

FERTILITY AND WOMEN'S EMPLOYMENT IN INDUSTRIALIZED NATIONS

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■ Abstract

INTRODUCTION

Thirty years ago, Bumpass & Westoff (1970:95) asked, "Do women limit their fertility in order to have time to pursue their nonfamily-oriented interests, or do women work if their fertility permits them to do so?" In the ensuing decades, sociologists, demographers, and economists have learned much about the relationship between fertility and women's employment, and yet the answer to this fundamental question remains elusive. Even so, women's labor force behavior lies at the heart of most explanations of fertility and fertility change, and many nations, both industrialized and developing, have formulated policies based on the inverse association between these two central aspects of women's lives.

The association between fertility and women's labor force activity reflects the incompatibility between caring for children and participating in economically productive work that typifies industrialized societies (Weller 1977). Prior to industrialization, work and child rearing tasks could be performed more or less simultaneously. In historical and contemporary preindustrial societies, nonmechanized agricultural tasks and piecework could be combined with child supervision with relatively little danger to the child or marked loss of economic productivity (Degler 1980, Roos 1985, Stycos & Weller 1967). As industrialization proceeded, however, childcare and economically productive work became increasingly incompatible. Today, work sites are usually some distance from home, and work schedules, set by employers, lack the flexibility required by children. The presence

of children at the work site, whether an office or factory, would jeopardize productivity; moreover, mechanical and electronic equipment may pose considerable danger to young children. Thus, women—and it is women who typically care for children—who wish to participate in the labor force must either limit their fertility or make alternative arrangements for the care of their children.

Increasingly, women in advanced industrialized societies are choosing both strategies. As a result, fertility rates in most countries are below the level needed for population replacement, and a rising proportion of children are in nonmaternal care while their mothers work. Concern with endemic low fertility and rising rates of nonmaternal care has stimulated considerable interest among researchers and policy makers in the relationship between childbearing and women's employment, and in the impact that paid childcare and various policy measures have on this relationship. This essay is a synthesis of recent European and American research on the linkages between fertility and female labor force participation in the countries of the European Union, the United States, Canada, Australia, and Japan. Research on the newly industrialized countries of Asia falls into a somewhat different literature and is not reviewed here.

Because the terminology used in this body of literature can be ambiguous, varying across articles and data sources, our review begins by fixing terms. We then summarize recent trends in fertility and in female labor force participation. The core of the essay comprises a discussion of the research concerning, first, the relationship between fertility and labor force activity at the individual level, and, second, the structural underpinnings of role incompatibility. We close by commenting on the implications of recent research for theoretical models of fertility.

TERMINOLOGY

Fertility is the least ambiguous of the major concepts we discuss. It refers simply to giving birth (a live birth as opposed to a stillbirth) and is biologically limited to females between menarche and menopause. Note that we use the terms fertility and childbearing interchangeably. The primary measure of fertility referred to in this essay is the *total fertility rate (TFR)*, an estimate of the number of children a woman would bear, if she survives to the end of her reproductive years and if the schedule of age-specific birth rates remains constant over her reproductive lifetime (Palmore & Gardner 1983). Although theories of fertility and fertility change are typically formulated in terms of the combined effects of period and cohort influences (Hirschman 1994), the TFR is typically calculated from period data, in part because they are more easily and immediately accessed than cohort data (Andersson 1999, Ní Bhrólchain 1992). A key concept is *replacement level fertility*, the level of births needed to ensure the replacement of the biological mother and father in the next generation. A replacement level TFR is just over two, to offset those children who do not survive to reproduce.

It is not childbearing per se but child rearing, the process of caring for and raising a child from birth to adulthood, that leads to the negative relationship between fertility and labor force participation (Bernhardt 1993). The time and attention demands of child rearing are highest during infancy and the preschool years, when children require constant supervision. We use the terms *child rearing* and *caretaking* interchangeably to refer to the supervisory aspects of raising a child. This usage is not intended to imply that child rearing involves only or even primarily supervision; rather, supervision, not the other aspects of parenting, is central to much of the research reviewed here. Child rearing is sometimes referred to as the “mother role” because, historically, mothers have assumed responsibility for raising children. Nevertheless, the supervisory aspects of the “mother role” can be—and increasingly are—performed by others.

By *work*, we refer to market work, that is, work for pay. As used here, then, work does not include the unpaid domestic labor, usually performed by women (Spain & Bianchi 1996: Table 7.4; see also Gershuny & Robinson 1988), which keeps most households functioning. Work is typically indexed at the individual level as *hours worked*, whether part-time (fewer than 35 hours per week) or full-time (more than 35 hours per week), although some studies assess work plans or the time elapsed between birth and return to the labor force. In the aggregate, women's work behavior is usually measured as the *female labor force participation rate*, the proportion of the female population between the ages of approximately 16 and 65 who are either working for pay or seeking paid employment. Finally, *career* refers to a sequence of jobs or positions that entail increasing responsibility along with rising income; such jobs typically have specific educational requirements. Noncareer type jobs, in contrast, require relatively little training, have a flatter age-earnings profile, and offer fewer prospects for mobility.

TRENDS

In describing trends in fertility and female labor force participation, we focus on the years since 1965. Comparable data on both variables are available for most industrialized nations at multiple time points throughout this period. Further, by 1965, the European and Japanese economies had largely recovered from World War II, and the unusually high fertility that characterized the United States, Canada, Australia, and various European countries after World War II had come to an end.

Fertility

Table 1 shows the trends in the TFR for Japan, Australia, Canada, the United States, and selected European countries. In 1965, the fertility of all of these countries was above replacement level; by 1998, all had below-replacement fertility levels. The period between 1998 and 1965 shows considerable variation across countries, indicating the different routes to below-replacement fertility. Of the

TABLE 1 Trends in total fertility rates for selected countries, 1965–1998

Country	1965	1970	1975	1980	1985	1990	1996	1998
Canada	3.1	2.3	1.8	1.9	1.8	1.7	1.7	1.6
United States	2.9	2.5	1.8	1.8	1.8	2.0	2.1	2.0
Australia	3.0	2.9	2.2	2.1	1.9	1.8	1.8	1.8
Japan	2.1	2.1	1.9	1.8	1.7	1.6	1.4	1.4
Austria	2.7	2.3	1.8	1.6	1.7	1.4	1.4	1.4
Belgium	2.6	2.3	1.7	1.7	1.6	1.6	1.5	1.6
Denmark	2.5	2.0	1.9	1.7	1.4	1.8	1.8	1.8
Finland	2.4	1.8	1.7	1.7	1.6	1.6	1.8	1.7
France	2.8	2.5	1.9	1.9	1.9	1.8	1.7	1.7
Germany						1.3	1.4	1.3
East	2.5	2.2	1.5	1.8	1.7	1.7	—	—
West	2.5	2.0	1.5	1.4	1.3	1.4	—	—
Greece	2.2	2.4	2.4	2.3	2.1	1.5	1.3	1.3
Iceland	3.7	2.8	2.6	2.3	2.2	2.3	2.2	2.0
Ireland	4.0	3.9	3.4	3.4	3.0	2.2	1.9	1.9
Italy	2.5	2.4	2.2	1.9	1.6	1.3	1.2	1.2
Luxembourg	2.3	2.0	1.6	1.5	1.6	1.4	1.8	1.8
Netherlands	3.0	2.6	1.7	1.6	1.5	1.5	1.5	1.5
Norway	2.9	2.5	2.0	1.8	1.7	1.8	1.9	1.8
Spain	2.9	2.9	2.8	2.6	2.0	1.5	1.2	1.2
Sweden	2.4	1.9	1.8	1.7	1.6	2.0	1.6	1.6
Switzerland	2.6	2.1	1.6	1.5	1.6	1.6	1.5	1.5
United Kingdom	2.7	2.4	1.8	1.7	1.8	1.8	1.8	1.8

Source: 1965–1975 figures from World Bank, 1984. 1980–1998 figures from Population Reference Bureau *World Data Sheet*, selected years.

21 countries listed in Table 1, only eight moved steadily toward lower fertility. Of these eight, two—Ireland and Iceland—did not reach below-replacement rates until 1996 and 1998, respectively. Notably, Greece, Italy, and Spain, which had above-replacement rates through the late 1980s, have sustained since 1995 the lowest levels of fertility recorded in any western country. Germany, too, has very low fertility; however, its current TFR reflects a continuation of the below-replacement levels characterizing the former Federal Republic of Germany and the dramatically lower fertility rates (less than one child per woman) in the former German Democratic Republic that followed reunification (Hooper 1999, Monnier & de Guibert-Lantoine 1993, Witte and Wagner 1995).

Cross-national differences in the demographic behaviors that determine fertility, including trends in first birth timing, birth spacing, and nuptiality (i.e., marriage patterns), underlie the aggregate variation in fertility levels and trends. A closer look at a few countries reveals the importance of each of these factors. In Japan, for example, where nonmarital births account for about 1% of all births, the substantial drop in fertility since 1975 is related to the avoidance or postponement of marriage among Japanese women (Tsuya & Mason 1995). Decreasing fertility in Ireland, Italy, and Spain also reflects marriage patterns (Pinnelli 1995), although the remarkable drop in Irish fertility over the past several decades and the exceedingly low fertility rates of the Mediterranean countries are due as well to a decrease in the number of children married women bear (Bettio & Villa 1998, Sporton 1993).

In much of western and northern Europe, where nonmarital fertility rates have risen substantially over the past three decades (Kuijsten 1996, van de Kaa 1987), nuptiality is less strongly related to fertility levels. Even with the increases in nonmarital fertility, however, the total fertility rate has remained low, reflecting declining birth rates among women in their twenties (Lesthaeghe & Willems 1999, Sporton 1993). Spacing, the time between births, also has had a significant impact on fertility in the Nordic countries and in the United States. In Sweden, for example, period fertility rates received a boost in the early 1990s from the more rapid pacing of second births (Hoem 1996, Hoem & Hoem 1997), while in the United States, the lower fertility rates of the past several decades reflect a dramatic slowing in the transition to second and third births (Morgan 1996). Researchers have linked all of these factors—birth timing and spacing, nonmarital childbearing, and nuptiality—to women's labor force activities.

Female Labor Force Participation

Table 2 shows trends in female labor force participation rates in the 21 countries from 1965 through 1996, the most recent year for which data are available. Participation rates in all 21 countries were higher, sometimes substantially, in 1996 than in 1965. By 1996, only four countries had rates lower than 50%, whereas in 1965, 12 of the 14 countries for which data are available had rates less than 50%.

As with fertility, national trend lines vary substantially. Only 10 countries experienced steady increases between 1965 and 1990; of these, six continued to show rising rates of participation through 1996 while four experienced decreases. Three countries—Ireland, Spain, and Greece—had rather stagnant participation rates prior to 1980, followed by a 16-year period of sustained increase. In Italy, participation rates have fluctuated at a moderately low level, perhaps a reflection in part of continuing economic uncertainties (Chesnais 1996).

In describing the evolution in women's labor force activity in the post-World War II period in the industrialized world, Jensen (1995) relies on a metaphor of three "waves." During the 1950s—the first wave—the roles of mother and paid worker were separate for most women. The second wave, during the 1960s and 1970s, saw an increasing proportion of women integrating the mother and worker

TABLE 2 Trends in female labor force participation rates for selected countries, 1965–1996

Country	1965	1970	1975	1980	1985	1990	1996
Canada	39.6 ^(a)	43.2	50.0	57.2	62.6	68.1	64.9
United States	44.3	48.9	53.1	59.7	63.9	68.2	71.0
Australia	39.8	45.1	49.3	52.7	54.1	62.1	64.9
Japan	55.8	55.3	51.7	54.9	57.2	60.4	62.2
Austria	—	49.2	47.6	48.7	51.0	55.4	62.1
Belgium	38.0	40.0	43.9	48.2	50.5	52.4	56.1
Denmark	49.3	58.0	63.5	69.9	74.5	78.4	74.1
Finland	62.6	62.5	65.6	70.1	73.5	72.9	70.5
France	—	48.2	50.5	54.3	55.0	56.6	59.9
Germany							61.0
East	—	—	—	—	—	—	
West	49.0	48.1	49.6	50.0	50.4	55.8 ^(b)	—
Greece	—	32.1	30.8	33.0	41.8	43.5 ^(c)	45.9
Iceland	—	44.7	45.1	—	—	—	80.0 ^(d)
Ireland	35.2 ^(a)	34.3	34.5	36.3	36.6	38.9	49.4
Italy	34.6	29.6	30.7	39.6	40.8	44.5	43.2
Luxembourg	—	33.8	38.3	39.9	43.2	47.2 ^(c)	57.5
Netherlands	—	30.3	32.0	35.4	41.2	53.0	58.3
Norway	36.9	38.8	53.3	63.2	68.3	71.2	66.0
Spain	—	29.2	32.4	31.9	33.6	40.9	46.2
Sweden	54.1	59.4	67.6	74.1	78.2	81.1	73.7
Switzerland	51.7	51.4	51.7	54.1	53.2	59.2	67.1
United Kingdom	49.0	50.5	55.3	58.3	60.1	65.1	66.4

Source: All figures from OECD Labour Force Statistics, volumes from 1965 through 1997. Note that these rates are computed as the ratio of the female labor force of all ages to the female population aged 15–64. The numerator includes full- and part-time workers as well as those seeking employment. Endnotes: (a) 1966 (b) 1989 (c) 1988 (d) 1994

roles, albeit on a part-time basis or sequentially. The third wave, which began in the 1980s, comprises an increase in full-time, continuous labor force participation, even among mothers with preschool age children. As Jensen (1995:224) notes: “In the course of one generation, women’s employment has gradually expanded . . . from quitting a job when marrying, to quitting when having a first child, and finally to today’s expectation that women will take their share in providing for the economic needs of the family by interrupting employment only during maternity leaves.” These changes reflect numerous factors, including the rising demand for

female labor; an increasing preference among women for nondomestic roles; the rising opportunity costs of homemaking as women's real wages rose; falling real wages for men, particularly those in the lower middle and working classes; and rising consumption aspirations (Chafetz 1995, England & Farkas 1986, Hoem & Hoem 1989, Reskin & Padavic 1994).

This pattern describes reasonably well trends in western and northern Europe (Jensen 1995) and the United States (Spain & Bianchi 1996). There are exceptions, however. In Japan, where female labor force participation rates have long exceeded 50%, marriage continues to mark the start of a lengthy time-out from paid work for most women (White 1996). In 1995, a graph of women's age-specific participation rates reveals an M-shaped pattern, with peaks in the early 20s and the late 40s, and a deep trough between, during the peak childbearing and child-rearing years (Ogasawara 1998: Figure 2). This pattern, typical of countries in Jensen's second wave, characterizes Ireland, too, although here the M is lopsided as relatively few women reenter the paid labor force after childbearing (Pyle 1990).

The age-participation profiles of Ireland and Japan suggest that, in these countries, the roles of paid worker and mother are performed sequentially rather than simultaneously. This situation likely reflects longstanding and highly ingrained norms about the family and women's roles. It is possible that the strong hold of these norms may continue into the foreseeable future. Indeed, the stability of the age-participation profile in Japan, despite more than three decades of relatively high labor force participation rates and a constitutional guarantee of equal rights for women, suggests a continuation of this pattern. But it is also possible that the lack of role integration women now experience in some countries will succumb to exogenous pressures for change. In their examination of Japan, for example, Tsuya & Mason (1995) suggest that sustained below-replacement fertility levels and the prospect of eventual population decline may stimulate policy changes that allow women to fill simultaneously the mother and worker roles.

The Relationship Between Fertility Trends and Trends in Female Labor Force Participation

Translating the maternal role incompatibility hypothesis (Stycos & Weller 1967) into a hypothesis about trends over time would suggest that fertility levels will fall as female labor force participation rates rise because of the difficulties of accommodating the demands of child rearing to the requisites of employment. While this may once have been the case, there is now evidence that the relationship between these variables may be more complicated than this hypothesis predicts (Bernhardt 1993, Bettio & Villa 1998, Rindfuss et al 2000, Rindfuss & Brewster 1996, Sundström & Stafford 1991). Even a cursory comparison of Tables 1 and 2 indicates that the countries that now have the lowest levels of fertility are those with relatively low levels of female labor force participation and that countries with higher fertility levels tend to have relatively high labor force participation rates.

A positive association between fertility levels and female labor force participation rates has been suggested by several authors (Bernhardt 1993, Pinnelli 1995, Rindfuss & Brewster 1996). Subsequent work has shown that this positive association is a recent development; just two decades ago, the country-level correlation between fertility and female labor force participation rates was negative (Bettio & Villa 1998, Rindfuss et al 2000). Figure 1 illustrates this change for the 21 countries shown in Tables 1 and 2. Panel *a* graphs the relationship between total fertility rates

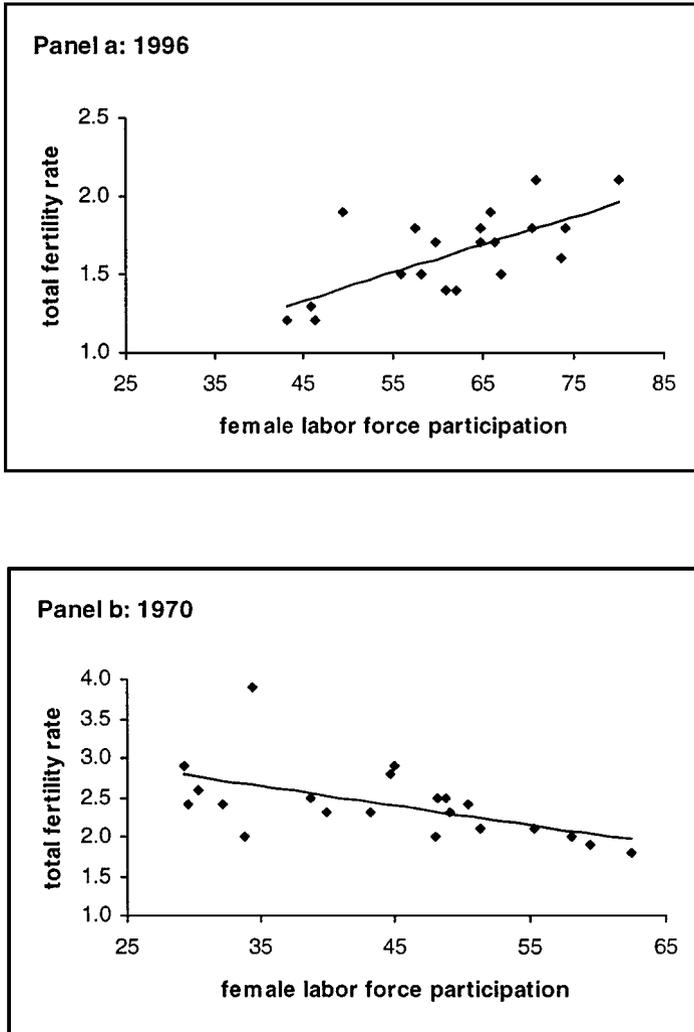


Figure 1 Relationship between female labor force participation rates and total fertility rates: 1995 and 1970.

and rates of female labor force participation in 1996. The regression line shows a strong positive relationship ($r = .714, p < .001$) between fertility and women's labor force activity; fertility rates tend to be higher in those countries with high rates of female labor force participation. Prior to the transition of most countries to the "third wave," however, the aggregate-level relationship was consistent with the maternal role incompatibility hypothesis, as shown in Panel *b*, which illustrates the fertility-employment relationship for the same set of countries in 1970. Then, the relationship was negative ($r = -.517, p < .001$); fertility rates were highest in those countries with the lowest fertility levels and vice versa.

What accounts for this reversal? Note that the relative positions of most countries have changed little. Sweden, Finland, Denmark, and the United States, for example, are clustered at the right-hand side of both panels, while Italy, Spain, and Greece are grouped at the left-hand side. Fertility in the former group barely changed from one time point to the next, even though the proportion of women in the labor force increased by an average of 15%. In contrast, fertility in the latter group declined by more than 1 child per woman, in the face of increases in participation rates similar in magnitude to those in the United States and northern Europe. This comparison suggests that, in some countries during the past quarter century, women have found ways to combine work and child rearing, and in other countries they have not. Where they have not, as in the Mediterranean countries, fertility has declined substantially. Thus, a viable explanation of the fertility-employment relationship must consider the social, economic, and policy contexts within which women make their work and fertility decisions. We return to this point below, after reviewing recent research bearing on the current relationship between fertility and female labor force participation.

ISSUES OF CAUSALITY AT THE INDIVIDUAL LEVEL

There is no question that, at the individual level, a negative association characterizes the relationship between fertility and female labor force participation. Women who work for pay have fewer children, on average, than women who do not, and mothers spend less time in paid employment, on average, than childless women. Four possible explanations for this association are: Women's fertility influences their labor force behavior; women's labor force behavior influences their fertility; a reciprocal relationship exists between the two variables; and the negative association is spurious, reflecting other factors (Cramer 1980, Weller 1977). Much evidence supports the first three models; the fourth model, advocated more often by economists (e.g. Macunovich 1996) than sociologists, has proven more difficult to support. Because the evidence has been reviewed previously by sociologists, demographers, and economists in the United States and elsewhere (Bernhardt 1993, Lehrer & Nerlove 1986, Macunovich 1996, Reskin & Padavic 1994, Spitze 1988), we focus here on recent findings, with any eye toward cross-national comparisons.

The Effects of Fertility on Labor Force Participation

The presence of children and their ages influence whether women participate in the paid labor force and, if they do, the nature of this participation. Indeed, women's work patterns are strongly tied to changes in their family status (Ellingsæter & Rønsen 1996, Rindfuss et al 1999, Rosenfeld 1996). Most employed women leave paid work for some period of time around a birth. The duration of nonworking periods varies among women and across countries, depending on leave policies, fiscal incentives, and childcare availability.

In Japan and Ireland, where norms dictate intensive maternal involvement in children's care and education, new mothers typically leave the labor force for prolonged periods, averaging a decade or more (Ogasawara 1998, Pyle 1990). German women also tend to leave the labor force for extended periods following a birth, encouraged by fiscal incentives, a serious shortage of childcare, and school-day schedules that vary by the age of the child (Huinink & Mayer 1995, Ondrich & Spiess 1998, Schiersman 1991).

In contrast, in the United States and the Scandinavian countries, where childcare is more readily available, the labor force participation rates of new mothers and the mothers of preschoolers are quite high, although most women in these countries take some leave (Desai & Waite 1991, Ellingsæter & Rønsen 1996, Jensen 1995, Klerman & Leibowitz 1994, 1999). In the Scandinavian countries, where employers must offer paid leave to new mothers (and new fathers), leave typically lasts from four months to about one year (Ellingsæter & Rønsen 1996, Bernhardt 1986). In the United States, maternal leaves average about twenty weeks and are typically unpaid (Waldfoegel 1998); moreover, the rate of return is quite rapid: 40% of women are back at work within three months and 86% are back within a year (Desai & Waite 1991).

There are, of course, differences both within and between countries with respect to who leaves paid work, who returns, and when. Marital status and the presence of another adult in the household, whether a spouse, a partner, or someone else, are significant factors. In Sweden, unmarried mothers are less likely than married mothers to stay at home in the year following a birth; if they do take time off, they return to work at a faster rate (Bernhardt 1986). In the United States, it is married women and women who have another adult in the household who exit more slowly and return more quickly (Wenk & Garrett 1992); unmarried women are more likely to leave paid employment early in pregnancy and are less likely to return to work in the first three months following a birth (Desai & Waite 1991). Likewise, in Japan, young mothers living in three-generation households have shorter labor force exits, presumably because the grandmother is providing childcare (Morgan & Hiroshima 1983, Choe et al 1999).

The age and presence of other children also appear to influence leave patterns. In the United States, the presence of other preschool children has no effect on the rate at which new mothers return to work (Wenk & Garrett 1992). In Sweden, however, where parental leave and fiscal benefits are tied to the spacing of births, new mothers who have children younger than three years of age have delayed

returns to paid employment (Oláh 1999). Similarly, in Norway, having two or more preschoolers inhibits women's return to the paid labor force (Ellingsæter & Rønsen 1996).

Educational background is another determinant of leave and labor force exit patterns. In most countries, women who are well-educated or who hold jobs that require lengthy training periods are less likely to leave paid work; if they do, they return to work more quickly (Bernhardt 1986, Desai & Waite 1991, Ellingsæter & Rønsen 1996, Klerman & Leibowitz 1999, Wenk & Garrett 1992). This finding, which is robust across data sets and time periods, likely reflects the strong link between education and career orientation.

When mothers return to work after paid leave or after a labor force exit, they often do so on a part-time basis, in an attempt to ease the work-parenting conflict. Although part-time employment may be more compatible with child rearing responsibilities, in some countries the costs of part-time employment are considerable. In the United States, for example, mothers who return to work on a part-time basis lose pay, seniority, and, often, benefits and job security (Corcoran et al 1984). In contrast, in Sweden and Norway, part-time workers enjoy the same employment rights and benefits as full-time workers, and part-time positions are available not only in marginal jobs but also in professional positions (Ellingsæter & Rønsen 1996, Hoem 1995, Sundström 1991). It is not surprising, then, that the likelihood of part-time employment among the mothers of preschoolers varies markedly across countries. In Norway, Sweden, and Denmark—all countries with high levels of labor market regulation—between 40% and 50% of the mothers of preschoolers work on a part-time basis (Hoem 1995, Jensen 1995, Stier et al 1998). Where part-time workers are marginalized, however, as in the United States, Canada, and Britain, levels of part-time employment among new mothers are roughly half those found in the Scandinavian countries (Rosenfeld & Birkelund 1995, Stier et al 1998).

A final factor that may mediate the impact of fertility on employment is the specific characteristics of the actual job. While job characteristics have yet to be linked to fertility *per se*, they are related to the timing of work exits and re-entry (Desai & Waite 1991). Moreover, jobs vary substantially in the extent to which they are compatible with caring for a child (Glass & Camarigg 1992). A few jobs allow paid work and childcare to be performed simultaneously. Jobs in the childcare industry presumably enable mothers to care for their own children while also supervising other children (Connelly 1992). Piecework and other work that can be performed in the home are additional examples. Shift work and jobs with flexible schedules can make it easier to coordinate childcare responsibilities with the father, grandparent, or some other relative (Presser 1989).

The Effects of Labor Force Participation on Fertility

In many industrialized countries, the impact of childbearing on labor force behavior tends to be relatively short-term, ending when the youngest child reaches school age, if not sooner. Over the long run, however, the causal relationship between

fertility and labor force participation may be stronger in the opposite direction, with labor force participation and participation plans inhibiting fertility (Waite & Stolzenberg 1976, Hout 1978, Smith-Lovin & Tickameyer 1978). Although the nonrecursive models on which this finding is based have been criticized for their statistical shortcomings (Cramer 1980),¹ the negative impact of labor force activity on fertility is theoretically well grounded. Labor force participation raises the costs of childbearing in terms of foregone wages; further, time spent in market work reduces the time and energy available for child rearing (Becker 1981, Willis 1973), as well as for leisure. In addition, for women who are pursuing careers, time spent out of the labor force, especially when it occurs early in a career track, negatively affects occupational advancement (Bielby 1992, Rindfuss et al 1999, Rosenfeld 1992, Rosenfeld & Spenner 1992). Not surprisingly, then, women in the paid labor force have fertility levels roughly one-half to one child lower than women who are not labor force participants (Spain & Bianchi 1996, United Nations 1976).

Despite the potential importance of this relationship for our understanding of the likely direction of fertility trends (Rosenfeld 1996), few studies describe the specific mechanisms by which labor force participation lowers fertility. The age at which women first become parents is related to their cumulative fertility, although this relationship appears to be weakening, at least in the United States (Morgan & Rindfuss 1999). Thus, one possible mechanism by which labor force participation may depress fertility is by delaying the transition to parenthood. In Japan, for example, higher educational attainment and labor force participation, in conjunction with women's rejection of traditional domestic roles, appears to be leading to a postponement of parenthood (Tsuya & Mason 1995). Similarly, in the United States, married women who work for pay are more likely than married women who do not to postpone the first birth (Blau & Robins 1988). Such delays may reflect deliberate decisions that take into account the higher opportunity costs of childbearing among women with greater human capital (Rindfuss et al 1996), or simply the cumulative effects of time spent in activities that compete with childbearing, such as education or training, the job search process, and establishing oneself with an employer (Hoem 1996).

Other studies suggest that the negative impact of labor force participation on fertility is more pronounced following the first birth, once women have experienced juggling the demands of work and child rearing. This mechanism was first suggested by Stolzenberg & Waite (1977), who proposed that women become more aware of the conflict between work and child rearing as they get older and gain experience with work or children. Consistent with this "learning hypothesis,"

¹In his review of problems in determining the causal relationship between fertility and female employment, Cramer (1980) observes that weak instrumental variables and the multicollinearity that result from inadequate instruments led to unstable, imprecise estimates in prior studies. More recent observers note the on-going dissatisfaction with simultaneous equation models and the failure of analysts to resolve these issues and, accordingly, questions about causal direction (Lehrer & Nerlove 1986, Spain & Bianchi 1996, Spitze 1988).

White & Kim (1987) reported that women in the United States do not view work as competing with child rearing until *after* they become mothers. It is not surprising, then, that Hoem & Hoem (1989) found that, for Swedish women, second- and third-order birth risk is significantly lower among labor force participants than housewives (Hoem & Hoem 1989). They also reported that the difference in third birth risk between labor force participants and nonparticipants is narrower for more recent cohorts of women, a finding they attribute to the deteriorating economic situation of single-earner families. Their interpretation points to the potentially dynamic nature of the employment-fertility relationship within countries across time, and, in particular, the likelihood that the relationship is mediated by the larger economic and social context—the issue we address in the next section.

INSTITUTIONAL DETERMINANTS OF ROLE INCOMPATIBILITY

Although the relationship between female labor force participation and fertility is negative at the individual level, as we saw above, it is now positive at the national level. Thus, while women in all countries experience difficulty balancing their work and family responsibilities, it is easier to coordinate these responsibilities in some countries than in others (Bernhardt 1993, Ellingsæter & Rønsen 1996, Rindfuss & Brewster 1996). Rindfuss & Brewster (1996:262) argue that role incompatibility mediates the relationship between female labor force participation and fertility, and further, that “the negative association between fertility and labor force participation can be expected to diminish as the conflict between work and family responsibilities is reduced—whether by a change in the nature of work life, shifts in the social organization of childcare, or a combination of the two.” Such change can be mandated by the state, or it can occur in the absence of government regulation, as employers respond to evolving labor market conditions. In this section, we review the literature on the structural underpinnings of role incompatibility.

Family Policies and Cash Benefits

In reviewing the family policy literature, it quickly becomes apparent that there are nearly as many ways of classifying family policies as there are authors. Research on family-relevant policies has distinguished explicit from implicit policies; redistributive from pronatalist policies; and universal policies from those that consider financial means, child's age, or family size (Gauthier 1996, Hantrais 1997, Hecht & Leridon 1993). Thus, family policies have wide-ranging goals, from ensuring that household income differences do not translate into markedly inequitable living standards to encouraging larger family sizes. Regardless of intent, all state mandates falling under the rubric of family policy aim to regulate social and economic relations within families as well as between families and other social institutions (Wennemo 1993).

Although all advanced industrial nations make some type of provision for working families, states' orientations toward families and family policies differ markedly (Chesnais 1996, Gauthier 1996, Hantrais 1997, Wennemo 1993). In describing these differences, Chesnais (1996) distinguishes between "nations of families," in which the extended family has primacy in all important life decisions (e.g., marriage and childbearing) and in which family networks typically provide services ranging from childcare to banking, and "nations of individuals," which espouse a strong philosophy of individualism and social equality. This dichotomy provides a convenient summary of national orientations towards the resolution of work-family conflict. Chesnais (1996) observes that policies in "nations of families" take two forms: either they are strongly supportive of families comprising a breadwinner-father, homemaker-mother and their dependent children, as in Germany, or they do little that could be construed as challenging or interfering with the prerogatives of such families, as in Italy. Policies in "nations of individuals," such as Sweden and the United Kingdom, tend to be both supportive of women's rights and concerned with children's living standards; moreover, policies in these countries often recognize a diversity of family forms, not just the breadwinner-homemaker model.

Hantrais (1997) maps such differences in national policy environments onto demographic trends using detailed data on ten aspects of national family policies and Eurobarometer survey results for 15 European Union member states. She finds (1997:373–74) that the European Union countries can be categorized into five combinations of family policy and demographic outcomes. Four of these combinations correspond neatly to Chesnais' (1996) distinction between "nations of families" and "nations of individuals," while illustrating the diversity that is possible within these two groups. There is just one anomaly, Ireland, whose unique combination of demographic characteristics—high birth rates, low marriage rates and no divorce (prior to 1998)—distinguish it from all other European Union members.

The first of Hantrais' combinations, exemplified by the Nordic countries, comprises high rates of female labor force participation, relatively high fertility levels, and policies that are "family friendly" while discouraging the institutionalization of any particular family form. Indeed, Hantrais (1997:363–64) notes that the Nordic states have moved away from policies aimed at the family as a social institution and toward policies that target individuals in families. Such policies are characteristic of Chesnais' "nations of individuals." France and the United Kingdom provide a somewhat weaker illustration of "nations of individuals." Their policies, while grounded in strong traditions of individual rights, continue to institutionalize the family, although they recognize an increasing diversity of family forms. Demographically, France and the United Kingdom have fertility levels and female labor force participation rates that are slightly lower than those of the Nordic countries, but still above the European average. Hantrais (1997:361) describes these countries as "drifting" toward the Nordic model, with respect to both policy and demographic outcomes.

The two remaining combinations represent Chesnais' "nations of families." Austria, Belgium, Germany, the Netherlands, and Luxembourg share a strong commitment toward families, backed by monetary allowances for housing, child benefit packages, and well-paid maternal leave. As Hantrais (1997:373) observes, however, such "family friendly policies have not been matched by high rates of female economic activity among women of childbearing age [nor] . . . high birth rates." This is likely because these policies, which are intended to reify the breadwinner-homemaker family, cannot entirely compensate families for the income lost when mothers leave the labor force. Further, such policies do not accommodate women who wish to both pursue a career and raise children.

The final combination is illustrated by the Mediterranean states, which view the family as a private domain in which the government should not intervene and where consistently low rates of female labor force activity are accompanied by extremely low fertility. The lack of state services, in conjunction with pronounced gender inequality and difficult economic conditions, has created a situation in which women bear the burden of ensuring the welfare of extended family members, precluding labor force participation and limiting the time available for child rearing (Bettio & Villa 1998).

Hantrais' (1997) work suggests the potential importance of family benefits in regulating fertility and female labor force participation. Multivariate analyses, however, provide mixed evidence. Higher cash benefits are related to higher fertility, although the effects of such benefits, including housing allowances, tax relief, and child benefits are modest (Blanchet 1987, Ékert-Jaffe 1986, Gauthier 1991, Gauthier & Hatzius 1997, Zhang et al 1994). For example, one recent study, using data from 22 countries over a 20-year time span, estimates that, in the short run, a 25% increase in overall benefit levels would raise fertility by only 0.6%; over the long run, the same increase would raise fertility by just 4% (Gauthier & Hatzius 1997). Whether parental leave—which would seem more closely tied to role incompatibility than cash benefits—enhances either fertility or labor force activity is less clear. Gauthier (1991) reports a positive effect of leave that is particularly pronounced in countries with generous cash benefits and ample childcare facilities. More recently, however, she failed to observe effects of either leave duration or pay rate, once male and female wages, unemployment rates, and cash benefits were controlled (Gauthier & Hatzius 1997).

These findings may say more about the ability of broadly drawn, cross-national indicators to capture the effects of policy differences than they do about the relationship between role incompatibility, fertility, and women's labor force activity, especially given the very small number of countries included in the analyses. Policies with multiple dimensions that cannot be captured by easily constructed measures, such as duration or pay rate, are ill-suited for cross-national analysis. Such analyses are unable to consider the finer details of leave policies or relevant aspects of the larger social context. The implications of this shortcoming are apparent upon a closer look at Germany's leave policy. Germany's maternal leave policy mandates 14 weeks of paid leave at a generous 100% of pre-leave

pay (Sundström & Stafford 1991). Leave length and pay rate are easily included in cross-national analyses; less easily incorporated are those aspects of German family policy that encourage new mothers to remain at home for a longer period. For example, mothers who do not return to paid work receive a tax-free childcare allowance for eighteen months. Mothers who return to work sacrifice this benefit unless they agree to work fewer than 19 hours a week; however, employers are under no obligation to provide part-time employment nor must they guarantee mothers returning from maternity leave the same or a comparable job (Schiersman 1991). Further, as we discuss below, Germany has a substantial shortage of childcare, particularly for children ages three and under (Schiersman 1991, Ondrich & Speiss 1998). Such factors, left uncontrolled in statistical analyses, likely obscure the impact on fertility or labor force activity of leave duration and pay rate.

Another approach is country-specific analysis of time-series data. Unfortunately, there are relatively few countries in which the influence of family benefits on fertility and labor supply have been examined in a multivariate framework. Sweden has received the most attention. Sweden mandates 52 weeks of paid leave at 90% of pre-leave pay and an additional 13 weeks at a flat pay rate, explicitly encourages paid employment among women, and encourages a gender-equitable division of household labor and childcare (Hoem 1990). Several multivariate studies indicate that the rise in Swedish period fertility during the late 1980s and early 1990s reflected, at least in part, changes in birth timing and spacing that appear to have been stimulated by newly enacted leave and wage compensation policies (Andersson 1999, Hoem 1993, Oláh 1999, Walker 1994). Likewise, the rising female labor force participation rates, which peaked in the early 1990s, have been attributed to policy provisions, particularly those related to parental leave (Sundström 1991). Although it is too early to tell, it is possible that the recent decline in Sweden's TFR is related to scaling back of its maternity benefits.

The United States provides an instructive counterpoint to Sweden. Fertility and labor force participation rates in the United States have been high over the past two decades relative to other industrialized nations. This is not the result of policies intended to reduce role incompatibility; indeed the United States had no family policy until 1993, when the Family and Medical Leave Act (FMLA) took effect. Prior to the FMLA, most new mothers relied on accumulated sick leave and vacation time or took unpaid leave (Klerman & Leibowitz 1994). Now, women who work for businesses with 50 or more workers are entitled to 12 weeks of job-protected, unpaid leave following the birth or adoption of a child. Although the proportion of the female labor force that is eligible for maternity leave jumped dramatically following the FMLA's enactment (Waldfogel 1999), fewer than half of all private-sector workers are covered. The FMLA has increased both the likelihood of leave among some women not already covered by employer or state policies and leave length among those already covered (Waldfogel 1999). It has not, however, substantially altered postnatal employment rates (Ross 1998), at least in the short term, nor is it likely to have much impact on the work patterns of new mothers over the long run (Klerman & Leibowitz 1999). Thus, while policies may help

ease role conflict, as in Sweden, the experiences of the United States indicate that policy interventions are not necessary for relatively high fertility rates to occur along with high rates of female labor force participation.

Childcare Arrangements

Perhaps the most widely used strategy women adopt to assist them in accommodating their family duties to the demands of paid employment is to relinquish responsibility for childcare during the hours they are engaged in market work. Women in economically developed nations rely on a wide range of childcare providers, including fathers and other family members, paid providers, preschools, and, as children age, schools and after-school activities. The degree to which such alternatives influence the association between female labor force participation and fertility depends on norms about child supervision and the availability of providers of acceptable quality at a cost that seems affordable to parents—factors that vary substantially across countries and, within countries, across population subgroups and geographic regions (Rindfuss & Brewster 1996:270–71).

Childcare norms: Norms and attitudes about childcare lie at the heart of the concept of role incompatibility. The incompatibility between women's roles as workers and mothers varies with beliefs about appropriate caregivers and the ages at which children need intensive supervision. In short, the more maternal supervision that norms prescribe, the greater the role incompatibility and, hence, the stronger the negative association between fertility and female labor force activity (Rindfuss & Brewster 1996).

Despite their implications for role incompatibility, norms about child supervision represent an aspect of childcare left unaddressed in most research on the relationship between fertility and women's labor force activity. Consequently, we have no direct information on how childcare norms vary across national contexts or across population subgroups, or the relationship of these norms to fertility or women's labor force participation.² Studies of public attitudes toward working mothers provide some insight into child supervision norms, insofar as they indicate the acceptability of nonmaternal care. Available data suggest substantial cross-national differences. For example, Hantrais (1997: Tables 12a, 12b) observes considerable variation in levels of public support for working mothers in the European Union. Further, while her data are incomplete, they suggest a positive correlation between public attitudes on the one hand and both state subsidies for preschool care and female economic activity on the other. Recent studies also indicate that public acceptance of working mothers has increased. In the United States and in the Netherlands, public attitudes toward working mothers have become more positive in recent decades; while rates of change vary across population

²One problem, of course, is disentangling the relationship between norms and behaviors. While greater reliance on nonmaternal providers may be indicative of norms that are more accepting of nonmaternal care, use-levels also likely reflect the availability and affordability of nonmaternal providers (Rindfuss & Brewster 1996).

subgroups, the trend is universal (Brewster & Padavic 2000, Néve 1995, Rindfuss et al 1996). To the extent that such change is associated with reduced role conflict, it may help explain the concurrence of high rates of fertility and female labor force participation in some countries (Rindfuss et al 1996).

Childcare availability: Reliable and consistent data on childcare availability are difficult to find. International data cover child enrollment in centers receiving at least some state-funded support. While these data are admittedly limited in coverage, they suggest wide cross-national differences in (state supported) child care. In France and Belgium, for example, in 1988, more than 95% of children ages 3 to school age were enrolled in publicly funded daycare institutions, including creches, family daycare centers, and preschools; Italy, Germany, Denmark, and Sweden all reported figures of 80% or higher (Gauthier 1996: Table 10.6, Ondrich & Speiss 1998: Table 1). In contrast, in Japan and Canada, fewer than 20% of children in this age range were enrolled in institutions receiving public support (Gauthier 1996: Table 10.6).

As in the rest of the industrialized world, availability in the United States appears to be better for older preschoolers than for those under age three, although evaluation is complicated by the lack of a centralized registration system and by cross-state differences in care legislation. Survey data indicate that among children of employed mothers, 14% of infants are in child care centers. This figure rises to 21% and 37% for children aged 1–2 and 3–4 respectively (Hofferth 1996). Such a pattern reflects both availability of suitable childcare centers and the preferences of parents.

Related to the availability of care providers is the cost of care. While cross-national comparisons are difficult, it is clear that care is more affordable in some countries than in others. In most European countries, care is publicly funded, at least in part, for children aged three and older. In Sweden and Finland, for example, childcare is state-subsidized; parents pay a nominal fee, depending on income, for care in state-licensed centers or family daycare homes (Mikkola 1991, Sundström 1991). In France, the childcare system is a complex combination of private and public providers, all of which are partly state-subsidized; parents pay from approximately 28% to 90% of the cost of care, depending on provider type (David & Starzec 1991). In none of the English-speaking countries, however, is care subsidized for the majority of parents. In Canada, for example, the federal government withdrew its support for the development of universal childcare services in 1988, after nearly two decades of study and debate (Gauthier 1996). In Australia, Britain, and Ireland, the state encourages employer-sponsored facilities, and provides subsidies only for the poor and near-poor. In the United States, the Family Support Act of 1988 was intended to facilitate employment for mothers of young children by increasing their wages and reducing their childcare costs; however, only the poor are eligible.

While most research on childcare provisions focuses on preschoolers, the structure of the educational system also has implications for role incompatibility; the age at which children start school and the amount of time they spend there can affect the extent of work-family conflict experienced by employed mothers. By

way of illustration, we contrast the educational systems of France and Germany. In France, children are in school or school-supervised programs from early morning through mid- to late afternoon on weekdays and Saturday mornings (Rindfuss & Brewster 1996). In Germany, where children can start kindergarten as early as age three, there has been a severe shortage of kindergarten slots; however, the German Parliament has recently passed legislation entitling all children to a slot by 1999 (Ondrich & Spiess 1998). Primary schools run on irregular hours and are in session, by and large, for only half the day; this situation is exacerbated by the paucity of daycare centers that run outside of school hours (Schiersman 1991). The German educational system, like the German family leave and benefits package, serves as an obstacle to women who wish to combine work and child rearing. The French educational system would appear far more friendly to mothers who engage in market work, consistent with the philosophy underlying its family policies.

Research results: While a substantial body of descriptive work on childcare availability and cost exists, there is a paucity of research addressing the impact of childcare constraints on either fertility or female labor force participation. No studies that we know of assess the extent to which such constraints account for variation in fertility and female labor force participation rates, although these factors appear to be correlated. Some individual-level studies suggest that childcare costs and availability influence women's fertility decisions, at least in the United States. Mason & Kuhlthau (1992) report, for example, that 8% of their sample of Detroit-area mothers indicated that problems with childcare costs, availability, or quality led them to have fewer children than they would have had otherwise, and nearly 4% indicated that they had postponed a birth because of childcare problems. For reasons outlined elsewhere (Rindfuss & Brewster 1996), these are likely to be underestimates of the actual effects. Employed women who rely on relatives for care are more likely to intend another birth (Lehrer & Kawasaki 1985), while those who have an additional adult in the household (other than the spouse) have a birth probability about 36% higher than those who do not (Blau & Robins 1989). While these findings suggest that childcare plays a role in individual decisions about work and fertility, the role of child care in explaining the aggregate-level relationship has yet to be demonstrated.

TOWARDS A CONCEPTUAL FRAMEWORK

Underlying the central question of this essay is the assumption that women either limit their fertility to accommodate their labor force activity, or they adjust their labor force behavior to their fertility. The evidence suggests that women do both. A substantial body of individual-level research describes the various strategies by which women in industrialized settings accommodate their employment patterns to their fertility and their fertility to their labor force participation. The evidence also suggests that these strategies vary across national settings and that the ability to combine labor force participation and motherhood varies across countries. In

short, demographers, sociologists, and economists have amassed a great deal of data on the fertility-employment relationship. What has been lacking is a unifying conceptual framework that ties together the findings from different contexts and levels of analysis.

To account for the many, sometimes discrepant, findings, such a framework must have at least three features: it must be dynamic; it must recognize the multidimensionality of both labor force participation and fertility; and it must be multilevel, incorporating the institutional and normative arrangements that influence individual fertility and labor force behavior. We consider each of these aspects in turn.

A Dynamic Model

Both labor force participation and fertility are more accurately conceived as processes that unfold over time rather than as static phenomena (Bernhardt 1993, Rindfuss et al. 1999). Labor force participation, for men as well as women, is fluid; individuals may enter, exit, and re-enter the paid labor force at any point in time, voluntarily or involuntarily (Gerson 1985, Koenigsberg et al 1994, Rexroat 1992). Moreover, the nature of labor force activity is variable; time commitments may range from minor to great and may shift repeatedly over the life course (Spain & Bianchi 1996, Stier et al 1998). Even the hours of the day and the days of the week that women and men work can vary (Presser 1999), and this has changed over time. The dynamic nature of fertility may be somewhat less obvious since child-bearing itself is irreversible; nevertheless, fertility proceeds one child at a time, and decisions about future births—both number and timing—can be re-evaluated at any point as relevant circumstances change (Udry 1983, Namboodiri 1983).

Because both phenomena are processual, each may influence and be influenced by the other at any one time point or at multiple points. Moreover, the nature of this influence may differ from one point to the next, as women gain experience with or knowledge of the degree to which paid work and parenting conflict (Stolzenberg & Waite 1977, White & Kim 1987). It is easy to imagine, for example, changes in work or schooling plans following the first birth or a revision of fertility plans in response to changes in labor force participation. Bernhardt (1993:35) refers to the complex interplay among behavior, intentions, and experience as “circular cumulative causality,” suggesting that current states build, in cumulative fashion, on past experiences. Framing the relationship in this way focuses attention on the complexity of the transitions from one state to the next and the pathways women follow through the life course. Open for research are questions about the interaction of individual characteristics and circumstance in shaping women’s life strategies.

Multidimensionality

Related to the dynamic nature of both labor force participation and fertility—and further complicating the conceptualization of their relationship—is their multidimensionality. Labor force activity encompasses far more than can be captured by simple binary measures of participation (Bernhardt 1993). Indeed, that

an increasing proportion of women in advanced industrial societies engage in paid work throughout their lives suggests that the critical variables in studies of work-family conflict may no longer be work participation/nonparticipation, but the *organization* of work time. Thus, our thinking about role incompatibility and the fertility-employment relationship needs to move beyond the part-time versus full-time distinctions (or even hours worked per week) to consider when women work and the compatibility of their work schedules with the schedules of potential childcare providers, as well as the distinction between careers and jobs (Bettio & Villa 1998, Presser 1989, 1995).

Fertility, like labor force participation, encompasses multiple dimensions. Investigators have focused on the decision to have children or not and the number of children, but additional aspects of fertility are likely to be relevant. Birth timing and spacing, for example, may comprise key components of strategies to balance work and family responsibilities. As Bettio & Villa (1998:166) observe, where completed fertility tends to be two or fewer children, "the burden of making motherhood more compatible with working life falls mainly on the timing of births." This, of course, brings us back to the dynamics of the fertility-employment relationship and the importance of incorporating time into conceptual as well as statistical models.

Incorporating Institutional Influences

Inherent in the concept of role incompatibility is the assumption that participation in economically productive work is difficult, if not impossible, for individuals who are responsible for child-rearing tasks, particularly when the children are of preschool age. But, as we have seen, considerable evidence suggests that the degree of conflict between work and fertility varies across advanced industrialized countries. Family benefits, maternal or parental leave policies, and childcare availability also differ from one country to the next, as well as over time. These aggregate characteristics, however, are not particularly good predictors of national fertility levels. As we observed above, this is likely, at least in part, a measurement problem, yet it points to the need for a more comprehensive conceptualization of the structural and institutional aspects of role incompatibility.

Numerous aspects of the social context likely deserve consideration; we suggest two here. First, the work we have reviewed suggests the overriding importance of the state's philosophical orientation toward family policy and families. Policy effects are best interpreted in light of announced policy goals and the state's philosophy concerning families and individuals. Policies in states seeking to promote gender equality, for example, are likely to have very different effects from superficially similar policies aiming to encourage traditional family relations. Second, macrolevel economic conditions are likely to be important. Individuals may be less willing to bear children when the economy is uncertain, even where family policies and childcare availability reduce work-family conflict and encourage gender equity. In Sweden, for example, both female labor force participation and

fertility have fallen in recent years as inflation and unemployment rates have risen (Andersson 1999).

While investigators have considered such factors, their true incorporation into our thinking about the fertility-employment relationship will require conceptual models that encompass individual and aggregate-level variables. The effects of institutional factors on rates of labor force participation and fertility are manifested through their influence on individual behavior. Thus, we cannot adequately assess the effects of structural factors, such as family benefits, without specifying the mechanisms by which these variables influence individual behaviors. Likewise, individuals act within contexts, and we run the risk of misleading ourselves about the association between individuals' work and family behaviors if we ignore the effects of contextual characteristics. In short, the incompatibility between work and fertility is a *variable*, and variation in this incompatibility is influenced by social, economic, and institutional forces.

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LITERATURE CITED

- Andersson G. 1999. Trends in childbearing and nuptiality in Sweden, 1961–1997. Pap. presented at Annu. Meet. Pop. Assoc. Am., New York
- Becker GS. 1981. *A Treatise on the Family*. Cambridge: Harvard Univ. Press
- Bernhardt EM. 1993. Fertility and employment. *Eur. Sociol. Rev.* 9(1):25–42
- Bernhardt EM. 1986. Women's home attachment at first birth: the case of Sweden. *Eur. J. Pop.* 2(1):5–29
- Bettio F, Villa P. 1998. A Mediterranean perspective on the breakdown of the relationship between participation and fertility. *Cambridge J. Econ.* 22:137–71
- Bielby D. 1992. Commitment to work and family. *Annu. Rev. Sociol.* 18:281–302
- Blanchet D. 1987. Les effets démographiques des différentes mesures de politique familiale: Un essai d'évaluation. *Population* 42(1):99–127
- Blau DM, Robins PK. 1988. Child care costs and family labor supply. *Rev. Econ. Stat.* 70:374–438
- Blau DM, Robins PK. 1989. Fertility, employment, and child care costs. *Demography* 26(2):287–99
- Brewster KL, Padavic I. 2000. Change in gender ideology, 1977–1996: The contributions of intracohort change and population turnover. *J. Marr. Fam.* 62(2): In press
- Bumpass LL, Westoff CF. 1970. *The Later Years of Childbearing*. Princeton: Princeton Univ Press
- Chafetz JS. 1995. Chicken or egg? A theory of the relationship between feminist movements and family change. In *Gender and Fertility Change in Industrialized Countries*, ed. KO Mason, AM Jensen, pp. 63–81. Oxford: Clarendon
- Chesnais JC. 1996. Fertility, family, and social

- policy in contemporary western Europe. *Pop. Dev. Rev.* 22(4):729–39
- Choe MK, Bumpass LL, Tsuya NO. 1999. *Employment hours, preferences, and their perceived impact on family life in Japan, South Korea, and the United States*. East-West Center: manuscript
- Connelly R. 1992. Self-employment and providing childcare. *Demography* 29:17–29
- Corcoran M, Duncan GJ, Ponza M. 1984. Work experience, job segregation, and wages. In *Sex Segregation in the Workplace: Trends, Explanations, Remedies*, ed. B Reskin, pp. 171–91. Washington, DC: Natl. Acad. Sci.
- Cramer JC. 1980. Fertility and female employment: problems of causal direction. *Am. Sociol. Rev.* 45(2):167–901980
- David MG, Starzec C. 1991. France: A diversity of policy options. See Kamerman & Kahn, pp 81–113
- Degler C. 1980. *At Odds: Women and the Family in America from the Revolution to the Present*. New York: Oxford Univ. Press
- Desai S, Waite LJ. 1991. Women's employment during pregnancy and after the first birth: occupational characteristics and work commitment. *Am. Sociol. Rev.* 56(4):551–66
- Ékert-Jaffe O. 1986. Effets et limites des aides financières aux familles: Une expérience et une modèle. *Population* 41(2):327–48
- Ellingsæter AL, Ronsen M. 1996. The dual strategy: motherhood and the work contract in Scandinavia. *Eur. J. Pop.* 12:239–60
- England P, Farkas G. 1986. *Households, Employment, and Gender: A Social, Economic, and Demographic View*. Hawthorne, NY: Aldine
- Gauthier AH. 1991. *Subsidizing parents: Does it make children more attractive?* Paper presented at Wksp. on Compar. Stud. of Welfare State Dev., Helsinki
- Gauthier AH. 1996. *The State and the Family: A Comparative Analysis of Family Policies in Industrialized Countries*. Oxford: Clarendon
- Gauthier AH, Hatzius J. 1997. Family benefits and fertility: an econometric analysis. *Pop. Stud.* 51:295–306
- Gershuny J, Robinson JP. 1988. Historical change in the household division of labor. *Demography* 25:537–52
- Gerson K. 1985. *Hard Choices: How Women Decide about Work, Career and Motherhood*. Berkeley: Univ. Calif. Press
- Glass J, Camarigg V. 1992. Gender, parenthood, and job-family compatibility. *Am. J. Sociol.* 98:131–51
- Hantrais L. 1997. Exploring relationships between social policy and changing family forms within the European Union. *Eur. J. Pop.* 13:339–79
- Hecht J, Leridon H. 1993. Fertility policies: a limited influence? In *The Changing Population of Europe*, ed. D Noin, R Woods, pp 61–75. Oxford, UK: Blackwell's
- Hirschman C. 1994. Why fertility changes. *Annu. Rev. Sociol.* 20:203–33
- Hoem B. 1995. The way to the gender-segregated Swedish labor market. See Mason & Jensen 1995, pp. 279–29
- Hoem B. 1996. *Some features of recent demographic trends in Sweden*. Pap. presented at Arbeitstagung der Deutschen Gesellschaft für Bevölkerungswissenschaft, 30th, Walferdange, Luxembourg
- Hoem B, Hoem J. 1989. The impact of women's employment on second and third births in Sweden. *Pop. Stud.* 43(1):47–67
- Hoem B, Hoem J. 1997. *Fertility trends in Sweden up to 1996*. Pap. presented to the Expert Group Mtg. on Below-Replacement Fertility, UN Pop. Div., New York
- Hoem J. 1990. Social policy and recent fertility change in Sweden. *Pop. Dev. Rev.* 16:735–48
- Hoem J. 1993. Public policy as the fuel of fertility: effects of a policy reform on the pace of childbearing in Sweden. *Acta Sociol.* 36(1):19–31
- Hofferth SL. 1996. Child care in the United States today. *The Future of Children* 6:41–61
- Hooper LM. 1999. *Fertility trends in the German Democratic Republic and the Federal Republic of Germany: 1960–1994*. Paper presented at the Annu. Meet. Pop. Assoc. Am., New York

- Hout M. 1978. The determinants of marital fertility in the United States, 1968–1970: inferences from a dynamic model. *Demography* 15:139–59
- Huinink J, Mayer KU. 1995. Gender, social inequality, and family formation in West Germany. In *Gender and Fertility Change in Industrialized Countries*, ed. KO Mason and A-M Jensen, pp. 168–99. Oxford: Clarendon
- Jensen A-M. 1995. Gender gaps in relations with children: closing or widening? See Mason & Jensen, pp. 223–42
- Kamerman S, Kahn A, eds. 1991. *Child Care, Parental Leave, and the Under-3's*. New York: Auburn House
- Kirshman N. 1983. Sequential fertility decision making and the life course. In *Determinants of Fertility in Developing Countries*, ed. R. Bulatao, R. Lee, vol. 2, pp. 444–72. New York: Academic
- Klerman JA, Leibowitz A. 1994. The work–employment distinction among new mothers. *J. Hum. Resour.* 29(2):277–303
- Klerman JA, Leibowitz A. 1999. Job continuity among new mothers. *Demography* 36(2):145–55
- Koenigsberg J, Garet MS, Rosenbaum JE. 1994. The effect of family on the job exits of young adults: a competing risk model. *Work Occup.* 21:33–63
- Kuijsten AC. 1996. Changing family patterns in Europe: a case of divergence? *Eur. J. Pop.* 12:115–43
- Lehrer E, Kawasaki S. 1985. Child care arrangements and fertility: an analysis of two-earner households. *Demography* 22:499–513
- Lehrer E, Nerlove M. 1986. Female labor force behavior and fertility in the United States. *Annu. Rev. Sociol.* 12:181–204
- Lesthaeghe R. 1995. The second demographic transition in Western countries: an interpretation. In *Gender and Fertility Change in Industrialized Countries*, ed. KO Mason, A-M Jensen, pp. 17–62. Oxford: Clarendon
- Lesthaeghe R, Willems P. 1999. Is low fertility a temporary phenomenon in the European Union? *Pop. Dev. Rev.* 25(2):211–28
- Macunovich DJ. 1996. A review of recent developments in the economics of fertility. In *Household and Family Economics*, ed. P Menchik, pp. 91–158. Dordrecht: Kluwer Academic
- Mason KO, Jensen AM, eds. 1995. *Gender and Fertility Change in Industrialized Countries*. Oxford, UK: Clarendon
- Mason KO, Kuhlthau K. 1992. The perceived impact of child care costs on women's labor supply and fertility. *Demography* 29:523–44
- Mikkola M. 1991. Finland: supporting parental choice. See Kamerman & Kahn 1991, pp 145–70
- Monnier A. de Guibert–Lantoine C. 1993. The demographic situation of Europe and the developed countries overseas: an annual report. *Population: An English Selection* 5:249–72
- Morgan SP. 1996. Characteristic features of modern American fertility. *Pop. Dev. Rev.* 22 (suppl):19–63
- Morgan SP, Hirosima K. 1983. The persistence of extended family residence in Japan: anachronism or alternative strategy? *Am. Sociol. Rev.* 48:269–81
- Morgan SP, Rindfuss RR. 1999. Re-examining the link of early childbearing to marriage and subsequent fertility. *Demography* 36:59–75
- Néve R. 1995. Changes in attitudes towards women's emancipation in the Netherlands over two decades: unraveling a trend. *Soc. Sci. Res.* 24:167–87
- Ní Bhrólchain M. 1992. Period paramount? A critique of the cohort approach to fertility. *Pop. Dev. Rev.* 18:599–629
- Ogasawara Y. 1998. *Office Ladies and Salaried Men: Power, Gender, and Work in Japanese Companies*. Berkeley: Univ. Calif. Press
- Olóh L Sz. 1999. Do public policies influence fertility? Evidence from Sweden and Hungary from a gender perspective. *Stockholm Res. Rep. in Demography, no. 130* Demogr. Unit, Stockholm Univ., Stockholm, Sweden
- Ondrich J, Spiess CK. 1998. Care of children in a low fertility setting: transitions between home and market care for pre-school children in Germany. *Pop. Stud.* 52(1):35–48

- Organisation for Economic Co-operation and Development. 1997. *Labour Force Statistics, 1976-1996*. Paris: OECD
- Organisation for Economic Co-operation and Development. 1990. *OECD Employment Outlook*. Paris: OECD
- Organisation for Economic Co-operation and Development. 1986. *Labour Force Statistics, 1965-1985*. Paris: OECD
- Palmore JA, Gardner RW. 1983. *Measuring Mortality, Fertility, and Natural Increase: A Self-Teaching Guide*. Honolulu: East-West Center
- Pinnelli A. 1995. Women's condition, low fertility, and emerging union patterns in Europe. See Mason & Jensen 1995, pp. 82-101
- Population Reference Bureau. 1980-1999. *World Data Sheets*. Washington, DC: US-GPO
- Presser H. 1989. Can we make time for the children? The economy, work, and child care. *Demography* 26(4):523-43
- Presser H. 1995. Are the interests of women inherently at odds with the interests of children or the family? A viewpoint. See Mason & Jensen 1995, pp. 296-313
- Presser H. 1999. Toward a 24-hour economy. *Science* 284:1778-79
- Pyle JL. 1990. Female employment and export-led development in Ireland: Labour market impact of state-reinforced gender inequality in the household. In *Women, Employment and the Family in the International Division of Labour*, ed. S Stichter & J Parpart, pp. 137-160. Philadelphia, PA: Temple Univ. Press
- Reskin B, Padavic I. 1994. *Women and Men at Work*. Thousand Oaks, CA: Pine Forge Press
- Rexroat C. 1992. Changes in the employment continuity of succeeding cohorts of young women. *Work & Occup.* 19:18-34
- Rindfuss RR. 1991. The young adult years: diversity, structural change, and fertility. *Demography* 28:493-512
- Rindfuss RR, Benjamin K, Morgan SP. 2000. *How do marriage and female labor force participation affect fertility in low-fertility countries?* Pap. to be presented at Annu. Meet. Pop. Assoc. Am., Los Angeles
- Rindfuss RR, Brewster KL. 1996. Childrearing and fertility. *Pop. Dev. Rev.* 22 (suppl):258-89
- Rindfuss RR, Cooksey EC, Sutterlin RL. 1999. Young adult occupational achievement: early expectations versus behavioral reality. *Work & Occup.* 26:220-63
- Rindfuss RR, Morgan SP, Offutt K. 1996. Education and the changing age pattern of fertility. *Demography* 33:277-90
- Roos PA. 1985. *Gender and Work: A Comparative Analysis of Industrial Societies*. Albany: State Univ. New York Press
- Rosenfeld RA. 1992. Job mobility and career processes. *Annu. Rev. Sociol.* 18:39-61
- Rosenfeld RA. 1996. Women's work histories. *Pop. Dev. Rev.* 22 (suppl):199-222
- Rosenfeld RA, Birkelund G. 1995. Women's part-time work: A cross-national comparison. *Eur. Sociol. Rev.* 11(2):111-34
- Rosenfeld RA, Spenner KI. 1992. Occupational sex segregation and Women's early career job shifts. *Work & Occup.* 19:424-29
- Ross K. 1998. Labor pains: the effect of the Family and Medical Leave Act on the return to work after childbirth. *Focus* 20(1):34-36
- Schiersmann C. 1991. Germany: recognizing the value of child rearing. See Kamerman & Kahn 1991, pp. 171-99
- Smith-Lovin L, Tickemeyer AR. 1978. Nonrecursive models of labor force participation, fertility behavior, and sex role attitudes. *Am. Sociol. Rev.* 43:541-57
- Spain D, Bianchi SM. 1996. *Balancing Act: Motherhood, Marriage, and Employment among American Women*. New York: Russell Sage Found.
- Spitze G. 1988. Women's employment and family relations: a review. *J. Marr. Fam.* 50:595-618
- Sporton D. 1993. Fertility: the lowest level in the world. In *The Changing Population of Europe*, ed. D Noin, R Woods, pp. 49-60. Oxford, UK: Blackwell's Publishers
- Stier H, Lewin-Epstein N, Braun M. 1998. *The*

- institutional context of women's employment consequences: evidence from eight industrialized countries.* Pap. presented at the Annu. Meet. Am. Soc. Assoc. Am., San Francisco
- Stolzenberg RM, Waite LJ. 1977. Age and the relationships between young women's plans for childbearing and employment. *Am. Sociol. Rev.* 42:769–83
- Stycos JM, Weller RH. 1967. Female working roles and fertility. *Demography* 4:210–17
- Sundström M. 1991. Sweden: supporting work, family, and gender equality. See Kammerman & Kahn 1991, pp 171–200
- Sundström M, Stafford F. 1991. Female labor force participation, fertility, and public policy. *Stockholm Res. Rep. in Demogr.* No. 63, Stockholm Univ.
- Tsuya NO, Mason KO. 1995. Changing gender roles and below-replacement fertility in Japan. See Mason & Jensen 1995, pp. 139–67
- Udry JR. 1983. Do couples make fertility plans one birth at a time? *Demography* 20:117–28
- United Nations. 1976. *Fertility and Family Planning in Europe around 1970.* New York: United Nations
- van de Kaa DJ. 1987. Europe's second demographic transition. *Pop. Bull.* 42(1):1–57
- Waite LJ, Stolzenberg RM. 1976. Intended childbearing and labor force participation of young women: insights from non-recursive models. *Am. Sociol. Rev.* 41:235–52
- Waldfogel J. 1998. The family gap for young women in the United States and Britain: Can maternity leave make a difference? *J. Lab. Econ.* 16(3):505–45
- Waldfogel J. 1999. The impact of the Family and Medical Leave Act. *J. Policy Anal. Mgmt.* 18(2):281–302
- Walker JR. 1994. *The effect of public policies on recent Swedish fertility behavior.* Univ. Wisc.-Madison: Cent. for Demogr. Ecol. Work. Pap.
- Weller RH. 1977. Wife's employment and cumulative family size in the United States, 1970 and 1960. *Demography* 14(1):43–65
- Wenk D, Garrett P. 1992. Having a baby: some predictors of maternal employment around childbirth. *Gender & Soc.* 6(1):49–65
- Wennemo I. 1993. *Motives and institutions in the formation of family policy: a comparative study of 18 OECD countries.* Pap. presented at the Conf. on Compar. Res. on Welfare States in Transition, Int. Sociol. Assoc., Res. Com. 19
- White L, Kim H. 1987. The family building process: childbearing choices by parity. *J. Marr. Fam.* 49:271–79
- White M. 1996. Contemporary Japanese women: family, education, and workplace. In *Women and Work: A Reader*, ed. P Dubeck, K Borman, pp. 464–66. New Brunswick, NJ: Rutgers Univ. Press
- Willis RJ. 1973. A new approach to the economic theory of fertility behavior. *J. Polit. Econ.* 81:S14–S69
- Witte J, Wagner G. 1995. Declining fertility in East Germany after unification: a demographic response to socioeconomic change. *Pop. Dev. Rev.* 21:387–97
- World Bank. 1984. *World Tables.* Vol II. Baltimore: Johns Hopkins Univ. Press. 3rd ed.
- Zhang J, Quan J, van Meerbergen P. 1994. The effect of tax-transfer policies on fertility in Canada, 1921–88. *J. Hum. Resour.* 29(1):181–201