The Impact of Fluctuating Workloads on Well-Being and the Mediating Role of Work–Nonwork Interference in This Relationship

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Heavy workloads have been central to the discussion of well-being. However, fluctuations in workloads have received sparse attention, even though transient and routine levels of workloads may have independent effects on well-being. The article assesses this, particularly focusing on the effort–recovery model of the workload/well-being relationship in which work–nonwork interference mediates this relationship. Using data from a weekly diary study of freelance or portfolio workers, multilevel analyses showed that both routine and transient levels of work to nonwork interference mediated the job demands–calmness relationship. Work to nonwork interference also negatively mediated the hours worked–calmness relationship, but the direct relationship between hours worked and calmness was a positive one so the mediating effect reduced this positive effect. In the case of enthusiasm, which was a second measure of well-being, there were no mediating effects but both routine and nonroutine levels of job demands and transient levels of hours worked were related to it. The study highlights the value of introducing the temporal dimension into the study of the work–nonwork interface, and the diversity of relationships that occur across different dimensions of workload and well-being.

Keywords: effort–recovery model, job demands and workload, work–nonwork interference, well-being, freelance workers

Temporal dimensions of the work–nonwork interface have been underresearched. While people may have stable patterns to their lives, variations in the factors that affect the work–nonwork interface may particularly affect their well-being precisely because they are deviations from this pattern. Especially salient are likely to be changes in people's workloads, which have been found in a wide range of studies to adversely affect levels of depression, anxiety, job satisfaction, and other measures of well-being (Häusser, Mojzisch, Niesel, & Schulz-Hardt, 2010; van der Doef & Maes, 1999). Working long hours and fulfilling tough workload demands are particularly likely to limit the time people have to recover from the exertions involved in these and enjoy nonwork activities that help this process. In theoretical terms this implies that work–nonwork interference is a mediator of workload and strain (Geurts, Kompler, Roxburgh, & Houtman, 2003).

Several studies have indeed tested the mediating effect of work–nonwork interference or a similar concept, and found some support for the theory that the impact of job demands on work–nonwork interference is a significant explanation for the effect that such demands have on well-being (e.g., Bacharach, Bamberger, & Conley, 1991; Frone, Russell, & Cooper, 1992; Geurts et al., 2003; Hall, Dollard, Tuckey, Winefield, & Thompson, 2010; a summary of these studies is in the Appendix). However, such studies have relied on cross-sectional data. The wording of the questions used in these studies implies that participants have relatively stable lifestyles as they capture typical or ongoing work–nonwork interference levels, whether these are chronic or not. While limited, insofar as people have a pattern to their lives, these studies do provide some supporting evidence for the constrained recovery model.

However, even if there is a basic configuration to people's work and family lives, workloads and other factors that impinge on the work–nonwork relationship may fluctuate. Daily or weekly deviations from the norms of one's life pattern are likely at least to contribute to levels of well-being, even if they do not dominate over the effect that the stable levels have on these. Moreover, it may be that such variations will have more impact on people who have successfully organized their lives according to a coherent and consistent pattern.

We thus, designed a study that is able to separate the stable or routine elements from the fluctuating elements of people's workloads and work–nonwork interference in order to test whether they

have discrete effects on well-being. We used the diary method to obtain information on a weekly basis (see Totterdell, Wood, & Wall, 2006, for further use of this data). The diary was completed by a sample of what are variously known as freelance workers, independent contractors or portfolio workers, which we define as self-employed individuals who do assignments, either in series or in parallel, for a number of different organizations or clients, on a (typically short-term) commercial rather than employment contract basis. These workers were selected as they were more likely to experience fluctuations over time in their workloads than most occupations, many of which may have fairly constant demands.

Adapting Greenhaus and Beutell's (1985) standard definition of work−family interference we define work–nonwork interference as demands in the work and nonwork domains that are mutually incompatible so that participation in one role is made more difficult by participation in another role. We focus on work–nonwork interference to reflect recent criticism of the narrowness of the more widely researched work−home or work−family conflict, and arguments in favor of more rounded notions such as the work−personal life conflict (Bailyn, 2006; Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005, p. 185; Özbilgin, Beauregard, Tatli, & Bell, 2010). We also consider that the more inclusive work–nonwork perspective connects more readily to the arguments about the virtues of portfolio work as a means of balancing all aspects of one's life, which is expressed most forcibly by Handy (1995, p. 146). Throughout the article we assume, following the work−family/home literature, that work–nonwork interference is bidirectional (Carlson, Kacmar, & Williams, 2006; Frone, 2003; Greenhaus & Beutell, 1985), that is, that work can interfere with nonwork life and vice versa. We shall use the term work–nonwork interference when referring to both directions or talking in general terms, and work-interference-in-nonwork (using the acronym WINW) and nonwork-interference-in-work (NWIW) when referring to the unidirectional terms.

Theoretical Focus

Work−life balance, as Grzywacz, Butler, and Almeida (2005, p. 196) say, revolves around "energy exchange." Excess energies and resources in each of the work and nonwork areas are thus shared between the two domains. The time outside work and particularly leisure time is thus a resource that can help the individual recover from tiring workloads—excessive or otherwise (Grandey & Cropanzano, 1999; Sonnentag, Binnewies, & Mojza, 2010). This principle is at the heart of the effort−recovery model that Geurts et al. (2003) use to explain why work–nonwork interference may mediate a workload−well-being relationship. It is for such reasons that achieving work−life balance is an important strategy for enhancing the well-being and health of people.

On the one hand, research on the work–nonwork interface has tended to assume that there is a relatively stable pattern to people's lives, and Grzywacz et al. (2005, p. 196) make this explicit. They and others have provided evidence of such stable routines (Moen & Wethington, 1992; Morehead, 2001). Moreover, it is argued that these patterns are the result of individuals and families purposely arranging their lives to achieve some consistency and coherency. Such family adaptive strategies, as Moen and Wethington (1992) term them, may thus minimize work–nonwork interference.

On the other hand, it is accepted that there may be unexpected or unpredictable events in people's lives, and such out-of-the-ordinary events are likely to have effects on people's well-being. Grzywacz, Frone, Brewer, and Kovner (2006) found that 52% of a representative sample of nurses in the U.S.A. experienced family−work conflict episodically and around 40% experienced work−family conflict similarly, and a diary study in this area by Butler, Grzywacz, Bass, and Linney (2005) confirmed there is some variability even on a daily basis. In their 14-day study of 91 nonprofessional parents in the midwest of the U.S.A., Butler et al. found that the percentage of total variation in work−family conflict and job demands that was explained by within-person variation over time, as compared with between-people variation, was well over half; it was in fact almost identical at 62% for work−family conflict and 63% for job demands.

Consistent with the juxtaposition of routine lifestyles and unpredictable events, Geurts et al. (2003, p. 535) use the notion of normal circumstances when introducing the effort−recovery model. Under such circumstances the physiological and psychological reactions to workloads can ensure a quick recovery from work demands: "after short respites . . . the worker's psychobiological systems will stabilize at the baseline level." It is feasible that recovery could be largely achieved in work time. If this were the case we would expect that only workloads that are out of the ordinary would have much effect on WINW. This implies that it is the nonroutine demands and their impact on nonroutine levels of nonwork interference that largely explain any workload−well-being relationship.

However, the customary level of workload may be sufficiently high that recovery is not feasible in work time and thus, the routine levels of workload will also affect the level of WINW and well-being. The routine aspects of a person's workload will have a negative effect on well-being to the extent that the demand imposed by the workload is excessive, sustained, and out of the person's control (van der Doef & Maes, 1999). For example, freelance workers who feel unable to alter their constantly high workload for fear of not getting repeat orders or gaining a bad reputation for not completing work on time will be prone to experiencing work–nonwork interference and strain. Even if they may be able to modify or adjust their work so that the demands are manageable on a routine basis, the transient aspects of these, which reflect deviations from the norm, may still present a problem. As effort−recovery theory predicts (van der Hulst & Geurts, 2001), sufficient recovery time is needed to offset the costs of increased effort, and this recovery time—if available—is likely to compromise the quality of nonwork time. In addition, following discrepancy theory, the divergences from routine workloads represent violations of expectations and these may adversely affect perceived work–nonwork interference and well-being (Holtom, Lee, & Tidd, 2002). The relative importance of the routine and transient components of workload for work–nonwork interference and well-being will, therefore, depend on the extent to which the work is unavoidably demanding and the extent to which the workload varies unpredictably. If people do purposely arrange their lives to achieve a stable and coherent work–nonwork pattern, then transient fluctuations in workloads will dominate over routine workloads in explaining work–nonwork interference; its mediating role in the workload−well-being relationship will in turn be concentrated on the transient.

The importance of distinguishing the transient from the routine is that the recovery time and process are likely to differ. Transient stressors are associated with what are conventionally labeled acute stress, although the high levels of stable stressors are associated with chronic stress (Eckenrode, 1984; Elfering et al. 2005). The transient−routine differentiation is then especially important as the nature of acute and chronic stress is different and the methods of coping with the different types of stress and successful treatments for each are known to differ.

The studies of the mediating role of work–nonwork interference have not made a distinction between transient and routine levels of workloads or of WINW. They have simply tested whether measures of work–nonwork interference or conflict mediate a relationship between workload and measures of well-being. In our study we do, however, separately identify transient and routine workloads and thus test:

Hypothesis 1: The negative relationships between the transient and routine level of workload and well-being will be mediated by the transient and routine levels of work–nonwork interference.

Workload consists of two main dimensions: the quantitative hours worked and the qualitative nature of the demands. We might expect transient changes in hours to have more effect on work–nonwork interference and hence on well-being than routine hours as people may have a notional normal working week that is more central to the definitions of people's lives than is the nature of these potentially fluctuating workloads. Thus, deviations from this norm will mean the reduced time spent on nonwork activities will be experienced as interference in nonwork and also these may involve stressful changes in routine arrangements. Equally we expect that unusual demands are more energy or time consuming than routine demands, because individuals may lack experience in handling them and they may require higher levels of attention, preparation, and experimentation than is involved in their routine work. This can be formulated thus:

Hypothesis 2: Transient effects will be stronger than routine effects for the (a) direct effects of workload on well-being and (b) indirect effects of workload mediated by work–nonwork interference.

Finally, in keeping with the matching theory of antecedents and effects of work–nonwork interference, we would expect that WINW will have the most effect on general or work-specific well-being and NWIW will have the most effect on nonwork or family-specific well-being measures (Amstad, Meieer, Fasel, Elfering, & Semmer, 2011; Shockley & Singla, 2011). The rationale is that people will appraise the situation they face largely in terms of the domain where the problem occurred (Grandey, Cordiro, & Crouter, 2005; Kinnunen, Feldt, Geurts, & Pukkinen, 2006). We would thus expect WINW to play a stronger role in mediating the workload–well-being relationship than NWIW, providing the well-being measure is general or work-specific rather than nonwork specific. In the mediation studies so far WINW consistently plays a mediating role in the workload−well-being relationship for work or general well-being measures, but the results for family well-being measures and the role of NWIW are less consistent (see Appendix). We, therefore, test the following hypothesis:

Hypothesis 3: The mediating effect of WINW on the negative relationships between workload and well-being will be stronger than that of NWIW.

The Study

The purpose of our study is to assess the role of transient and routine work–nonwork interference in explaining relationships between transient and routine (a) job demands and (b) hours worked, and well-being. More specifically it was designed to test the above three hypotheses. We tested these simultaneously using a mediation model as in Figure 1, our depiction of which concentrates on the indirect effects, as adding the direct effects of the predictors would reduce the figure's clarity.

The Sample of the Study

Our study is of freelance or portfolio workers, as they constitute a group that is likely to have more fluctuating workloads than in standard employment job contexts, which are in fact often defined in terms of their having a fixed duration of work. Though employed workers may often have to do overtime or take work home, the occurrence of this may be on a regular, or at least predictable
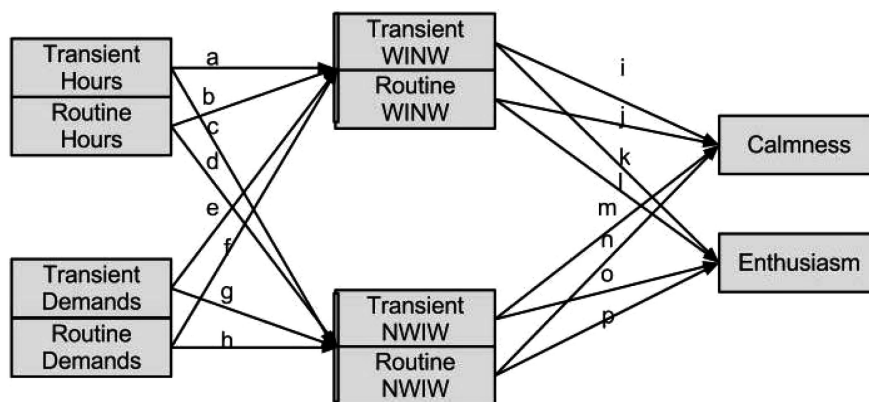

Figure 1. Hypothesized mediation model for Calmness and Enthusiasm.

or seasonal, basis and form part of the individual's life pattern. For example, clergy tend to experience more work–nonwork interference at Easter and Christmas (Kreiner, Hollensbe, & Sheep, 2009, p. 714). Portfolio workers may themselves be habituated to having fluctuating workloads but, even if they are, this means that if we do find the mediating effect of fluctuating demands in samples of these, we can have more confidence that we will find the same effect in other samples, even though the extent of fluctuations may be lower.

Also, freelance or portfolio workers are attractive for our concerns as work–nonwork interference may be an especially salient concern for them, as there is evidence that it is often a major reason for people becoming freelance workers (Clinton, Totterdell, & Wood, 2006; Fraser & Gold, 2001). They are unlikely to have low involvement in their work or attribute work problems to an organization, two states that past research suggests may limit the mediating effect of work–nonwork interference on the workload−well-being relationship (Frone et al., 1992: 75; Geurts et al., 2003). Also, freelancers frequently work at home, so although this provides them with an opportunity to better manage the interfaces between work, housework and leisure, the boundary between work and nonwork may become blurred, which may exacerbate any tendencies to overwork and consequently increase strain (Clark, 2001a, 2001b; Sullivan & Lewis, 2001).

Data Collection Methodology

We adopted a diary and longitudinal method of data collection that involved 6 months of weekly observations. Our primary reasons for selecting a week were that we assumed, following Zerubavel (1985), that the pattern to people's work and nonwork responsibilities reflected a 7-day cycle and that a duration of a week was likely to produce a meaningful level of fluctuations for portfolio workers' workloads. It would also allow us to collect data for a much longer time period than is typical in the daily diary study and for which we were aiming. Especially given the nature of freelance work, we assumed a short fortnight's or month's study would not give an adequate picture of the level or variability in demands, work–nonwork interference or well-being of our sample. We were also guided by the results of a prior qualitative study of portfolio workers in which the weekly planning cycle seemed to be the norm (Clinton et al., 2006).

The study thus required participants to complete a diary questionnaire every week for 26 weeks and a survey questionnaire at the start and end. Participants were instructed: "Try to complete the diary at approximately the same time each week. If you forget you can complete it the following day."

Fifty-four participants completed an online version of the diary, and 11 participants chose to complete an equivalent paper-based version. The online participants completed a total of 88% of the questionnaires. The online diary participants were sent an e-mail reminder every Tuesday evening to complete the diary the following day. The reminder contained an address link to a Web site that hosted the diary questionnaire. Participants accessed the diary by entering a password and a personal identification number. The participants−who used the paper diary were sent a few weekly diaries at a time and asked to return each set by post once completed.

Sampling

The sample was recruited using adverts in national and local newspapers, professional magazines and newsletters, supplemented by an online freelance directory and personal contacts. To qualify for the study, volunteers had to be self-employed, have multiple clients, and not have employees. The volunteers were not remunerated for taking part.

The sample. The 65 participants completed the diary on 1,164 occasions during the study, which was a response rate of 70%. The average number of weeks' data provided by participants was 17.91 ($SD = 7.71$). Ten participants provided the maximum 26 weeks' data. The minimum number of responses on any week was 32, the average was 37, and the maximum was 42. In order to ensure that the data were sufficiently representative of weekly variations, we excluded any participants who had provided less than 13 weeks' data. The analyses were, therefore, conducted on the remaining 48 participants who collectively provided 959 weeks of data. From the final sample, 93% ($n = 891$) of responses were from the online questionnaire and 7% ($n = 68$) from the paper-based questionnaire.

In the final sample there were 14 males and 34 females with a mean age of 48 years. The age range for males was 29 to 69 and for females 33 to 65. The range of hours worked varied from no hours worked in a given week to a maximum of 103 hours. The mean number of clients a respondent had per week was 2.63 and this ranged from one to 18 when the person worked. Over the 6-month period of study an average across the sample of 67.4% of work hours per week was allocated to working on the person's main occupation and 74.5% of working hours were worked from home.

Both the main and secondary occupations of respondents varied widely. However, there was a significant concentration of respondents in publishing—broadly defined to include journalism, writing, copyediting, and indexing. Twenty of the 48 participants for whom we have information had their first occupation in publishing, and the second occupation was within this field for a further eight participants. Among the others in the list of primary occupations were coaching, accountancy, sales, translator, psychologist, Web design, and joiner.

Measures

We include two measures of all our key variables. In the case of workload: a quantitative measure, the number of hours worked; and a qualitative measure, perceptions of job demands. We measured work–nonwork interference with two discrete measures capturing WINW and NWIW. Finally, we have two well-being measures: anxiety−calmness and depression−enthusiasm. These can be identified on the basis of Russell's (1980) circumplex model of affect (Warr, 2007, pp. 19–49) as they are differentially related to arousal; anxiety entails high arousal and depression entails low arousal, whereas positive ends of the continuum for both dimensions are characterized by a state of high pleasure or positive affect.

The collection of longitudinal data allows one to differentiate between routine and transient job demands and work–nonwork interference. We can measure the routine effects through averaging this weekly data on work-context variables to form person-level measures of these, and the transient through the deviation of the weekly individual-level data from the routine. The average of the scores from

diary entries represents the configuration or pattern of the workload a person routinely faces that has emerged as a habitual routine, to use Gersick and Hackman's (1990) term from the team literature. These routine or person-level measures may be treated as emergent properties depicting the current parameters of people's lives. In multilevel analysis terminology they are of the compilation type (Kozlowski & Klein, 2000, pp. 16–18), because there are distinct differences between the aggregate and nonaggregate data. Though the phenomena constitute a common domain across levels, they are not isomorphic with each other, as they would be if they were of the composition type (Bliese, 2000, p. 366).

A prime consideration in selecting our measures was the diary method, which severely limits the number and type of questions that can be used in the research instrument due to the frequency of measurement. For example, as work–nonwork interference was only one focus of our research we could not delve more deeply to differentiate family dimensions of nonwork from others.

Diary measures. The weekly diary contained questions about the participants' activities and experiences during the previous week, and included questions about their hours of work, job demands, work–nonwork interference, calmness, and enthusiasm. All the core questions for this study asked about experiences in the last 7 days and were answered using a 5-point response scale ranging from 1 (*not at all*) to 5 (*a great deal*).

Well-being. This was measured using a two-item scale for calmness ($\alpha = .67$) and a two-item scale for enthusiasm ($\alpha = .72$). Participants were asked to rate the extent to which they had felt or experienced the following in the last 7 days: anxious, calm, gloomy, and enthusiastic. The responses for anxious and gloomy were reverse-scored to load on anxiety and depression, respectively. The four items were drawn from the modified versions (Sevastos, Smith, & Cordery, 1992) of the scales for anxiety−calmness and depression−enthusiasm developed by Warr (1990).

Work–nonwork interference. Work to nonwork interference (WINW) was measured through asking respondents how often they had felt the following in the last 7 days: work had interfered with nonwork activities. Nonwork to work interference (NWIW) was measured by a similar question asking how often they had felt the following in the last 7 days: nonwork activities had interfered with work.

Hours worked. This was the total number of hours worked per week.

Workload. Work demands were measured using a four-item scale ($\alpha = .76$) that asked participants to rate the extent to which they had experienced conflicting demands on their time, varying levels of demand on their time, difficult work tasks, and work tasks that they would prefer not to do. The focus was, therefore, on demands that were likely to reflect negative aspects of the job. These items were adapted to be appropriate for freelance workers from measures of demands developed at the University of Sheffield's Institute of Work Psychology (Haynes, Wall, Bolden, Stride, & Rick, 1999).

Control Variables

In light of the importance, following Karasek (1979), of control and support as complements to job demands in theories of well-being, we included these as controls (De Lange, Taris, Kompier, Houtman, & Bongers, 2003; Johnson & Hall, 1988; Payne, 1979; van der Doef & Maes, 1999).

Work control. Work control was measured using a 7-item reflective scale ($\alpha = .92$) that asked participants to rate the extent to which they could control the hours they worked, how much work they did, when they worked on tasks, what work they did, how they worked, the quality of work they did, and whether they could plan their work ahead of time. The items, therefore, reflected aspects of both timing control and method control and were primarily adapted from measures of control or autonomy again developed at the University of Sheffield's Institute of Work Psychology (Haynes et al., 1999; Jackson, Wall, Martin, & Davids, 1993).

Social support. Social support was measured using a 3-item formative scale or index that asked participants to rate the extent to which they received support from clients, family and friends, and colleagues and peers. The items were designed to reflect key sources of social support for the participants and an additive score was used to measure social support.

Other controls. In addition we initially explored other potentially confounding factors which included: gender, age, marital status and number of children, homeworking (the proportion of time spent working at home), the intensity of portfolio working (e.g., the number of clients whose work the participant worked on per week), and data collection method (i.e., whether the participant completed the online or the paper-based version of the questionnaire). Only gender had a significant effect on any of the relationships in our model, and this was included in the analysis along with the work control and support variables.

Analysis Procedure

Multilevel analysis was used to address the nested nature of the data in which weekly responses were nested within individuals. Prior to the analysis we examined James, Demaree, and Wolf's (1984) r_{WG} measure of interrater reliability. The r_{WG} scores indicate that there was a high level of consistency over time for individuals and thus, the aggregation of weekly results into the routine variables was justifiable. The intraclass correlation coefficients (*ICC1 and ICC2*) were high for all independent, potential mediator and dependent variables (all *ICC1*s were above 0.45 with the exception of WINW which was 0.36 and all *ICC2*s were above 0.90), suggesting that there was sufficient between-individual variation to necessitate the multilevel methodology. Table 1 shows r_{WG} scores, *ICC1*, *ICC2*, descriptive statistics, and correlations for all the variables used.

The approach used for the mediation is based on Zhang, Zyphur, and Preacher's (2009) adaptation of the three-step Baron and Kenny (1986) approach. As Zhang et al. explain, applying the Baron and Kenny method to multilevel data is a problem as within- and between-individual effects may be confounded. To overcome this they recommend the use of individual- or group-mean centering as an approach to separating the within and the between components. When predictors and mediators are measured at the within level (known as a 1–1–1 model), each predictor and mediator has to be group-mean centered and then the group means added as group-level predictors or mediators in the model, which in this case represent the routine measures.

The weekly measures of workload and work–nonwork interference used are the deviation of individuals' scores from their routine, not the absolute values reported, that is, they were person-

Table 1
Descriptive Statistics, Correlations, rwg Scores, ICC1, ICC2, and Analysis of Variance F Values

	rwg	ICC1	ICC2	F (p < .001)	Mean	SD	1	2	3	4	5	6	7
1. Hours worked	.86	.52	.96	22.88	30.28	15.92							
2. Demands	.72	.45	.94	17.15	2.14	.81	.30**						
3. Control	.72	.53	.96	23.41	3.41	.88	−.02	−.23**					
4. Support	.73	.65	.97	38.74	2.69	1.01	.14**	.00	.24**				
5. Work interfering with nonwork	.46	.36	.92	12.10	2.21	1.12	.36**	.62**	−.28**	−.09*			
6. Nonwork interfering with work	.50	.52	.96	22.31	2.26	1.25	.09*	.59**	−.13**	−.16**	.53**		
7. Anxiety−Calmness		.52	.96	22.89	3.55	.89	−.06	−.48**	.15**	.05	−.39**	−.37**	
8. Depression−Enthusiasm		.53	.96	23.12	3.75	.88	.05	−.24**	.11**	.21**	−.19**	−.18**	.67**

* $p < .01.$ ** $p < .001.$

mean centered. To see why this is necessary, consider the work hours of two individuals as an example. One is typically working 30 hours each week and the other is working 50 hours each week. In a specific week they both work 40 hours. For the first one this constitutes extra hours although for the second one it implies less hours than usual. We are thus testing, through the weekly measure, whether the deviation from the routine affects individuals' well-being rather than the actual work hours that each individual worked.

In addition, in this study the longitudinal data means that observations were both nested in individuals and collected in a specific order. We allowed for this in the analysis by including the weekly variable as an additional random predictor that varied for each individual. Thus, by adapting Zhang et al.'s (2009) approach to longitudinal mediation using hierarchical linear models, the three steps for a 1–1–1 mediation were:

Step 1:

$$y_i \sim N(\beta_{0j[i]} + \beta_{1j[i]}week_i + \beta_2(X_i - \overline{X}_j), \sigma_y^2),$$

$$for\ i = 1, \ldots, n\ Observations$$

$$\beta_{0i} \sim N(\gamma_{00} + \gamma_{01}\overline{X}_j, \sigma_{\beta_0}^2), \qquad for\ j = 1, \ldots, J\ Individuals$$

$$\beta_{1i} \sim N(\gamma_{10}, \sigma_{\beta_1}^2), \qquad for\ j = 1, \ldots, J\ Individuals$$

where X_i refers to the weekly predictors (weekly hours worked, workload, job control and support), and $\overline{X}_j$ refers to the person means or the routine predictors (weekly hours worked, workload, job control and support). $X_i - \overline{X}_j$ represents the person-mean centering of the weekly predictors. y_i is the dependent variable and can be either calmness or enthusiasm.

Step 2:

$$M_i \sim N(\beta_{0j[i]} + \beta_{1j[i]}week_i + \beta_2(X_i - \overline{X}_j), \sigma_y^2),$$

$$for\ i = 1, \ldots, n\ Observations$$

$$\beta_{0i} \sim N(\gamma_{00} + \gamma_{01}\overline{X}_j, \sigma_{\beta_0}^2), \qquad for\ j = 1, \ldots, J\ Individuals$$

$$\beta_{1i} \sim N(\gamma_{10}, \sigma_{\beta_1}^2), \qquad for\ j = 1, \ldots, J\ Individuals$$

where M_i is work–nonwork conflict (not person-mean centered), and X_i and $\overline{X}_j$ refer to the same predictors as in Step 1.

Step 3:

$$y_i \sim N(\beta_{0j[i]} + \beta_{1j[i]}week_i + \beta_2(X_i - \overline{X}_j) + \beta_3(M_i - \overline{M}_j), \sigma_y^2),$$

$$for\ i = 1, \ldots, n\ Observations$$

$$\beta_{0i} \sim N(\gamma_{00} + \gamma_{01}\overline{X}_j + \gamma_{02}\overline{M}_j, \sigma_{\beta_0}^2), \quad for\ j = 1, \ldots, J\ Individuals$$

$$\beta_{1i} \sim N(\gamma_{10}, \sigma_{\beta_1}^2), \qquad for\ j = 1, \ldots, J\ Individuals$$

where M_i refers to the weekly mediators, $\overline{M}_j$ refers to the person means and $M_i - \overline{M}_j$ represents the person-mean centering of the mediator. The weekly person-mean centered work–nonwork conflict and the routine work–nonwork conflict were thus added to the model from Step 1.

We evaluated the significance of the mediated or indirect effect using the bootstrapping approach described by MacKinnon, Lockwood, and Williams (2004) to calculate confidence limits. Specifically we employed the "bias-corrected bootstrap" which adjusts the confidence intervals for bias in the central tendency of the estimate. For each of the hypothesized mediations we resampled with replacement for 10,000 iterations. Data analysis was performed using R 2.15.0 (R Development Core Team, 2012) and the nlme package (Pinheiro, Bates, DebRoy, Sarkar, & R Development Core Team, 2012). The models allowed for random slope effects and used an autoregressive covariance structure because preliminary analysis indicated they were necessary.

Results

Testing Hypothesis 1: The negative relationships between the transient and routine level of workload and well-being will be mediated by the transient and routine levels of work–nonwork interference.

In the first step of the analysis required to test Hypothesis 1—that there is a negative relationship between the level of workload and well-being—transient hours worked, transient demands, and routine demands had significant effects on both measures of well-being, but routine hours worked did not. However, transient hours worked was positively associated with both calmness ($\beta = 0.05$, $p < .05$) and enthusiasm ($\beta = 0.07$, $p < .01$), not negatively

as predicted (see Table 2). Transient demands ($\beta = -0.20$, $p < .001$ for calmness; $\beta = -0.07$, $p < .001$ for enthusiasm) and routine demands ($\beta = -0.37$, $p < .001$ for calmness; $\beta = 0.25$, $p < .05$ for enthusiasm) were as predicted.

The results for the controls were the same across the two well-being measures for gender, routine control, and routine support, all of which were nonsignificant. Transient control was significantly associated with calmness ($\beta = 0.06$, $p < .001$) but not enthusiasm, although transient support was significantly related to enthusiasm ($\beta = 0.08$, $p < .001$) but not calmness.

In the second stage of testing Hypothesis 1, we tested the effect of the workload measures on WINW and NWIW. Transient demands ($\beta = .32$, $p < .001$), routine demands ($\beta = .43$, $p < .001$) and transient hours worked ($\beta = .27$, $p < .001$) were significantly related to WINW, as was transient control ($\beta = -.08$, $p < .001$; see Table 3). Again routine hours worked was not significant. Similarly, transient demands ($\beta = .39$, $p < .001$) and routine demands ($\beta = .69$, $p < .001$) were significantly associated with NWIW, but neither measure of hours worked affected NWIW. Transient control ($\beta = .06$, $p < .05$) and routine support ($\beta = -.18$, $p < .05$) were also related to NWIW as was gender, as men experienced on average lower NWIW levels (see Table 3).

Adding the transient and routine WINW and NWIW to the well-being models to complete the third step of the analysis to Test Hypothesis 1 revealed that transient WINW ($\beta = -.06$, $p < .01$) and routine WINW ($\beta = -.27$, $p < .05$) had a significant effect on anxiety-calmness (see Table 4). Adding the mediators to the model resulted in a nonsignificant effect for routine demands ($\beta = -.26$, $p > .05$), indicating that a potential full mediation that entails one or both of transient and routine WINW can be responsible for this mediation. Transient demands and transient hours remained significant, but the estimates of the coefficients and their standard errors changed, suggesting partial mediation effects for calmness. Neither transient nor routine NWIW had an effect on either calmness or enthusiasm and, therefore, there was no mediation through NWIW. Similarly, neither transient nor routine WINW had a significant effect on enthusiasm and thus, neither mediated any of the predictors of this.

For calmness, the bootstrapping of the indirect effects corroborated that indeed demands were mediated by WINW (see Table 5). Specifically, there were negative indirect effects for transient demands through both transient WINW ($ab = -.02$, 95% CI [$-.04$, $-.003$]) and routine WINW ($ab = -.08$, 95% CI [$-.12$, $-.06$]; Figure 1, paths e + i and e + j), and similarly there were negative indirect effects for routine demands through transient WINW ($ab = -.03$, 95% CI [$-.05$, $-.003$]) and routine WINW ($ab = -.12$, 95% CI [$-.16$, $-.09$]; Figure 1, paths f + i and f + j).

For transient, but not routine, hours worked there were similarly significant indirect effects for the mediation pathway through transient WINW ($ab = -.02$, 95% CI [$-.03$, $-.001$]) and routine WINW ($ab = -.07$, 95% CI [$-.10$, $-.05$]) to calmness (Figure 1, paths a + i and a + j). The indirect effect was negative and thus, the effect of both transient and routine WINW was to reduce the positive association of hours with calmness. WINW operates as a counteracting force to the positive effect that high working hours might have on calmness.

Testing Hypothesis 2: Transient effects will be stronger than routine effects for the (a) direct effects of workload on well-being,

Table 2

Step 1: Effects of Transient and Routine Predictors on Calmness and Enthusiasm

	Calmness				Enthusiasm			
	B	*SE*	95% CI		**B**	*SE*	95% CI	
Fixed Effects								
Week	.01	.00	.00	.01	.00	.00	−.01	.01
Gender (Male)	.08	.17	−.27	.43	−.03	.19	−.41	.36
Transient hours worked	.05*	.02	.01	.09	.07**	.02	.03	.11
Transient demands	−.20***	.02	−.24	−.15	−.07***	.02	−.12	−.03
Transient control	.06***	.02	.03	.10	.01	.02	−.03	.05
Transient support	−.01	.02	−.05	.03	.08***	.02	.03	.12
Routine hours	.04	.08	−.12	.21	.04	.09	−.14	.23
Routine demands	−.37***	.08	−.54	−.20	−.25*	.09	−.44	−.06
Routine control	.01	.09	−.17	.18	.05	.10	−.14	.25
Routine support	.02	.09	−.15	.19	.11	.09	−.07	.30
Intercept	3.43***	.11	3.22	3.64	3.74	.11	3.53	3.96

		Estimate	95% CI			**Estimate**	95% CI	
Random Effects								
Intercept (*SD*)		.55	.41	.72		.57	.45	.72
Week (*SD*)		.01	.00	.04		.01	.00	.09
Residual (*SD*)		.58	.55	.61		.60	.57	.64
r (intercept and B for week)		−.35	−.78	.31		−.03	−.32	.26
Phi AR(1) correlation		.30	.22	.38		.25	.18	.32
Log Likelihood	−871.62				−925.88			

Note. N Observations = 959, N Individuals = 48.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3
Step 2: Effects of Transient and Routine Predictors on WINW and NWIW

	WINW				NWIW			
	B	*SE*	**95% CI**		**B**	*SE*	**95% CI**	
Fixed Effects								
Week	−.01	.00	−.02	.00	−.01*	.00	−.02	.00
Gender (Male)	−.20	.15	−.51	.11	−.44*	.18	−.80	−.08
Transient hours worked	.27**	.03	.22	.32	−.03	.03	−.09	.02
Transient demands	.32**	.03	.27	.38	.39**	.03	.33	.45
Transient control	−.08**	.02	−.13	−.04	.06*	.03	.01	.11
Transient support	.02	.03	−.03	.07	.01	.03	−.04	.06
Routine hours	.10	.07	−.04	.25	−.11	.09	−.28	.06
Routine demands	.43**	.07	.29	.58	.68**	.09	.50	.85
Routine control	−.08	.08	−.24	.08	.02	.09	−.16	.20
Routine support	−.14	.07	−.29	.01	−.18	.09	−.36	−.01
Intercept	2.36**	.10	2.15	2.56	2.49**	.12	2.25	2.73
	Estimate		**95% CI**		**Estimate**		**95% CI**	
Random Effects								
Intercept (*SD*)	.55		.41	.75	.65		.48	.87
Week (*SD*)	.02		.01	.03	.01		.00	.06
Residual (*SD*)	.69		.66	.72	.78		.74	.82
r (intercept and B for week)	−.62		−.84	−.20	−.94		−1.00	1.00
Phi AR(1) correlation	.12		.05	.20	.18		.11	.25
Log Likelihood	−1079.04				−1177.10			

Note. N Observations = 959, N Individuals = 48.
* $p < .05$. ** $p < .001$.

and (b) indirect effects of workload mediated by work–nonwork interference.

To test Hypothesis 2, we examined whether the transient direct and transient indirect effects overlapped with the routine direct and routine indirect confidence intervals. Since transient hours and transient demands but not routine hours and routine demands (routine demands was fully mediated) have a significant direct association with both calmness and enthusiasm, we can conclude that the first part of Hypothesis 2 was supported (see Table 5).

For the second part of the hypothesis we used the bootstrapped estimates of the indirect effects and the bias-corrected confidence intervals (MacKinnon et al., 2004). Routine hours worked was not mediated by any of the routine mediators so we can conclude that the transient indirect effect was stronger providing support for Hypothesis 2. However, the indirect effect of transient demands mediated through transient WINW on calmness (ab = −.02, 95% CI [−.03, −.004]; Figure 1, path e + i) had a smaller effect than routine demands mediated through routine WINW (ab = −.12, 95% CI [−.16, −.09]; Figure 1, path f + j). The effect size does not overlap with the confidence intervals, suggesting that this effect for demands was significant but in the opposite direction of what was hypothesized (see Table 5).

Testing Hypothesis 3: The mediating effect of WINW on the negative relationships between workload and well-being will be stronger than that of NWIW.

The third hypothesis was fully supported for calmness because NWIW did not mediate any effects of workload although WINW did. It both mediated the negative effect of work demands on calmness (Figure 1, paths e + i, e + j, f + i, and f + j), and the

positive one between work hours and calmness (Figure 1, paths a + i and a + j), when NWIW did not. Thus, no further testing was required.

Overall, there is some support for two of the hypotheses for calmness, but no support for any hypothesis for enthusiasm though there is a direct relationship between both workload measures and this. Considering only calmness, Hypothesis 1, that a negative workload−well-being relationship is mediated by work–nonwork interference, was only supported for the work demands−calmness relationship and it was only mediated by WINW but not by NWIW. Since the relationship between transient hours and calmness is positive, the hypothesis is not supported. Nonetheless, this relationship is mediated by WINW, and therefore, it has the effect of reducing the positive hours−calmness relationship. Thus, WINW acts as a counteracting force.

Hypothesis 2, that the direct and indirect effects of transient workloads will be stronger than their routine effects, was supported for the direct effects of hours and the indirect effects of hours worked on calmness through WINW. The results for demands, however, showed a significant effect but in the opposite direction to that hypothesized; that is, the indirect effect of routine demands mediated by WINW was stronger than the transient indirect effect on calmness. The indirect effects of NWIW were not significant for either measure of workload and thus, there was no support in this case.

Finally, Hypothesis 3, that the mediating effect of WINW is stronger than that of NWIW, was fully supported for calmness showing that the mediation pathways through WINW were stronger than the mediation through NWIW.

Table 4
Step 3: Effects of Transient and Routine Predictors and Mediators on Calmness and Enthusiasm

	Calmness				Enthusiasm			
	B	*SE*	95% CI		**B**	*SE*	95% CI	
Fixed Effects								
Week	.01	0	.00	.01	0	0	−.01	.01
Gender (Male)	.05	.18	−.31	.42	−.03	.2	−.44	.38
Transient hours worked	.07**	.02	.03	.11	.07**	.02	.02	.11
Transient demands	−.17***	.02	−.21	−.12	−.1***	.02	−.14	−.05
Transient control	.06**	.02	.02	.10	.01	.02	−.03	.05
Transient support	−.01	.02	−.05	.03	.08***	.02	.03	.12
Routine hours	.1	.09	−.08	.27	.1	.1	−.10	.30
Routine demands	−.26	.13	−.52	.00	−.2	.14	−.49	.09
Routine control	−.04	.09	−.21	.14	.02	.1	−.18	.22
Routine support	−.03	.09	−.20	.15	.1	.1	−.10	.29
Transient WINW	−.06**	.02	−.11	−.02	.01	.02	−.04	.06
Transient NWIW	−.02	.02	−.06	.02	.04	.02	.00	.08
Routine WINW	−.27*	.13	−.53	.00	−.25	.14	−.54	.04
Routine NWIW	.07	.14	−.22	.35	.13	.16	−.19	.45
Intercept	3.45***	.1	3.25	3.65	3.74***	.11	3.52	3.96

	Estimate	95% CI			**Estimate**	95% CI		
Random Effects								
Intercept (*SD*)		.50	.37	.69		.56	.42	.73
Week (*SD*)		.01	.00	.04		.01	.00	.13
Residual (*SD*)		.58	.54	.61		.60	.57	.64
r (intercept and B for week)		−.16	−.75	.57		.12	−.78	.86
Phi AR(1) correlation		.30	.23	.38		.25	.18	.32
Log Likelihood	−873.21				−930.25			

Note. N Observations = 959, N Individuals = 48.
* $p < .05.$ ** $p < .01.$ *** $p < .001.$

Discussion

The aim of the study was to test the importance of the routine and fluctuating elements of people's work demands and work–nonwork interference on their well-being. Insofar as traditional analysis of work–nonwork interference treats it as a stable outcome of demands, it is portrayed as an effect of persistent high demands. A complementary conception, as followed in this article, is that work–nonwork interference arises, at least in part, from the immediate demands of a job. In addition, to the extent that work–nonwork conflict contributes to well-being, there will be concomitant fluctuations in well-being. This article has tested this conception using data from a diary study of freelance or portfolio workers that has allowed us to identify transient fluctuations in demands, control, work–nonwork interference, and well-being. In portfolio working where demands are most likely to fluctuate from week to week, we would

especially anticipate that the experience of interference fluctuates from week to week.

Our study shows different relationships between routine and transient measures, hours worked, and workloads, and our two measures of worker well-being, calmness, and enthusiasm. This diversity justifies our emphasis on differentiating the norm from fluctuating elements of people's lives, our inclusion of two types of workload, and treating well-being as multidimensional.

In terms of our central concerns, the differentiation between routine and fluctuating factors, the results for work demands show that both are important in explaining calmness and equally both are important in the mediating role of work–nonwork interference. The routine demands have a stronger effect than do transient demands on both routine and transient WINW, the latter effect implying that at high levels of demand people are less able to cope on a daily or weekly basis.

Table 5
Indirect Effects and Bootstrapped Bias Corrected Confidence Intervals for Calmness

Predictor	Mediator	Effect	95% CI
Transient hours	Transient WINW	−0.017	−0.034, −0.001
Transient hours	Routine WINW	−0.072	−0.101, −0.049
Transient demands	Transient WINW	−0.020	−0.041, −0.003
Transient demands	Routine WINW	−0.087	−0.124, −0.061
Routine demands	Transient WINW	−0.027	−0.053, −0.003
Routine demands	Routine WINW	−0.116	−0.162, −0.086

However, in the case of work hours, only transient hours and transient WINW contribute to calmness. This implies that people's lives are organized in the light of their customary levels of hours. Moreover, the relationship between hours and calmness that is being mediated is positive and not as predicted or equivalent to that for job demands. This first result that deviated from expectations—the positive effect on well-being of increasing transient working hours that deviate from the routine—we suggest reflects a reduction in the anxieties associated with the supply of work and a feeling of calm that the person has a more than usual workload. Nonetheless the mediating effect of WINW on calmness is as expected, negative, and it could be so strong in some cases as to tip the person into a state of high anxiety.

The second result that diverges from expectations is that the relationship between enthusiasm and both hours and workload are not mediated by WINW. They are independently related to enthusiasm. Through investigating both calmness and enthusiasm, we have demonstrated that the mediating role of work–nonwork interference varies between them. That it mediates the calmness relationships but not the enthusiasm one suggests that the effect of WINW on recovery from work results in energy depletions that are expressed more in fears about not completing work or work creating nonwork problems rather than feelings of loss, for example of job satisfaction or pleasures outside of work.

The third result that is not consistent with our expectations, as expressed in Hypothesis 2 is that the mediation pathway for demands was stronger through routine WINW rather than transient WINW. This suggests that consistently high demands can have an accumulating effect on routine levels of WINW. The fact that the same was not true for hours suggests that people may be able to organize their lives coherently around even high routine work hours. In contrast, people may be less able to cope with high routine demands, which thus results in routine WINW.

The stronger results involving WINW compared with those for NWIW for calmness are consistent with the matching theory that WINW will have a bigger effect on general or work-related outcomes. They also add support to the recent conclusions that the research results tend to support this theory rather than the alternative cross-domain theory (Amstad et al., 2011).

The mediating effects of WINW on the relationships between transient demands and hours and calmness are partial and thus, direct effects also exist. We may conjecture that this means that unusual hours or demands necessitate some juggling around of activities and this impacts on well-being without knocking on to WINW (Williams, Suls, Alliger, Learner, & Wan, 1991). Alternatively or in addition, they may be associated with missing deadlines or producing work that is not as good as the person would have liked or even the client anticipated, and this increases anxiety or displeasure.

Overall, the study chimes with the calls for more temporal analysis of the work–nonwork interface which acknowledges fluctuations in work–nonwork interference (Grzywacz & Butler, 2008) and with the more general pleas for more intraindividual analysis in occupational and health psychology (Ilies, Schwind, & Heller, 2007a; Ilies, Schwind, Wagner, Johnson, DeRue, & Ilgen, 2007b). In common with other studies, WINW has been shown to negatively mediate the relationships between calmness and work hours or demands. But in exploring two types of workload, both direc-

tions of work–nonwork interference and two dimensions of well-being, we have shown that the picture, at least in our sample of freelance workers, is more nuanced than the simple thesis that work–nonwork-interference mediates the relationship between workload and well-being.

The significance of the research is, first, that it illustrates the advantages of our approach that differentiates the habitual level of work characteristics from transient variations because they both have an effect on work–nonwork interference. The traditional study will be conflating transient and routine work–nonwork interference and this could lead to misleading results if the two cancel each other out. Two individuals with the same average level of work–nonwork interference may have very different levels of week-by-week fluctuations. Given that we have found an independent effect for transient work–nonwork interference, not distinguishing between the two could thus underestimate the role of work–nonwork interference in explaining variability in well-being.

The results for hours further highlight the importance of differentiating transient from routine levels as the former has a stronger relationship with anxiety−calmness than the latter. Moreover, there was a mediated relationship between work hours and calmness when considering fluctuations in work hours over time, but not when comparing the routine work hours of different individuals. This divergence of the relationships involving routine and transient hours and calmness, and the counteracting effect of WINW on the positive nature of the routine hours−calmness, illustrates particularly well the conflict between work and nonwork.

Demonstrating such divergences between the effects of routine and fluctuating factors has been facilitated by the longitudinal design, which is a major strength of the study. Cross-sectional studies are conflating the routine and the fluctuating components of work characteristics, so it is not clear how each affects well-being.

The divergence between the results between job demands and hours illustrates a second strength of our study: we included multiple measures of workload. Related to this, the self-reported nature of both workload measures means that we have measured these concepts at the correct perceptual level for our theoretical arguments (this applies also to controls and supports).

The lack of any population statistics for portfolio working means we are unable to assess the representativeness of our convenience sample. While the variety of methods used to acquire this reduces the confidence that we might have in their representativeness, the net we cast to gain a sample did not restrict the occupations. Yet, given the broad similarity in the results at least for calmness to previous mediation studies, we can have some confidence in the results extending to other workers.

There are no strong grounds for suspecting that the central innovation that fluctuations from people's norm is important for understanding well-being will not extend to groups with less fluctuations. Indeed if anything we might suspect that those experiencing fewer fluctuations may be less used to these than are freelancers and thus, such variations may have more effects. However, the self-employment, variety of clients, type of work, and degree of homeworking that distinguishes freelancers from others may have some effect. The precarious nature of being self-

employed may particularly contribute to the positive relationship between hours and well-being.

A limitation of the study may be that the number of scale items was in certain cases small because the diary method necessitated using shorter scales. Responses to the single-item measures of work–nonwork interference measures were not, however, so strongly correlated to suggest that respondents could not readily differentiate between them. Thus, if they were measured with multiple items there was no guarantee their reliability would be improved.

Finally, common method bias is a danger in survey studies but the low autoregressive correlation coefficients suggest that this danger is slight. There are indeed dangers in exaggerating common method bias (Conway & Lance, 2010; Spector, 2006) and, although not a panacea, the use of validated (albeit in this case truncated) versions of scales and even the longitudinal design of our study may have helped to reduce it.

Future research is naturally required to substantiate these results in samples of both standard workers and other nonstandard workers. The methodology used has shown the value of the combined transient (intraindividual) and routine (interindividual) approach to work–nonwork interference and well-being. Future studies might ask additional questions on how work–nonwork interference affects well-being—is it mainly through having to forsake some activities, or doing some or all suboptimally or unsatisfactorily, or resolving conflicts in favor of one or other of work or nonwork that creates the tension? Similarly, are there certain kinds of demands or processes of intensification of these that affect work–nonwork interference? Initially such questions might benefit from exploration through research of a more qualitative nature.

Other areas that further research might delve more deeply into are (a) the positive relationship between transient hours and well-being, and particularly whether it only extends to other occupational groups where income is heavily dependent on the level of work or time worked; (b) the performance effects of reductions in well-being consequent on excessive workloads and whether the effects of anxiety differ from those of depression; and (c) whether the degree to which people segment their work from their family and other nonwork lives affects the relationships we have observed.

Conclusion

The study demonstrates that both the routine and fluctuating nature of workloads are important for understanding the well-being of at least freelance workers. It has reinforced the argument following effort−recovery theory that work–nonwork interference plays a mediating role in the workload−well-being relationship, although showing that the nature of this mediation varies between types of well-being and in the case of hours worked between the routine and nonroutine. The divergent results between calmness and enthusiasm should be taken on board when designing future studies in the work–nonwork area.

In addition to contributing to the study of work–nonwork interference and well-being, our research adds to our knowledge of portfolio workers. The results reinforce the sense that Handy (1995) is portraying a Utopian conflict-free model because, in

practice, transient fluctuations in work demands are likely to occur and have spillover effects on nonwork and well-being.

The policy implications of the results, assuming they are generalizable to other groups, are to reinforce the current importance being given to work–nonwork interference in occupational discourse, while pointing to the central role of managing job demands for minimizing interference. Avoiding work–nonwork conflict may be important for well-being and our research highlights that the place to start in addressing this remains the work demands made on people. Moreover, even if long hours do not have detrimental effects or even have beneficial effects on well-being, the effects they have on work–nonwork interference should not be ignored. The fact that there are differential effects for transient and routine demands has implications for the type of support needed for individuals or the interventions designed to improve individual well-being through reducing work–nonwork interference. Potentially different approaches could be required for reducing either routine levels of demands or minimizing fluctuations of the demands and buffering the effects of each. If the results are generalizable to standard workers, they suggest that managements, when designing personnel policies, should be more mindful than they perhaps have been of differentiating temporary from more permanent needs.

For workers, or at least freelance workers, the results imply that their well-being depends on the routine level of WINW, as determined by routine job demands, and in addition is adversely affected by unusual highs in these. In the case of hours of work, it depends more on the extent to which they can buffer the effect of fluctuating hours on conflicts resulting from WINW. If freelancers wish to minimize such conflict, then managing the demands placed on them and hours they work is where they should concentrate and not simply rely on increasing their autonomy or the support they get from others. The salutary lesson—indeed that some of the participants in our study recounted to us—is that getting away from the constraints and politics of organizations that freelance working facilitates is not the panacea for a happy working life that it is often thought to be.

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Appendix

Summary of Studies Testing Work–Nonwork Interference as a Mediator of Workload–Well-Being Relationship

Author(s)	Sample	Potential mediator(s)	Significant mediated relationship(s) (partial unless stated)	Unsupported mediated relationship(s)
Bacharach et al. (1991)	Public sector, professional engineers and nurses in USA	Work–home conflict	Role overload–burnout and satisfaction Role conflict–burnout and satisfaction	
Frone et al. (1992)	Random regional (New York State) household sample in USA	Work–family conflict Family–work conflict	(a) Work stressors–work distress (b) Work stressors–depression by a path of family–work conflict and work–family conflict	Work stressors–nondomain depression by work–family conflict and family–work conflict
Parasuraman, Purohit, & Godshalk (1996)	Self-employed entrepreneurs in USA	Work–family conflict Family–work conflict	Work–role overload and time commitment to work and general life satisfaction	Relationships with family satisfaction or career success not mediated by work–family conflict No relationships mediated by family–work conflict
Stephens, Franks, & Atziena (1997)	US women combining elder (parent) care with paid work	Bi-directional spillover between care and work roles	Stress in both roles—depression mediated by negative spillover	
Vinokur, Pierce, & Buck (1999)	Representative stratified sample of 526 U.S. Air Force women	Work–family conflict Family–work conflict	Family stress–depression mediated by family–work conflict.	Relationships involving family or work involvement, and job stress and depression
Geurts et al. (2003)	Three samples in the Netherlands: medical residents, child care workers and bus company workers	Work–home interference	Workload–depression (fully) Workload–health complaints (fully) Workload–work-related negative affect (partially)	
Janssen, Peeters, De Jonge, Houkes, & Trummers (2004)	Nurses in the Netherlands	Work–home interference	Job demands and exhaustion	
Choi (2008)	239 Chinese employees in the Beijing area	Work–family conflict Family–work conflict	Work–family conflict Family–work conflict	
Hall, Dollard, Tuckey, Winefield, & Thompson (2010)	257 frontline police officers in Victoria, Australia	Work–family conflict	Work–family conflict mediated job demands–emotional exhaustion relationship	