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Dynamics of Occupational Segregation and the Sexual Division of Labor

—a consequence of feminization of white-collar work—

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The following errors found in the original paper were corrected:

- [**p. 90**] The second column "[Wife's Age]" of the last two rows in Table 4 was corrected as follows: "[36–]" → "[46–]"; "[–35]" → "[–45]".
- [p. 91] In the first line of the legend beneath Table 5, "1993" was replaced by "1991".
- **[p. 92]** Two "N"s in Equation (1) and in its foregoing sentences were replaced by "F". A new phrase "N = f + p + u" was inserted into the second line in the legend beneath Table 6 to avoid confusion.
- [p. 119] The beginning of line 4, "[1985" was replaced by "[1995". In line 27, "Sachiko" was inserted after "Furukawa".
- [p. 120] "Iwamoto Jun" in line 6 was replaced by "Iwamoto Sumi".
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Dynamics of Occupational Segregation and the Sexual Division of Labor

—a consequence of feminization of white-collar work—

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The first half of this paper examines the relationship between women's status and their continuity rate of full-time employment (CRFE). It is found that CRFE is independent of women's status in occupational structure, both longitudinally and cross-sectionally, even if the change in the composition of households' members is considered. The second half explains this finding with the aid of previous qualitative research. Everyday interaction in the white-collar workplace is more gendered than in blue-collar's, because female and male white-collar workers often work together. The feminization of white-collar work has caused sexism in the workplace and has had a negative effect on CRFE, along with the positive effect of upgrading women's occupational status.

Key-words: day-to-day segregation, marriage bar, case study, social change, gender

1. The Accepted Theory

In this paper, the term "sexual division of labor" means the division between occupational work and housework, which is often called "the modern sexual division of labor".

The sexual division of labor has been explained by economists who emphasize a rationalistic view of human behavior. They explain that the sexual division of labor is a consequence of the effort of the household to arrange the member's labor efficiently. Since women are paid less in the labor market, it is efficient for the household that the husband specializes in occupational work and the wife specializes in housework [Becker: 5: 42].

According to the rationalist's view, men will do more housework and women will do more occupational work, if women's occupational status rises: Egalitarianism in the labor market will lead to the collapse of the sexual division of labor.

This is no peculiar view to rationalistic economics. Many authors share the rationalist's point of view and believe that the sexual division of labor in the household is closely related to women's position in the occupational structure, for example, class theory [Carling: 9: 161–171] [Goldthorpe: 16: 468], feminist theory [Sørensen et al.: 43: 660–662], and studies of the Japanese enterprise-centered society [Morioka: 34: 256]. It has been the accepted theory from a variety of political or methodological standpoints. In the next two sections, we will examine this accepted theory. Section 2. reveals time-series trends in the occupational sex gaps and in the sexual division of labor, using the index of the sexual division of labor that is called CRFE (women's continuity rate of full-time employment, see 2.2.). Section 3. contains a cross-sectional analysis of the correlation between women's occupational status and CRFE.

2. Trends

2.1. Sex gaps in the occupational structure

Occupational distribution

Table 1 shows changes in the occupational distribution of each sex. The figures are drawn from the published reports of the Japanese Census, with the occupations recategorized into the SSM Occupational Categories¹⁾. In order to maintain comparability and facilitate arguments in the later sections, we exclude occupations that are fairly certain to be self-employment or family enterprise work—farmer and shopkeeper (retail dealer, wholesale dealer, and restaurant operator). This exclusion is unfortunate, but it cannot be helped because the reports of the 1950 Census provide no tabulation of employment status with detailed occupations.

Occupation (SSM		Female			Male	
Occupational Categories)	1950	1970	1990	1950	1970	1990
Professional	9.7	8.6	13.4	8.5	8.6	13.1
Managerial	0.3	0.7	1.1	5.3	7.7	7.0
Clerical	17.8	26.8	34.4	19.8	17.3	17.1
Sales	24.4	20.2	16.8	9.5	10.3	14.2
Skilled	13.4	15.1	11.3	25.9	25.9	22.7
Semi-skilled	22.7	21.9	16.5	17.0	22.8	18.2
Unskilled	11.5	6.7	6.6	13.9	7.3	7.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
N/1000	(5,116)	(14, 728)	(21, 852)	(12, 462)	(26,069)	$(33,\!553)$
				Census [8.	18-41] [45	· 204-317]

 Table 1. Changes in occupational distribution by sex

Census [8: 18-41] [45: 294-317].

Farmer, shopkeeper, and unclassifiable occupations are excluded. See Note 1.

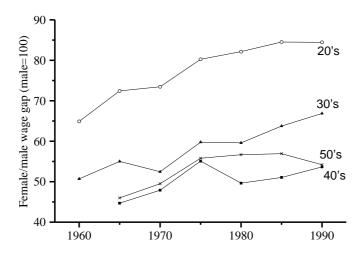
Table 1 demonstrates women's rising status in the occupational structure. The most significant change is the rise of clerical work: The percentage of women working in the clerical occupation has risen to 34.4% in 1990, compared with 17.8% in 1950. Professional workers have also increased, although more slowly than clerical. On the other hand, sales, semi-skilled, and unskilled workers have decreased. Broadly speaking, the percentage of lower status occupations has fallen, while higher status occupations have grown.

As for men's occupational distribution, we find that professional workers are increasing and that unskilled manual workers are decreasing. But the figures for the other occupations remain almost the same.

To sum up, occupational distribution for women has performed a more rapid upward shift than for men.

The wage gap

Osawa [38: 70] reports trends in the female/male wage gap by age groups. It is known that the wage gap between the sexes will appear to be steady, when women and men in various ages are put together. But this steadiness is misleading: Women's wage is lower in older ages, and many older women entered the labor market and pulled down the collected average for women's wages. When we restrict our attention to the younger age, however, we will see the gap become smaller (Figure 1)²).



Osawa [38: 70], recalculated. Data: 賃金構造基本統計調查 (Basic Survey on Wage Structure), various years, 労働省 (Ministry of labour). See Note 2.

Figure 1. Trends in the female/male wage gap by age groups

Gaps within the couple

Now we will try to examine the change in women's occupational distribution, limiting the scope to their careers before marriage. Table 2 indicates women's first jobs before marriage drawn from the personal histories in the SSM data³⁾. Only female respondents whose first jobs were full-time employment. Occupations are grouped according to the SSM Occupational Categories (see Note 1). For both 1985 and 1995 SSM data, two trends are remarkable: increasing clerical work and decreasing semi- and unskilled work. These trends are common to Table 1, where all women in the labor market are included, but the extent of the improvement in occupational status is especially great for young, unmarried women.

The first job (SSM			Birth o	ohorts		
Occupational Categories)	1915 - 25	1925 - 35	1935 - 45	1945 - 55	1955 - 65	1965 - 75
85 SSM (Cramer's $V = 0.13$	$35^{**}, df = 1$	16)				
Professional	21.1	15.9	8.6	14.5	18.7	
Clerical	29.6	38.6	44.0	52.4	44.9	
Sales	2.8	6.1	13.9	12.8	15.5	
Skilled	7.0	11.4	10.5	3.7	8.6	
Semi- and unskilled	39.4	28.0	23.0	16.6	12.3	
Total	100.0	100.0	100.0	100.0	100.0	
N	(71)	(132)	(209)	(296)	(187)	
[Age]	[60-70]	[50-59]	[40-49]	[30 - 39]	[20-29]	
95 SSM (Cramer's $V = 0.13$	$38^{**}, df = 1$	16)				
Professional		9.8	9.7	15.2	20.5	18.8
Clerical		45.1	45.9	45.9	61.6	58.3
Sales		8.3	11.4	12.2	7.1	9.7
Skilled		9.8	14.6	6.6	3.6	4.2
Semi- and unskilled		27.1	18.4	20.1	7.1	9.0
Total		100.0	100.0	100.0	100.0	100.0
N		(133)	(185)	(303)	(224)	(144)
[Age]		[60-70]	[50-59]	[40-49]	[30 - 39]	[20-29]

Table 2. Changes in women's first jobs before marriage

Only those whose first jobs were full-time employment (Appendix A.).

None were managerial. Unmarried respondents are included. See Note 3.

How about the occupational distribution of the men to whom the respondents were married? Changes in the husbands' occupations (at the time of marriage) are presented in Table 3, only for the husbands of the respondents whose first jobs before marriage were in full-time employment. We detect two obvious trends: the fall of farmers and the rise of professional and managerial. The husbands' occupational status became higher, as well as the wives', although the details were different.

We know that both wives' status and husbands' status have risen, but the question remains how the gap *within the couple* has changed: Have the upward shifts in the status of the wife and of the husband been parallel, or has one exceeded the other? To answer this question, we present the change in women's first jobs by the husbands' occupational groups. Table 4 shows the husband-wife occupational association for two cohorts, by the upper lines denoting the respondents (=wives) born before 1950, and the lower lines, after 1950. For women with the clerical or sales husbands, the result is uncertain because the 85 SSM data show no change, though the 95 SSM data reports a statistically significant change; therefore, it would be better to withhold judgment. On the other hand, as far as the other women are concerned —those women whose

Husband's job on marriage			Wife's bir	th cohorts		
(SSM Occupational Categories)	1915 - 25	1925 - 35	1935 - 45	1945 - 55	1955 - 65	1965 - 75
85 SSM (Cramer's $V = 0.135^{**}$, df	f = 20)					
Professional and managerial	9.5	19.1	18.0	15.1	13.4	
Clerical	23.8	30.0	21.2	27.2	17.1	
Sales	4.8	3.6	9.0	14.3	15.9	
Skilled	28.6	17.3	25.4	23.5	26.8	
Semi- and unskilled	14.3	23.6	21.2	15.8	23.2	
Farmer	19.0	6.4	5.3	4.0	3.7	
Total	100.0	100.0	100.0	100.0	100.0	
N	(42)	(110)	(189)	(272)	(82)	
[Wife's age]	[60-70]	[50-59]	[40-49]	[30 - 39]	[20-29]	
95 SSM (Cramer's $V = 0.135^{**}$, df	f = 20)					
Professional and managerial		15.5	18.3	20.9	26.2	10.1
Clerical		19.0	26.2	26.6	23.6	21.7
Sales		12.9	9.8	11.0	12.0	17.4
Skilled		19.0	17.7	22.8	20.4	30.4
Semi- and unskilled		19.0	24.4	16.7	15.2	18.8
Farmer		14.7	3.7	1.9	2.6	1.4
Total		100.0	100.0	100.0	100.0	100.0
N		(116)	(164)	(263)	(191)	(69)
[Wife's age]		[60-70]	[50-59]	[40-49]	[30 - 39]	[20-29]

Table 3. Changes in the husband's job on marriage

Only for the respondents employed full-time before marriage (Appendix A.). See Note 3.

husbands are professional, managerial, manual, or farmers—, the husband-wife gap has decreased. In the past, the familiar coupling patterns were the following: a blue-collar man and a blue-collar woman; a professional or managerial man and a clerical or sales woman. Those classic patterns of coupling are becoming old-fashioned, and more equal ones have taken over: a professional man and a professional woman; a blue-collar man and a white-collar woman.

Thus the association between the wife and the husband has approached equality in the labor market situations. According to the accepted theory, the condition for reforming the sexual division of labor has been fulfilled. However, has the sexual division of labor been really reformed as theoretically expected?

2.2. Measurement of changes in the sexual division of labor

Now we will seek the appropriate measure of changes in the sexual division of labor.

Husband's job on marriage	[Wife's	Tł	ne first j	ob	Total	Cramer's
(SSM Occupational Categories)	Age]	1	2	3	(N)	V (df=2)
85 SSM						
1: $Professional^a$	[36-]	20.0	65.0	15.0	100.0 (80)	
	[-35]	41.9	51.6	6.5	100.0 (31)	0.234^{*}
2: Clerical and sales	[36-]	14.6	72.9	12.5	100.0(144)	
	[-35]	15.7	69.6	14.7	100.0(102)	0.038^{ns}
3: Manual ^{b}	[36-]	8.8	42.0	49.1	100.0 (226)	
	[-35]	11.8	54.5	33.6	100.0 (110)	0.146^{*}
Total	[36-]	12.7	56.0	31.3	100.0 (450)	
	[-35]	17.3	60.5	22.2	100.0(243)	0.104^{*}
95 SSM						
1: $Professional^a$	[46-]	17.4	72.5	10.1	100.0 (69)	
	[-45]	34.1	58.2	7.7	100.0 (91)	0.186^{\ddagger}
2: Clerical and sales	[46-]	7.9	66.9	25.2	100.0(139)	
	[-45]	13.2	74.8	11.9	100.0(151)	0.181**
3: Manual ^{b}	[46-]	5.6	46.6	47.8	100.0(178)	
	[-45]	14.9	57.5	27.6	100.0 (174)	0.232**
Total	[46-]	8.5	58.5	32.9	100.0 (386)	
	[-45]	18.5	63.9	17.5	100.0 (416)	0.207^{**}

Table 4. Changes in the husband-wife occupational association

Only for the respondents employed full-time before marriage (Appendix ${\bf A.}).$

For husbands, a: including managerial, b: including farmer. See Note 3.

Problems in using the index of women's labor force participation rate

The sexual division of labor has two connotations: exclusion of women from occupational work, and exclusion of men from housework. Accordingly, the measurement of the sexual division of labor must consider the following three factors:

- distinction between workplace and household
- men's participation in housework
- women's participation in occupational work

Preceding researches ignored the former two factors and used only the index of women's labor force participation rate—figures readily available in governmental statistics. They thereby missed an underlying trend behind the statistics [Tanaka: 50]. In the following paragraphs, we will approach the hidden trend, correcting the bias step by step.

Exclude family enterprises

Fluctuation in the number of family enterprises affects women's labor force participation rate [Hill: 20]. We should regard this fluctuation as a bias, because most family enterprises do not fill our precondition: They live everyday life with no distinction between the workplace (the public sphere) and the household (the private sphere) [Ochiai: 36: 22f.]. Hence we must exclude family enterprise workers from our analysis. Operationally, we will adjust the figures by excluding family or self-employed workers, and farmers.

Women's employment and the division of housework

The next question is the relationship between women's employment and their husbands' participation in housework. Although it would be ideal to measure the amount and the details of the housework done by men, it is difficult to obtain longitudinally comparable data on it. Since we could only rely on the figures of women's employment status, we are forced to investigate how the division of housework is affected by women's employment.

 Table 5. The percentage of husbands' participation in housework

Wives' employment status	Stage 1	Stage 2	Stage 3
Not employed ^{a}	7.2(517)	5.2(301)	5.8(1525)
Part-time employee	11.3 (71)	6.5(138)	5.8(379)
Full-time employee	20.8 (72)	$10.5 \ (\ 76)$	8.8(273)
Total	9.1(660)	6.2(515)	6.2(2177)
Cramer's V (df)	$.150^{**}(2)$	$.079^{\dagger}(2)$	$.042^{\dagger}(2)$

% (N). 1991 survey by JIL [25: 141], recalculated (Notes 4, 5). a: including family and self-employed workers, status unknown. Stages are divided according to the age of the last child: 0-6 (Stage 1), 7-12 (Stage 2), and $13 \le$ (Stage 3).

Table 5 displays the probability of participation of men in housework⁴⁾ according to the life-stages and the wives' employment status⁵⁾. Men whose wives are employed parttime show the same probability of participation in housework as those whose wives are not employed. Even the full-time employment of the wife makes little difference, except at the life-stage with a small child (Stage 1). The table thus betrays how the wife's employment can hardly alter the sexual division of labor, with only one exception when she works full-time at the childrearing stage.

This can be understood in the light of historical changes in housework. Owing to the popularization of electric machines and to the commercialization of housework, today it is possible to do most housework without any conflict with employment. But there is a remaining field: child-care, which is slow in both mechanization and externalization. If a woman continues her employment at the childrearing stage, her husband will inevitably be involved in housework.

All of this suggests that the best way to grasp the changes in the sexual division of labor is to measure the women's continuity rate of full-time employment in the childrearing stage.

CRFE: women's continuity rate of full-time employment

The index of women's continuity rate of full-time employment (CRFE) is operationally determined as follows. For any set of women, let F be the number of women employed full-time before marriage. They are classified into four categories according to the employment status when the last child was born:

- full-time employee (f),
- part-time employee (p),
- family or self-employed worker, farmer (s),
- not employed (u),

where f, p, s, u denote the number of women classified into each category. The index CRFE is the proportion of women remaining full-time employees at the latest childbirth, but those who moved to family enterprise sector are excluded from the population:

$$CRFE = \frac{f}{f+p+u} = \frac{f}{F-s}.$$
(1)

D: 41			$85 \ \mathrm{SSM}$				$95 \ \mathrm{SSM}$	
Birth	[Age]	N	Graduation	$Childbirth^a$	[Age]	N	Graduation	$Childbirth^a$
1915 - 25	[60's]	43	19341941	19481956				
1925 - 35	[50's]	99	19461951	$1957\dots 1964$	[60's]	88	19451950	19581964
1935 - 45	[40's]	168	19551961	$1967 \dots 1972$	[50's]	126	19571961	19681974
1945 - 55	[30's]	241	19661971	$1977\dots 1982$	[40's]	224	19661971	19761983
1955 - 65	[20's]	70	19751979	$1983\dots 1985$	[30's]	167	19771982	19881993
1965 - 75					[20's]	47	19851988	19931995

 Table 6. Timing of the women's life events by birth cohorts

The first quartile (the 25 percentile)...the third quartile (the 75 percentile). Only respondents valid in the CRFE calculation: N = f + p + u (Equation 1). *a*: the latest childbirth. See Note 3, Appendix **A**.

Table 7 shows the change in CRFE by birth cohorts. The youngest cohort of each data (in the 20's at the time of the survey) exhibits the highest (or the lowest) value among the cohorts. But this can easily be misunderstood: first, the number of valid respondents in the cohort is small; second, they are limited to those who experienced childbirth earlier; third, timing of the childbirth is concentrated within two or three years (Table 6). Except for those youngest cohorts, CRFE has been steady at the level of 20%. (For further details, see Appendix A.)

Birth	$85 \ \mathrm{SSM}$	$95 \ \mathrm{SSM}$
1915 - 25	20.9 (43)	
1925 - 35	20.2 (99)	21.6 (88)
1935 - 45	16.7(168)	23.0(126)
1945 - 55	19.9(241)	21.4(224)
1955 - 65	27.1 (70)	25.1 (167)
1965 - 75		12.8 (47)
Total	20.0(621)	22.1 (652)
Cramer's V ((df) $.075^{ns}(4)$	$.072^{\rm ns}(4)$

 Table 7. CRFE by women's birth cohorts

% (N). See Note 3, Equation (1), Appendix A.

2.3. External disturbing factors

Table 7 gives us the impression that there hasn't been any change in the sexual division of labor, despite the lessening sex gap in the labor market (2.1.). Before we come to this conclusion, however, let us investigate the remaining problems: the effects of social support and of the extended family.

Social support for child-care

Women's employment might be prompted by social support for housework, especially for child-care. If the social support system is developed enough, CRFE can be high even if all housework in the household is done by women [Hirota: 21: 366]; so CRFE may not be a good index of the sexual division of labor⁶.

In Japan, the social support system has been developing. It is difficult to estimate that development, but it can at least be stated that the social support system has not been declining. If so, the steady CRFE may suggest the more rigid division of labor between two sexes. Therefore, we do not have to correct our impression that the lessening sex gap in the labor market has not contributed to reducing the sexual division of labor.

Effect of the extended family

Another source of the support for child-care is the extended family. A woman can continue her full-time employment with her child looked after by another woman in the household—especially by her mother. In this case, the sexual division of labor is not altered, since all housework is done by women⁷).

We can estimate the effect of the extended family from the 1990 Census [44: 308]. Among households that consist of child(ren) under 6 years old and the parents, the percentage of double-income couples (both the wife and the husband are employed) was 19.4%. As for the three-generation households with child under 6 years old, the proportion amounted to 33.2%. The three-generation households thus exhibit higher rates of women's employment at the childrearing stage.

However, the proportion of the three-generation households is fairly constant from 1970 to 1990 (Table 8). In other words, the proportion of women enjoying the benefit of an extended family should have been unchanging⁸⁾, so the effect of the change in the composition of households is negligible. Accordingly, we can conclude that the sexual division of labor has not reformed.

Turne of household	Number of households			
Type of household	1970	1990		
S: Children and parents only	5,027,635	3,926,998		
L: Children, parents, and grandparents	$2,\!202,\!555$	$1,\!563,\!448$		
L/(S+L)	30.5%	28.5%		

Table 8. Changes in the composition of households with children under 6

Census [7: 254f.] [44: 308]. Other types of household are excluded.

3. Good Jobs and Low Continuity

This section presents a cross-sectional analysis of the effect of women's occupational status on CRFE.

3.1. Difference among occupations

Table 9 shows women's CRFE by their first jobs before marriage according to the SSM Occupational Categories (Note 1; semi- and unskilled manual are combined). The "V" shape of CRFE can easily be seen: the bottom at the "sales" or "skilled", and two peaks at each end—"professional" and "semi- and unskilled".

The distribution of CRFE is affected by the presence of two sectors in which child-care support is highly developed: the government and professional—especially teachers and nurses⁹⁾. Toward the more refined measurement of the sexual division of labor, first we must look at the right columns of Table 9, where the government employees are exempted, and see how CRFE for clerical workers slightly decreases. Furthermore, if we ignore the professional, no difference will be found among occupations: White-collar (clerical and sales) women could appear to have less tendency to continue full-time employment, but this tendency is weak and statistically nonsignificant. This result is consistent with Kojima [29: 77f.] and Tanaka [49: 74], who reported the weak negative effect of being white-collar on women's employment at the childrearing stage.

First job (SSM	А	.11	Nongov	Nongovernment		
Occupational Categories)	85 SSM	$95 \ \mathrm{SSM}$	85 SSM	$95 \ \mathrm{SSM}$		
Professional	33.3 (93)	35.7 (98)	26.2 (65)	27.8 (72)		
Clerical	16.7(281)	20.2 (341)	15.7 (249)	16.4 (311)		
Sales	14.3 (77)	14.3 (56)	13.2 (76)	14.3 (56)		
Skilled	17.1 (41)	12.5 (48)	$17.1 \ (\ 41)$	13.0 (46)		
Semi- and unskilled	20.8(125)	24.3(107)	19.7 (122)	24.3 (107)		
Total	19.8(617)	22.2~(650)	17.5 (553)	18.8 (592)		
Cramer's V (df)	$.151^{**}(4)$	$.157^{**}(4)$	$.058^{ns}(3)^{a}$	$.095^{ns}(3)^{a}$		

Table 9. CRFE by women's first job before marriage

% (N). None were managerial. a: Professional is excluded from the calculation of V. See Note 3, Equation (1), Appendix A.

3.2. Controlling the husbands' status

Many authors insist that the employment behavior of women is strongly affected by the economic resources of the households, which are determined by the husbands' occupational status [Chimoto: 10]: Wives of lower class men could only keep their full-time employment in order to gain the money to live. Another variant of this view emphasizes the more cultural factor: The modern family of a breadwinner and a housekeeper has been the new lifestyle of the middle class —especially of the upper-white-collar men—, and they have made an attempt to have housewives to symbolize their status [Yamada: 58: 165, 191f.]. In any case, we must try to control the husbands' status.

Table 10. Women's first job and CRFE by husbands' occupation (listwise deletion)

The husband's occupation on marriage		85 SSM			$95 \ \mathrm{SSM}$		
		$White^{a}$	CRFE	N	$White^{a}$	CRFE	
Professional	44	79.5	11.4	37	81.1	10.8	
Managerial, clerical, or sales in large^b firm	103	82.5	11.7	121	84.3	11.6	
Managerial, clerical, or sales in small c firm	53	86.8	22.6	73	78.1	19.2	
Blue-collar worker in large^b firm	64	57.8	15.6	63	54.0	17.5	
Blue-collar worker in small ^{c} firm	94	50.0	19.1	95	59.0	23.2	
Family or self-employed worker, farmer	71	62.0	15.5	57	63.2	17.5	
Total	429	68.5	15.9	446	70.2	16.8	
Cramer's V (df=5)		.305**	* .104 ^{ns}		.264**	* .120 ^{ns}	

a: Percentage white-collar for the first job before marriage, where white-collar = {clerical and sales}, blue-collar = {skilled, semi-skilled, and unskilled}, professional and managerial are omitted.

b: Employee \geq 300 or government. c: Employee < 300. See Notes 3, 10; Equation (1); Appendix A.

We applied a logistic regression analysis¹⁰ with the variables listed in Table 10.

Variables	$85 \ \mathrm{SSM}$	$95 \ \mathrm{SSM}$
Constant	-1.923 (0.527)	$-1.971 \ (0.574)$
First job before marriage was white-collar	$-0.167 \ (0.295)$	-0.174 (0.279)
Husband's occupation on marriage (referred t	o professional)	
Managerial, clerical, or sales in large firm	$0.033\ (0.566)$	$0.082 \ (0.601)$
Managerial, clerical, or sales in small firm	$0.838\ (0.578)$	$0.667 \ (0.607)$
Blue-collar worker in large firm	$0.331 \ (0.591)$	$0.509\ (0.630)$
Blue-collar worker in small firm	$0.564\ (0.550)$	$0.872 \ (0.586)$
Family or self-employed worker, farmer	$0.328\ (0.580)$	$0.531 \ (0.636)$
$\chi^2 (df)$	$4.912^{\rm ns}(6)$	$6.892^{ns}(6)$

Table 11. Logit coefficients on women's continuity of full-time employment

Parenthesized are standard errors. See Table 10.

Women's first jobs before marriage were converted into a dichotomous variable: whitecollar = 1, blue-collar = 0. The husbands' jobs on marriage were classified on a basis similar to the SSM Synthetic Occupational Classification (SSM 総合職業分類) by Hara Junsuke (原 純輔) [1995 SSM Project: 2: 105], with a modification in the line between "large" and "small" firms; they were presented as a combination of five dummy variables whose reference category was the professional.

The result of the regression is presented in Table 11, which is similar to the result of the simple crosstabulation in Table 9. White-collar (clerical or sales) women would tend to give up their full-time employment even if their husbands' status remained constant, but this effect is weak and statistically nonsignificant.

This result makes it clear that women's continuity of full-time employment is independent of the women's occupational status, which will be unexpected for those who believe the accepted theory. White-collar women get higher rewards than blue-collar, as reported by past economic research [Kawashima: 26: 79]. In addition, they are free from the stigma suffered by blue-collar women [Goldin: 15: 84]. Thus white-collar work may be a better occupation for women. However, in spite of the benefit that white-collar women receive, they show no greater tendency toward continuous full-time employment than blue-collar women.

4. The Hidden Mechanism of Patriarchy

4.1. Manifesto

The foregoing findings are contrary to the accepted theory (1.). Despite the substantial rise of women's occupational status, no reformation in the sexual division of labor was observed (2.). In cross-sectional terms, women's occupational status was shown to have no effect on CRFE (3.). Thus we have been confronted with a disproof of the theory.

This could imply that the theory is totally wrong. Women might not care about their occupational status or rewards, and their behavior might be the same no matter how the sex gap narrows or widens. However, if we take this view, we will lose the clue to the question and the logic to explain the changes in the sexual division of labor. This view can offer only *ad hoc* explanations of the social change.

That is not what we choose to do. Instead of a similar theoretical disorganization, we assume a two-way causal process in the occupational structure. The expected effect may be neutralized by another hidden mechanism, which the theory misses. In the next two sections **5.** and **6.**, we will try to understand what the hidden mechanism is, having some theoretical matters fixed beforehand.

4.2. The patriarchy theory

Our manifesto overlaps with the patriarchy theory [Ueno: 53: 180, 189, 214–220, 244f., 263–266, 305f.]. Ueno argues for a social mechanism called "patriarchy", which perpetuates the sexual division of labor against the sexual egalitarianism. While sexual egalitarianism is driven by the utility-maximization behavior of companies, households, and individuals, the mechanism of patriarchy is strong enough to hinder it. As a consequence of the conflict between egalitarianism and patriarchy, the equilibrium has come into existence: women's labor force participation without reformation in the division of housework. Today women are utilized as the secondary labor force —out of the established career courses—, while all housework —the labor to reproduce the labor force—remains women's work. Behind this rigid situation, the patriarchy theory finds the built-in mechanism of contemporary societies to stabilize the sexual division of labor.

The patriarchy theory is famous in Japan, since it appeals to the Japanese reality. But there has been no operational attempt to betray the concrete process of patriarchy. We will make the first attempt through looking into the difference between white-collar and blue-collar work.

4.3. The marriage bar: patriarchy visualized in the workplace

As the clue to the concrete process of patriarchy, we focus on the marriage bar, which is defined as follows:

Definition 1. The notion *marriage bar* denotes any institution, custom, or norm in the workplace directing women to quit upon marriage, pregnancy, or childbirth.

The most obvious marriage bar is an employment contract providing that women must quit when they marry. Of course, it does not matter whether there is a provision or not. A vague condition, such as coworkers' expectation of women's quitting upon marriage, also can constitute a marriage bar. As we have seen in Section **3.**, white-collar women show a CRFE as low as bluecollar's, although they are privileged with high occupational rewards. This suggests that the marriage bar would be developed in the white-collar workplace, and would neutralize the effect of the high rewards. This neutralizing process would correspond to the patriarchy embedded in the occupational structure. Let us investigate more closely the mechanism producing the marriage bar.

5. Testing the Turnover Hypothesis

5.1. The turnover hypothesis formalized

In this section, we are testing the hypothesis that the marriage bar develops because it profits the employer. This hypothesis is widespread and has many variants [Fujii: 12: 116]. We focus on the formalized version of it, called "turnover hypothesis" by Goldin [14: 171–173], which is the most sophisticated and the best at demonstrating the effectiveness of the hypothesis.

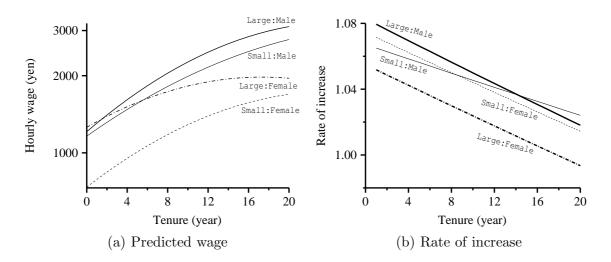
The turnover hypothesis starts with the assumption that the rigid tenure-based salary scale has been introduced as the internal labor market has developed, where the workers receive a low salary in the beginning of their employment, and receive the higher salary the longer they are employed. The second assumption is that the employer cannot set a separate wage system according to the jobs or any attribute of the workers, because of the strong union, social norms, or other reasons. Thus it becomes common that all workers in a firm receive the same tenure-based salary. Under this condition, the wage for workers in routine jobs, which require little training, rises more rapidly than the productivity. It therefore becomes profitable for the employer to concentrate women in routine jobs and to set the marriage bar system, since it allows the employer to replace old costly workers with new cheap workers¹¹.

From this hypothesis, the following implication is obtained after a simple manipulation: The marriage bar will develop where the wage for both men and women rapidly rises along with tenure. To put it another way, suppose women's wages are suppressed, then they will not cost even with long tenure, accordingly the employer will have no incentive to fire the old female workers. It is this paradoxical implication that has attracted those who focus on the mechanism of patriarchy in the workplace.

5.2. An argument against the turnover hypothesis

Regrettably, the turnover hypothesis is shown to be wrong by Osawa [39]. Osawa estimates the tenure-wage curve by a quadratic regression using data of a 1989 survey of sampled private establishments. The dependent variable is the natural logarithm of the hourly wage w (including bonuses). The independent variables are tenure (t), tenure squared (t^2) , age, age squared, years of education, and industry dummies. Parameters are estimated separately for each combination of male/female workers and large/small firms¹²⁾. We plot the predicted tenure-wage curves on Figure 2 (a), based on the result of the regression [Osawa: 39: 14f.]:

$$\log_e w = at^2 + bt + c,\tag{2}$$



where c is the sum of the effects of the other variables and the intercept.

Osawa [39: 14, 15, 18]. Data: Basic Survey on Wage Structure, 1989, Ministry of Labour. The vertical axis of the graph (a) is log-scaled. See Equations (2) (3), Note 12.

Figure 2. The predicted wage by tenure

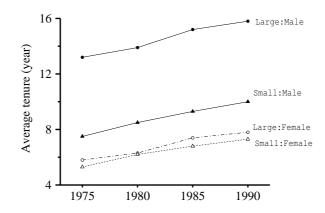
Figure 2 (a) reveals the difference between large and small firms. In large firms, the tenure-wage curves of women and men are distinct: While men's wages grow with tenure, women's wages are almost constant irrespective of tenure. By contrast, men and women in small firms are basically similar in the tenure-wage curve: Men and women both gain higher wage as the tenure becomes longer.

To bring out the contrast, we plot the rate of increase in the wage on Figure 2 (b):

Rate of increase
$$= \frac{w_t}{w_{t-1}},$$
 (3)

where w_t denotes the predicted hourly wage at the tenure t. As Figure 2 (b) indicates, while small firms bring almost the same rate of increase in the wages for both of the sexes, large firms bring women a lower rate than men.

Under the turnover hypothesis, small firms should have a more developed marriage bar system than large firms, but this expectation is contrary to reality. It is large firms that develop the marriage bar system, Osawa argues upon the evidence that the male-female tenure gap is greater in large firms. In fact, the average tenure of female employees is short, irrespective of the firm-size (Figure 3). Considering the higher wages and better conditions in large firms, it should not be the case that the marriage bar system is



Osawa [39: 9]. Data: Basic Survey on Wage Structure, Ministry of Labour. See Note 12.

Figure 3. Sex difference in tenure by firm size

less developed in large firms. Besides, we can confirm Osawa's finding with Table 12 indicating CRFE by the firm size of women's first jobs: There is no tendency of higher CRFE among women in large firms.

We come to the conclusion that the turnover hypothesis should be rejected: The marriage bar tends to be developed in the firms that hold the sex-based two-tier wage system.

Firm size (number	85 \$	SSM	$95 \ \mathrm{SSM}$			
of employees)	White	Blue	White	Blue		
Small (<100)	19.3(114)	15.5 (58)	18.0(128)	22.4 (58)		
Medium $(100-999)$	$10.3 \ (\ 68)$	22.2 (36)	15.1 (106)	24.4 (45)		
Large $(999 <)$	12.9(101)	20.0 (30)	16.8(113)	$13.5\ (\ 37)$		
Total	14.8(283)	18.6(124)	16.7(347)	20.7(140)		
Cramer's V (df)	$.107^{\dagger}(2)$	$.076^{ns}(2)$	$.032^{\rm ns}(2)$	$.109^{\rm ns}(2)$		

Table 12. CRFE by the occupation and the firm size of women's first jobs

% (N). White/blue classification is the same as Table 10.

See Note 3, Equation (1).

5.3. The Sumitomo Semento case

Let us seek more detailed information in minutes of a trial [1]. In 1964, a female employee of the Sumitomo Semento corporation, dismissed on the grounds of the marriage bar provision in the employment contract, brought a suit against the employer in the Tokyo District Court¹³⁾. The statement by the defendant Sumitomo Semento is interesting from our point of view.

According to the statement by the defendant, the personnel policy of Sumitomo Semento toward women had two characteristics [1: 1411f.]:

- The career course was clearly separated by the sexes. Men went up the ladder as they were employed longer, whereas women were excluded from the upgrading career.
- For young female employees, the company paid a premium as a "reserve for marriage".

Women's tenure-wage curve in Sumitomo Semento was almost flat for two reasons: They were excluded from the upgrading career, and their starting wages were already pulled up higher than their productivity. The two conditions together generated the flat tenure-wage curve, which is peculiar to women in large firms (Figure 2).

Some may suspect why the "reserve for marriage" was paid to women only, though men should share the marriage cost, too. That could be regarded as a kind of "living wage" system, which paid employees according to their needs, not for what they produce. The management may have thought as follows: While men must continue in having responsibilities to earn the bread, women could rely on their husband after the marriage; it was important for a woman to get a good husband, so she must prepare for the marriage. At last, the management might set separate lifecourses for men and women, and might make institutions suitable for the sex-separated lifecourses. As Brinton [6: 157–159] found, this kind of thought has been widely accepted among Japanese large corporations¹⁴.

In this two-tier wage system, the marriage bar is disadvantageous for the employer: If a woman quits and a new woman is employed, the employer must pay another premium to the new one (this is just a reverse of the foregoing illustration in **5.1**. by which we traced the logic of the turnover hypothesis). In spite of the disadvantage, Sumitomo Semento and other corporations developed the marriage bar system. Why did they behave so irrationally?

The defendant Sumitomo Semento answered that the marriage bar system had been introduced because of the pressure of male employees. They had complained about women gaining the status along with long tenure¹⁵⁾, so the marriage bar was introduced to calm down the complaints [1: 1413]. Of course, the corporation would have had to be able to face the disadvantageous compromise.

6. Sexism and Segregation in the Workplace

6.1. Effect of sexism

In the Sumitomo Semento case, we easily find men's prejudice against women, and find that prejudice plays an important role in producing the marriage bar. This will lead us further into a consideration of "sexism", the cultural factor producing the prejudice against women in the workplace.

Definition 2. The notion *sexism* denotes a system of belief that appreciates men and depreciates women.

The effect of sexism is often visible as the marriage bar provision in a contract — as we have seen in the preceding section. It may be also effective in discouraging women from continuous employment through setting the two-tier wage system to suppress women's wage to not rise along with tenure. Moreover, it always works in a vague manner, such as an unclear custom or the coworkers' expectation.

The low CRFE among the white-collar women (3.) suggests, thus, that the whitecollar workplace shows strong sexism. We will inquire why the white-collar workplace causes sexism, with the aid of studies of occupational sex segregation.

6.2. Formal segregation in blue- and white-collar workplaces

Occupational concentration

First of all, we must know the proportion of women for each blue- and white-collar work. From the 1950, 1970, and 1990 Census, we calculate the proportion of women according to the same white/blue classification as Table 10—clerical and sales comprise "white", while skilled, semi-skilled, and unskilled manual comprise "blue". Let f_w and m_w be the numbers of female and male workers in white-collar occupations; f_b and m_b , in bluecollar. The proportion of women, W and B for each white- and blue-collar, is given as follows:

$$W = \frac{f_w}{f_w + m_w}, \quad B = \frac{f_b}{f_b + m_b}.$$
(4)

In Figure 4 (a) (c) (e), the vertical broken lines noted "W=" denote the proportion of women for white-collar work; the solid lines noted "B=", for blue-collar¹⁶). The graphs show that white-collar has a greater proportion of women than blue-collar; the difference widened during 1950–1970, then have been steady till 1990.

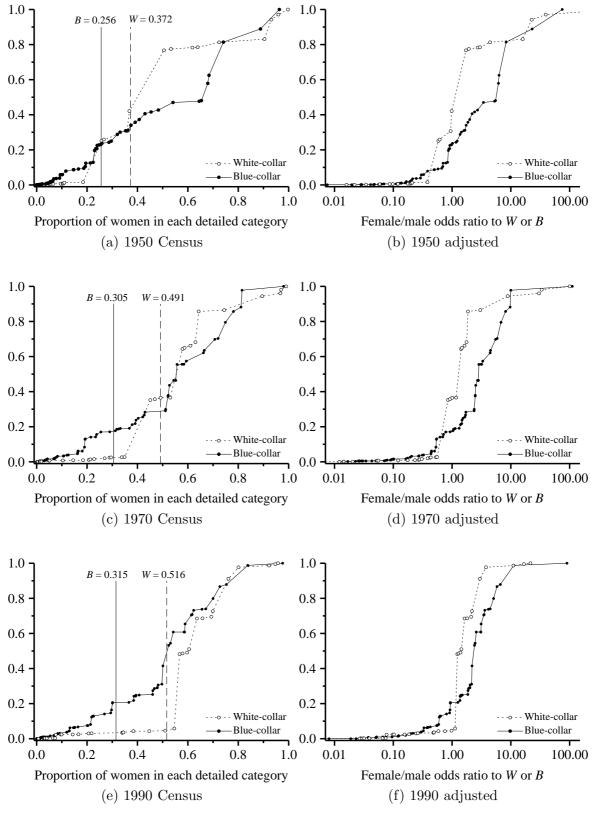
The other two stepped lines on each of Figure 4 (a), (c), and (e) indicate women's occupational concentration. The dotted line with white circles denotes white-collar occupations, while the solid line with black bullets denotes blue-collar — a circle or a bullet corresponds to a detailed occupational category¹⁷). The vertical axis denotes the cumulative proportion among the female workers within each white- or blue-collar.

Here we are illustrating what is indicated in Figure 4 (a) (c) (e). Let f_i and m_i be the numbers of female and male workers in a category *i*. The proportion of women in the category *i* is

$$x_i = \frac{f_i}{f_i + m_i}.$$
(5)

For any x_k , the corresponding cumulative proportion among the female workers is

$$y = \frac{\sum_{x_i \le x_k} f_i}{\sum_{\text{all } i} f_i}.$$
(6)



Census [8: 18–41] [45: 294–317]. The SSM detailed categories [3: 104–110] are used. The vertical axes denote the cumulative proportion among the female workers. The horizontal axes in graphs (b) (d) (f) are log-scaled. See Equations 4–7, Notes 16, 17.

Figure 4. Distribution of women over detailed occupational categories

That is, line up all categories in order of the increasing proportion of women, then sum up the number of female workers for the category in question (then divide the sum by the total number of female workers). The locus of y traces out an increasing curve between the following two points: If $x_k = 0$ then y = 0, if $x_k = 1$ then y = 1. Repeating the procedure above for each white- and blue-collar, we obtain the graph.

It is difficult to interpret Figure 4 (a) (c) (e), since we have not yet adjusted the base lines for comparison—W and B. The adjustment is given by the ratio of the female/male odds to the base line:

$$x'_{i} = \begin{cases} \frac{f_{i}}{m_{i}} \times \frac{m_{w}}{f_{w}} = \frac{x_{i}}{1 - x_{i}} \times \frac{1 - W}{W} & \text{for white-collar} \\ \frac{f_{i}}{m_{i}} \times \frac{m_{b}}{f_{b}} = \frac{x_{i}}{1 - x_{i}} \times \frac{1 - B}{B} & \text{for blue-collar.} \end{cases}$$
(7)

The horizontal axes in Figure 4 (b) (d) (f) are adjusted in accordance with Equation (7). If women and men were equally distributed over all the white-collar (or blue-collar) categories, the proportion of women should be equal to W (or B) for all the categories, then the graph should draw a vertical line: the odds ratio = 1. As both sexes are distributed unevenly, the line will shift right, with women concentrated in a few categories.

In Figure 4 (b) (d) (f), lines for blue-collar are located to the right of white-collar. The occupational concentration of women is shown to be higher in blue-collar than in white-collar. This situation has remained during 1950–90, though the difference has been narrowing¹⁸.

Workplace concentration

Now we will investigate in detail: the workplace concentration of women. The high concentration in blue-collar occupations (Figure 4) might be an artifact, made up by the categorization with which the blue-collar occupations are divided into smaller groups than white-collar (see Note 17). Does closer observation lead us to a view similar to Figure 4?

Table 13 is made using the data from a survey of union members of Denki Rōren, which was a national organization of unions of the electrical machinery industry in Japan. More than 20% among the blue-collar respondents work in female-dominated workplaces, by contrast with the smaller proportion (less than 10%) among white-collar. Though two exceptions in white-collar occupations indicate the high percentage of female-dominated workplaces —29.6% for "key puncher and operator" and 26.7% for "instructor"—, they have only the small population. Generally speaking, most white-collar women work in workplaces where both sexes are intermingled, while blue-collar women are usually concentrated in female-dominated workplaces¹⁹.

Roughly classified job titles	% (N)
White-collar	
General clerical (一般事務)	3.2 (2373)
Planning and management (管理・企画)	4.1 (267)
Key puncher and operator (キーパンチャー、オペレーター)	29.6 (162)
Business and sales (営業・販売)	7.8(103)
Instructor (インストラクター)	26.7 (45)
Blue-collar	
Manufacturing (製造 (技能))	31.7(1584)
Testing and inspecting (試験・検査)	23.6 (330)

Table 13. The proportion of women working in female-dominated workplaces

1990 survey by Denki Rōren [11: 2, 10]. The percentage of female respondents whose workplaces were "ほとんどが女性である" (almost women only). Professional and technical jobs are omitted.

Case studies

There have been numerous studies of the labor process in the workplace with qualitative methods—mainly in-depth interviews. They offer views similar to the ones we saw above.

In blue-collar workplaces, the clear separation between the sexes is common. Furukawa [13] witnessed the typical case of a female-dominated workplace in the electrical machinery industry: Almost all workers in the factory were female. As a smaller unit, Wakisaka [56] reported the case of a factory of the automobile industry: Women were concentrated in the sewing process of seats for cars, while other car production processes were occupied by male workers. At the more detailed level, Tokunaga et al. [51: 234–243] reports the case of an automated Hitachi factory, one of the major corporations in Japanese electrical machinery industry: Women do only handwork —production processes left behind by automation—, while men use machines.

In contrast, white-collar workplaces are shown to be less separated by sex [6] [27] [28] [32] [55] [56]. The white-collar workplace, investigated in those studies, has female and male workers intermingled. Besides, the separation by nominal job titles is weak. Of course, this "integrated" workplace is only superficial. Next we will approach in detail the sex segregation in the white-collar workplace.

6.3. Another aspect of segregation

Although the white-collar workplace is less separated by sex, as we have seen, this never ensures that white-collar women are treated equally to men. The qualitative research into the white-collar labor process clarified that the substantial jobs are differentiated between men and women, and that these differences are recognized by the workers themselves. The differentiation can be grouped into the following four types: 1. Decision-making or assistant routine work.

In most offices, men are assigned to jobs that require decision and responsibility, whereas women are engaged in routine work to assist male coworkers, under their direction. Typical jobs of OL^{20} make up this type of female work — processing documents, adjusting accounts, receiving customers, cleaning the office, serving tea, and so on [Group Nagon: 17] [Kumazawa: 30: 249].

2. Expensive dealing or cheap one.

Research in banks and department stores, Kawashima [27: 650–654] and Wakisaka [55: 57, 74–77], summarizes the typical sex differentiation in business transaction jobs. Women are always assigned to charge of cheap commodities or of small amount dealing. Otherwise, negotiation with other corporations is men's work, while women deal with individual customers.

- 3. Experience various sections or specialize in a specific area. Kimoto [28] researched a department store to find the sex difference in job rotation. Men are rotated among various sections and various jobs, while women are not rotated and specialize in their specific areas.
- 4. Work as a team or as an individual.

This type of differentiation has two subtypes: Women work as a team, or men do so. Konno [32: 16f.] gives an example of the former subtype in a corporation for business loans: Each man works as an individual, being responsible for "his own cases"; women work as a team, each of who deals with a different part of a particular case, so that their responsibilities are unclear. Kimoto [28: 35f.] witnessed a somewhat different example: Men worked in teams and thereby were trained by the senior men, whereas each woman worked separately, receiving no organized training.

We should not interpret hastily this differentiation as the hierarchical order between the sexes. Although the former two are hierarchical (associated to power and prestige), the latter two are not necessarily so. Kimoto [28: 37f.] observed a workplace in a department store, within which the third type of differentiation above was dominant, to discover that female workers were in no more worse condition than men. Men were bound to their tasks for long hours; besides, they were obliged to do extra work without overtime pay, so that the substantial hourly wage was low. In contrast, the female workers in the same workplace enjoyed freedom, with good pay for their short working hours.

Kimoto interprets the differentiation as core-marginal segregation: In Japanese corporations, candidates for executives should experience various jobs to obtain a wide view of the system of the corporation, and should be trained through heavy, responsible tasks. The above four types of sexual differentiation in white-collar workplaces share the character of core-marginal segregation: men are regarded as the core members of corporation and are advanced through organized training, whereas women are placed in marginal, dead-end careers.

6.4. Sexism and day-to-day segregation

Unsatisfactorily, Kimoto's interpretation cannot answer the question, since the coremarginal segregation exists in blue-collar workplaces, too. The sex-separated labor process witnessed in a production process in Hitachi [51: 234–243] that we mentioned (**6.2.**) gives an instance. The question, white-blue comparison, requires another perspective.

Konno [33] argues that what is important is not the formal separation of jobs, but the formation of human interaction within the workplace—what degree the interactive practice is gendered. Konno's discovery can be summarized that the little separation by sex ironically forces the workers to realize the sex difference in the everyday work process and encourages gendered interaction.

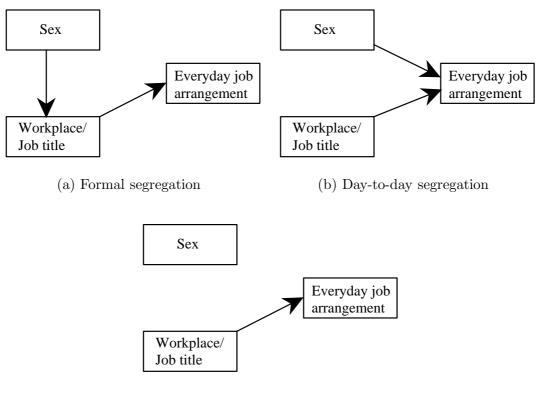
Introducing a typology of segregation helps us understand the point (Figure 5):

- **Formal segregation** Figure 5 (a) illustrates a two-stage process of sex segregation: First, workers are allocated among workplaces and job titles according to their sex; second, everyday jobs are assigned according to the workplace or the job title.
- **Day-to-day segregation** Figure 5 (b) illustrates more informal segregation by sex, where both sexes are mixed within each workplace and each job title, then the sex of each worker directly affects everyday job arrangement.

The first stage of formal segregation —the assignment of the workplace or the job title usually occurs at the time of making an employment contract or deciding a personnel shift, hence infrequently. And once the workplace and the job title are assigned, the labor process can run irrespective of the sex of each worker. In contrast, day-to-day segregation happens when the workers are assigned their workplaces and job titles independently of their sex; the differentiation by sex occurs in the everyday labor process.

Theoretically speaking, we can imagine the third type, "sex neutral" in Figure 5 (c), where the sex is really independent of job arrangement. But we know that few workplaces are sex neutral. The sex segregation processes would take place in almost all workplaces, in the form of mixed formal and day-to-day segregation.

Among these segregated workplaces, the blue-white contrast is remarkable. In the blue-collar workplace, formal segregation is dominant, whereas day-to-day segregation is dominant in the white-collar workplace. Blue-collar women and men are always clearly separated by job titles, and besides, they have often been separated by workplace beforehand (6.2.). Conversely, in the common white-collar workplace, women and men are engaged in similar tasks in the same workplace, but the way of working is differentiated (6.3.): The sex of the workers is a prime determinant of everyday job arrangement.



(c) Sex neutral

Figure 5. Three ideal types of segregation by sex

Day-to-day segregation will bring sexism in the white-collar workplace through the sex-typed everyday job arrangement. In the classic white-collar workplace, dominated by that kind of segregation, no job can be carried out without referring to the workers' sex. Besides, as the result of segregation, men (or women) define their core (or marginal) position at the corporation. Sexism and prejudice against women thereby grow up in the white-collar workplace.

7. Conclusion

7.1. A latent causal process behind the feminization of white-collar work

Our typology of segregation successfully explains the difference of women's behavior between blue-collar and white-collar, and what happened when women poured into whitecollar jobs, namely, the feminization of white-collar work. It would have effects on women's employment behavior via two different processes, which contradict each other (Figure 6).

On the one hand, the feminization of white-collar has freed women from bad jobs and has provided them with better work conditions. In blue-collar workplaces, women suffered bad pay and poor working conditions [Ujihara: 54]. In these years, many women have started white-collar work to improve their pay and conditions. The upgrading of

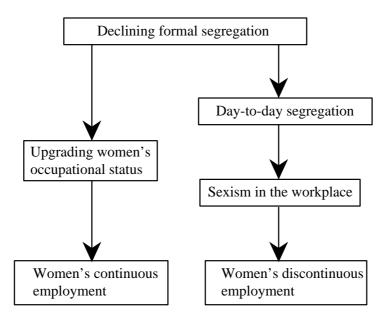


Figure 6. The two-way effect of the decline in formal segregation

women's occupational status has encouraged them to stay in the labor market to keep the status they won. This process is just what the accepted theory predicts, which we saw in Section 1.

On the other hand, the feminization of white-collar work has reduced formal segregation: It has become common for female and male workers to work together in offices, in place of the sex-separated production process in factories. This has never led to the sex neutral workplace, but to day-to-day segregation and sexism: Workers have become more sensitive about gender roles, and a gendered interactive practice has begun. Consequently, women still have discontinuous employment, because they are more gender-role oriented, or because the sexism in the workplace makes up institutions prompting them to withdraw—the marriage bar provisions, the two-tier wage system, and so on.

Those two simultaneous processes have kept the steadiness in continuity of women's full-time employment, although the situation of female workers has been transformed. In the past, women quit owing to low rewards or bad working conditions. In contrast, today women in the classic white-collar workplace, enjoying higher rewards and better conditions, quit owing to the gendered orientation in the workplace, either cultural or institutional. Although the reason is now different, women's employment behavior has shown to be unchanged, at least on the surface, thus the sexual division of labor has kept away from reformation.

7.2. Theoretical implications

We have set out a concrete explanation of patriarchy. As we noted in Section 4.2., the patriarchy theory is characterized by the assumption of the built-in stabilizer that

stands against the sexual egalitarianism driven by the utility-maximization behavior of each company, household, and individual. Our finding of the day-to-day segregation process betrays the stabilizing mechanism of the Japanese society to perpetuate the sexual division of labor. Thus we now understand a concrete mechanism of patriarchy for the first time, instead of abstract or ideological arguments. Of course, what we have presented is just a preliminary hypothesis; we are looking forward to more sophisticated tests or proposals of alternatives.

Our findings offer some suggestions about the particular perspective widespread in the research field of women's careers, which over-emphasizes the importance of the personnel policy of employers. Although the personnel policy might affect the employees' behavior, the effect is not straightforward; so we must investigate the way gendered interaction takes place in the workplace²¹⁾. In addition, the gendered interaction can reinforce the sex-typed personnel policy, as we saw (**5.3.**), thus the relation between the personnel policy and women's employment behavior becomes more complex.

7.3. In the future

Will the Japanese sexual division of labor change in the near future? Our research suggests a negative answer. Whether the changes in the occupational structure come to formal segregation or day-to-day one, women's employment behavior will be unchanged, being stabilized by the two-way effect of segregation (Figure 6). If there were a chance for reformation, it would occur when a sex neutral workplace (Figure 5 c) appears. That is to say, the sexual division of labor will reform if formal segregation falls and day-to-day segregation does not rise.

We take the example of the female career development program, which many corporations have introduced since the mid-1970's [Takeuchi: 48: 76–96]. This program assigns women and men to the same workplace and the same job title, so to cause the decline of the formal segregation. The question is whether this change is doomed to rising day-today segregation, or can succeed in making the workplace sex-neutral and in reforming the sexual division of labor.

Until the present, the program has failed to stop sexual differentiation in everyday job arrangements. Interviews with women who are following (or followed) the sex-integrated career track —often called "sōgōsyoku"— show that women are never treated equally to men [Akiba: 4] [Takenobu: 47] [WWI: 57]. Women on the integrated track face either men's hostility or paternalism, both of which strongly differentiate them from their male counterparts. As they are given the same formal status as men, any different treatment is interpreted in a gendered context. They are exposed to so strong sexism in everyday life that they exhibit a high probability of withdrawals [Konno: 33].

But this might be a transitory problem: In due course of time, the program would possibly be able to abolish the sex differentiation in job $\operatorname{arrangement}^{22}$. If so, women's continuous full-time employment would be prompted in the future, but the following three questions remain:

- Only a few career-oriented women will be able to join the program [Lam: 31: 177–180]. Greater population of female workers will be excluded from it, remaining marginalized in the workplace (see **6.3.**).
- In most cases, support system for child-care (such as child-care leave) will be introduced along with the female career development program [Wakisaka: 55]. Most career-oriented women will make use of it, and there will be no change in their husbands' participation in housework (see **2.3.**).
- Women who can achieve their careers tend not to marry [Yamada: 59: 3].

There is a strong probability that the lifestyles of men and of the mass women will never reform, while only a few career-oriented elite women will reap the benefits from the program. At last, the reforming effect of the female career development program on the sexual division of labor, if any, will be small.

Appendix

A. Details for the calculation of CRFE

Here are details for calculating CRFE, the index of women's continuity rate of full-time employment (2.2.). On the occupational history of each female respondent, we find the jobs at the two relevant points of time:

• The first job before marriage.

If the respondent had not worked before marriage, we give the "not employed" status. We also give the "not employed" status to respondents who experienced the series of life events in the following sequence: bore the first child, started the first job, and got married²³⁾.

• The job when the last child was born.

While the 1985 SSM Survey data contains the respondent's age at the childbirth, the 1995 data contains the child's age when the survey was conducted. The latter is converted by subtracting the respondent's own age at the time of the survey from it; since this may produce a positive aberration within +1year at most, a correction is made for some respondents²⁴) by subtracting an additional year.

These two relevant jobs are classified into seven categories as follows:

- 1 常時雇用されている一般従業者 = regular and full-time employee
- 2 臨時雇用, パート, アルバイト = temporary or part-time employee
- 3 内職 = home handicraft worker
- 4 無職 = not employed

Before	When the last child was born							Un-	No	No
marriage	1	2	3	4	5	6	7	married	child	answer
60's (born 19	915-25;	N = 199	9)							
ì	9	1	2	31	1	4	11	4	4	4
2	0	0	0	2	0	0	1	0	0	0
3	0	0	0	2	0	0	0	1	0	0
4	3	2	1	37	2	5	4	0	2	1
5	1	0	0	6	0	0	2	2	0	1
6	0	0	0	4	0	0	0	1	0	1
7	1	0	0	4	0	3	25	0	0	3
No answer	1	0	0	1	0	0	1	0	0	8
50's (born 19	925-35;	N = 33	6)							
1	20	1	2	76	3	5	5	4	12	6
2	0	2	0	3	0	0	2	1	0	0
3	1	0	4	1	0	0	0	0	0	0
4	5	0	0	59	3	5	11	1	8	4
5	0	0	1	3	0	0	0	1	0	1
6	0	1	0	8	0	5	2	0	2	0
7	2	0	1	10	1	1	38	2	1	1
No answer	0	0	0	3	0	2	0	0	1	5
40's (born 19	935 - 45;	N = 32	6)							
1	28	5	10	125	10	8	4	4	7	8
2	0	2	1	8	0	1	1	1	1	0
3	0	0	0	1	0	0	0	1	0	0
4	3	1	1	40	2	8	4	1	1	0
5	0	0	0	3	0	1	0	1	0	0
6	0	0	0	2	2	4	0	0	1	0
7	0	1	0	7	0	3	4	0	0	0
No answer	1	1	0	2	1	0	1	0	1	3
30's (born 19	945-55;	N = 363	8)							
1	48	10	12	171	5	16	7	14	11	5
2	1	2	0	2	0	1	0	1	1	0
3	0	0	1	1	0	0	0	0	0	0
4	2	1	0	20	1	0	1	0	2	1
5	0	0	0	1	2	0	0	0	0	0
6	0	0	0	2	0	6	1	2	1	0
7	0	0	0	0	1	1	1	0	0	0
No answer	1	0	0	4	0	2	1	0	2	3
20's (born 19)			5)							
1	19	3	0	48	1	2	1	102	11	3
2	0	1	0	1	0	0	0	11	1	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	5	0	0	1	18	3	1
5	0	0	0	0	1	0	0	1	1	0
6	0	0	0	1	0	0	0	2	0	0
7	0	0	0	1	0	0	1	1	1	0
No answer	0	0	0	0	0	0	0	1	2	0

Table A.1. Detailed mobility of women before marriage to child birth (85 ${\rm SSM})$

Total 1,474 respondents. Details are in the text.

Before	When the last child was born							Un-	No	No
marriage	1	2	3	4	5	6	7	married	child	answer
60's (born 19	925 - 35;	N = 264)							
1	19	3	0	66	3	13	7	6	8	8
2	0	0	0	8	0	1	1	1	0	2
3	0	0	0	0	0	0	0	1	0	0
4	1	0	0	48	0	5	7	0	3	1
5	0	0	0	1	0	0	0	0	0	0
6	0	0	0	2	0	5	0	1	1	0
7 No answer	$\begin{array}{c} 0 \\ 1 \end{array}$	$\begin{array}{c} 1\\ 0\end{array}$	$\begin{array}{c} 0\\ 0\end{array}$	$\frac{8}{1}$	$\begin{array}{c} 0\\ 0\end{array}$	$\begin{array}{c} 1 \\ 0 \end{array}$	$\begin{array}{c} 20 \\ 0 \end{array}$	$\begin{array}{c} 0\\ 0\end{array}$	$2 \\ 0$	$\frac{2}{6}$
				1	0	0	0	0	0	0
50's (born 19				0.9	0	11	-	٣	0	10
$\frac{1}{2}$	$\frac{29}{2}$	11 1	3	$\frac{83}{11}$	9	$\frac{11}{3}$	7	51	9	19 1
$\frac{2}{3}$			$\begin{array}{c} 0 \\ 3 \end{array}$	0	$\begin{array}{c} 0\\ 0\end{array}$	3 0	$\begin{array}{c} 0\\ 0\end{array}$		$\begin{array}{c} 0\\ 0\end{array}$	$\begin{array}{c} 1\\ 0\end{array}$
3 4	$\frac{0}{2}$	3	0	36	0	$\frac{1}{5}$	0	1	$\frac{0}{2}$	0
5	0	0	0	3	1	0	0	0	$\tilde{0}$	0
6	$\frac{0}{2}$	0	0	9	1	6	0	1	0	1
7	1	1	0	1	0	Ő	13	0	1	1
No answer	0	0	0	1	0	0	0	0	0	5
40's (born 19	945-55	N = 367	.)							
1	48	13	4	159	7	21	2	12	16	22
2	1	1	0	9	0	0	1	2	2	0
3	0	0	0	3	0	0	0	0	0	0
4	1	1	0	18	1	1	1	1	0	1
5	0	0	0	0	2	0	0	0	0	1
6	0	1	0	2	2	1	0	1	2	0
7	0	0	0	0	0	0	1	0	0	1
No answer	0	0	0	1	0	1	0	0	1	2
30's (born 19										
1	42	8	2	115	1	10	5	20	15	6
2	2	3	0	9	0	1	0	2	4	1
$\frac{3}{4}$	$\begin{array}{c} 0 \\ 2 \end{array}$	$\begin{array}{c} 0 \\ 1 \end{array}$	$\begin{array}{c} 0\\ 0\end{array}$	$\begin{array}{c} 0 \\ 11 \end{array}$	$\begin{array}{c} 0 \\ 2 \end{array}$	$\begin{array}{c} 0 \\ 2 \end{array}$	$\begin{array}{c} 0\\ 0\end{array}$	0 0	$\begin{array}{c} 0 \\ 1 \end{array}$	0 0
4 5			0	11	$\frac{2}{2}$		0	0	1	0
6	0	0	0	$\frac{1}{2}$	$\frac{2}{0}$	3	0	0	0	0
7	0	0	0	$\frac{2}{0}$	0	0	1	0	1	0
No answer	0	0	0	1	Ő	0	0	ů 0	0	1
20's (born 19	965-75									
1	6 ⁶	4	0	37	0	3	0	75	19	1
2	0	0	0	9	Ő	0	ů 0	14	1	1
3	0	0	0	0	0	0	0	0	0	0
4	1	0	0	1	0	0	0	13	1	0
5	0	0	0	0	0	0	0	1	0	0
6	0	0	0	0	0	0	0	2	0	0
7	0	0	0	0	0	0	0	0	0	0
No answer	0	0	0	0	0	0	0	0	1	2

Table A.2. Detailed mobility of women before marriage to child birth (95 SSM) $\,$

Total 1,405 respondents. Details are in the text.

- 5 自営業主, 経営者 (重役) 役員 = self-employed person or director
- 6 家族従業者 = family worker
- 7 農林的職業 = farmer [, lumberman, and fisherman]

Write a mobility table between these two jobs (Tables A.1, A.2). Let n_{ij} denote the number of movers (or stayers) from the category *i* to the category *j*, then

$$CRFE = \frac{n_{11}}{n_{11} + n_{12} + n_{13} + n_{14}}$$

This formula will yield the same result as Equation (1), if we put

$$f = n_{11}, \quad p = n_{12} + n_{13}, \quad u = n_{14}.$$

Other details are as follows:

- The distinction between categories 1 and 2 is based on the respondent's answer, not on the working time. Category 2, temporary or part-time employee, includes jobs with considerably long working time²⁵⁾.
- In the 1995 SSM Survey, a new choice "派遣社員" (dispatched worker) was added for the question about employment status. This was integrated into category 2 (temporary or part-time employee). Only six respondents made this choice: In Table A.2, one in the 40's moved from the category 1 (regular and full-time employee) to it; two in the 20's and one in the 50's moved from it to the category 4 (not employed); two in the 20's had started in it and remained unmarried at the time of the survey.

B. Comparability of the Census's occupational categories, 1950-70

The occupational category system used in the Japanese Census had performed a series of transformations till 1970 to reach the standard version used today (the SSM occupational category system is based on that standard version in 1970 [2: 19]). Each of the transformations had usually divided an old category into new categories; thus 1970 and 1990 Census used smaller categories than 1950, broadly speaking.

Since some large categories of the 1950 Census stand across the SSM Occupational Categories (Note 1), it is difficult to keep comparability in such tabulation as Table 1. In Table 1, such large categories are assigned to one of the corresponding SSM Occupational Categories according to Bureau of Statistics [8]. The categories in question are the following:

- $\bullet \mbox{ Clerical} \rightarrow \mbox{ Professional}$
- 110 その他の通信従事者 (other communication workers) → 106 無線通信士, 無線技術士 (radiotelegraphists)
- \bullet Professional \rightarrow Managerial
 - 99 船舶機関長・機関士 ([chief] ship engineers)
 → 98 船長, 航海士, 水先人 (ship captains, navigators and pilots)
- \bullet Unskilled \rightarrow Sales
- 277 芸者・ダンサー (*Geisha*-girls and hall dancers) → 276 接客社交係 (Barmaid and cabaret waitresses)
- Sales \rightarrow Skilled
 - 274 バーテンダー (bartenders) → 273 料理人 (cooks)
- \bullet Semi-skilled \rightarrow Skilled
- 131 半導体製品製造工 (semi-conductor products makers)
- 132 電球・真空管組立工 (electric lamp and electronic tube assemblers)
- 134 その他の電気機械器具組立・修理作業者 (other electric machine assembling and repairing workers)
 - $\rightarrow 128$ 一般機械組立工 (general machine assemblers)
- Skilled \rightarrow Semi-skilled
- 192 窯業原料工 (ceramic raw material workers)
- 218 土木・建築請負師 (construction contractors)
 → 253 他に分類されない技能工, 生産工程作業者 (other miscellaneous craftsman and production process workers)
- \bullet Unskilled \rightarrow Semi-skilled
- 254 荷造工 (packers and wrappers)

 $\rightarrow 253$ 他に分類されない技能工, 生産工程作業者 (other miscellaneous craftsman and production process workers)

Notes

- 1) Original figures from the Census [8: 18–41] [45: 294–317] are reported in the detailed (three-digits) occupational categories. In Table 1, they are grouped according to the SSM Occupational Categories (SSM 職業大分類) [2: 101–104] [3: 104–110], which consists of the following eight major categories:
 - 専門的職業 = professional [and technical]
 - 管理的職業 = managerial [and official]
 - 事務的職業 = clerical [and protective]
 - 販売的職業 = sales [and service]
 - 熟練的職業 = skilled [manual]
 - 半熟練的職業 = semi-skilled [manual]
 - 非熟練的職業・単純労働者 = unskilled [manual]
 - 農林的職業 = farmer [, lumberman, and fisherman]

The figures from the 1950 Census are incomparable for 1970 and 1990 for the following two reasons:

- Okinawa and Amami Islands are excluded from the 1950 Census.
- Classification for some occupations in the 1950 Census differs from 1970 and later, because of the changes in the occupational category system [8: 268–299, 313–317]. The most unreliable is the boundary between skilled and semi-skilled manual labor. See Appendix B.
- 2) Osawa [38: 70] provides figures of the female/male wage gap for each five-year age group. In Figure 1, they are combined into ten-year age groups with the geometrical mean of each pair of the corresponding groups (not weighted): 20–24 and 25–29 into 20's, 30–34 and 35–39 into 30's, and so on. Exceptionally, the following figures are simply according to the original grouping: 30's in 1960; 40's and 50's in 1965 and 1970.
- 3) Analyses of the SSM data in this paper use the female sample of the 1985 (4th) survey [37] and the female sample of the "A" questionnaire of the 1995 (5th) survey [3], which are noted as "85 SSM" and "95 SSM" in the tables. Occupations are categorized on the basis of the SSM Occupational Categories (see Note 1). As for managerial occupations, the 1995 survey set the different guideline from the 1985 survey for coding occupations; we converted the 1995 data to make it conformable to the 1985 guideline [1995 SSM Project: 3: 114]. Results of statistical tests are marked on each statistic: significant at the level of 0.01 (**), 0.05 (*), $\sqrt{0.01}$ ([‡]), $\sqrt{0.05}$ ([†]); nonsignificant (^{ns}).
- 4) The original questionnaire of Table 5 asked *who* (one or two persons) did housework and *how much* each one did it. JIL [25: 135] categorized the answers into five groups: (1) mainly the wife; (2) mainly the husband; (3) the wife and the husband equally; (4) other relatives; (5) external service. In Table 5, (4) and (5) are omitted; (2) and (3) are counted as the husband participated in housework, while (1) is counted as he did not. Results of statistical tests are marked in the same way as Note 3.
- 5) The wives' employment status in Table 5 was determined in much the same way as the SSM Survey. See JIL [25: 132, 168, 184, 200], Appendix A., Note 25.

- 6) Sweden is frequently quoted as a society that holds a highly developed social support system. Owing to the social support for housework, many Swedish women continue their full-time employment in the childrearing stage. However, men's participation in child-care is inactive. Over 90 percent of child-care-leave days are taken by women [Haas: 18: 61–63].
- 7) Taiwan has been regarded as a classic example. In Taiwan, many women continue their full-time employment in the childrearing stage, nevertheless men seldom participate in child-care and other housework. The traditionally strong kinship connection enables women to make use of support by the extended family. In addition, the labor market of older women has not expanded, so that usually the grandmothers of children are not employed and have spare time. While women's continuous employment is thereby made up through the intergenerational transfer of child-care work, the labor force participation rate of the whole of Taiwan women is lower than of Japanese women [Sechiyama: 42: 262–264].
- 8) Data before the 1960's are not available. It may be a problem that changes before the 1960's might have been greater than after [Ochiai: 36: 88–91]. We must note the limitation that Table 8 mentions only the 1970's and after.
- 9) Female teachers, nurses, and other medical/welfare professional workers in public institutions have been guaranteed child-care leave by the law since 1975. It was 17 years ahead of the general parental leave law in 1992. Among the rest, the teaching profession had improved the maternity leave system especially early [Hirota: 21: 351].
- 10) For the 1995 SSM data, we excluded four respondents who remarried after the last child had been born. But this operation was not applicable to the 1985 SSM data, because no information was available about the time of remarriage. Besides, there was a difference between the two surveys in questions for widows: The 1995 survey asked the husband's occupation for widows, while the 1985 survey did not (this made 21 respondents missing). We attempted the same analysis as Table 11 of the 1995 SSM data with the exceptions of the 22 widows and found little difference.
- 11) This relies on the assumption that there has been a social consensus to justify both the concentration of women in routine jobs and the marriage bar [Goldin: 14: 161], which assumption would have been acceptable in Japan [Takeuchi: 48: 73–76].
- 12) Data were drawn from the published report of the Basic Survey on Wage Structure (賃金 構造基本統計調査) by the Ministry of Labour (労働省), the report entitled "賃金センサス" (Wage Census). Firms with 10–99 employees were called "small"; more than 999 employees, "large". Firms with 100–999 employees were omitted from Osawa's analysis. Firms with less than 10 employees had been excluded from the sample of the survey.
- 13) This was the first case that the court judged that the marriage bar was illegal. The logic established by the judgment had been referred by the following judgments, until the Equal Opportunity Law was introduced by 1986 [Takahasi: 46: 328].
- 14) Contrary to the argument of the turnover hypothesis (5.1.), the development of the internal labor market in Japanese large corporations seems to have developed the sex-separated wage system. It is probable that the hypothesis was wrong from the beginning!
- 15) The defendant also stated that the union had played an important role in the resistance of men. Two years after the marriage bar system was introduced, the union demanded the base pay for women to be cut down to 70 percent of men, and the management accepted that demand [1: 1413].

- 16) Figure 4 is based on the same data source as Table 1. Family and self-employed workers are included, but shopkeeper occupations are excluded (see **2.1.**).
- 17) The standard categories in the reports of the Japanese Census divide blue-collar work into too tiny units to keep balance with the rough division for white-collar. To recover the balance, we combine them according to the SSM detailed categories [3: 104–110], which are characterized by the rough categorization for blue-collar work. The numbers of the categories in Figure 4 are here (white/blue): 26/75 for 1950, 33/80 for 1970, 34/78 for 1990.
- 18) At the same time, the entire concentration is shown to have been declining. Figure 4 (b) (d) (f) indicates that the two lines for white- and blue-collar both have been approaching to the base line (the odds ratio = 1), where both sexes are equally distributed. In addition, as we saw in Table 1, a greater population of women poured into white-collar occupations, and pulled down the degree of concentration as a whole. This finding differs from the previous studies that used non-stratified categories [Iwamoto: 22: 48f.]. This suggests the importance of introducing stratified categories into studies of occupational segregation, but we may leave the details to another paper.
- 19) Of course, Table 13 is not representative of Japanese workplaces, since it relies on a survey among unions in the particular industry.
- 20) "OL" is the abbreviation for a Japanese English phrase "office lady"—female office workers. That word has acquired an (often negative) connotation of banter on the particular lifestyle of female clerical workers in large corporations [Kumazawa: 30: 253].
- 21) Konno [33] and Ōtsuki [40] give much importance to the role of lower level supervisors (e.g., the chief of a section). They found that the personnel had set the policy of equal treatment of both sexes, but the supervisors insisted on the sex-typed job arrangement and mutilated the policy.
- 22) Old male supervisors are often blamed for the gendered attitudes [17: 502] [33]. If that blame is acceptable, the alternation of generations will bring about a sex neutral workplace.
- 23) In counting the respondents' age at the childbirth, we follow the same procedure as the birth of the last child.
- 24) This correction is limited to those who satisfy both of the two following conditions: (1) the result will not become younger than the age on the marriage; (2) born from May through October (because the survey began in late October and ended in early November).
- 25) NIEVR's survey in 1983 [35: 40–43], which used a similar questionnaire to the SSM Survey, reported that 66 percent of such "part-time" workers worked for more than five days per week; 29 percent, more than seven hours per day.

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For the Japanese names and titles, I give romanization or English translation, if possible. Among the English translations, parenthesized are the authorized ones, bracketed are mine.

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