gradational and class effects here to cast light on whether intergenerational processes take on a continuous or lumpy form.
6. In estimating this model, we have reweighted each of the national samples to ten thousand cases, as doing so ensures that our pooled estimates are not unduly affected by large-sample countries. The gradational term is also omitted from figure 5.3 because we wish to cast in the sharpest possible relief the relative sizes of the immobility terms. The fit statistics for the model of figure 5.3 are presented in appendix table 5A.1.
7. We could instead constrain the inheritance effects to be the same within each class. Although one of our reviewers suggested that we do so, we are concerned that the resulting model error would distort the other parameters of interest.
8. For example, we report a "base" meso-class estimate for the United States of 0.21, which is simply the mean of the estimates for classic professions (0.28), managers and officials (0.11), other professions (0.10), sales (0.73), clerical (−0.18), craft (0.11), lower manual (0.25), and service workers (0.29).
9. The fit statistics for the models in table 5.4 are presented in appendix table 5A.1.

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