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Is the Labor Market Becoming More or Less Gradational?

The spectacular takeoff in earnings inequality within the United States has led to much debate about its sources and causes. It is hardly surprising that such a sudden takeoff in inequality, one that reversed what had been a decades-long decline, would generate so much research on its causes. Important as the resulting causal agenda has been, it is perhaps equally important to examine the *consequences* of the takeoff, especially its consequences for the class structure. The purpose of this chapter is to ask whether the transition to a high-inequality regime in the United States has strengthened or weakened the class structure.

How could we know so little about such consequences despite decades of research on the takeoff? The simple answer is that the research literature on earnings inequality has been dominated by economists and that economists have never regarded classes as an important prism through which inequality might be viewed. This answer, while perhaps nominally on the mark, is nonetheless silent on the more fundamental matter of why economists have shown so little interest in the sociological model of class. It might well be imagined that economists would find the sociological model of increasing interest as the old income paradigm is called into question and multidimensional representations of inequality gain support (e.g., Sen, Ch. 26; Bourguignon 2006). Indeed, insofar as social classes are understood as institutionalized packages of valued goods, they then become an omnibus inequality measure that is pregnant with information on precisely those noneconomic variables (e.g., working conditions, life chances, lifestyles) that a multidimensional approach emphasizes (see Grusky and Weeden 2007).

The bivariate class-earnings distribution accordingly tells us whether earnings are becoming more or less tightly associated with the various inequality dimensions that social classes signal. If both earnings inequality and the earnings-class association are increasing, it means that the rich are not just growing ever richer, but they are also more likely to be advantaged on other inequality dimensions. Obversely, it means that the poor are not just growing ever poorer, but they are also more likely to be disadvantaged on other inequality dimensions. These results would imply that a stark winner-take-all form of inequality is emerging. It follows that economists, at least those with multidimensionalist sympathies, should care about the class-earnings distribution and whether it reveals a form of inequality more problematic than univariate analyses of earnings alone can reveal.

For sociologists, there is likewise much interest in assessing whether the inequality

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dimensions are crystallizing, but the class-earnings association is further of interest because it speaks to the viability of class models themselves. That is, because class models are viable insofar as the various dimensions of inequality cohere into classes comprising distinct packages of goods, the class analyst has an interest in demonstrating that some amount of coherence indeed obtains. It is accordingly common for class analysts to attempt to validate their models by demonstrating that class and earnings are closely related (e.g., Beck 1992; Hout, Brooks, and Manza 1993). Put differently, sociologists care about crystallization not just because it reveals whether inequality is becoming an all-or-nothing affair, but also because a class representation of inequality is methodologically feasible only insofar as inequality is quite crystallized. If it is, inequality becomes a lumpy, group-determined phenomenon rather than a more continuous and individualistic one. As Giddens (Ch. 14) famously (if awkwardly) put it, "class structuration" is well developed insofar as class position is determinative of a host of life conditions, including most obviously earnings.

We will carry out our analyses in the context of a model that examines labor market structure at both the big-class and micro-class levels (see Weeden et al. 2007; Weeden and Grusky 2005a, 2005b, 2005c; Grusky 2005a, 2005b; Grusky and Sørensen, Ch. 17). In operationalizing big classes, we take the usual approach of aggregating "similar" detailed occupations, with such aggregations yielding categories like professional, manager, clerical worker, craft worker, or farmer. As we noted above, these aggregations are often justified on the argument that class members share broadly similar life conditions (e.g., prestige, earnings, cultural capital), although reference is sometimes additionally or alternatively made to the similarity of their on-the-job working conditions and employment contracts (e.g., Lockwood 1989; Erikson and Goldthorpe, Ch. 47). In this sense, the categories of big-class schemes are largely statistical constructions of academics or Census Bureau officials, whereas the detailed occupations or "micro-classes" (e.g., lawyer, secretary, carpenter) that comprise big-class categories are more deeply institutionalized constructions of employers, employees, and many others. This institutionalization takes the form of (1) workers representing their career aspirations in occupational terms, (2) professional and vocational schools training workers for occupationally defined skills, (3) professional associations and labor unions forming around occupational designations, and (4) employers constructing, advertising, and remunerating jobs in terms of occupational labels (e.g., Treiman 1977; Wilensky 1966).

We simply don't know whether the takeoff in earnings inequality has strengthened big-class distinctions, occupational distinctions, or both. This is not to suggest that big classes and detailed occupations have been ignored altogether. To the contrary, many analyses of earnings inequality have featured big classes of one sort or another (often referred to as "occupations"), while a handful of analyses have brought in detailed occupations in some way (Groshen 1991; Howell and Wolff 1991; Levy 1998; Murphy and Welch 1993). These efforts fall short for our purposes either because (1) only a single time period is analyzed, or (2) the decomposition is carried out in terms of big classes alone or detailed occupations alone, not both at once.

The structure of the takeoff is best understood, we will argue, by recognizing that detailed occupations are nested in big classes and then apportioning the earnings inequality into three components: (1) the between-class (BC) component (i.e., inequality between big classes); (2) the between-occupation/within-class (BO/WC) component (i.e., inequality between the detailed occupations that comprise each big class); and (3) the within-occupation (WO) component (i.e., inequality within detailed occupations). The BO/WC

and WO components are conflated as "within-class inequality" in analyses that use big classes alone, and the BC and BO/WC components are conflated as "between-occupation inequality" in analyses that use detailed occupations alone. We argue below that these components are driven by very different mechanisms and are therefore usefully distinguished in understanding trends.

The further virtue of distinguishing these three components is that it allows us to identify whether trends in inequality are playing out in ways that strengthen either big classes or occupations, strengthen neither, or strengthen both. As an example of one possible outcome, Figure 1 graphs a constellation of changes that, taken together, are distinctly pro-class in their implications. In this stylized figure, the labor market has just three big classes (i.e., BC1, BC2, and BC3), with three micro-classes (i.e., MC1–MC3, MC4–MC6, MC7–MC9) then nested in each of these big classes. Within each micro-class, the log(wages) of incumbents are uniformly distributed, an implausible but presentationally convenient functional form. The two vertical axes reveal a pattern of change in which the WO component is shrinking, the BO/WC component is shrinking, and the BC component is growing. The second axis (pertaining to "time 2") thus suggests a three-class society marked by substantial between-class differences in log(wages) and trivial within-class differences. By contrast, the transition to a micro-class regime, as represented in Figure 2, has the WO component again decreasing, whereas the BO/WC and BC components now move in directions opposite to those shown in Figure 1. This change effectively yields a labor market with nine small classes rather than three big ones.

It is quite plausible that we will instead observe roughly commensurate increases in the WO, BO/WC, and BC components. This type of change simply "stretches out" the overall distribution and leaves the relative sizes of the WO, BO/WC, and BC compo-

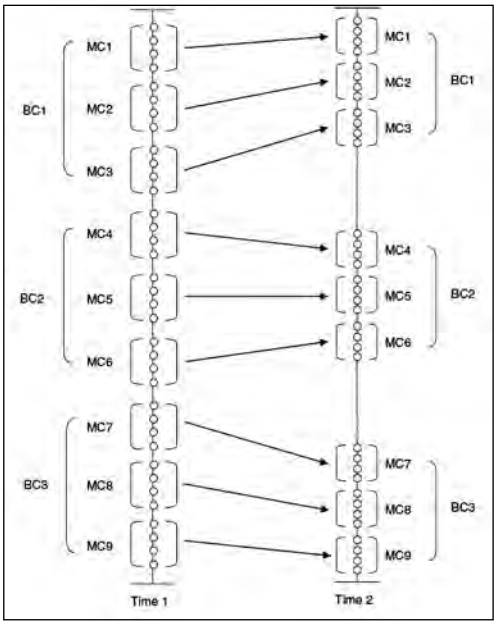

Figure 1. The Transition to a Big-Class Regime
Note: BC=big class; MC=micro class

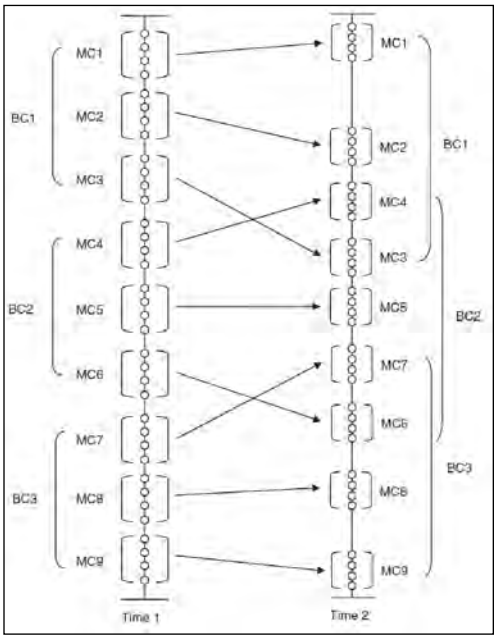

Figure 2. The Transistion to a Micro-Class Regime
Note: BC=big class; MC=micro class

nents unchanged (see Allison 1978; also, Sen 1973). If an absolutist tack is taken, all that matters is that such change increases the earnings heterogeneity within classes and occupations, thereby undermining the class principle (e.g., Kim and Sakamoto 2005).[1] The relativist counterargument is that (1) the social meaning of inequality is gradually recalibrated to adjust to an increased dispersion in earnings, and (2) a commensurate change in all components is therefore a class-neutral change (see Blau and Kahn 2002). This counterargument suggests that one should care principally about the relative sizes of the WO, BO/WC, and BC components. We will not privilege either argument but rather will cater to both by presenting evidence on relative as well as absolute change in the inequality components.

Sources of Trends

It is instructive to identify the mechanisms that underlie change in the three components of inequality and thus strengthen or weaken the class principle. As will become evident, these mechanisms differ across the three components, implying that rates of change may also differ across the components.

The BC Trend

The between-class (BC) component is well studied within the literature and hence can be dispensed with quickly. In understanding the BC component, it is relevant that entry into different big classes is linked to different levels of schooling, with the professional and managerial classes usually requiring a college or more advanced degree, the sales and clerical classes typically requiring at least some college education, and the manual classes (i.e., craft, operative, laborer) serving as the default location for those with high school degrees or less. This link between big-class categories and educational levels is hardly perfect, not just because conventional big-class schemes typically make distinctions between categories that have roughly similar educational requirements (e.g., sales, clerical), but also because entry requirements for most big classes are not *explicitly* tied to specific educational degrees (e.g., Weeden and Grusky 2005a; Grusky and Sørensen, Ch. 17). Most obviously, entry into the craft class is not limited to those with high school degrees, nor is entry into the operative or laboring classes reserved exclusively for those who lack such degrees. Even so, there is clearly a strong association between class and educational qualifications, and the BC component should therefore fluctuate with changes in the returns to different levels of schooling. If big classes are effectively just education groups in disguise, the BC trend line should be quite flat in the 1970s by virtue of the relatively large supply of college-educated workers but then increase rapidly in the 1980s as the demand for college-educated workers begins to outstrip the supply (see Katz and Murphy 1992; Levy and Murnane 1992).

In the foregoing story, classes are mere statistical entities that stand in as markers of educational qualifications, and the trend in the BC component simply shadows the well-known trend in returns to education. Could one imagine a story about the BC component in which classes are more than such indirect "stand-ins?" This type of story becomes available in societies where big classes are deeply institutionalized and their representatives participate formally in collective bargaining. For example, big classes in Sweden are conventionally represented as meaningful wage-setting actors, not just statistical categories that indirectly signal changes in market-driven returns to schooling. The BC component will increase in Sweden whenever the upper class does unusually well in its collective bargaining or the lower class does unusually poorly in its collective bargaining. To some extent, big unions in the United States engage in similar collective bargaining and wage-setting efforts, but they do not map onto entire big

classes nearly as neatly as in the Swedish case, nor do they command anything approaching the wage-setting power of their Swedish counterparts. It follows that the BC component will fluctuate in the United States largely in response to changes in the returns to education or changes in the educational composition of classes.

The BO/WC Trend

The direction of the BO/WC trend does not fall out quite so directly from an existing empirical literature (cf. Weeden, Ch. 18). We can, however, lay out two simple hypotheses about this trend, the first directly related to demand shifts that favor high-skill labor, and the second directly related to the spread of occupationalization and occupational closure.

The first of these two stories, a within-class variant of the standard demand-side account, begins with the presumption that each big class is a mixture of high-skill and low-skill occupations. Clearly, the skill differential within classes will be much smaller than the skill differential for the full labor market, but one would nonetheless anticipate a nontrivial differential within even the most homogeneous classes. If the demand for labor within the high-skill occupations of each big class outstrips the supply of labor for those occupations, their earnings will be driven up and the BO/WC component will accordingly grow. For example, the relative demand for high-skill computer programmers and related technical occupations within the professional class clearly took off during the 1980s, whereas the demand for other less skilled occupations within the professional class (e.g., photographers) appears to have increased more slowly. The increasing demand for computer programmers and related technical occupations can itself be understood as part of the shift toward an "information economy" driven by technological change and outsourcing of low-skill work.

Should we anticipate a quick increase in the supply of high-skill labor in response to these higher wages? Although one might expect relatively quick responses to demand-induced wage premia that emerge either within occupations or between classes, there is good reason to believe that interoccupational wage premia will be preserved over the longer run. This is because occupations have often established control over entry in ways that make slow-growth policies viable. That is, many high-skill occupations control entry via licenses, credentials, training requirements, and certification, thus allowing them to protect the wages of current incumbents by restricting supply (see Weeden, Ch. 18). In this sense, a demand-shift story becomes especially plausible when applied to the BO/WC component, as here one finds institutionalized mechanisms of closure that give real staying power to demand-induced wage premia.

The second main source of BO/WC trend also references these institutionalized mechanisms of closure but turns attention to the gradual diffusion of such mechanisms over the last quarter century. The process of occupationalization, one of the main rent-generating forces of our time, can raise the wages of occupational incumbents by (1) increasing the occupation's control over the supply of labor, and (2) reducing competition from other potential providers of the product or service and therefore increasing demand (see Weeden, Ch. 18; Abbott 1988). For example, the American Bar Association (ABA) is not only involved in establishing certification requirements and hence better controlling the supply of labor, but is also involved in ensuring that lawyers, rather than representatives of other occupations (e.g., paralegals, accountants), maintain as much control as possible over the dispute-adjudicating niche in the labor market.

If closure movements were a random process to which all occupations, both high skill and low skill alike, were equally subjected, then they would not have any implications for within-class inequality. However, high-skill occupations appear to have been

especially successful over the last quarter century in securing closure of this sort, thereby raising their already high wages yet higher. This process has been especially prominent within the professions (i.e., "professionalization") and other nonmanual big classes. Although some high-skill occupations in the manual sector have attempted to follow suit with professionalization projects of their own (e.g., truck drivers, electricians), these projects are neither as common nor as successful as those within the nonmanual sector.

If professionalization has been the method of choice for securing the rewards of social closure within the nonmanual sector, craft unionization is the corresponding method of choice within the manual sector. The latter method has fared less well of late than has professionalization. As craft unions weaken, it has become difficult for them to maintain control over the supply of labor and to capture the rent that such control makes possible, and the wage gap between the privileged and less privileged craft occupations has accordingly begun to close. The BO/WC trend may therefore be suppressed by such countervailing "deoccupationalizing" effects in the manual big classes.

The forces making for BO/WC trend are therefore deeply dependent on the institutional mechanisms by which occupationalization is either weakened or strengthened. Indeed, even when one understands the BO/WC trend line in terms of a standard demand-side account, the forces of occupationalization are still relevant because they affect the long-term staying power of demand-induced wage premia. The importance of occupationalization for the BO/WC component leads us to hypothesize that this component will particularly take off in those sectors of the labor market, such as the nonmanual sector, in which occupationalization has been unusually successful.

The WO Trend

The final component of interest is the within-occupation variance (WO). In the economics literature, the closest analogue to the within-occupation variance is what has conventionally been termed the "within-group" variance, where this refers to the residual variance in earnings that falls out of standard Mincer-type human capital regressions (using such variables as age, schooling, and interactions between age and schooling). Although the groups that are referenced by such methods are statistical cross-classifications rather than institutionalized occupations (cf. Groshen 1991), it is still worth examining the ways in which the within-group variance is presumed to be generated.

The stylized fact with which this literature begins is that most of the growth in overall wage inequality is attributable to growth in such residual inequality (e.g., Acemoglu 2002; DiNardo, Fortin, and Lemieux 1996; Juhn, Murphy, and Pierce 1993; Katz and Autor 1999; cf. Card and DiNardo 2002; Lemieux 2003). This growth is frequently, although not exclusively, attributed to the rising demand for skill, where the skills of interest are not indexed by observable schooling but by unobservable social, cognitive, or personality traits (see Levy and Murnane 1992, pp. 1365–7). The demand for skilled labor started expanding in the 1970s, yet the effect of this expansion on the wage premium for observable schooling was suppressed until the 1980s, when finally the supply of college-schooled labor no longer kept pace with the growing demand for such labor. By contrast, the relative supply of unobservable skills may be presumed to be constant over time, meaning that the wage premium for such skills should steadily expand and generate a long-term upward trend in residual inequality over the 1970s and beyond (see especially Acemoglu 2002).

The rising demand for unobservable skills, which is typically treated as exogenous, can itself be attributed to any number of causes, including skill-biased technological change and shifts in the structure of final demand (also see Stone 2004; Frank and Cook 1995).

Whatever its source, a rising payoff to unobservable skills will generate a growth in within-group inequality, just as a rising payoff to observable skills generates a growth in between-group inequality. This type of account has not been subjected to anything approaching a definitive test, yet it remains attractive because of its consistency with competitive wage theory (see Levy and Murnane 1992).

We are not averse to borrowing this economic account and using it to explain trends in within-occupation inequality (WO). It is possible, however, that much of what appears to be growing demand for high-skill labor within the residual statistical groups of Mincer-type regression models is just growing demand for particular high-skill occupations, not growing demand for high-skill tasks within all occupations. If so, we need only invoke a story about increasing demand for high-skill occupations, a story already outlined in the preceding section on the BO/WC trend. Once the BO/WC inequality is stripped out of the residual, it may well be that the remaining WO component suggests much less in the way of growing demand for high-skill labor.

The WO component is not, however, likely to be entirely stable once the BO/WC component is parsed out. To the contrary, it is plausible that complementary increases in the WO component will be generated by rising demand for unobservable skill, just as the standard economic account would have it. This type of account is best suited to explaining a WO takeoff in those sectors of the labor market, such as the nonmanual sector, in which the demand for skill has substantially increased. The introduction of computers and related technical innovations has presumably transformed the nonmanual workplace in especially revolutionary (and skill-demanding) ways. At the same time, the demand for interactive or "soft" skills may also have grown among service and manual laborers (Howell and Wolff 1991; Fernandez 2001), but we doubt that this soft-skill demand shift in the manual sector is as pronounced as the computer-based demand shift in the nonmanual sector.

Data and Methods

We analyze earnings data collected in the May supplement of the Current Population Surveys (CPS) from 1973 to 1978 and in the "outgoing rotation group" (ORG) supplements of the monthly CPS from 1979 to 2004 (Bureau of Labor Statistics [BLS], years vary). These surveys are nationally representative samples of households that contain information on the usual pay of the main job that all household members held in the week prior to the survey.

Data Processing

In preparing the May/ORG files for the analysis, we were required to make a host of technical and conceptual decisions that affect the measurement of inequality and may affect observed trends in inequality as well. We follow best practice in the earnings literature whenever a consensus on best practice has been reached and otherwise proceed by carrying out analyses with two or more operational alternatives. Because our main conclusions were usually unaffected by such operational decisions, we report but one set of results in this paper (see Weeden et al. 2007 for details).

Throughout the analyses presented here, earnings are measured as hourly wages. In the May/ORG CPS, workers who indicate that they are paid on an hourly basis are asked to report their usual hourly wages, and workers who indicate some other pay periodicity report their usual weekly wages. We follow here conventional practice of calculating hourly wages for nonhourly workers by dividing weekly wages by the number of hours usually worked at the main job. We then convert hourly wages into constant 2000 dollars using the personal consumption

expenditures index from NIPA (Bureau of Economic Analysis, 2005). When wages have been truncated by the BLS to maintain confidentiality (i.e., "topcoding"), we have applied the conventional multiplier of 1.4 (Lemieux 2003; Card and DiNardo 2002). We rely on unedited measures of earnings because, unlike the edited earnings, these are available in the May 1973–1978 surveys and are unaffected by changes in the mid–1990s to the BLS procedures for allocating earnings (see Hirsch and Schumacher 2003; Lemieux 2003). This decision forces us to exclude the 1994–1995 ORG files in which workers with edited earnings are impossible to identify (see Lemieux 2003, pp. 6–7).

We include all wage and salary workers between the ages of 16 and 65 who report positive hours worked at their main jobs and for whom a valid occupation code is available. Following conventional practice, we exclude workers whose hourly wages fall below $1 or above $100 in 1979 dollars or who are self-employed, the latter because they are not asked the earnings questions in the ORG supplements (Angrist and Krueger 2000; Card and DiNardo 2002; Mishel, Bernstein, and Schmitt 2001; cf. Bollinger and Chandra 2005). We do not, however, exclude part-time workers, as analysts of wage inequality often do. Instead, we weight workers by the number of hours they usually work, thereby obtaining a wage distribution representative of all hours worked in the economy (see e.g., DiNardo, Fortin, and Lemieux 1996; Lemieux 2003; Card and DiNardo 2002). This practice may be understood as a compromise between excluding part-time workers and simply ignoring the distinction between part-time and full-time work.

After imposing all restrictions, our May surveys contain on average 20,254 men and 15,776 women per year, and our ORG surveys contain on average 64,048 men and 62,181 women per year. The final sample pooled over years includes 1,618,174 men and 1,587,005 women.

Occupation and Class Schemes

For our reported analyses, we rely on Standard Occupation Classification (SOC) codes, thus allowing the scheme to change with the introduction of new versions of the SOC in the 1983, 1992, and 2003 surveys. We have also examined trends with a uniform scheme created by back-coding all CPS data between 1983 and 2004 into the 1970 SOC codes (see Weeden et al. 2007; also, Weeden 2005a, 2005b; also Weeden and Grusky 2005a, 2005b, 2005c). This back-coding procedure uses a set of sex-specific weights, calculated from double-coded data sets, to assign earlier SOC codes to data originally arrayed in a later SOC scheme.

Which of these two occupation schemes is to be preferred? With the back-coded scheme, the occupational structure is treated as frozen in time as of 1970, and the rise of new occupations and related changes in occupational boundaries are thus ignored. The indigenous occupation scheme, by contrast, provides the best available characterization of the occupational structure in a given year and presumably delivers the most accurate estimate of absolute levels of within-occupation inequality. However, where the goal is to obtain estimates of *trend* in the various components of inequality, one should not necessarily default to this form of accuracy. If each new occupational classification scheme comes on the heels of real change in institutionalized boundaries of the occupational structure, analysis of the data arrayed in the indigenous scheme will indeed offer a better assessment of trends in micro-class inequality. The 1970-basis scheme will overestimate the increase in within-occupation inequality and, conversely, underestimate the increase in between-occupation inequality, at least if the earnings profiles of newly formed occupations diverge from those of their "parent" occupations. If, on the other hand, each new occupation scheme merely improves the measurement of an underly-

ing occupational structure that has remained largely constant, the indigenous occupation scheme will overestimate the increase in between-occupation inequality.

It is likely that both accounts are partly true. That is, some of the changes in a new occupation scheme may capture newly institutionalized occupational boundaries (e.g., systems analysts), whereas others may capture occupational distinctions that existed in the past but had simply been ignored by the classifiers (e.g., distinctions among managers). Because there is no solution to this dilemma, we have estimated trends in the various components of inequality with both indigenous and 1970-basis schemes, allowing us to gauge the sensitivity of our results to our measurement decisions. We report only the indigenous-scheme decompositions here in the interest of brevity.

We have carried out analyses with two conventional big-class schemes: the Erikson-Goldthorpe (EG) scheme (Erikson and Goldthorpe, Ch. 47), and the Featherman-Hauser (FH) scheme (Featherman and Hauser 1978). In the following graphs and tables, we feature the FH scheme because our prior research suggests that it better captures the heterogeneity in many variables, including income (Weeden and Grusky 2005a, 2005b, 2005c). We have, however, replicated all of our analyses with the EG scheme and secured very similar results.

The FH scheme, which is based on aggregate Census Bureau categories, is more detailed than the EG scheme and is devised specifically for the U.S. occupational structure. In its commonly applied version, the FH scheme consists of twelve classes, from which we have excised two (self-employed professionals, self-employed managers). The remaining ten FH categories are employed professionals, employed managers, sales workers, clerical workers, craft workers, operatives, service workers, laborers, farmers, and farm laborers. We refer the reader to Weeden et al. (2007) for a discussion of the algorithm that was used to translate SOC codes into the FH scheme.

Methods

We carried out all analyses with two measures of inequality, the variance of log(wages) and Theil's index, both of which can readily be decomposed into BC, BO/WC, and WO components. However, we only present decompositions based on the variance of log(wages), given that the analogous decompositions using the Theil index yielded similar conclusions. We present separate decompositions of inequality for men and women throughout.

The total variance in log(wages) can be decomposed by fitting two models. The first model regresses log(wages) on the categories of a big-class scheme, and the second model regresses log(wages) on the categories of an occupation scheme, where occupations are nested in big classes. These two models allow us to implement our desired three-way decomposition: The BC component is the total variance in log(wages) minus the variance of the residuals of the big-class model; the BO/WC component is the difference between the variance of the residuals of the occupation and big-class models; and the WO component is the variance of the residuals from the occupation model.

Results

The first set of three-way decompositions is presented in Figure 3 (for men) and Figure 4 (for women). Because the relative rate of change can be difficult to gauge via inspection alone, we report in Table 1 the estimates secured by imposing, for men and women separately, a linear trend on the variance in log(wages). The first model in Table 1 fits a single slope and intercept to the trend lines, while the second model fits a single slope but allows the intercept to shift with each change in the occupational classification scheme (in 1983, 1992, and 2003). The simpler model

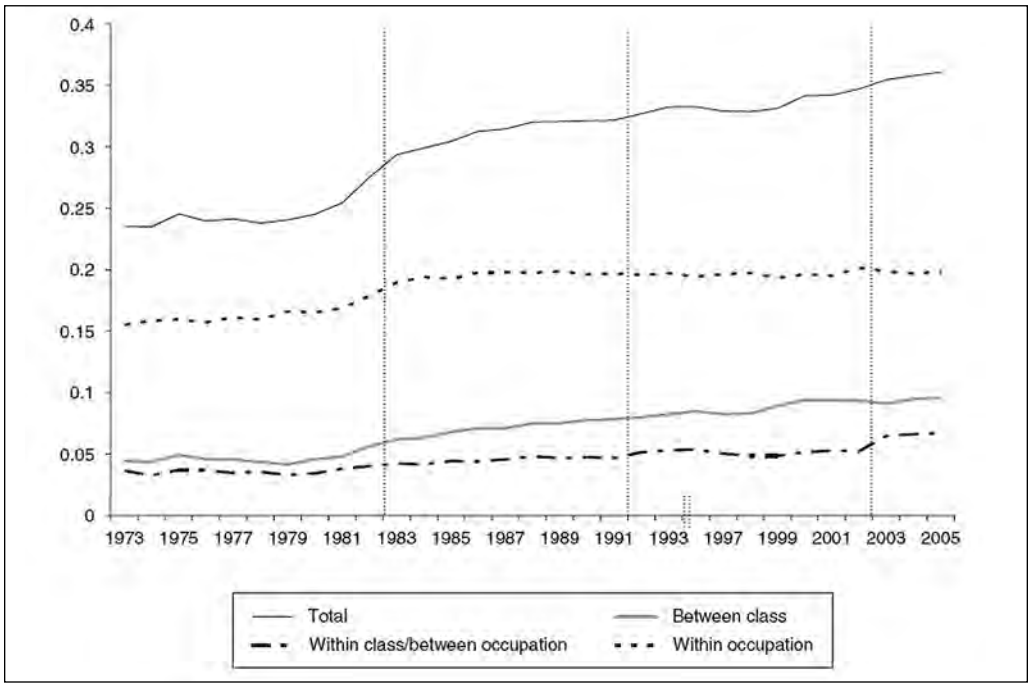

Figure 3. Variance-Based Decomposition of Men's Wage Inequality Into Between-Class, Within-Class/Between-Occupation, and Within-Occupation Components, 1973 to 2005

Note: Vertical lines indicate new Standard Occupation Classification scheme; hash marks indicate a break in the time series.

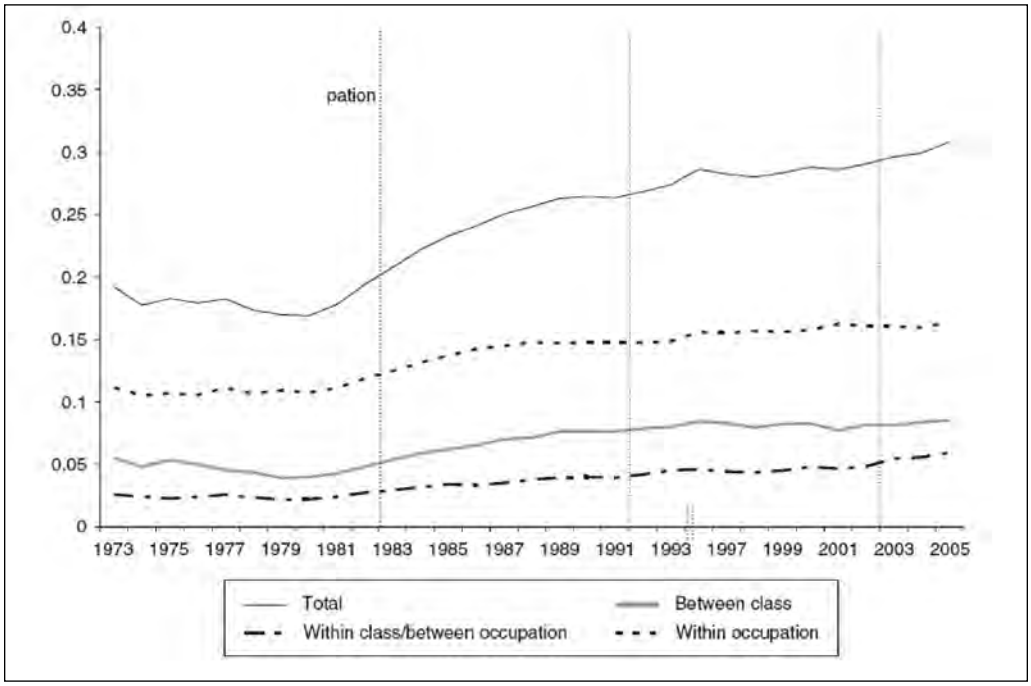

Figure 4. Variance-Based Decomposition of Women's Wage Inequality Into Between-Class, Within-Class/Between-Occupation, and Within-Occupation Components, 1973 to 2005

Note: Vertical lines indicate new Standard Occupation Classification scheme; hash marks indicate a break in the time series.

Table 1. Estimated Linear Effect of Time on the Components of Wage Inequality, by Sex

	Intercept	Slope Coefficient	Average Percentage Change per Year	Percentage of Total Change
Model 1: Changing occupational structure				
Men				
Total	0.2374	0.0041	1.7	
	(0.005)	(0.000)		
Between class	0.0411	0.0019	4.5	45.0
	(0.002)	(0.000)		
Between occupation/ within class	0.0323	0.0009	2.7	21.4
	(0.002)	(0.000)		
Within occupation	0.1640	0.0014	0.8	33.6
	(0.003)	(0.000)		
Women				
Total	0.1684	0.0046	2.7	
	(0.005)	(0.000)		
Between class	0.0436	0.0015	3.3	31.6
	(0.002)	(0.000)		
Between occupation/ within class	0.0198	0.0011	5.4	23.5
	(0.001)	(0.000)		
Within occupation	0.1050	0.0021	2.0	44.7
	(0.002)	(0.000)		
Model 2: Constant occupational structure				
Men				
Total	0.2335	0.0026	1.1	
	(0.003)	(0.000)		
Between class	0.0402	0.0014	3.4	51.7
	(0.001)	(0.000)		
Between occupation/ within class	0.0346	0.0003	0.8	10.3
	(0.001)	(0.000)		
Within occupation	0.1586	0.0010	0.6	37.5
	(0.002)	(0.000)		
Women				
Total	0.1691	0.0024	1.4	
	(0.005)	(0.001)		
Between class	0.0449	0.0004	0.8	15.0
	(0.002)	(0.000)		
Between occupation/ within class	0.0217	0.0005	2.4	21.7
	(0.001)	(0.000)		
Within occupation	0.1025	0.0015	1.5	62.9
	(0.002)	(0.000)		

Note: Numbers in parentheses are standard errors. Model 1 fits a simple linear trend on the variance in logged wages. Model 2 fits a uniform linear trend with intercept adjustments at each change in the occupational classification scheme.

(i.e., Model 1) corresponds to the assumption that new classification schemes are introduced in response to real changes in institutionalized occupational boundaries (i.e., "changing occupational structure"). If such changes are indeed real, then any increase in the explanatory power of these more refined classifications bespeaks a meaningful change in how inequality is apportioned within and between occupations. By contrast, the second model corresponds to the assumption that new classification schemes capture occupational distinctions that were always present, but were ignored in the more primitive classifications of prior years (i.e., "constant occupational structure"). It is appropriate under this assumption to parse out the classification effects and then fit a pooled slope coefficient.

The results of Table 1 pertain to absolute changes alone. As we have noted, the relative size of the BC, BO/WC, and WO components is also of interest, implying that one should condition on the overall growth in inequality and ask how it was distributed across the three components. We thus present in Table 2 measures of relative change under the models of Table 1. These measures, calculated for 1973 and 2004, are simply the percentage of the total variance in log (wages) that each component represents.

We can turn now to addressing the main questions at hand. The BC trend line, which we consider first, is distinguished by a steep takeoff in the 1980s and steady increase thereafter. The between-class component accounts for 45.2–51.6 percent of the total

Table 2. Predicted Change in Proportion of Total Variance Attributable to the Components of Inequality, 1973 to 2005

	Model 1		Model 2	
	1973	2005	1973	2005
Men				
Total variance	0.237	0.369	0.233	0.317
Percentage of total				
Between class	17.3	27.2	17.2	26.3
Between occupation/within class	13.6	16.4	14.8	13.6
Within occupation	69.1	56.4	67.9	60.0
Women				
Total variance	0.168	0.315	0.169	0.246
Percentage of total				
Between class	25.9	28.6	26.5	22.9
Between occupation/within class	11.8	17.2	12.8	15.6
Within occupation	62.3	54.2	60.6	61.5

Note: Model 1 fits a simple linear trend on the variance in logged wages. Model 2 fits a uniform linear trend with intercept adjustments at each change in the occupational classification scheme.

change in male inequality (Table 1), and the between-class share of the total male variance increased from 17.2 percent in 1973 to 26.1–27.1 percent in 2004 (Table 2). For women, the pooled BC trend line is less steep, and the BC component accordingly accounts for less of the total change in inequality (see Table 1). This apparent gender difference should not be overinterpreted. Because the BC series for women declines steeply in the 1970s, the pooled coefficient reported in Table 2 averages across the decline and the post–1982 takeoff, yielding an attenuated estimate of the latter. If one instead fits a linear trend to the post–1982 data, the male and female series uniformly show a rapid increase in the BC component. This growth in between-class inequality is hardly surprising. Insofar as big classes are merely education groups in disguise, the well-known increase in the payoff to schooling should be expressed as a takeoff in the BC trend line over the last two decades, just as we find here.

We consider next the trend in WC/BO inequality. In this case, our results cannot be straightforwardly read off from prior research, because big classes and detailed occupations have not before been analyzed in tandem. For both women and men, we find that the WC/BO trend line does not show the characteristic steep takeoff in the early 1980s, nor does it move sharply upward at any point thereafter. Except for a classification-induced shift in 2003, the increase in WC/BO inequality is slow and gradual, and it translates into a slightly higher share of the total variance by 2004, at least under Model 1 (see Table 2). The WC/BO component accounts for 10.8–16.5 percent of the total growth in male inequality and for 19.1–19.9 percent of the total growth in female inequality (see Table 1). We thus find that the WC/BO component, like the BC component, is increasing both in absolute and relative terms, although the rate of increase for the WC/BO component is less dramatic than the corresponding rate for the BC component.

We had predicted that the upward trend in the between-occupation component would be especially pronounced in the nonmanual classes because they contain precisely those high-skill occupations (e.g., computer programmer) that might profit from demand explosions. Furthermore, the nonmanual classes are the home ground of closure movements that allow high-skill occupations to control supply and demand, thus generating rent and opening up an earnings gap relative to occupations that have not successfully occupationalized. Although we will not provide a direct test of this hypothesis here, we have elsewhere (Weeden et al. 2007) examined whether the between-occupation trends are playing out differently in different big classes. For women and men alike, we found that the nonmanual trend lines tend to move upward at a faster pace than the manual trend lines, the latter being mired for the most part at very low levels over the last thirty years. The most dramatic takeoff in between-occupation variance was found in the nonmanual class of sales workers. When we examined the particular occupations within this class that are rising or falling in earnings, we found some evidence of high-

skill winners (e.g., sales engineers, stock and bond salespeople, advertising agents) and low-skill losers (e.g., retail sales clerks, cashiers, sales representatives), just as a demand-shift hypothesis would have it.

The third series in our analysis, the WO series, is distinguished by important gender differences in the absolute trend. Among male workers, the WO component is increasing, but fails to match the fast-paced growth of the BC component or even the WC/BO component. Indeed, the WO series suggests a one-time takeoff in the early 1980s, followed by near stasis thereafter. The relatively slow pace of change means that only a minority share of the total change in male inequality is attributable to a growth in WO (see Table 1). This result is inconsistent with the long-standing claim that rising "within-group" inequality is the driving force behind the overall growth of inequality (cf. Lemieux 2003). It does, however, lend support to our alternative suggestion that much of what conventional Mincer-type formulations represent as growth in within-group inequality is in fact growth in the WC/BO component.

The relatively slow pace of change in the WO component for males translates, furthermore, into a decline in the percentage of the total variance that is generated within occupations. It may be recalled in this context that the BC and WC/BO components both increased in absolute as well as relative terms. Clearly, these two components had to be taking relative share from the WO component, and Table 2 reveals precisely this relationship. The within-occupation share declines from 68.6 percent to 57.9 percent when Model 1 estimates are used.

The female WO series, by contrast, shows clear evidence of ongoing increase after the early 1980s, with a steeper overall slope coefficient as a result. In fact, the WO component accounts for more of the total change in variance than the BC component, especially under the assumption of a constant occupational structure (see Model 2, Table 1). There are a host of potential explanations for the gender disparity in the WO series. The task of adjudicating among them is well beyond the scope of this paper, but it is worth noting that the disparity is potentially consistent with an account emphasizing skill-biased technological change. That is, many female-typed occupations (e.g., secretary) have developed an especially strong reliance on computer, interactive, and other unobservable skills, whereas male-typed clerical occupations (e.g., mail sorter) have not been as frequently affected by skill-demanding technological change (Welch 2000; Weinberg 2000). The rapid rise in within-occupation inequality among women may arise from such new unobserved skills opening up new inequalities.

Although the trend in the WO component is steeper for women than for men, it is not so much steeper as to require a gender-specific account of trends in the WO share of inequality. Under Model 1, the WO share of the total variance declines from 61.8 percent to 55.5 percent for women, a decline that is only slightly less dramatic than that for men. By contrast, the WO share of inequality increases under Model 2, but this result is an artifact of gender differences in the pre–1982 trend. If only post–1982 data are analyzed, the Model 2 estimates show that the WO share of total inequality is declining for women as well as for men.

We argued in our introductory comments that rising demand for unobservable skills should play out principally in the nonmanual sector, where the workplace has been transformed dramatically by the introduction of computers, more advanced telecommunications, and related technical innovations. For reasons of space, we won't present the requisite decompositions here, but we have shown elsewhere that, as anticipated, the WO trends lines are increasing in the nonmanual classes yet stable in the manual classes (see Weeden et al. 2007 for details).

Discussion

We conclude by asking how our results speak to the relationship between class and earnings. Has the ongoing increase in earnings inequality played out in ways that support the rise of big classes? Does the takeoff in inequality instead support the rise of micro-classes? Are both types of class principles simultaneously supported? Or is earnings inequality becoming an increasingly individualistic affair that occurs mainly within groups rather than between them? By posing questions of this sort, we have sought to move away from the field's long-standing focus on the *causes* of earnings inequality, turning instead to questions about its *effects* on the structure of social classes.

We begin by assessing whether the foregoing results are consistent with big-class formulations (see Figure 1). Although there is much here that big-class enthusiasts can embrace, our data are not working exclusively or unambiguously in support of the big-class principle. The core results to which big-class adherents will inevitably point are the growing absolute size of the between-class component and the growing between-class share of the total variance. Important though these results are, it must also be noted that interoccupational cleavages within some big classes are growing as well, a result that is inconsistent with simple big-class stories. The double-edged sword of rising earnings inequality appears to be *simultaneous* growth in distinctions between classes and within them. These within-class cleavages have become so prominent in some classes, such as the FH service class, that it has to be asked whether this is still a single class, if ever it was.

How, then, does the micro-class story fare? Here again, one can find results that are consistent with a micro-class account, especially the steady growth in within-class occupational distinctions. Moreover, the within-occupation component to inequality is declining in relative size for both men and women, at least after 1982. We can conclude that the class principle, as expressed via big classes and micro-classes together, accounts for a growing share of the total variance in earnings, while the residual of "individualized inequality" is declining in relative size. The earnings distribution thus suggests a new type of dual closure in which two types of nested social groupings, big-classes and detailed occupations, figure increasingly prominently.

Although the dual-closure account is a descriptively accurate account of recent trends, it would be heroic to suppose that inequality in the future will necessarily take on an increasingly simple dual-closure form. This is because, without understanding the mechanisms behind recent trends, a simple-minded extrapolation is obviously too bold. There are two questions about mechanisms that are especially important in this regard. The first pertains to the mechanisms underlying the trend in big-class formation, and the second pertains to the mechanisms underlying the trend in micro-class formation. We review each of these two questions below.

On the big-class side of the equation, one has to ask whether the rising payoff to schooling is indeed the main mechanism increasing BC inequality. If it is, big-classes are reduced to indirect beneficiaries of trends that ultimately support the development of "education classes" (e.g., Meyer, Ch. 105; Brooks, Ch. 33). The key question in this regard, and one which remains unanswered by our analyses, is whether the between-class component is increasing even in the presence of controls for education. For purposes of illustration, suppose that there are just two big classes (manual and nonmanual) and two education groups (educated and uneducated), as indicated in Figures 5a and 5b. We can then distinguish between (1) pro-education change in which the net education cleavage is widening and the net class cleavage is not (i.e., Figure 5a), and (2) pro-class change in which the net class cleavage

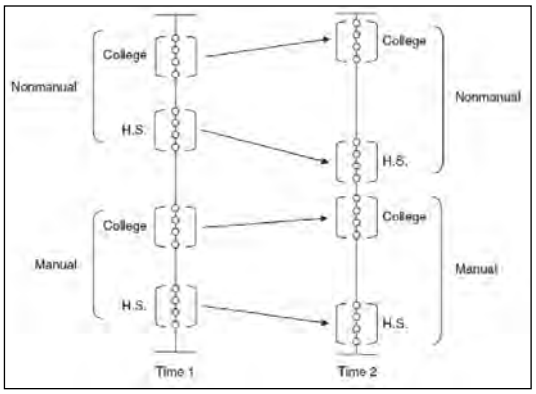

Figure 5a. The Transition to an Education Regime
Note: H.S.=high school

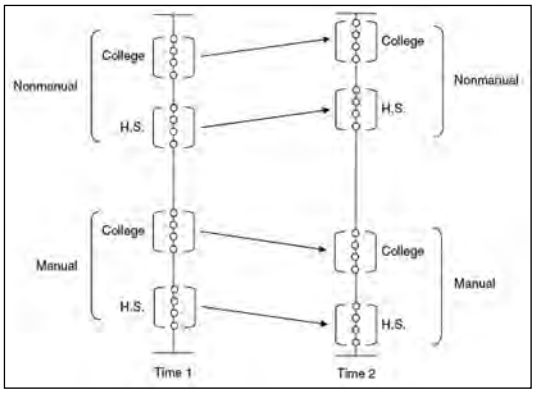

Figure 5b. The Transition to a Big-Class Regime
Note: H.S.=high school

is widening and the net education cleavage is not (i.e., Figure 5b). If the growth in between-class inequality is driven exclusively by the rising payoff to education, then education groups rather than big classes are arguably emerging as the principal form of extra-individual structure in the contemporary labor market.

The dual-closure account is also potentially vulnerable on the micro-class front. Here, the skeptic might point out that the relative decline in within-occupation variance is playing out mainly in the manual sector, not within the ever-growing ranks of the nonmanual sector (see Weeden et al. 2007). It follows that, as the manual sector continues to shrink, the forces that expand WO inequality (e.g., increasing returns to unobservable skills) may come to dominate those that contract such inequality. By this account, WO inequality in nonmanual occupations will eventually control trends, and the overall decline in WO inequality reported here will therefore soon stall.

The foregoing skeptic's account treats the steep rise of WO inequality within the nonmanual sector at face value. Might we instead interpret this steep rise as an artifact of increasingly error-ridden occupational classifications? The occupational structure within the nonmanual sector is so dynamic that there is inevitable ambiguity in distinguishing true increases in within-occupation inequality from those generated by the emergence of new suboccupational distinctions. When, for example, the earnings of cosmetic dentists grow spectacularly while those of other dentists do not, does this bespeak a true increase in within-occupation inequality? Or does it instead reveal incipient suboccupational distinctions that might be formalized in separate occupational associations with differentiated training and credentialing? In practice, we have resolved this question by conditioning on formal occupational classifications, thus allowing for new occupations only when the SOC recognizes them. We suspect, however, that the SOC does not always keep pace with the dynamism of the nonmanual sector, meaning that some of the apparent takeoff in WO inequality within this sector is just classification error. If this interpretation is on the mark, the rise of group-based inequality is even more extreme than our results imply.

It bears reiterating that these ambiguities are especially consequential when one attempts to predict whether inequality in the future will take on increasingly individualized or class forms. If one instead settles for a purely descriptive account of recent trends, the ambiguity fades somewhat and the merit of a class account of inequality is less contestable. Although the majority of earnings inequality is still generated within

occupations, the relatively rapid growth of the between-class and between-occupation components implies that the labor market is not only becoming more unequal but lumpier as well.

NOTES

1. The increase in the BC component under this scenario is a compensating form of pro-class change.

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