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# Sex Structure of Occupations and Job Mobility\*

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## ABSTRACT

*Despite the differences in the mean levels of occupational attainments of men and women over the life cycle, men and employed women attain the same mean level of occupational attainment at mid-life and do so through quite similar processes. Although human capital theory is helpful in understanding differences in mean levels of occupational attainment over the life cycle for men and women, it cannot explain why women's occupational attainments are minimally affected (if at all) by labor force interruptions. To account for the above findings, we develop explanations concerning the effects of labor market structure on occupational achievement, derived from the literature on occupational segregation by sex and dual labor market theory. For this explanation to be useful, two propositions derived from it must be true: (1) female occupations are easier to reenter after labor force interruptions; and (2) female occupations tend not to be stepping stones upward in the occupational structure, at least for women. Using log-linear analysis, we test these propositions utilizing 1970 Census data.*

Research on occupational attainment has largely neglected the potential effects of characteristics of labor market structure on individual's achievements. Rather, sociologists have been concerned with the effects of individual characteristics and experiences at different points in the life cycle on subsequent occupational attainments. Aspects of labor market structure can potentially explain some inconsistent findings in studies of sex differences in occupational attainment, that cannot be adequately explained by individual characteristics. In this paper, we present the paradoxical

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findings on sex differences in occupational attainment for which we offer explanations based on the effects of labor market structure on occupational attainment. We then test two propositions derived from these structural explanations to account for these findings.

Research on sex differences in occupational attainment indicates that employed men and women (wives) attain the same mean level of occupational status and do so through quite similar processes (Featherman and Hauser; McClendon; Treiman and Terrell, a), although there are marked differences between the sexes in patterns of occupational achievements over the life cycle. Studies to date show that, on the average, men's occupational status increases over their work lives, with the greatest increases occurring early in their careers as they move through a series of progressively better jobs (Duncan et al.; Ornstein and Rossi; Sørensen); whereas, women remain at essentially the same mean level of occupational status (prestige) at different life cycle stages (Rosenfeld; Wolf). The finding of no sex differences in status attained by some particular point in time (usually mid-life), then, coexists with the finding of differences in mean occupational attainments of the sexes over the life cycle.

A potential explanation based on individual characteristics for sex differences in mean attainments over the life cycle can be found in human capital theory (Mincer; Mincer and Polachek; Thurow, a). Economists have found some evidence to support the hypothesis that differences between men and women in the length and continuity of their employment account for some of the differences in wages between the sexes (Mincer and Polachek corrected by Sandell and Shapiro). Assuming that persons generally change jobs to obtain higher monetary rewards to their increased human capital, it is logical to reason that changes in status (prestige) which result from such job changes also measure returns to human capital (Sørensen). Although patterns of mean occupational status of the sexes over the life cycle are consistent with the hypothesis that differences in status achievement result from differences in human capital accumulation (as indexed by extent of employment), further investigation indicates that women's occupational status (mobility) is only minimally affected (if at all) by their extent and patterns of employment experience (Rosenfeld; Wolf). Thus, despite the fact that human capital theory is able to predict the same mean occupational attainments over the life cycle as are observed empirically, it appears that differential employment experience (and concomitant increases in human capital) have little to do with it.<sup>1</sup> Human capital theory is also not helpful in explaining the lack of sex differences found in most cross-sectional studies.

We, thus, need to find a further explanation for the sex differences in mean occupational status attainments over the life cycle as well as for the fact that the levels of occupational attainments of women at different points in the life cycle are not particularly responsive to employment

experience. This explanation must be consistent with the findings of sexual equality in occupational status attainment at one point in time.

### Structural Explanations

The research discussed thus far has focused on how individual characteristics and experiences affect occupational attainment. The fact that the extent of employment experience has little impact on the occupational attainments of women suggests that structural characteristics of the labor force may impede or obstruct the effects of individual characteristics on occupational achievements. From the literature on occupational segregation by sex and dual labor market theory we develop an explanation to account for these findings by showing how characteristics of the labor market structure could affect mobility into the labor force and occupational status mobility within it.

The extent and stability of sex segregation in the United States labor force has been well documented (Ferriss; Oppenheimer; Sweet; Treiman and Terrell, b). Women tend to be highly concentrated in a small number of predominantly female occupations. More specifically, women are disproportionately employed in clerical, semi-professional, and service occupations. These occupations tend to have relatively high status (since they tend to be white-collar occupations), require that fairly high levels of education and training be brought to the job, demand little career continuity and commitment of their incumbents, and offer relatively low pay and chance for advancement (Oppenheimer). Since female occupations tend to require general training before employment, rather than on-the-job training, these general skills should be easily transferable to different firms, industries, or geographical areas. Because of this, female occupations should be easy to reenter after interruptions in employment. The low career commitment required of incumbents in female jobs coupled with limited need for on-the-job training (Mincer) may result in a lack of upward mobility for most female incumbents of these occupations.<sup>2</sup> Thus, the trade-off for ease of reentry to female occupations after labor force interruptions is likely to be a lack of opportunity for upward occupational mobility. If this were the case, it could explain why increased amounts of employment experience do not affect substantial increments in occupational status for women.

The literature on occupational segregation by sex does not provide an adequate theoretical rationale for the hypothesis that female occupations offer little chance for upward occupational mobility. Additional theoretical justification for this hypothesis can be derived from the discussions of labor market stratification by dual labor market theorists.

Doeringer and Piore, Edwards et al., and Gordon, among others,

propose that the labor market consists of internal labor markets (primary sector) and secondary labor markets.

Jobs in the primary market possess several of the following characteristics: high wages, good working conditions, employment stability, chances of advancement, equity and due process in the administration of work rules. Jobs in the secondary market, in contrast, tend to have low wages and fringe benefits, poor working conditions, high labor turnover, little chance of advancement, and often arbitrary and capricious supervision (Doeringer and Piore, 165).

Doeringer and Piore make the further distinction within the primary sector between enterprise and craft markets. In part because of the specificity of skills and on-the-job training required by jobs in primary labor markets (more specifically in enterprise internal labor markets)<sup>3</sup> employers want to fill these jobs with stable, labor force committed workers (Doeringer and Piore). Statistical discrimination is one relatively inexpensive way to screen out those who have unreliable and intermittent work patterns (Phelps; Thurow, b). If persons with certain demographic characteristics are known to have generally low labor market attachment (e.g., women, blacks, teenagers), then all members of such groups may be barred from jobs which lead to sets of jobs allowing on-the-job training, job security, and upward mobility. Many of those channeled into secondary labor markets may have the behavioral characteristics (such as lack of commitment to employment) which are the bases for the statistical discrimination. Some will not, but their individual characteristics will not affect their chances for advancement, given the structure of the labor market. Doeringer and Piore, and Gordon further argue that since there is little inter-sector mobility over one's career (except perhaps for white males) and since minorities and women tend to begin their careers in the secondary labor market (Gordon), it is likely that women (and therefore the majority of women's jobs) are highly concentrated in the secondary sector.

Of course, it is possible that some of the channeling of persons into the secondary sector occurs because the employee chooses such jobs, rather than simply being screened from the primary sector by employers. For example, women may choose to be in the secondary sector (or craft markets) because they perceive occupations in these sectors as easy to reenter after labor force interruptions. The point of the structural argument is that regardless of how people end up in the secondary sector (or craft markets), once there, their chances for advancement will be limited and unrelated to variations in their employment experience.

The degree to which female occupations are concentrated in the secondary sector of the labor market is not well established (cf. Gordon, and Blau and Jusenius for discussions of this issue). Although most dual labor market theorists tend to argue that women (and women's jobs) often get allocated to the secondary sector through statistical discrimination, we

argue that a more correct statement is that women, through statistical discrimination, tend to be excluded from enterprise internal labor markets, since these markets rely so heavily on the high labor market stability of their workers. We argue that many female occupations could be in craft labor markets if one is willing to conceive of craft labor markets more generally than Doeringer and Piore do. Craft markets could be those markets where training is brought to the job, skills are not specific to firms, there is little on-the-job training, the market includes a large geographic area (or nation), and there is not much likelihood of occupational advancement. By stressing the aforementioned characteristics rather than union control over entrance into the sector and job allocation within it when defining which jobs belong in craft internal labor markets, many female occupations—in particular the female semi-professions—would tend to be in craft markets. Using this broader definition of craft markets, women's occupations would tend to be concentrated in craft internal labor markets and the secondary sector, and excluded from enterprise internal labor markets.

This allocation scheme would have implications for occupational mobility by sex. One would expect occupational stability within craft markets, mobility into and out of the labor force and between jobs without large increases in status in the secondary sector, and upward mobility within a specific job cluster in enterprise markets, a segment of the labor force from which women and women's occupations tend to be largely excluded. Thus, our refinement of dual labor market theory suggests that women's occupations (and, therefore, a large majority of women) are excluded from the sector of the labor market where there are chances for upward mobility.

Consequently, the finding that women's occupational attainments are not responsive to the extent of employment experience could be explained by the fact that female occupations are easy to reenter after labor force interruptions and that female occupations offer little chance for upward mobility regardless of the individual's labor force history, since women's occupations tend to be concentrated in secondary or craft markets. Furthermore, the segregation of women into selected occupations may explain the cross-sectional findings of sex similarities in occupational attainments. Men are more likely than women to fill both highest- and lowest-status positions, while women are more likely to be concentrated in the "respectable," white-collar, middle-level positions (cf. Wolf and Fligstein for empirical evidence on this point). On the average, then, status is about the same by sex, though the variation in status is somewhat greater for males. Further, since general education is useful for entrance to the clerical and semi-professional jobs in which women predominate, women receive status returns to their education at about the same rate as men.

If this argument concerning the effects of occupational segregation

by sex to successfully explain the paradoxical findings on sex differences in occupational attainment, two propositions derived from the literature on sex segregation of the occupational structure must be confirmed empirically. The first proposition is that female occupations are easier than other occupations to reenter after a period of absence from the labor market because of the transferability of the general skills required for entrance to these occupations. Second, job shifts within the female sector tend not to lead to upward occupational status mobility, while shifts from the female sector or within and between other types of occupations will tend to result in higher status. These two propositions are tested in this paper. If these two hypotheses are found to be true then we will feel more confident that structural aspects of the labor market can help to explain why women tend to attain the same mean level of occupational attainment at different points in the life cycle, regardless of employment experience, and are minimally affected by career contingencies.

### **Data and Methodology**

Data from the 1970 Census of the U.S. Population are used to study these questions. From a one in one-thousandth sample of the Public Use Sample (state), we selected records of those persons who were white, between the ages of 25 and 64 in 1970, not in school or in the military in 1965 or 1970, not permanently disabled in 1970, and not in an allocated occupational category in 1965 or 1970. In other words, the sample which provides data for our analyses consists of white adults who were potentially in the civilian labor force in both 1965 and 1970. Those in allocated occupations (that is, those who did not report an occupation) were eliminated since allocated categories are not occupations per se and the sex-label of these categories has little meaning. In this paper, we simplify the analysis by focusing on sex differences among white adults in mobility patterns and therefore excluded nonwhites and teenagers. Additional inclusion criteria relevant for the two analyses that follow are discussed at the beginning of each respective section.

The analytical technique is log-linear analysis with a dependent variable (Bishop et al.; Goodman, a, b, c). In such analyses one is interested in finding the dimensions of a contingency table which are necessary and sufficient to reproduce the cell frequencies; i.e., how much one can collapse a table and not lose important information. The chi-square (likelihood ratio) statistic is used to measure the goodness of fit between cell frequencies expected under a given model and those actually observed. We find the best-fitting model for each table in order to ascertain whether the effect of interest is included in the best-fitting model.

In an attempt to find the best-fitting model, we fit models with

terms of uniform order to find a model with terms of order  $r-1$  that fits poorly and a model with terms of order  $r$  that fits too well (i.e., has several unnecessary parameters). We then use forward selection to find an intermediate model (one with some terms of order  $r$ ).<sup>4</sup>

We start with the model containing terms of order  $r-1$  as our base model and add the  $u$ -term of order  $r$  that gives the greatest improvement in goodness of fit, provided that the test statistic associated with adding this term is significant at a prespecified level. This becomes our new base model. The remaining  $u$ -terms of order  $r-1$  [*sic*] are candidates for inclusion at the next stage, and selection is again an automatic procedure governed by the magnitude of improvement in fit compared with the base model. The process continues until no further terms can be added that significantly improve the fit (Bishop et al., 165–66).

Once no more terms of order  $r$  have to be added, we execute a stepwise-down procedure to insure that no effects of order  $r-1$  or  $r-2$  are unnecessary. (See Goodman, a, for a discussion of the combination of stepwise-up and stepwise-down procedure.) The significance level used here is .01, a somewhat conservative level because of the large sample size.<sup>5</sup> In our analysis we obtain best-fitting models separately by sex.

### Sex-Label of Occupations

The central variable in our analysis is sex-label of occupation. This variable is discussed here, while other variables will be discussed as they are introduced into the analyses. There are a variety of ways to operationalize the sex-label of an occupation. For example, Oppenheimer considers an occupation disproportionately female when the occupation contains a higher proportion of female workers than the labor market as a whole. For these analyses, we chose to designate *highly* sex segregated occupations as male and female occupations and to include an unlabeled category which is quite heterogeneous with respect to sex composition. The cut-off points were chosen to correspond to breaks in the distribution of persons over occupations by percent female, with the result that the following categories were defined; male occupations are those occupations (defined by the 1970 3-digit code) which were 0 to 25 percent female in 1970, unlabeled occupations are those occupations which were 26 to 69 percent female in 1970<sup>6</sup> and female occupations are those which were 70 to 100 percent female in 1970.<sup>7</sup>



### Ease of Reentry

We hypothesize that women's occupations are easier to reenter after labor force interruptions than are male occupations. This hypothesis is based on the premise that since a majority of women's occupations require general skills before admission rather than skills acquired through firm-specific on-the-job training (Oppenheimer), these general skills would be easily transferred to different firms, industries, or geographical areas. Thus, there are many different work settings in which women could find jobs in those occupations that utilize their general training. Women should therefore be able to return to the labor force after interruptions and obtain a job in their previously held occupation.<sup>8</sup> To ascertain whether female occupations are easier to reenter, we utilize the 1970 Census information on employment status and job held in 1965 and 1970. Women who were not employed at all in 1965 would be more likely to be in female occupations in 1970, than women who were employed in 1965. This hypothesis might apply as well to men. Using log-linear analysis, we ascertain how employment status in 1965, education and age affect sex-label of occupation held in 1970, by using sex-label of occupation held in 1970 as the dependent variable. To do this, we further restrict our sample to all those employed in 1970; this results in a sample of 28,041 white males and 16,860 white females. The operationalization of sex-label of occupation held in 1970 (L) was described earlier. Employment status in 1965 (S) is a dichotomy, employed or not employed. Education (E) is divided into three categories according to the number of years of formal schooling completed: (1) less than twelve, (2) twelve, and (3) greater than twelve. Age (A) in 1970 has four categories as the age range is broken into four ten-year birth cohorts: 25-34, 35-44, 45-54, 55-64. As is the case in most analyses of secondary data, these data have some shortcomings as far as their use for our purposes. The five-year interval 1965-70 (in contrast to a shorter one) may mask several entries to and withdrawals from the labor market; this fact must be considered when interpreting the findings. Although this is not a minor shortcoming, no other data set with data for each sex would allow us to inspect job shifts per se.

Table 1 presents the results of the log-linear analysis of the cross-classification of sex-label of occupation held in 1970 (L), by employment status in 1965 (S), by education (E), by age (A) for each sex. All of these models have (L) as the dependent variable and thus fit the marginals (SEA), the associations among all the independent variables. The purpose of finding the best-fitting model for each sex is to ascertain whether the effect of employment status in 1965 on sex-label of occupation held in 1970 (LS) or its higher order interactions are necessary to describe the table. We present the initial models (with terms of uniform order) which are neces-

sary to find the original base model, the subsequent base models, and tests for specific effects that are omitted or added in the progression from one base model to another.

Part A of Table 1 presents the steps in obtaining the best-fitting model for women. The best-fitting model for females is (LSE) (LA), (see line A4).<sup>9</sup> This model states that age, education, and employment status in 1965 affect the sex-label of the occupation held in 1970 and that the effect of employment status in 1965 on sex-label of occupation held in 1970 differs at different levels of education.<sup>10</sup> Part B of Table 1 presents the same kind of analysis for men. The best-fitting model is (LS) (LE), (line B4).<sup>11</sup> Thus, for males, both employment status in 1965 and education affect the sex-label of the occupation held in 1970.

The existence of a statistically significant main effect of employment status in 1965 on sex-label of occupation held in 1970 does not constitute a confirmation of the hypothesis, since the parameters for the effect of employment status on sex-label of occupation held could indicate that the effect was exactly the opposite from the direction expected. Table 2 presents the tau parameters (the multiplicative parameters) for the effects of employment status in 1965 on sex-label of occupation held in 1970, by sex.

In the best-fitting model for females (LES) (LA), the effect of interest (LS) differs at different levels of education. If we multiply together the tau parameters for the effect (LES) by those for the effect (LS), we can see how the effect of employment status in 1965 on sex-label of occupation in 1970 varies at different levels of education.<sup>12</sup> Since these parameters do not vary much from the patterns of the main effect, we present the main effect parameters in the top half of Table 2. These parameters indicate that women with employment interruptions are more likely to be in female and less likely to be in male occupations in 1970, as expected.

The bottom half of Table 2 presents the tau parameters for the effect (LS) for men. These parameters indicate that our hypothesis for women applies for men. The small number of men in the sample who were not employed in 1965 are much less likely to be in a male and more likely to be in a female occupation than men who were employed in 1965.<sup>13</sup> This finding could be explained by two different, and to some degree, overlapping explanations. First, it could be argued that the reasons why women's occupations are easy to reenter could apply to men as well as women by claiming that the hypothesis hinges on characteristics of occupations and the kinds of training required for entrance to those occupations, rather than on characteristics of incumbents of those occupations. Second, one could argue that prime age males are usually found in the primary sector. Since the majority of workers who are in the primary sector are employed in enterprise internal labor markets (Doeringer and Piore), prime age white males are in working situations in which labor force commitment and continuity are not only highly valued but expected by the employer. Year-

**Table 1.** MODELS OF EFFECTS OF EMPLOYMENT STATUS IN 1965 (S), EDUCATION (E), AND AGE (A) ON SEX-LABEL OF OCCUPATION HELD IN 1970 (L), BY SEX

Fitted Models (all include SEA)		$\chi^2$	LR	DF	P	Index of Dissimilarity
A. Females (n=16,860)						
1.	(L)	569.0	46	.000	7.8	
2.	(LS) (LE) (LA)	65.8	34	.001	2.1	
3.	(LSE) (LEA) (LAS)	20.6	12	.056	1.1	
4.	(LSE) (LA)	47.6	30	.021	1.7	
5.	(LSE) (LEA)	21.1	18	.274	1.1	
6.	A2 VS A4 test for interaction (LSE)	18.2	4	.005	$p > .001$	
7.	A4 VS A5 test for interaction (LEA)	26.5	12	.01	$p > .005$	

Table 1, continued

Fitted Models (all include SEA)	$\chi^2$	LR	DF	P	Index of Dissimilarity
B. Males (n=28,041)					
1. (L)	238.6		46	.000	2.5
2. (LS) (LE) (LA)	43.4		34	.130	.8
3. (LE)	90.3		42	.000	1.1
4. (LE) (LS)	60.9		40	.018	1.1
5. B1 VS B3 test for main effect (LE)	193.3		4	p > .005	
6. B3 VS B4 test for main effect (LS)	29.4		2	p > .005	
7. B4 VS B2 test for main effect (LA)	17.5		6	.01 > p > .005	

**Table 2.** PARAMETERS DESCRIBING THE EFFECTS OF EMPLOYMENT STATUS IN 1965 (S) ON SEX-LABEL OF OCCUPATION HELD IN 1970 (L)

Females

*Best Fitting Model is (LES) (LA) (SEA)-Tau parameters for the main effect of employment status on sex-label of occupation held in 1970*

<i>Sex-label of Occupation Held in 1970</i>	<i>Employed in 1965</i>	<i>Not Employed in 1965</i>
Male	1.09	.92
Unlabeled	.95	1.05
Female	.97	1.03

Males

*Best Fitting Model is (LE) (LS) (SEA)-Tau parameters for the main effect of employment status on sex-label of occupation held in 1970*

<i>Sex-label of Occupation Held in 1970</i>	<i>Employed in 1965</i>	<i>Not Employed in 1965</i>
Male	1.19	.84
Unlabeled	1.07	.93
Female	.78	1.28

long interruptions in employment by males may be perceived by employers as lack of labor force commitment and may restrict the entrance into the primary sector for such individuals. It is possible that both of these explanations are operating. We are unable to choose between the two explanations (or test for them) using this data set.

Thus, women and men who have experienced interruptions in employment are more likely to be in female occupations (and excluded from male ones) than are those who had not experienced such interruptions. These findings might indicate that women's occupations are in fact easier to reenter, and that interruptions in employment can result in limited access to male occupations. However, these results also could be

caused by individuals perceiving women's occupations as easier to reenter (and male ones harder to reenter) or by their perceiving that the rewards lost from interruptions in employment are minimal in female occupations, and thus acting accordingly. It is impossible to distinguish between these two possible explanations for the findings.

### **Sex-Typing of Occupations and Upward Occupational Status Mobility**

In the introduction it was argued that although typically female occupations may be easier to enter after a labor force interruption, such occupations might not be stepping stones upward in the occupational structure, at least for women. If this were the case, we would expect women who started a five-year period in a female occupation to be less likely to be upwardly mobile during that interval than women who started in a male or unlabeled occupation. In particular, women making a job change from a female job to a female job would not be expected to experience any substantial change in occupational status. To the extent that the female sector overlaps with secondary and craft markets, men also might be limited in their upward mobility by remaining in female occupations over a five-year interval. However, if men are more likely than women to take advantage of whatever chances for upward mobility that are offered within the female sector, starting a five-year interval in a female occupation should have less negative consequences for men than for women. Further, if men have greater access to the male sector (because they are not as affected by statistical discrimination), being in a female occupation at one time should not as severely limit men's chances of subsequent upward status mobility. Therefore, the effects of sex-labeling of occupations held at the beginning and end of a five-year interval might have different effects on the likelihood of upward occupational status mobility for males and females.

To investigate how sex-typing of occupations affects mobility chances, we determine the effects of sex-label of occupations in 1965 and 1970, broad categories of occupational status in 1965, education and age on the likelihood of being stable, upwardly or downwardly mobile in terms of occupational status over the five-year period 1965 to 1970. The dependent variable is a trichotomy describing the amount of occupational status change (M) over the five-year period 1965 to 1970: (1) those losing more than 5 SEI points (Duncan; Featherman et al.) were classified as downwardly mobile; (2) those gaining or losing 5 or fewer SEI points were classified as stable; and (3) those gaining 6 or more SEI points were classified as being upwardly mobile on the occupational status scale. This categorization was chosen so that small (and indeed trivial) changes in occupational status would not be classified as upward or downward mobi-

lity. Sex-label of occupation held in 1965 (6) and 1970 (7) each have three categories (male, unlabeled, and female) as defined earlier. Education (E) and age (A) have the same categories as in the earlier analysis. The occupational status of the job held in 1965 or the Duncan score (D) is a trichotomy: (1) low includes scores from 0 to 32.9; (2) medium includes scores from 33.0 to 64.9; and (3) high includes scores from 65.0 to 97. Although these categories are quite broad, any narrower classification (for example, 5 twenty-point intervals) resulted in an overabundance of random zeros caused by small numbers of female occupations at the highest status levels. This latter variable, broad categories of occupational status of occupation held in 1965, was included to control for the regression towards the mean phenomenon.

For this particular analysis, the original sample was restricted to those employed in 1965 and 1970 (reducing the sample to 27,191 white males and 11,745 white females) and to those who changed jobs from 1965 to 1970 (further reducing the sample to 11,764 white males and 5,130 white females). Changing jobs was defined as having an occupation, industry or class of worker in 1970 different from that in 1965.<sup>14</sup> Since our concern is with the status change (or lack of it) due to certain kinds of job changes, as defined by the sex-label of origin and destination occupation, restricting the sample to those who changed jobs over the five-year period is only reasonable. Men and women were equally likely to have changed jobs over the five-year interval.

Table 3 presents the steps in finding the best-fitting model for males and females separately to explain the effects of sex-label of occupation held in 1965 (6), sex-label of occupation held in 1970 (7), 1965 Duncan score (D), education (E) and age (A) on the likelihood of being downwardly mobile, stable or upwardly mobile from 1965 to 1970 (M). (M) is the dependent variable; all models fit the marginal table (76DEA), the association between all the independent variables. We are interested in finding the best-fitting model so that we can ascertain whether the effects of sex-label of occupation held in 1965 and 1970 on mobility or their higher order interactions are necessary to describe this table adequately.

Part A of Table 3 presents the steps in obtaining the best-fitting model for women—(76M) (7DM) (ME)—found in line A6. This model indicates that (1) sex-label of occupation held in 1965 and 1970, occupational status in 1965, and education affect the likelihood of status mobility, (2) the effect of sex-label of occupation in 1965 on the likelihood of status mobility differs according to sex-label of occupation held in 1970, and vice versa, and (3) the effect of sex-label of occupation held in 1970 on status mobility differs at different levels of education.

Part B presents the steps in finding the male best-fitting model, (76DM) (DME) (DMA) (MEA), found in line B9. Sex-label of origin and destination occupation affect the likelihood of status change, and this

**Table 3.** MODELS OF EFFECTS OF SEX-LABEL OF OCCUPATION HELD IN 1970 (7) SEX-LABEL OF OCCUPATION HELD IN 1965 (6), OCCUPATIONAL STATUS IN 1965 (D), EDUCATION (E), AGE (A), ON TYPE OF STATUS MOBILITY (M), FOR ALL WHO CHANGED JOBS FROM 1965 TO 1970 BY SEX

<i>Fitted Marginals all Include (76DEA)</i>	$\chi^2$ <i>LR</i>	<i>DF</i>	<i>P</i>	<i>Index of Dissimilarity</i>
A. Females (n=5,130)				
1. (M)	2584.58	646	.000	26.983
2. (7M) (6M) (DM) (ME) (MA)	1170.36	624	.000	16.222
3. (76M) (7MA) (7ME) (7MA) (6DM) (6ME) (6MA) (DME) (DMA) (MEA)	499.23	528	p > .5	8.381
4. (76M) (DM) (ME) (MA)	874.70	616	.00	13.000
5. (76M) (7DM) (ME) (MA)	675.65	608	.029	10.757
6. (76M) (7DM) (ME)	681.45	614	.03	10.830
7. A4 VS A2 test for (76M)	295.66	8	p < .001	
8. A5 VS A4 test for (7DM)	199.05	8	p < .001	
9. A6 VS A5 test for (MA)	5.80	6	p > .5	
B. Males (n=11,764)				
1. (M)	4431.12	646	.000	23.418
2. (7M) (6M) (DM) (ME) (MA)	1985.74	624	.000	13.729
3. (76M) (7DM) (7ME) (7MA) (6DM) (6ME) (6MA) (DME) (DMA) (MEA)	641.63	528	.001	5.85
4. (DMEA) (6MEA) (6DMA) (6DME) (7MEA) (7DMA) (7DME) (76MA) (76ME) (76DM)	232.63	320	p > .5	2.867
5. (76DM) (7ME) (7MA) (6ME) (6MA) (DME) (DMA) (MEA)	526.75	512	.316	5.122
6. (76DM) (7ME) (7MA) (6MA) (DME) (DMA)	530.90	520	.360	5.143
7. (76DM) (7MA) (6MA) (DME) (DMA) (MEA)	537.89	528	.373	5.184
8. (76DM) (6MA) (DME) (DMA) (MEA)	551.98	540	.351	5.345
9. (76DM) (DME) (DMA) (MEA)	574.02	552	.250	5.833
10. B5 VS B3 test for (76DM)	114.88	16	p < .001	
11. B6 VS B5 test for (6ME)	4.15	8	p > .5	
12. B7 VS B6 test for (7ME)	6.99	8	p > .5	
13. B8 VS B7 test for (7MA)	14.09	12	.25 < p < .5	
14. B9 VS B8 test for (6MA)	22.04	12	.025 < p < .05	



relationship differs at different levels of origin socioeconomic status. The other effects that are not of direct concern here can be described as follows: origin status, education and age all affect the likelihood of status mobility from 1965 to 1970; the effects of education and age differ at different levels of origin status; and the effect of education is different by level of age.

Again, it is less than satisfactory merely to indicate that sex-labeling of occupation held in 1965 and 1970 has an effect on the likelihood of occupational status mobility over that five-year period. Table 4 presents information that summarizes the nature of the effects of sex-labeling of occupations on occupational status mobility. Columns 2 through 5 represent the observed percentage distributions over mobility categories by type of job shift and show what the gross relationship of type of job shift on occupational status mobility is. Columns 6 through 9 present the expected percentage distributions under a model which allows only education, age and occupational status categories of origin status to affect occupational status mobility.<sup>15</sup> The differences between these two percentage distributions, shown in columns 10 through 12, indicate the effects of sex-label of occupation held in 1965 and 1970 on occupational status mobility net<sup>16</sup> of the effects of education, age and occupational status categories of 1965 occupation. For example,  $-2.17$  (the first entry in column 10) indicates that men who make a job shift from one job in 1965, classified as a male one, to a different male job in 1970 are less likely to be downwardly mobile over that period than would be predicted by their age, education and origin occupational status.

The literature on occupational segregation by sex and dual labor markets is of special relevance in predicting the outcomes of the job shifts within sectors, defined by sex composition. We find that people remaining within sectors are more likely to have stable status over the five-year interval than would be expected on the basis of other combinations of significant variables. For women and men, making a female-female job shift does not bring greater than expected chances of upward mobility, but does reduce the chances of downward mobility, relative to those expected on other characteristics. Given this finding and the fact that a large proportion (37%) of all women who changed jobs make a female-female job shift could in part account for the finding that the mean occupational status of women is constant at different points in the life cycle. There is no evidence that men remaining in female occupations over the five-year period are in a privileged position relative to women. The small percentage of men who stay in female occupations from 1965 to 1970 are less likely to change status—up or down—and much more likely to remain stable than would be expected. In short, staying in the female sector insures occupational status stability for men as well as for women. It should be noted that, for women, staying in the male sector over the five-year period increases the likelihood of occupational status stability and decreases the likelihood of

**Table 4.** THE EFFECTS OF SEX-LABEL OF OCCUPATION HELD IN 1965 AND 1970 ON THE EXTENT OF OCCUPATIONAL STATUS MOBILITY FROM 1965 TO 1970

Type of Job Shift	N (1)	Observed Percentage Distribution				Expected Percentage Distri- bution Due to Effects of Education, Age and Occupa- tional Status of Job in 1965				Effects of Sex-label of Occupa- tion in 1965 and 1970 on Occupational Status Mobility Net of the Effects of Educa- tion, Age and Occupational Status on Occupation in 1965		
		DOWN (2)	STABLE (3)	UP (4)	TOTAL (5)	DOWN (6)	STABLE (7)	UP (8)	TOTAL (9)	DOWN (10)	STABLE (11)	UP (12)
<u>PART A. MALES</u>												
MN*	6371	21.75	47.20	31.05	100	23.92	41.61	34.47	100	- 2.17	+ 5.59	- 3.42
MU	1125	33.16	30.76	36.09	100	24.22	40.98	34.80	100	+ 8.94	-10.22	+ 1.29
MF	177	40.68	28.25	31.09	100	27.01	38.76	34.23	100	+13.67	-10.51	- 3.14
UM	2301	25.99	17.86	56.15	100	26.53	36.15	37.32	100	- .54	-18.29	+18.83
UU	1135	32.42	52.33	15.24	100	26.52	38.16	35.32	100	+ 5.90	+14.17	-20.08
UF	105	30.48	48.57	20.95	100	29.65	38.47	31.88	100	+ .83	+10.10	-10.93
FM	242	25.62	25.62	48.76	100	26.70	36.08	37.22	100	- 1.08	-10.46	+11.54
FU	197	19.29	54.31	26.40	100	30.62	42.36	27.02	100	-11.33	+11.95	- .62
FF	111	14.41	59.46	26.13	100	30.06	33.45	36.49	100	-15.65	+26.01	-10.36
Total	11764	25.03	39.90	35.06	100	25.03	39.90	35.06	100			
<u>PART B. FEMALES</u>												
MM	226	14.60	66.81	18.58	100	30.45	47.19	22.36	100	-15.85	+19.62	- 3.78
MU	177	40.68	32.77	26.55	100	27.94	47.70	24.36	100	+12.74	-14.93	+ 2.19
MF	196	52.04	23.47	24.49	100	29.59	46.93	23.48	100	+22.45	-23.46	+ 1.01
UM	237	29.96	22.36	47.68	100	26.73	47.01	26.26	100	+ 3.23	-24.65	+21.42
UU	1083	50.23	39.52	10.25	100	28.95	46.28	24.77	100	+21.28	- 6.76	-14.52
UF	474	25.11	40.08	34.81	100	26.31	47.32	26.37	100	- 1.20	- 7.24	+ 8.44
FM	245	20.82	26.94	52.24	100	23.72	47.54	28.74	100	- 2.90	-20.60	+23.50
FU	595	21.34	49.24	29.41	100	26.66	47.77	25.57	100	- 5.32	+ 1.47	+ 3.84
FF	1897	16.03	58.09	25.88	100	27.86	45.65	26.48	100	-11.83	+12.44	- .60
Total	5130	27.74	46.53	25.73	100	27.74	46.53	25.73	100			

\*The first letter refers to sex-label of occupation held in 1965 (where M=male, U=unlabeled, F=female).  
The second letter refers to sex-label of occupation held in 1970.

downward mobility; similar effects for men are present, but are quite small.

A small percentage of men and women change sectors, defined by sex-label of occupation, over the five-year period. Table 4 indicates that for both men and women, it is advantageous in terms of upward status mobility to leave the female or the unlabeled sector and enter the male sector, net of other factors. Moving out of the male sector into these other sectors increases the likelihood of downward mobility, net of other characteristics. The probability of gain from the first type of move and loss from the second is greater for women than for men, suggesting that at least for certain kinds of job shifts, sex-labeling of occupations held has a greater net effect on the mobility chances of women than men. Contrary to our hypothesis, starting a five-year interval in a female occupation does not hinder net upward mobility of either sex, as long as one has left this sector by the end of the five-year interval. On the other hand, moving into a female occupation from a male one increases the likelihood of downward mobility for both sexes, although the effect is more pronounced for women.

In general, after controlling for the effects of other variables, the sex-label of occupation held at the beginning and end of a five-year interval does have marked effects on occupational status mobility. Making a job shift from a female to a female job results in stability of status for men and women, but so do male-male shifts. At least over a five-year period, changing sectors leads to the greatest changes in status. Movement into male jobs increases the likelihood of upward mobility, while movement into female jobs from male ones increases the likelihood of downward mobility. In most instances the net effects are much stronger for women than men, indicating that sex-typing of occupations has a larger impact on the chances of occupational status mobility for females than males.<sup>17</sup>

## Conclusions

This paper has taken as problematic certain paradoxical findings of studies of sex differences in occupational attainment. We develop explanations for these findings based on structural characteristics of the labor market and how they might impede or obstruct the effects of individual characteristics. For these explanations to be useful in clarifying these paradoxical findings, two propositions must be confirmed: (1) women's occupations are easier to reenter after labor force interruptions than are male occupations; and (2) female occupations offer few chances for upward occupational status mobility. We obtain limited confirmation for each of these propositions and, thus, cannot reject our explanation.

Women's occupations were found to be easier to reenter for females and males. This suggests that not only may female jobs be easier to reenter

because of transferability of skills, but also employers may restrict access to male occupations for individuals with indications of low labor force attachment.

Analyses of status mobility resulting from job shifts over a five-year period point to the limited chances for status advancement offered by predominantly female occupations. It was found that remaining within either the female or the male sector led to occupational status stability, at least over a relatively short period of observation. Status changes were found to accompany job shifts between the male and female sector. In general, the greatest likelihood of upward status mobility comes by shifting to a predominantly male occupation, while the greatest likelihood of status loss results from a move from a male occupation to a female one. These gains and losses were greater for women than men. This suggests that especially women are underrewarded in terms of status relative to the status rewards they could receive with entry into the male sector. That is, even controlling for age, education, and status at the beginning of a five-year interval, one finds that persons (especially women) qualified for a certain level in the hierarchy of predominantly male occupations lose status by a job shift(s) which leaves them in a predominantly female occupation five years later, while those (especially women) qualified to fill a certain level within the female sector can improve their status by leaving that sector. However, most persons remain within a given sector.

The segregation of women into occupations which offer ease of reentry but limited chances for upward occupational status mobility helps explain the stability over time of the means of the distributions of women's occupational status and the lack of responsiveness of women's occupational attainments to their employment experience. The consideration of structural characteristics of the labor market, as well as individual characteristics, has proved helpful in understanding certain paradoxical findings of sex differences in occupational attainment, and, therefore, should be incorporated into future studies in this area.

### Notes

1. Human capital theorists could argue that the measures of labor force experience utilized in the aforementioned research are unsatisfactory measures of employment experience over the life cycle. The fact that several different measures of labor force participation have been utilized in these different studies should counteract this argument.
2. One can think of some typically female occupations which have at least short career ladders: secretaries may become administrative assistants, schoolteachers may become principals or other types of school administrators. However, according to Grimm and Stern, men are overrepresented in such high level positions within the female semi-professions. This suggests that if female occupations offer any chances of advancement, it is men who are more likely to take advantage of these opportunities.
3. Clearly, employment stability and high labor force commitment are more essential in enterprise than craft internal labor markets since employers pay for the costs of firm-specific on-the-job training in enterprise internal labor markets.
4. For example, for a given table of three or more dimensions, a model containing all third-

order terms (i.e., all interactions of dimensions taken three at a time) might fit too well, while a model with all second-order terms (all associations between dimensions taken two at a time) leaves a significant difference between the observed frequencies and those expected under a model. The model with all second-order terms would thus be the first base model.

5. Often we obtain a base model (with some terms of order  $r$ ) which fits well. However, the addition of another term of order  $r$  results in (1) a significant decrement in  $X^2$  but (2) the new base model which fits the data *too* well. In all such cases we decided (basically on the grounds of parsimony) not to include this last term of order  $r$  in the best-fitting model since (1) the last base model fits the data well, (2) the reduction in  $X^2$  due to its addition was, in all cases, much smaller than the decrement resulting from the earlier addition of terms of order  $r$ , (3) the new base model (including this last term) fits the data *too* well, and (4) such large  $N$ s warranted a more conservative strategy.

6. The unlabeled category contains detailed codes which are collections of occupations (i.e., those not elsewhere classified). The occupations in this category, therefore, tend to be heterogeneous as far as the specific jobs subsumed under the title (cf. Oppenheimer).

7. Percent female was calculated from the detailed occupational distribution by sex found in PC-2-7A Subject Report—Occupational Characteristics.

8. Dual labor market theorists would argue, as well, that women through statistical discrimination are allocated to the secondary sector where the lack of labor force continuity or commitment is not only tolerated but expected. Therefore, those in the secondary sector are not penalized for labor force interruptions.

9. As an example of our reasoning discussed in note 5, we decided to exclude the effect (LEA), despite line A7, on the aforementioned grounds of parsimony.

10. Alternatively, the effect of education differs at different levels of employment status in 1965. In general, the interpretation of any effect (ABC) where A is the dependent variable can be either that the effect of B on A differs at different levels of C or that the effect of C on A differs at different levels of B.

11. Another example of our use of the criterion of parsimony is our exclusion of the main effect of age, despite line B7, from the best-fitting model for men.

12. An alternative explanation of the (LSE) effect is that the effect of education on sex label of occupation held in 1970 differs with employment status in 1965. To obtain parameters for this effect one could multiply  $\tau_{e(j)} \tau_{e(k)}$ . If one were interested in the combined effects of education and employment status in 1965, one could multiply  $\tau_{e(j)} \tau_{e(k)} \tau_{e(l)}$  to study this effect. In other words, which tau parameters you decide to combine depends on your substantive interests.

13. It should be noted that although the number of men who were not employed in 1965 and were included in our sample (850) was large enough to estimate the models, this group is an incredibly small percentage of all men in the sample. Although the permanently disabled were excluded from these analyses, it is possible that some of these men were temporarily disabled or perhaps were released from institutional care (jails or mental hospitals) during 1965. The hypothesis concerning ease of reentry is less important for males than females since so few of the males have year long interruptions in employment.

14. This operationalization could be viewed as somewhat crude. First, one could have changed jobs and still have the same industry, occupation and class of worker code. Second, an individual could change jobs more than once during that five-year interval, moving from one 7-digit code to another and then back to the original 7-digit code; this individual would not be classified as a job changer. Nevertheless, this definition of job changing is the most refined one available in this data set.

15. The model used for males was (76DEA) (DME) (MEA) (DMA); for females, it was (76DEA) (DM) (ME). These were obtained by taking the best-fitting models for each sex and omitting any terms that include (7M) or (6M). Another possible strategy could have been to saturate the model with respect to the variables not of interest; that is, use the expected distribution from the model (76DEA) (DMEA) for each sex. Actually, there should be little difference between these two strategies, since attaining a best-fitting model suggests that you don't need those other effects to reproduce the frequencies. In fact, the expected percentage distribution from the latter, saturated model, and from the former, parsimonious model, were essentially the same; hence, we chose the more parsimonious models.

16. These are in some senses gross net effects; that is, they present not only the net effect of (76M), but also the effects of all higher order interactions including (7M) or (6M).

17. In this analysis, only the direction of the status change—up, down, stable—was considered as the dependent variable. Multiple regression analyses using amount of status change as the dependent variable were executed and yielded results which were largely consistent with the log-linear analysis presented here.

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