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Word count: 7,093 (excluding tables and figures)

Abstract

This paper examines the influence of job demands and job-related resources on the experience of two dimensions of work-life conflict (WLC) in Britain. Theory suggests that higher levels of resources should reduce work-life conflict but empirical analyses often fail to find this effect. We address the issue by examining the impact of a wide range of resources as well as their interactions with job demands. Analyses of the *Working in Britain 2000* survey suggest that job resources and demands affect WLC through different processes, which differ for the two types of WLC. They fail to find evidence that job resources dampen the effects of job demands on WLC. They also document that many effects of job characteristics depend on context or vary by gender, for example the effects of job pressure and job autonomy.

Keywords: work-life conflict, job resources, job demands, buffer hypothesis

Introduction

The growth in the number of two-earner families in Western societies raises concerns about the ability of people to achieve a healthy balance between paid work and family life. It is frequently asserted that high levels of work-life conflict (WLC) are not only associated with ill-health, but implicated in the failure of family breakdowns and a reason for family limitation (Allen et al., 2000; Presser, 2004; Bellavia and Frone, 2005).

WLC emerges when the demands of work are at odds with the role expectations of private life.[1] These demands can be reduced, it has been claimed, by job control – meaning the capacity to make autonomous decisions about how one works – with the implication that excessive demands without commensurate control become stressors (Karasek, 1979). Job control is just one resource that can be deployed to reduce the negative effects of job demands (Bakker and Demerouti 2007). But the evidence is mixed as to which resources are effective under what conditions (Bakker and Geurts, 2001; Gallie and Russell, 2009; Schieman et al., 2009; Steiber, 2009; Schieman and Young, 2010). It is common that people with high-status jobs experience high levels of conflict despite having access to resources that should help them to cope (Clarkberg and Moen, 2001; Gallie and Russell, 2009; McGinnity and Calvert, 2009; Schieman et al., 2009).

It may be that some resources heighten conflict especially in jobs with particularly taxing demands (Schieman and Reid, 2009). For example, job authority makes it easier to delegate work, but is also associated with the management of interpersonal conflict and the stress of making difficult decisions. Schedule control – the ability to decide when to start and quit work – permits flexibility in dealing with family needs, but also encourages multitasking and taking work home. The latter blurs

the border between work time and family time and therefore may contribute to WLC (Schieman and Young, 2010).

The main goal of our paper is examining how job demands and job resources affect WLC and in particular whether job resources reduce the effects of job demands. As part of this inquiry it seems useful to assess how different forms of WLC are affected. Greenhaus and Beutell (1985) distinguish time based and stress based conflict. This distinction has rarely been applied in empirical research (but see Steiber (2009)). One of our contributions is to explore whether these two types of conflict are associated in different ways with particular job demands and job resources.

The ways in which job demands and resources produce conflict may depend on family circumstances, gender and a partner's engagement with paid employment. Surprisingly the evidence suggests that variation by family circumstance is smaller than one might expect, certainly smaller than variation by job characteristics (Byron, 2005; Gallie and Russell, 2009). Nevertheless these factors should not be dismissed as the importance of family circumstances may depend on which type of conflict we focus on. Examining this is the second contribution of our paper.

Finally, we address a more general question about how strongly WLC is related to job characteristics. As occupational classifications aim to capture the most important aspects of jobs, one would expect that a considerable share of the variance in WLC can be captured by an occupational classification. Assessing the extent to which the effects of job resources and demands on WLC are attributable to occupations is the third aim of the paper.

The research we report is related to a number of recent contributions to the study of WLC. Though building on the work of Schieman and his co-authors, it differs from it by examining the interplay between job demands and resources for a wider range of job characteristics. In doing this our findings partly confirm the most prominent theory about this relationship but fail to support some of its claims.

Background

The Nature of WLC

Our approach to WLC follows Greenhaus and Beutell's (1985) conceptualization of work-family conflict as a 'form of inter-role conflict in which the pressures from the work and family domains are mutually incompatible in some respect' (Greenhaus and Beutell, 1985, p. 77). Drawing on the ideas of Voydanoff we regard conflict as an individual's 'cognitive appraisal of the effects of the work … domain on the family … domain' (Voydanoff, 2004, p. 398). Instead of 'work-family conflict' we use the term 'work-life conflict' to designate more than just strains involving family roles within conjugal households - it also includes relations with friends and family members outside the immediate household and the opportunity to participate in leisure activities. Therefore it is just as relevant to those living without a partner.

Most research restricts its attention to a single dimension of WLC although conceptually, time-based (TBC) and strain-based conflict (SBC) can be distinguished (Greenhaus and Beutell, 1985; Carlson et al., 2000). TBC implies that time devoted to one role makes it difficult to meet the demands of the other, for example when a doctor's appointment for one's child clashes with one's work schedule. SBC refers to things like physical tiredness and psychological stress. For example, a stressed parent might struggle to constructively supervise their child's homework.[2]

The literature identifies a considerable number of factors that affect WLC, almost exclusively originating in working conditions. A first idea is that these are well approximated by detailed occupational groups. In one of the earliest sociological investigations of WLC, occupational class is the only source of variation considered (Young and Willmott, 1975: 165). In keeping with this earlier literature we hypothesize that *most of the variation in WLC will be captured by detailed occupational groupings (H1).*

Demands and Resources

There are different types of demands and resources. Demands are aspects of jobs associated with sustained physical and/or mental effort (Bakker and Geurts, 2001). Time-based job demands affect WLC by limiting the time available for non-job-related purposes (Voydanoff, 2004). Time-based demands are most consequential for TBC whilst strain-based demands are most important for SBC (Greenhaus and Beutel, 1985; Steiber, 2009; Voydanoff, 2004). Domain-spanning demands like commuting or taking work home directly impact the interface between work and family domains and thus should play a key role in shaping WLC (Voydanoff, 2005).

Job resources are things that help people to reduce or cope with WLC. They may help people perform their work more efficiently or motivate them so that burdensome tasks are bearable (Bakker and Geurts, 2001). Job resources also include domain-spanning resources, such as schedule control and supportive family-friendly policies (Voydanoff, 2004).

It is an open question whether demands and resources affect WLC through independent processes or whether they modify each other's effects. According to the Job Demands-Resources (JD-R) model (Bakker and Demerouti, 2007), job demands and job resources are responsible for different

processes with demands being related to strain and resources to motivation. However, the JD-R model also asserts that job resources may moderate the effects of job demands. Although some studies have provided support for this 'buffer hypothesis' (Bakker and Demerouti, 2007), others fail to show a clear pattern of effects. Though we acknowledge that existing results are ambiguous we hypothesize that *job resources will moderate the effects of job demands (H2)*.

Gender and Partnerships

Research suggests that men are better than women at separating work and family roles (Kossek et al., 1999). If men's paid work interfered with their family obligations, this was traditionally accepted and their families expected to make adjustments (Pleck, 1977). As women's paid work might not attract the same level of support from other family members, we could expect perceived WLC to be lower among men than women. However, as British women are often secondary earners another outcome is possible; they might actually perceive more scope for reducing their WLC than men by cutting down their hours of paid work or choosing a less stressful job.

Family circumstances – for example the presence of children – can affect WLC in two ways. The more family commitments a person has, the greater are the time demands from the family domain, which limit his or her capacity to accommodate excessive or unusual work demands. They can also reduce opportunities for recovery from work and thereby contribute to a state of exhaustion.

The empirical findings about the influence of family characteristics are mixed. Many studies find that having children, especially young children or many children, increases WLC generally (Voydanoff, 2004; Steiber, 2009; Gallie and Russell, 2009; Bianchi and Milkie, 2010; Schieman and Young, 2010) or just for women (Maume and Houston, 2001; White et al., 2003) but some studies find no significant effect of children (Schieman et al., 2009) or do not control for the presence of children (Bakker and Geurts, 2001; Demerouti et al., 2001).

Previous research points to the potential support provided by partners (Bianchi and Milkie, 2010) but partners can also limit one's time for other commitments. Research about dual-career couples is inherently concerned with the time-squeeze experienced in these relationships. In particular partner's hours of paid work can limit the accommodation of the other's work demands. We hypothesize that *having a child will increase WLC in particular for women (H3a)* and that *WLC will be increasing in partner's working hours (H3b).*

Methods

Data

The Working in Britain 2000 survey (WIB2000) provides detailed information about working conditions for a sample of 2,466 employed or self-employed people aged 20 to 60 in Great Britain (McGovern et al., 2007). The response rate was 65 per cent. Respondents were interviewed face-to-face. We have excluded 334 self-employed individuals from the study because many of the questions posed to employees did not apply to them. After excluding cases with missing values there are 2,010 cases left for the analyses.

Many concepts of interest are captured by several questions and we have combined the answers into composite measures and use, unless otherwise stated, summated scores derived from principal components analyses (PCA).

The main drawback of WIB2000 is its cross-sectional design which limits our ability to make rigorous causal inferences.[3] People choose their work to fit their private lives. They also receive and create for themselves resources that are meant to help them cope with the job demands they actually

experience. These caveats should be kept in mind when considering the conclusions we draw from our results.

Table I about here

Models

To test our first hypothesis, we estimate multilevel models for individuals nested in occupational groups. The multilevel model separates variation in WLC into two parts, variation between occupations and variation within occupations. We then introduce covariates measuring job demands, job resources, family circumstances and additional controls. We estimate a random-intercept linear regression model (Skrondal and Rabe-Hesketh, 2004) of the general form:

$$WLC_{ij} = \beta_0 + \beta_1 x_{1ij} + \beta_2 x_{2ij} + ... + \beta_k x_{kij} + u_j + e_{ij},\ for\ i = 1,...,n_j,\ \ j = 1,...,n_g,$$
$$u_j \sim N(0, \sigma_u^2), \quad e_{ij} \sim N(0, \sigma_e^2),\ \ Cov(u_j, e_{ij}) = 0,$$

where x_{kij} gives the value of the *k*-th covariate for the *i*-th member of occupational group *j*, β_k is the regression coefficient associated with the *k*th covariate, u_j the group intercepts, e_{ij} the level-one residual and n_g the number of occupational groups. All models are estimated separately for men and women.

Variables

Response Variables.

We use seven items that measure aspects of WLC. A PCA reveals two distinct dimensions. The first is formed by three items that measure TBC whereas the second dimension captures aspects of SBC. All items are listed in Table I and their means are reported in Table II, separately for men and women.

Table II about here

Job demands.

Time demands are captured by three variables: the usual number of weekly working hours in the main job; the number of hours in a second job, taking value zero if the respondent has no second job; and a dummy variable for working unusual hours.[4] Place demands are captured by a dummy variable that takes value one if the respondent usually or always works in a variety of places and zero otherwise. According to Table II, most time demands are higher for men than for women, except the number of hours in a second job.

Several strain based demands are included in the models. Table I lists the survey items used to create the variables *Pressure, Job insecurity* and *Workplace anxiety*. The dummy variable *Leadership responsibility* indicates whether respondents regard providing leadership as 'essential' or 'very important' for performing their jobs well.

We measure two boundary-spanning demands. Respondents were asked how often they take work home which is part of the job (*Takes work home*) with response options ranging from 'never' (value 0) to 'work mainly from home' (value 5). The variable *Duration commute* gives the usual commuting time in hours, centred at zero. Respondents with no usual place of work or variable travel times (n=152) are identified by a dummy variable (*Varying commute*). For these respondents, *Duration commute* is given the value of zero.[5]

Job resources.

These comprise three types: organisational, social and boundary-spanning. Organizational resources include *Job autonomy*, which counts the number of 'yes' answers to three questions about

respondents' say in how they carry out their work (cf Table I). The variable *Pace of work* indicates whether the respondents have any influence on the pace of their work.

Social resources are proxied by assessments of colleagues and supervisors. *Supervisor evaluation* is based on four items (cf. Table I). The dummy variable *Friendly colleagues* indicates whether respondents were completely satisfied or very satisfied with the friendliness of the people they work with.

Turning to boundary-spanning resources, the dummy variable *Full schedule control* takes value one if respondents either can vary their starting or finishing times from day to day in a flexible hours system, or if they decide their own working times, and zero otherwise. The variable *Time off for family reasons* ranges from value zero if the respondent does not get time off unconditionally for a family emergency to value 3 if the respondent gets time off and still gets paid for it.

Family circumstances.

Marital status distinguishes three groups: people living with a partner, never married people, and previously married people (widowed, divorced, or separated).[6] Partnerships are then divided into those with partners with low, medium or high labour market attachment, where 'low' labour-market attachment includes those who are not working for pay. Female partners with low labour-market attachment worked less than eight hours per week, those with medium attachment between eight and below 35 hours per week, and those with high attachment worked at least 35 hours per week. For male partners, the thresholds are 35 and 45 hours, respectively. The dummy variable *Child* takes value one if respondents have a child under age 16 living with them.[7]

Other controls.

Age is measured by dummies for ten-year age groups.[8] The models estimate a random effect for occupational groups, the 'minor groups' identified by three-digit codes in the Standard Occupational Classification (OPCS, 1990). In WIB2000, men's jobs are spread over 236 occupational groups and women's jobs over 155 groups.

Results

Before looking at slope coefficients we first discuss the estimated variance components of our models. On estimating a simple variance components model for the occupational groups we find that the occupational groups account for less than one per cent of the variance in men's TBC and about eight per cent of the variance in women's. The equivalent figures for SBC are ten per cent for men and four per cent for women. If we estimate models in which family circumstances and job characteristics are successively introduced, family composition explains higher shares of the total variation in SBC (nine per cent for men, 24 per cent for women) than of TBC (four per cent for men, less than two per cent for women). Controlling for job demands reduces the unexplained variation of both TBC and SBC more than controlling for job resources. Including all explanatory variables explains between 26 and 30 per cent of the total variation in TBC and 41 and 55 percent, respectively, of the variation in SBC of men and women.

The implication of these results is that the lion's share of the variation in WLC is related to job demands and resources. They also indicate that demands and resources are not well proxied by occupational groups even when these are observed at a disaggregated level. Occupation does predict WLC, but to understand how the circumstances of working life impact on WLC, one has to have information at the level of the individual job. In other words most variation in WLC is linked to within occupation variation in demands and resources. This contradicts our hypothesis H1.

TABLE III about here

Demands and Resources.

Table III reports the coefficients for the demands and resources variables for TBC under four model specifications: where only family circumstances are included (models 1 and 5); where family circumstances and job demands are included (models 2 and 6); where family circumstances and job resources are included (models 3 and 7); where all explanatory variables are included (models 4 and 8). In all models we also control for age but do not report the coefficients. If demands and resources are correctly so described, then all of the coefficients for the demands variables should have either a positive sign (they increase TBC) or be insignificant, whereas all the coefficients for the resources variables should have a negative sign (they decrease TBC) or be insignificant.[9] The full models (4) and (8) show that our expectation is confirmed.

To some extent job demands will tend to call forth resources to deal with them and thus induce a correlation between variables measuring demands and resources. This 'confounding' will then manifest itself in large differences between the effects of job demands depending on whether or not job resources are controlled in the model, and corresponding changes in the effects of job resources, depending on whether the model controls for job demands. Table III shows that adding the resources variables to models that already contain the demands variables reduces the size of some of the demands coefficients for TBC – most notably *Workplace anxiety* and *Job insecurity* for men and *Unusual hours* for women – but does not alter significances at the 5% level.

Turning to the impact of resources we see that for both men and women *Job autonomy* in the unconditional models (models 3 and 7) has the 'wrong' sign because jobs that permit autonomous working also tend to be demanding. However once demands are controlled (models 4 and 8) though the sign is not reversed, *Job autonomy* ceases to have a significant impact on TBC. Also striking is the

reduction in the (negative) impact of *Supervisor evaluation* on TBC when demands are controlled. *Supervisor evaluation* and job demands are negatively correlated (supervisors receive lower evaluations when job demands are high). Thus controlling for demands reveals a more modest impact of *Supervisor evaluation*.

Table IV about here

Table IV reports the corresponding model estimates for SBC. As with TBC, we find overwhelming confirmation in the full models (4) and (8) of our expectations that demands should have positive effects and resources negative effects. However, there is one exception as the negative effect of *Job insecurity* in the full model for women is weakly significant. This is in contrast to our expectations but we must be wary of overinterpreting weak effects. However, Steiber (2009) found that job insecurity increased SBC for men but not for women. There might indeed be a gender difference in the degree to which the prospect of losing one's job represents a source of stress that affects private life.

As in Table III, *Job autonomy* is the only resource with the 'wrong' sign in models (2) and (6) but the effect becomes insignificant when demands are added to the models. When comparing the effects in the models that only control for demands with the full model, there are some noticeable changes in the effect sizes. These concern the same variables as in the models for TBC, most notably *Workplace anxiety, Job insecurity, Unusual hours,* and *Supervisor evaluation*. In addition, there are also some changes in the effects of *Time off for family* and *Pace of work*, which points towards further correlations between these job resources and job demands.

Overall, the pattern of the coefficients in models 4 and 8 is rather similar for TBC and SBC but there are also quite a few exceptions: the effect of *Hours in the main job* is larger in the models for SBC than TBC; *Job pressure* seems to have a much more substantial effect on SBC than on TBC, as does

Taking work home. In addition, the effects of *Workplace anxiety* differ between men and women, showing significant effects for men the model for SBC and for women in the model for TBC.

So far we have established the net effects of job demands and job resources on TBC and SBC for men and women and observed how these effects depend on the particular job characteristics that are controlled for in the models. We note though that only one (out of six) resources has a significant impact on TBC and only three have a significant impact on SBC. It is thus easy to see why the existing literature tends to find only limited support for the ameliorating role of resources. However, as we shall see below this conclusion is partly due to the fact that important interactions have been ignored.

Gender and Family circumstances.

The easiest way to investigate gender and family circumstances is to pool data and estimate a joint model for men and women. When we do this, women's TBC and SBC are significantly lower than men's when no other controls are included in the model.[10] After including all explanatory variables, there is no longer any significant difference between men's and women's levels of TBC nor between their levels of SBC. Tables III and IV show that many job demands and resources affect men and women in similar ways. However, there are some exceptions: some time demands have larger effects on men's TBC than on women's; women but not men experience lower levels of TBC and SBC if they have *Friendly colleagues*; and *Workplace anxiety* increases women's TBC and men's SBC. An analysis of the underlying mechanisms is beyond the scope of this paper, but we speculate that these differences could be related to gender differences in the type of work, in social relationships and in strategies of coping with stress.

The models also demonstrate the importance of family circumstances for WLC. *Never married* women have a lower level of TBC and *Previously married* women have higher levels of SBC than

women who are living with a *Partner with medium working hours*. Women's TBC is considerably higher if they have a *Child*, which increases their TBC to the same extent as 18 additional hours of paid work. In contrast to women, men's SBC and TBC vary with the number of hours that their partners work for pay. Men whose partner works less than 8 hours per week experience higher levels of TBC compared to other partnered men although the effect is only weakly significant. Men whose partner works 35 hours or more have significantly higher levels of SBC than men whose partners work between 8 and 35 hours.

The strong effect of having a child on women's but not men's TBC lends support to H3a. H3b receives partial support as men report higher levels of SBC if their partner works more than 35 hours per week for pay but we do not find a corresponding effect for women.

Table V about here

Interactions.

So far we have only examined the 'main effects' of demands and resources and have not considered how these effects might themselves depend on complex interactions between job resources and demands. Tables V and VI address this issue and contain estimates from models for TBC and SBC, respectively, that condition on family circumstances, resources, and demands exactly as the full models in Tables III and IV and additionally include interaction terms. In the body of the tables we only report the coefficients that contribute to the interaction effects. We tested many different interaction effects but only the ones shown in Table V and VI were statistically significant. Before discussing these numbers it is important to make one point: empirically it seems to be the case that we never observe interactions between resource and demand variables i.e. resources, if they have an impact on WLC, have a constant level of efficacy or, to put it the other way around, the negative

impact of demands is the same at all levels of resources. Particular combinations of resources may modify the effect of each other and the same can be said of particular combinations of demands.

Let us first consider interactions between job demands. Only one such interaction was statistically significant. *Job pressure* and *Hours of main job* have mutually reinforcing effects on SBC for both women and men (models (3) and (6) in Table VI). At low hours of work *Job pressure* produces strain but the effect gets much greater as working hours increase.

TABLE VI about here

In three instances we found significant interactions between different types of job resources, two of which concern the resource *Full schedule control* – the ability of an employee to determine when they start and finish work. It was not significant for men in the final models in Tables III and IV, and weakly significant for women in Table IV. It turns out to be the case that the efficacy of *Full schedule control* in reducing TBC for women is related to their *Supervisor evaluation* (Table V). The pattern is illustrated in Figure I. *Full schedule control* is most beneficial for women with a negative evaluation of their supervisor, that is, in the absence of another resource. Among women with a positive evaluation of their supervisor, *Full schedule control* is associated with slightly higher TBC. These relationships do not hold true for men for whom there is no discernible effect of *Full schedule control*.

The other two interaction effects between job resources emerge for SBC. *Job autonomy* should be a resource that offers protection against SBC, but as we saw from Table IV it appears to have a negligible net effect on SBC after other demands and resources are controlled. However the story is more complicated (cf. Table VI, model (4)). For women, *Job autonomy* can lower SBC depending on the precise arrangements she is subject to with regard to taking time off to attend to family matters.

Women with high levels of *Job autonomy* but no opportunity to take *Time off for family reasons* experience high levels of SBC. The more opportunity a woman has to take *Time off for family reasons*, the less detrimental is the effect of *Job autonomy*.[11] In contrast, for men the advantage of taking *Time off for family reasons* is not related to *Job autonomy*.

For both men and women, the effects of *Job autonomy* are conditional on those of *Full schedule control* but in different ways (cf. Table VI, models (2) and (5), Figure II). For men with *Full schedule control* but no *Job autonomy* SBC is high. As the degree of autonomy increases his SBC decreases. For men, the detrimental effect of having full control over one's schedule is reduced if it is combined with autonomy over how to carry out one's work.

For women, *Full schedule control* is more beneficial. If they have a job which gives them little choice about the way in which they carry out their work (low autonomy) then being able to choose their start and finish time reduces SBC. As for men, *Job autonomy* balances the effects of having full control over one's schedule. The conclusion from the interactions between *Full schedule control* and *Job autonomy* is that the effects of resources depend very much on the context. The findings for men illustrate that a resource can be associated with an increase in WLC; and this effect can be removed by the presence of other resources. The finding for women shows that the availability of two resources can be associated with more conflict than the presence of a single resource.

Our investigation of interaction effects has not provided any support for H2 because we did not find any significant interaction between the effects of job demands and job resources. We have not found any evidence that job resources reduce the effects of job demands. Instead we have found evidence that the effects of different job demands may reinforce each other. We have not found any instance where the effects of job resources reinforce each other. Instead the models show a variety of patterns in which job resources combine to affect WLC.

Figures I and II about here

Conclusions

In our statistical models for WLC we started out from the assumption that a detailed occupational grouping like the SOC would reflect the variation in the main work-based factors responsible for WLC. The estimates for the random effects showed that this is not the case; only a small share of the variation in WLC is captured by occupational groups. Thus we conclude that the factors relevant to WLC are not strongly related to occupation per se but they depend strongly on the particular circumstances of the *job*, the workplace and the family.

Our results illustrate the importance of context for understanding the effectiveness of job resources in reducing WLC. Individual resources do not always act in isolation but sometimes in interactive combination. Our findings reveal several different patterns. The interaction of *Full schedule control* and *Supervisor evaluation* could be interpreted as *Supervisor evaluation* being the primary resource and *Full schedule control* only coming into play if the primary resource is not present. For women, *Full schedule control* had the most advantageous effects when they had no *Job autonomy*, that is, when their work could be most easily carried out by someone else. For men, *Full schedule control* increased SBC unless the men also enjoyed *Job autonomy*. The findings confirm past research that demonstrated the possible negative effects of flexible work (Schieman and Young, 2010; Kossek, Lautsch & Eaton 2005). In addition to schedule control we identify further job resources that exert ambiguous effects. *Job autonomy* is a motivational resource that comes with certain demands about designing one's work, which can counteract its positive effects. Our research also hints at certain demands associated with the maintenance of a good relationship with a supervisor; it is possible that *Full schedule control* can lead to working at inconvenient times to oblige a supportive

supervisor. Altogether our study emphasizes that job resources work in combination and that their effectiveness depends on other circumstances. It also indicates that job resources can be used in ways that open up other sources of stress. These are points that have not received sufficient emphasis in the existing literature.

The fact that the effects of demands and resources in the models are largely independent of each other provides some mixed evidence regarding the JD-R model (Bakker and Demerouti, 2007). It supports the idea of dual processes but it does not support the buffer hypothesis. In other words different demands or different resources can either reinforce or counteract each other, but, somewhat surprisingly, resources in themselves do not appear to eliminate the consequences of demands. Both the presence of demands and the absence of resources produce WLC in our models.

The distinction between TBC and SBC proves helpful in that it draws attention to different underlying WLC mechanisms. For example, generous policies for taking time off for family matters reduce only TBC but not SBC. A closer examination of our results shows, unexpectedly, that many differences between TBC and SBC are gender specific. For example, men experience higher levels of TBC if they work unusual hours or have a long commute but these factors have weaker or no effects on their SBC. In contrast, for women, both factors are more strongly associated with SBC than with TBC. It might indicate that women have made arrangements that reduce TBC but they might come at the cost of increased SBC. The possibility that some solutions to TBC just shift the conflict to a different aspect of life is one of the suggestions that emerge from the separate analysis TBC and SBC.

Another example of differences in effects on TBC and SBC is *Workplace anxiety*, which also affects men and women in a different way: among men it is associated with higher levels of SBC, but for

women it has stronger effects on TBC. One possible explanation would be that women who are anxious about some aspects of their work might react by increasing their working hours or make less use of flexible working options whereas men might not alter their behaviour in the same way. A more systematic examination of this explanation and other gender differences in the production of TBC and SBC are promising avenues for future research that might be necessary to formulate efficient policies for reducing WLC. Quite importantly our research suggests that policies for reducing WLC might have to be gender specific.

Our research has also shown that different types of families experience different types and levels of WLC. In line with the findings from earlier studies we find that the presence of a child increases WLC for women but not for men. Interestingly though, we find that the presence of children increases TBC but not SBC. In other words, although children put considerable demands on mothers' time, the activities associated with children do not lead to an increase in mothers' strain nor do they form a barrier to mothers' recuperation from work.

WLC is also affected by the presence of a partner. TBC is lower for never-married than for currently or previously partnered employees, indicating that having a partner increases people's time pressure. This seems to contradict Bianchi and Milkie's (2010) suggestion that the presence of a partner may help an individual to more successfully negotiate the tensions generated by time based demands. Taking partner's hours of paid work into account shows no strong effect on TBC although the increase in TBC for men whose wives work only a small number of hours or not at all might point to a more heterogeneous interface between work and family patterns than hitherto acknowledged in quantitative research. In our models for SBC we find a strong relationship between men's increased level of SBC and their partner working full time, supporting the time-squeeze hypothesis

but only for men. Together with the finding that children do not affect their fathers' WLC but contribute strongly to their mother's WLC this suggests that there might be a genuine difference in the nature of the work-family border of mothers and fathers.

The levels of WLC observed in the survey, as we have stressed, are affected by self-selection into paid work and the type of paid work. Self-selection into jobs and family circumstances might also affect our finding that job characteristics are more influential for WLC than family characteristics. Addressing the issue of self-selection into different types of family arrangements, occupations and working hours and studying WLC in a longitudinal perspective remains a pressing, though highly challenging, matter for the future and is clearly the only way in which firmer causal conclusions can be hoped for.

Overall, the relationship between family circumstances and WLC is much more complex and nuanced than has heretofore been acknowledged in the literature. Though our own results and those of others drawing on cross-sectional data are highly suggestive, sensible policy conclusions will only flow from studies that can make robust and credible causal claims in the light of the self-selectivity issue alluded to above. Making a serious attempt to unravel the complex interlinked causal processes involved should be the direction for future research to take, though progress is only likely to be made when much better data become available.

Notes

[1] Of course the relationship between work life and family life is reciprocal but in this paper we only address the impact of the former on the later.

[2] The items we use to measure TBC and SBC are presented in Table 1.

[3] In this respect our position is no different from that of practically everyone else who has investigated the subject.

[4] People are classified as working usual hours if they work mostly during the daytime on Monday to Friday with no more than occasionally working in the evenings, at night, or on Saturday or Sunday.

[5] As they are identified by a separate dummy variable, it does not matter which particular value we assign them on the *Duration commute* variable.

[6] We first established whether any respondent lives with a partner. Then we divided those who do not live with a partner into those who were never married and those who were previously married.

[7] Controlling for the age of the youngest child did not substantially affect the results and was dropped from the analysis.

[8] To save space we do not report the age coefficients in any of the tables below.

[9] We must expect some effects to be insignificant (or even take the wrong sign) because of collinearity between the different demands and different resources.

[10] To save space these results are not shown here but are available on request from the corresponding author.

[11] For women with the highest level of job autonomy (value 3) and no time off for family, the joint effect of these two resources on SBC is .30; for women without job autonomy the joint effect is between 0 and 0.06 depending on their opportunities to take time off for family; for women with the highest level of job autonomy and the most generous arrangements regarding time off for family (value 3) the joint effect is also 0.

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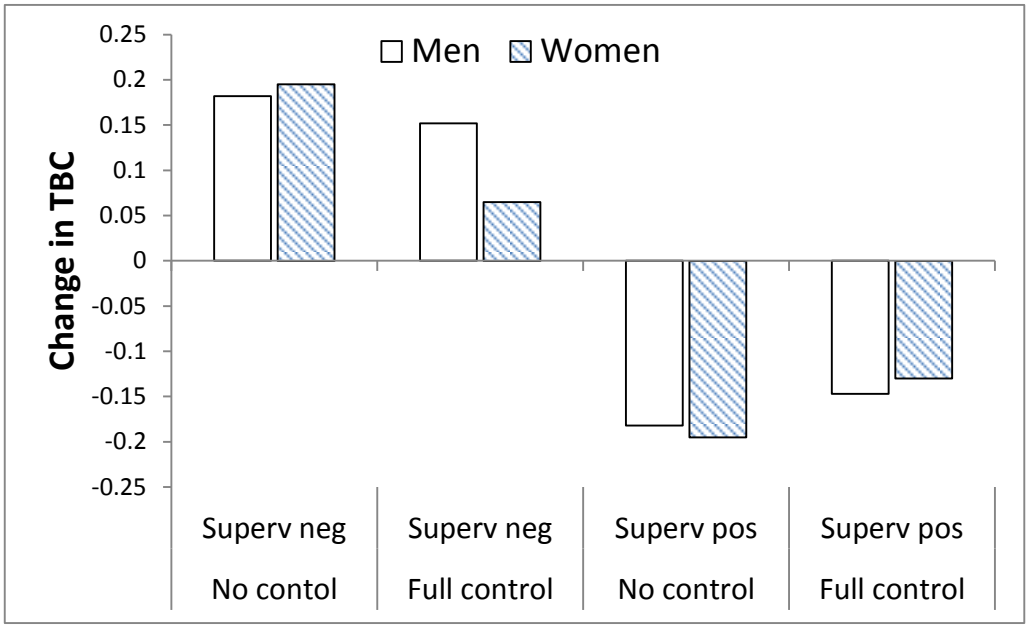
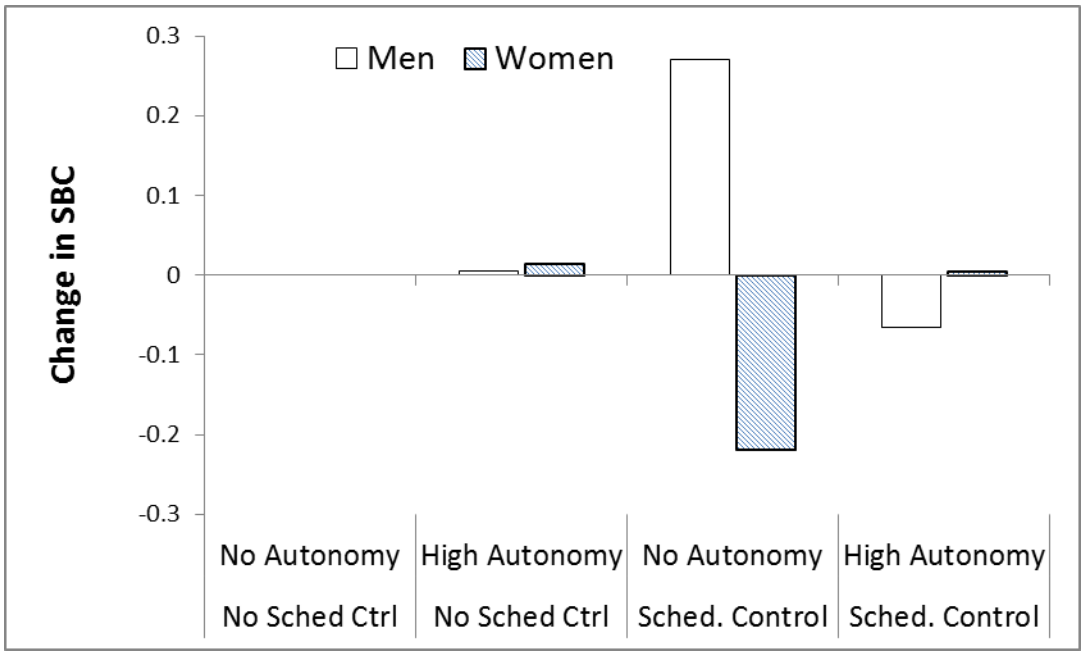
Figure I: Illustration of interaction effects of *Schedule control* and *Supervisor evaluation* on TBC (Table V)



Note: *Supervisor evaluation* is evaluated at the 10th percentile ('Superv neg') and the 90th percentile ('Superv pos').

Figure II: Illustration of interaction effects of *Full schedule control* and *Job autonomy* on SBC (Table VI, models (2) and (5))



Note: *Job autonomy* is evaluated at values 0 ('No autonomy') and 3 ('High Autonomy').

Table I: Survey items feeding into selected composite measures; Cronbach's alpha in parentheses

Time-based conflict (TBC) (α=0.73)	'After work I have too little time to carry out my family responsibilities as I would like.' 'After work I have enough time to pursue other interests as I would like.' 'My job allows me to give the time I like to my partner or family.'
Strain-based conflict (SBC) (α=0.84)	'After I leave my work I keep worrying about job problems.' 'I find it difficult to unwind at the end of a workday'. 'I feel used up at the end of a workday'; 'My job makes me feel quite exhausted by the end of a workday.'
Pressure (α=0.66)	'I never seem to have enough time to get everything done in my job'. 'My job requires that I work very hard' 'How often do you feel under excessive pressure at work?'
Job insecurity	The variable takes value one if the respondent regarded it as likely or very likely that they would leave their present employer during the year following the interview for any of the following reasons: 'Firm will close down', 'I will be declared redundant', 'My contract of employment will expire'
Workplace anxiety (α=0.93)	How anxious are you about these situations affecting you at your work? 'Being dismissed without good reason; being unfairly treated through discrimination; victimization through management; bullying; sexual harassment; others listening in to one's telephone conversations.'
Job autonomy (α=0.69)	'Is yours a job which allows you to design and plan important aspects of your own work (or is your work largely defined for you)?' 'Do you decide the specific tasks that you carry out from day to day (or does someone else)?' 'Can you decide on your own to introduce a new task or work assignment that you will do in your job?'.
Supervisor evaluation (α=0.75)	'How true is it that your supervisor or manager - treats people fairly, - helps employees to learn to do their jobs better, - supports employees when they are under pressure' 'How satisfied or dissatisfied are you with the relations with your supervisor or manager?'

Table II: Descriptive statistics. Means and percentages, by gender

	Men	Women
N	970	1,040
	Mean	Mean
Time-based conflict*	.11	-.06
Strain-based conflict*	.09	-.03
Job demands		
Working hours main job*	45.8	33.2
Hours 2nd job*	.12	.19
Hours of commute* (here uncentred)	.46	.39
Unusual hours* (1/0)	42.1%	35.7%
Works in various places* (1/0)	25.2%	10.6%
Job pressure	.04	.04
Job insecurity	6.4%	5.3%
Leadership responsibility*	58.4%	49.9%
Workplace anxiety	.00	-.01
Takes work home* (values 0-5)	1.00	.87
Job resources		
Full schedule control (1/0)	33.9%	31.2%
Autonomy (values 0-3)	1.69	1.66
Controls pace of work* (1/0)	74.2%	79.6%
Supervisor evaluation*	-.13	.15
Friendly colleagues*	55.2%	67.3%
Time off for family (values 0-3)	2.17	1.96
Demographic characteristics and family circumstances		
Age (years)	38.8	39.1
Marital status*		
Married, together	69.5%	59.2%
Previously married, separated	8.4%	18.4%
Never married	22.1%	22.3%
Partner working hours (ref.: No partner)		
Low*	27.5%	11.3%
Medium*	18.9%	26.6%
Long	23.1%	21.3%
Child	43.2%	42.5%

Note: '*' indicates a significant difference by gender at the 5% level

Table III: Job demands and resources slope coefficients from multilevel models for time-based conflict

	Men				Women			
	Family only	Demands	Resources	D&R	Family only	Demands	Resources	D&R
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Family circumstances								
Never married	-.18	-.08	-.19	-.10	-.12	-.19*	-.12	-.18*
Previously married	.20	.16	.21	.15	.15	.11	.14	.11
Partner low hours	.17^{+}	.15^{+}	.17^{+}	.14^{+}	.03	-.03	.03	-.04
Partner medium hours								
Partner high hours	.03	.01	-.08^{a}	-.01	-.04	-.01	-.05a	.02
Child	.09	.06	.07	.04	.22**	.41***	.25***	.41***
Job demands								
Hours main job		.02***		.02***		.02***		.02***
Unusual hours		.18**		.16**		.11^{+}		.08
Hours 2nd job		-.02^{c}		-.02^{b}		.02^{a}*		.02^{a+}
Duration commute		.29***		.30***		.14^{+}		.14^{+}
Varying commute		-.03^{a}		-.03		.05		.02
Varying places		.06		.07		.03		.05
Job pressure		.26***		.24***		.26***		.24***
Leadership responsibility		.02^{a}		.06		-.07		-.05
Job insecurity		.20^{+}		.11		.12		.06
Workplace anxiety		.12^{+}		.06		.26***		.18**
Take work home		-.07^{a}		.04^{a}		.06**		.07**
Job resources								
Full schedule control			-.02	-.03			-.06	-.10^{+}
Job autonomy			.09**	.07^{a}			.12***	.04^{b}
Pace of work			-.08	-.02			-.04	.01
Supervisor evaluation			-.17***	-.12***			-.19***	-.11***
Friendly colleagues			-.02	-.04			-.15*	-.10^{+}
Time off for family			-.06^{+}	-.05			-.01	-.03
Constant	.20^{+}	-.12	.24^{+}	-.03	-.08	-.02	-.10	.12
σ_u^2	.011	.011	.018	.015	.091	.022	.078	.020
σ_e^2	.941	.741	.897	.718	.860	.675	.810	.659
Variance partition coefficient	.012	.014	.020	.020	.096	.032	.088	.029
Prop. total variance explained	.041	.243	.078	.262	.016	.278	.082	.298
N	969	969	969	969	1040	1040	1040	1040

Notes: Total variance in null models: Men .993; Women .9672. All models also control for age.

$^{+}$ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

a Coefficient x 10 b Coefficient x 100 c Coefficient x 1000

Table IV: Job demands and resources slope coefficients from multilevel models for strain-based conflict

	Men				Women			
	Family only	Demands	Resources	D&R	Family only	Demands	Resources	D&R
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Family circumstances								
Never married	-.03	.04	-.04	.02	-.05	-.09	-.05	-.09
Previously married	-.08	-.12	-.07	-.13	.19*	.16*	.19*	.15*
Partner low hours	.13	.10	.12	.08	.19†	.11	.18†	.10
Partner medium hours								
Partner high hours	.24*	.21*	.19†	.19*	-.08	-.02	-.06	-.01a
Child	.03	-.01	.07a	-.03	-.11	-.04a	-.08	-.03a
Job demands								
Hours main job		.09a***		.09a***		.01***		.09a***
Unusual hours		.10†		.08		.14**		.11*
Hours 2nd job		-.03b		-.04b		-.03b		-.08b
Duration commute		.12†		.13*		.15*		.16*
Varying commute		-.04		-.08		.12		.08
Varying places		.06	.	.05		-.03		-.01
Job pressure		.51***		.49***		.47***		.45***
Leadership responsibility		-.03		.04		.03		.05
Job insecurity		.13		.04		-.12		-.19†
Workplace anxiety		.29***		.24***		.12*		.06
Take work home		.05**		.07**		.10***		.11***
Job resources								
Full schedule control			.12	.04			-.01	-.08
Job autonomy			.09**	-.03			.16***	.02
Pace of work			-.04	.06			-.14†	-.09
Supervisor evaluation			-.17***	-.10***			-.16***	-.09***
Friendly colleagues			.01b	-.02			-.16*	-.11*
Time off for family			-.12**	-.08**			-.02	-.05*
Constant	.12	-.16	.18	-.03	.03	-.23*	.02	-.05
σ_u^2	.005	.000	.001	.000	.090	.000	.072	.000
σ_e^2	1.022	.680	.979	.662	.849	.575	.798	.556
Variance partition coefficient	.005	0	.0007	0	.096	0	.083	0
Prop. total variance explained	.093	.400	.135	.415	.239	.534	.295	.549
N	969	969	969	969	1040	1040	1040	1040

Notes: Total variance in null models: Men 1.13; Women 1.23. All models also control for age.

$^{+}$ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

a Coefficient x 10 b Coefficient x 100 c Coefficient x 1000

Table V: Selected slope coefficients from multilevel models for time-based conflict: models with interaction effects

	Men (1)	Women (2)
Full schedule control	-.03	-.13*
Supervisor evaluation	-.14***	-.15***
Schedule control * Supervisor evaluation	.05	.15**
σ_u^2	.015	.020
σ_e^2	.718	.654
Variance partition coefficient	.020	.030
Prop. total variance explained	.263	.303
N	969	1040

Notes: The model also includes all covariates in the full models of Table III. Here we only show the significant interaction effect and their associated main effects.
Total variance in null models: men .993; women .967.
$^{+}$ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table VI: Selected slope coefficients from multilevel models for strain-based conflict: models with interaction effects

	Men			Women		
	(1)	(2)	(3)	(4)	(5)	(6)
Hours main job			.08[a]**			.08[a]**
Job pressure			.45***			.48***
Full schedule control		.27*			-.22*	
Job autonomy	.05	-.18[b]		.10*	.04[a]	
Time off for family	-.03			.02		
Autonomy * Time off for family	-.04			-.04*		
Autonomy * Schedule control		-.11*			.07	
Hours main job * Pressure			.06[a]**			.04[a]*
σ_u^2	.000	.000	.000	.000	.000	.000
σ_e^2	.661	.659	.657	.554	.555	.554
Variance partition coefficient	0	0	0	0	0	0
Prop. total variance explained	.411	.417	.419	.461	.460	.461
N	969	969	969	1040	1040	1040

Notes: The models also include all covariates in the full models of Table IV. Here we only show the significant interaction effects and their associated main effects.
Total variance in null models: men 1.132; women .689.
$^{+}$ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$
a Coefficient x 10 b Coefficient x 100