Published in final edited form as:

Eur Sociol Rev. 2013 June 1; 29(3): 411–425. doi:10.1093/esr/jcr081.

Parental Involvement and Work Schedules: Time with Children in the United States, Germany, Norway, and the United Kingdom

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Abstract

We examine variation in parents' time with children by work schedule in two-parent families, utilizing time use surveys from the United States (2003), Germany (2001), Norway (2000), and the United Kingdom (2000) ($N = 6,835$). We find that American fathers working the evening shift spend more time alone with children regardless of mothers' employment status, whereas this association is conditional on mothers' employment in the United Kingdom and Germany. We find no evidence that Norwegian fathers working the evening shift spend more time alone with children. We conclude that a consequence of evening work often viewed as positive for children - fathers spending more time with children - is sensitive to both household employment arrangements and country context.

Many European and American parents work nonstandard or atypical schedules (Lewis *et al.*, 2008; Presser, 2003; Statistics Norway, 2008). Nonstandard shifts have been linked to a number of negative outcomes for parents and families including health problems and decreased marital quality. Of central concern, however, has been the consequence of nonstandard work for children's well-being (see review Han, 2007). Evidence suggests both positives and negatives for children. For example, American and British children may get more one-on-one interaction with fathers, but fewer family dinners and less time with mothers (Barnes *et al.*, 2006 in the UK; Presser, 2003 in the US; Wight *et al.*, 2008 in the US).

There are reasons to suspect, however, that this potentially positive implication of working a nonstandard shift - more time with fathers - varies by country context. Research in the US and the UK suggests that fathers working evening shifts spend more time alone with children and more time on routine childcare (Wight, Raley and Bianchi, 2008 in the US). They are also more likely to provide care for their children while mothers are at work (La Valle *et al.*, 2002 in the UK), particularly for preschoolers (Brayfield, 1995 in the US). This positive association, however, is not found in Norway (Kitterød and Pettersen, 2006). This suggests the mechanism linking work schedule and time with children varies by national context. Several researchers have called for cross-national comparisons of this relationship (Kitterød and Pettersen, 2006; Wight, Raley and Bianchi, 2008).

We answer this call by asking, does the association between working the evening shift and parents' time with children vary across countries? Furthermore, does this association depend

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A previous version of this work was presented at the 2010 European Population Association meeting in Vienna.

on how families reconcile work and family commitments as expressed by mothers' employment status? We hypothesize why the association between work schedule and time with children might vary across the US, Germany, Norway, and the UK and use a novel dataset to examine our hypotheses. We harmonize four nationally-representative time diary studies and focus on two parent families with children ages zero to fourteen.

We focus on two measures of the time parents spend with children - time alone with children (time in "sole charge" or sole responsibility) and time spent on direct childcare. We use these measures to capture the responsibility and work of childcare, as well as the dyadic and direct time children receive from parents. Because of large gender inequities in parents' time alone with children, there are generally different interpretations of this time for mothers and fathers. For mothers, particularly those with small children, the concern is that time in sole charge is a constraint. Estimates indicate that mothers spend 12 times as much time alone with infants (Pedersen et al., 1987) and over five times as much time alone performing childcare for children under 12 (Craig 2006). Although time in sole charge is also a constraint for fathers, because fathers are typically the "secondary" parent, time alone with children is believed to be an important component of bonding between fathers and their children. Essentially, if fathers spend little time alone with children, it creates an environment where mothers are the "experts" on children and where fathers feel less competent and develop a smaller skill set. Conversely, fathers establish confidence and skill when mothers are not present as "back-up" or serving as gatekeepers (Pedersen et al., 1987). Findings from small studies in the US indicate that fathers who more frequently provided solo care during their infant's first year had a greater variety of engagement and more direct interaction with their infant at one year. Their infant also had higher rates of responding to their father and more exploratory behavior (Pedersen et al., 1987). Among older children, Crouter and Crowley (1990) found that daughters who had more dyadic time with their fathers felt closer to their fathers, although they did not find this for boys. In the long run, strong bonds and perceived competency may be especially important for maintaining relationships in cases of divorce or separation (Burgess, 1997). Thus in general, more alone time for mothers is generally interpreted as negative, signaling a greater burden, whereas for fathers more alone time is interpreted as positive, signaling stronger bonds between fathers and children. It is important to note, however, that early studies also document that fathers' increased solo care may correlate with fathers feeling overloaded and mothers' decreased satisfaction (Baruch and Barnett, 1986; Russell, 1982).

We also examine engagement time, or *direct childcare*. It includes both physical care, such as feeding and dressing and interactive care such as talking and playing. It is strongly correlated with warmth, closeness, and monitoring, indicating a good measure of positive involvement promoting child well-being (Pleck and Masciadrelli, 2004). Although the time parents jointly spend with children is an important component of the time parents spend with children it is beyond the scope of this paper. Results for joint parent time and total parent time (largely composed of sole time plus joint time) are available from the authors upon request.

In selecting countries for study, we apply a most similar and a most different systems design (Przeworski and Teune, 1970) to Esping-Andersen's (1990) typology of Western welfare states. He groups states into three categories according to how extensively the government buffers citizens from the harshness of the labor market (i.e., decommodification), and how universal these benefits are (i.e., stratification). In light of critiques from gender scholars (see Orloff, 1996), the typology was expanded to include whether families – versus individuals – are the targeted beneficiaries of support (i.e., the degree of familialism) (Esping-Andersen, 1999). In liberal welfare states the role of the labor market is central. A belief in individual choice and the primacy of the labor market leaves families to make their

own (constrained) choices about work and care. In social-democratic countries the state is central. A range of universal policies support individuals and generally direct individuals towards more gender-egalitarian choices about work and care. In conservative countries the role of the family is central. While conservative countries also have an array of “family-supportive” policies, these policies generally support male-breadwinner/female-caregiver families. We select a country from each regime to represent “most different” types – the US and the UK for the liberal, Norway for the social-democratic, and Germany for the conservative regime. We chose these countries because each has high-quality, publicly available data. We select two liberal countries because variability exists within regimes (e.g., O’Connor *et al.*, 1999) and much of the previous work on this topic has been conducted on the US.

THEORETICAL FRAMEWORK

The predominate approach to understanding how work time is associated with parental time focuses on how much time parents spend at work. The time constraints, or demand/response capability, approach focuses on individuals’ pragmatic allocation of work given availability and demand, predicting that partners distribute workloads toward equilibrium (Blood and Wolfe, 1960; Coverman, 1985). Individuals are hypothesized to do less childcare or spend less time with children the more time they spend on employment. Conversely, individuals are expected to do more childcare or spend more time with children the more time their partner spends on employment and the more children they have. Evidence is mixed as to whether mothers spend more time on childcare when fathers’ work longer hours (Joesch and Spiess, 2006 in nine European countries; Nock and Kingston, 1988 in the US). Mothers may not be very responsive to partners’ employment because mothers are generally expected to adhere to a high standard of care time regardless of fathers’ availability.

Results for fathers do not follow expectations drawn from a time constraints perspective and highlight the importance work-family reconciliation strategies - specifically mothers’ employment status and associated childcare arrangements - for understanding parents’ time with children. American and Norwegian studies find that men partnered to women working part-time, not full-time, are more likely to provide childcare during mothers’ work hours (see Casper and O’Connell, 1998; Kitterød and Pettersen, 2006). When mothers work full-time families are more likely to use outside care (Folk and Beller, 1993). A similar model is found in the UK and Germany, where Lewis, Campbell and Huerta (2008) characterize mothers’ part-time work as “recognizably *the way of reconciling work and family*” (p. 25). In both countries a one-and-a-half earner model is combined with high use of informal care arrangements. These findings illustrate how time constraints are gendered. Mothers and fathers, on average, have different configurations of time constraints and demands, as well as a differential response to the same constraints and demands.

We contend that the influence of work schedule varies by context because parenting time is embedded in these reconciliation strategies, shaped by care policies, work policies, and cultural context. Context may produce, reinforce, or reflect structural and normative gender inequalities, influencing gender inequalities through both access to concrete resources and opportunities as well as normative expectations about behavior (see Lewis, 1992; Pfau-Effinger, 2005; Sainsbury, 1996). Context may influence time with children through time available to parents (e.g., the length of the standard workweek), demands for parents’ time (e.g., availability of affordable, quality childcare), and normative expectations about behavior (e.g., who should care for younger children – mothers, fathers, and/or the state?). We use the framework of gendered time constraints to consider why the association between nonstandard work and time with children would vary across country contexts. We draw on the comparative literature on the gender division of labor, which highlights the importance

of employment practices and family policies, and how normative expectations about gender are encoded in both (Gornick and Meyers, 2003; Gregory and Milner, 2007; Moss and Deven, 1999). Here, time constraints are not only about how many hours an individual works, but which hours. We review the context in each country, circa 2000, and develop hypotheses about the relationships between work schedules and parental time.

The United States

In the US labor market regulations and family policy provisions are low as reflected in Table 1. Over one-quarter of workers are exempt from receiving overtime pay for working over 40 hours per week, mandatory overtime and weekly hours are not restricted, and additional compensation for work during nonstandard hours is not required. The US has the highest percentage of employed men working over 50 hours per week and the smallest percentage of employed mothers working less than 30 hours per week. Parental leave is meager. The US has the smallest percentage of children age three to five in publicly-funded childcare and the largest parental share of childcare costs. The private childcare market is large, but is expensive and largely unregulated beyond basic health and safety; 38% of children ages zero to two in some type of licensed care.

We expect the combination of long work hours for men and women to limit availability, even while the lack of publicly-funded childcare and the high cost of private care create a strong demand for parental care. Nonstandard schedules provide the opportunity to tag-team parenting and avoid costly (or less favored) non-parental care. Although very few fathers and less than half of mothers report working nonstandard shifts for family reasons (Presser, 2003), they do create this opportunity in dual-earner couples. Non-parental care may also be unavailable during evening hours, forcing the use of parental care. Based on previous research, *we expect women's time with children to remain fairly stable regardless of shift because of strong norms for maternal care, but we expect men working an evening shift to spend more time with children.*

The United Kingdom

Until recently labor market regulations and family policy provisions in the UK were fairly similar to those in the US. Policies have diverged more with the election of the New Labour party in 1997. Normal working hours and compensation for nonstandard shifts are not set. Mandatory hours are capped at 48 per week, but workers may opt-out of this cap (Gornick and Meyers, 2003). Table 1 shows several similarities with the US; mother's employment is high, while leave provisions and care for young children are low. Consistent with the prevalence of the one-and-a-half-earner family (Lewis et al., 2008), the rate of part-time employment for mothers is much higher. Two-thirds of employed mothers with 2 or more children work less than 30 hours per week. There is greater variation in men's weekly work hours; 32% of men report working 50 or more hours per week and 31% report working 39 hours or less. There is also greater provision of care for 3-5 year olds, driven primarily by half-day care for four year olds. Parents' share of childcare costs is less than in the US but fewer children under age three are in some type of licensed care.

Similar to the US, we expect relatively meager provisions for childcare to create a strong demand for a tag-team solution to childcare when a parent works a nonstandard shift. We may observe this more frequently in the UK because of the prevalence of part-time employment for mothers, which may provide more opportunities for such arrangements. *We expect women's time to be stable, regardless of work shift, and men to spend more time in care when working an evening shift, particularly when their partner is employed part-time.*

Germany

Germany's labor market is highly regulated through collective bargaining among employers, trade unions, and the state. There are strict regulations for workers in standard employment contracts but far fewer regulations for part-time workers (Ebbinghaus and Eichhorst, 2006). Average hours set through collective bargaining are 37.7, mandatory hours are capped at 48, and night work is paid at a premium (Gornick and Meyers, 2003). Table 1 shows that Germany is similar to the UK in several respects; employed mothers generally work part-time, similar proportions of men work 50 or more and 39 or fewer hours per week, and public childcare coverage is similar. Germany differs, however, in its extensive leave provisions and lack of private childcare for children under three. As of 2000, German parents were granted up to three years of parental leave at a flat-rate with job security. Men's take-up is extremely low, whereas most women take two to three years. Children under the age of three are expected to be cared for in the home, by mothers (Ostner, Reif, Turba and Schmitt, 2003).

Given the strong norm of at-home maternal care, particularly for small children, *we expect work shift to have little effect on women's time*. Countervailing factors in Germany, however, make our expectations for fathers more complex. *On one hand, given the strong expectations for maternal care, there may be little fluctuation in demand associated with men's work schedule. On the other hand, the lack of public or private childcare may create a demand for fathers to spend more time on care, particularly when their partner is working part-time.*

Norway

Norway has the most extensive regulations of working time and the largest provision of public childcare. Weekly and mandatory hours are set at 40 with exceptions, while the average workweek set through collective bargaining is 37.5. Over-time work is paid a minimum 40% premium, and work at night is not permitted with exceptions (Torp and Barth, 2001). Table 1 shows that Norwegian men are the least likely to be working 50 or more hours per week and the most likely to work 39 or fewer. Norway has the highest rate of maternal employment, with fewer mothers working part-time than in the UK or Germany. Norway offers parents 42 weeks of fully-paid leave. Four weeks are reserved for the father; take-up rates are 85%. Norway enacted a cash for care scheme in 1998, providing a cash payment to parents who do not use public childcare for children ages one to two, regardless of employment status (Skevik, 2003). Pre-primary programs are full-day, operating 41 or more hours per week and municipalities are required to make before- and after-school programs available to first through fourth graders (Gornick and Meyers, 2003; Organization for Economic Cooperation and Development, 2006). More children ages 1 to 2 are in publicly-funded childcare and unlike the other countries fathers have a right to paternity leave.

Given the extensive services available to children in Norway, there may be less demand for daytime parental care. Thus, *we expect that parents working an evening shift, both mothers and fathers, may spend less time with children*. As early care, school, and before and after school programs sync well with the day shift, children may not be available during the day when parents could "make up" time. *Only parents who forgo public care and programs would be able to shift time to the day.*

In sum, we expect considerable variation in the association between evening work and time with children in the four countries, particularly for fathers. We expect work shift to have little effect on women, with mothers working evenings shifting time with children to the daytime. This may be less likely in Norway, unless mothers eschew public care for younger

children and before and after school activities for older children. We have similar expectations for Norwegian fathers. In the US and UK, we expect men working evenings to spend more time with children, in part, to avoid high costs of childcare. Because of the high prevalence of women's part-time work in the UK, this may be more common. We have countervailing expectations for fathers in Germany, where the lack of public or private care competes with the strong preference for at-home maternal care.

METHOD

Data

We use four nationally-representative time use surveys conducted in the early 2000s to explore our hypotheses. Respondents are asked to either keep a paper diary of their activities or are asked by interviewers to reconstruct their previous day. In most diaries respondents record what they were doing in their own words (primary activity), what else they were doing (secondary activity), who they were doing it with, where they were doing it, and what time they started and stopped the activity. Staff then code the activities using a standard activity lexicon. For the US, we use the American Time Use Survey (ATUS) 2003 conducted by the Bureau of Labor Statistics. Respondents reconstructed the previous day using computer assisted telephone interviewing. Only one adult in the household constructed a diary and only main activities were recorded. The other three datasets followed the Harmonised European Time Use Survey (HETUS) guidelines with some small variations. In contrast to the ATUS, the others used paper diaries containing 10-minute time slots and space to record secondary activities. Germany's Time Use Survey 2001-2002, conducted by the Federal Statistical Office, collected diaries from all household members for three days. Norway's Time Use Survey 2000-2001, conducted by Statistics Norway, collected diaries for two days from one adult. The UK's National Survey of Time Use 2000-2001, commissioned by the Office for National Statistics, collected diaries from all household members for two days (Ipsos-RSL and Office for National Statistics, 2003). Response rates are 45% in the UK, 50% in Norway, 57% in the US, and 95% in Germany (Bureau of Labor Statistics, 2009; Office of National Statistics, 2003; Statistics Finland, 2009). All analyses are weighted using weights provided in each dataset, accounting for sampling design, day of the week, and non-response.

We harmonized the datasets in several steps. After the Norwegian and German datasets were translated into English, we selected time use categories of interest and developed a template for harmonizing variables across the four surveys. We then harmonized demographic and other variables across the surveys. The final dataset excludes a small percentage of households containing children over the age of 14 or additional adults (e.g. 7% of US households) because the British dataset includes time spent with a partner in the same category as time spent with other household members. Documentation and syntax files are available on the Interuniversity Consortium for Political and Social Research (ICPSR) web site (<http://dx.doi.org/10.3886/ICPSR30021>).

We restrict the sample to workdays of heterosexually partnered and employed fathers and mothers residing with children under the age of fifteen (not necessarily biological parents). Because so few fathers were unemployed, we restrict mothers to those with employed partners. We also eliminate respondents working a night shift because few diaries (2 to 6%) were completed by night workers. Finally, we delete 215 cases with missing data on covariates, omitting 2.9% of the sample, resulting in 6,835 diaries. The deleted cases show no concerning differences (i.e., we could not use our dependent variables to predict that a particular covariate was missing). Sample sizes by country are listed in Table 2. We have the largest samples, and thus the most statistical power, in the US and Germany, less in the UK, and the least in Norway. In Germany and Norway respondents may provide two cases to a

regression, particularly on weekdays, because studies gathered multiple diary days. In multivariate analyses we cluster standard errors by person to account for non-independence.

The time-diary format is widely recognized as the most valid and reliable measure of time use and is generally robust to variations in data collection, facilitating cross-national comparison (Harvey, 1993; Robinson, 1985). An advantage of national time diary studies is that respondents are not primed for specific topics, so social desirability bias is minimized (Pleck and Stueve, 2001). This is useful for cross-national research where cultural differences might influence responses to survey questions.

Measures

Dependent variables are created from parents' diary accounts of their activities and who was present during their activities. *Time alone with children* is the time that the parent is the only adult physically with a household child, regardless of activity (i.e. when the parent has full responsibility of a child). *Childcare time* includes both physical care, such as feeding, bathing, dressing, supervising, transporting, and accompanying a child, and interactive care, such as talking, reading, teaching, and playing. The correlation between the two measures is moderate, ranging from .41 for mothers in the UK to .57 for mothers in the US. It may be surprising that the correlation is not higher. Parents, however, may spend time alone with children without performing any direct childcare; that is, they are co-present, but not engaged. Similarly, parents may perform direct childcare, but spend no time alone with children because their partner or other adults are also co-present.

Childcare time is calculated from primary activity reports only. Secondary childcare measures in the ATUS are not comparable to the European surveys. Thus, our results underestimate childcare time because it is often multitasked (Budig and Folbre, 2004). Another concern about the ATUS's lack of secondary activities is that whether people can report secondary activities may affect their reporting of main activities (Kitterød, 2001). To lessen error we use measures from both activity reports and who the respondent was with. We also make many within country comparisons (e.g., between day and evening workers), which are less sensitive to these issues.

Our independent variable of primary interest is *working an evening shift*. We choose a classification scheme consistent with past research in the US (Presser, 2003; Wight, Raley and Bianchi, 2008). We classify respondents reporting the majority of their work time (on their diary day) between 8 a.m. and 4 p.m. as day workers and between 4 p.m. and midnight as evening workers. That is, if the amount of time spent working from 4 p.m. to midnight is greater than the amount of time spent from 8 a.m. to 4 p.m. the respondent is classified as working an evening shift. This information comes from the time diary, thus we know only respondents' schedules on the day they completed the diary.

Other independent variables are shown in Table 2. Exploratory analysis revealed a need to use different measures of work hours for men and women. For the vast majority of men the salient distinction is how many hours they work at their full-time job, whereas for women the distinction is between whether they work part- or full-time. This is consistent with our focus on women's employment status as a key component of work-family reconciliation. For men, weekly work hours are measured by two dummy variables: usually work *less than 40 hours* per week and *more than 45 hours* per week (40 to 45 hours is the reference category). For women, we use *full-time employment* (part-time is the reference category). We use 35 hours, the most comparable cut-off, as the distinction between part- and full-time employment. To determine if this categorization obscured substantial variation between countries, we examined mothers of young children, comparing reported weekly hours and

self-reported employment status. We found that the means and medians are highly comparable.

Partners' employment characteristics are measured by respondents' reports of their partners' employment status. For men, we include dummy variables for *partners' full-time* and *part-time employment* (reference category is partner not employed). For women, we include a dummy variable for partners' part-time employment (reference category is partner working full-time). Respondents report their partners' employment status, except in Norway where respondents report work hours (coded as above). In the US if respondents reported that their partners' hours vary, we code them to full-time (based on a bounds analysis).

Control variables include the age and number of children. The number of children is measured with two dummy variables indicating households with *two children* and households with *three or more children*; the reference category is one child. We include dummy variables to indicate if the youngest household child is *under the age of 6* or *age 10 to 14*; the reference category is age 6 to 9. We also include a dummy variable marking *weekends*. Weekends are workdays for many respondents and children may have different availability on weekends compared to weekdays.

We tested the sensitivity of our results to controls for age, education, cohabitation, and the presence of a son in the household. We omit these controls in the final models. We are unable to distinguish step- from biological-parents outside the UK, thus we do not include this in our models. In the UK we find some association between being a step-parent and time with children, but its inclusion does not change our findings.

Analyses

Multivariate analyses focus on discerning across-country differences in effects on parents' time use. The data are cross-sectional snap-shots of parents' time with children, and thus, we do not conclude that relationships are causal. For example, although mothers' employment may predict father involvement, father involvement may predict mothers' employment. The contribution of this research is to explore whether associations hold in direction and magnitude across countries. We estimate separate models for men and women within each country and test for the equality of coefficients across models because seemingly unrelated estimation rejected common models for countries and for men and women within countries.

Most time use variables have a significant amount of zeros, creating an irregular distribution. These zeros arise from either a mismatch between the observation window (one day) and the period of interest (routine time use) or from respondents never engaging in an activity (Stewart, 2009). We assume that zeros arise from this mismatch and not from a group of parents who never interact with their children.

We use OLS for the multivariate analysis. Recent empirical work demonstrates that OLS is preferred over Tobit and two-part models for time use variables. Stewart (2009) finds that marginal effects from Tobit models are biased, increasingly so as the proportion of zeros increases. A two-part model performs similar to OLS, but OLS is preferred if a covariate predicts performance and time spent. Stewart concludes, "OLS estimates are unbiased and robust to a number of assumptions about the relationship between the variables in the model and the probability of doing an activity" (p. 12).

RESULTS AND DISCUSSION

Table 2 shows descriptive statistics for our sample of employed fathers and mothers. There are several notable cross-national differences in demographic and employment

characteristics. German households are less likely to contain a child under the age of six. Thus means that are not adjusted children's age will show German parents spending less time than parents in other countries. Relatively few German fathers are partnered to women working full-time, whereas relatively few American fathers are partnered to women working part-time. In our sample of employed mothers, the majority in US are employed full-time, compared to less than half of mothers in other countries. Eight to 13% of fathers and 11 to 16% of mothers worked an evening shift on their recorded workday.

Table 3 shows daily participation rates and mean time among those participating for our dependent variables. We show figures separately for workers by shift, and test for within-country differences. Note that there is considerable uncertainty around the means for evening workers, particularly in Norway and the UK where we have smaller sample sizes. There are no statistically significant differences between day and evening workers in participation rates for time alone with children or for childcare. Fathers spend more time alone with children, however, if they worked evenings - a 1/2 hour more in Germany, about an hour more in the US and Norway, and 1-1/3 hour more in the UK. Only fathers in the US and the UK, however, appear to translate this time into direct childcare. Mothers in all countries, except Germany, spend more time alone with children if they worked evenings - about an hour more in the US and the UK, and 1-1/2 hour more in Norway. Only mothers in Norway spend more time in direct childcare. We observe clear differences in time with children by work shift in each country, except for German mothers.

Table 4 shows selected results from multivariate analysis of fathers' time alone with children and childcare time. We show results only for employment variables (full tables including controls for number and ages of children and for weekend diaries are available from the authors upon request). The first model includes no interactions, showing the main effect of working an evening shift. Comparing model fit statistics (BICs not shown), including nonstandard schedules only improves model fit in some countries. For men, evening work improves fit in the US and UK, but not in Germany or Norway. For women, evening work improves fit in all countries except Germany. The second model interacts working an evening shift with partners' part- and full-time employment status. Thus, the effect for evening shift is conditional and refers to fathers with non-employed partners. Similarly, the effect of partners' part- and full-time employment is conditional and refers to fathers working a day shift. The interaction terms show the deviation from these values for other groups.

In Table 4, Model A1 shows that fathers working an evening shift in the US and UK spend more time alone with their children. In Model A2, however, we observe that this relationship is conditional on mothers' employment status in the UK, and a conditional relationship emerges in Germany. For fathers in Germany and the UK, working evenings means less time alone with children if the respondents' partner is not employed, but more time alone if their partner is employed part-time (and to a lesser extent full-time in the UK). We present predicted values in Table 5, illustrating the difference between the UK and Germany compared to the US and Norway. Predicted means are shown by shift and spouses' employment status.

We observe a similar, but more extreme, relationship in the UK. Fathers working evenings with non-employed partners are predicted to spend nearly a 1/2 hour *less* alone with children than fathers working days. Fathers working evenings with partners employed part-time, however, are predicted to spend 1-3/4 hour *more* alone with children, and those with partners employed full-time are predicted to spend about an hour *more* than fathers working days.

These relationships are consistent with expectations and prior research. In the UK and Germany evening work appears to facilitate reconciliation through the one-and-a-half earner model and high use of informal care (Lewis, Campbell and Huerta, 2008). It is also consistent with the finding that parents hire care if mothers are employed full-time, but fathers are more likely to provide care if mothers are employed part-time (Folk and Beller, 1993). Although the UK and Germany show a similar pattern, the magnitude is smaller in Germany, suggesting less father care with women's part-time employment. Strong norms of at-home maternal care may help explain this. This points to a reason for discrepancies in studies examining the association between nonstandard work and time with children; in many cases the association is conditional on women's employment status.

Consistent with Wight, Raley, and Bianchi (2008), fathers in the US spend more time alone with children when they work evenings. Curiously, fathers working evening shifts spend more time regardless of partners' employment status; even when partnered to stay-at-home mothers, they spend more time alone with their children. Predicted values show some variation, but it is not nearly as large as in other countries. An uptick for fathers partnered to stay-at-home mothers suggests that the mechanism underlying this increase may be about more than a deliberate childcare strategy (fathers' presence during the day, of course, may free mothers for non-employment activities as well). It is possible that fathers who want to spend more time with their children select into the evening shift, but this is inconsistent with research about why fathers work nonstandard hours (Presser 2003).

Consistent with Kitterød and Pettersen (2006) and our expectations, we observe no effect of evening work for Norwegian fathers (the coefficient is negative and statistically insignificant). Overall these findings replicate inconsistencies found across single country studies. There appears to be a true difference in the association between work schedules and time with children dependent on context.

The second half of Table 4 shows results for direct childcare time. Model 2A shows no main effect of working an evening shift on fathers' childcare time. Whereas fathers in the US and the UK appear to spend more time in sole charge of children this does not translate to more time engaged in child-focused activities. In Model 2B, however, we once again observe a conditional relationship in the UK and Germany. Both show a negative main effect of working the evening shift for fathers with nonemployed partners, but a positive association for fathers with partners working part-time. Table 5 shows little difference in childcare time by partners' employment status for British fathers who work days, but wide variation for fathers who work evenings. We see a similar, but less extreme, pattern for Germany. This direct association with childcare time further supports a reconciliation strategy combining women's part-time employment and father's nonstandard schedule.

Table 6 shows the results for women. The sample is restricted to employed mothers partnered to employed men. Model 1A shows a positive association between working evenings and mothers' time alone with children in the US, Norway, and the UK. Whereas we predicted that women would not reduce their time with children when working evenings, Model 1A shows that in these countries mothers working evenings translate this schedule into even *more* sole care of children. In Model 2A working evenings is interacted with mothers' full-time employment status (the comparison group is mothers employed part-time). We see that Norwegian and British mothers employed both part- and full-time spend nearly an hour more alone with children if they work evenings. Predicted values in Table 5 show means by shift and own employment status for mothers with partners working full-time.

We hypothesized that evening work would not increase parents' time with children in Norway unless parents eschewed public care and school programs. Evening work may be a strategy Norwegian mothers use to care for their children – and keep them out of public care – but it is something men do as feature of their job. This is consistent with Presser's (2003) finding that mothers are more likely to report that their nonstandard schedule is chosen for family reasons than are fathers. It is possible that Norway's 1998 cash-for-care scheme, which provides cash payment to parents who do not use public childcare for children ages one to two, encourages mothers to use nonstandard hours to accomplish this feat. Furthermore it suggests a greater time crunch for Norwegian mothers working evenings. Whether by preference or employment constraints, they have more of their time committed to employment and child-minding than mothers working days.

In contrast to Norway and the UK, we find a conditional relationship in Germany and weak evidence of a conditional relationship in the US. In Germany the negative association between full-time employment and time alone appears to be attenuated by working full-time evenings. We see a similar, but not statistically significant pattern in the US.

The second half of Table 6 shows results for direct childcare time. In Model 2A only Norwegian mothers show a positive association between evening work and childcare time. American and British mothers show a similar pattern to fathers of providing more sole care, but not more direct engagement. In Model 2B, we see that this relationship holds regardless of Norwegian women's full- or part-time status. In the UK, evening shifts appear to attenuate a negative effect of full-time employment on childcare time (although predicted values show mothers working full-time evenings spending more time on childcare than mothers working full-time days in all countries).

In sum, work shift is associated with parents' time with children, but associations are different for mothers and fathers and differ across countries. Fathers in the US working evenings spend about an hour more alone with their children regardless of their partners' employment status. Fathers in the UK and Germany, however, spend *less* time if they work evenings *unless* they are partnered to women working part-time (or full-time in the UK), in which case they spend more time alone with children and on direct childcare. Mothers in the UK and Norway spend more time alone with children when working evenings, regardless of part- or full-time status; this extends to direct childcare time in Norway. For German mothers, however, the effect of working evenings serves to attenuate a negative association between full-time employment and time alone with children.

We tested the sensitivity of the results to the inclusion of partner's employment schedule. We were able to match couples in the UK and Germany. We limited the sample to days that both the respondent and their partner worked. We replaced the variable *evening shift* with two dummy variables: *respondent day shift/partner evening shift* and *respondent evening shift/partner day shift*. In both countries the results for *evening shift* are consistent with results for *respondent evening shift/partner day shift*. The estimates are similar because the vast majority of respondents working an evening shift have a partner working the day shift. In both countries, however, if a respondent works days while their partner works evenings, the respondent spends additional time alone with children. This effect is not captured in the main analysis, but its exclusion does not affect our conclusions.

We also tested the sensitivity of results by limiting the sample to parents with a youngest child aged 0 to 9 and results were consistent. Unfortunately, due to our small sample size of evening workers, we are unable to explore interactions with the ages of children while examining interactions by mothers' employment status. An important extension for future

research is to incorporate children's developmental stages because age may alter the association between work shift and parental time (Presser, 2003).

CONCLUSION

We find that a consequence of evening work often viewed as positive for fathers and children - fathers spending more time caring for children - is sensitive to both household employment arrangements and country context. For fathers, evening work facilitates more time in sole charge of children, but only in certain contexts, under certain conditions. Although fathers working an evening shift in the US spend more time alone with children regardless of their partners' employment status, British fathers only do so when their partner is employed and German fathers only do so when their partner is employed part-time. Norwegian fathers do not spend additional time alone with children.

For mothers, working evening shifts appear to be associated with a higher risk of being over-committed. Mothers working an evening shift full-time, particularly in Norway and the UK, spend more time in sole charge of children, in addition to a full-time work schedule. Mothers in this situation may be particularly over-stretched with implications for their well-being and that of their families. Although evening work may facilitate parental care, there is a cost. Research finds that mothers working evenings and nights are likely to sacrifice sleep to coordinate childcare and employment (Presser, 2003). Given these findings, a cross-national analysis of work schedules among single parents is an important next step.

In terms of child well-being, although we find that evening work is associated with more parental time alone with children in some instances, there are fewer associations with direct care and engagement. Only mothers in Norway show a clear and substantial association between evening work and childcare time. Among fathers, German and British fathers actually spend less time on childcare when they work evenings, unless their partners are employed part-time. Further work is needed to explore the positives and negatives of parents' nonstandard work on child well-being across divergent policy and cultural contexts.

Although we do not have data on couples, we can speculate about general patterns of gender inequity in childcare. Overall, mothers - regardless of employment status or shift - spend more time in sole charge of children and more time on childcare. An interesting pattern appears, however, in the US and the UK. Fathers working the evening shift with part-time employed partners spend about as much time in sole charge of their children as mothers working full-time days. Obviously fathers with part-time employed partners could not be matched to mothers working full-time, but it does suggest that in certain contexts under certain employment conditions fathers commit as much time to the sole care of children as mothers. Future work with data on couples should explore how the relative time commitment of partners is associated with nonstandard schedules. Couple-level time use data would add additional value to our understanding of work schedules and family life in two-parent families.

We find true differences across countries in the association between nonstandard work schedules and time with children. In many instances the relationship is conditional, dependent on mothers' employment status. Researchers and policy makers should focus additional attention on how families use nonstandard schedules to reconcile work and care. Nonstandard schedules must be considered within the context that they operate; that is, they must be considered within the policy and cultural frameworks that families navigate as they make decisions - or are left with few decisions to make - about how to work and how to care.

Acknowledgments

This work was supported by a grant from the National Institute of Child Health and Human Development [R03 HD056996-01A1 to J.H.], a Sloan Foundation Work-Family Career Development Award to J. H., and a seed grant from the Population Research Institute at Penn State to J. H. The authors thank Cindy Mitchell for assistance with data preparation. Some of the data applied in this publication are based on the Norwegian Time Use Survey, 2000. Anonymized data sets have been made available by the Norwegian Social Science Data Services (NSD). Statistics Norway (SSB) was responsible for sampling and interviewing. Neither NSD nor SSB are responsible for the analyses/interpretation of data presented here. This research was also based on the United Kingdom Time Use Survey 2000, produced by Ipsos-RSL, sponsored by the Office for National Statistics, and supplied by the United Kingdom Data Archive. The data creators, depositors, copyright holders, funders, and the United Kingdom Data Archive bear no responsibility for analysis or interpretation of the data. The data are Crown copyright.

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Table 1

Summary of labor market and policy context, 2000

National Characteristics	US	UK	NO	GE
Employed men working 50+ hours, percent ^a	27	32	20	29
Employed men working 39 hours or less, percent ^a	19	31	42	29
Mothers (2+ children) employed, percent ^b	65	62	78	56
Employed mothers (2+ children) working 30 hours or less, percent ^b	24	63	41	60
Paid maternity leave (fully-paid), weeks ^c	0	5	38	14
Paid paternity leave, weeks ^c	0	0	4	0
Extended leave (paid or unpaid), weeks ^c	12	13	52	156 ^e
Children ages 1 to 2 in publicly-funded childcare, percent ^c	6	2	37	5
Children ages 3 to 5 in publicly-funded childcare, percent ^c	53	77	78	77
Children under age 3 in licensed childcare, percent ^f	38	26	44	9
Parents' share of childcare cost, average or cap, percent ^f	60	45	20	14

Note:

^a) Fagan, 2002; Jacobs and Gerson, 2004 for the U.S.^b) Organization for Economic Cooperation and Development, 2002 refers to children under age 15.^c) Gornick and Meyers, 2003.^d) Nine weeks reserved exclusively for the mother, the remainder may be shared.^e) This is a family entitlement; the others are an individual entitlement.^f) Organization for Economic Cooperation and Development, 2006.

Table 2

Independent Variables: Means, Weighted (N=6,835)

	Employed fathers				Employed mothers			
	<u>US</u>	<u>NO</u>	<u>GE</u>	<u>UK</u>	<u>US</u>	<u>NO</u>	<u>GE</u>	<u>UK</u>
<i>Employment Variables</i>								
Evening shift	.10 (.01)	.09 (.02)	.08 (.01)	.13 (.02)	.11 (.01)	.16 (.02)	.15 (.01)	.13 (.02)
Partner part-time	.23 (.02)	.47 (.03)	.52 (.01)	.58 (.02)	.04 (.01)	.03 (.01)	.07 (.01)	.21 (.02)
Partner full-time	.39 (.02)	.37 (.03)	.13 (.01)	.29 (.02)	.96 (.01)	.97 (.01)	.93 (.01)	.79 (.02)
Works less than 40 hours	.07 (.01)	.48 (.03)	.36 (.01)	.21 (.02)	.35 (.02)	.83 (.02)	.75 (.02)	.79 (.02)
Works more than 45 hours	.30 (.02)	.21 (.02)	.29 (.01)	.50 (.02)	.09 (.01)	.05 (.01)	.05 (.01)	.10 (.02)
Works full-time	.95 (.01)	.96 (.01)	.96 (.01)	.93 (.01)	.71 (.02)	.48 (.03)	.38 (.02)	.40 (.03)
<i>Control Variables</i>								
Two children	.47 (.02)	.49 (.03)	.50 (.01)	.44 (.02)	.45 (.02)	.50 (.03)	.50 (.02)	.45 (.03)
Three children	.24 (.02)	.23 (.02)	.22 (.01)	.17 (.02)	.19 (.02)	.20 (.03)	.16 (.01)	.12 (.02)
Youngest child 0 to 5	.59 (.02)	.64 (.02)	.45 (.01)	.62 (.02)	.52 (.02)	.56 (.03)	.36 (.02)	.54 (.03)
Youngest child 10 to 14	.15 (.01)	.14 (.02)	.33 (.01)	.16 (.02)	.22 (.02)	.13 (.02)	.42 (.02)	.20 (.02)
Weekend	.12 (.01)	.11 (.02)	.09 (.01)	.11 (.01)	.12 (.01)	.12 (.02)	.11 (.01)	.11 (.01)
<i>N - Evening shift diaries</i>	143	32	193	84	97	38	164	68
<i>N - Individuals</i>	1,145	251	991	387	654	228	602	294

	Employed fathers			Employed mothers		
	US	NO	GE	US	NO	GE
<i>N - Diaries</i>	1,145	409	2,040	674	354	1,091
				654		468

Note: standard errors appear in parentheses underneath means.

Table 3

Dependent Variables: Means, Weighted (N=6,835)

	Employed fathers				Employed mothers			
	US	NO	GE	UK	US	NO	GE	UK
Time alone with children								
Day shift								
Participation rate	.59 (.02)	.77 (.02)	.63 (.01)	.37 (.02)	.87 (.02)	.93 (.02)	.87 (.01)	.77 (.02)
Minutes participating	102 (4.2)	92 (5.1)	71 (2.3)	101 (6.5)	155 (5.8)	141 (7.9)	142 (4.6)	160 (8.4)
Evening shift								
Participation rate	.64 (.05)	.63 (.09)	.56 (.04)	.48 (.07)	.88 (.04)	.95 (.04)	.92 (.04)	.86 (.04)
Minutes participating	165 (17.1)	154 (31.1)	103 (14.3)	181 (37.7)	210 (21.8)	229 (29.0)	151 (12.6)	229 (30.3)
Difference (evening - day)								
Participation rate	.05	-.14	-.06	.11	.01	.01	.05	.08
Minutes participating	63 *	62 *	32 *	80 *	54 *	89 *	9	68 *
Childcare time								
Day shift								
Participation rate	.64 (.02)	.68 (.03)	.57 (.01)	.60 (.02)	.86 (.02)	.91 (.02)	.78 (.02)	.88 (.02)
Minutes participating	80 (3.2)	62 (3.6)	46 (2.0)	56 (5.1)	127 (5.0)	80 (4.6)	76 (3.1)	110 (5.7)
Evening shift								
Participation rate	.62 (.05)	.65 (.09)	.52 (.04)	.53 (.07)	.85 (.04)	.88 (.05)	.84 (.03)	.88 (.04)
Minutes participating	106 (13.0)	87 (19.1)	55 (7.2)	97 (20.6)	125 (12.1)	128 (19.7)	72 (7.9)	104 (16.6)
Difference (evening - day)								

	Employed fathers				Employed mothers			
	US	NO	GE	UK	US	NO	GE	UK
Participation rate	-.02	-.04	-.05	-.07	-.01	-.03	.06	.00
Minutes participating	26	25	9	41	-3	48	-4	-6

Note:

* indicates that the means for day and evening workers are statistically different at the $p \leq .05$ level.

Table 4

United States			Norway			Germany			United Kingdom								
	B	SE		B	SE		B	SE		B	SE						
MODEL 1A: Time alone with children																	
Evening shift (ES)	37.4	(13.4)	**	g,n	-9.5	(23.2)				6.9	(9.7)		50.8	(22.6)	*	g,n	
Partner part-time (PT)	22.4	(8.1)	**	g	35.5	(11.6)	**	G		5.0	(4.7)		31.1	(10.3)	**	G	
Partner full-time (FT)	34.0	(7.5)	***	G,b	32.5	(10.8)	**	G		6.7	(6.0)		11.2	(10.9)			
Less than 40 hours	34.7	(18.5)	+		8.0	(10.6)				5.0	(4.7)		21.1	(12.5)	+		
Over 45 hours	3.7	(6.0)			-10.2	(12.8)				1.1	(4.4)		3.2	(8.2)			
R ²	.06				.11					.06			.08				
MODEL 1B: Time alone with children with interaction																	
Evening shift (ES)	52.6	(17.9)	**	G,N,B	-57.1	(36.1)				-15.7	(10.1)		-26.6	(10.6)	*		
Partner part-time (PT)	22.2	(8.1)	**	G	29.4	(10.7)	**	G		2.6	(4.8)		15.6	(9.2)	+		
ES x Partner PT	-2.9	(33.7)			68.8	(50.7)				33.8	(16.6)	*	114.3	(39.2)	**	U	
Partner full-time (FT)	37.5	(7.7)	***	G,B	30.3	(10.0)	**	G,B		6.2	(6.4)		1.6	(9.7)			
ES x Partner FT	-38.0	(27.7)			28.3	(49.6)				10.5	(14.2)		63.1	(33.8)	+	u	
Less than 40 hours	36.1	(18.4)	+	g	8.2	(10.5)				4.7	(4.7)		20.3	(12.3)	+		
Over 45 hours	3.2	(6.0)			-10.0	(12.6)				.9	(4.4)		2.4	(8.2)			
R ²	.07				.12					.06			.10				
MODEL 2A: Childcare time																	
Evening shift (ES)	11.1	(9.8)			-11.6	(12.3)				1.2	(5.3)		16.8	(13.3)			
Partner part-time (PT)	18.7	(6.4)	**	G	5.5	(9.7)				-4.9	(4.3)		17.2	(7.6)	*	G	
Partner full-time (FT)	20.9	(5.2)	***	G	4.1	(10.2)				-2.6	(5.2)		7.7	(7.6)			
Less than 40 hours	8.6	(12.4)			4.8	(7.1)				4.8	(4.5)		19.6	(7.3)	**	g	
Over 45 hours	6.6	(4.7)			2.6	(10.3)				-2.8	(3.3)		4.0	(6.3)			
R ²	.06				.14					.13			.10				
MODEL 2B: Childcare time with interaction																	
Evening shift (ES)	14.8	(10.5)			-12.5	(33.7)				-17.5	(8.6)	*	U	17.3	(10.3)	+	U

	United States		Norway		Germany		United Kingdom	
	B	SE	B	SE	B	SE	B	SE
Partner part-time (PT)	18.2	(6.5)	4.5	(8.8)	-7.0	(4.5)	10.0	(7.7)
ES x Partner PT	3.4	(25.1)	10.3	(40.3)	28.9	(10.8)	53.6	(26.1)
Partner full-time (FT)	22.0	(5.4)	5.2	(9.4)	-2.8	(5.4)	4.2	(7.8)
ES x Partner FT	-12.2	(19.3)	-16.3	(40.3)	3.3	(10.6)	23.2	(17.1)
Less than 40 hours	9.1	(12.5)	4.9	(7.0)	4.5	(4.5)	19.2	(7.3)
Over 45 hours	6.4	(4.7)	3.4	(10.3)	-3.0	(3.3)	3.8	(6.3)
R ²	.06		.15		.14		.11	
N	1,145		409		2,040		674	

Note:

⁺ p < .10,

* p < .05,

** p < .01

*** p < .001.

Upper-case letters denote that a coefficient is statistically different (at the p<=.05 level) from the comparison country (U= United States, N = Norway, G=Germany, B= United Kingdom). Lower-case letters indicate a comparison is marginally significant (p<=.10). Models include control variables listed in Table 2.

Table 5

Predicted values by employment status and shift

	Time alone with children				Childcare time			
	US	NO	GE	UK	US	NO	GE	UK
<i>Fathers</i>								
Day shift								
Spouse not employed	0:48	0:50	0:50	0:43	0:56	0:57	0:54	0:40
Spouse part-time	1:10	1:19	0:52	0:58	1:14	1:02	0:47	0:50
Spouse full-time	1:25	1:20	0:56	0:44	1:18	1:03	0:51	0:44
Evening shift								
Spouse not employed	1:41	-0:02	0:34	0:16	1:11	0:45	0:36	0:23
Spouse part-time	2:00	1:31	1:11	2:26	1:32	1:00	0:58	1:26
Spouse full-time	1:40	0:51	0:51	1:21	1:21	0:34	0:37	0:50
<i>Mothers</i>								
Day shift								
Part-time	3:10	2:40	3:15	3:09	2:57	1:32	2:01	2:26
Full-time	2:28	2:35	2:40	2:19	2:26	1:35	1:37	1:48
Evening shift								
Part-time	3:22	4:20	3:11	4:13	2:43	2:25	1:51	2:00
Full-time	3:46	3:34	3:13	3:12	2:44	2:01	1:45	2:16

Note: Predicted means are for respondents with two children and a child under 6, on a weekday. For fathers, working hours are set to 40-45 hours a week, and predicted means are shown by shift and spouses' employment status. For mothers, means are for spouses working full-time, and predicted means are shown by shift and own employment status. The underline indicates when a relationship was statistically significant in Tables 4 and 6.

Table 6
 Linear Regression Predicting Mothers' Time Spent Alone with Children and Childcare Time, by Country, Weighted (N = 2,567)

	United States		Norway		Germany		United Kingdom	
	B	SE	B	SE	B	SE	B	SE
MODEL 1A: Time alone with children								
Evening shift (ES)	45.1	(23.9)	+				61.0	(24.2)
Full-time (FT)	-32.7	(13.0)	*				-50.9	(12.5)
Partner part-time (PT)	2.9	(19.9)					-10.7	(14.1)
R ²	.13						.16	
MODEL 1B: Time alone with children with interaction								
Evening shift (ES)	12.2	(29.5)					64.0	(31.0)
Full-time (FT)	-41.9	(13.6)	**	N			-49.8	(13.2)
ES x FT	66.2	(42.9)					-10.9	(43.0)
Partner part-time (PT)	5.6	(19.4)					-10.8	(14.1)
R ²	.13						.16	
MODEL 2A: Childcare time								
Evening shift (ES)	2.0	(13.0)					-11.1	(16.3)
Full-time (FT)	-26.7	(9.9)	**	N			-32.6	(8.3)
Partner part-time (PT)	-2.1	(20.3)					14.7	(13.3)
R ²	.17						.24	
MODEL 2B: Childcare time with interaction								
Evening shift (ES)	-13.7	(20.1)					-26.0	(19.4)
Full-time (FT)	-31.1	(11.0)	**	N			-37.9	(8.5)
ES x FT	31.6	(24.5)					54.5	(28.8)
Partner part-time (PT)	-8	(20.2)					14.8	(13.1)
R ²	.18						.25	
N	654						468	

Note:

+ p < .10,

* $p < .05$,
 ** $p < .01$
 *** $p < .001$.

Upper-case letters denote that a coefficient is statistically different (at the $p < .05$ level) from the comparison country (U= United States, N = Norway, G=Germany, B= United Kingdom). Lower-case letters indicate a comparison is marginally significant ($p \leq .10$). Models include control variables listed in Table 2.