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Exploring types of interference between work and non-work: using a diary study approach

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Studies of work and family issues have used predominately between-subject cross-sectional designs. While some researchers have called for more longitudinal studies, others have suggested that a more strategic way forward for the field is the use of daily diary studies (Frone, Russell, & Cooper, 1992). This study explores different types of interference between work and non-work domains, using a diary study methodology. This study consisted of a two-week diary study among 12 Irish employees. Analysis involved a two-step procedure involving both content analysis and interpretative phenomenological analysis (IPA). Results indicated that while individuals reported strain-based and time-based interference, evidence was also found of interference concerning persistent and intrusive thoughts. Despite some limitations to the study, this paper demonstrates that diary studies represent an opportunity for researchers to explore work and non-work experiences in a sensitive and ecologically valid way.

Keywords: diary study; work–family interference; family–work interference; interpretative phenomenological analysis

Estudios sobre temas relacionados con el trabajo y la familia han utilizado principalmente diseños de investigación cross-seccionales y entre-sujetos. Mientras que algunos investigadores han solicitado más estudios longitudinales, otros han sugerido que una manera más estratégica de avance científico en este ámbito es el uso de estudios de diario (Frone, Russell, y Cooper, 1992). Este estudio explora los diferentes tipos de interferencias entre los dominios de trabajo y no trabajo, utilizando una metodología de estudio de diario, que se llevó a cabo durante dos semanas con una muestra de doce empleados irlandeses. Los análisis de datos se llevaron a cabo con un procedimiento de dos pasos, análisis de contenido y análisis fenomenológico interpretativo. Los resultados indicaron que los participantes mostraron interferencia basada en estrés y en el tiempo, aunque también hubo evidencia respecto a pensamientos persistentes e intrusivos. A pesar de algunas limitaciones del estudio, este trabajo demuestra que el estudio de diario representa una oportunidad para los investigadores de explorar las experiencias de trabajo y no trabajo de forma ecológicamente sensible y válida.

Palabras claves: estudio de diario; interferencia familia–trabajo; interferencia trabajo–familia; análisis fenomenológico interpretativo

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Exploring types of interference between work and non-work: using a diary study approach

Reconciling work and family life has become an increasingly important issue for European countries. Indeed, the EU social policy agenda (European Commission, 2000) and EU employment guidelines (Fagan, 2004) have included the compatibility of work and family life as a central policy issue. Changes in family structures, increasing participation by women in the workforce, and technological changes, such as the use of mobile phones and portable computers (Chesley, 2005; Rakow & Navarro, 1993; Sproull, 2000) that enable job tasks to be performed in a variety of locations have blurred the boundaries between work and family/personal life. For many workers, this has created the potential for interference or conflict to occur between their work and non-work lives (Hill, Miller, Weiner, & Colihan, 1998). Work–home interference (WHI) and home–work interference (HWI) are experienced when pressures from the work and family roles are mutually incompatible, such that participation in one role makes it difficult to participate in the other (Greenhaus & Beutell, 1985). Moreover, the importance of such interference is highlighted by community-based studies that indicate that higher levels of both WHI and HWI are associated with clinically significant mental health problems (Frone, 2000).

On the one hand, a large amount of literature attests to the fact that WHI/HWI interference has been studied extensively (see the meta-analysis of Allen, Herst, Bruck, & Sutton, 2000 for a comprehensive review). Indeed, the positive spillover that can occur between work and family has also been studied (Grzywacz & Marks, 2000). However, on the other hand, both occupational stress researchers (Jex & Beehr, 1991) as well as researchers of work and family issues have used predominately between-subject cross-sectional designs (Geurts & Demerouti, 2003). While some researchers have called for the need for more longitudinal studies, others have suggested that a more strategic way forward for the work and family area is the use of daily diary studies (Frone, Russell, & Cooper, 1992; Jones & Fletcher, 1996). Eby, Casper, Lockwood, Bordeaux, and Brinley (2005), in a content analysis of work and family research from 1980 to 2002, conclude that little attention has been placed on developing or testing theoretical models, and identify that the limited number of exploratory studies has hampered model development.

Daily diaries and work–family research

Previous research using a time diary methodology (Barling & MacEwen, 1992; MacEwen & Barling, 1997; Van Hooff, Geurts, Kompier, & Taris, 2006; Van Gelderen, Heuven, Van Veldhoven, Zeelenberg, & Croon, 2007; Williams, Suls, Alliger, Learner, & Wan, 1991) has shown that there is a variation in inter-role conflict on a daily basis, both from work interfering with family and family interfering with work. Such research encourages the idea that daily studies of inter-role conflict may provide a closer approximation to reality than cross-sectional or longitudinal studies. It is not difficult to imagine how work may interfere with non-work on a daily basis. For example, a sick child may interfere with a parent's business meeting on one day, but not on the next day when the child is better. Additionally, the need to work overtime to finish a project might cause an employee to miss a family activity on a particular day. Daily diary studies provide us with a tool to

capture the dynamic nature of both WHI and HWI. Such data are difficult to capture in more traditional questionnaire studies, where most of the time the prevalence of HWI is lower than WHI (Geurts & Demerouti, 2003). For example, Sonnentag (2001) used a diary methodology to show that leisure activities and a low stress work situation contribute independently to an individual's well-being. The diary approach allowed Sonnentag (2001) to reduce problems associated with retrospective bias and dynamically examine the systematic variation contributed by both work and leisure. Additionally, Van Hooff et al. (2006) in their five-day diary study of academics, found that a global measure of WHI was not related to daily activity patterns within the work domain as such (i.e., time spent daily on [effortful] work activities), but was related to activities carried out at the intersection between work and home. Diary studies can provide a more nuanced view of the intersection in comparison with global measures. Therefore, a diary study approach represents a useful way to examine the time lags associated with work and family processes.

The research questions

Four substantial research questions are addressed using a diary study. The next section will present the rationale behind each of the four research questions.

The first question relates to the variation of WHI/HWI over a specified period. A within-subjects approach, such as daily diaries, allows researchers to examine the prevalence and pattern of specific episodes of interference for both the same and subsequent days. Therefore, this provides an opportunity to assess work and family issues in a dynamic framework.

Research Question One: How does WHI/HWI vary over a two-week period?

The second research question focuses on the different types of interference reported by individuals. The idea of spillover between the work and non-work domains is rooted in role theory (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1965), which defines WHI as a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect. Following from this, Greenhaus and Beutell (1985) distinguish between three types of WHI:

1. Time-based conflict, referring to time pressures from one domain (associated with fulfilment of one role) that make it physically impossible to meet demands from the other domain, or produce a preoccupation with one role even when one is physically attempting to meet the demands of another role.
2. Strain-based conflict, referring to strain (e.g., tension, anxiety, fatigue, depression, irritability) created by the participation in one domain (role) that makes it difficult to comply with the demands from the other domain (role). An example of this type of conflict is when fatigue built up during working hours spills over to the family domain and drains one's energy resources for family activities.
3. Behaviour-based conflict, referring to specific patterns of role behaviour that are incompatible with expectations regarding behaviour in another role. An example of this is when one has difficulty in combining a professional, rational business-like attitude at work with a personal, more open and sensitive attitude at home.

In general, evidence has been found to support this tripartite classification (e.g., Carlson, Dacmar, & Williams, 2000; Stephens & Sommer, 1996), but the difficulties in the operationalization of behaviour-based conflict has meant that little empirical evidence has been found to support it (Geurts & Demerouti, 2003). Assessing work and non-work interactions over a two-week period facilitates an analysis of the ways that work interferes with home (and vice versa) and charts the prevalence of the different types of work–home interference.

> *Research Question Two: What types of interference do people experience in a two-week period?*

The third area of focus concerns the nature of positive enrichment and negative interference. The most recent literature in the WHI field has suggested that WHI/ HWI can also be positive (Grzywacz & Marks, 2000), so in this study participants will rate the occurrences of both positive enrichment and negative interference. In addition, the prevalence of positive and negative words used when talking about WHI and HWI is analysed using a text-based analysis program Linguistic Inquiry and Word Count (LIWC) (Pennebaker, Francis, & Booth, 2001). Previous research using LIWC (Montgomery, Panagopolou, Peeters, & Schaufeli, 2005) has indicated that individuals tend to use more negative emotion words when talking about their work in comparison with their home life.

> *Research Question Three: Does interference tend to be mostly negative or is enrichment also evident in diary reports?*

The final area of examination concerns the meaning that individuals attribute to the nexus between the work and non-work domains. In terms of understanding the intersection between the work and home role, Greenhaus (1988) suggests that we need to examine relationships between the characteristics of a job and the permeability of the boundary between the job and an employee's non-work life. The idea that work and home can best be conceptualized as interdependent domains with interdependent borders has been noted (Clark, 2000; Nippert-Eng, 1996). For example, Clark (2000) introduces the idea of work/family border theory, which suggests that individuals are daily border-crossers between the domains of work and home, managing and negotiating the work and non-work spheres and the borders between them to attain balance. In addition, Nippert-Eng (1996) explored the way that people negotiated between their work and home boundaries, and suggested that there is a continuum between 'integration' and 'segregation' of work and home domains. For example, an integration-style person makes little or no distinction between what belongs to home and what belongs to work, while a segregation-style person is typified by the treatment of home and work as two distinct domains. This suggests that the way individuals construct meaning about the work and non-work domains can have varied implications. Indeed, Simon (1995) found that the meanings individuals attached to role identities had implications for their mental health. In this regard, a good place to start to understand meaning is to try to identify how individuals construct the meaning of work and family/home life.

> *Research Question Four: How do people construe their work and home domains?*

The purpose of the present research is to qualitatively examine the different types of interference that individuals report regarding the ways that work and non-work

domains impact upon each other. A daily diary will provide a profile of the daily occurrence of work and non-work interference, including whether work is present at the weekend.

Method

Participants and procedures

The study sample consists of Irish employees attending extra-mural education classes. The participants were employed in a variety of occupations such as teaching, farming, and sales. The recommendations of Bolger, Davis, and Rafaeli (2003) were taken into account when designing the diaries. As such, (1) diaries were designed to be portable and pocket size, (2) the diary format was pilot tested, (3) ongoing contact with participants was maintained, in a personal yet non-intrusive manner, and (4) the difficulty in filling out diaries was communicated to participants and individuals were prompted to exclude their diary if they believed that they had not filled it in adequately.

A total of 30 individuals were invited to take part in the study, and 17 diaries were returned at the end of the study period. Five diaries were excluded due to their partially completed status. In total, 12 diaries were judged to be usable for the purposes of the research. The sample consisted of 10 women and 2 men, the mean age of the sample was 37 (SD = 6, range = 29–49) and 8 participants (7 of whom were women) had children. On average, participants worked 35 hours per week (SD = 21, range = 21–60) and 8 participants, all women, had working partners. No participants worked formally at the weekend.

Individuals were given a small diary to fill in over a two-week period (10 working days and two weekends). The instructions encouraged the individuals to fill in the diary at the end of each day, and Sunday evening at the weekend. For each particular day, the individuals were presented with the following instructions:

> *Thinking back on today, please describe the ways in which your work was present in your life outside of work (page one)*

> *Thinking back on today, please describe the ways in which your personal/family life was present in your work (page two)*

At the end of each page, participants had to rate the level of interference experienced using a single item (Jones & Fletcher, 1996). For page one: Thinking back on this day, how would you rate the effect that your work is having on your personal/family life?, and for page two: Thinking back on this day, how would you rate the effect that your personal/family life is having on your job? In both cases a seven-point scale was used (1 = very negative, 4 = neither negative nor positive, 7 = very positive).

Analysis strategy

The analysis of the data follows a two-step approach: (1) firstly, the texts are content analysed and thematic/text analysis is employed, where appropriate, to elucidate the differences in categories identified, (2) secondly, the texts are analysed using the methodology of interpretative phenomenological analysis (IPA). Content analysis is

used to address the first three questions and IPA will be used to address the fourth hypothesis.

Step one: content analysis

Each text was analysed according to sentences referring to identifiable 'incidents' of: (1) work to personal/family life interference or WHI, (2) personal/family life to work interference or HWI. Furthermore, each incident was categorized according to strain-based, time-based, and behaviour-based types of interference (MacDermid, 2000). All categories were agreed between the first and second author with a mean inter-rater reliability of 0.82. *Post hoc* analysis was used to identify other types of interference, using the approach suggested by Polkinghorne (1994) regarding the cycles of data collection and accommodation to theory. In addition, the amount of positive and negative words used was analysed. Our methodological approach to categorizing positive and negative words was based on an approach use by Montgomery et al. (2005) concerning the socio-linguistic profile of work and non-work.

Step two: interpretative phenomenological analysis (IPA)

The aim of IPA is to explore in detail the participant's view of the topic under investigation (individual level) and to facilitate the identification of shared experiences (group level). The present research follows the methodology recommended by Smith, Jarman, and Osborn (1999), and the steps are as follows: (1) the script is read through a number of times, with initial thoughts and possible codes/themes noted down, (2) once clusters of themes have been produced for the first interview/text, the coding process is repeated for each interview in turn, (3) clusters of themes from all texts are gathered together to identify general themes, (4) once these broader themes have been identified, researchers go back to the text to gather data to verify that there was evidence for these themes, (5) these broader themes are then examined to see whether they can be grouped together in a meaningful way, (6) codes are rechecked and assigned numerical codes for ease of analysis and grouping, (7) it is then possible to move from text to diagrams in order to capture emergent themes. This process is continued in an iterative fashion until the researcher reaches a point of saturation.

The small sample used in this study is the norm in IPA as the analysis of large data-sets may result in the loss of 'potentially subtle inflections of meaning' (Collins & Nicolson, 2002, p. 626). The use of diary studies and IPA permit an in-depth longitudinal picture of participants.

Results and discussion

Research Question One: How does WHI/HWI vary over a two-week period?

It is useful to begin the analysis by providing examples of what types of WHI and HWI the participants reported.

> WHI, male, time 20:30: *Customer called to my house to discuss sales (a real b******) while I was having my tea. If I'd known who it was I wouldn't have opened the door.*
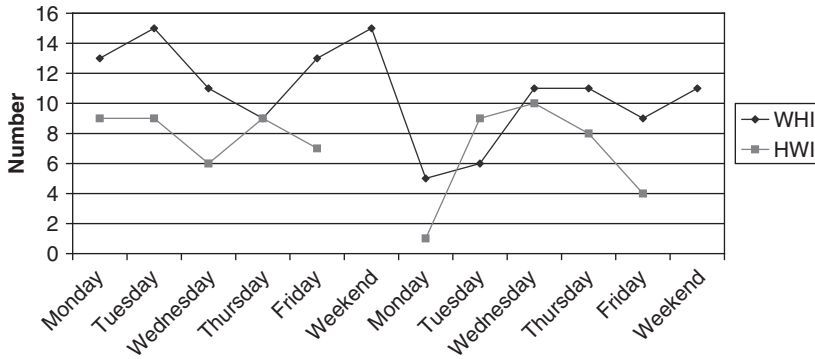
Figure 1.   Total number of WHI and HWI incidents reported over a two-week period.

> HWI, female, time 12:45: *My daughter came to the office to discuss money just before lunch, I was very busy and it wasn't very convenient.*

Figure 1 presents the total number of WHI/HWI incidents reported per day over two weeks, and Figure 2 presents the total number of incidents reported by each respondent. Analysis of Figures 1 and 2 indicates the variation of the WHI/HWI both over the two-week period and for each individual. In contrast to empirical research that traditionally finds WHI as more prevalent than HWI (e.g., Frone et al., 1992; Kinnunen & Mauno, 1998), there is a considerable degree of individual variation concerning the prevalence of WHI/HWI. In addition, Figure 1 indicates that WHI moves towards a 'spike' at each weekend. This unexpected result may reflect two processes; firstly, it may reflect that participants are under much pressure as work is still intruding even when they are not supposed to be working, or secondly, it could mean that their perception of interference is raised at the weekend (such that a small amount of interference is perceived as a much greater imposition) because expectations are different due to expectations that weekends should be free from work. The fact that participants also reported persistent and intrusive thoughts may suggest that this spike may reflect their inability to successfully recover from work.
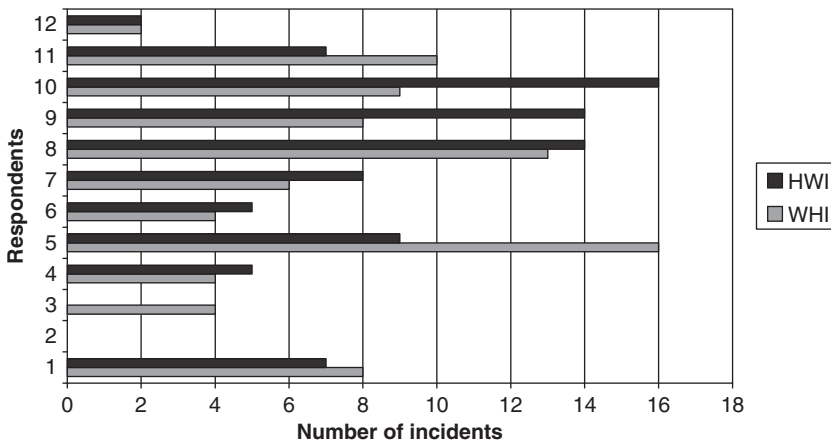

Figure 2.   Total number of WHI/HWI incidents reported by participants.

Research on the topic of recovery from work indicates that the effects of the workday can inhibit an individual's ability to switch off from work and ultimately influence their ability to recover successfully from work (Sonnentag, 2001; Sonnentag, Binnewies, & Mojza, 2008; Sonnentag & Zijlstra, 2006).

Figure 2 is interesting in that it provides a varied picture of the ratio of WHI and HWI. For example, WHI and HWI can be experienced at similar levels (e.g., participant 12), or WHI can dominate (e.g., participants 3 and 5) or HWI can dominate (participants 9 and 10), or interestingly neither forms of interference are reported (e.g., participant 2).

Research Question Two: What types of interference do people actually suffer from?

Evidence was found to support the three types of interference outlined in the literature (strain-based, time-based, and behaviour-based). Within the category of WHI the breakdown was as follows: strain-based = 66%, time-based = 29%, behaviour-based = 5%. Within the category of HWI, the breakdown was as follows: strain-based = 43%, time-based = 51%, behaviour-based = 6%. For both categories of WHI and HWI time-based and strain-based interference dominated. The lack of evidence concerning behaviour-based is consistent with the view of Geurts and Demerouti (2003) that difficulties in the operationalization of behaviour-based conflict has meant that little empirical evidence has been found to support it. The large categories concerning strain- and time-based illuminate for us the frequency of such interference, but not the impact. Indeed, the results from Figures 1 and 2 indicate that WHI/HWI vary both across time and within individuals. These results taken together show that averaging measures of WHI/HWI can potentially miss out on within-person variation.

However, two other types of interference were also identified: intrusive thoughts and persistent sources of interference. In terms of a definition, *intrusive thoughts* were defined as referring to unwanted thoughts, ideas, or images disrupting present functioning. *Persistent sources of interference* were defined as referring to the same (interfering) incident appearing on more than one occasion.

Examples of intrusive thoughts included the following:

Woman, 12:30: *Teacher's brother was beaten up last night. Very distracted by this event. Talked about it at work quite a bit. Extremely distressing.*

Man: *My wife is mad at me for no apparent reason and although I was busy all day at work it kept nagging and popping into my mind, and causing me to be distracted all day.*

Woman: *Work entered my thoughts a lot today as I have an interview. I was weighing up what it meant to me.*

Examples of persistent events included the following: (a) Male: mentioned on four days that he was anxious while at home about an upcoming meeting; (b) Female: missed three separate social appointments due to work; (c) Male: reported conducting business deals (either on the phone or in person) while at home on nine days.

Intrusive thoughts are a symptom of inhibited cognitive processing strongly associated with physiological arousal and long-term psychosomatic complaints (Pennebaker & Francis, 1996; Tait & Silver, 1989). The existence of persistent

interfering thoughts is in agreement with research concerning 'carryover' effects from one day to the next (Totterdell, Spelten, Smith, Barton, & Folkard, 1995). In conclusion, the frequency (persistence) and intensity (intrusive) of WHI and HWI is important and needs to be evaluated in future research.

Research Question Three: Is interference mostly positive or negative?

On average, 45% of WHI incident-days were rated as negative compared with 11% of HWI incident-days. Concurrently, analysis of emotional words used indicated that WHI was associated with 3 times more negative emotional words than HWI. Therefore, it appears that WHI tends to be experienced as more negative than HWI, and WHI is more strongly connected to negative emotional words.

Research Question Four: How do people construct their work and home domains?

The following analysis represents the individual and group themes identified using IPA.

Interruption and boundary crossing

Analyses revealed that work and non-work incidents could invade between boundaries and interrupt. This phenomenon was observed throughout the text of the diaries. For example, one participant (woman, in her 40s with no children) reported how unexpected work demands can cause significant disruptions:

> *Phone call from work to say they want me in early to view video evidence of events last night. Not coinciding with my plans.*

Throughout the text, the participant reveals how her life is characterized by the need to acknowledge the different aspects of her work life, which are also present in her local community. Indeed, the text indicates the way that boundaries will most probably always be crossed due to the continuous opportunity to meet her work colleagues in her life outside of work.

Equally, another participant (woman) reports repeated examples of such interruptions:

> *I was at work in the playschool when a mother of my daughter's friend came with some distressing news about my daughter. I was totally preoccupied for the rest of the morning and unable to concentrate on my work. Extremely distressing.*

And

> *My daughter rang me to say that I was needed at work for the afternoon; I had to cancel my dentist's appointment.*

For this individual interruptions came from both domains:

> *I was at home when I got a phone call to go to work on Sunday. I had to rearrange the whole day from a babysitter to arranging dinner and also cancel plans made for that day.*

Interestingly, this individual makes a strong effort to adapt to the constant stream of interruptions by actively mixing the two roles (i.e., mother and choir member), but is thwarted by the demands of the different roles:

> *My son's first Holy Communion. I was expected to play for the choir but I wanted to sit next to my son as a family, which I did, the choir were not happy. Distressing.*

This incident illuminates the way in which group attitudes concerning appropriate role behaviour can actively construct group norms and lead to role inflexibility for an individual.

Successive work interruptions can have a compound effect as illustrated by a man in his 30s, who had a wife and a young baby. Examples included:

> *While having lunch at home, my mobile rang and I spent 10 minutes talking to a client.*

> *Client called my mobile at 9pm to discuss a sale I'm handling for him. Had to pull over to talk to him while my wife and child were in the car.*

> *Was having a drink in a hotel Saturday evening. Client rang to discuss the sale of his property. Do these people think I never take a break?*

For this individual, technology in the form of a mobile phone was causing his boundaries to be more fluid than he wanted. This is consistent with research that has found that the more forms of technology people use to communicate between the home and work domain, the greater WHI they experience (Batt & Valcour, 2003). The result of this constant interruption may be linked to the perception of his parental duties as being an unwanted demand:

> *Had to collect my daughter from Montessori school and drop her to child minder [a daily chore]. Have to keep eye on time in case I'm late for her.*

These three stories were representative of similar interruptions experienced by the other participants. A full reading of the texts of the diaries reveals the ways in which these 'small bumps' can allow boundaries to be constantly crossed and represent the cumulative impact of WHI/HWI on well-being.

Boundary (Ashforth, Kreiner, & Fugate, 2000) and border theory (Clark, 2000) specify that a person's role takes place within a specific domain of life, and that these domains are separated by borders that may be physical, temporal, or psychological. Accordingly, the flexibility and permeability of those boundaries between people's work and family lives will affect the level of integration, ease of transition, and level of interference between the domains. The reports of the participants indicate that permeability, or the degree to which elements from other domains may enter (Clark, 2000), was a key issue throughout their lives. As in the diary study of Van Hooff et al. (2006), we found that a global measure of WHI was related to activities carried out at the intersection between work and home.

Women communicating across the work/non-work nexus

Communication and negotiation are an inherent part of coping with the work and non-work nexus, but their importance is under-represented in the work–family literature. Repetitive readings of the diary texts revealed that women were constantly communicating about the spillover from work to non-work (and vice versa).

No evidence of such communication was found in any of the diaries written by men, although it is important to note that we only had two men in the sample.

Examples found in the individual texts include:

Woman, with two children: There was a problem at work, and I was not able to contact my boss (not even after three days). It put me into a bad mood. Afterwards, I was contacted by him and I relaxed.

Woman: Talked about weekend plans with colleagues. Talked about work with husband … Explained to son about being delayed at work. Distressing. Explained to other children about delay in school, distressing.

Woman, with two children: Talking with a colleague at work about personal life outside of work … Talking on the phone with a friend regarding work … Talked to sister regarding work.

Woman, with a young baby: Had a heated debate with couple at party re work and conditions. Again discussed work at party … Told husband of two girls who because I praised them are choosing my subject.

Woman, single with no children: Farming with my dad, we discussed several areas of my house plan. Annoyed me as I have alternative plans.

Although we cannot report gender differences per se, given the nature of our sample we can nevertheless reflect on the experiences of these women from the perspective of gender. The finding that communication needs were salient among the women in the sample may reflect their feelings of obligation to be available to meet the demands of the family and home (Barnett & Baruch, 1985). Traditionally, the work–family literature has found no significant gender differences between reported levels of WHI and HWI (Geurts & Demerouti, 2003), but the present texts suggest that women are inclined to feel guilt or inadequacy in trying to fulfil an idealized version of motherhood. The present findings are consistent with a study by Guendouzi (2006), who examined the conversations of working women and found that managing both domestic and professional responsibilities was experienced as stressful, and a frequent topic for conversation, resulting in discussion about maternal and domestic problems often becoming the dominant discourse.

General discussion

In relation to the first research question about how WHI/HWI varies over a two-week period, the findings indicate considerable variation with regard to the reporting of WHI and HWI, but that HWI was appraised less negatively. In addition, the diaries illuminated the differing patterns of WHI and HWI among different individuals. In particular, the spiking of WHI at the weekend begs the question as to how well people are recovering from the demands of their jobs. The present sample cannot be considered as a representative sample of the wider population, but the heterogeneous nature of the phenomena should prompt us to reflect on the assumptions made by between-subject cross-sectional regression studies. Indeed, Sutton (2002) provides an excellent review concerning the problems inherent in using static models (i.e., multiple regression) to examine dynamic psychological processes (i.e., attitude–behaviour).

Strain-based and time-based are the predominant forms of interference reported in this study. As expected, behaviour-based interference was difficult to identify in both samples. Possible reasons for this include the fact that this form of conflict may be easier to measure in an observational study. For example, the actor–observer effect (Jones & Nisbett, 1972) in social psychology predicts that individuals are less likely to explain their own behaviour in dispositional terms (in comparison to environmental conditions). Thus, we could imagine that individuals would be reluctant to admit that they have a core workself, which impinges on their home/family environment. In addition, Bellavia and Frone (2005) have recently questioned the logic inherent in the initial classification of Greenhaus and Beutell (1985), suggesting that strain-, time-, and behaviour-based are predictors, not forms of WHI per se. In other words, different types of causal antecedents do not logically equal different forms of WHI itself. That said, the present study confirmed the importance of strain-based and time-based interference, but also introduced more detail with regard to types of strain that individuals can suffer from: intrusive thoughts and persistent forms of interference. To the present knowledge of the authors, these aspects of interference have not been previously identified in the literature. Finally, while behaviour-based interference may be a less common experience than strain- and time-based forms of conflict, its possible impact on people remains unclear. The frequency of its occurrence is not the only measure of how significant it might turn out to be for people's lives.

The findings indicate that negative interference and emotions are more strongly associated with the work domain. Such a finding is consistent with Montgomery et al. (2005), who, using socio-linguistic text analysis, found that individuals tended to use positive words to describe their non-work life and negative words to describe their work life. This is consistent with the idea that the work environment of people is more strongly proscribed in terms of how one should behave. The idea that emotional processing is not appropriate in the work context is seen most clearly in Hochschild's work (1983) on emotional labour in service organizations. Thus it seems reasonable to expect that in so far as individuals experience their jobs as emotionally negative WHI spillover is experienced as more negative. This result goes some way to furthering our understanding on why WHI is reported to occur more frequently than HWI (Bellavia & Frone, 2005), while family-to-work facilitation (positive spillover) is reported to occur more frequently than work-to-family facilitation (Grzywacz & Marks, 2000).

The fourth research question involved an exploration of meanings using IPA, and two major themes were identified. The issues of borders and boundaries between the two domains were identified and the way in which interruptions can impact on the day-to-day management of work and family/personal life domains was illuminated. Both the issues of boundary interruption and boundary crossing pose questions with regard to border theory (Clark, 2000). For example, a central tenet of the theory is that individuals are proactive or enactive, meaning that they strongly influence the shape of each domain, and the borders and bridges between them. However, the results from the participants indicate that interruptions significantly weaken the ability to influence border crossing. These interruptions may increase the ambiguity and disruption between borders. In this sense the present findings are consistent with research by Desrochers (2002), who developed a three-item measure of work–family boundary ambiguity and found that greater work–family boundary ambiguity was associated

with greater work–family conflict, a greater number of work–family transitions made when doing paid work at home, and a higher number of hours spent doing paid work at home. The diaries present us with a dynamic picture of the gradual WHI/HWI bumps that can accumulate, supporting the notions of the relationships between work and family as an integration issue (Rapoport, Baily, Fletcher, & Pruitt, 2002) rather than superficial dichotomy between the domains of work and non-work.

The theme concerning the way that women communicate as a way to deal with work and family issues provides an insight into the way that these participants deal with the problems of WHI/HWI. Social and cultural contexts play a large role in the way that individuals construct the domains of work and home/family, and it may well be that the women in our sample are reinforced more to view these two domains as fluid. In this sense, it presents the contradiction to fulfil oneself in work while still being a 'good mother'. Diary studies provide a way for us to understand the importance of role salience and the present findings present some initial evidence that our participants may be socialized to be 'jugglers' or 'balancers' of work and non-work (Miller, 1999). In this sense, both men and women are increasingly socialized to believe that they need have a presence in both roles (Rochlen, Suizzo, McKelley, & Scaringi, 2008). However, the present findings support studies that find that prioritizing family obligations is governed more by gender traditionalism than by egalitarianism, and women impose more job trade-offs in response to husband's work efforts (Maume, 2006). Future research should look more closely at the meanings that both men and women ascribe to their life roles in relation to how this influences their experience of belonging to both their work and non-work roles.

Contribution of the present research to study of work and family processes

The findings contribute to the study of work and family processes in four significant ways.

Firstly, there is a significant amount of individual variation in the way that people experience WHI/HWI meaning that research should also examine this phenomenon from a within-subject perspective. To date, the field has been dominated by between-subject designs. Secondly, our study adds to our understanding with regard to the way that WHI/HWI is experienced, and presents data on the rarely studied behaviour-based interference. The domination of strain-based interference has important implications for survey studies that measure stressors and strains, and such domination could artificially inflate common method variance in such studies. Future studies should make an effort to identify the different types of interference and their respective contribution to strain-based outcomes (e.g., burnout). Thirdly, WHI days were rated as more negative than HWI days. This result would need to be tested with a more representative sample, but it does behove researchers to differentiate between the incidence of interference and the impact of interference. Finally, our IPA analyses revealed that WHI/HWI can be understood as a series of boundary interruption 'bumps' that accumulate and gradually have an impact. Future research should examine whether there is a critical number of bumps that contribute to decreased well-being and reduced performance. This also poses the question as to how much WHI/HWI is normative, expected, and innocuous. Overall, our research asks serious questions about the pattern of interference and the types of interference that people experience.

Final note on intrusive thoughts and persistent forms of interference

In terms of the new knowledge provided by this research, our findings with regard to intrusive thoughts and persistent forms of interference represent interesting avenues for further research. The study does not allow us to establish whether these phenomena simply represent a finer grained example of strain-based interference or a completely separate form of interference. However, they do suggest that individuals can ruminate heavily about the events they experience at work. At a practical level, the problems which people encounter at work may be experienced as ruminative thoughts, which may make it difficult to switch off from work (Sonnentag & Zijlstra, 2006). A UK survey on sleep behaviour found that 17% of the working population had sleeping problems caused by worrying about work (Groeger, Zijlstra, & Dijk, 2004). The importance of such ruminative and persistent thoughts relate to how they affect ability to recover from work properly. For example, there is evidence that university employees who negatively reflected on their work during a vacation experienced increased levels of exhaustion and disengagement after the vacation (Fritz & Sonnentag, 2006). These phenomena represent interesting processes for researchers interested in psychological detachment from work and its subsequent effect on recovery from work.

Limitations

The use of diary studies helped to reduce some of the problems associated with retrospective bias, but they did not completely remove them. Participants filled out the diary at the end of each day. The fact that positive spillover was under-reported, in general, poses the question as to whether the methodology prompted individuals to mainly consider negative instances. The study would have benefitted from the use of Palm Pilots and experience sampling methods to ensure greater reliability.

Little is known about the effect of diary completion on participants' experiences or responses (Bolger et al., 2003). In terms of a positive benefit, filling out a diary may prompt individuals to deal with the phenomena differently. For example, research by Pennebaker and colleagues (e.g., Suedfeld & Pennebaker, 1997) has documented therapeutic outcomes for certain kind of self-reflective recollection processes. Additionally, habituation may also be an issue, as participants may develop a tendency to skim over sections and develop a habitual response style (Gleason, Bolger, & Shrout, 2001).

The majority of the participants were women, which further limits the generalizability of our findings. Moreover, qualitative research does not allow for generalizations. Participants were requested to fill out a one-item question that rated how positive or negative their spillover was on a seven-point scale. However, it is possible that during the working day non-work roles could interfere in both positive and negative ways simultaneously. As such, closed-ended questions are limited and may thus not add substantially to the information provided within the diary.

In conclusion, diary studies represent an opportunity for researchers to explore phenomena in a more sensitive and ecologically valid way.

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