

---

# Sourcebook of Labor Markets

*Evolving Structures and Processes*

Edited by

**Ivar Berg**

*University of Pennsylvania  
Philadelphia, Pennsylvania*

and

**Arne L. Kalleberg**

*University of North Carolina at Chapel Hill  
Chapel Hill, North Carolina*

# 21

---

## Evolving Patterns of Sex Segregation

Jerry A. Jacobs

Men and women often work in different jobs. The differing distribution of men and women across positions within the occupational structure may be referred to as the "sex segregation" of occupations. Sex segregation remains a defining element of the American occupational structure. The composition of incumbents in a position, whether they are male or female, influences the notions men and women hold about their own opportunities. The concentration of women in low-paying, female-dominated occupations also contributes to the earnings gap between women and men.

This chapter provides a brief overview of some of the issues confronting students of gender segregation in the workplace. I begin by discussing alternative measures of segregation, then examine why occupational status, which is widely used in studies of status attainment, is not adequate as a measure of the gender gap in opportunity in the workplace. Selected data on recent trends in segregation in the United States are presented.<sup>1</sup>

### MEASURING SEX SEGREGATION

The principal dimension of segregation that is the focus of most research is the degree to which men and women are distributed unevenly across fields. This concept is typically measured with the index of dissimilarity (D), which indicates the proportion of women (or men) who would have to change fields to be distributed in the same manner as men (or women). As we will see, over half of women in

---

Jerry A. Jacobs • Department of Sociology, University of Pennsylvania, Philadelphia, Pennsylvania 19104.

*Sourcebook of Labor Markets: Evolving Structures and Processes*, edited by Ivar Berg and Arne L. Kalleberg. Kluwer Academic/Plenum Publishers, New York, 2001.

the U. S. labor force would have to change occupations to match the occupational distribution of their male counterparts. The level of labor force sex segregation has declined during the 1970s and 1980s, after remaining largely unchanged for most of the century (Jacobs 1989a). However, new data presented here suggest that a new equilibrium level may have emerged during the 1990s. In other words, after two decades of slow but steady progress, women appear to be making few additional inroads into male-dominated fields in recent years.

The index of dissimilarity is often supplemented with a size-standardized measure of segregation, designated here as SSD, which treats each occupation as having the same number of incumbents. This counterfactual approach can be useful for assessing change between two points in time. By holding the size of occupations constant, the SSD helps to answer the question, "How much change is due to the changing size of occupations, and how much is due to the changing mix of men and women within occupations?"<sup>2</sup>

The degree of differentiation between men and women in the labor market is quite sensitive to the units of analysis across which segregation is measured. The more fine-grained the units, the more segregation is revealed. We may conceive of the occupational structure as 10 or so broad occupational groups arranged hierarchically. While this representation is satisfactory for some purposes, it captures only a small portion of segregation by sex because within each broad occupational strata, some occupations are female-dominated and others are male-dominated. For example, within the professions, some fields, such as elementary and secondary education, are typically occupied by women, while other fields, such as surveyors, airplane pilots, and clergy, are typically staffed by men. If one groups all of the professions together into a single occupational group, these distinctions will be lost, and the occupational system will seem more integrated than it really is.

The same criticism can be levied at more detailed occupational measures. The detailed occupational classification system of the U.S. Census divides the labor force into over 500 different types of work. Yet even these 500 units lump together many disparate situations in which some jobs are performed by men and other jobs typically employ women. Since the early 1980s, it has been established that specific job titles within specific companies are more segregated by sex than are occupations, even when occupations are divided by industry. In an influential paper, Bielby and Baron (1984) showed that when job-level data are scrutinized, many firms approach complete segregation by sex. For example, Reskin and Roos (1990) showed that the occupation "bakers" should be best thought of as representing several related types of work. Bakers who work for grocery stores are typically women who bake frozen sheets of dough to make store-fresh rolls, breads, and cakes. Specialty bake shops, which pay bakers more than do supermarket chains are more likely to employ men to make more specialized pastries. Thus, the national statistic that 46 percent of bakers are men does not fully capture the true level of gender differentiation within this field.

The results present in Table 21.1 document the increase in segregation that can be seen with more precise occupational measures. These data are drawn from the March 1997 Current Population Survey (CPS), a large sample of the working population that provides the most consistent and reliable available estimates of labor force trends. The top panel of results displays the percentage of men and women in each of 10 broad occupational groupings. Some of these patterns are no doubt familiar

Table 21.1. Occupational Distributions of Men and Women, 1997

	Percent of workers		Percent female
	Men	Women	
<b>A. 10 major occupational groupings</b>			
Managerial	14.4	13.2	44.6
Professional and technical	15.1	20.3	54.2
Clerical	5.8	23.9	78.2
Sales	11.0	13.5	51.9
Craft	19.0	2.1	8.7
Operative	7.2	5.4	39.5
Transport	7.2	0.9	9.6
Service	10.1	18.1	61.1
Farm	4.1	1.0	17.2
Laborers	6.1	1.8	20.3
Total	100.0	100.2	46.7
D	33.65		
SSD (Size Standardized D)	41.73		
<b>B. Detailed (3-digit) occupational classifications</b>			
	1990	1997	
D (Index of dissimilarity)	56.4	53.9	
SSD (Size-standardized index of dissimilarity)	59.6	60.1	

Source: Current Population Survey (March 1997).

Women represent the majority of workers in clerical and retail sales positions, while men represent the majority of those employed in skilled craft and transportation jobs. However, some may find it surprising that women represent the majority (54.2 percent) of professionals and have nearly reached parity with men in managerial positions. Women represent 44.6 percent of managers, which is just short of their 46.7 percent representation in the labor force.

These results reveal two important facts about occupational segregation by sex. The first, as we have already mentioned, is that more detailed measures of occupations will produce higher levels of segregation than will more aggregated units of analysis. The second is that occupational segregation is not a simple matter of women being concentrated in low-status occupations. There are female-dominated occupations among low-, middle-, and relatively high-status occupations, although very few are at the highest echelons of the status hierarchy. Rather, occupational segregation is better thought of as the concentration of women in low-paying occupations within each broad occupational group.

If sex segregation is measured across the 10 broad groupings displayed in Table 21.1, then just over one-third (33.7 percent) of women would have to change occupations to match the pattern of men in the labor force. However, if we increase our precision in occupational measurement to 505 categories, we then see (bottom panel in Table 21.1) that over half of women (53.9 percent) would have to change occupations in order to be distributed in the same manner as men.

The 505 detailed occupations are about the smallest unit of analysis that can be considered with the CPS data. However, some other data sources allow us to look even more closely at this phenomenon. Tomaskovic-Devey (1995), who conducted

a survey of employees in North Carolina that included information about respondents' job titles, found that over two-thirds of women would have had to change jobs to be distributed in the same manner as men. This figure was similar to that found by Petersen and Morgan (1995), who analyzed job-level data from Department of Labor surveys.

### ALTERNATIVE MEASURES OF SEGREGATION

Another approach to measuring occupational sex segregation, termed A, has been proposed by David Grusky (see Grusky and Charles 1998). I am a firm believer in welcoming new measures when they improve our understanding. But I am afraid in this case that technical sophistication has been pursued to the detriment of understanding the phenomenon in question.

Grusky's A is built on the odds ratios of men's and women's representation in specific occupations. It is the sum of the logged transformation of a table of occupation by sex. Log-linear models have been used successfully in the study of intergenerational occupational mobility, so it is not surprising that scholars have sought to apply these measures to the study of gender inequality. But what worked for socioeconomic inequality loses a great deal in the transition to gender inequality.

The main virtue of log-linear models is that they remove "the marginals" from the analysis and allow the analyst to focus on the underlying association. In other words, if we are comparing occupational mobility in two countries, we may want to hold the occupational distributions of these two countries constant and focus on the association between origins and destinations. In that way, changes across countries and over time in the shape of the occupational distribution can be separated from the issue of the association in outcomes between parents and their children. So far so good. The main problem with the log-linear approach is that one obtains a separate measure for each occupational stratum rather than a single parameter for each country. Researchers have circumvented this difficulty by focusing on a broad set of occupations, sometimes as few as three occupational groups per country. Substantive distinctions are traded for statistical sophistication.

But we have seen that using broad occupational groups would be disastrous in studying occupational sex segregation. The broader the occupational units, the more men and women who do disparate work are lumped together, and the more we lose sight of the underlying reality. We need the most detailed measures possible to understand the topic in question.

Grusky proposes to solve this problem by using the most detailed measures possible and then simply averaging the deviations in the log-odds across occupational units. In this way, he feels that he gets to eat his cake and have it too. But, despite my sweet tooth, I cannot say I find this confection appealing.

One problem is that the measure he has devised has no readily interpretable meaning. It also inflates the importance of small occupations and is unduly susceptible to errors in the underlying data. What does Grusky's measure produce? It is the arithmetic average (mean) of the log-odds ratios. But odds ratios are not linear terms. Why average them? And what do you have when you are done?

Perhaps more telling is the problem that each occupation counts equally in this system. Imagine, for example, that there is great gender disparity among nuclear

physicists (a tiny group of workers) but gender parity among managers (a huge segment of the labor market). Grusky's measure gives these two occupations equal weight and would characterize the labor market as highly sex typed. The index of dissimilarity, in contrast, would produce a more balanced picture of the labor market, because it would give a great deal of weight to the case of managers and very little weight to the case of nuclear physicists.

A related problem is measurement error. All survey data have some rate of error, and some statistics are more sensitive to this error than others. Some measures, for example Theil's H, are designed to measure sex segregation in small units when natural variability will tend artificially to inflate observed segregation. A similar approach to adjusting for small numbers has been used with the index of dissimilarity. Grusky's measure, in contrast, is especially vulnerable both to the random variability inevitable in small occupational units and to measurement error. That is because those small units are given undue weight in his measure. Of course, one could revised Grusky's index by weighting it by the size of each occupation. But this and other alterations would make his measure considerably more like the index of dissimilarity.

The ultimate question of the usefulness of this measure is whether it produces new insights that improve our understanding. It is not enough for the results to be different from the index of dissimilarity—they should be better. But my review of research that uses this approach indicates that it is less revealing than the index of dissimilarity. For example, Weeden (1998) uses Grusky's measure to study long-term trends in sex segregation in the United States. Where earlier analysis using the index of dissimilarity showed continuity until 1970, Weeden's new measure shows declines occurring in sex segregation throughout the century. But these new findings do not make sense. For example, they show that the 1930s was the decade in which women made the biggest inroads into men's jobs. But historical studies have consistently shown that the 1930s was a period of retrenchment for women in the labor force (Scharf 1980). Marriage bars were devised to block married women from "taking jobs away" from unemployed men (Goldin 1990). I find compelling neither the statistical properties of this measure nor the substantive results it produces.

### **SOCIOECONOMIC STATUS, OCCUPATIONAL PRESTIGE, and GENDER INEQUALITY**

Critics have complained that studying occupational sex segregation does not reveal whether it is men or women who have the good jobs (e.g., see Watts 1998). The index of dissimilarity measures the extent to which men and women are concentrated in different types of jobs, but it offers no guide as to where the good and bad are located. We may conceive of social stratification as arraying positions on a continuum, from the most desirable to the least desirable occupations. The study of sex segregation does not assess how men and women compare along this vertical dimension of inequality. It would be most informative if we had a yardstick that would enable us to assess not only the degree of gender differentiation but also the gender gap in access to desirable occupations.

A long-standing approach to ranking occupations has been widely employed by sociologists as well as many other social scientists, namely, occupational status as

measured by the socioeconomic index (SEI; Hauser and Warren 1997). Why do students of gender inequality in the workplace shun this widely accepted metric to assess gender inequality on the job? The answer is that the standard occupational metrics mask important aspects of gender inequality.

The SEI combines the education and income of incumbents in an occupation to produce an occupational status score for each occupation. The occupations with stringent educational requirements and high salaries, such as physicians, lawyers and financial advisors, have high-status scores. Those occupations requiring few educational credentials and offering low earnings, such as janitors and cashiers, have lower-status scores. If men monopolized the high-status occupations while women were concentrated in the low status ones, then perhaps SEI scores would capture much of the gender difference in the workplace.

But it has long been established that employed men and women have similar status scores. The precise scores differ slightly based on the specific formula used to assign the relative weight to income and education, and several other technical aspects on which the scores are constructed. But the fundamental point holds across all of these scales.

The system of gender stratification is more complicated than a simple concentration of women in low-status jobs. There are women's and men's jobs spread throughout the status hierarchy. Men are somewhat overrepresented in both the very highest echelon of occupations and the very lowest, but, in general, one can find men's and women's jobs at all levels of socioeconomic status.

But this does not mean that men's and women's jobs are equally good. Recall that socioeconomic standing reflects both the income and education of incumbents in a position. The irony is that women's jobs tend to derive their status from relatively high educational requirements, while men's jobs tend to derive their status from relatively high income. Thus, men's and women's jobs with similar SEI scores in fact represent very different combinations of traits.

Table 21.2 displays individuals employed in 1996 by the socioeconomic rankings of their occupations (data from the March 1997 Current Population Survey

**Table 21.2. Indicators of Gender Inequality,  
by Socioeconomic Status**

SEI quintile	MSEI	Occupation	Earnings	Education	
<b>Men</b>					
1.	15.6	60.6	36.2	\$60,166	95.3
2.	21.4	45.3	35.4	\$49,468	72.4
3.	17.8	35.0	30.2	\$35,214	53.3
4.	24.3	25.6	17.7	\$24,892	31.3
5.	20.8	18.2	32.1	\$16,089	26.0
<b>Women</b>					
1.	19.4	57.7	61.8	\$60,166	95.3
2.	19.0	44.2	53.0	\$49,468	72.4
3.	26.1	33.8	75.3	\$35,214	53.3
4.	15.3	26.3	67.7	\$24,892	31.3
5.	20.2	18.2	66.3	\$16,089	26.0

(CPS)]. Occupations are divided into five quintiles, from the top fifth of the socioeconomic ladder to the bottom. For each stratum, the proportion of individuals who attended at least some college and the average earnings of workers are displayed by sex. I also present the proportion of females in each occupation.

The average occupational status of women slightly exceeded that of men in 1996 by a small but statistically significant amount (36.2 vs. 35.6). Women are overrepresented in the top and third quintiles, and only trail by a substantial margin in the next-to-the-bottom stratum. Within each stratum, men and women have similar socioeconomic status scores. The standard interpretation of this result is that women are situated in slightly more desirable occupations than their male counterparts. However, there are good reasons to be skeptical of this conclusion. The fact is that women and men are employed in very different occupations within each stratum. In the top quintile, for example, the average man was employed in an occupation with 36.2 percent women, while his female counterpart was employed in an occupation with 61.8 percent women. This gap is somewhat smaller in the second tier of occupations but even more pronounced in the other three groups. Thus, equivalent socioeconomic status scores do not mean that men and women are located in the same occupations, or that men and women fare equally well in strictly economic terms.

Indeed, more direct evidence of gender disparities are revealed by the earnings and education data. Men earn far more than women, even in the same occupational tiers. Thus, parity in occupational status does not represent parity in earnings. Women's education, as indexed by the proportion of women having attended some college, trails that of men by a modest amount in the top two tiers but exceeds men's in the bottom two tiers.

The data clearly show that women generally match men in terms of education but earn much less than men at each level of the socioeconomic hierarchy. Thus, gender parity in socioeconomic status does not produce earnings parity. Nor do other facets of women's occupation make up for this earnings gap. Women trail men in many desirable features of work, including authority, autonomy, job security, pensions and other fringe benefits, and on many indicators of working conditions (Jacobs 1995; Gornick and Jacobs 1998).

This occurs because men and women are concentrated in different occupations at each level of the socioeconomic order. And women's occupations tend to be higher on education and lower on income than the same fields for men. Based on the male socioeconomic status (MSEI) data provided by Hauser and Warren (1997), the following formula calculates (MSEI):

$$\text{MSEI} = 38.976 + (5.24 \times \text{MEDUC}) + (7.84 \times \text{MEARN}).^3$$

If one calculates the components of this formula, female-dominated occupations (those with 70 percent or more women in 1990) received 4.17 points on average from their educational attributes and received -9.84 points from their earnings attributes. Other occupations, in contrast, garnered 1.42 status points from education and received -5.35 points from earnings. In summary, women's occupations have a different mix of education and earnings than do men's. Women thus are located in occupations requiring more credentials but offering lower earnings. This does not strike me as representing gender parity. Instead, it shows that socio-



economic status measures miss this gender-segmented dimension of occupational equality.

The second reason for this disparity is intraoccupational inequality. Women earn less than men, even within the same detailed occupations (England and McLaughlin 1979). Thus, any occupational score that treats all incumbents in that occupation as having the same status will mask the significant intraoccupational inequality that traverses our employment system. Hauser and Warren (1997) make a good case for using occupations to score respondents' social background, but they do not make the case that occupation represents the best measure of employment outcomes.

### RECENT TRENDS IN SEX SEGREGATION IN THE UNITED STATES

In 1997, just over half of women would have had to change (U.S. Census detailed) occupations in order to be distributed in the same manner as men (see Table 21.1). The index of segregation was 53.9 in 1997, which means that 53.9 percent of women would have had to relocate in order to match men's occupational patterns. This figure strikes many who are unfamiliar with research in this area as surprisingly high. There is a widespread sense that most fields are equally open to men and women. The entry of women into such high-profile jobs as television news anchors, physicians, and lawyers has heightened the popular sense of the changes in women's roles. And there has been change.

But change is slower than is popularly believed. There are many female fields employing large numbers of women that have experienced little change. Secretarial work, nursing, and waiting on tables are largely female fields and employ far more women than law or medicine. Occupations that are still dominated by men include professions such as engineers and clergy; protective service occupations such as police and firefighters; many craft occupations, such as carpenters, electricians, and plumbers; and transport occupations such as truck and taxi drivers. Thus, despite all the attention paid to women's entry into a few, relatively small, high-profile fields, many large occupations remain dominated by one sex or the other.

A second important conclusion evident in Table 21.1 is that the SSD index of segregation was virtually unchanged between 1990 and 1997. In other words, had there been no change in the size of occupations, there would have been no trend toward greater gender integration in the occupational structure. Another way of putting this point is that all of the decline in sex segregation during the 1990s can be attributed to a shift in the distribution of occupations, that is, a growth in the size of fields.

Which fields grew and which declined? The more integrated occupational groups—professionals, technical workers, managerial and sales occupations—grew, while the more segregated occupational groups—clerical workers and craft workers—declined in size. These shifts were often quite small in size but their cumulative effect was sufficient to account for the modest declines in sex segregation during the 1990s.

A reader might wonder which (D or SSD) is the "right" statistic or the more meaningful measure. I would suggest that they are complementary indicators, in that each helps to answer an important but related question. The (unweighted)

index of dissimilarity indicates that there has been a modest continuing trend toward greater gender integration in the labor market, although at a slower rate than during the 1970s or 1980s. The SSD measure, however, shows that the only remaining momentum is due to changes in the occupational structure. In other words, there has been no further mixing of men and women within occupations other than that produced by the growth of relatively integrated industries, such as services, and the decline of relatively segregated sectors, such as manufacturing.

## SEX SEGREGATION AND EARNINGS

Much of the interest in occupational sex segregation stems from the low wages paid in female-dominated occupations. Bianchi (1995), citing the work of Cotter et al. (1995), concludes that the effect of occupational segregation on earnings in the United States has declined. She suggests that only 14 percent of the sex gap in wages is now due to occupational segregation by sex (1995:126).

But this is just one part of the story. Bianchi considered occupational segregation but not differences between women and men in industry. Sorensen (1989) showed that adding the effects of industrial segregation nearly doubled the effect of workplace segregation on wages. Sorensen estimated that 20 percent of the gender gap in wages was due to the sex segregation of occupations, with another 16 percent due to the sex segregation of industries. The combined effect, 36 percent, was substantially higher than the effect of occupation alone.

But this, too, is an understatement of the effects of sex segregation in the workplace because of imprecise measurement. As noted earlier, occupational classifications, even detailed ones, typically lump together disparate types of work and mask much of the segregation of men and women on the job. Most studies do not fully capture these effects because the data are reported at the occupational level rather than as a description of the particular conditions of an employee's job. Several studies have estimated the effects of job-level segregation on wages (Petersen and Morgan 1995; Tomaskovic-Devey 1995). This research shows that a very substantial proportion of the sex gap in wages is due to women's concentration in female-dominated occupations.

But even these job-level analyses understate the significance of occupational segregation by sex. A recent analysis by Cotter et al. (1997) showed that the concentration of women into female-dominated occupations affects the pay of all women, not just those in female-dominated fields. Consider an example of how women moving into male-dominated fields might indirectly help to increase the wages of women in more traditional female-dominated professions. As women pursue business degrees instead of education degrees, they move into a traditionally male field and stand to earn higher wages. But in doing so, they gradually reduce the pool of new teachers, thus driving up the wages of teachers. Thus, the earnings of women across the board may benefit from even a modest decline in occupational segregation by sex.

Why do female-dominated jobs pay less? Two explanations have been most influential: crowding and culture. The crowding view holds that restricting women from entering large numbers of occupations results in large numbers of women

available for work in female-dominated fields such as child care, retail sales, and waiting on tables, thereby depressing wages in these fields (Bergmann 1986; Parcel 1989; Edgeworth 1922). The analysis discussed by Cotter et al. (1997) suggests that this logic not only reduces wages in these occupations but also reduces women's earnings in male-dominated fields.

A more recently developed view holds that our culture tends to devalue women's work. Much of the activity performed by women is invisible or held to be of marginal value (Steinberg 1990). Those occupations that score high on such feminine values as nurturance are not accorded additional compensation but are instead devalued and accorded low wages (England et al. 1994). It should be noted that these explanations persist after educational investments, which are emphasized by the human capital school of economics, are taken into account. It should also be noted that the crowding and cultural explanations are not mutually exclusive.

One explanation that has not held up under scrutiny is the "compensating differential" hypothesis. This view holds that female-dominated fields are paid less because they involve work that is more pleasant and less risky than that found in many male-dominated fields. The higher wages in men's positions, it is held, represent monetary compensation to offset the countervailing differences in working conditions. Hence, the wage difference represents a "compensating differential" that offsets the differential in working conditions.

There are two principal problems with this thesis. The first is that careful scrutiny reveals that many female-dominated occupations are associated with their own undesirable working conditions. Women's jobs are more likely to involve emotional stress and to require cleaning others' dirt, while men's jobs are more likely to involve working in hot or cold conditions and to require strenuous physical activity. People often assume that men's jobs involve more risk of injury due to working with machinery, but some women's jobs, such as nursing, involve risk due to lifting heavy patients and exposure to potentially serious illness through needle sticks.

The second difficulty is that neither male- nor female-dominated occupations necessarily receive a significant monetary bonus due to unfavorable working conditions. In a detailed study of working conditions, Jacobs and Steinberg (1990) found that unpleasant working conditions often lower rather than raise the wages associated with the job, as the compensating differentials thesis would predict.<sup>4</sup>

## EXPLAINING SEX SEGREGATION

Why do men and women work in different occupations? Polachek (1979) offered an economic explanation, suggesting that occupational sex segregation reflects the rational choices of individual men and women who seek to maximize their lifetime earnings. Because women tend to interrupt their careers, they would want to make as much as possible early in their careers in order to maximize their lifetime earnings. Given their expected pattern of discontinuous lifetime labor force participation, it would make sense for women to choose jobs that had higher initial wages but lower earnings trajectories than men's. The problem with this idea is that those working in female-dominated fields earn less at the outset than they

would if they had pursued employment in a male-dominated field (England 1982). Sex segregation thus produces low initial wages in female-dominated fields, which fall further and further behind male-dominated fields as workers' experience grows. The sex segregation of occupations thus cannot be attributed to the rational choices of women seeking to maximize their lifetime earnings.

Perhaps the most common explanation for occupational sex segregation is that women choose different occupations because they are socialized to prefer different types of work than men. For example, girls play with baby dolls and learn to take care of others, becoming elementary school teachers or nurses, while boys play with trucks and building blocks, becoming truck drivers and engineers. There is much personal experience and statistical evidence to support this view. Most adults can recall instances in which they were encouraged as children to conform to prevailing norms of gender-appropriate behavior, including encouragement to pursue gender-appropriate roles as adults. Nor is statistical evidence hard to find. For example, occupational aspirations of young men and women are roughly as segregated as the occupational structure (Jacobs 1989b; Marini and Brinton 1984). Thus, many researchers believe that sex-role socialization plays a crucial role in the reproduction of gender inequality in the workplace.

One problem with this view is that aspirations are not as stable as assumed. Occupational choices shift frequently and often cross sex-typed boundaries. In earlier research (Jacobs 1989b), I explored the strength of the connection between sex-typed aspirations and subsequent occupational choices. The great majority of young women change the specific occupation to which they aspire and, among these changers, there was little connections between early aspirations, later aspirations, and subsequent occupational choices. Similar patterns of mobility were found among college students, who frequently shift between male- and female-dominated majors, and in the labor force, where mobility between male- and female-dominated occupations is surprisingly common. Subsequent research has confirmed these patterns in the United States (Levine and Zimmerman 1995; Rosenfeld and Spenner 1995), but research conducted in the United Kingdom and Germany reports much lower levels of mobility (Chan 1999; S. Jacobs 1995; Blossfeld 1987).

A second problem with the socialization thesis is that it implies that change will occur only when a new generation, reared in a more egalitarian manner, replaces those currently in the labor force. Demographers call this process of change a "cohort replacement process," because a new generation (cohort) must gradually take the place of older individuals for change to occur. Yet change also occurs as individuals age, and not simply as a result of cohort replacement. Indeed, during the 1970s and 1980s, there was about as much change in occupational sex segregation experienced by cohorts as in the labor market overall. In other words, groups of women (and men) remain more adaptable during their careers than the socialization perspective would imply. People's attitudes are not set in stone but remain flexible in important respects. They appear to remain open to change as new opportunities arise.

Table 21.3 displays data on occupational sex segregation spanning the 1970s, 1980s, and 1990s by age group. It is evident from these results that there have been declines in sex segregation—not only among new entrants to the labor force but

**Table 21.3. Sex Segregation by Age Group,  
Based on Detailed Occupational Classifications**

Age group	1971	1981	1990	1997	1971-1997
16-24	67.4	59.4	57.5	54.2	-13.2
25-34	68.4	64.5	55.6	54.1	-14.3
35-44	66.9	62.7	57.4	56.8	-10.1
45-54	67.5	63.1	59.1	56.1	-11.4
54-64	68.2	64.1	62.6	59.6	-8.6
65+	64.1	63.2	68.0	64.1	0.0

*Note.* Measures reported are unstandardized indices of dissimilarity (D). Changes in detailed occupational classification make the 1971 results not strictly comparable to later figures.

*Source:* Current Population Surveys (1971, 1981, 1990, and 1997).

also for every age group through age 65, the typical retirement age. It is true that the changes have been largest for the youngest groups, but it is remarkable that there have been declines among older age groups as well.

These findings suggest that, at least in some respects, sex-role attitudes are not as firmly implanted in individuals' psyches as the socialization thesis assumes. As opportunities for women expanded, many women were willing to take advantage of them. Thus, despite significant attrition of women from male-dominated fields over the last three decades, there has been a net addition of women making midcareer moves into male-dominated fields.

Thus, socialization is not sufficient to account for sex segregation without taking into account discrimination by bosses and co-workers. I prefer to think of sex-role socialization as the early stages of the social controls that reinforce distinctions between men and women. Social pressures later in life, in school, and at work combine with socialization to form a lifelong system of social control. Continued pressure throughout the life course maintains gender distinctions in the labor force. When these pressures abate for a period of time, as they did in the 1970s and 1980s, evidence of change can be found throughout the life course.

Whereas most theories of sex segregation focus on one decisive life stage or causal factor, it seems to me that a multiplicity of forces contribute to the maintenance of sex segregation. I see sex segregation as a system of social control that endures from early childhood throughout individuals' careers. There are feedback loops from current to future segregation—it is hard for young individuals to see a sex-segregation system and not take that into account in forming their career plans. At the same time, the links between aspirations, education, and careers are slippery and imperfect in our country. Other countries, such as Germany, have much tighter connections between the early life decisions of students, their subsequent education, and their ultimate occupational destinations. Thus, in the United States, there is room for shifting, shuffling, and resorting for persons in the occupational systems, as well as for those about to enter it. At the same time, social pressure to conform to sex-appropriate norms does not end with early life socialization but continues throughout people's lives. Both employers and co-workers play a role both in limiting women's entry into, and speeding their exit from, male-dominated fields. The result is a system of sex segregation that has room for substantial

individual mobility but is nonetheless resilient enough to endure all but the most dramatic combinations of social and cultural changes.

The notion of social control strikes some researchers as overly deterministic, attributing too much power to society and depicting individuals as passive victims of societal forces beyond their control. This is probably not the place to try to resolve questions of social determinism and individual freewill, but a few points are in order that suggest that the social control thesis is not overly deterministic.

There are countless reasons individuals choose their career goals and myriad factors that determine where individuals end up in terms of the career goals they set for themselves and the positions they end up accepting. But these myriad factors should be random with respect to sex. In other words, while it is difficult or impossible to predict with any precision where a given individual will end up, one can draw stronger conclusions regarding the behaviors of larger groups. If the occupational destinations of men and women were strictly a matter of individual choice, one would expect that the idiosyncratic choices of large numbers of men and women would produce a great deal of overlap between these two groups. I interpret the tremendous deviation of the observed patterns from the expected similarity of men and women as indicating that powerful social pressures are leading men and women in different directions.

Another way to reconcile social control and individual initiative is to note that social control involves both sanctions and incentives. Social control discourages women from pursuing male-dominated fields but also encourages them to engage in traditionally female pursuits. When people say that they are pursuing their chosen field, they may well be right, but there is also a good chance that social factors played a large role in leading them to feel that this was the right choice for them.

A final consideration is that any complete theory of sex segregation needs to take into account the substantial mobility of individuals across sex-typed boundaries. This mobility suggests that individuals are not passively accepting their fate but are rather actively seeking out situations that fit their individual talents and proclivities. However, it is only during certain periods of dramatic social and economic change that these individual efforts cumulate into a change in the overall system of sex segregation. In other words, individuals acting in their own self-interest often end up perpetuating sex segregation. When women leave a male-dominated field because of pressure from co-workers, it represents individual agency and power but does not necessarily change the system.

Given this explanation of the continuity of occupational sex segregation, what conclusions might we draw for the analysis of labor markets? First, it should be clear that the labor market is not uniform by sex. Sex-typed jobs and occupations are not an isolated phenomenon but remain a defining feature of the employment system.

Second, labor market analysts would do well to analyze finely differentiated data on occupations and even job titles. Groupings such as professional or blue-collar jobs are unlikely to be informative with respect to gender differences, because sex segregation is high within these aggregations.

Third, the pool of individuals for any given occupation is rather wide. Early life socialization constrains the choices of men and women to some degree, but substantial mobility is evident throughout the life course. Thus, the pool of potential women recruits for a previously male-dominated field includes many women in traditionally female fields, since the analysis of mobility suggests that these individ-

uals may well pursue employment in male-dominated fields at some point during their careers.

### PROSPECTS FOR THE 21st CENTURY

It seems unrealistic to expect a rapid eradication of occupational segregation in the coming decades. While sex segregation has declined substantially since 1970, the rate of change appears to be slowing. During the 1990s, the principal declines resulted from shifts in the relative size of occupations rather than increased mixing of men and women within occupations. And after two decades of significant movement toward greater integration, the sex segregation of college majors has hit a plateau since the mid-1980s (Jacobs 1995). This has direct implications for the future gender integration of the professions and management positions in coming years. This trend has significant implications for gender integration in general, since the professional and managerial strata has been a major locus of gender integration in the labor force. Finally, in recent years the gender gap in wages appears to be leveling off again. This pessimistic prediction reflects the fact that basic organizational changes in society are needed in order to facilitate further progress for gender equality in the labor market. We are currently in a period of political retrenchment, in which bold new proposals are unlikely to gain serious attention. It will take another wave of reforms like those initiated during 1960s—changes that affect our political, cultural, social, and economic systems—to produce another major decline in occupational segregation.

While the broad outlines of sex segregation remain clear, there is much additional room for research on the processes that produce and maintain sex segregation. Specifically, it would be useful to have more research on specific occupations, on comparative patterns across countries, on the reasons for the low pay of women's work, on the processes of occupational segregation and integration, and on the formation and change in occupational aspirations. Since sex segregation is likely to persist for many years, this topic will be of enduring interest to scholars interested in understanding gender inequality in the labor market.

### NOTES

1. Several of the themes developed here are drawn from the paper "Sex Segregation at Work: A Critical Appraisals of Theories and Evidence," in *Handbook of Gender in Organizations*, edited by Gary Powell. Thousand Oaks, CA: Sage Publications, 1999.
2. Another approach, decomposition, is designed to achieve the same objective. This technique divides changes into a component due to occupational shifts and a component due to changes in the level of integration within occupations. See Blau and Hendrick (1979) for an application.
3. The measure of men's earning is the logit transformation of the proportion of men earning \$14.30 per hour or more, and the measure of men's education is the logit transformation of the proportion of men with 1 year or more of college education.

## REFERENCES

- Argmann, Barbara. 1986. *The Economic Emergence of Women*. New York: Basic Books.
- Brinchi, Suzanne M. 1995. "The Changing Economic Roles of Women and Men." Pp.107-154 in *State of the Union: America in the 1990s, Vol. 1*, edited by Reynolds Farley. New York: Russell Sage Foundation.
- Blau, William T. and James N. Baron. 1984. "A Woman's Place Is with Other Women: Sex Segregation." Academy Press.
- Bu, Francine D. and Wallace E. Hendricks. 1979. "Occupational Segregation by Sex: Trends and Prospects." *Journal of Human Resources* 14(2):197-210.
- Cassfeld, Hans-Peter. 1987. "Labour Market Entry and the Sexual Segregation of Careers in the Federal Republic of Germany." *American Journal of Sociology* 93(1):89-118.
- Chan, Tak Wing. 1999. "Occupational Sex Segregation over the Life Course." *American Sociological Review* 64(1):86-98.
- Chatter, David A., JoAnn M. DeFiore, Joan M. Hermsen, Breda M. Kowalewski, and Reeve Vanneman. 1995. "Occupational Gender Segregation and the Earnings Gap: Changes in the 1980s." *Social Science Research* 24:439-54.
- Chatter, David A., JoAnn M. DeFiore, Joan M. Hermsen, Breda M. Kowalewski, and Reeve Vanneman. 1997. "All Women Benefit: The Macro-Level Effect of Occupational Integration on Gender Earnings Inequality." *American Sociological Review* 62:714-734.
- Claworth, F. Y. 1922. "Equal Pay to Men and Women." *Economics Journal* 32:431-457.
- Goldman, Paula. 1982. "The Failure of Human Capital Theory to Explain Occupational Sex Segregation." *Journal of Human Resources* 18:358-370.
- Goldman, Paula, Melissa S. Herbert, Barbara S. Kilbourne, L. L. Reid, and L. M. Medgal. 1994. "The Gendered Valuation of Occupations and Skills: Earnings in 1980 Census Occupations." *Social Forces* 73(1):65-99.
- Goldman, Paula and Steven McLaughlin. 1979. "Sex Segregation of Jobs and Male-Female Income Differentials." Pp. 189-213 in *Discrimination in Organizations*, edited by R. Alvarez, K. Lutterman, and Associates. San Francisco: Jossey-Bass.
- Goldman, Betty. 1963. *The Feminine Mystique*. New York: W. W. Norton.
- Goldman, Claudia. 1990. *Understanding the Gender Gap*. New York: Oxford University Press.
- Grinnick, Janet C. and Jerry A. Jacobs. 1998. "Gender, the Welfare State, and Public Employment: a Comparative Study of Seven Industrialized Countries." *American Sociological Review* 63(5):688-710.
- Husky, David B., and Maria Charles. 1998. "The Past, Present, and Future of Sex Segregation Methodology." *Demography* 35(4):497-504.
- Huser, Robert M. and John H. Warren. 1997. "Socioeconomic Indexes for Occupations: A Review, Update and Critique." *Sociological Methodology* 27:177-298.
- Goldman, Jerry A. 1989a. "Long Term Trends in Occupational Segregation by Sex." *American Journal of Sociology*
- Goldman, Jerry A. 1989b. *Revolving Doors: Sex Segregation and Women's Careers*. Stanford, CA: Stanford University Press.
- Goldman, Jerry A. 1993. "Theoretical and Measurement Issues in the Study of Sex Segregation in the Workplace." *European Sociological Review* 9(3):325-330.
- Goldman, Jerry A. 1995. "Gender and Academic Specialties: Trends among Recipients of College Degrees during the 1980s." *Sociology of Education* 68(2):81-98.
- Goldman, Jerry A. and Ronnie Steinberg. 1990. "Compensating Differentials and the Male-Female Wage Gap: Evidence from the New York State Comparable Worth Study." *Social Forces* 69(2):439-468.
- Goldman, Sheila C. 1995. "Changing Patterns of Sex Segregation Occupations throughout the Life-Course." *European Sociological Review* 11(2):157-171.
- Goldman, Phillip B. and David J. Zimmerman. 1995. "A Comparison of the Sex-Type of Occupational Aspirations and Subsequent Achievement." *Work and Occupations* 22(1):73-84.



- Parcel, Toby. 1989. "Comparable Worth, Occupational Labor Markets, and Occupational Earnings: Results from the 1980 Census." Pp. 134-152 in *Pay Equity: Empirical Inquiries*, edited by Robert T. Michael, Heidi I. Hartmann, and Brigid O'Farrell. Washington, DC: National Academy Press.
- Petersen, Trond and Laurie A. Morgan. 1995. "Separate and Unequal: Occupation Establishment Sex Segregation and the Gender Wage Gap." *American Journal of Sociology* 101(2):329-365.
- Polachek, Solomon. 1979. "Occupational Segregation among Women: Theory, Evidence, and a Prognosis." Pp. 137-157 in *Women in the Labor Market*, edited by Cynthia B. Lloyd, Emily S. Andrews, and Curtis L. Gilroy. New York: Columbia University Press.
- Reskin, Barbara F. and Patricia A. Roos. 1990. *Job Queues, Gender Queues: Explaining Women's Inroads into Male Occupations*. Philadelphia: Temple University Press.
- Rosenfeld, Rachel A. and Kenneth I. Spenner. 1995. "Occupational Sex Segregation and Women's Early Career Job Shifts." Pp. 231-258 in *Gender Inequality at Work*, edited by Jerry A. Jacobs. Thousand Oaks, CA: Sage.
- Ross, Catharine E. and John Mirowsky. 1996. "Economic and Interpersonal Work Rewards: Subjective Utilities of Men's and Women's Compensation." *Social Forces* 75(1):223-246.
- Scharf, Lois. 1980. *To Work and to Wed: Female Employment, Feminism and the Great Depression*. Westport, CT: Greenwood Press.
- Sorensen, Elaine. 1989. "Measuring the Effect of Occupational Sex and Race Composition on Earnings." Pp. 49-69 in *Pay Equity: Empirical Inquiries*, edited by Robert T. Michael, Heidi I. Hartmann, and Brigid O'Farrell. Washington, DC: National Academy Press.
- Steinberg, Ronnie J. 1990. "The Social Construction of Skill: Gender, Power and Comparable Worth." *Work and Occupations* 17(4):449-482.
- Tomaskovic-Devey, Donald. 1995. "Sex Composition and Gendered Earnings Inequality: A Comparison of Job and Occupational Models." Pp. 23-56 in *Gender Inequality at Work*, edited by Jerry A. Jacobs. Thousand Oaks, CA: Sage.
- Warren, John R., Jennifer T. Sheridan, and Robert M. Hauser. 1998. "Choosing a Measure of Occupational Standing: How Useful Are Composite Measures in Analyses of Gender Inequality in Occupational Attainment?" *Sociological Methods and Research* 27(1):3-76.
- Watts M. 1998. "Occupational Gender Segregation: Index Measurement and Econometric Modeling." *Demography* 35(4):489-496.
- Weeden, Kim A. 1998. "Revisiting Occupational Sex Segregation in the United States, 1910-1990: Results from a Log-Linear approach." *Demography* 35(4):448-475.