

*The authors compare determinants of labor force participation and occupational sex typing over a 20-year period for matched samples of American and Swiss women. Results indicate important cross-national differences in processes governing women's market careers. These are in line with the authors' predictions regarding mediating effects of specific cultural, organizational, and institutional factors that differentiate the two countries. Female labor force participation is more strongly influenced by family configuration in Switzerland than in the United States. This can be attributed to powerful cultural and organizational constraints on maternal employment in Switzerland. In addition, the association between educational credentials and occupational sex typing is stronger and more persistent in Switzerland due probably to the greater differentiation and tighter market linkages characterizing the Swiss educational system. Results suggest that the explanatory power of conventional individual-level models of female market behavior varies depending on the structural and normative conditions under which women make life choices.*

## **The Context of Women's Market Careers**

### **A Cross-National Study**

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Countless sociological studies have examined how such individual-level variables as educational investments, aspirations, and family status affect women's labor force attachment and their distributions across occupations (e.g., Hakim, 1996; Jacobs, 1989; Okamoto & England, 1999; Roos,

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1985; Wenk & Garrett, 1992). Although much has been learned from this research, most analysts agree that substantial gender gaps in market behavior remain even after taking individual-level factors into account, and that these gaps are in large part attributable to cultural, institutional, and organizational constraints on women's employment. Aggregate-level statistics, which reveal striking cross-national differences in female employment rates and occupational distributions, also attest to the importance of contextual factors in determining women's market role (Charles, 1992; Jacobs & Lim, 1992; Meulders, Plasman, & Vander Stricht, 1993).

Despite growing calls by sociologists to consider the social and cultural embeddedness of social behavior and stratification processes (e.g., Brinton, 1988; DiPrete & McManus, 2000; Granovetter, 1985; Kerckhoff, 1996), the contextual dependence of female market careers has rarely been examined empirically. This reflects, in part, the dominance of individual-centered theorizing (as exemplified by the neoclassical and functionalist paradigms), and in part, practical data constraints—specifically, the fact that most previous studies have been based in single societies, within which many of the relevant institutional and cultural factors are invariant.

This article examines cross-national differences in the processes governing women's market careers by comparing the individual-level determinants of labor force attachment and occupational sex-typing for matched samples of ever-married American and Swiss women born between 1949 and 1951. The analysis covers a 20-year period from 1968 to 1988, which includes most of these women's reproductive years and a substantial segment of their labor market careers. Our comparative design allows us to examine the cross-national generalizability of dominant individual-level models of female labor force participation and occupational sex segregation and to identify some conditions under which they are more likely to hold.

Switzerland and the United States are very well suited as comparative case studies because they are similar in many fundamental respects,<sup>1</sup> but differ with regard to some key cultural, organizational, and institutional characteristics. We focus on the following two dimensions of cross-national variability that we believe have been underresearched to date: (a) the organizational and ideological compatibility of family and market roles, and (b) the structure of the secondary educational system.<sup>2</sup> We suspect that work-family compatibility conditions the relationship between women's family status and their labor force attachment, and that educational structure influences the processes governing occupational sex segregation and occupational mobility. Below,

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we elaborate on the expected contextual effects, and we motivate our choice of comparative cases by describing Swiss-American differences in this regard.

## THE CONTEXT OF WOMEN'S MARKET CAREERS

### WORK-FAMILY COMPATIBILITY AND FEMALE LABOR FORCE PARTICIPATION

Neoclassical economic theory holds that women have a competitive advantage (over their husbands) at child rearing, and that mothers will be induced to engage in paid labor only if the female wage rate is high enough to compensate the family for their reduced presence at home (Becker, 1981; Mincer & Polachek, 1974). This family economy model, and related functionalist accounts (e.g., Coser, 1974; Pleck, 1977), have been extremely influential. Indeed, much contemporary gender-stratification research aims to either test or refine these arguments. Often overlooked in this work, however, is the fact that the impact on women's market attachment of any competitive advantage depends fundamentally on the context in which individual employment choices are made.

Organizational arrangements and cultural ideologies that are often invisible to policy makers and social scientists within national societies can work to either inhibit or facilitate the combination of occupational and familial roles. Where quality child care is unavailable or prohibitively costly, for example, more women will be forced to discontinue their occupational careers when they become mothers. Where primary school schedules are irregular, two-income families and single parents will face more formidable organizational hurdles. And, where strong normative proscriptions against maternal employment are in place, working mothers must reckon with significant social and psychological sanctions. The compatibility of family and market roles is thus determined to an important degree by the social organization of children's lives and by the ways in which motherhood and childhood are culturally defined. Such effects have not been adequately explored or theorized.<sup>3</sup>

Switzerland and the United States differ substantially on these organizational and cultural dimensions. In many Swiss cantons (especially in the German-speaking regions), primary school schedules are difficult to reconcile with even part-time maternal employment: Hours vary widely from day to day and from child to child, and children are dismissed daily for 2-hour lunch breaks. American schools generally operate on more uniform Monday-through-Friday schedules that include on-site lunch breaks (Buchmann &

Charles, 1995; International Labour Office [ILO], 1988). Furthermore, the availability of public and private child care services is considerably more limited in the Swiss than the American context—despite the fact that public-sector provisions in the United States are not particularly well developed (ILO, 1988; Organisation for Economic Cooperation and Development [OECD], 1991). In addition, rates of preschool attendance are much lower in Switzerland. About 6% of 3-year-olds and 27% of 4-year-olds were enrolled in Swiss preschools in 1995, compared with 34% and 62%, respectively, in the United States (OECD, 1997, Table P12).

Social structures and cultural norms influence one another reciprocally. The organizational arrangements described above can be viewed as enactments of prevailing ideals regarding the sexual division of labor, motherhood, and childhood: Where work and family roles of women are viewed as mutually exclusive alternatives, they tend to be organized as such. At the same time, longstanding structural forms and social institutions help shape such cultural understandings.

It is therefore not surprising that gender-role attitudes are more traditional in Switzerland than in the United States. In 1988, 69% of Swiss but only 42% of American respondents agreed with the statement “It is better for the man to work, and for the women to tend the home.” Comparison of attitudes toward two-income couples also suggests greater gender-role traditionalism in Switzerland: 45% of Swiss respondents registered approval, compared with 67% of Americans.<sup>4</sup> Gendered cultural norms likely combine with (and reinforce) the above described organizational constraints to significantly raise the opportunity costs of maternal labor force participation in Switzerland.

The above observations suggest that the negative impact of children on female employment (and thus the explanatory power of conventional neo-classical and functionalist models) is greater in the Swiss than in the American context. Aggregate-level labor market statistics appear to bear this out. In 1990, activity rates of married women with children younger than 6 were 59% in the United States, but only 32% in Switzerland (Charles, 2001). Such summary statistics are of limited use for causal analysis, however. First, they do not account for possible cross-national differences in the (average) individual-level attributes of mothers (e.g., age, occupational status), which may themselves be correlated with relative propensities for employment.<sup>5</sup> Second, they provide insufficient information as to the nature of the observed relationships: Is maternal employment influenced by children’s ages, their numbers, or both? And, do family effects vary according to women’s occupational status? We will explore these questions by examining cross-national similarities and differences in these relationships in a multivariate context.

Given the substantial cultural and organizational barriers to combining work and family roles in Switzerland, we advance the following hypothesis:

*Hypothesis 1:* The relationship between labor force participation and family configuration (i.e., presence of infants, toddlers, and/or school-age children, multiple children) is stronger among Swiss than American women. Cross-national differences in this relationship will persist net of women's individual-level attributes and controlling for the characteristics of their jobs.

#### EDUCATIONAL STRUCTURE AND OCCUPATIONAL SEX-TYPING

It is widely known that women's participation in the labor force does not translate into economic equality with men. Throughout the industrialized world, women are concentrated in relatively few female-labeled sales, service, and clerical occupations (Charles, 1992, 1998), and these positions tend to be associated with lower pay, fewer fringe benefits, less authority, and fewer opportunities for advancement than do those dominated by men. Indeed, sex segregation is widely recognized as a key contributor to the gender gap in pay and opportunities in industrialized societies (e.g., Levy, Joye, Guye, & Kaufmann, 1997; Petersen & Morgan, 1995; Reskin, 1993).

Occupational sex segregation, like discontinuous female employment, is often portrayed as the product of rational choices by individuals seeking to balance work and family roles. Neoclassical economists, for example, attribute this phenomenon to women's preferences for female-typed occupations, which purportedly require less investment in formal education (Becker, 1985; Polachek, 1981). Here again, it is important to consider the possibility that the relationship between individual attributes and labor market outcomes is contextually contingent. Of particular interest are the ways in which structural features of educational systems mediate the relationship between educational investments and occupational sex-typing over the life course.

Secondary educational systems vary considerably in their structures and in the nature of their linkages to the labor market (e.g., Kerckhoff, 1996; Shavit & Müller, 1998). At one extreme are so-called comprehensive systems. These bestow general credentials that serve in the labor market as generic signals of competence, discipline, and literacy. For all but the most highly skilled professional positions, occupational training generally occurs on the job in these contexts. At the other extreme are highly differentiated systems in which students are sorted into relatively impermeable vocational or academic tracks early in the school career. These vocationally oriented systems bestow occupation-specific credentials, which govern access to most skilled and semiskilled jobs.

To date, little attention has been given to how such institutional differences affect patterns of gender stratification in the labor market. Such attention is warranted because the impact of any gender-specific educational aspirations or investments on women's market opportunities is likely to be contextually variable. Where the educational system is highly differentiated and school-to-work linkages are tight, gendered premarket career expectations will more directly translate into sex-typed educational and occupational outcomes. This is because these systems more heavily emphasize vocational training (which is itself highly sex segregated [e.g., Calonder Gerster, 1990; OECD, 1986]), and because gender-typed educational investments have more tangible market effects in these contexts.

Occupational sex-typing is also likely to be more persistent over the life course in vocationally oriented systems. Evidence from American studies suggests that many women come to recognize the disadvantages of female-labeled occupations as they age (Gerson, 1985; Rosenfeld & Spenner, 1992). Movement into male-dominated or gender-neutral occupations represents one means by which they can improve their pay and opportunities for career advancement. Market-wide requirements for occupation-specific credentials inhibit such sex-type mobility by raising the costs of any occupational mobility over the life course (Buchmann & Charles, 1995; Li, Buchmann, König, & Sacchi, 1998).

Switzerland and the United States are ideal comparative cases for studying the effects of educational structure because their secondary educational systems occupy extreme positions with respect to degree of curricular differentiation and extensiveness of labor market penetration. Although American education is comprehensive and geared toward the bestowal of general credentials, secondary education in Switzerland (as in Germany) is highly specialized and vocationally oriented (see Buchmann & Charles, 1993; Buchmann & Sacchi, 1998, on the Swiss educational context). Links between educational programs and the labor market are direct and persistent in Switzerland because occupation-specific (vocational or academic) credentials are required for access to most jobs. With regard to the relationship between educational structure and occupational sex-typing, we thus put forward the following hypotheses:

*Hypothesis 2:* The feminizing effect of vocational training on women's first occupations is stronger in the Swiss than in the American context.

*Hypothesis 3:* Rates of mobility out of female-dominated occupations are lower among Swiss than among American women.

## DATA

Our analyses are based on matched Swiss and American samples of ever-married women born between 1949 and 1951. The United States data are drawn from the National Longitudinal Survey of Young Women (NLS), a series of longitudinal panels conducted through a combination of personal and phone interviews. NLS respondents were interviewed annually from 1968 to 1973; subsequent surveys were administered in 1975, 1977, 1978, 1980, 1982, 1983, 1985, 1987, and 1988. The Swiss data are taken from a mailed retrospective life history survey, "Berufsverlauf und Berufsidentität," carried out in 1989 (Buchmann & Sacchi, 1997). It is representative of the German-speaking majority in Switzerland, which constitutes about 65% of the population. Both data sets provide biographical information on respondents' marital and family histories and labor market experiences for the 20-year period between 1968 and 1988, when respondents were in their late teens through late 30s. We are thus able to cover a substantial portion of these women's labor market careers and most of their reproductive years.

Individuals who grew up and attended school outside of the focal country were eliminated from the sample to allow more accurate assessment of contextual effects. In addition, we have dropped noncitizens from the U.S. sample to enhance comparability with the Swiss data.<sup>6</sup> Of the 740 American women, 488 are White and 252 are Black.<sup>7</sup> We conduct separate analyses for White and Black Americans. This allows us to determine the generalizability of our conclusions across racial groups within the United States and to consider possible intranational contextual effects. As discussed further on, there are reasons to expect some significant interracial differences in these relationships. Lineage-based rules of citizenship in Switzerland mean that there are very few persons of color among Swiss citizens. We can therefore presume that racial variability is negligible in the Swiss sample.

The panel data for the United States do not provide exact dates of family and labor force transitions. But, changes in individuals' employment status, occupational location, or family configuration can be identified by comparison of states across annual survey dates (most of which were in January). To enhance cross-national comparability, we have coded the retrospective event-history data for Switzerland into annual person-records as well (with annual event states measured on January 15).<sup>8</sup> After omitting cases with missing data on key variables (i.e., number and ages of children, marital status, education, early work histories), the Swiss file contains 9,303 records

(443 women  $\times$  21 time points), the United States file 11,100 records (740 women  $\times$  15 time points). Swiss and U.S. person-records were matched to aggregate-level files containing information on national occupational characteristics (e.g., prestige scores, 1970 gender ratios).<sup>9</sup>

Consideration of employment histories is limited to jobs held after completion of formal education.<sup>10</sup> American women were defined as occupationally active in any given year if they worked for pay on the corresponding interview date; Swiss women were defined as occupationally active if they worked for pay on January 15 of the respective year. Occupations were defined as female-dominated if they were composed of at least 70% women in 1970. Identification of this cutoff point follows work by Jacobs (1989), Rosenfeld and Spenner (1992), and Tomaskovic-Devey (1993). Alternative specifications yielded substantively similar results.

We restrict our attention to married (or, for the historical models, ever-married) women because the relatively small number of single-parent households in Switzerland prevents us from conducting separate analyses for married and unmarried mothers.<sup>11</sup> Past American research suggests that determinants of maternal labor market participation differ by marital status, and that the impact of marital status differs by race (Aldridge, 1989; Browne, 1997; Klerman & Leibowitz, 1994). Our results should therefore not be generalized to never-married women.

## METHOD

Our analysis centers on two sets of fixed-effects models—predicting labor force participation and incumbency in a female-dominated occupation as functions of dynamic family and market variables. We use a fixed-effects specification because it allows us to control for unobserved heterogeneity (see Allison, 1994; Judge, Hill, Griffiths, Lutkepohl, & Lee, 1982; Mundlak, 1978). Standard event history models yield biased estimates when unmeasured factors that influence the transition in and out of covariate states are also correlated with the dependent variable (Yamaguchi, 1991). Such a correlation seems especially likely in the present context because women's movement in and out of the labor force, and their movements across various types of occupations, are often theorized to be affected by some of the same individual-level factors (e.g., gender-role attitudes, individual aptitudes). Fixed-effects models control for otherwise unmeasured person-specific effects (e.g., socialization, ambition, work commitment, social background, education, intelligence) and thus eliminate biases due to selection effects and omitted variables. The model can be estimated by subtracting the person-

mean from each observation of the dependent and independent variables and then fitting an OLS regression equation. By this specification,

$$Y_{it}^* = b_0 + \sum_k b_k X_{kit}^*, \text{ where } Y_{it}^* = Y_{it} - 1/t \times \sum Y_{it}, \text{ and } X_{kit}^* = X_{kit} - 1/t \times \sum X_{kit}.$$

In these equations,  $i$  indexes individuals,  $t$  indexes time periods, and  $k$  indexes the measured independent variables ( $X$ ). By subtracting the person-mean from each observation, we remove the fixed effects of any stable but unmeasured individual-level characteristics and thus obtain unbiased coefficients for the effects of time-variant factors (family composition, marriage, occupational characteristics, labor force experience, year).

Prior to their transformation, the two dependent variables, indicating labor force participation and incumbency in a female-dominated occupation, were coded as dichotomous (0/1) dummy variables. But, by deviating each person-year value from the mean, we obtain continuously scaled  $Y$  variables suitable for use in an OLS equation. Coefficients can be interpreted as the effect of  $X_k$  on change in  $Y$ , where change is defined as deviation from the person-specific mean.<sup>12</sup> For any given woman-year, being employed (or working in a female-dominated occupation) will result in a positive change score; nonemployment (or working in other than a female-dominated occupation) will result in a negative change score.<sup>13</sup>

The  $t$  values obtained from this model will be inflated because degrees of freedom were not reduced to take account of the implicit variables for persons. To correct for this, standard errors were multiplied by the following factor:

$$[(nT - K)/(nT - n - K)]^{1/2},$$

where  $K$  is the number of coefficients in the model,  $T$  is the number of time periods, and  $n$  is the number of individuals considered in at least one time period (Allison, 1994).

To examine cross-national differences in the effects of educational attainment on occupational sex-typing (Hypothesis 2), we supplement our longitudinal analysis with a set of cross-sectional logistic regression models predicting incumbency in a female-dominated first job.

## RESULTS

### LABOR FORCE PARTICIPATION

Our first set of models examines changes in labor force participation between 1968 and 1988 as a function of family-status variables (marital

status, number of children, presence of infants, toddlers, school-age children),<sup>14</sup> last year's occupational characteristics (gender type, weekly work hours, prestige), labor force experience,<sup>15</sup> and time. As described above, we employ a fixed-effects specification that controls over time for unmeasured person-specific characteristics, such as early aspirations, aptitudes, and attitudes. Time-invariant variables (educational attainment) cannot be included here because the mean-deviation scores obtained for these variables will be constant over time.<sup>16</sup>

Regression results are shown in Table 1. Coefficients can be interpreted as the effect of  $X_k$  on change in employment status, with change defined as deviation from the woman-specific mean. A positive score on the dependent variable indicates employment, and a negative score indicates nonemployment at the respective time point. Descriptive statistics for untransformed variables are presented in Appendix A.

Consistent with the predictions of the neoclassical and functionalist paradigms, we find negative effects of marriage, and of infants, toddlers, and school-age children on Swiss and White American women's probability of employment. Controlling for children's ages, number of children shows no significant effect on labor force participation of any group (also see Felmler, 1984; Joesch, 1994). The market activity of Black American women appears to be altogether unaffected by family configuration.

From a theoretical perspective, the most interesting finding emerging from this set of models is the substantial intergroup variability in the determinants of female employment. Effects of marriage, infants, toddlers, and school-age children are considerably stronger among Swiss than American women, even if only White Americans are considered. All differences in slope are significant at the 0.001 level at least.<sup>17</sup> As discussed above, we believe that these cross-national differences are at least partly attributable to cultural and organizational factors. For mothers of preschool children in Switzerland, employment is constrained by a strong ideology of domestic motherhood and limited options for child care and preschool. Among women with school-age children, the irregularity of Swiss primary school schedules constitutes an additional organizational barrier. Results support our first hypothesis, which posited a stronger effect of children on female employment status in Switzerland.

The employment status of ever-married Black American women appears remarkably insensitive to marital status and to the presence of children.<sup>18</sup> This squares with published national statistics and may reflect the relative weakness of bourgeois family norms in the Black American culture (Aldridge, 1989; Jones, 1985), the severe financial pressures that have historically impacted African American families (Herring & Wilson-Sadberry, 1993;

**TABLE 1: Fixed-Effects Models Predicting Female Labor Force Participation, 1968-1988**

	<i>United States</i>		
	<i>White</i>	<i>Black</i>	<i>Switzerland</i>
Married?	-.069*** (3.92)	.096 (.44)	-.205*** (10.42)
Number of children?	.000 (.001)	-.026 (1.19)	-.097 (.63)
Infant?	-.257*** (6.34)	-.079 (1.50)	-.566*** (16.08)
Toddler?	-.140*** (4.83)	-.009 (.24)	-.529*** (17.04)
School-age child?	-.093** (2.80)	-.013 (.33)	-.352*** (8.95)
Female-dominated occupation, previous survey year? <sup>a</sup>	.018 (1.06)	.021 (.95)	-.023 (1.02)
Infant × female-dominated occupation	-.202*** (4.44)	-.066 (1.04)	.017 (.53)
Occupational prestige, previous survey year	.001 (1.29)	.002 (1.52)	.000 (.29)
Weekly work hours, previous survey year	.001 (1.11)	-.001 (1.26)	.000 (.04)
Experience through previous survey year <sup>a</sup>	-.005*** (5.20)	-.006*** (5.47)	.000 (.50)
Year	.013*** (6.26)	.014*** (4.60)	.005* (2.37)
<i>R</i> <sup>2</sup>	.153***	.075***	.391***
<i>N</i> (woman-years)	2,945	1,356	3,056

NOTE: Sample was restricted to ever-married women who were in the paid labor force at time of previous survey. Values in parentheses are *t* scores, adjusted according to Equation 3.

a. See text for variable definition.

\* $p \leq .05$ . \*\* $p \leq .01$ . \*\*\* $p \leq .001$ , two-tailed.

Higginbotham, 1986; Oliver & Shapiro, 1994), or both.<sup>19</sup> In any case, this result underscores the contextual contingency of maternal labor force participation, even within national societies.

Net of time-invariant individual-level traits (which are held constant in fixed-effects models), the structural characteristics of last year's occupation (i.e., gender composition, weekly work hours, prestige)<sup>20</sup> are generally unrelated to women's labor-force attachment. There is one exception, however; in the United States, results suggest that White mothers of infants are more likely to withdraw from the labor force if they work in a gender-typical occupation (i.e., one that is at least 70% female) than if they work elsewhere.<sup>21</sup> Although analysts of more structuralist persuasions would no doubt attribute

this higher withdrawal rate to the poorer quality and lower status of women's jobs (Glass, 1988; Wenk & Garrett, 1992), the result also supports neoclassical economic arguments positing lower pecuniary costs of exit and relative ease of reentry in women's occupations (Mincer & Polachek, 1974; Polachek, 1981).<sup>22</sup> It is, however, not consistent with the idea that female-dominated occupations have characteristics that render them more compatible with child rearing (Becker, 1985). The fact that this interaction effect holds only for the White American population, and not the Swiss, may be attributable to the much stronger main effect of infants on female employment in Switzerland. Given strong structural and cultural biases against maternal employment, the vast majority of new Swiss mothers withdraw from the labor force regardless of their occupational location.

We were surprised to find negative effects of labor-market experience for both Black and White Americans. This implies that American women who have spent more time in the labor force are more likely to withdraw in any given year, a result that is inconsistent with the predictions of human capital theory and some previous American studies (Desai & Waite, 1991; Shaw, 1985; but see Wenk & Rosenfeld, 1992). It is important to bear in mind, however, that these fixed-effects models measure relationships net of many individual-level attributes that may be highly correlated with experience. These include work- and family-related attitudes, motivation, and human capital investments. The negative effect of experience in this context may represent some sort of market fatigue (i.e., mounting desire for an employment break). Labor force interruptions may, furthermore, come at a lower cost later in the career because reentry is easier once skills and connections are solidified.<sup>23</sup>

One important commonality across the three models is a clear positive effect of time (year) on likelihood of labor force participation. Between 1969 and 1988, rates of employment increased for all three groups. This result is consistent with aggregate-level statistics, which have revealed sizeable historical increases in married women's labor force participation rates in virtually all industrialized nations and in both the Black and White American populations. Secular growth in female employment rates thus appears to occur not only through cohort replacement, but through within-cohort changes as well. The secular trend has been attributed to changes in the nature of labor demand (Mincer, 1985; Oppenheimer, 1970), increasing female educational attainment (Goldin, 1990), the spread of part-time work (Blossfeld & Hakim, 1997), and the growing influence of gender-egalitarian cultural norms (Ramirez, 1987).

Also consistent with aggregate-level statistics, we find a significantly stronger effect of time for American than for Swiss women ( $p < 0.01$  for White-Swiss difference in slopes;  $p < 0.05$  for Black-Swiss difference). Net

**TABLE 2: Logistic Regression Models Predicting Incumbency in a Female-Dominated First Occupation**

	<i>United States</i>		<i>Switzerland</i>
	<i>White</i>	<i>Black</i>	
Vocational training?	.678* (2.03)	.340 (.48)	3.912*** (5.83)
Education (years to date)	-.010 (1.39)	-.023 (.21)	-.892*** (6.46)
Father's education (years)	.026 (0.62)	-0.124 (1.82)	-.029 (.61)
Constant	-.125 (0.14)	1.042 (.75)	8.148*** (6.03)
Log likelihood statistic (-2LL)	352.42	108.67	308.30***
Degrees of freedom	3	3	3
N (women)	259	82	292

NOTE: Values in parentheses are *t* scores.  
\* $p \leq .05$ . \*\* $p \leq .01$ . \*\*\* $p \leq .001$ , two-tailed.

of the other variables in the model and net of individual-level characteristics, wives' rates of labor force participation have, in other words, increased less in Switzerland than they have in the United States. We attribute this in large part to the greater cultural and structural constraints on maternal employment in the Swiss context. Additional factors may include high native-male wages, the relatively slow growth of the service sector, and the availability of immigrant workers to fill low skilled jobs in Switzerland (Charles, 2000).

#### OCCUPATIONAL SEX-TYPING

We begin our analysis of occupational gender composition by presenting results from a set of cross-sectional logistic regression models predicting incumbency in a sex-typical first occupation. This allows us to examine the effects of stable individual-level characteristics, such as educational attainment and social background, on incumbency in a female-dominated occupation (i.e., one that was at least 70% female in 1970). Results of these models are shown in Table 2.<sup>24</sup>

Parameter estimates indeed suggest a strongly segregative effect of vocational education. Swiss and White American women who completed vocational training were significantly more likely to work in female-dominated first occupations than were those without such training.<sup>25</sup> To the extent that vocational education represents a means of gaining access to a desired occupation, it is not a direct causal factor in the generation of occupational sex segregation but rather an intervening variable in the relationship between

occupational aspirations and occupational outcomes. However, many adolescents, especially in Switzerland, choose or are channeled into vocational education per se (before making any specific occupational choices). Once this occurs, the probability of gender-typical employment may increase for the following two reasons: (a) vocational programs provide training for occupations with especially strong gender labels (e.g., skilled craft, technical, personal service, clerical, retail sales, medical support), and (b) vocational training occurs during adolescence, a developmental phase when pressures to conform to gender stereotypes are especially intense (Entwisle & Greenberger, 1972; Gaskell, 1985). Through secondary specialization, adolescents' earliest gendered choices are effectively locked in, and prevailing patterns of sex segregation in the labor market are incorporated into the educational system. Cultural gender distinctions and occupational sex labels are thus reproduced and legitimated (West & Zimmerman, 1987).

We predicted that the segregative effect of vocational training would be particularly strong in Switzerland due to the tight formal links between educational institutions and the Swiss labor market (Hypothesis 2). Indeed, *t* tests indicate that the regression slopes are significantly steeper for Swiss than for White or Black American women (*p* for difference in slopes < 0.001 in both cases). This result suggests that gender-specific vocational investments may translate more directly into occupational gender distinctions in Switzerland than in the United States.

Consistent with past research on the United States (e.g., England, 1982; Jacobs, 1989), we find no significant effect of overall educational attainment for American women, Black or White. In Switzerland, by contrast, incumbency in a female-dominated occupation is strongly and negatively related to overall levels of educational investment (i.e., years of education). As discussed earlier, the American educational system emphasizes general training and therefore offers fewer opportunities for gender differentiation. The relationship between occupational sex-typing and quality or quantity of educational investment is therefore necessarily attenuated. In this sense, it is not surprising that the human capital model is more powerful in explaining sex segregation in the Swiss context.

We employ a second set of fixed-effects models to explore the dynamics of occupational sex segregation between 1968 and 1988. Because Hypothesis 3 posits cross-national differences in rates of sex-type mobility, our primary interest here is in the effect of time. However, our models also include controls for labor force experience and family status (number of children, presence of infants, toddlers, school-age children, marital status), none of which exerted statistically significant effects on sex-type mobility. Parameter estimates for the variable indexing "year" are shown in Table 3.<sup>26</sup> Again, regres-

**TABLE 3: Fixed-Effects Models Predicting Incumbency in Female-Dominated Occupations, 1968-1988**

	<i>United States</i>		
	<i>White</i>	<i>Black</i>	<i>Switzerland</i>
Year	-.012*** (5.87)	-.015*** (4.34)	-.005*** (3.55)
$R^2$	.031***	.045***	.018***
<i>N</i> (woman-years)	3,286	1,489	3,791

NOTE: Controls were added for family status (marital status, number and ages of children) and labor force experience. None showed statistically significant effects. The complete set of parameter estimates is available on request. The sample was restricted to ever-married women. Values in parentheses are *t* scores, adjusted according to Equation 3.

\* $p \leq .05$ . \*\* $p \leq .01$ . \*\*\* $p \leq .001$ , two-tailed.

sion slopes give the effect of the independent variables on change in *Y*, with change defined as deviation from the person-specific mean (see equation 1). In this case, a positive value indicates that the respondent worked in a female-dominated occupation in the respective year, a negative value indicates that she worked in a male-dominated or gender-neutral occupation.

Results for all three groups support past United States studies suggesting that women are decreasingly likely to work in sex-typical occupations over time (also see Gerson, 1985; Jacobs, 1989; Rosenfeld & Spenner, 1992). The negative effects of "year" may reflect historical trends (e.g., increasingly egalitarian cultural norms, decreasing employer discrimination) or individual-level processes that lead women to revise their initial occupational preferences as they grow older (e.g., increasing financial burdens, growing awareness of the disadvantages of female-dominated jobs). The integrative trend is indeed stronger among American than among Swiss women ( $p < 0.01$  for both contrasts), which supports our hypothesis that occupational gender-typing is more persistent in the Swiss context. We believe that this persistence can be attributed to market-wide requirements for specialized occupational credentials and to other institutional constraints on career mobility. These make revision of initial vocational choices more costly in the Swiss context.

## CONCLUSIONS

Individual decision making and economic behavior can only be understood with attention to the broader social environment in which they occur. Our results point to significant cross-national differences in the micro level

processes governing female labor force participation and occupational sex-typing in the United States and Switzerland. These differences are in line with our predictions regarding the mediating effects of specific organizational, cultural, and institutional features that distinguish the two countries.

Regarding the determinants of female labor force attachment, our analyses reveal significant intergroup differences. Most notable are the varying effects of family status. Consistent with the family-economy paradigm, being married or having an infant, toddler, or school-age child exerts strong negative effects on employment of Swiss women. For White Americans of the same 1950 birth cohort, we find weaker (but still negative) effects of family configuration. For American Blacks, we find no effects at all. The strong family dependence of female labor force participation in Switzerland can be attributed, at least in part, to organizational and ideological features of Swiss society that render family and market roles especially difficult to reconcile (i.e., irregular school schedules, poor preschool and child care provisions, a strong ideology of domestic motherhood).

Economic behavior is related reciprocally to social structures and ideologies. Although women's labor market choices and opportunities are conditioned by cultural and organizational features of national societies, these features are in turn influenced by prevailing patterns of maternal employment. Historically low rates of female labor force participation imply low demand for employment-compatible school schedules and child care arrangements, and few incentives for government and private-sector organizations to pursue such policy goals. The secular increases in female market attachment that have been observed in many industrial nations (including Switzerland) may contribute to eventual ideological and organizational shifts that enable future cohorts of Swiss women to better reconcile work and family obligations.<sup>27</sup> To date, however, there is little evidence of imminent convergence between rates of maternal employment in Switzerland and the United States (Charles, 2001).

More generally, the significant intergroup differences that we have documented suggest that the power of microlevel theories of female labor force participation depends in important ways on the structural and normative contexts in which women make life choices. Our results are thus in line with McLaughlin's (1982) observation that "the conflict between work and family that emerges with childbirth varies by social conditions under which work and first birth are experienced" (p. 417). Relevant social conditions may vary across national/regional boundaries (e.g., primary and preprimary school schedules, child care availability), historical periods (e.g., family and welfare policies), racial/ethnic communities (e.g., male wage rates), or all of the above dimensions (e.g., prevailing ideals of femininity and motherhood). The mediating effects of these and other contextual factors on female market

attachment should be investigated in greater detail through further cross-national and historical research (e.g., Drobnic, Blossfeld, & Rohwer, 1999).

Regarding the determinants of occupational sex-typing, we also find contextually variable relationships. As expected, the association between educational investment and occupational sex-typing was considerably tighter for Swiss than American women. This difference can be attributed to cross-national variability in the structure of secondary education and in the nature of school-to-market linkages. Switzerland's highly differentiated educational system provides more opportunities for sex segregation within secondary education. Its strong reliance on occupation-specific credentials means that gender-differentiated educational choices will have more direct and more persistent labor market effects. Findings suggest that the explanatory power of theories attributing sex segregation to gender-specific human capital investment depends on the extent to which gender distinctions prevailing in the labor market can be incorporated into the educational system (also see Baker & Jones, 1993; Hanson, Schaub, & Baker, 1996).

Finally, we find evidence of decreasing gender stratification (i.e., increasing labor force participation and declining rates of gender-typical employment) over time in both Switzerland and the United States. This result is in line with past American research on sex-type mobility and female labor force participation. It can be attributed to secular shifts in gender norms and employment practices, and to age-related changes in individual women's behavior and market preferences. Notably, integrative shifts are less pronounced in Switzerland than in the United States. This may be due to the deep ideological entrenchment of the sexual division of labor in the Swiss culture, the mobility-inhibiting effects of widespread credential requirements, or both. The equalizing impact of any emergent egalitarian norms and preferences will be mediated by the cultural and structural features of the local environment in which economic behavior is embedded.

**APPENDIX A**  
**Group Means (Standard Deviations) for Untransformed Variables**  
**Used in Fixed-Effects Models of Female Labor Force Participation**

	<i>United States</i>		
	<i>White</i> N = 2,945	<i>Black</i> N = 1,356	<i>Switzerland</i> N = 3,056
Paid employment? <sup>a</sup>	.83 (—)	.85 (—)	.60 (—)
Married? <sup>a</sup>	.71 (—)	.59 (—)	.65 (—)
Number of children	.99 (1.11)	1.47 (1.24)	.94 (1.09)
Infant? <sup>a</sup>	.08 (—)	.08 (—)	.11 (—)
Toddler? <sup>a</sup>	.17 (—)	.26 (—)	.24 (—)
School-age child? <sup>a</sup>	.28 (—)	.38 (—)	.15 (—)
Female-dominated occupation, previous survey year? <sup>a</sup>	.48 (—)	.47 (—)	.32 (—)
Occupational prestige, previous survey year	42.75 (11.10)	39.84 (12.21)	43.76 (9.73)
Weekly work hours, previous survey year	35.88 (11.06)	37.41 (7.88)	37.89 (13.33)
Experience through previous survey year (% of years in labor force)	65.78 (24.77)	63.85 (23.64)	60.15 (23.53)
Year	79.22 (5.84)	79.47 (5.59)	78.42 (5.36)

a. 1 = yes.

**APPENDIX B**  
**Means (Standard Deviations) for Models Predicting**  
**Incumbency in a Female-Dominated First Occupation**

	<i>United States</i>		
	<i>White</i> N = 259	<i>Black</i> N = 82	<i>Switzerland</i> N = 292
Female-dominated occupation? <sup>a</sup>	.54 (—)	.48 (—)	.42 (—)
Education (years to date)	13.05 (.19)	12.84 (2.22)	12.87 (2.11)
Vocational training? <sup>a</sup>	.21 (—)	.12 (—)	.72 (—)

**APPENDIX B Continued**

	<i>United States</i>		<i>Switzerland</i> N = 292
	<i>White</i> N = 259	<i>Black</i> N = 82	
Father's education (years)	11.41 (3.30)	7.17 (3.68)	12.04 (2.91)

a. 1 = yes.

**APPENDIX C**  
**Group Means (Standard Deviations) for Untransformed Variables**  
**Used in Fixed-Effect Models of Occupational Sex-Typing**

<i>Variable</i>	<i>United States</i>		<i>Switzerland</i> N = 3,791
	<i>White</i> N = 3,286	<i>Black</i> N = 1,489	
Female-dominated occupation? <sup>a</sup>	.47 (—)	.45 (—)	.33 (—)
Married? <sup>a</sup>	.69 (—)	.58 (—)	.48 (—)
Number of children	1.00 (1.13)	1.46 (1.25)	.54 (.92)
Infant? <sup>a</sup>	.05 (—)	.08 (—)	.04 (—)
Toddler? <sup>a</sup>	.19 (—)	.27 (—)	.11 (—)
School-age child? <sup>a</sup>	.28 (—)	.36 (—)	.15 (—)
Labor force experience	65.17 (24.38)	64.13 (23.17)	61.03 (23.81)
Year	78.98 (6.09)	79.05 (5.83)	77.35 (5.78)

a. 1 = yes.

**NOTES**

1. Both are characterized by long, democratic traditions, liberal market economies, and de-centralized welfare states that offer relatively few universal family entitlements.

2. Although these factors may also vary within national societies, cross-national variability is far more significant.

3. Exceptions include studies by Maume (1991) on the effects of child care costs on women's employment, and by Presser and Baldwin (1980), Joshi and Davies (1992), and Meyers, Gornick, and Ross (1999) on the effects of child care availability.

4. Among Black Americans, approval was considerably higher than among Whites. United States data were taken from the 1988 General Social Survey and the 1990 World Values Survey. Swiss data were taken from the 1988 UNIVOX Survey (see Charles, 2001, for details). On Swiss gender-role attitudes, see also Simona (1985), Popenoe (1988), and Höpflinger, Charles, & Debrunner (1991).

5. For instance, Swiss women (and men) generally become parents at an older age than do their American counterparts. As a result, they may experience less financial pressure to contribute to family income once they become mothers. Cross-national differences in female occupational distributions may also be relevant in this regard. For example, the stronger concentration of Swiss than American women in female-labeled service occupations (Charles, 1992) may translate into a greater propensity to exit the labor force with motherhood.

6. The original Swiss survey was restricted to national citizens, in part because it aimed to identify national schooling effects.

7. The National Longitudinal Survey of Young Women (NLS) includes an intentional oversampling of Blacks. Three American women categorized as "other" on the race variable were dropped from the sample.

8. See Peters (1988) for a comparison of data derived from retrospective and panel surveys.

9. National occupational categories were mapped onto the International Standard Classification of Occupations (ISCO-88). Data on occupational gender composition were extracted from the respective 1970 census and matched with the individual-level records for all years. Prestige scores were matched to the ISCO categories using information provided by Harry Ganzeboom (unpublished table). Zero-order correlations of prestige and gender-composition scores based on the ISCO mapping with those based on the national classificatory schemes are very high.

10. In Switzerland, respondents were directed to report only those jobs that commenced after educational completion. The United States data were rendered compatible with the Swiss by defining educational completion as the start date of the first break of 3 years or more in educational enrollment. Alternative definitions yielded very similar results.

11. In 1990, 90% of Swiss children lived in two-parent households (Bundesamt für Statistik, 1994). Corresponding figures for American children are 79% for Whites and 38% for Blacks (United States Bureau of the Census, 1998).

12. For example, the mean of the binary variable indexing labor force participation gives the proportion of years in which the respective woman was employed over the 20-year period. Year-specific values give deviations from that proportion.

13. A small minority of women (i.e., 6 Swiss and 27 American) were employed at every time point. Because their values on the employment variable will be a constant zero over time, they are de facto excluded from consideration. (All women in our samples were employed at a minimum of one time point.) Similarly, women who never experienced sex-type mobility will not influence parameter estimates in the fixed-effects model predicting incumbency in a female-dominated occupation (and are also excluded from consideration in these models).

14. By our definitions, infants are less than a year old, toddlers range from 1 to less than 5 years old, and school-age children are at least 5 years old.

15. Experience is measured as the proportion of nonmissing survey years in which the respondent worked for pay prior to (i.e., not including) the current time point.

16. However, to gain some baseline information on the effect of educational investments on married women's labor force participation, we computed a set of cross-sectional logistic regres-

sion models for the year 1988 (coefficients available on request). These included an indicator of educational attainment (years of education), along with controls for family configuration, spousal earning capacity, and social background. For United States women, results indicated positive effects of education that were consistent with the predications of human-capital theory and with results of previous American analyses (e.g., Klerman & Leibowitz, 1994; McLaughlin, 1982; Wenk & Rosenfeld, 1992). However, we were surprised to find no linear effect of education on probability of employment among Swiss wives. A possible explanation is that labor force withdrawal is (or was) so tightly associated with motherhood in Switzerland that variability in human capital investments has little predictive power (on education and female employment in Switzerland, also see Buchmann et al., 2001).

17. Statistical significance of these differences was tested using a *t* test, with the equation:  $(b_{kw} - b_{ks}) / (SE_{kw}^2 + SE_{ks}^2)^{1/2}$ , where *W* designates White American and *S* designates Swiss women (see Chiswick & Chiswick, 1975). All significance levels reported are for two-tailed tests.

18. The statistical insignificance of these effects cannot be attributed to sample size: Parameter estimates for Black Americans are considerably smaller in magnitude than those for the other two groups (and in the case of marital status, they are opposite in sign).

19. Employment rates of Black American mothers have been a minimum of 15 percentage points higher than those for their White counterparts since 1975 (United States Bureau of the Census, 1998, Table 655). Some scholars have traced racial differences in labor market attachment to cultural patterns established during slavery, when African American women, as chattelworkers, were excluded from the White middle-class roles prescribed by the "cult of domesticity" (Goldin, 1990; see Hill & Sprague, 1999 for a review of this literature). Interestingly, Black mothers' higher rate of labor force participation holds only for married women. Among unmarried mothers, Blacks are in fact less likely to be employed (Browne, 1997; Corcoran, 1999), perhaps because single Black mothers generally have fewer human capital assets than similarly situated White women and are therefore often better off on public assistance than in the workforce (Cherlin, 1992; Schoen & Kluegel, 1988; Smock, 1990).

20. No data on occupational wages were available for Switzerland. For the United States, we found no effect of last year's income on propensity for employment.

21. No significant interaction effect was found between incumbency in a female-dominated occupation and presence of toddlers or school-age children.

22. Desai and Waite (1991) found no effect of gender composition on labor force withdrawal of American mothers. However, data for Whites and Blacks were pooled in their analyses, which may have diluted the effect for White women. In an analysis of Whites only, Rexroat (1992) reports a negative effect of male-dominated occupations on quit rates of women born prior to 1946.

23. Inclusion of a squared term for the experience variable did not change results substantively.

24. Descriptive statistics are shown in Appendix B. The higher American means on the gender composition variable can be attributed to the higher rate of female labor force participation in the United States. (All else being equal, fewer occupations will reach the 70% threshold where women make up a smaller share of the labor force.) Levels of occupational sex segregation are in fact somewhat higher in Switzerland than in the United States (Charles, 1992).

25. Vocational training is a binary variable that was coded 1 if the respondent reported that she had completed a vocational degree (Switzerland) or that her high school curriculum was vocational (United States).

26. The complete set of parameter estimates is available on request. Untransformed means and standard deviations for all included covariates are given in Appendix C.

27. In the future, European integration and processes of cultural and economic globalization may promote gradual international convergence in structural forms (e.g., credentialing programs, child care and preschool arrangements, school schedules) and in cultural gender norms.

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