Chapter 7

The Sex Segregation of Occupations

Prospects for the 21st Century

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Men and women work in different jobs, and often do so in different organizations. The differing distribution of men and women across positions within the occupational structure may be referred to as the "sex segregation" of occupations. The term *segregation* may be more familiar in the context of residential segregation by race and ethnicity, but there are a number of analogies that may be made between residential segregation and occupational segregation. The same statistical measures are used in both cases, and some of the theoretical explanations of both phenomena resonate.

Sex segregation remains a defining element of the American occupational structure. It is pervasive, although it has declined somewhat in recent years. The composition of incumbents in a position, whether they are male or female, helps define choices for women and men. The concentration of women in low-paying, female-dominated occupations also contributes to the earnings gap between women and men.

This chapter outlines the multiple facets or dimensions of segregation. A simple example is presented along with the formulas used to calculate various measures of segregation so that interested readers can calculate these indexes

for themselves. Issues of measurement are discussed, followed by a presentation of data on recent trends in segregation in the United States. Subsequent sections consider international comparisons, the gender gap in earnings, and the causes of sex segregation. The conclusion includes a discussion of the prospects for sex segregation in the 21st century.

Multiple Facets of Segregation

There are at least three distinct aspects of sex segregation (Jacobs, 1993; Massey & Denton, 1989). 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 the United States 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 below suggest that a new equilibrium level may be emerging 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. The size-standardized measure 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 size-standardized measure 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?"[1]

A second feature of sex segregation is the crowding of women into a limited number of fields. This aspect is not directly captured by the index of dissimilarity, and requires the use of specific indexes of concentration, designated C, for concentration or crowding.[2] I use the measure RC to describe the "relative crowding" of one group versus another.

Crowding is important for two reasons. First, crowding is an indication of the extent of opportunities for women. Although all occupations are now formally open to both men and women, some fields, such as engineering, remain de facto male preserves. The concentration of a great majority of women into a handful of fields would be one indication of the pervasiveness of social restrictions on women. For example, in 1960 almost half of women receiving bachelor's degrees did so in one field, namely, teaching. Over 75% of women received their degrees in one of six fields: English, fine arts, history, home economics, nursing, and teaching (J. A. Jacobs, 1995). (Friedan's 1963

discussion of the constraints on women college students during this period remains instructive.) Their male counterparts were more widely dispersed across the range of specialties, with no single field garnering as much as 20% of male degree recipients. At that time, women were crowded into a few fields, thus effectively limiting their range of choices.

A second reason to examine the dispersion of men and women across fields is that the financial potential of a field is influenced by the relationship between supply and demand. Edgeworth (1922) argued that women earned less than men in part because they were crowded into a limited number of fields. The issue of crowding is also discussed by Bergmann (1986) and Parcel (1989). Restricting women to a narrow set of jobs approved of as "women's work" can produce an excess supply of women for these occupations, thus limiting women's bargaining power and lowering their wages. The extent to which women are crowded into a few fields of study is one indication of the potential economic returns to their educations. The evidence provided by this measure is necessary, but not sufficient, proof of crowding, because it does not directly compare the number of degrees to the demand for talent in different fields.

A third aspect of segregation is the degree of intergroup contact, in other words, the chances of men and women sharing an occupation. This measure indicates the probability of interaction on the job. The intergroup contact index—designated P* by Lieberson (1980)—reflects both the level of segregation and the representation of each group. Moreover, women's chances of sharing an occupation with men differ from men's chances of sharing a field with women. One striking result of the growth in women's labor force participation is that women's chances of sharing an occupation with men has declined (as working women's numbers increase, women's chances of sharing an occupation with another woman increase) while men's chances of sharing an occupation with women has increased markedly. The two groups thus differ in how they experience the same changes, an aspect of segregation revealed by measures of intergroup contact.

Those interested in calculating these statistics may find Table 7.1 helpful. Table 7.1 provides a simple example of occupational segregation using hypothetical data. The formulas for the measures just described (see appendix) as well as results are provided, so that all who are interested can check the accuracy of their calculations and computer programs. In this hypothetical case, there are five occupations that range from 10% female to 100% female, and there are twice as many employed men as women. Just under half (45.0%) of women would have had to change occupations to be distributed in the same manner as men. Nursing is the most segregated occupation but also is the smallest. Thus, the size-standardized index of segregation measure is larger than the unadjusted one (52.81 vs. 45.00), because standardizing for size gives the case of nursing relatively more importance in the overall calculation. Men are quite likely to share their occupation with other men (P*MM = 74.66),

TABLE 7.1 Hypothetical Data

Occupation	No. of Men	No. of Women	M_i/M	W_i/W	% Female[a]	% Male[a]
Carpenters	90	10	45	10	10.0	90.0
Lawyers	60	20	30	20	25.0	75.0
High school teachers	40	40	20	40	50.0	50.0
Sociologists	10	20	5	20	66.7	33.3
Nurses	0	10	0	10	100.0	0.0
Total	200	100	100	100	251.0[b]	248.3[b]
D (index of dissimilarity)				45.00		
SSD (size-standardized index of dissimilarity)				52.81		
P*WW (women's chances of sharing an occupation with another woman)				49.33		
P*MM (men's chances of sharing an ccupation with another man)				74.66		
RC (relative crowding) (women – men)				-15.00		

a. These columns represent PF_i and PM_i, respectively.
b. These figures represent the sum of PF_i and PM_i, respectively.

but women are almost equally likely to have male or female coworkers (P*WW = 49.33). That disparity results from the numerical predominance of men in the labor market. In this example, men are somewhat more crowded into a limited set of occupations than are women (RC = –15.0), because nearly half of men work in one field, namely, carpentry. Thus, we need to employ several complementary measures to understand the varied facets of occupational segregation.

Measuring Sex Segregation: The More Detail the Better

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. Although this representation is satisfactory for some purposes, it captures only a small portion of segregation by sex. That is 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, whereas 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

TABLE 7.2 Occupational Distributions of Men and Women, 1997, in 10 Major Occupational Groupings

Occupation	% of Workers		
	Men	Women	% of Females
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 (index of dissimilarity)			33.65
SSD (size-standardized index of dissimilarity)			41.73
P*WW (women's chances of sharing an occupation with another woman)			59.35
P*MM (men's chances of sharing an occupation with another man)			59.27
RC (relative crowding) (women – men)			19.22

SOURCE: Data for the 10 occupational groupings are from the March 1997 Current Population Survey (U.S. Department of Commerce, 1997b).

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 work, Bielby and Baron (1984) showed that when job-level data were scrutinized, many firms approached 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% of bakers are men does not fully capture the true level of gender differentiation within this field.

The results presented in Tables 7.2 and 7.3 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 estimates of labor force trends available. The top panel of results

TABLE 7.3 Measures of Segregation, 1990-1997, Based on Detailed (3-Digit) Occupational Classifications

Measure	1990	1997
D (index of dissimilarity)	56.4	53.9
SSD (size-standardized index of dissimilarity)	59.6	60.1
P*WW (women's chances of sharing an occupation with another woman)	69.1	67.8
P*MM (men's chances of sharing an occupation with another man)	71.5	70.4
RC (relative crowding) (women – men)	9.6	8.2

SOURCE: Current Population Survey, 1990 and 1997 (U.S. Department of Commerce, 1997b, and earlier versions in the same series).

displays the percentage of men and women in each of 10 broad occupational groupings. Some of these patterns are no doubt familiar: Women represent the majority of workers in clerical and retail sales positions, whereas 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%) of professionals and that women have nearly reached parity with men in managerial positions. Women represent 44.6% of managers, which is just short of their 46.7% 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 7.2, then just over one-third (33.7%) 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 (in Table 7.3) that over half of women (53.9%) would have to change occupations 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) conducted a survey of employees in North Carolina that included information about respondents' job titles and 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.

Recent Trends in Sex Segregation in the United Stat

In 1997, just over half of women would have had to change (U.S. census detailed) occupations to be distributed in the same manner as men (see Table 7.3). The index of segregation was 53.9 in 1997, which means that 53.9% of women would have had to relocate 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 some 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 drivers 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 7.3 is that the size standardized 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 relatively integrated fields, rather than to changes in the sex composition of specific fields.

Which fields grew and which declined? The more integrated occupational groups—professionals, technical workers, managers, 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 size-standardized 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

TABLE 7.4 Sex Segregation by Educational Level, Based on Detailed Occupational Classifications, 1971-1997

Educational Level	*1971*	*1981*	*1997*	*1971-1997*
Less than high school	68.7	62.7	56.9	-11.8
High school graduate	65.6	62.9	60.7	-4.9
Some college	68.2	59.9	57.3	-10.9
College graduate	64.9	49.7	44.9	-20.0
Some postgraduate	61.5	42.0	43.7	-17.8

SOURCE: Current Population Surveys, 1971, 1981, and 1997 (U.S. Department of Commerce, 1997b, and earlier versions in the same series).
NOTE: Measures reported are unstandardized indexes of dissimilarity (D). Changes in detailed occupational classification make the 1971 results not strictly comparable to later figures.

produced by the growth of relatively integrated industries such as services and the decline of relatively segregated sectors such as manufacturing.

Intergroup contact measures indicate that both men and women typically share their occupation with other members of the same sex. Despite the fact that women represent 46% of the labor force, the average man is employed in an occupation with 70% men (P*MM = 70.4). Women typically find themselves in occupations where two out of three coworkers are women (P*WW = 67.8). There were slight increases in contact between men and women at work as the levels of segregation declined during the 1990s.

Women remain crowded in a more limited set of occupations than men (RC = 8.2 in 1997). However, there are good reasons to be cautious about this conclusion because men's occupations tend to be reported in more detail than women's occupations. If that were the case, the difference in concentration could be an artifact of the categories employed in the CPS data, rather than a true reflection of the range of choices made by men and women.

Table 7.4 provides estimates of segregation by sex within educational groups over three decades.[3] As recently as 1971, sex segregation was essentially evenly distributed by educational levels. At that time, there was nearly as much segregation between men and women with similar educational levels as there was in the labor force as a whole. Indeed, one may understand the historical emergence of occupational segregation in part as a response to the high levels of education attained by women. Segregation between many groups in society is often accomplished via the ostensibly neutral criterion of education: By limiting access to individuals with specific educational credentials, many with limited educational credentials are shut out. But the problem with men using this strategy against women is that women have had high levels of educational credentials for decades. Thus, the sex typing of occupations is needed to supplement selection based on educational credentials.

Since the early 1970s, declines in sex segregation have occurred most rapidly in the professions and management. The index of dissimilarity declined 20.0 points for college graduates, compared with 11.8 points for those without a high school degree. This development in part reflects important changes that have occurred in higher education. In 1960, women pursued teaching above all other fields of study as undergraduates, and few women went on to graduate and professional school. By 1985, business was the leading field of study for women obtaining bachelor's degrees, and women entered law school and other professional schools in steadily increasing numbers (J. A. Jacobs, 1995). The entry of women into the professions and managerial positions in part stems from this transformation in the type of education women have obtained. Thus, there is a kernel of truth in the popular view that women have gained an important place in the nation's professions.

International Comparison

Sex segregation is high in many countries throughout the world, but precise comparisons are difficult because it is hard to obtain data from different countries that use comparable, detailed occupational coding systems. Studies that have been done have typically relied on a high degree of aggregation in occupations, and consequently uncertainty remains about what the relative standing of different countries would be if detailed and comparable measures were available.

Some international studies have been cross-sectional, whereas others have conducted longitudinal analyses. Cross-sectional studies show variations across countries, but suffer from uncertainty about the comparability of occupational coding schemes across countries (Charles, 1992). Longitudinal analyses avoid much of these difficulties by focusing on change in individual countries (Jacobs & Lim, 1992).

Yet international comparisons may be instructive in many respects. Some have suggested that countries with low levels of sex segregation do not necessarily exhibit gender equality in wages and, conversely, that nations with high levels of segregation sometimes have a smaller gender gap in wages. Japan represents the first case. Measures of occupational segregation in Japan are lower than in many other industrial countries (Brinton & Ngo, 1993),[4] whereas the gender gap in wages is quite high. In Sweden, sex segregation is relatively high but the gender gap in wages is small.

Blau and Kahn (1992) explain this paradox by calling attention to the way the overall structure of wages affects the earnings gap between men and women. They suggest that countries with limited wage dispersion favor women. Because women tend to be concentrated at the lower end of the wage spectrum, those countries where the bottom tail of the wage curve is compressed tend to exhibit a smaller gender gap in wages. Blau and Kahn's thesis helps to explain why the gender gap in wages in Sweden is relatively low despite the high levels of occupational sex segregation in the labor market. The compressed wage distribution in these countries brings up women's wages

relative to men's, and more than compensates for the high degree of occupational differentiation by sex. Blau and Kahn's analysis of the wage structure reminds us that we should not focus on the effects of occupational segregation in isolation. It also reminds us that the structure of the labor market may be as important to study as individual attributes associated with personal choices. New research on the impact of sex segregation on wages, discussed below, further reinforces this conclusion.

Gornick and Jacobs (1998) discuss the role of government employment as it influences opportunities for working women. In most industrial countries, women are overrepresented in government employment, yet the size of the public sector varies substantially from country to country. In some countries, such as Sweden, most women work in the public sector, whereas in other countries, such as the United States, government employment represents a modest fraction of the labor force. Cross-national analyses indicate marked variation across liberal, conservative, and social democratic welfare states in the size of the government sector and its impact on women workers, but reveal a number of uniformities as well. Gornick and Jacobs report that public sector workers earn more, on average, than those working in the private sector in most countries in their sample and that most of the public sector earnings advantages are concentrated in the lower end of the earnings distribution. Yet the effect of public employment on the overall gender gap in earnings is limited in most countries. This occurs because those countries where the government sector is the largest and thus has the most potential to affect the wages of women have the lowest public sector wages, relative to the private sector. There appears to be a trade-off between a small public sector with good wages and a large public sector with lower wages.

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, DeFiore, Hermsen, Kowalewski, and Vanneman (1995), concludes that the effect of occupational segregation on earnings in the United States has declined. She suggests that only 14% of the sex gap in wages is now due to occupational segregation by sex (Bianchi, 1995, p. 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% of the gender gap in wages was due to the sex segregation of occupations, and another 16% was due to the sex segregation of industries. The combined effect, 36%, 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 above, 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 & 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, DeFiore, Hermsen, Kowalewski, and Vanneman (1997a) 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 a more traditional female-dominated profession. 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; Edgeworth, 1922; Parcel, 1989). The analysis discussed above by Cotter et al. (1997a) suggests that restricting women to female-dominated occupations not only reduces wages in these occupations but reduces women's earnings in male-dominated fields as well.

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 is held to be of marginal value (Steinberg, 1990). Occupations that score high on such feminine values as nurturance are not accorded additional compensation but, instead, are devalued and are accorded low wages (England, Herbert, Kilbourne, Reid, & Medgal, 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 undesirable working conditions. Women's jobs are more likely to involve emotional stress and to require cleaning others' dirt, whereas 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 is that neither male-dominated nor female-dominated occupations necessarily receives 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 lowered the wages associated with the job, rather than raising them as the compensating differentials thesis would predict.[5]

Explaining Sex Segregation

Why do men and women work in different occupations? Polachek (1979) offered an economic explanation. He suggested that occupational sex segregation reflects the rational choices of individual men and women seeking to maximize their lifetime earnings. Because women tend to interrupt their careers, they want to make as much as possible early in their careers to maximize their lifetime earnings. Given their expected pattern of discontinuous lifetime labor force participation, it would make sense to choose jobs that had higher initial wages but lower earnings trajectories than would men. The problem with this idea is that those working in female-dominated fields earn less at the outset than they would have if they 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 wages in 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 from men. For example, girls play with baby dolls and learn to take care of others, becoming elementary school teachers and nurses, and 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 and to pursue gender-appropriate roles as adults. Statistical evidence is not hard to come by as well. For example, occupational aspirations of young men and women are roughly as segregated as the occupational structure (Jacobs, 1989b; Marini & Brinton, 1984). Thus, many 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 connection between early aspirations, later aspirations, and subsequent occupational choices. Similar patterns of mobility were found among college students, who frequently shift between male-dominated and female-dominated majors, and in the labor force, where mobility between male-dominated and female-dominated occupations is surprisingly common. Subsequent research has confirmed these patterns in the United States (Levine & Zimmerman, 1995; Rosenfeld & Spenner, 1995), but research conducted in the United Kingdom and Germany reports much lower levels of mobility (Blossfeld, 1987; S. C. Jacobs, 1995).

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 there was 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. People appear to remain open to change as new opportunities arise.

Table 7.5 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 just among new entrants to the labor force but 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 at the older ages 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, there were many women willing to take advantage of them. Thus, despite significant attrition of women

TABLE 7.5 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

SOURCE: Current Population Surveys, 1971, 1981, 1990, and 1997 (U.S. Department of Commerce, 1997b, and earlier versions in the same series).
NOTE: Measures reported are unstandardized indexes of dissimilarity (D). Changes in detailed occupational classification make the 1971 results not strictly comparable to later figures.

from male-dominated fields, over the past 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 coworkers. 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 contributes 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 may be slippery and imperfect. However, in countries such as Germany, there are tight connections between the early life decisions of students, their subsequent education, and their ultimate occupational destinations. In the United States, there is room for shifting, shuffling, and resorting for those in the occupational systems as well as 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. The result is a system of sex segregation with room for substantial individual mobility but that is nonetheless resilient enough to endure all but the most dramatic combination of social and cultural changes.

Prospects for the 21st Century

I expect significant levels of occupational segregation to persist in the early decades of the 21st century for several reasons. The rate of decline in occupational segregation appears to be slowing. During the 1990s, the principal declines resulted from shifts in the relative size of occupations, rather than an increased mixing of men and women within occupations. And after two decades of steep declines, the sex segregation of college majors has hit a plateau since the mid-1980s (J. A. Jacobs, 1995). As a result, I expect to see the rate of gender integration of the professions and management positions slow in coming years. Because the professions and management have been a major locus of gender integration in the labor force, this trend does not bode well for future gender integration. 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 to facilitate further progress for gender equality in the labor market. We are currently in a period of political retrenchment, with bold new proposals unlikely to gain serious attention. It will take another wave of reforms like those initiated during the 1960s—changes that affect our political, cultural, social, and economic systems—to produce another major decline in occupational segregation.

Although 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. Because 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.

Dedicated to *Tony Butterfield*—
my great mentor, collaborator, colleague, and friend

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